



ADAPTATION FUND

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The annexed form should be completed and transmitted to the Adaptation Fund Board Secretariat by email or fax.

Please type in the responses using the template provided. The instructions attached to the form provide guidance to filling out the template.

Please note that a project/programme must be fully prepared (i.e., fully appraised for feasibility) when the request is submitted. The final project/programme document resulting from the appraisal process should be attached to this request for funding.

Complete documentation should be sent to:

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## ADAPTATION FUND

# PROJECT/PROGRAMME PROPOSAL TO THE ADAPTATION FUND

### PART I: PROJECT/PROGRAMME INFORMATION

Project/Programme Category:	Regular
Country:	Syrian Arab Republic / Ministry of Local Administration and environment
Title of Project/Programme:	Increasing the climate change resilience of communities in Eastern Ghouta in Rural Damascus to water scarcity challenges through integrated natural resource management and immediate adaptation interventions
Type of Implementing Entity:	Multilateral Implementing Entity
Implementing Entity:	UN-Habitat
Executing Entities:	UNDP, FAO, UN-Habitat
Amount of Financing Requested:	US\$ <u>9,997,156</u>

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### Project Background and Context

#### Introduction

The Syrian Arab Republic is highly vulnerable to the effects of global warming and climate change in its various dimensions. This is manifested in various climatic phenomena, but alarming are the increasing temperatures and droughts, already in the short term, and projected reduction of precipitation, mainly in the long term. The effects of these climatic phenomena impact all social and economic sectors and represent a threat to livelihoods, agricultural productivity, water availability and community health.

The crisis has exacerbated these threats since it led to a weak and deteriorating adaptive capacity resulted from damaged infrastructure, limited institutional capacity, the rapid resettlement of displaced people, returnees and the high level of poverty.

Given the above context, the proposed Adaptation Fund (AF) project aims to reduce vulnerabilities to water availability challenges in one of the most vulnerable areas in Syria: Eastern Ghouta. To manage water and land resources efficiently, also considering future climate change risks and population trends in this area, an integrated natural resource management strategy will be developed.

Complementing the strategy, the proposed project will directly build the resilience of selected communities through the implementation of concrete no-regret adaptation activities including the treatment of wastewater which is currently pollution water resources in the area and the establishment of water efficient irrigation systems.

#### Geographic, Environmental and Socioeconomic Context

##### Geographic and Environmental Context

Syria is located on the eastern coast of the Mediterranean Sea. The total area of the Syrian Arab Republic is 18,517,971 hectares, of which about 6 million hectares are agricultural lands, and the rest are mountains and valleys. The Syrian Badia is suitable for growing grasses and is used as a pasture when enough rain falls. Syria can be divided from a natural geographical point of view into four regions:

1. Coastal Region: confined between mountains and sea.
2. The Mountainous Region: Mountains and highlands stretching from the north to the south parallel to the Mediterranean Sea.
3. Inner area or plains Region: It includes the plains of Damascus, Homs, Hama, Aleppo, Hassakeh and Daraa, located in the eastern mountain area.
4. Badia Region: the desert plains located in the south-east on the Jordanian and Iraqi borders.

Prior to the crisis, Syria already faced substantial environmental challenges including water scarcity, water pollution, soil degradation, air pollution, inappropriate treatment of solid waste, etc.<sup>1</sup> Historically, the proportion of land area covered by forest represented 15 percent of the Syrian landscape. By 2007, forest coverage had been reduced to just 3 percent.

In 2008, the water deficit stood at around 2.4 billion cubic meters. This was mainly due to increasing demand on surface and ground water for agricultural use, with 89 percent of water being used for agricultural irrigation before the crisis.<sup>2</sup> Availability of drinking water and sanitation in Syria had steadily improved before the crisis.

In addition to water scarcity, water quality in Syria was relatively poor, especially in areas with high economic activity. The reuse of untreated wastewater in agriculture led to polluted surface and ground water. This affected the quality of drinking water, and contaminated river water used for irrigation.

Only few urban areas and no rural areas were connected to sewage water treatment. Existing treatment facilities often did not meet international standards and many wastewater pipes were leaking. Although water quality standards were in place, permitted levels of pollution were relatively high.

While a comprehensive assessment of the environmental damage of the crisis has yet to be conducted, damage to oil production and processing areas, and to other industrial areas, has had direct and indirect negative effects on the environment. In addition, destruction of critical infrastructure, including wastewater treatment plants, has impacted water supply and management. Frequent disruptions of electricity supply in some areas forced people to look for firewood in forested areas. National protected areas were affected by severe cutting, fires, theft and other prohibited acts.<sup>3</sup> Further environmental hazards have been caused by the collapse of waste management, debris from destroyed infrastructure.

Recent studies have shown<sup>4</sup> that the water management practices in Syria have changed during the course of the crisis, resulting in a reduction in agricultural land. However, a number of Syria's key environmental challenges are not directly linked to, or resulting from, the crisis. Rather, they are rooted in weaknesses in environmental protection.

### **Socio-economic and Development Context**

In 2010, Syria had a population of about 20.7 million people. Under normal circumstances, and using the country's pre-crisis population growth rate, the population would have exceeded 23 million by 2018. According to UN-OCHA figures from August 2018,<sup>5</sup> the Syrian population in the country was 19.95 million in 2018).

The Syrian Arab Republic is divided into 14 governorates with different areas, resources and population. Each governorate is divided into city, town and municipality<sup>6</sup>

The devastating war has set the country back decades in terms of economic, social and human development. The crisis in Syria continues to take a heavy toll on the life of Syrian people and on the Syrian economy. Several major urban centers and industrial areas have been destroyed. Moreover, the crisis has resulted in destruction of essential basic services, infrastructure and key economic sectors, which have served as a basis for people's livelihoods. The crisis in Syria continues to have a negative impact on the lives of the Syrian people and the Syrian economy because of the unilateral coercive economic measures imposed on the Syrian Arab Republic for several decades, which have been tightened since 2011.

Syria's GDP today is less than half of what it was before the war started and it could take two decades or more for Syria to return to its pre-war GDP levels; and while reconstructing damaged physical

<sup>1</sup> Syrian Arabic Republic (2010). Third National MDG Progress Report 2010

<sup>2</sup> Idem

<sup>3</sup> Office of the Permanent Representative of the Syrian Arab Republic to UNEP (2016). Preliminary Report on Environment Outlook , Damages , Challenges and National Reponses in the Syrian Arab Republic

<sup>4</sup> Stanford University (2016). Stanford News: Syrian crisis altered region's land and water resources (5 December, 2016):

<https://news.stanford.edu/2016/12/05/syrian-crisis-altered-regions-land-water-resources/>

<sup>5</sup> OCHA. (August 2018) 2018 HRP Monitoring Report

<sup>6</sup> Decree 107 -2011

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infrastructure will be a monumental task, rebuilding Syria's human and social capital will be an even greater and lasting challenge.

Agriculture is the backbone of the Syrian economy, and despite the crisis in Syria, the sector contribution to GDP during the period 2017- 2019 was 14.6 percent and represents a critical safety net for the 6.7 million Syrians.<sup>7</sup>

While the scale of damage and needs caused by the Syrian crisis requires continuation of the humanitarian response in many parts of the country, stability across major population centres - with the exception of certain parts of the North East and North West of Syria - and a rising number of returnees, accentuate the need for basic services (such as water and sanitation) and livelihood opportunities to restore a basic level of coping, reduce tensions, and support social cohesion amongst returnees, Internally Displaced Persons (IDPs) and host communities.

However, in the current transition period, while the national government is working on a rehabilitation strategy, some issues are hampering rehabilitation efforts, including climate change impacts such as water scarcity challenges. Therefore, it is necessary to respond to climate change impacts as part of a rehabilitation strategy.

Priorities for adaptation to water scarcity challenges are to reduce vulnerability, achieve sustainable agricultural production, and conserve the environment. This requires significant change in the management of water resources, policies and associated infrastructure.

### Climate and climate change trends and projections<sup>8</sup>

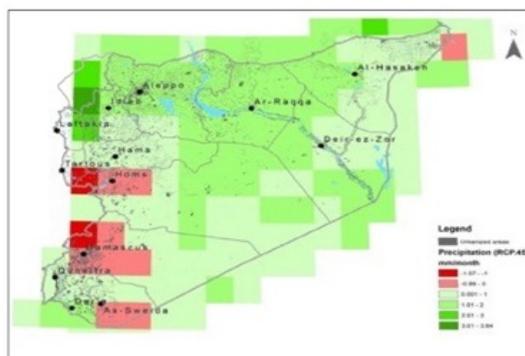
#### Climate

The climate in Syria is Mediterranean, characterized by cold winters with rain and hot and dry summers. The two main seasons are separated by relatively two short transitional seasons. The annual average of precipitations in Syria (300 mm) is low when compared with the world's average (720 mm). In summer, temperatures rise to more than 30 °C in most regions and at times can go above 40 °C or recently even 50 °C. The weather during this season is usually very dry, with a high evaporation level (about 1200 mm/year on the coast and more than 2600 mm/year in the eastern area).

#### Precipitation

- Several sources<sup>9</sup> verify that changes in rainfall patterns over the Middle East, including Syria, have declined over the past four decades. Nearly all rainfall in the region occurs during winter (November – April) and exhibits large natural year-to-year variability, but there have been new record lows in the past three decades, especially in the northern and north-eastern zones of Syria.
- Precipitation has historically been highest in the west of Syria, particularly in the NW near the Mediterranean Sea. Precipitation is also historically

Figure 1 Syria precipitation projections 2030 (RCP45). Source: ESCWA (prepared for UN-Habitat Syria CO)



<sup>7</sup> UNCT Syria report 2020

<sup>8</sup> With regard to the climate modelling outputs, data is downscaled from 3 different global climate models (CNRM-CM5, EC-EARTH, and GFDL-ESM2M) and bias-corrected using historical reanalysis data to minimize some inherent model biases. Data is at a 50-km grid scale. The historical period represents an ensemble mean (outputs from the 3 models averaged over a 20-year period) from 1986-2005. There are 2 outputs for the future period (2021-2040) which include RCP4.5 (representing a moderate climate scenario) and RCP8.5 (representing an extreme climate scenario). RCP8.5 can be considered a 'business as usual' scenario as it assumes little-to-no mitigation efforts globally.

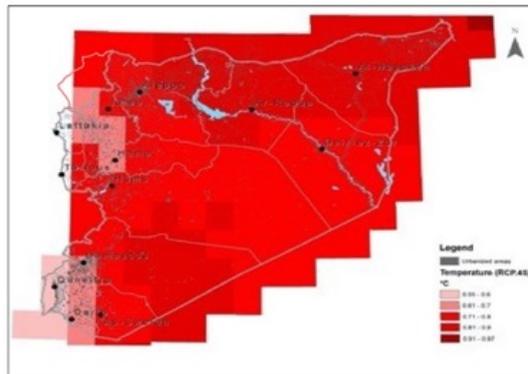
<sup>9</sup> IPCC (2013)

high in the NE. Precipitation is historically lowest in the south.

- In the near term (2030), precipitation is generally expected to increase (up to 3.6 mm/month in the NW), other than the SW, where decreasing precipitation is expected (up to -1.7 mm/month), including in eastern Ghouta – see figure 1.
- It is expected that the annual rainfall will typically decline by 5–25% in 2040–2069<sup>10</sup>. The number of rainy days may decrease by 5–15 days at mid- century.

**Temperature**

Figure 2 Syria temperature projections 2030 (RCP45). Source: ESCWA (prepared for UN-Habitat Syria CO)



- Average temperature has been steadily increasing for most of the past century with a sharp rise since the 1980s – and most extreme increase in the summer months.<sup>11</sup> In addition to higher average temperatures, the number, intensity and length of heat waves in the eastern Mediterranean has increased.
- Temperature has historically ranged from 12-21°C, with temperatures lowest in the Mountains in the central-western part of Syria and highest in the SW.
- In the near term (2030), temperature is expected to increase, with the smallest increases near the western border / Mediterranean Sea and the largest temperature increases in the NE corner (up to 1.3°C compared to 1986-2005) – see figure 2.
- Average summer temperatures will gradually increase 0.5–0.9° C per decade over much of the region and will be higher than the global average for both reference and policy scenarios.

**Heat stress**

- The number of hot days has historically exhibited an increasing gradient from west to east, whereby the lowest number of hot days (> 35°C) is nearest the Mediterranean Sea and the highest number is inland.
- The number of warm days will increase by 50–60 additional days/year by the end of the 21st century
- The annual number of heat wave days may increase, and drastically so by the end of 21st century.
- The greatest increase in the number of hot days (> 35°C) for the near term is in the south (~24 days/year) and the number of very hot days (> 40°C) increases the most inland, in the SE.

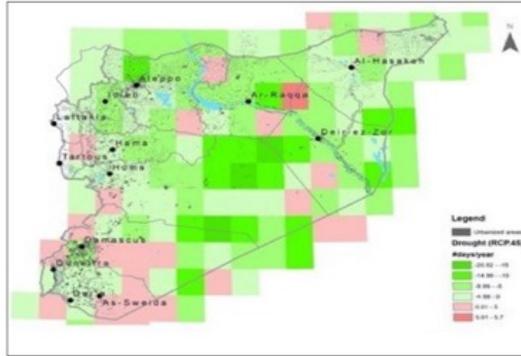
**Droughts**

10 IPCC (2013)  
11 IPCC (2013)

Higher temperature means higher

Figure 3 Syria drought projections 2030 (RCP45). Source: ESCWA (prepared for UN-Habitat Syria CO)

evaporation, so the combination of rising average temperatures and declining rainfall increases the water stress and can result in droughts. Droughts are recurring climatic events which often hit Syria, however, the multi-year (>3 years) droughts that are especially devastating have only occurred four times since 1930; one around 1960 and then three in rapid succession since 1990 with the latest just before the crisis (2007-2010).<sup>12</sup> In fact, this drought was the longest and the most intense in the last 900 years,<sup>13</sup> causing widespread crop failure and a mass migration of farming families to urban centres.<sup>14</sup> Century-long

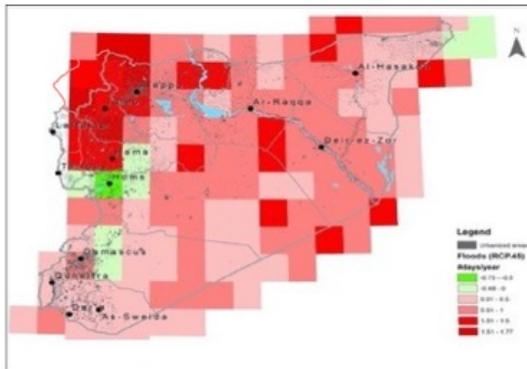


observed trends in precipitation, temperature, supported by climate model results, strongly suggest that anthropogenic forcing has increased the probability of severe and persistent droughts in this region, and made the occurrence of a 3-year drought as severe as that of 2007–2010 two to three times more likely than by natural variability alone. However, the magnitude and frequency of the drying that has occurred is too great to be explained by natural variability alone, so anthropogenic drivers are also playing a role.

- Historically, NW Syria has had the shortest period of consecutive dry days (~50-60 days/year), whereas SW Syria has been more drought-prone, with the longest period of consecutive dry days (~130-160 days/year)
- In the near term (2030), Syria is generally trending toward shorter periods of drought (reduction in ~3 days/year). However, some areas, especially in the south, including eastern Ghouta, may experience more droughts – see figure 3.

#### Floods

- Heavy and very heavy rain days (> 10 mm and > 20 mm, respectively) have been historically highest near the western border, particularly where the border meets the Mediterranean Sea
- In the near term (2030), the number of heavy and very heavy rain days will generally remain the same, with an increase of 0.5-1.8 days per year of days with very heavy rainfall (> 20 mm) expected in the NW – see figure 4.



<sup>12</sup> IPCC (2013)

<sup>13</sup> IPCC SR1.5, chapter 3 box on Middle East Droughts: [http://report.ipcc.ch/sr15/pdf/sr15\\_chapter3.pdf](http://report.ipcc.ch/sr15/pdf/sr15_chapter3.pdf) (page 41-42). The potential evolution of drought conditions under 1.5°C/2°C warming can be analysed by comparing the 2008 drought (high temperature, low precipitation) with the 1960 drought (low temperature, low precipitation). Though the precipitation deficits were comparable, the 2008 drought was amplified by increased evapotranspiration induced by much higher temperatures (a mean increase of 1°C on the 1931-2008 period on Syria) and a large population increase (from 5 million in 1960 to 22 million in 2008)

<sup>14</sup> Ibid

## *Potential implications (impacts and vulnerabilities)*

### **Implications for water resources**

- The pre-crisis drought exposed Syria's water insecurities and currently (i.e. post-crisis) there is limited response capacity to respond to / manage water resources and droughts
- Reduced availability of water supplies and reduced quality of water have aggravating water resources management problems in the country.
- Groundwater levels in many of the country's water basins is of great concern to national authorities, due to its social, economic and political implications.
- Due to sectoral and urban – rural competition for water, most Syrian cities currently have a water supply deficit and rapid urbanization combined with water deficit increases the pressure on water supply even more, both for urban and rural areas.
- Increased temperatures and continued decreases in annual precipitation (with increased likelihood of droughts) induce worsening water scarcity in Syria, especially on the long run.

### **Implications for agriculture**

- The projected lower rainfall in the Eastern Mediterranean, Turkey, Syria, and Northern Iraq in the long term is likely to further damage rain fed agriculture in vast areas, and longer dry seasons will reduce the length of time that the rangelands can be grazed.<sup>15</sup>
- Variations in the amounts and timing of rainfall can cause substantial shifts in areas planted, productivity and yields in most of the major agro-ecological zones in the country.
- Water availability for agriculture will be further reduced placing greater strain on existing irrigation practices
- The pace of land degradation and desertification is accelerating

Hence, with climate change impacts threatening the existing agricultural systems, particularly those that are dependent on unsustainable and dwindling water sources, the future outlook for production of water-demanding crops and trees is bleak and the population still engaged in the agricultural sector (25-30 percent) may be even more vulnerable.

In short, current agricultural and natural resource management policies as well as climate change have affected the current state of agricultural, farming system, making it important to consider the current and future changes in climate in the post-crisis recovery phase. In the coming decades, water-related challenges will increase as projected temperatures will rise and rainfall and groundwater resources will reduce.

### **Adaptation challenges**

In Syria, major changes in geographical distribution of the population, settlement patterns and agricultural reforms have aggravated pressure on natural resources, increased water demand and - as a consequence escalated vulnerability of people and ecosystems. These challenges include:

- Environmental challenges, which are many; in addition to climate variability and drought, they include: deforestation, desertification, soil erosion, soil salinization, overgrazing
- The war has caused enormous damage to the country's essential water and sewage systems putting millions of people at risk of waterborne diseases and creating huge challenges for the sector.
- Population increase - Syria witnessed rapid population growth in the 20th century, with the population increasing from about 4.565 million to about 21,124 million at the end of 2011<sup>16</sup>. During the war years, drinking water was significantly reduced per capita, and the negative effects of drought and low water stocks were deepened. After reaching 119 liters / day in 2011, the per capita water consumption declined gradually to 80 liters / day in 2015, affected by the decrease in water

<sup>15</sup> Evans JP (2009): 21st century climate change in the Middle East. *Climatic Change* (2009) 92:417–432, DOI 10.1007/s10584-008-9438

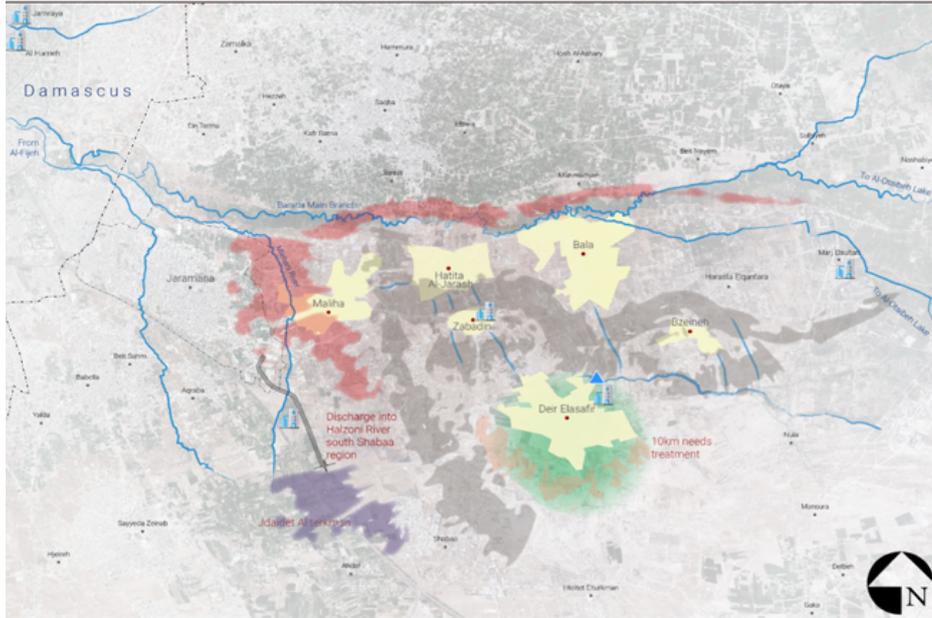
<sup>16</sup>Central Bureau of Statistic in Syria CBS

produced for drinking purposes (12 percent) between 2011 and 2015, and an increase in the rate of wastage (34 percent) in 2010 to (49 percent) in 2015 due to damaged networks and inability to replace or rehabilitate the old and damaged one.<sup>17</sup>

- Rapid urbanization has increased water demand in urban areas, reduced agriculture land and increased pollution, negatively impacting clean water availability and supply.
- As shown by the 1999 and 2007-10 droughts, these have implications for farmers, resulting in low income, declining crop yields, the loss of fixed portion of agricultural assets - drought has also led to the migration of many families to drought-affected villages and communities, resulting in a new situation with added pressure on natural resources, facilities and basic services on the host cities.
- Agriculture accounts for almost 90 percent of the country's water consumption.<sup>18</sup>
- Most of Syrian irrigated agriculture is in need of modernization, still relying on highly inefficient irrigation.
- 77 percent of agricultural land is irrigated from groundwater while 23 percent is rainfed and dependent on rain precipitation, which is increasingly rare.

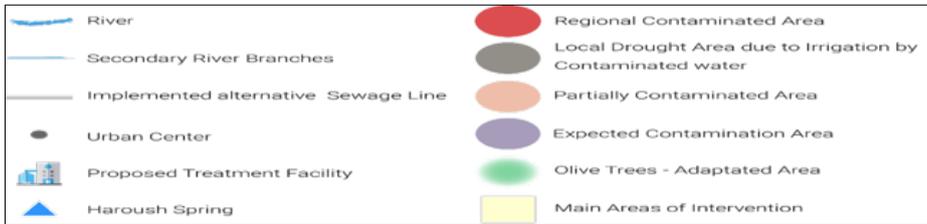
### Project target area

Figure 5 Eastern Ghouta Barada Branches. The Target areas are four Municipalities (Meiha, Zebdine, Deir Alasafi, Bala and Bzeinah). The 4 settlements are located along the Mleihani watershed / east BARADA branch and Zebdiny Watershed middle BARADA branch



17 MDG report

18 Syrian Arabic Republic (2010). Third National MDG Progress Report 2010



Global, MENA- region and National climate change models have been used to understand climate change impacts in Syria and to justify this project, focused on addressing water-related challenges in Syria and specifically in the target areas – see also figures 1-4 above.

The Syria Initial National Communication and Climate Change Atlas of Syria assessed the impact of climate change on water resources, reflected in an overall decrease in precipitation and increased temperature and droughts, for the Barada and Al Aaway basin, which includes the Fijeh spring and Barada river and Zabadani sub-basin (as a resource of drinking water in Damascus and agriculture in Eastern Ghouta).

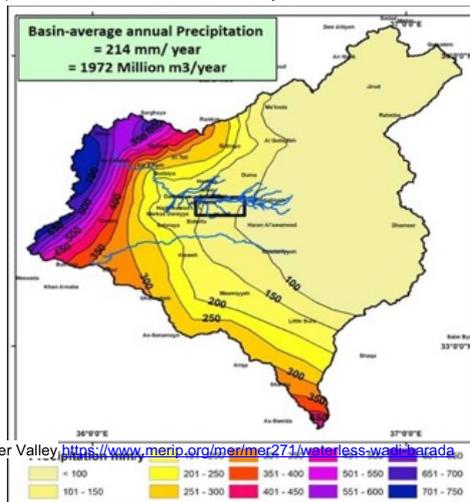
The Barada river descends through a steep, narrow gorge before it arrives at Damascus, where it divides into seven branches that irrigate the Al Ghoutah oasis, the location of Damascus. Since ancient times, canals dug by Damascenes provided irrigation of land on either side of the Barada, and historically providing its inhabitants with a variety of cereals, vegetables and fruits. The area has suffered from severe drought in the last decades. It also suffers from pollution problems, especially in the summer, when there is limited flow and little water in the basin. Before the crisis, the area also used to be a tourism area, especially for people from Damascus. It was known for its beautiful trees.

The Barada river penetrates Eastern Ghouta almost in the middle and passing through the Damascus plain to its outlet in Lake Otaiba to the east. The total length from the source up to the downstream is between 71 and 82.3 km. The impacts of climate change in Eastern Ghouta are expected to affect precipitation (including snowfall) (see also figure 1), and evaporation (through warming) (see also figure 2), which may lead to more droughts (see also figure 3), which in turn may negatively affect the river flow and groundwater levels. As a result, the discharge of the river towards its outlet is decreasing due to less precipitation, droughts and water use for irrigation and drinking at the spring.

A study carried out in 2007 by the Arab Centre for the Studies of Arid Zones and Dry Lands in Damascus<sup>19</sup> showed that a 5 percent decrease in rainfall would cause the Barada spring to dry up entirely by 2040. However, climate models predict a 5–25 percent decrease in rainfall (see current precipitation in figure 6) by 2050.<sup>20</sup> Going forward, climate change is likely to have severe consequences for water availability in the larger Damascus area. Therefore, the Syrian Ministry of Local Administration and Environment (MoLAE) has identified the Barada watershed in Eastern Ghouta (Damascus governorate) as a vulnerable area and the main project priority (see consultation section).

During the crisis, most of the Ghouta inhabitants were displaced to or outside Damascus, but

Figure 6 Spatial distribution of long-term mean annual precipitation in Barada and Awaj Basin derived by interpolation of station data for the period from 1991-2010. Source: FAO Syria



19 Waterless Wadi Barada: Manufacturing Scarcity in a Syrian River Valley <https://www.merip.org/mer/mer271/waterless-wadi-barada>  
 20 Ibid

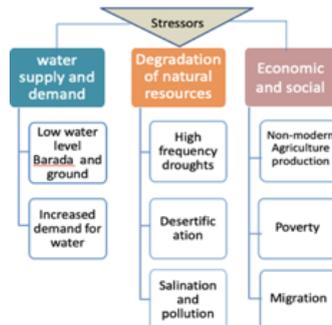
recently people began to return. For IDPs / returnees, the "perspective" of return is critical, including the restoration of their livelihoods, where historically, the region was a green belt along the Barada River. The region has previously produced fruits, vegetables and grains (most of which are now fruit trees)<sup>21</sup> Since 1980, the region has begun to shrink due to urbanization in the west and desertification in the east, where the Barada River no longer reaches Lake Otaiba in the east side of Ghouta. Jaramana is the biggest town in the Ghouta plain, 3 km southeast of Damascus. Its population in 2004 was about 114.00 people, while in 2018 it was 589,000 people, of which 287,000 were displaced from neighboring areas. This urban trend has led to an increase in the quantities of wastewater and the transformation of agricultural land into urban areas, which reduces the agricultural land and available water in the eastern Ghouta both for drinking and irrigation.

### Climate change vulnerabilities assessment and hot-spot mapping

A rapid climate change vulnerability assessment and hotspot mapping of Eastern Ghouta has been undertaken by the Syrian Ministry of Local Administration and Environment (MoLAE) and UN-Habitat. Main stressors identified are shown in figure 7.

The mapping and analysis revealed (see also figure 5) that droughts / water scarcity are the main issues in both urban and rural areas. Desertification and salination is a problem in the least populated eastern part of eastern Ghouta (around Ateibeh Lake). In the larger urban areas in the west (including Jaramana, Aqraba), availability of drinking water is also a problem. Data and inputs from mayors reveal that not only water availability is a problem, but also spread of untreated wastewater from the larger urban areas in the west to agriculture areas in the east, i.e. threatening wells that are still relatively clean and used for both drinking purpose and agriculture irrigation and, in some cases, livestock production. Most agriculture has degraded, including that most trees have been cut. Moreover, most buildings in the area have been damaged and / or destroyed during the crisis.

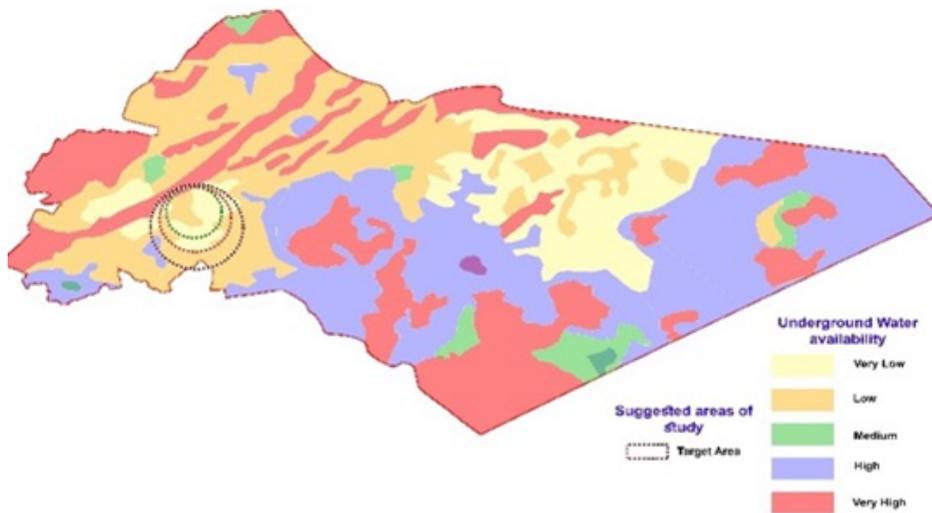
Figure 7 Simplified overview main stressors in Eastern Ghouta



Consultations conducted in Mleha / Rural Damascus (see also Part II.H), revealed that wastewater was flooding into agricultural areas noting that the sewage system of Jaramana Area (Nearby Village) is also passing through Al Mleha area and increase the flooding of sewage in area, which leads to contamination of the water and disease outbreaks.

Figure 8 groundwater availability in target area

21 Al Zoughbi, Samira (2005). "An Analysis of Agriculture-Environment Interactions and Policy Options for Sustainable Agriculture in Eastern Al Ghouta (Syria)" (PDF). Farming Systems and Poverty: Making a Difference -- Proceedings of the 18th International Symposium of the International Farming Systems Association: A Global Learning Opportunity. Food and Agriculture Organization of the United Nations. p. 31. Retrieved 17 February 2016



Jaramana is currently hosting a large number of DPs who could potentially return back to municipalities / villages east of it. As shown in 8, large areas of groundwater, which are already low are already polluted (West and North) (see figure 9). Untreated wastewater is flowing from Jaramana and Aqraba in the west to the east. As water from the Barada river is decreasing / not available, people mostly depend on wells (that are still relatively clean) for both drinking and agriculture purpose. It is crucial to protect these clean sources (by stopping pollution) and find alternative water sources, such as from treated wastewater. A large share of the assets, including trees / crops and trees is damaged in the area east of Jaramana. Therefore, there is an opportunity redevelop with sustainable / climate change resilient crops and trees.

The target area has been selected because of relatively: 1) high exposure to less rain and more droughts, 2) high share of DPs and potential returnees, high share of agriculture land, high share damaged assets and risk of pollution of water resources from untreated wastewater and low groundwater levels, all threatening water supply for agriculture and drinking purposed. Poverty has not been a critical selection criterion because almost the whole area is defined as being very poor.

It is important to give potential returnees (see potential number of returnees in [Error! Reference source not found.](#)) any perspective in the area in regaining their livelihoods, especially in the agriculture sector. In focusing on livelihoods security, special attention should be paid to the empowerment of women as many of them are now heading their households after losing husbands or fathers to the war and of whom many already work in the agriculture sector. Special attention will also be given to youth, who are particularly vulnerable and crucial for effective longer-term economic development.<sup>22</sup> For an overview of data and identified issues / vulnerabilities in the target area, see table 1.

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Figure 9 groundwater and pollution movement in target area

22 UN Syria common assessment on country situation (2018)



Table 1 Climate change vulnerability assessment overview of target municipalities in Eastern Ghouta. The population in target areas in 2020 versus in 2010 shows potential number of returnees. Share of women working in agriculture in shown in last column. Numbers for 2020 are estimations based on inputs from Mayors. (Based on data and MoLAE workshops and consultations).

Target Municipality	Population / beneficiaries [reference from CBS Syria)		Main climate change hazards / issues (exposure)	Underlying vulnerability (sensitivity)			Effects on communities (impacts)				Barriers to adapt (adaptive capacity)				
	2010	2020		1.Drought 2.Less rain 3.Warmer 4.Other	Population: 1. expected nr. returnees 2. Poverty 3. Share labour / dependence on agriculture	Natural 1. Dégradation 2. Agriculture converge 3. Salination 4.Desertification	Human made 1. Pollution (water, soil) 2. Damages 3. Cultural heritage present	Water 1. Less stream flow 2. less groundwater	Human settlement 1. less water for urban / domestic use	People 1. less clean / drinking water	Agriculture 1. Crop failure; 2. not enough water for livestock	Knowledge and awareness (Lack of)	Technology (Lack of) 1. Waste water treatment 2. Irrigation	Institutional capacity (Lack of) 1. govern 2. planning 3. crisis impact	Services / infra (lack of) 1. Cover-age; 2. Access 3. Env performance
<b>Maliha Municipality</b>	80,000	45,000 W: 60% Y:32%	Less rain; Drought of wells	Exp.returnees: 15,000; High poverty; Share agri labour: 30%	High degradation, esp. fruit trees reduction	Pollution (water / soil); Damaged sewerage + irrigation	60 days flow; less ground water; informal wells	Less water for domestic use; urban expansion	Less clean / drinking water	Crop failure (less water irrigation)	Lack of water efficient use water	Lack of waste water treatment and rehab irrigation	Lack of system planning and rehab	Very limited coverage / access; Limited env performance	30% farmers
<b>Zebdine Municipality</b>	10,380	8,000 W: 55% Y:35%	Less rain; Droughts	Exp.returnees: 2,380; High poverty; Share agri labour: 95%	High degradation agri; reduction livestock	Untreated wastewater (mixing with clean); damages irrigation	60 days flow;	Less water for domestic use;	Less clean / drinking water	Crop failure / fruit trees / olives	Lack of water efficient use water / new tech	Lack of irrigation system	Lack of system planning and rehabilitation	Very limited coverage / access; Limited env performance	95% farmers
<b>Hatita Al-Jarash</b> village related to zebdine	2,300	1,200 W:60% Y:35%	Less rain; Droughts	Exp.returnees: 900; high poverty; Share agri labour: 95%	High degradation, esp. fruit trees reduction	Untreated wastewater; damages irrigation	60 days flow; Reduced ground / spring water (2 of 5 dry)	Less water for domestic use;	Less clean / drinking water	Crop failure/fruit trees failure reduce in livestock	Lack of water efficient use water	Lack of irrigation	Lack of system planning and rehab	Very limited coverage / access; Limited env performance	95% farmers
<b>Deir Al Asafir Municipality</b>	16,000	12,000 W: 50% Y:37%	Less rain; Droughts; Warmer	Exp.returnees: 4000; high poverty; Share agri. labour: 65%;	High degradation agri (esp. olive trees; salination and desertification	Untreated wastewater; spring pollution; damages irrigation	60 days flow; Reduced ground water	Less water for domestic use;	Less clean / drinking water	Not enough water for agri and livestock	Lack of water efficient use water / new tech	Lack of water management / collective irrigation system	Lack of system planning and rehab	Very limited coverage / access; Limited env performance	65% farmers
<b>Hosh Dwair</b>	~ 3500	3,000 W:55% Y:35%	Less rain; Droughts; Warmer	Exp.returnees 500; high poverty; agri. labour: 65%;	Land degradation Salination	Untreated waste water Polluted irrigation +spring canals	Reduce water flow of Al Faid spring	Less water clean for Domestic and farming	Less clean water	Lack of water sustainable flowing	Lack of water efficient use	Lack of irrigation sys	Lack of system planning and rehab	Very limited coverage / access; Limited env performance	65% Farmers
<b>Marj El sultan Municipality</b>	4,500	3,000 W: 55% Y :37%	Less rain; Droughts	Exp.returnees: 1,500; high poverty; Share agri labour: 80 %;	abended agricultural land; degradation water canals blocking	Damaged water supply + irrigation channels out of service + flooding	Reduce water in 5 wells+ flooding spots in the higher farmland	less drinking water	Less clean / drinking water	Not enough water flowing for agri	Lack of water efficient use	Lack sustainable drinking water- lack of modern irrigation	Lack of system planning and rehab	Very limited coverage / access; Limited env performance	80% farmers 80% livestock

<b>Harasta Elqantara</b> village related to Marj al Sultan	4,000	2,500 W: 55% Y: 32%	Droughts Less water flowing	Exp.returnees: 1,500; high poverty; Share agri labour: 65%;	High degradation Agri; salination, desertification	Untreated wastewater and pollution; damages irrigation	60 days flow; Reduced ground	Less water for domestic use;	Less clean / drinking water	Not enough water for agri and livestock	Lack of water efficient use + response cc	Lack of modern irrigation	Lack of system planning and rehab	Very limited overage / access; Limited env performance	65% farmers	45% women work in farming
<b>Bzeineh</b> Village related to Marj al Sultan	5,000	1,500 W: 55% Y: 37%	Less rain; Droughts	Exp.returnees: 3,500; high poverty; Share agri labour: 65%;	High degradation agri; salination, desertification	Damages irrigation-water supply; flooding and blocking of channels	60 days flow; Reduced ground	less drinking water	Less clean / drinking water	Not enough water for agri and livestock	Lack of water efficient use use + response cc	Lack sustainable drinking water- lack of modern irrigation	Lack of system planning and rehab	Very limited overage / access; Limited env performance	65% farmers	45% women work in farming
<b>Bala</b> Village related to Marj el Sultan	2,500	1,500 W:50% Y:37%	Less rain; Droughts	Exp.returnees: 1000; high poverty; Share agri labour: 65%;	salination, desertification	Untreated waste water Polluted irrigation	Water flow reduce	Lack of Domestic network water availability	Less drinking water	Not enough water for labour use	Lack of sustainable water and farming crops and trees	lack of modern irrigation	Lack of system planning and rehab	Very limited overage / access; Limited env performance	65% Farmers	45% Women working in farming and livestock
<b>Noleh</b> Village related to Marj al Sultan	3,500	2,000 W:50% Y:37%	Less rain; Droughts Desertification due to salination	Exp.returnees: 1,500; high poverty; Share agri labour: 65%;	salination, Desertification	Untreated waste water Polluted irrigation	Reduce in water flow and ground water level	Lack of Domestic network water availability	Lack of Domestic network water availability	Not enough water for agri and livestock	Lack of sustainable water and farming crops and trees	lack of modern irrigation lack of waste water treatment sys	Lack of system planning and project implementation	Limited env performance	65% Farmers	45% Women working in farming and livestock
<b>Total target area</b>	110,680	T 81,700 W:50-60% Y:32-37% F30-95%		Exp.returnees: 31,780;											30-95% farmers	45-65% women
<b>Total Eastern Ghouta</b>	225,000	145,000 W: 55% Y: 35% F: 75%														

## **Problem Statement**

The problem to be addressed by the proposed project is that the livelihoods of communities and farmers in the Eastern Ghouta area of Syria are being negatively affected by a combination of climate change and crisis impacts. Rising temperatures, decreasing precipitation and more droughts are resulting in: i) reduced availability of water (both surface and groundwater); ii) reduced agriculture production; and iii) increased exposure to pollution resulting from untreated wastewater. These effects are greatly exacerbated by the baseline situation of unsustainable management of land and water resources in Syria and impacts of the crisis. Future prospects for rural communities in Eastern Ghouta are jeopardised, with their livelihoods expected to be further threatened as climate change impacts, making sustainable management of their natural resources increasingly challenging.

## **Possibilities for Syria to handle climate change-related challenges**

Sustainable natural resource (water and land) management is a key issue to address in Syria in order to build up climate change resilience, to support sustainable development, to enhance social cohesion and to improve people's livelihoods and well-being.

In line with Syria's NDC (2019), key concrete adaptation needs / priorities concerning water include:

- The protection of water resources (and prevent contamination of surface and groundwater resources / wells)
- The reduction of water losses;
- The increase of water use efficiency, supporting water harvesting projects and using high efficiency irrigation methods;
- The promotion of use of non-conventional water resources (e.g. treated wastewater); and
- Improved agricultural production practices (e.g. drought tolerant crops and trees).

According to the NDC, this should also be established through: 'Building capacity, expertise and competencies, raising awareness and developing sustainable awareness about adapting to climate change, establishing a participatory approach among residents of affected areas, and enhancing the role of local communities in the formulation and implementation of development programs.'

There are several institutions concerned with natural (water) resources management and water supply, which currently often work with a sectoral planning approach. Therefore, to manage natural resources more efficiently and sustainably, better coordination among various stakeholders is required, which could be established through an Integrated Natural Resource Planning and Management approach for regional planning in water basins in Syria.

Water resources are to be managed more efficiently and sustainably, including the application of existing knowledge and experience. The available renewable water resources need to be better shared for domestic, agricultural, and industrial use with a priority for respecting internationally defined minimum standards for supply and use. The objective should be to support the economic potential of Syria and vulnerable groups for the coming decades and beyond for future generations, taking into account climate change impacts.

Addressing climate change-related water and post-crises challenges requires a combination of immediate response to people's basic needs combined with a longer-term approach aimed at building resilience to climate change, shocks and protracted crises, as per a three-tier approach (see table 2).

The restoration of access to (clean) water should be a priority, combined with water availability for agriculture, which is important as it provides for people's livelihoods, especially since a 'broken' system of wastewater reuse has polluted some areas. Investment in innovative practices is also pivotal as research, technology development and transfer can provide further improvements to water efficiency and agriculture productivity (also considering the water-food-energy nexus).<sup>23</sup>

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<sup>23</sup> FAO and WB (2018) water management in fragile systems. Building resilience to shocks and protracted crisis in the Middle east and North Africa. Discussion paper. Online: <http://www.fao.org/3/I7902EN/I7902en.pdf>

Table 2 Project three-tier approach

Three-tier approach	Relevant for project target area
a) <b>Immediate / no regret:</b> local rehabilitation measures (concrete interventions). The focus will be on urgent issues of functionality to assist people to have access to clean water and regain their livelihoods. Design should be durable / sustainable and climate change resilient.	- Urgent restoration of functionality of assets and systems in target communities, aiming to provide clean water, reduce wastewater pollution and regain agricultural livelihoods
b) <b>3-5 year-perspective:</b> Identify and initiate projects to develop and (re)construct infrastructure and water - related services integrating local and basin-wide concepts by linking the existing situation in communities and to a long-term vision of climate change resilient water management.	- Participatory assessment of water supply and demand needs in target areas, directing integrated and participatory water and land resource planning and management linked to watershed- and river-basin-wide considerations, taking into account climate change induced factors and crisis impact factors
c) <b>10-year perspective:</b> Re-defining and implementing Syria's National Water Strategy, spatial strategies and a National Adaptation Plan. The objective is to create enabling conditions for implementation of an Integrated Natural Resource (Water and Land) Management, taking into account climate change effects and fragility challenges	- Support capacities, including for replication of assessment, planning- and management approaches and techniques used in the 3- to 5-year process (through recommendations)

## Solution and Barriers

### Preferred Solution

The preferred solution would be for the communities within the Eastern Ghouta Rural Damascus Governorate of Syria to become resilient to climate change impacts, especially those related to water scarcity challenges. This would be achieved by a combination of immediate / no regret adaptation interventions and the longer-term and efficient and sustainable planning and management of natural resources in Eastern Ghouta. A project theory of change table has been included in annex 1.

### Barriers

Barriers to implementation of the above solution within Syria include:

- Lack of coherent climate risk information coupled with limited knowledge sharing within the country.
- Weak institutional structures for developing integrated natural resource management strategies at the catchment level.
- Limited technical capacity of public services to promote climate change adaptation among communities.
- Limited community experience in participation in assessment, planning and development of above strategy.
- Limited knowledge among communities of the benefits of water conserving agricultural technology, pollution prevention and the use of non-traditional water sources.

## Project / Programme Objectives

### Overall objective

*Increasing the climate change resilience of communities in Eastern Ghouta in Rural Damascus to water scarcity challenges through integrated natural resource management and immediate adaptation interventions*

### Sub-objectives

- Strengthening the capacities of national and sub-national government institutions, communities and vulnerable groups to assess, plan and manage climate change-induced and post-crises water and land challenges in an efficient, sustainable and climate resilient way, including sharing

lessons for replication of the approach (In line with AF outcomes 2, 3, 8 and with the 3-5 year and 10-year planning approach)

Increase the access to municipal and community-level efficient, sustainable and climate change resilient water supply systems for urban and agriculture purposes, using innovative and replicable techniques (in line with AF outcome 2, 3, 4 and 8)

Increase the resilience of water-dependent livelihoods and secure related income (through reduced water demand), especially for vulnerable groups (in line with AF outcome 2, 3, 6 and 8).

### Project / Programme Components and Financing

Table 3 Project components and financing

Project/Programme Components	Expected Outputs	Expected Outcomes	Amount (US\$)
Component 1 – Integrated natural Resource Management to cope with climate change and crisis-related water challenges	1.1. Inception workshop and coordination mechanism	1. Capacities and commitment of national and sub-national government institutions, communities and vulnerable groups to assess, plan and manage climate change-induced and post-crisis water and land challenges have been strengthened and knowledge and lessons learned for replication collected and shared and integrated into strategies and regulations  (in line with AF outcomes 2, 3 and 8)	176,064
	1.2. Capacity strengthening package		126,064
	1.3. Detailed hydrogeological study, CC VA and future outlook for the region		617,364
	1.4. Gaps analyses and recommendations for managing water and land		81,000
	1.5. INRM Strategy and action plan (with CC mainstreamed)		227,564
	1.6. M & E plan for above + replication mechanism		311,039
	1.7. Formal adoption of strategy document		209,000
			T: 1,748,095
Component 2 – Establishment of efficient, sustainable and climate change resilient water supply systems for urban and agriculture purposes	2.1 Assessment and verification / technical specification and engineering studies, including surveys required for detailed design of below interventions	2. Access to municipal and community-level efficient, sustainable and climate change resilient water supply systems for urban and agriculture purposes, using innovative and replicable techniques has increased through: - Use of non-conventional water resources - Reduction of losses / leakages of wastewater and from canals / irrigation systems  And capacities to operate, maintain and sustain these systems have been strengthened  (in line with AF outcome 2, 3 and 4 and 8)	114,300
	2.2 Rehabilitated sewage network to divert wastewater towards the WWTPs (concrete intervention)		296,250
	2.3 Installed mobile wastewater treatment plants to use non-conventional water resources identified (concrete intervention)		4,049,313
	2.4 Rehabilitated irrigation canals to divert treated water for irrigation purposed (concrete intervention)		107,053
			T: 4,566,916

Component 3 - Establishment of efficient, sustainable and climate change resilient irrigation systems and agriculture practices and security of income	3.1. Studies and assessments to detail the proposed interventions	3. Resilience of water-dependent livelihoods and security of related income (through reduced water demand), especially for vulnerable groups, has increased through: - Protection of water resources (and prevention of contamination of surface and groundwater resources / wells) - Raising water use efficiency, using high efficiency irrigation methods - Improved agricultural practices (introduction of climate smart agriculture practices.) - Alternative or diversified livelihoods;  And capacities to operate, maintain and sustain these systems have been strengthened  (in line with AF outcomes 2, 3 and 6 and 8).	174,133
	3.2. Introduction of water efficient agricultural technology		924,158
	3.3. Adoption of climate-smart agriculture practices for improved soil fertility and enhanced water use efficiency		814,242
	3.4. <a href="#">Promote sustainable livelihood opportunity through crop residuals management and support to rural women.</a>		266,906
4. Total components			8,494,450
5. Project / Programme Execution cost			<del>719,519</del>
6. Total Project/Programme Cost			<del>9,213,969</del>
7. Project / Programme Cycle Management Fee charged by the Implementing Entity			<del>783,187</del>
<b>Amount of Financing Requested</b>			<del>9,997,156</del>

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**Deleted:** Promote alternate sustainable livelihood opportunities in silage crops and trees residues and organic fertilizer production

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### Projected Calendar

Table 4 Project components and financing

Milestones	Expected Dates
Start of Project/Programme Implementation	July 2021
Project/Programme Closing	<del>December 2024</del>
Terminal Evaluation	<del>December 2024</del>
Total project duration	3,5 years

## PART II: PROJECT / PROGRAMME JUSTIFICATION

### A. Project / programme components

To achieve the overall project objective to 'increase the climate change resilience of communities in Eastern Ghouta in Rural Damascus to water scarcity challenges through integrated natural resource management and no-regret adaptation interventions, the projects' 'core' is a set of concrete adaptation actions (component 2 and 3). Around 2/3rd of the components budget will be allocated to these concrete interventions and these will directly benefit the populations living in the target area. Component 1 will consist of activities to strengthen the capacities of national and sub-national government institutions, communities and vulnerable groups to assess, plan and manage climate change-induced and post-crises water and land challenges in an efficient, sustainable and climate resilient way, including sharing lessons and replication of the approach. Component 1 is not only needed to verify the (to be selected) concrete no-regret adaptation interventions under component 2 and 3, but also to allow the government to identify other investment needs in the water sector and adjustments of the regulatory framework to manage water efficiently sustainably and in a climate change resilient way Eastern Ghouta, but also in other geographical areas in Syria. The specific needs of women, youth and other vulnerable groups have been identified at the proposal development stage. Engagement with these groups will be continue during project implementation through women and youth unions and farmers and water user associations and syndicates

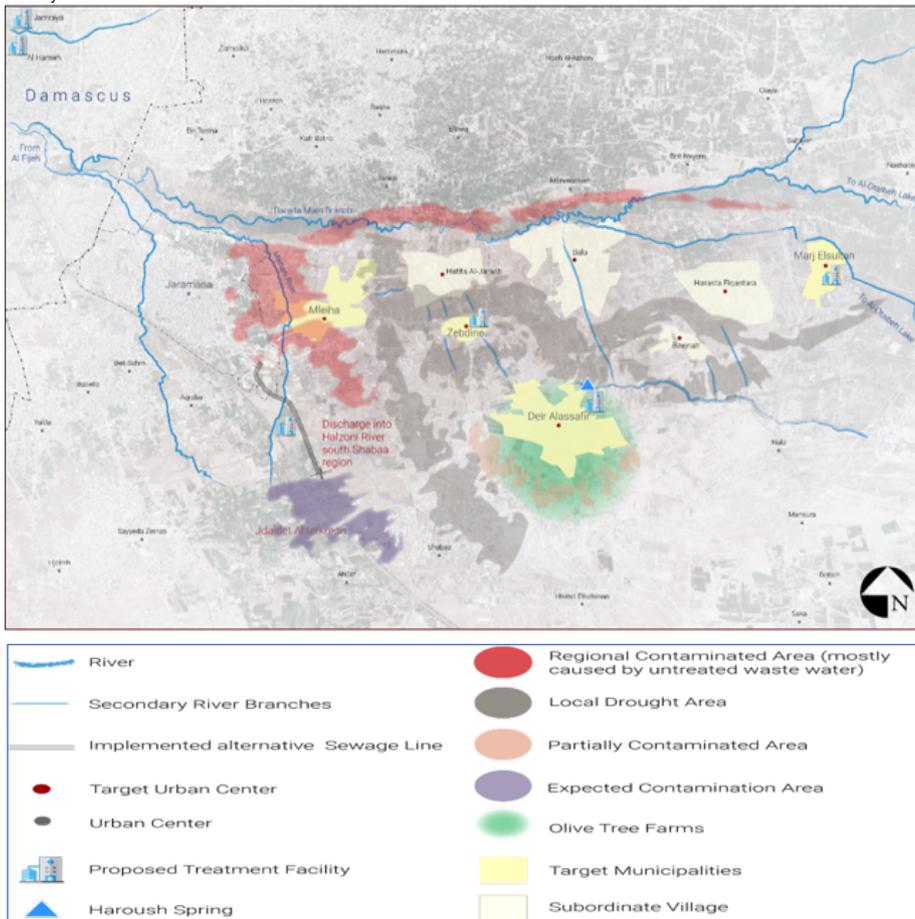
**Component 1:** Integrated natural Resource Management to cope with climate change and crisis-related water challenges.

In line with AF outcomes 2, 3, 7 and 8 and the priorities of the government of Syria (see part II.D), this component will focus on strengthening the capacities of national and sub-national government institutions, communities and vulnerable groups to assess, plan and manage climate change-induced and post-crises water and land challenges in an efficient, sustainable and climate resilient way, including sharing lessons for replication of the approach through the following outputs:

- 1.1. Inception workshop and coordination mechanism
- 1.2. Capacity strengthening package
- 1.3. hydrogeological study, CC VA and future outlook for the region
- 1.4. Gaps analyses and recommendations for managing water and land
- 1.5. INRM Strategy and action plan (with CC mainstreamed)
- 1.6. M & E plan for above + replication mechanism
- 1.7. Formal adoption of strategy document

The information generated and included in the Integrated Natural Resource (water and land) Management (INRM) Strategy will allow the government and target communities to understand what the existing water resources (supplies) are (including quantities), what the demands are and how these may be affected in the future by climate change, population trends, growth of sectors etc. The strategy will also identify a comprehensive set of actions to use the water resources efficiently, sustainably and climate change resilient in Eastern Ghouta. This component is required because the current information on water scarcity risks and responds / adaptation options is limited, but also to verify the (to be selected) concrete no-regret adaptation interventions under component 2 and 3 as part of the larger water system. Adjustment of the regulatory framework may be required to support the efficient management of natural resources. Therefore, the INRM strategy will include proposed interventions for the future 3 – 5 years as well as identification of other investment needs in the water sector, and adjustments of the regulatory framework, if needed. Institutions will be involved vertically (ministries, governorate and municipalities) and horizontally (environment and climate change, water and agriculture). The capacity strengthening package will include series of workshops and trainings on inputs & analysis & outputs & report / M & E and coordination vertically + GIS and updating of strategy. For an overview see table 6 and for details see annex 2.

Figure 5: Eastern Ghouta Barada Branches. The Target area in yellow cover five Municipalities (Mleiha, Zebdine, Deir Alassafi, Marj Elsultan and their related villages and towns) The 4 settlements are located along the Mleihani watershed / east BARADA branch and Zebdiny Watershed middle BARADA branch



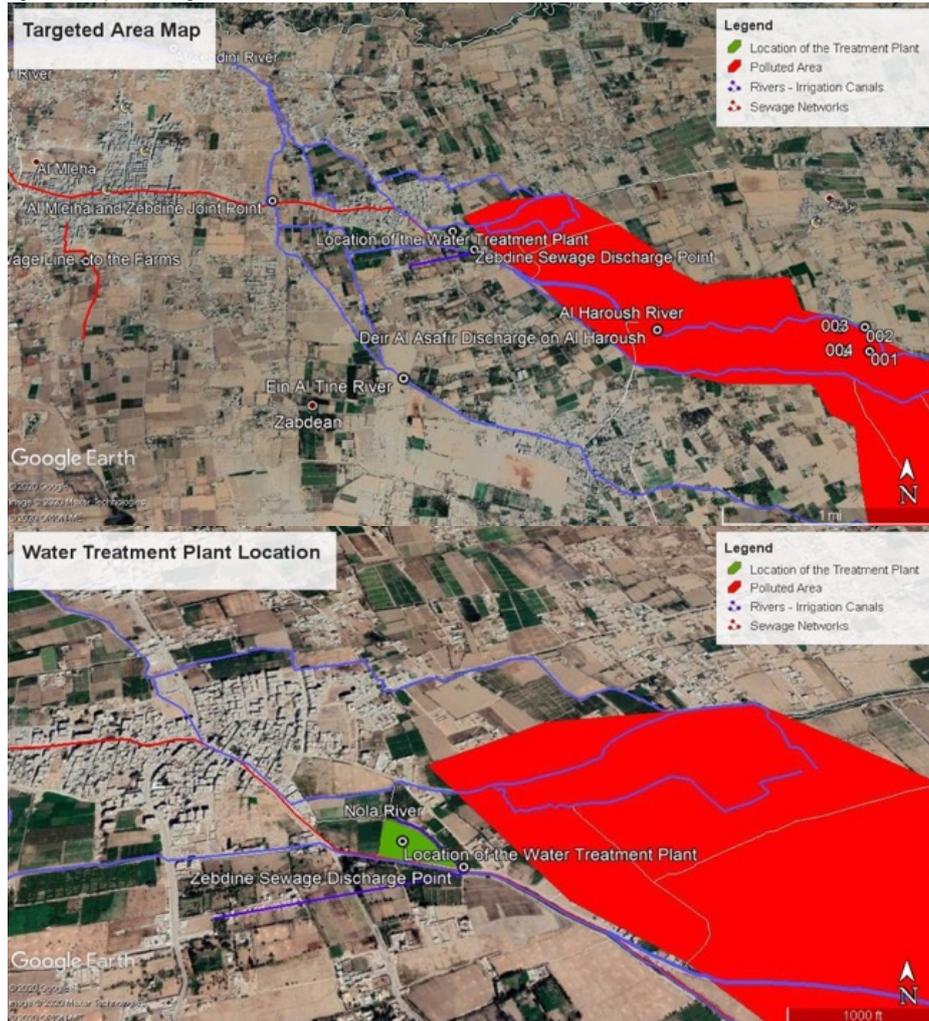
**Component 2:** Establishment of efficient, sustainable and climate change resilient water supply systems for urban and agriculture purposes

In line with AF outcomes 2, 3, 4 and the priorities of the government of Syria (see part II.D), this component will focus on increasing the access to municipal and community-level efficient, sustainable and climate change resilient water supply systems for urban and agriculture purposes, using innovative and replicable techniques through the following outputs:

- 2.1. Assessment and verification / technical specification and engineering studies, including surveys required for detailed design of below interventions
- 2.2. Rehabilitated sewage network to divert wastewater towards the WWTPs (concrete intervention)
- 2.3. Installed mobile wastewater treatment plants to use non-conventional water resources identified (concrete intervention)
- 2.4. Rehabilitated irrigation canals to divert treated water for irrigation purposes (concrete intervention)

This component is needed to stop the pollution of soils and water resources from wastewater coming from the west and to provide sustainable and climate change resilient access to clean water downstream for urban and agriculture purposes. Solar PV will be installed to compensate for the extra energy use by the WWTP. For an overview see table 6 and for details see annex 3

Figure 10 component 2 target area



**Component 3:** Establishment of efficient, sustainable and climate change resilient irrigation systems and agriculture practices

In line with AF outcomes 2, 3, and 6 and the priorities of the government of Syria (see part II.D), this component will focus on increasing the resilience of water-dependent livelihoods and security of income (through reduced water demand), especially for vulnerable groups, through the following outputs:

- 3.1. Studies and assessments to detail the proposed interventions
- 3.2. Introduction of water efficient agricultural technology
- 3.3. Adoption of climate-smart agriculture practices for improved soil fertility and enhanced water use efficiency

3.4. Promote sustainable livelihood opportunity through crop residuals management and support to rural women.

This component is needed for target communities to cope with increasing droughts and water scarcity issues. The activities under this component will help to reduce demand on both surface and groundwater resources through introduction of water efficient irrigation technologies and climate-smart agricultural practices promotion of drought and heat-tolerant crops and trees and livestock, and the promotion of climate smart practices that enhance soil fertility and provide income to vulnerable farmers (such as intercropping, crop rotation). For an overview see table 6 and for details see annex 4.

**Deleted:** Promote alternate sustainable livelihood opportunities with special focus on rural women. ¶

Figure 11 component 3 target area



Figure 12 component 3 target area

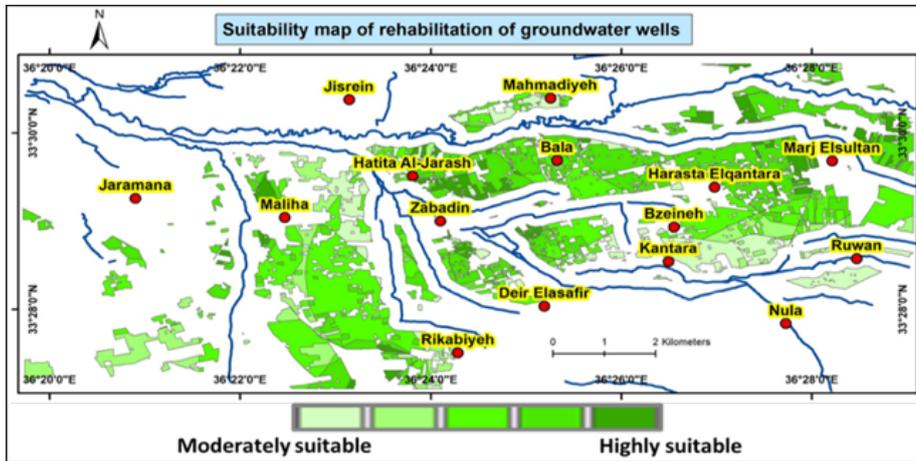


Figure 13 component 3 target area

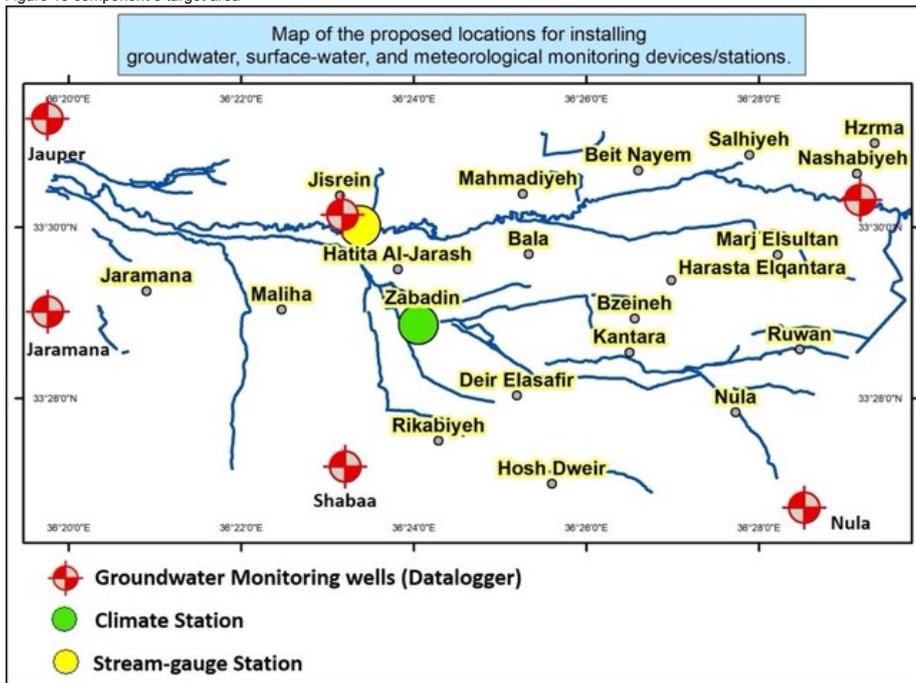


Figure 14 component 3 target area

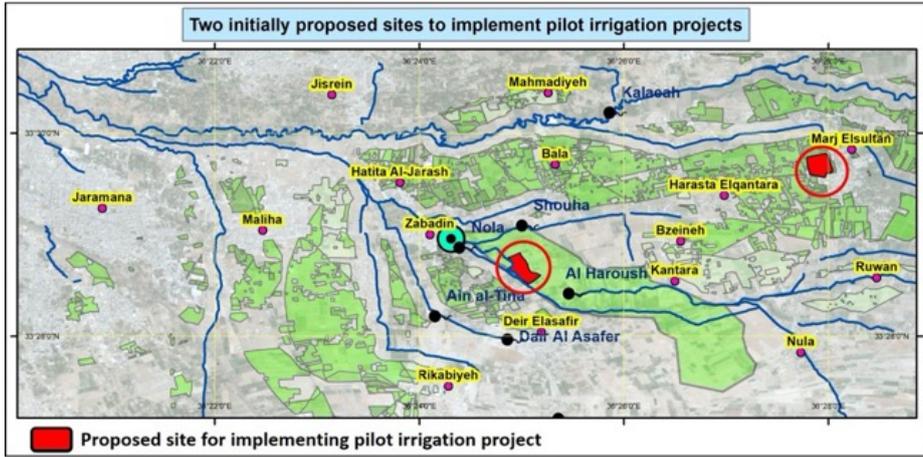


Table 6 Overview of proposed project activities

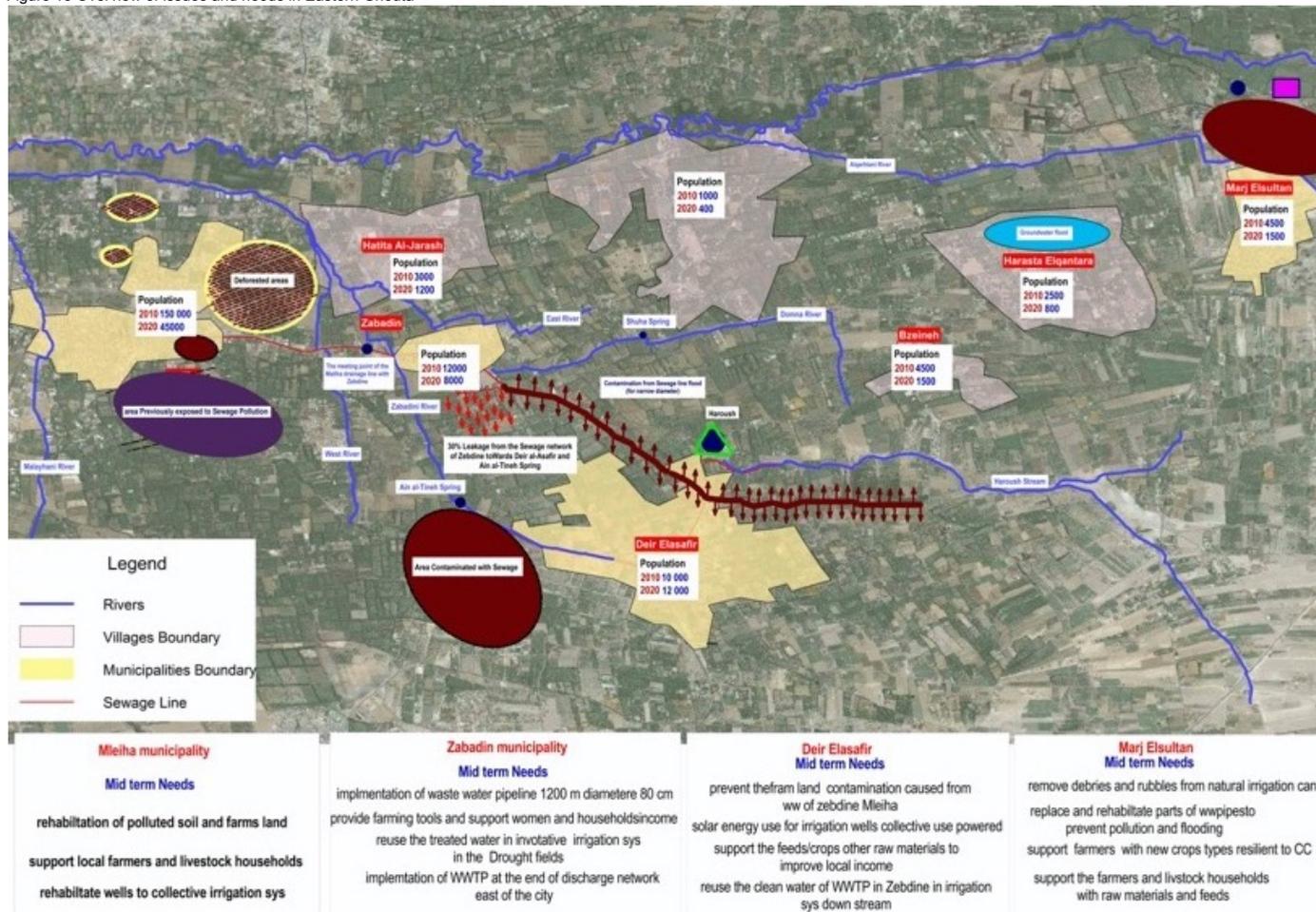
Problem description and climate change adaptation needs statement	Adaptation measure outcome (to address the problem and respond to the needs)	Outputs	Activities	Target areas	Beneficiaries		
					Total (T)	Women (W)	Youth (Y) Farmers (F)
					Direct		Indirect
<b>Overall problem description:</b> in Eastern Ghouta, climate change-related patterns of reduced precipitation and increased number of droughts are resulting in drying up of streams from the west and desertification from the east. This in turn is resulting in crop failure and lacking water supply options for urban / domestic use in an area that is largely dependent on agriculture as main source of income. The situation is aggravated by the impacts of the Syrian crisis, especially increased pollution of streams, groundwater and soil due to non-functioning wastewater treatment, destroyed agriculture assets and high poverty numbers, preventing DPs to be able to return.							
<b>Component 1</b>							
There is limited understand of the complexity of the regional water system in Eastern Ghouta: supply options and demands, now and in the future, also considering climate risks and merging this with recovery needs and limited capacities to manage natural resources (water and land) efficiently as a larger system.	Support integrated natural Resource Management to cope with climate change and crisis-related water challenges in Eastern Ghouta, with the purpose to identify high impact response options and verify proposed activities under component 2 and 3 as part of the larger water system	1.1. Inception workshop and coordination mechanism	- See annex 2	- Meiha municipality	<b>T45,000</b> ; W60%; Y32%; F30% (of which 40%W)	Eastern Ghouta (145,000) + populations dependent on agriculture in this area	
		1.2. Capacity strengthening package		- Zebdine municipality			<b>T8,000</b> ; W60%; Y35%; F95% (of which 65%W)
		1.3. Hydrogeological study, CC VA and future outlook for the region		- Hatita El jarash (village related to Zebdine)			<b>T1,200</b> ; W60%; Y35%; F95% (of which 65%W)
		1.4. Gaps analyses and recommendations for managing water and land		- Deir El Assafir municipality			<b>T12,000</b> ; W50%; Y37%; F65% (of which 45 %W)
		1.5. INRM Strategy and action plan (with CC mainstreamed)		- Hosh Dweir (village)			<b>T3,000</b> ; W55%; Y35%; F65% (of which 45%W)
		1.6. M & E plan for above + replication mechanism		- Marj El sultan municipality			<b>T3,000</b> ; W55%; Y37%; F80% (of which 45 %W)
		1.7. Formal adoption of strategy document		- Harasta Elqantara (village related to Marj)			<b>T2,500</b> ; W55%; Y32%; F65% (of which 45%W)
				- Bzeineh village related to Marj El Sultan			<b>T3,500</b> ; W50%; Y37%; F65% (of which 45%W)
				- Bala (village related to Marj El Sultan)			<b>T1,500</b> ; W50%; Y37%; F65% (of which 45%W)
				- Noleh village related to Marj El Sultan)			<b>T2,000</b> ; W50%; Y37%; F65% (of which 45%W)
					<b>Total 81,700</b>		
<b>Component 2</b>							
The target area is facing a considerable challenge in securing clean water for urban and agricultural use; the ground water, river streams and canals are polluted by waste water discharge, which farmers are currently using	Increasing the access to municipal and community-level efficient, sustainable and climate change resilient water supply systems for urban and agriculture purposes, using innovative and replicable techniques	2.1. Assessment and verification / technical specification and engineering studies, including surveys required for detailed design of below interventions	- 2.1.1. Assessment and verification - 2.1.2. Prepare detailed technical specification for the Wastewater treatment plants - 2.1.3 Site surveys and preparation of details BOQ for the below outputs	- Meiha municipality (90 %)	<b>T40,000</b> ; W60%; Y32%; F30% (of which 40%W)	Eastern Ghouta (145,000) + populations dependent on agriculture in this area	
				- Zebdine municipality			<b>T8,000</b> ; W60%; Y35%; F95% (of which 65%W)
				- Deir El Assafir municipality			<b>T12,000</b> ; W50%; Y37%; F65% (of which 45 %W)
				- Hosh Dweir (village)			<b>T3,000</b> ; W55%; Y35%; F65% (of which 45%W)
				- Marj El sultan municipality			<b>T3,000</b> ; W55%; Y37%; F80% (of which 45 %W)
					<b>Total 66,000</b>		

		2.2. Rehabilitated sewage network to divert wastewater towards the WWTPs (concrete intervention)	<ul style="list-style-type: none"> <li>- 2.2.1. Excavation works</li> <li>- 2.2.2. Replacement of damaged pipes or pipes that leakage</li> </ul>	<ul style="list-style-type: none"> <li>- Zebdine municipality</li> <li>- Deir El Assafir municipality</li> </ul>	<b>T8,000</b> ; W60%; Y35%; F95% (of which 65%W) <b>T12,000</b> ; W50%; Y37%; F65% (of which 45 %W) <b>Total 20,000</b>	
		2.3. Installed mobile wastewater treatment plants to use non-conventional water resources identified (concrete intervention)	<ul style="list-style-type: none"> <li>- 2.3.1. Undertake civil and site preparatory work</li> <li>- 2.3.2. Excavation work for the collection cement container, concrete base for the container, pipeline outlet for the treated water</li> <li>- 2.3.3. Construction of the cement collection container of wastewater discharge input, installation of the outlet pipeline outlet for the treated water, electrical connections, and sludge collection containers</li> <li>- 2.3.4. Install and operate waste treatment plant</li> <li>- 2.3.5.Capacity strengthening package required for operating, maintaining, and sustaining the intervention, incl. O &amp; M and exit strategy plan developed</li> </ul>	<ul style="list-style-type: none"> <li>- Meiha municipality (90 %)</li> <li>- Zebdine municipality</li> </ul>	<b>T40,000</b> ; W60%; Y32%; F30% (of which 40%W) <b>T8,000</b> ; W60%; Y35%; F95% (of which 65%W) <b>Total 48,000</b>	
		2.4. Rehabilitated irrigation canals to divert treated water for irrigation purposed (concrete intervention)	<ul style="list-style-type: none"> <li>- 2.4.1. Removal of residual/ debris from irrigation canal (stream bed)</li> <li>- 2.4.2. Rehabilitation of channel sides</li> </ul>	<ul style="list-style-type: none"> <li>- Zebdine municipality</li> <li>- Deir El Assafir municipality</li> <li>- Hosh Dweir (village)</li> <li>- Marj El sultan municipality</li> <li>-</li> </ul>	<b>T8,000</b> ; W60%; Y35%; F95% (of which 65%W) <b>T12,000</b> ; W50%; Y37%; F65% (of which 45 %W) <b>T3,000</b> ; W55%; Y35%; F65% (of which 45%W) <b>T3,000</b> ; W55%; Y37%; F80% (of which 45 %W) <b>Total 26,000</b>	
<b>Component 3</b>						
The target area is facing a considerable challenge in securing clean water for urban and agricultural use; the ground water, river streams and canals are polluted by waste	Increasing the resilience of water-dependent livelihoods and security of income (through reduced water demand and the introduction of climate smart agriculture	3.1. Studies and assessments to detail the proposed interventions are finalized	<ul style="list-style-type: none"> <li>- 3.1.1. Finalize the studies, technical designs and assessments of the proposed interventions</li> </ul>	<ul style="list-style-type: none"> <li>- Meiha municipality</li> <li>- Zebdine municipality</li> <li>- Deir El Assafir municipality</li> <li>- Marj El sultan municipality</li> </ul>	T30,790 persons distributed over 4 target municipalities (W50-60%; Y 32-37%; F30-95%). Target is 30 % women and youth. <b>Total 30,790</b>	Eastern Ghouta (145,000) + populations dependent on agriculture in this area

<p>water discharge, which farmers are currently using.</p> <p>With the increasing number of farmers returning to the targeted area, there is need to introduce climate smart agriculture practices to enable the farmers adapt to climate change while resuming their production to enhance their livelihood and thus not be vulnerable to climate change</p>	<p>practices, especially for vulnerable groups</p>	<p>3.2. Introduction of water efficient agricultural technology</p>	<ul style="list-style-type: none"> <li>- 3.2.1. Irrigation source is restored and efficient irrigation systems at farmers' level are installed</li> <li>- 3.2.2. Access to information regarding ground water levels (water quantity and quality) is provided for farmers and decision makers, through Installation groundwater, surface-water, and meteorological monitoring networks</li> </ul>	<ul style="list-style-type: none"> <li>- Mleiha municipality</li> <li>- Zebdine municipality</li> <li>- Deir El Assafir municipality</li> <li>- Marj El sultan</li> </ul>	<p>T8,700 persons distributed over 4 target municipalities (W50-60%; Y 32-37%; F30-95%). Target is 30 % women and youth.</p> <p><b>Total 8,700</b></p>
		<p>3.3. Adoption of climate-smart agriculture practices for improved soil fertility and enhanced water use efficiency</p>	<ul style="list-style-type: none"> <li>- 3.3.1. Introduce climate smart crop production practices</li> <li>- 3.3.2. Introduce drought tolerant crops and trees and enhance livestock production</li> </ul>	<ul style="list-style-type: none"> <li>- Mleiha municipality</li> <li>- Zebdine municipality</li> <li>- Deir El Assafir municipality</li> <li>- Marj El sultan</li> </ul>	<p>T16,840 persons distributed over 4 target municipalities (W50-60%; Y 32-37%; F30-95%). Target is 30 % women and youth.</p> <p><b>Total 16,840</b></p>
		<p>3.4. <a href="#">Promote sustainable livelihood opportunity through crop residuals management and support to rural women</a></p>	<ul style="list-style-type: none"> <li>- 3.4.1. Promote sustainable livelihood opportunity through crop residuals management and support to rural women</li> </ul>	<ul style="list-style-type: none"> <li>- Mleiha municipality</li> <li>- Zebdine municipality</li> <li>- Deir El Assafir municipality</li> </ul>	<p>T5,400 persons distributed over 3 target municipalities (W50-60%; Y 32-37%; F30-95%). Target is 30 % women and youth.</p> <p><b>Total 5,400</b></p>

**Deleted:** Promote alternate sustainable livelihood opportunities with special focus on rural women.

Figure 15 Overview of issues and needs in Eastern Ghouta



## B. Project / programme provides economic, social and environmental benefits

The proposed project aims to maximize benefits to the most vulnerable groups while maximising the positive environmental impact and reducing any potential social risk due to sensitivities among the local communities. The most vulnerable groups to be targeted under this project can be categorized as following:

- women headed households, (estimated by 35-40% of the total households in the area)
- Households with Persons with disabilities-PWD and/or elders,
- households with no decent income,
- Youth willing to engage in agriculture production and have no other income source
- Small-scale farmers and herders who lost their productive assets and/or lack access to inputs
- Internal-Displaced Persons - IDPs and returnees

For an overview of project beneficiary numbers see table 1 and 6. Specific needs of women, youth and farmers / water users have been identified, as well as of target municipalities through mayors have been identified through field assessments and consultations (see Part II.H). The total number of direct beneficiaries in the target municipalities and related villages is: 81,700, of which 50-60 percent women, 32-37 percent youth and 30-95 percent farmers, dependent on the municipality. Besides that, the project targets potential returnees (approximately 31,780, based on pre-crisis inhabitant population numbers). For Component 2, all activities are concrete and serve the whole community residing in targeted areas of interventions. the benefits will be equal for all direct beneficiaries. The project also targets women-headed households, especially under component 3, which is estimated to be 50-60 percent of the households. Water User Associations/Groups (WUAs/Gs) will be used or established to manage water and women and youth unions will be involved.

In addition to the aforementioned target vulnerable groups, he direct beneficiaries of each proposed project activity are selected based on vulnerability selection criteria to ensure that the programme is targeting:

- A) the most vulnerable households among those who fulfil the technical requirements of the proposed activity;
- B) to ensure equity and avoid any social tensions in the local communities.

The process of beneficiaries' identification is through establishment of local committees at the community level. These committees include local leaders, technical institutions, and farmers and women and youth groups representatives and should be gender balanced as much as possible. Such direct engagement of the target local community will ensure communities contribution and participation in applying the criteria to their committees and suggest beneficiaries who are eligible. For component 3, the process will be coordinated with FAO resilience officers in the targeted areas to ensure transparency. The final lists of beneficiaries will be made available publicly and kept for monitoring and audit purposes.

As part of project compliance to the AF ESP and GP, possible negative environmental and social risks and impacts will be avoided / mitigated, also through participatory assessment, planning and decision-making processes, also during project implementation. Below is a summary of the project benefits:

Table 7 Economic, Social and Environmental benefits

Components	Baseline		Economic, social and environmental benefits with/after project
	General	Specific	
1 - Integrated natural Resource Management to cope with climate change and crisis-related water challenges.	in Eastern Ghouta, climate change-related patterns of reduced precipitation and increased number of droughts are resulting in drying up of streams from the west and desertification from the east. This in turn is resulting in crop	There is limited understand of the complexity of the regional water system in Eastern Ghouta: supply options and demands, now and in the future, also considering climate risks and merging this with recovery needs and limited capacities to manage natural	<ul style="list-style-type: none"> <li>• Eco: water efficiency will also support economic activities and efficiency</li> <li>• Soc: Vulnerable groups and women and youth with participate in assessment and planning processes Women and youth unions)</li> <li>• Env: environmental issues will be identified in the whole target area</li> </ul> <p>The government, at different levels, will be able to better assess, plan and manage natural resources, which are also of economic</p>

**Moved (insertion) [1]**

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**Deleted:** Households headed by women

**Deleted:** having

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**Deleted:** Unemployed young

**Deleted:** IDP host families

**Deleted:** and women and youth, and to avoid as best as possible any negative environmental and social impacts. For

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	failure and lacking water supply options for urban / domestic use in an area that is largely dependent on agriculture as main source of income.	resources (water and land) efficiently as a larger system.	importance and will reduce losses
2 - Establishment of efficient, sustainable and climate change resilient water supply systems for urban and agriculture purposes	The situation is aggravated by the impacts of the Syrian crisis, especially increased pollution of streams, groundwater and soil due to non-functioning wastewater treatment, destroyed agriculture assets and high poverty numbers, preventing DPs to be able to return.	The target area is facing a considerable challenge in securing clean water for urban and agricultural use; the ground water, river streams and canals are polluted by wastewater discharge, which farmers are currently using	<ul style="list-style-type: none"> <li>Eco: increased productivity of the whole area</li> <li>Soc: increased income / livelihood security and reduced health issues</li> <li>Env: reduced pollution</li> </ul> <p>Target municipalities and populations will benefit directly, and women and youth will be involved through unions.</p>
3 - Establishment of efficient, sustainable and climate change resilient irrigation systems and agriculture practices			<ul style="list-style-type: none"> <li>Eco: increased productivity, especially of agriculture sector</li> <li>Soc: increased income / livelihood security / food security and reduced health issues (esp. for women-headed households).</li> <li>Env: reduced pollution</li> </ul> <p>Target municipalities and populations will benefit directly, and women and youth will be involved through unions. Farmer households will mostly benefit, but also some herder households. Women-headed households will be prioritized for capacity strengthening activities.</p>

### C. Cost-effectiveness of the proposed project / programme

All below proposed actions aim to reduce water demand while enhancing sustainable supply together (i.e. as a package). The assessment, planning and management of water resources in an integrated / holistic manner is required not only to increase water use efficiency in the whole region, but also to plan for actions such as below in areas other than the project target area. Detailed costs per component / output are provided below, including cost effectiveness (cost per person). For more details see annex 2, 3 and 4.

Table 8 project outputs / activities, cost-effectiveness and alternative options

Proposed project outputs / activities	Beneficiary numbers	Budget	Cost per person (USD)	Alternative actions and rationale why priority actions have been selected from a cost-effectiveness perspective
1.1. Inception workshop and coordination mechanism 1.2. Capacity strengthening package 1.3. Hydrogeological study, CC VA and future outlook for the region 1.4. Gaps analyses and recommendations for managing water and land 1.5. INRM Strategy and action plan (with CC mainstreamed) 1.6. M & E plan for above + replication mechanism 1.7. Formal adoption of	81,700	1,748,095	21	<p>A regional approach to integrated water resource management is required to plan and manage water resources efficiently by looking at the whole system and future trends and projections (including for implementation of actions such as below)</p> <p>Alternatively, water is managed at the national level or per municipality, neighbourhood or well (not at catchment level), which could result in unsustainable / inefficient practices because the 'whole' system is not taken into account.</p>

strategy document				
2.1. Assessment and verification / technical specification and engineering studies, including surveys required for detailed design of below interventions	66,000	114,300	2	Rehabilitation of wastewater networks is required to reduce pollution / connect it to wastewater treatment plants to allow beneficial reuse.  Water networks are currently damaged and water losses significant. Furthermore, as a result of mixed networks, water suitable for drinking is being used for agriculture. These measures are cost-effective because they will reduce wasting/misusing already scarce water
2.2. Rehabilitated sewage network to divert wastewater towards the WWTPs (concrete intervention)	20,000	296,250	15	Alternatively, conventional water supply methods are used, such as drilling of more wells. However, this would lead to unsustainable water use and would not avoid these wells being polluted and groundwater being overexploited, leading to more costs on the long run.
2.3. Installed mobile wastewater treatment plants to use non-conventional water resources identified (concrete intervention)	48,000	4,049,313	84	Mobile wastewater treatment plants + irrigation connections are required to enable beneficial reuse of wastewater and to reduce pollution of groundwater and agriculture lands. Irrigation connections are required to make optimal use of treated water in a water scarce environment.
2.4. Rehabilitated irrigation canals to divert treated water for irrigation purposes (concrete intervention)	26,000	107,053	4	Although wastewater treatment plans are more expensive than conventional water supply measures (also mentioned above), treating waste water is the only way to enable wastewater to be recycled, to reduce pollution and avoid further destruction of farm land. Therefore, it is a more cost-effective long-term solution
3.1. <a href="#">Studies and assessments to detail the proposed interventions are finalized</a>	30,790	174,133	6	The traditional irrigation methods (e.g. surface irrigation) requires much higher quantity of water per unit area compared to drip irrigation system that saves 40-50% of water. Moreover, surface irrigation rely on gravity and land topology, unless the land has appropriate slope additional quantity of water is required to irrigate. Given the climate changes and water scarcity, it is no longer affordable and sustainable to leave small vulnerable farmers apply this traditional method. In other words, traditional irrigation methods with certain water resource will leave some many small farmers in the area without irrigation depending on rainfalls which are more frequently unstable in term of rates and distribution.
3.5. <a href="#">Introduction of water efficient agricultural technology</a>				
3.2. <a href="#">Adoption of climate-smart agriculture practices for improved soil fertility and enhanced water use efficiency</a>	8,700	924,158	106	
	16,840	814,242	48	
3.3. <a href="#">Promote sustainable livelihood opportunity through crop residuals management and support to rural women</a>	5,400	266,906	49	The other possible solution for wells rehabilitation is to dig new wells, which causes additional depletion on groundwater. Moreover, it will be much more costly compared to rehabilitation works. In addition to this, the Wells to be rehabilitated have been authorised by the government based on studies to identify water levels and other sustainability issues  <a href="#">Equipping the rehabilitated wells with solar system for pumping water can be replaced using fuel (i.e. diesel) as source of power. From cost effectiveness point of view, solar system is proven much more sustainable and costs effective at long term. The cost of fuel is increasingly become unaffordable to small farmers in addition to the fact that fuel availability in the country is questioned. The alternative solution for laser levelling is to level the land by applying additional tillage operations. This traditional method is considered as major soil</a>

**Deleted:** <#>Assessment and verification / technical specification and engineering studies, including surveys required for detailed design of below intervention¶

**Deleted:** <#>Water efficient irrigation system and collective groundwater wells system ¶

**Deleted:** 3

**Deleted:** Intercropping system and introduction of drought resilient crop¶

			<p><u>erosion and high soil moisture loss which is unsustainable, from cost point of view, it required tractors and highest fuel and labor costs which are not available/affordable by small farmers and cannot be technically recommended by FAO.</u></p> <p><u>Indeed, there is no other solution or alternative, either to have such stations that provide the decision makers with accurate information on surface and groundwater levels and available water resources in general so that they conduct informed-decision that sustainably benefit the local communities in their main livelihoods or to leave the limited available water resources being managed blindly without information and understanding on what is going on.</u></p> <p><u>Possible alternative is to distribute fertilizers and pesticides so that farmers increase their few crops productivity by applying more chemicals. Away from the natural resources pollution and the sustainability of this alternative solution, it will be much expensive to implement (the price of 1 ton of UREA fertilizer equals to about 3 tons of drought tolerant crop seeds).</u></p> <p><u>Using current local market prices, the average cost of the required agricultural inputs and services (fertilizers, pesticides, using traditional operations) is estimated by USD 560 per 1000 m2 of land. By introducing the appropriate crop rotation and intercropping systems that are climate change adaptive, farmers can save up to 50-60% of the costs for production inputs (mainly fertilizers and pesticides) which amounts to about USD 280 to 336 per 1000 m2 of land. Additional savings can be derived from lowering the irrigation and tillage traditional operations which is estimated by USD 100.</u></p> <p><u>Possible alternative is pay farmers cash money to procure saplings and restore their fruits trees which is their main livelihood. Doing so, will result in planting unknown varieties from unreliable sources which most like be a susceptible to biotic/abiotic stresses. It will be very expensive and time consuming to leave the small farmers look for saplings from private sectors which is very limited in the country.</u></p> <p><u>Establishing nursery for continuous distribution and planting of the biotic/abiotic tolerant and high-yielding fruits saplings will save about 50 to 60% (260-300 USD per year) of the production costs and inputs required per 1000 m2. Additionally, there will be about 100-200 USD as a gain/benefit from having improved productive fruits trees per unit area.</u></p> <p><u>The alternative for management of crop residuals as compost and feed for animals can be distributing concentrated animal feeds and chemical fertilizers to farmers and herders. Current cost estimate for the feeds requirement of one cows per month is USD 500 to 700. Hence, training and equipping herders and farmers to manage their farms residual is much more cost effective compared to procurement and distribution which is unsustainable as well.</u></p>
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**Deleted:** Using water more efficiently is cost-effective compared to alternative conventional water supply measures (see above). E.g. drip systems are the most water efficient irrigation systems (reduce from 75% against overhead irrigation).  
 Drought tolerant crops and trees are required to reduce unnecessary water consumption in a water scarce area, especially with more frequent droughts. Moreover, the (post)crisis situation allows for applying the building (or growing) back better principles, since a large share of the crops and trees has been destroyed. Improved agricultural technology and techniques will further reduce water usage.  
 Alternatively, existing farming practices are continued and more water supply will be required, however demand is already exceeding supply. Therefore, this is not a sustainable and cost-effective solution....

Altogether, the project will be cost-effective by:

4. Avoiding future costs associated with damage and loss due to climate change impacts (especially droughts) and to ensure the interventions are sustainable;
5. Efficient project operations because of 'in-house' technical support options and capacity building expertise and because of direct partnering with communities (thereby building their capacity as well as reducing costs);
6. Community involvement with development/construction of concrete interventions and because of community capacity building
7. Having selected the technical / concrete adaptation options based on cost-feasibility and resilience/sustainability criteria. As shown in above table and in annex 3 and 4, the technical / concrete intervention options have been selected based on:
  - o Location suitability (Location + suitability)
  - o Cost-effectiveness (cost per beneficiary)
  - o Comparison to alternative solutions
  - o Beneficiaries vulnerabilities and needs (direct and indirect) + benefits
  - o Operation + maintenance needs and arrangements feasibility
  - o Sustainability needs and arrangements, incl. replication, upscaling and exit strategy feasibility
  - o Limited / manageable environmental and social risks / impacts as per annex 5 and 6

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#### D. Project consistency with national or sub-national sustainable development strategies

The proposed project is designed to be consistent with international, national and sub-national development strategies, plans and goals. From an international perspective, the project directly supports targets under SDG 13 (climate change adaptation & DRR) and indirectly under environmental-related SDG 6 (increasing safe and clean water), SDG 8 (reducing waste and especially stopping pollution), and SDG 15 (reducing land degradation and improve sustainability of natural resource management). The project also indirectly supports targets under SDG 1 (reducing poverty), SDG 2 (increasing food security) SDG 3 (improving good health and well-being), SDG 5 (improving gender equality), SDG 9 (improving innovation and infrastructure), SDG 10 (reducing inequalities), SDG 11 (increasing the sustainability of communities) and SDG 16 (enhancing social cohesion).

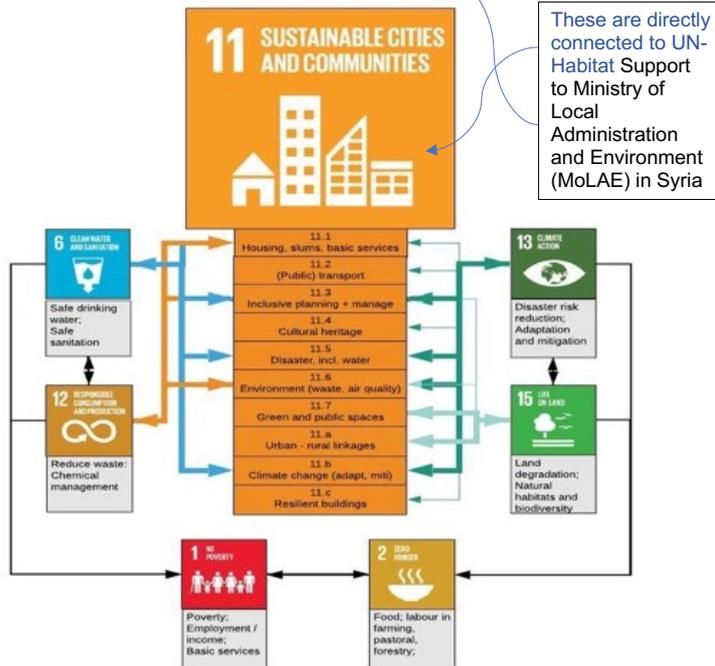
As per below, the project directly supports UN-Habitat's Global priority / Domain of Change (DoC) number 3: Strengthened Climate Action and Improved Urban Environment (especially outcome 3.2 (urban ecosystems) and 3.3 (climate change adaptation), and there are synergies with DoC1: *Reduced Spatial Inequality and Poverty in Communities Across the Urban-Rural Continuum* and DoC4: *Effective Urban Crisis Prevention and Response*. The proposal is also aligned with the New Urban Agenda.

DoC1: Reduced spatial inequality and poverty in communities across the urban – rural continuum

DoC2: Enhanced shared prosperity of cities and regions

DoC3: Strengthened climate action and improved urban environment

DoC4: Effective urban crisis prevention and response



The Syrian Arab Republic ratified the United Nations Framework Convention on Climate Change in 1995, acceded to the Kyoto Protocol of 2006 and ratified the Paris Agreement on Climate Change (13 November 2017). Syria submitted its first national communication to the United Nations Framework Convention on Climate Change in 2010 and submitted the initial document for Nationally Identified Contributions (NDC) in 2018. Table 9 provides an overview of priorities identified in the NDC and priorities identified in the project target areas. Due to the crisis, most strategies, both national and sub-national, are often not updated, especially considering the changed context. Table 10 provides an overview of national strategies and how the project aligns.

Table 9 adaptation needs / priorities in the eastern Ghouta and alignment with national priorities as per the NDC

Relevant water resource management adaptation needs (in line with national priorities - NDC)		Protect water resources (and prevent contamination of surface and groundwater resources / wells)	Reduce water losses, reduce water leakage from canals	Raising water use efficiency, supporting water harvesting projects and using high efficiency irrigation methods	Promote the use of non-conventional water resources (treated wastewater); pilot treatment plants for villages, spatial treatment plants for small communities and water production	Improved agricultural practices (changing sowing dates, drought tolerant crops and trees conservation agriculture, extension and rural extension services)	Other adaptation needs
Relevant adaptation measures Identified / confirmed per municipality (by mayors)		- <b>Integrated natural resource management</b> - Spatial planning strategies - Regulations - <b>See wastewater treatment</b>  (comp 1)	- <b>Rehabilitate wastewater network (connection under waste water treatment)</b>  (comp 2)	- <b>Rehabilitate irrigation network</b> - <b>Drip / micro irrigation, subsurface</b>  (comp 3)	- <b>Mobile wastewater treatment plants</b> (+ connections) to stop pollution downstream (urgent issues) and enable use of treated water for agriculture (reducing pressure on other sources)  (comp 2)	- <b>Drought tolerant crops and trees</b>  (comp 3)	- <b>Water user associations / women / youth cooperation</b> - <b>Livelihood skills building</b>  (comp 1, 2 and 3)
Resilience building outcomes		Increased resilience to water scarcity issues through diversity of water sources and efficient water management	Municipal / community increased resilience to water scarcity issues (esp. droughts) through reduction of drinking water and waste water losses	Farmers and consumers dependent on food production increased resilience to water scarcity issues (esp. droughts) through water use efficiency and harvesting	Municipal / community / farmers increased resilience to water scarcity issues (esp. droughts) and environmental pollution through use of non-conventional water resources	Farmers and consumers dependent on food production increased resilience to water scarcity issues (esp. droughts) through improved agriculture practices	Increased resilience of women, youth to livelihoods that depends on water and are thus affected by water scarcity issues (esp. droughts)
Town / city	Settlements						
Maliha							
Zebdeen	Hatita Al-Jarash						
Deir Elasafir	Housh Doier, Rekabieh and Sahia						
Marj Elsultan	Bzieneh, Harasta Elqantara, Bala and Noieleh						

Table 10 Project alignment with National priorities

Strategies and plans	Year submitted / ratified	Relevant priorities the project is aligned with
<b>Climate Change strategies / plans</b>		
NDC	2019	Adaptation focus areas: <ul style="list-style-type: none"> <li>• Water resource management</li> <li>4. Conservation of biodiversity</li> <li>5. Combating land degradation and desertification</li> <li>6. Integrated coastal zone management plans</li> <li>7. Development of early warning systems.</li> </ul> Most relevant for this project: Water resources management: The priorities for adaptation to water scarcity are to reduce vulnerability, achieve sustainable agricultural production, and conserve the environment. This requires significant change in the management of water resources, policies and associated infrastructure. Concrete adaptation measures in the water and agricultural sector include the ones listed in table 9 above (see relevant water resource management adaptation needs-(in line with national priorities - NDC)
The MoLAE study of effects of climate change On precipitation in Syria 2000-2020	2020	The projects are implementing with cooperation with MOLAE and commission of Remote sensing which focus on areas affecting by climate change related precipitation using remote sensing techniques
Initial National Communication	2010	Main relevant climate change hazards are: <ul style="list-style-type: none"> <li>8. Projected increase of droughts</li> <li>9. Projected increase of heat</li> </ul> Main relevant climate change impacts are on: <ul style="list-style-type: none"> <li>10. Water resource management</li> <li>11. Agriculture</li> <li>12. Land degradation</li> </ul>
<b>National Development strategies / plans</b>		
Draft Humanitarian Response Plan 2018	2018	Strategic priorities for early recovery focus on: <ul style="list-style-type: none"> <li>13. Access to basic and social services and community physical infrastructure restoration</li> <li>14. Livelihoods and food security</li> <li>15. People with disability care and psychosocial support</li> <li>16. Social cohesion and community security.</li> </ul>
Strategic Framework for Cooperation between the Government of the Syrian Arab Republic and the United Nations 2016-2017	2016-2017 This has been extended	The Government and the UN developed a framework for national priorities that will articulate foreseen components in regard to resilience: <ul style="list-style-type: none"> <li>17. Responses to people's basic needs: water, sanitation, health, housing, energy, and sustainable livelihoods and education.</li> <li>18. Community needs: infrastructure, reenergizing productive sectors, including women's participation in local economic development, return of IDPs and socio-economic integration in rural areas.</li> <li>19. Institutional needs: to enhance institutional performance in analysis, planning, implementation, monitoring and reporting.</li> </ul>
10th Five-Year Plan	2007-2011	This plan set out to establish 200 water treatment plants. However, due to the crisis this did not happen
<b>Disaster Risk Reduction strategies / plans</b>		
National drought management strategy	2009	Reducing vulnerability to drought through: <ul style="list-style-type: none"> <li>20. Encourage the use of technologies to mitigate drought.</li> <li>21. Research on drought.</li> <li>22. Increased strategic stocks</li> </ul>
National Plan to Combat Desertification	2002	<ul style="list-style-type: none"> <li>23. Strengthen land management</li> <li>24. Combat soil salinity, and mitigate its negative impacts,</li> <li>25. Overcome the problem of water and wind erosion</li> <li>26. Stop the conversion of agricultural land to other uses.</li> </ul>
National Strategy of Drought	2019	<ul style="list-style-type: none"> <li>27. Geo -Area based of drought areas by sectors include Rural Damascus</li> <li>28. Build indicators and models to assess the drought as</li> <li>29. Guideline to national strategy for confront the drought impact</li> </ul>
<b>Environmental strategies / plans</b>		
National Strategy and Action Plan for the Environment in Syria	2003	<ul style="list-style-type: none"> <li>30. Contamination of surface and groundwater resources</li> <li>31. Land degradation</li> <li>32. Degradation of air quality in major cities</li> <li>33. Improper disposal of solid waste</li> <li>34. Sustainable use of water resources</li> <li>35. Sustainable use of land resources</li> <li>36. Improved urban services and infrastructure</li> <li>37. Sustainable development of natural and heritage resources</li> </ul>
National Biodiversity	2002	38. Protection of natural biodiversity, terrestrial and aquatic biodiversity (freshwater and marine) and establish a network of nature reserves.

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Strategy		39. Protection of agricultural biodiversity, including; 40. Protection of agricultural systems, rangelands, forests and national forest areas. 41. Protection of plant and animal genetic resources
LDN- National land Degradation Neutrality report	2020	<ul style="list-style-type: none"> <li>• adopt national indicators of Land Degradation Neutrality</li> <li>• define related Stakeholders roles and responsibilities include Rural Damascus</li> <li>• implementing the LDN endorsed into plan 2020-2030</li> </ul> 42.
<b>Sectoral strategies / plans</b>		
Ministry of Water Resources and the Ministry of Local Administration and Environment and UN WASH priorities	2018	43. Ensure the proper functioning of sewerage and drinking water networks and their accessories within cities and residential communities, including proper maintenance operations and functioning equipment. 44. During 2019, it is estimated that the sector will need to support the implementation of /400/ sanitation projects and treatment plants, /100/ drinking water projects, and /100/ projects to improve and enhance the efficiency of solid waste management.
National biodiversity strategy	2002	45. To protect biodiversity
<b>Sub-national strategies / plans</b>		
Local administrative plans /	2020	Each municipality council endorse local recovery plan in coordination with local Community and farmers union ,water users include civil work on waste water rehabilitation network <ul style="list-style-type: none"> <li>• Partly Rehabilitation of drinking water network and water reservoir</li> <li>• Partly remove debris from main streets and rehabilitate the returnees' neighborhood infrastructures services</li> </ul>

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## E. Project / programme compliance with relevant national technical standards

The proposed project is designed to meets all relevant international and national technical rules, regulations, standards and procedures. During the preparation phase, all the relevant rules, regulations and standards have been identified, including steps / procedures to comply per proposed activities / interventions, including any risks screening and impact assessments and related approvals required by Syrian law. Table 11 provides an overview of the proposed project outputs / activities, relevant rules regulations, standards, steps / procedures to comply and authorizing offices.

Regarding any environmental and social risks screening and impact assessments and related approvals required by Syrian law, the following mechanism is in place to obtain environmental approvals for projects:

Environmental protection law (2012) and Executive EIA procedures n 818 (2013).

The General Commission for Environmental Affairs/EIA Directorate issued an Environmental Impact Assessment (EIA) Executive Procedure (EP) on 2008 and 2013. According to Annex 1 and Annex 2 of EIA Executive Procedure, the developer should conduct and present an EIA study to the Ministry of Environmental Affairs according to the following steps:

1. Screening: To determine if the EIA procedure will be applied. If the activities size is below the threshold values provided in Annex 1 of the EIA EP, the decision about the necessity to carry out an EIA for the proposed project shall be made based on the analysis of the environmental sensitivity of the project area according to the screening criteria provided in Annex 2 of the EIA EP.
2. Scoping: The Scoping process is initiated when an EIA is determined to be compulsory. According to Article 5 of the EIA EP, the Scoping process will clarify what content is to be included in the Environmental Impact Statement (EIS). The Developer, with assistance of an EIA Expert, must provide information about the activities and the environmental conditions in a proposed Scoping Document, as per the provisions of Annex 3 of the EIA EP.

3. Preparation of an EIS: According to Article 7 of the EIA EP, the Developer is responsible for the EIS, carried out by an EIA Expert. The preparation cannot be initiated prior to the completion of the Scoping process including the review and submission of the Scoping Document.
4. Review of EIS: According to Article 8 of the EIA EP after the preparation of the EIS, the results will be reviewed by the MoLAE and its directorates in Syrian Governorates.
5. Conclusion and Decision: After completion of the assessment process, the Licensing Authority will prepare an Assessment Report, which will form the basis for the decision regarding licensing for the activities.
6. Monitoring: The EIA process does not end with the licensing of activities. After conclusion of the licensing process with integrated EIA, the activities must be monitored.

All proposed project activities fall below the threshold values in Annex 1 of the EIA EP. Therefore, no EIA are required. This has been confirmed by the MoLAE after 'screening' of proposed project activities and a letter from MoLAE stating no further EIA is required by Syrian law [is included in annex 5](#).

Table 11 Compliance with relevant national technical standards

Expected concrete output / intervention	Relevant rules, regulations, standards (to comply to AF principle 1)	Procedure / steps to comply and authorizing offices	Authorizing offices
<b>Component 1</b>	<ul style="list-style-type: none"> <li>- Law 23 urban planning regulations and rehabilitation (2015)</li> <li>- Land-Use Planning Legislative Decree 82/2010</li> <li>- Urban Renewal Law No 10/2018</li> <li>- Act 40 for rehabilitation of informal urban expansion (2012)</li> <li>- Regional Planning Law (2012)</li> <li>- Environmental protection law (2012)</li> <li>- Law 107 (on decentralisation) (2011)</li> <li>- Law 31 water resources protection and efficient water consumption and supply (2005)</li> <li>- Law 9. For 2006 for Syrian regional and international water protection</li> <li>- law local administration 107 for 2011</li> <li>- Decree 239 .2020 for MOLAE Organizational Chart .</li> </ul> <p>*Consideration of laws below for planning purposes</p>	<p>Compliance to laws when developing the strategy required</p> <p>Final approval of strategy would be required by MoLAE, Eastern Ghouta governorate and Municipalities</p>	<p>MoLAE Directorate of environmental safety</p> <p>MoLAE Eastern Ghouta governorate Target municipalities</p>
<b>Component 2</b>	<ul style="list-style-type: none"> <li>- Environmental protection law (2012)</li> <li>- Executive EIA procedures 818 (2013)</li> <li>- Law of water legislation (2005)</li> <li>- Law 31 (2005) water resources protection and efficient water consumption and supply</li> <li>- Cleanliness Law No. 49 of 2005</li> <li>- Approved Standard No./2580/2008/related to shed treated water in the general sewer Network.</li> <li>- Approved Standard No./2752/2008/ related to the use of treated water in irrigating crops and trees</li> <li>- Approved Standard No./3474/2014/To wastewater permitted to be discharged to water Environment.</li> <li>- Approved Standard No./2665/2002/for safe use of permitted waste resulting from wastewater treatment plants</li> <li>- Technical condition book and Specification for rehabilitation of sewage networks</li> </ul>	<p>See EIA procedure above. No further EIA required.</p> <p>During project implementation:</p> <ul style="list-style-type: none"> <li>- TORs to be prepared verified and issued by the Engineering &amp; studies Department</li> <li>- Competitive procurement process to be done to select a company</li> <li>- The contract with the company shall be formulated to ensure that the listed laws are adhered to mainly the quality of treated water</li> <li>- The contract implementation will be closely monitored by the Project Implementing Unit and the technical committee that will be established including representative from all stakeholder</li> </ul>	<p>MoLAE Directorate of environmental safety</p> <p>MoLAE EIA department</p> <p>MOWR Engineering &amp; studies department at Sewage directorate</p> <p>MoWR Directorate for management of Water resources</p>

<b>Component 3</b>	<ul style="list-style-type: none"> <li>- Environmental protection law (2012)</li> <li>- Executive EIA procedures 818 (2013)</li> <li>- Law No. 31 of 16 November 2005 on Water legislation with its amendment (Resolution No. 23 of 2008).</li> <li>- Law 31 (2005) water resources protection and efficient water consumption and supply</li> <li>- Decree No/11/2007/ related to specified missions and responsibilities of MOAA</li> <li>- Act n 91 (2005) to support modernization of irrigation systems</li> <li>- Approved Standard No./2752/2008/ related to the use of treated water in irrigating crops and trees</li> <li>- Agricultural Quarantine Law of 2007 (aims to prevent infection of viral, fungal and insect diseases)</li> <li>- Resolution No. 47/T of 2008 bans on the introduction, importation and exportation of plants and plant products before the inspection and control by experts of plant protection and plant quarantine.</li> <li>- Agrarian Reform Law No. 161 of 1958 and its amendments</li> <li>- National law N. 31/T date 5/2/2013 For the plant handling (seed)</li> <li>- The ministry of agriculture law n. 158 includes regulations on the use of fertilizers</li> <li>- Decree-Law No.41 amending Act No.21 of 1974 respecting peasants' co-operative associations</li> <li>- FAO technical standards for compost making</li> </ul>	<p>See EIA procedure above. No further EIA required.</p> <p>Rules mentioned in chapter (6, 9 and 10) of law 31 must be met, as chapter-6 refers to licenses for well digging and for pumping installations, chapter-9 refers for drilling and chapter-10 refers to the establishment of the Water User Associations.</p> <p>Crops and trees should be registered at the ministry of agriculture and regulations in this regard (in terms of water demand and agro-ecological zones) should be followed. If some of seed and tools need to be imported, then the ministerial resolution of the ministry of agriculture number 31/T date 5/2/2013 should be followed.</p> <p>The nursery will be established by a decision from the minister of agriculture. The decision will identify the structure and operational regulations of the nursery. For the plant handling (seed) the national law N. 31/T date 5/2/2013 would be applied.</p> <p>The ministry of agriculture law n. 158 includes regulations on the use of fertilizers.</p> <p>The ministry of agriculture has a registry special to rural women empowerment and small projects. In order to ensure sustainability, women groups need to be registered in this registry</p>	<p>MoLAE Directorate of Environmental Safety</p> <p>MoLAE EIA department</p> <p>MoWR Directorate for management of Water resources</p> <p>MoAA</p>
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\*For details per component / output see annex 2, 3 and 4

## F. Duplication of project with other funding sources

The proposed project avoid overlap with other projects and uses lessons from relevant projects, as show in table below.

Table 12 mapping of other projects in the target area and lessons learned to be used.

Relevant projects and focus	Relevant focus and interventions / activities	Lessons learned	Complimentary potential and non-duplication
<b>MENA region</b>			
UN-Habitat - <a href="#">Increasing the resilience of displaced persons to climate change-related water challenges in urban host settlements in Jordan and Lebanon</a> (AF project to start in 2021) – USD 14M	<ul style="list-style-type: none"> <li>Managing urban risks and vulnerabilities</li> <li>Citizen engagement and livelihood support</li> <li>Wastewater treatment and irrigation</li> <li>Efficient irrigation systems</li> <li>Permaculture</li> </ul>	<ul style="list-style-type: none"> <li>Managing urban risks and vulnerabilities</li> <li>Will start in 2021; projects will be coordinated, also for lessons learned</li> </ul>	<ul style="list-style-type: none"> <li><b>Complementary</b></li> <li>Lessons from the Jordan and Lebanon project will be mapped and used for the Syrian project <a href="#">and visa-versa. The project will coordinate and share lessons learned between the UN-Habitat Jordan/Lebanon project and Syria project, particularly with regard to the wastewater treatment and irrigation systems through:</a></li> <li><a href="#">Direct communication / coordination between the offices – project coordinators and managers and KM staff will be put in touch</a></li> <li><a href="#">Through UN-Habitat Community of Practice on climate change (currently being set-up by UN-H)</a></li> <li><b>Non-Duplication</b></li> <li>In Lebanon and Jordan</li> </ul>
Jordan government with AF funding - <a href="#">Increasing the resilience of poor and vulnerable communities to climate change impacts in Jordan through Implementing Innovative projects in water and agriculture in support of adaptation to climate change</a> (2015-2018) – USD 9,2 million	<ul style="list-style-type: none"> <li>Waste water treatment plant + monitoring quality</li> <li>Permaculture – adaptation + ecosystem management in demonstration sites</li> </ul>	<ul style="list-style-type: none"> <li>Permaculture was difficult to establish without expertise.</li> </ul>	<ul style="list-style-type: none"> <li><b>Complementary</b></li> <li>Coordination took place for the UN-H Jordan and Lebanon project</li> <li><b>Non-Duplication</b></li> <li>In Jordan Valley</li> </ul>
IFAD with AF funding - <a href="#">Building Resilience of the Agriculture Sector to Climate Change in Iraq</a> (2018-2023) – USD 10 million	<ul style="list-style-type: none"> <li>Capacity development to integrate CC adaptation and risk reduction into agriculture planning and production systems</li> <li>Climate-resilient Agriculture Investments</li> </ul>	<ul style="list-style-type: none"> <li>Has not started yet</li> <li>Monitor lessons during project formulation phase</li> </ul>	<ul style="list-style-type: none"> <li><b>Complementary</b></li> <li>FAO to coordinate</li> <li><b>Non-Duplication</b></li> <li>In Iraq</li> </ul>
FAO Dutch-funded <a href="#">Sanaa Basin Project in Jemen</a> (2014-2017)	<ul style="list-style-type: none"> <li>Water sustainability for farmers while empowering women</li> <li>All Water User Associations choose their board members through elections and 30% of the seats are designated for women.</li> </ul>	<ul style="list-style-type: none"> <li>Water association and women only access to water can be used as a water management system to reduce crisis between tribes</li> </ul>	<ul style="list-style-type: none"> <li><b>Complementary</b></li> <li>Build upon lessons from Water Association and women only access to water approach and cash-for-work formula for farmers to use for agricultural.</li> <li><b>Non-Duplication</b></li> <li>In Jemen</li> </ul>
<b>National</b>			
UN-Habitat programme in Syria 2015-2018	<ul style="list-style-type: none"> <li>Establishment of Water distribution networks</li> <li>Establishment of Sewege and drainage networks</li> <li>Community awareness campaigns: on health and hygiene promotions involving women, youth and children.</li> </ul>		<ul style="list-style-type: none"> <li><b>Complementary</b></li> <li>Build on UN-Habitat experience with water and sewerage</li> <li><b>Non-Duplication</b></li> <li>Not in target areas</li> </ul>
UNDP <a href="#">Humanitarian and Livelihoods Program</a> (2013-2015) – USD 2,5 million Early recovery and livelihoods	<ul style="list-style-type: none"> <li>Response that provided IDPs and their host communities with rapid employment opportunities (temporary job under cash-for-work arrangement) to enhance service delivery and rehabilitate basic community infrastructure; and</li> </ul>	<ul style="list-style-type: none"> <li>The removal and disposal of solid waste improved the environmental and health conditions</li> </ul>	<ul style="list-style-type: none"> <li><b>Complementary</b></li> <li>UNDP is an executing partner for the wastewater treatment activities</li> <li>The AF project will complement the humanitarian approach</li> </ul>

	create/stabilize basic livelihoods in view of supporting spontaneous recovery efforts.		with sustainable and <u>Non-Duplication</u> • In Damascus, Homs and Aleppo • Project ended
FAO Strengthening the resilience to food insecurity of crisis-affected households and communities"	<ul style="list-style-type: none"> <li>• Rehabilitation of irrigation infrastructure (26 km)</li> <li>• Water harvesting</li> <li>• Low cost efficient irrigation systems; Solar and drip pilots</li> <li>• Conservation agriculture</li> <li>• Capacity building: Focus on irrigation</li> </ul>	<ul style="list-style-type: none"> <li>• Techniques can be replicated.</li> <li>• Communities to play a vital role in rehabilitation work</li> <li>• Technicians staff of the MoWR and GCWR to be involved</li> <li>• Water user associations / farmers to be trained to maintain and replicate activities</li> </ul>	<u>Complementary</u> <ul style="list-style-type: none"> <li>• FAO is an executing partner for the agriculture / rural related activities</li> </ul> <u>Non-Duplication</u> <ul style="list-style-type: none"> <li>• In Homs and Hama.</li> </ul>
<b>Eastern Ghouta and Barada Valley</b>			
UNICEF <a href="#">WASH programme / humanitarian results</a>	<ul style="list-style-type: none"> <li>• In Eastern Ghouta, UNICEF provided water to over 137,400 returnees through water trucking in 22 communities</li> </ul>	<ul style="list-style-type: none"> <li>• Humanitarian approach – the area requires a more sustainable approach</li> </ul>	<u>Complementary</u> <ul style="list-style-type: none"> <li>• The AF project will complement the humanitarian approach with sustainable and climate resilient solutions for water supply</li> </ul> <u>Non-Duplication</u> <ul style="list-style-type: none"> <li>• In Eastern Ghouta but focused on water trucking</li> </ul>
International Committee of the Red Cross and Red Crescent (ICRC) and Syrian Arab Red Crescent (SARC)	<ul style="list-style-type: none"> <li>• The main NGO in both Eastern Ghouta region. With assistance by UNICEF, SARC has provided resources to reduce water deficits. Activities are humanitarian type, such as water trucking.</li> </ul>	<ul style="list-style-type: none"> <li>• Humanitarian approach – the area requires a more sustainable approach</li> </ul>	<u>Complementary</u> <ul style="list-style-type: none"> <li>• The AF project will complement the humanitarian approach with sustainable and climate resilient solutions for water supply</li> </ul> <u>Non-Duplication</u> Not for sustainable measure (compared to emergency / humanitarian)
UN-Habitat MTOS project Planning process at city /neighborhood level prioritizations of needs/projects	<ul style="list-style-type: none"> <li>• Phase 1: 22 municipalities / technical offices support and training program (include the Eastern Ghouta and municipalities</li> </ul>	<ul style="list-style-type: none"> <li>• Enhancing consultation process with the local authorities and local community</li> </ul>	<u>Complementary</u> <ul style="list-style-type: none"> <li>• The AF project will complement the humanitarian approach with sustainable and climate resilient solutions for water supply</li> </ul> <u>Non-Duplication</u> <ul style="list-style-type: none"> <li>• No duplication but integrated process at national and sub national level for a the phase 2 of the MTOS to cover spatially more areas</li> </ul>
Ongoing initiatives by Government of Syria	<p>To move towards the implementation of wastewater treatment plants and to invest the resulting water in collective irrigation projects. Towards the formation of associations of water users on existing water resources.</p> <p>The use of renewable energies to pump groundwater (solar energy). Follow modern irrigation methods and techniques to rationalize water consumption. Revisiting the agricultural productivity plan in order to determine the type of plantations that consume less water in light of the decline of the flow and the reduction of groundwater levels.</p>	<ul style="list-style-type: none"> <li>• Approach and techniques can be replicated</li> </ul>	<u>Complementary</u> <ul style="list-style-type: none"> <li>• The AF project will support the government needs and priorities (as agreed through consultations)</li> </ul> <u>Non-Duplication</u> No duplication but integrated process with current proposal

## G. Learning and knowledge management to capture and disseminate lessons learned

The proposed project intends to collect and share acquired knowledge from the project and to replicate the assessment and planning approach used under component 1 in other areas, as well as the techniques used under component 2 and 3. Whilst component 1 provides the cornerstone for capturing and disseminating lessons learned through dedicated activities, activities under components 2 and 3 directly contribute to knowledge management mechanisms and dissemination of lessons learned (see table 13).

Because of increasing relative stability in large parts of the country, a transition from humanitarian response to sustainable response, including responding to climate change, especially in the water sector, is required. Assessment, planning and management approaches and low-cost innovative techniques that address direct and long-term water scarcity challenges benefitting the most vulnerable, need to be urgently showcased for replication throughout the country. Capacities of stakeholders at public and local level authorities will be strengthened to replicate these approaches and techniques. The Ministry of Local Administration and Environment Affairs (MoLAE) will capture lessons and share these among ministries, sub-national government bodies and the wider public (through the governance system presented in part III.A). Acquired project knowledge will also be shared through UN-Habitat, UNDP and FAO (as executing partners) through the Resident Coordinator. Knowledge sharing tools used will include social media streams, [press release](#), plans and guidelines. Also, videos will be produced showing the baseline and the results.

Lessons will be relevant beyond the Syrian context. Therefore, the project team will also share lessons through international events, with relevant climate change bodies such as the UNFCCC and the Global Centre on Adaptation and with UN agency offices, especially in the MENA region, including UN ESCWA. The latter will be directly accessed through the AF-UN-Habitat Jordan and Lebanon project, in which similar adaptation measures will be implemented. Therefore, also lessons will be shared between the UN-Habitat Jordan, Lebanon and Syria offices, as well as through the UN-Habitat regional office (ROAS) and HQ. [There will be direct communication / coordination between the UN-Habitat Jordan / Lebanon and Syria offices \(project coordinators and managers and KM staff will be put in touch. Knowledge and lessons learned will also be shared through UN-Habitat Community of Practice on climate change \(currently being set-up by UN-Habitat HQ\).](#)

[Strengthening local capacity, building knowledge and coordination between stakeholders within Syria, and scaling up or replicating project activities in other areas of the country will be done through:](#)

- [Municipal capacity building units \(which exist in more than 85 municipalities in Syria\), which monitor the implementation of action plans on the ground, detect the gaps and define the lessons learned. The capacity units in Rural Damascus are in Mleiha and Jarama](#)
- [Community environment centers](#)
- [Including the lessons from the implementation of the WWTP in the National master plan for wastewater treatment with recommendations for replication \(through MoLAE\)](#)
- [UN Habitat, UNDP and FAO supporting greater uptake of lessons as well as enhanced coordination with central authorities \(eg. MoLAE, MoWR, MoA\) with planned workshops under component 1, 2 and 3 and through project steering committee and advisory / technical committee. Also, there will be field visits for local experts and farmers from other areas to demonstrate the success and the practical achievements. Farmer's field school has been also proven to be a successful tool for efficient knowledge/information sharing.](#)
- [The UN Strategic Framework in Syria. UN Habitat, UNDP and FAO will promote greater uptake within the UN system on measures to support natural resource management and climate change resilience at central \(UNCT\) and local level \(Hubs\), as well as the integration of measures into environmental safeguards assessment and risk mitigation tools.](#)

Table 13 Learning and knowledge management

Outputs	Learning objectives (lo) & indicators (i)	Knowledge products
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<p>1.1. Inception workshop and coordination mechanism</p> <p>1.2. Capacity strengthening package</p> <p>1.3. Detailed hydrogeological study, CC VA and future outlook for the region</p> <p>1.4. Gaps analyses and recommendations for managing water and land</p> <p>1.5. INRM Strategy and action plan (with CC mainstreamed)</p> <p>1.6. M &amp; E plan for above + replication mechanism</p> <p>1.7. Formal adoption of strategy document</p>	<p>(lo): To strengthen capacities of national and Eastern Ghouta government institutions, communities and vulnerable groups to assess, plan and manage scarce natural resources (especially water and land) in an efficient, coordinated, sustainable and climate resilient way, also considering recovery needs, and to replicate the approach in other areas, to capture and share lessons and to mainstream these in strategies and regulations</p> <p>(i): identification of lessons and recommendations in knowledge products in the column on the right</p>	<ul style="list-style-type: none"> <li>• Project video (baseline and results)</li> <li>• Training package</li> <li>• Hydrology study</li> <li>• Detailed climate change vulnerability assessment report</li> <li>• Database</li> <li>• Gaps analyses and recommendations for managing water and land, including for adjusting regulations</li> <li>• Integrated Natural Resource Management strategy for Eastern Ghouta</li> <li>• Replication mechanism / guidelines</li> <li>• Specific consideration roles women and youth</li> </ul>
<p>2.1. Assessment and verification / technical specification and engineering studies, including surveys required for detailed design of below interventions</p> <p>2.2. Rehabilitated sewage network to divert wastewater towards the WWTPs (concrete intervention)</p> <p>2.3. Installed mobile wastewater treatment plants to use non-conventional water resources identified (concrete intervention)</p> <p>2.1. Rehabilitated irrigation canals to divert treated water for irrigation purposed (concrete intervention)</p>	<p>(lo): collect and share information on best practice low-cost and replicable innovative techniques on wastewater treatment and use in Syrian climate change and fragility context.</p> <p>(i): Number of techniques showcased and identification of lessons and recommendations in knowledge products in the column on the right</p> <p><u>All products will be shared through decentralized CO. area offices that covers all country to transfer knowledge that support replication of similar activities.</u></p>	<ul style="list-style-type: none"> <li>• Showcased models also to include in project video above)</li> <li>• Guidelines for replication</li> <li>• Specific consideration roles women and youth</li> <li>• <u>Lessons from the implementation of the WWTP to be integrated in the national strategy for wastewater treatment with purpose of supporting replication</u></li> </ul>
<p>1.1. Studies and assessments to detail the proposed interventions</p> <p>1.2. Introduction of water efficient agricultural technology</p> <p>1.3. Adoption of climate-smart agriculture practices for improved soil fertility and enhanced water use efficiency</p> <p>3.1. <u>Promote sustainable livelihood opportunity through crop residuals management and support to rural women.</u></p>	<p>(lo) collect and share information on best practice low-cost and replicable innovative techniques on irrigation and farming in Syrian climate change and fragility context.</p> <p>(i): Number of techniques showcased and identification of lessons and recommendations in knowledge products in the column on the right</p>	<ul style="list-style-type: none"> <li>• Showcased models also to include in project video above)</li> <li>• Guidelines for replication</li> <li>• Specific consideration roles women and youth</li> </ul>

**Deleted:** Promote alternate sustainable livelihood opportunities in silage crops and trees residues and organic fertilizer production

## H. Consultative process

The proposed project has been designed based on inputs from key stakeholders in Syria and project beneficiary groups, including vulnerable groups. During project preparation four types of consultations shaped the proposal:

1. Consultations to align with National and local priorities. This has been done with MoLAE and the ministries of Water Resources and Agriculture and Agrarian Reform through a project preparation steering committee. Throughout the proposal development phase, UN-Habitat, UNDP and FAO worked closely together with MoLAE in order to prepare this proposal. The target areas have been selected together and priorities identified through analyses of national strategies and through consultations. MoLAE lead the process of conducting field visits and consultations with potential beneficiary groups in Eastern Ghouta.
2. Consultations to avoid duplication with other projects (government, UN agencies, etc.)

3. Consultations to identify needs of target communities and vulnerable groups. Through MoLAE, consultations with all target municipalities and beneficiary groups have been conducted.
4. Consultations to identify potential environmental and social risks and impacts, in line with AF policies.

In summary, the following actors have been consulted. The purpose of the consultations are show by the numbers, which are aligned with above.

- Ministry of Local Administration and Environment (1, 2, 3, 4)
- Ministry of Water Resources (1, 2, 3)
- Ministry of Agriculture and Agrarian Reform (1, 2, 3)
- Public sewage Association (1, 2, 3)
- Governorate of Rural Damascus / Eastern Ghouta (1, 2, 3)
- Mayors of target municipalities (1, 2, 3, 4)
- Rural Women development unions (3, 4)
- Youth unions (3, 4)
- Farmer and water associations and syndicates (3, 4)
- UNDP (1, 2, 3, 4)
- FAO (1, 2, 3, 4)
- UNHCR (4 – esp. safeguard area 4 and 8)
- UN Women (4 – esp. safeguard area 1-4)
- ILO (4-esp safeguard area 6)
- IUCN (4 – esp. safeguard area 9-10)
- RED Crescent (2, 3, 4)

The following mayor field visits and community consultations were conducted in Eastern Ghouta:

In March 2019, MoLAE, in cooperation with UN-habitat, UNDP and FAO, conducted the following field visits / consultations:

- Municipality Mleiha
  - o Identified the streams and farms polluted by the untreated waste water coming from Jaramana located in Mleiha surrounding at the entrance of the village
  - o Meeting with the mayor of Mleiha
  - o Meeting with the director of 8 MARS farms project near Mleiha: the farms are owned by the governorate but invested by the public sector. Purpose: to identify the problem of the polluted fields and decrease in ground water in irrigation area
- Municipality Deir AlAssafir -Zabdine -Houteitat Aljarash
  - o Meeting with the local community and mayor and the representor of the public farmer originations with the participation of representative of women farmer community, and the local, farmer and owner of a tree and livestock farm
  - o Identified issues: irrigation difficulties and high cost pumping from deep wells
  - o Identifying drought areas: fields /crops and trees affected by lack of water
- Municipality: Bzeina -Marj AL sultan
  - o Identifying the expansion of the drought fields comparing to before
  - o Filming the drought fruit trees due to lack of water, less rain.

Figure 16 Women and farmer representatives



In February 2020, MoLAE, in cooperation with UN-habitat, UNDP and FAO, conducted the following field visits / consultations in Eastern Ghouta. The GSC and representatives from the Ministry of Water Resources and the Ministry of Agriculture and Agrarian Reform Rural from Rural Damascus joint.

- Meeting with Mayor and RED Crescent working group in Syria, RD Farmers representor
  - Identify the area affected previously after building the sewerage pipeline although the areas soil needs rehabilitation
  - Identify the fields affected by trees cutting and alternative seasonable crops and trees are growing based on MoAA emergency recovery plan 2020.
- Zebdine and DEIR AL Assafir Meeting with Mayors, farmers, cattle's breeders, and Representor of water uses association and local communities, representor of women union
  - Identify the area effected by drought
  - Identify the locations and farms where Merging river water coming from Zebdini streams Barada branch with the flooding of waste water from Mleiha and other villages
  - Identify the Haroush natural lake and the reduction of water level and the contamination of water channels throughout the farms
- Marj AL sultan meeting with mayor and local community representors, youth union representor
  - Identify the northern drought area, the failure of crops and trees in fields
  - Identify the locations of flooding due to water channels blocked by debris

Figure 17 polluted soil, streams and meeting with mayor



In August 2020, MoLAE, in cooperation with UN-habitat, UNDP and FAO, conducted the following field visits / consultations in Eastern Ghouta:

- Mleiha – Zebdine – Deir AlAssafir -Marj Sultan municipalities and its villages. Four working groups to:
  - Update city / municipality information, including to verify the problem and need, also on maps (i.e. locations of discharged of wastewater, pollution, droughts, damages, degradations, water connection, urban expansion
  - Update information based on MoWR and MoAA related departments experts over the GoV plan 2020 -2021.

- Have an interactive discussion between all participants (Mayors and local community associations)

This was followed by final consultation with the new deputy of Minster at MoLAE and all stakeholders of above, including the four mayors of the targeted cities and related representors from ministries after the field visits in November 2020. The purpose was to verify the best solutions resilient to water scarcity and meet the increased demand on water and regain the income from farming and livestock activities, post crisis ,and proposed locations to implementing sub proposed activities .

| Table 14 shows the details of consultations conducted besides the field visits / consultations.

Table 14 Consultations and Meetings with key stakeholders

Stakeholder	Consultation objective	Outcome	Conclusion	Evidence
<p>MoLAE / Environmental Committee:</p> <ul style="list-style-type: none"> <li>- Wadah Qdmaouy Minister Deputy for Environmental Issues, MOLAE</li> <li>- Ibrahim Alallan Director of Atmospheric Safty MOLAE</li> <li>- Sonia Afesa , Director of International Cooperation, MOLAE</li> <li>- Yara Hazory National Coordinator of the United Nations Cooperation on Climate Change, MOLAE</li> <li>- Khaled Jabour National Adaptation Fund Coordinator (DA), MOLAE</li> <li>- Belal Alhayek director of Land and biodiversity MOLAE</li> <li>- Rawnak Jabbour Director of Laboratories in MOLAE</li> <li>- Ahmad Noamam Director of Environmental Research, MOLAE</li> <li>- Imad Almerie NFP to UNCCD, MOLAE</li> </ul>	<ul style="list-style-type: none"> <li>- Agree with MOLAE representatives, Environmental Committee and Designated Authority on modality (ToR) to develop the proposal</li> <li>- Agree on approach to select target municipalities / communities</li> <li>- Approach to fill data gaps and consult target municipalities and communities</li> <li>- Ensure alignment with government and communities needs</li> </ul>	<ul style="list-style-type: none"> <li>- A working group consisting of key stakeholders, incl. UN-H-UNDP-FAO team was established to develop the proposal; meetings have been held <b>at least every month</b></li> <li>- A project preparation committee was established from the government side to cooperate with ministries</li> <li>- Approach / focus aligns with strategy in the government INC, the NDC and different ministry plans.</li> <li>- MoLAE leads consultations in target governorates, municipalities and communities and vulnerable groups</li> </ul>	<ul style="list-style-type: none"> <li>- MOLAE and the Environmental Committee support the modality to develop the proposal</li> <li>- Easter Ghouta is MoLAE priority target area. The most vulnerable area (municipalities) within Ghouta has been selected for concrete interventions and assessments and consultations conducted there</li> <li>- All proposed activities have been approved</li> </ul>	 <p>Date: Regular meetings since 2018 Technique: technical meeting</p>

Stakeholder	Consultation objective	Outcome	Conclusion	Evidence
Representatives from: <ul style="list-style-type: none"> <li>- MoLAE</li> <li>- Ministry of agriculture</li> <li>- Ministry of water resources</li> <li>- Governorates</li> <li>- Municipalities in Eastern Ghouta (<b>20 mayors</b>)</li> <li>- Agriculture syndicate</li> </ul> Total: 55 participants (excluding UN-Habitat)	<ul style="list-style-type: none"> <li>- Identify main climate change impacts in target area</li> <li>- Identify specific issues, needs, concerns in target area (by mapping by mayors)</li> <li>- Agree on area most in need</li> <li>- Collect required data</li> </ul>	<ul style="list-style-type: none"> <li>- Relevant ministries established a project work group</li> <li>- Main issues in Eastern Ghouta are: droughts / lack of water, pollution coming from the west, poverty, and damages.</li> <li>- People are starting to come back but need assistance to rebuild their life</li> </ul>	<ul style="list-style-type: none"> <li>- Main climate change-related issues are clear (see figures 7 and 8). Barriers to adapt and crisis impact also.</li> <li>- Mayors are on board and requested support</li> <li>- Mayors provided useful information on local situation in 2018 and other required info in 2020</li> <li>- Ministries and governorates are also on board.</li> </ul>	 <p>(due to large number of participants more attendance sheets can be shared on request) Date: 27-11-2018 and recurring in 2020 Technique: Workshop</p>
Mike Robson FAO representative FAO Syria  Patrizia Epifania Programme officer FAO Syria	<ul style="list-style-type: none"> <li>- Identify climate change-related issues in agriculture sector in target areas</li> <li>- Avoid overlap of projects and use lessons learned</li> <li>- Explore options of cooperation</li> </ul>	<ul style="list-style-type: none"> <li>- Agriculture sector is very vulnerable because of dependence on water</li> <li>- FAO has some best practices to respond to climate change in Syria</li> <li>- FAO will execute component 3</li> <li>- A technical working group with UN-H-FAO and UNDP has been established</li> </ul>	<ul style="list-style-type: none"> <li>- FAO will be the executing entity of this project and FAO best practices could be used – This resulted in close cooperation during proposal development.</li> </ul>	 <p>Date: Regular meetings since 2018 Technique: discussion</p>
Ramla Khalidi UNDP representative UNDP Syria	<ul style="list-style-type: none"> <li>- Identify climate change-related issues in agriculture sector in target areas</li> <li>- Avoid overlap of projects and use lessons learned</li> <li>- Explore options of cooperation</li> </ul>	<ul style="list-style-type: none"> <li>- UNDP has experience in wastewater management projects</li> <li>- UNDP will execute component 2</li> <li>- A technical working group with UN-H-FAO and UNDP has been established</li> </ul>	<ul style="list-style-type: none"> <li>- UNDP will be the executing entity of this project and FAO best practices could be used – This resulted in close cooperation during proposal development.</li> </ul>	<p>Date: Regular meetings since 2018 Technique: discussion</p>

Stakeholder	Consultation objective	Outcome	Conclusion	Evidence
UNHCR  Senior Return and Reintegration Team	<ul style="list-style-type: none"> <li>- Mapping of relevant projects and lessons learned</li> <li>- Understand needs and issues in target area</li> <li>- Consultations for AF ESP and GP compliance (needs DPs / returnees)</li> </ul>	<ul style="list-style-type: none"> <li>- The spontaneous return of refugees and IDPs will greatly exacerbate demands on natural resources and especially natural resource dependent livelihoods.</li> <li>- The inability to adapt to degraded natural resources due to climate change – especially livelihood related impacts – can result in increased tensions and potentially future unrest and displacement</li> </ul>	<ul style="list-style-type: none"> <li>- UNHCR and UN Habitat explored the issue through the Refugee and Reintegration Working Group alongside senior government representatives</li> </ul>	Meeting with Ajmal Khybari, UNHCR Syria  10-12-2018
Faten Tibi Programme Manager Women and Youth Empowerment Programme in Host communities  UN Women Lebanon + Syria	<ul style="list-style-type: none"> <li>- Mapping of relevant projects and lessons learned</li> <li>- Understand needs and issues in target area</li> <li>- Consultations for AF ESP and GP compliance (needs and issues women)</li> </ul>	<ul style="list-style-type: none"> <li>- Many women work in agriculture + food processing.</li> <li>- Need to ensure secure / safe environment (i.e. protection) for women during work since gender based violence can still be an issue in the region</li> </ul>	<ul style="list-style-type: none"> <li>- Consider women roles in agriculture and water handling when designing the project</li> <li>- Ensure women protection measures are in place for the project (when needed)</li> </ul>	 Date: 08-11-2018 Technique: discussion
Sarah El Jamal Programme officer Regional office for Arab States in Lebanon  ILO	<ul style="list-style-type: none"> <li>- Mapping of relevant projects and lessons learned</li> <li>- Understand needs and issues in target area</li> <li>- Consultations for AF ESP and GP compliance (core labour rights)</li> </ul>	Agriculture: <ul style="list-style-type: none"> <li>- Syria has not ratified: C184 - Safety and Health in Agriculture Convention, 2001 (No. 184)</li> </ul> Construction: <ul style="list-style-type: none"> <li>- Syria has not ratified: C167 - Safety and Health in Construction Convention, 1988 (No. 167)</li> </ul> 46. Migrant workers: <ul style="list-style-type: none"> <li>- Syria has not ratified: C143 - Migrant Workers (Supplementary Provisions) Convention, 1975 (No. 143)</li> </ul> Women: <ul style="list-style-type: none"> <li>- Syria has not ratified: P089 - Protocol of 1990 to the Night Work (Women) Convention</li> </ul>	<ul style="list-style-type: none"> <li>- The project should put measures in place to avoid potential risks related to the left, which basically means ensuring safe and equal working opportunities and conditions for all groups</li> </ul>	 Date: 16-11-2018 Technique: discussion

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Stakeholder	Consultation objective	Outcome (Revised), 1948	Conclusion	Evidence
Ali Hayajneh Water and CC programme  IUCN regional office	<ul style="list-style-type: none"> <li>- Mapping of relevant projects and lessons learned</li> <li>- Understand needs and issues in target area</li> <li>- Consultations for AF ESP and GP compliance (natural habitats, biodiversity and soils)</li> </ul>	<ul style="list-style-type: none"> <li>- IUCN is developing water security action plans at municipal level</li> <li>- IUCN helped to identify potential (sub-project risks related to natural habitats, biodiversity (IUCN red list) and fragile soils in target areas</li> </ul>	<ul style="list-style-type: none"> <li>- There are no protected areas in or near Ghouta and Barada valley watershed In the Golan Heights, and Yarmuk valley (close but not in eastern Ghouta target are) there are some bird areas and mammals, flora and fish that are threatened.</li> </ul>	 <p>Date: 19-11-2018 Technique: discussion</p>
MoLAE / Environmental Committee: <ul style="list-style-type: none"> <li>- Waddah Kattmawi Minister Deputy for Environmental Issues, MOLAE</li> <li>- Rweida Nahar :Director of Environment Safety</li> <li>- Ibrahim Alallan Director of Atmospheric Safety section MOLAE</li> <li>- Sonia Afesa , Director of International Cooperation, MOLAE</li> <li>- Rawan Al Azam new National Adaptation Fund Coordinator (DA), MOLAE</li> <li>- Belal Alhayek Director of Land and biodiversity MOLAE</li> <li>- Rawnak Jabbour Director of Laboratories MOLAE</li> <li>- Ahmad Noamam Director of Environmental Research, MOLAE</li> <li>- Mouhmad Daher ENV dep of Rural Damascus</li> </ul>	<ul style="list-style-type: none"> <li>- Update information based on MoWR ,MoAA departments over the GoV plan 2020 -2021</li> <li>- agree on Milestone of the Workplan what had been done, and further steps</li> <li>- mapping Data need to complete the activities of 3 components</li> <li>- Agree with MoLAE over area based of the proposed activities under 2+3 components</li> <li>- Through four joint Working groups</li> </ul>	<ul style="list-style-type: none"> <li>- Define of the field and land degradation due to pollution from Wastewater and salinations</li> <li>- Layout urban expansion over the farmlands recently</li> <li>- Layout of the main drainage and wastewater pipeline throughout the city</li> <li>- Area of discharged of the wastewater pipeline cause soil pollution</li> <li>- Areas of the cutting tree land by non-treated</li> <li>- waste water discharge of the 3 cities pipeline causing spring and water soil pollution due to its merge with the clean water of Barada basin branch (Zebdini )and leakage to ground water layer</li> </ul>	<ul style="list-style-type: none"> <li>- Approve the updates on the Hot spot map was drafting of four t based on agree the Main climate change &amp; crisis impacts and challenges location as zoning</li> <li>- Agree on Main activities of comp2 and 3 and its area based</li> <li>- agree on Enhancing capacity of related staff (public institution &amp; local community)</li> <li>- agree establishment of integrated management of water and land farms and monitoring sys for regional regionally located</li> <li>- Agree on Improve local income of families and household by providing farm tools and livestock equipment's specially for returnees</li> </ul>	 <p>Work shop on 25 -8 2020 "due to large number of participants more attendance sheets can be shared on request)"</p> 

Stakeholder	Consultation objective	Outcome	Conclusion	Evidence
<p>Representatives from:</p> <ul style="list-style-type: none"> <li>- MoLAE</li> <li>- Ministry of agriculture</li> <li>- Ministry of water resources</li> <li>- Ministry of Housing/General sewage company</li> <li>- Rural Damscus Governorates</li> <li>- Four targets municipalities in Eastern Ghouta (<b>4 mayors</b>)</li> <li>- 2 women from Municipalities technical offices</li> <li>- representors of Zebdine and Deir AL assafir</li> <li>- Farmer union and Agriculture syndicate representors</li> </ul> <p>Total:40 participants (excluding UN-Habitat + UNDPP + FAO )</p>				

Table 15 consultations conducted to comply to the AF ESP and GP

Environmental and social principles	Requirements to comply to AF ESP and GP	Consulted (see section II.H)
<i>Compliance with the Law</i>	<ul style="list-style-type: none"> <li>- Identify relevant rules, regulations and standards, including procedures to comply to these for proposed interventions</li> <li>- Identify national legal framework and guidelines for conducting EIAs for relevant projects</li> </ul>	Environmental directorate MoLAE; Relevant laws and how to comply have been identified (see section II.E) Done at CN and full proposal stage
<i>Access and Equity</i>	<ul style="list-style-type: none"> <li>- Detailed stakeholder mapping done</li> <li>- Assessment to fully identify needs and potential issues related to proposed project actions.</li> </ul>	Vulnerable groups Mapped at full proposal stage
<i>Marginalized and Vulnerable Groups</i>	<ul style="list-style-type: none"> <li>- Detailed stakeholder mapping done</li> <li>- Assessment to fully identify needs and potential issues related to proposed project actions.</li> </ul>	UNHCR; Vulnerable groups Mostly done at CN and full proposal stage
<i>Human Rights</i>	<ul style="list-style-type: none"> <li>- Initial screening of core human rights and consultations with vulnerable</li> </ul>	OHCHR; Vulnerable groups Done at full proposal stage
<i>Gender Equity and Women's Empowerment</i>	<ul style="list-style-type: none"> <li>- Detailed stakeholder mapping done</li> <li>- Assessment to fully identify needs and potential issues related to proposed project actions.</li> </ul>	UNICEF; UN Women; Vulnerable groups Done at CN and full proposal stage
<i>Core Labour Rights</i>	<ul style="list-style-type: none"> <li>- Initial screening of core Labour rights. Consult ILO about possible risks and how these could be mitigated.</li> </ul>	ILO; Vulnerable groups Done at CN stage
<i>Indigenous Peoples</i>	<ul style="list-style-type: none"> <li>- No indigenous people identified in target area</li> </ul>	
<i>Involuntary Resettlement</i>	<ul style="list-style-type: none"> <li>- Identify any risk of involuntary resettlement</li> </ul>	MoLAE consulted land owners; Vulnerable groups Done at CN and full proposal stage
<i>Protection of Natural Habitats</i>	<ul style="list-style-type: none"> <li>- Identify any protected areas in target area.</li> </ul>	IUCN; MoLAE Done at CN stage
<i>Conservation of Biological Diversity</i>	<ul style="list-style-type: none"> <li>- Identify potential endangered species in target area</li> </ul>	IUCN; MoLAE Done at CN stage
<i>Climate Change</i>	<ul style="list-style-type: none"> <li>- Identify potential emissions from proposed interventions</li> </ul>	Extra energy uses for the wastewater treatment plant (component 2) and for some pumping under component 3 will be produced through PV
<i>Pollution Prevention and Resource Efficiency</i>	<ul style="list-style-type: none"> <li>- Identify if selected interventions will use large quantity of energy</li> </ul>	Vulnerable groups Done at full proposal stage
<i>Public Health</i>	<ul style="list-style-type: none"> <li>- Understand health risks of proposed project actions.</li> </ul>	Vulnerable groups Done at full proposal stage
<i>Physical and Cultural Heritage</i>	<ul style="list-style-type: none"> <li>- Identify heritage sites in target area</li> </ul>	UNESCO website; no heritage sites have been identified in target areas
<i>Lands and Soil Conservation</i>	<ul style="list-style-type: none"> <li>- Map any fragile and valuable lands in target area.</li> </ul>	IUCN; proposed interventions will support sustainable land/ soil use and avoid degradation Done at full proposal stage

## I. Justification for funding requested

The proposed project components, outcomes and outputs fully align with national and local government / institutional priorities and gaps identified (with a clear and direct response to needs in water resource management identified in the 2018 NDC and those of mayors in the target area) (see also Part II.D). The components, outcomes and outputs also align with needs of identified community and vulnerable groups and with the Adaptation Fund outcomes. This alignment has resulted in the design of a comprehensive approach to address climate change related water scarcity issues in a fragile state.

While the scale of damage and needs caused by the crisis requires continuation of the humanitarian response in many parts of the country, Government control of major population centers and a rising number of returnees escalate the need to expand sustainable and climate change resilient development solutions, including regaining livelihoods and basic services. Apart from providing promising business opportunities and economic growth, investments can substantially contribute in the current country context to reduce the need for continued **humanitarian assistance**, stem further migration from rural to

urban areas and support the return of IDPs and refugees. In contrast, further neglect of productive farming areas will force more people to leave already depopulated rural areas, making eventual recovery harder, longer and more costly to achieve.

Due to the crisis, government capacity, both in terms of human resources and financing, is reduced compared to before the crisis. In addition, due to remaining sanctions, the government has little capacity and means to respond to needs. As such, Syria had been supported from external countries, and from assistance from the UN and other agencies. At least 2/3 of the funding will be allocated to components 2 and 3, which are concrete adaptation activities.

The table below provides a justification for funding requested, focusing on the full cost of adaptation reasoning, by showing the impact of AF funding compared to no funding (baseline) related to expected project outcomes.

Table 16 Overview of impact of AF funding compared to no funding (baseline) related to expected project outcomes

Project outcomes	Baseline (without AF)	Additional (with AF)	Comment and alternative adaptation scenario's
Component 1 – Integrated natural Resource Management to cope with climate change and crisis-related water challenges	<p>In Syria, water is usually managed at micro scale and not by looking at larger systems (watersheds), which leads to unsustainable management.</p> <p>Due to the crisis, capacities of both the government and communities had a major blow, resulting in a lack of capacity to plan for and operate and sustain resilient water supply systems and related livelihoods</p> <p>The national government has limited capacity (available models, tools, techniques and financial resources) to develop and replicate water management models that enhance sustainability and climate change resilience</p>	<p>The activities related to this outcome will allow government institutions to assess, plan and manage natural resources in an efficient, sustainable and resilient way.</p> <p>The activities related to this outcome will allow the government to replicate the approach in the project target areas.</p> <p>It will also allow the government, UN-H, UNDP and FAO to verify to proposed no regret " immediate " adaptation interventions proposed under component 2 and 3 from a larger water system perspective, ensuring it the interventions fit in the system</p>	<p>Without sustainable and climate change resilient water management approaches (considering larger water systems and techniques to reduce water consumption), target areas (and Syria as a whole) will become more water scarce, resulting in negative effects for poverty reduction targets and livelihood.</p> <p>The government need to develop their own capacity and knowledge products related to resilient development, especially in response to less water / drought</p> <p>Without activities related to this outcome, there is a risk that interventions won't be replicated and sustained and demand for adopting similar approaches is not generated; and high-level support and engagement for the proposed approach is not mobilized.</p> <p>Alternatives are to manage water more locally, but this would not improve the overall efficiency of the system and could have negative impacts downstream</p>
Component 2 – Establishment of efficient, sustainable and climate change resilient water supply systems for urban and agriculture purposes	<p>Target communities have very limited options (capacity – skills and technically - and financial resources) to protect their people and assets against climate change impacts, especially droughts, and against environmental issues. Moreover, the crisis destroyed much of their assets</p>	<p>The activities related to this outcome will allow target communities to protect inhabitants and assets against climate change impacts, especially droughts and environmental issues, especially water and soil pollution</p>	<p>Static /large interventions have the risk of not being appropriate on the long-run and will also not respond to the situation (i.e urgent needs and flexibility of systems required, taking into account possible numbers of returnees) and changing environmental issue due to upstream interventions. Mobile WWTPs can be used in a flexible way (geographically), allowing to adapt to the situation</p> <p>Alternative adaptation scenarios are ad hoc humanitarian responses, which would respond to urgent needs, but not in a sustainable and climate change resilient way.</p>
Component 3 -	Target communities have	The activities related to	Without sustainable and climate change

Establishment of efficient, sustainable and climate change resilient irrigation systems and agriculture practices	limited access to climate smart technology and techniques for agriculture. Traditional irrigation is not efficient, and drought tolerant crops and trees and livestock limited. Moreover, some assets are destroyed due to the crisis  Cooperatives/groups (e.g., water user groups) are non-existent or weak.	this outcome will allow communities to improve efficiencies and productivity through adoption of new technology, drought tolerant crops and trees and techniques.  The activities related to this outcome will also allow communities to explore and begin to adopt alternate livelihoods to diversify their income streams and so provide greater climate resilience	resilient agriculture approaches at community level, target areas with diminishing water resources will become less and less productive in terms of agriculture, resulting in negative effects for poverty reduction targets and livelihood security.  Alternatively, ad hoc attempts are unlikely to be successful due to lack of coordination or incorrect livelihood selection.
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## J. Sustainability of the project/programme

The project partners see that the main way to sustain the achievement of the project in the long run is by ensuring ownership of the project and to strengthen capacities to operate, maintain and sustain systems and to replicate approaches and techniques elsewhere.

By engaging both government institutions and communities and vulnerable groups in project activities, including assessments, planning and decision-making processes (through component 1 and capacity building through components 2 and 3), the project aims to achieve building of communities' awareness and capacities, and furthermore ownership and leadership in the area of water and land management. Specific emphasis will be given to community capacity strengthening to operate and maintain the systems.

Investing in increasing the resilience of vulnerable assets and livelihoods is a sustainable economic approach. It will not only avoid future costs related to climate change and disaster risks and impacts, but it will also strengthen livelihoods, improve the health and security of the community.

With all three components, the project aims to support sustainable development in Syria compared to a currently humanitarian driven approach.

Sustainability / maintenance arrangements for all proposed activities have been identified / established and verified. Support mechanisms to scale-up and replicate interventions have also been identified and agreed upon with relevant ministries, governorates, municipalities and UN agencies. During the project, operation and maintenance and exit strategy plans will be developed.

Table 17 Proposed arrangements to maintain, sustain and replicate / upscale proposed project activities and supporting mechanisms

Proposed adaptation actions	Operation and maintenance arrangements and mechanisms to support this	Exit strategy, including replication and upscaling arrangements and mechanisms to support this
Protect Component 1 – Integrated natural Resource Management to cope with climate change and crisis-related water challenges	Government of Syria – monitoring and updating of INRMPs are required with a 3-5 year review period).  <u>Responsible:</u> MoWR and MoLAE  <u>How:</u> identify responsibilities, coordinate with municipalities, local communities and allocate required budget through propose project activities	Approach and lessons learned captured for replication in Syria, including building ministry and municipalities, local communities capacities to do so and guidelines  <u>Responsible:</u> MoLAE and MoWR  <u>How:</u> identify responsibilities, coordinate with municipalities, local communities and allocate required budget to develop new plans
Component 2 – Establishment of efficient, sustainable and climate change resilient water supply	O & M and exit strategy plans will be developed, including identified responsibilities and budget allocations from national and municipal governments	Approach and lessons learned captured for replication in Syria, including building ministry and municipalities, local communities capacities to do so and guidelines

<p>systems for urban and agriculture purposes</p>	<p><b>Responsible:</b> MoWR and MoLAE in coordination with MoAA</p> <p><b>How:</b> coordinate with public institutions for drinking water and sanitation in each governorate and municipality and water use / farmers associations</p> <p>Mobile system, biological treatment, no chemicals added; energy efficient use by installing solar panels or battery pack is possible, sludge reusable for agriculture. O &amp; M plans will be developed, including identified responsibilities and budget allocations from national and municipal governments.</p> <p><b>Responsible:</b> Ministry of Water Resources in coordination with both local Councils and the public utilities</p> <p><b>How:</b> Ministry of Water Resources can supervise and provide required technical support. Water use / farmers association can play a role in maintenance.</p>	<p><b>Responsible:</b> MoLAE and MoWR in coordination with MoAA</p> <p><b>How:</b> identify responsibilities, coordinate with municipalities, local communities and identify possible sources of funding for replication and upscaling. Mobile treatment plants can be used in a flexible way, meaning that on the long-term, when larger WWTP are build up-stream, the mobile plants could be relocated, if needed.</p>
<p>Component 3 - Establishment of efficient, sustainable and climate change resilient irrigation systems and agriculture practices</p>	<p>Ministry of Agriculture and Agrarian Reform – has an annual guidance program implemented by the Directorate of Agricultural Extension / associations. O &amp; M plans will be developed, responsibilities identified and budget allocated from national and municipal governments. Trainings and coordination will be provided to water use or farmers associations.</p> <p><b>Responsibility:</b> Ministry of Agriculture and Agrarian Reform in coordination with ministry of Water Resources, water or farmers associations and local communities.</p> <p><b>How:</b> Ministry of Agriculture and Agrarian Reform (MAAR) can supervise and provide required technical support. Water association / farmers associations can play a role in cleaning and maintenance. Additionally MAAR is responsible for agriculture policy and identifying the suitable crops and trees for each soil and water. At the same time, MAAR in coordination with other stakeholders (i.e. FAO, MoLAE and MWRs) is responsible for applying climate smart agriculture practices.</p>	<p>Approach and lessons learned captured for replication in Syria, including building ministry, municipalities, local communities and water use / farmers associations capacities to do so</p> <p><b>Responsible:</b> ministry of Agriculture and Agrarian Reform</p> <p><b>How:</b> identify responsibilities, coordinate with local governments and identify possible sources of funding for replication and upscaling. Business models for replication by farmers will also be explored during the full proposal development phase. FAO has a good practice on trainings water use association for replicating project lessons.</p> <p>MAAR with its branch of The General Commission for Scientific Agricultural Research (GCSAR) will identify the successful applications and lesson learned to repeat successful applications in suitable locations.</p>

**\*For detailed maintenance / sustainability arrangements per output see annex 2, 3 and 4.**

The Ministry of water resources and its active departments in Rural-Damascus are responsible for conducting water assessment, both for domestic and wastewater in the target municipalities. These institutions have a mechanism to manage, monitoring and maintain the proposed water-related project activities in the target area based on the national requirement and compliance with ESIA policies (as per MoLAE responsibility). Through the ministries' related department, participatory processes will take place with local community representors and beneficiaries' groups, including water user and farmer associations, as well as with the municipalities through meetings and training sessions to assure sustainability and quality of the interventions.

The ministry of agriculture and Agrarian Reform and its active departments in Rural-Damascus are responsible for agricultural and irrigation activities. In line with their national and sub-national strategies, they are to define the type of climate resilient crops and trees, including needed field / soil assessments (and inspection soil). Water user and farmer associations will participate in the process, to identify the most efficient 'collective' irrigation options connected with the treated water sources and

innovative farming systems, but also to identify maintenance needs and arrangements and options for replication.

If water user association are not established or functional in the target areas, these will be set-up. Their main responsibilities will be to: 'equally' distribute available water resources among farmers according to the developed irrigation schedule and to operate and maintain the rehabilitated /installed irrigation system. 'Impacts' will be monitored: this is to measure the impact of rehabilitated/installed irrigation system on agricultural productivity. Besides that capacities of institutional staff and water user and farmer association members will be build using four pillars:

- o Coaching during activity design, implementation, supervision and maintenance
- o On the job-training
- o Courses with demonstration field visits (farmers are involved)
- o Applying case studies and giving courses on used tools

## **K. Overview of the environmental and social impacts and risks identified as being relevant to the project / programme**

The proposed project seeks to fully align with the Adaptation Fund's Environmental and Social Policy (ESP), and its 15 safeguard areas, as well as its Gender Policy (GP). Further to Section II.E on compliance with regulations / standards, outlined below is a summary of the findings of the screening process to identify and evaluate potential environmental and social risks and impacts of proposed interventions and based on that, of the entire project. With this information, the entire project has been categorized. As shown in Section II.H, consultations have been conducted to identify potential environmental and social risks and impacts and to identify specific group's needs and possible concerns. These include consultations with UNHCR (potential risks and needs DPs), UN Women (potential risks and needs women), ILO (potential risks Labour standards), IUCN (potential risks Natural habitats and biodiversity) and farmers and women.

Annex 5 shows how the project complies to the AF ESP and annex 6 shows how the project complies with the AF GP.

Normative, planning and capacity development activities under Component 1 consist of assessments and strategy development and capacity development. The project will ensure beneficiary groups will be equally represented and equal benefit from the project activities. This is done through a participatory planning approach. Quotas will be used ensure different groups are represented equally.

Activities under Components 2 and 3 are 'concrete' adaptation actions. Because of the scope of the proposed activities, which are numerous and localized, and, where possible, managed by communities who have a stake in avoiding environmental and social risks and impacts, potential direct impacts will be minimal and indirect impacts and transboundary impacts are highly unlikely. Given this, cumulative impacts are also unlikely. As a result, the entire project is regarded as a medium risk (Category B) project.

As for the proposed WWTP (output 2.3) and irrigation of treated wastewater, project activities to avoid any potential risks and impacts are proposed to ensure water quality is in compliance with standards for irrigation and to ensure there will be no health risks. The same accounts for the other proposed project activities, where 'general' risk avoidance measures are proposed against 'typical' risks in Syria, as per table 19. These typical risks have not been identified as specific risks for the project but as 'typical' risks in Syria for which general risk avoidance / mitigation measures are proposed. Thus, table 19 shows a high-level summary of typical environmental and social risk areas found within these project types in Syria.

Through project risks screening (see also risks screening sheets for component 2 and 3 in annex 5), a potential risk of adverse impacts on vulnerable groups (principle 3) has been identified for the proposed project activities. Consultation will be conducted when the project commences (inception phase) to make sure specific needs, limitation and constraints / concerns of vulnerable groups are identified (and up to date). Therefore, it is indicated in the table 18 that further assessment and management is required for AF principle 3. No further assessment is required for compliance for the remaining potential risk areas/principles, only 'management' of the identified typical risks with 'general' risk avoidance measures.

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Aligned with table 19, a detailed risk analysis and corresponding proposed mitigations (to avoid risks / impacts) required for compliance for the remaining safeguard areas is provided in Annex 5.

The project is designed to generate positive economic, social and environmental impacts, using inputs from especially farmers, women and youth in target communities and by incorporating best practices from other projects. The adaptation measures proposed have been selected together with mayors and group representatives, making sure they are culturally appropriate and local.

Table 18 Overview of environmental and social impacts and risks for which further assessments are required\*

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
1. Compliance with the Law	X	
2. Access and Equity	X	
3. Marginalized and Vulnerable Groups		X
4. Human Rights	X	
5. Gender Equity and Women's Empowerment	X	
6. Core Labour Rights	X	
7. Indigenous Peoples	X	
8. Involuntary Resettlement	X	
9. Protection of Natural Habitats	X	
10. Conservation of Biological Diversity	X	
11. Climate Change	X	
12. Pollution Prevention and Resource Efficiency	X	
13. Public Health	X	
14. Physical and Cultural Heritage	X	
15. Lands and Soil Conservation	X	

\* Further details on initial risk screening and additional actions and proposed mitigations required for compliance with AF ESP and Gender Policies are given in Annex 5 and 6.

Table 19 Overview of typical potential environmental and social risk areas in Syria

Checklist of environmental and social principles	Potential Risk/Impact Area
<a href="#">Principle 1: Compliance with the Law</a>	<ul style="list-style-type: none"> <li>• <a href="#">Non-compliance with laws / standards</a></li> </ul>
<a href="#">Principle 3: Marginalised and Vulnerable Groups</a>	<ul style="list-style-type: none"> <li>• <a href="#">Potential adverse impacts on vulnerable groups</a></li> </ul>
<a href="#">Principle 6: Core Labour Rights</a>	<ul style="list-style-type: none"> <li>• <a href="#">Non-involvement of local employment</a></li> <li>• <a href="#">Non-local procurement</a></li> <li>• <a href="#">Non-compliance for worker rights</a></li> <li>• <a href="#">Limited facilities</a></li> </ul>
<a href="#">Principle 8: Involuntary Resettlement</a>	<ul style="list-style-type: none"> <li>• <a href="#">Physical displacement</a></li> <li>• <a href="#">Economic displacement</a></li> </ul>
<a href="#">Principle 11: Climate Change</a>	<ul style="list-style-type: none"> <li>• <a href="#">Increased GHG Emissions due to Project Emissions (such as pumping )</a></li> </ul>
<a href="#">Principle 12: Pollution Prevention and Resource Efficiency</a>	<ul style="list-style-type: none"> <li>• <a href="#">Lack of waste management procedure</a></li> <li>• <a href="#">Spills</a></li> </ul>
<a href="#">Principle 13: Public Health</a>	<ul style="list-style-type: none"> <li>• <a href="#">Lack of occupational and community health and safety risk assessment</a></li> <li>• <a href="#">Lack of occupational health and safety</a></li> <li>• <a href="#">Lack of Contractor-Community interactions and security training</a></li> <li>• <a href="#">Increase in vector borne and communicable diseases</a></li> <li>• <a href="#">Limited emergency response, local capacity and equipment</a></li> <li>• <a href="#">Contextual security risk is moderate to high in Eastern Ghouta which is to</a></li> </ul>

**Deleted:** high-level summary of typical environmental and social risk areas found within these project types in Syria is provided in Table 19. Further detail regarding these can be found in Annex 5: Section 1.4 (Environmental and Social Management Framework/Plan) and Table 37 (Overview/summary of project risks management approach). Therefore, it is indicated in table 19 that further assessment and management is required for safeguard area 3. For details see annex 5. ¶

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	<p>be monitored over the course of the project</p> <ul style="list-style-type: none"> <li>Project-based risk to <u>security and human rights</u> is acceptable with mitigations</li> <li>Project-induced risk to <u>social cohesion</u> is acceptable with mitigations</li> <li>Increase potential for <u>stolen items</u></li> <li>Increase risk of <u>Covid-19 transmission</u> without protocols</li> <li>Potential chance finds (archaeological, graves)</li> </ul>
<a href="#">Principle 14: Physical and Cultural Heritage</a>	

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## PART III: IMPEMENTATION ARRANGEMENTS

### A. Arrangements for project management

The following arrangements for project management (oversight, coordination and execution) have been agreed upon with the AF DA, the project steering committee and Execution Partners in Syria

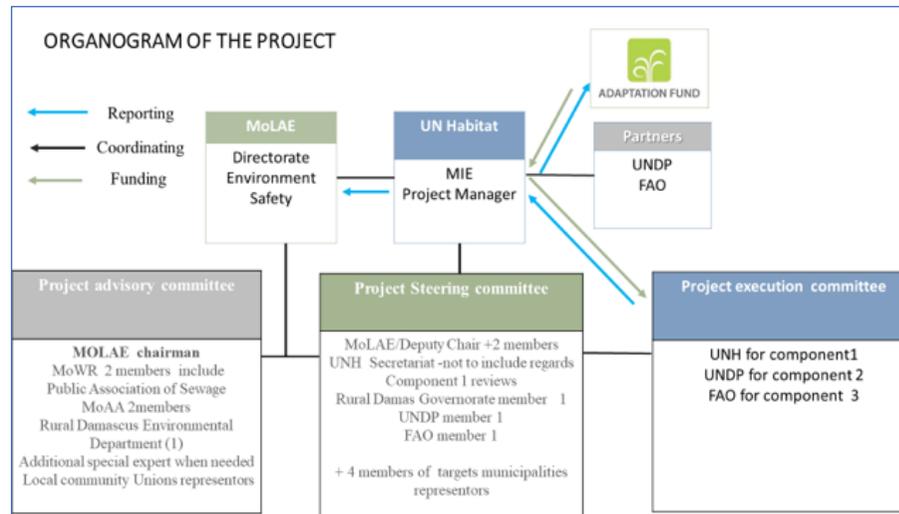


Figure 18 Project Organigram

Table 20 Key project stakeholders and roles and responsibilities

Stakeholder	Roles and responsibilities
UN-Habitat	<p>Multilateral Implementing Entity:</p> <ul style="list-style-type: none"> <li>Project oversight / supervision and coordination with UN-H HQ and regional office (ROAS), government actors and execution entities</li> <li>Ensuring project compliance with AF and UN-H policies and reporting / M&amp;E requirements, incl. safeguarding system</li> <li>Contracting and coordination with execution partners and MoLAE (ES CC)</li> <li>Execute component 1, as execution entity agreed from MoLAE</li> <li>Secretariat project Steering Committee</li> <li>Received the fund disbursement from AF board</li> <li>Provide the required agreed disbursement payments to Project execution committee</li> </ul>
Ministry of Local Administration and Environment (MoLAE)	<p>Adaptation Fund Designated Authority:</p> <ul style="list-style-type: none"> <li>Coordinate through the Environment Safety Climate Change (Directorate ES-CC committee) with UN-Habitat, PSC and PAC</li> <li>Chair of PSC-PAC</li> </ul>

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	<ul style="list-style-type: none"> <li>- Recommend the additional technical advisory members to ensure project compliance with the National laws and plans</li> <li>- Technical and financial audit for all activities and implementing stages of the project.</li> </ul>
Project Advisory / Technical Committee (PAC)	<ul style="list-style-type: none"> <li>- Providing inputs and advice on how to deliver project outputs and the achievement of project in line with national and sub-national strategies and technical standards</li> <li>- Coordination with ES-CC directorate</li> <li>- Coordination with the PSC and provide the needed data/updated assessments related to project</li> </ul>
Project Steering Committee (PSC)	<ul style="list-style-type: none"> <li>- Supervision on smooth implementation of the project from start to completion, including ensuring alignment with the agreed upon timetable and compliance with the National laws and plans</li> <li>- Conduct meetings regularly with both PAC committee and PEEU</li> <li>- Review PAC Committee reports and comments</li> <li>- Review any deviations and consider amendments to work plans and contractual arrangements</li> <li>- Review work progress reports the activities to be executed by UN Habitat (comp 1) without UN-H member included</li> <li>- Review work progress report the activities to be executed by UNDP (comp 2) and FAO (comp 3)</li> </ul>
Project Execution Entities Unit (PEEU)	<ul style="list-style-type: none"> <li>- UN-Habitat to execute comp 1 and report to the PSC. UN-H can be requested to leave the PSC meeting when reporting on component 1 is being discussed.</li> <li>- UNDP to execute comp 2</li> <li>- FAO to execute comp 3</li> <li>- Provide periodic reports / plans to the PSC</li> <li>- Provide required work progress reports to UN-Habitat / MIE to release further disbursements</li> <li>- Report on each problem delay /amendment on work plan/contractual arrangement /time deficit or problem to PSC</li> </ul>

The organigram above (figure 18) shows how the project will be supervised, coordinated and executed. As UN-Habitat is the Multilateral Implementing Entity (MIE) of the project, UN-Habitat will be responsible in addition to MOLAE/project unit ESCCU for the oversight / supervision of the project, including reporting to the AF, and contracting of execution entities (UNDP and FAO) and coordination with the government. The UN-Habitat Syria Country Office in cooperation with MOLAE/project unit will coordinate with UN-Habitats' Headquarter (HQ) and regional office (ROAS) to ensure project compliance with AF and UN-H policies and reporting / M&E requirements, incl. safeguarding system. UN-habitat will be the secretariat of the PSC. As UN-Habitat will also execute component 1, the PSC can request UN-Habitat to leave the PSC meeting when reporting on component 1 is being discussed (to avoid any potential crisis of interest).

The MoLAE will coordinate the project through its Environment Safety Climate Change (ES-CC) directorate. This directorate will coordinate the PAC and the PSC. The PAC will provide inputs and advice on how to deliver project outputs and the achievement of project in line with national and sub-national strategies and technical standards. The Ministries of Water Resources (MoWR) and Agriculture and Agrarian Reform (MoAA) will be part of it. If specific technical inputs are required, members can be invited. MoLAE will chair the PSC. The PSC will supervise and ensure the smooth implementation of the project from start to completion and review plans and reports. The target governorate and municipalities will also be represented through the PSC.

Justification for UN-habitat to execute component 1: Also requested by the MoLAE and the MoFAE, this project takes a joint UN programming approach, where the mandates of UN agencies to execute activities are followed. Related to this, UN-habitat has been requested to execute component 1 (see endorsement letters). Component 1 is within the UN-Habitat mandate and the UN-Habitat / New Urban Agenda commitment to facilitate the sustainable management of natural resources in urban areas, with urban-rural linkages, in a manner that protects and improves the urban ecosystem and environmental services, reduces greenhouse gas emissions and air pollution, and promotes disaster risk reduction and climate change adaptation. Moreover, UN-Habitat already works with the MOLAE and target municipalities on recovery action plans through MTOS programme, and it is therefore best placed to support the capacity development of national and local government institutions to plan and manage natural resources in an efficient, coordinated, sustainable and climate resilient way. Besides that, taken the limitation in Syria (i.e. sanctions, limited capacities of other potential execution entities), potential alternatives for executing component 1 are limited.

Figure 19 Governance system in Syria, relevant entities for the project

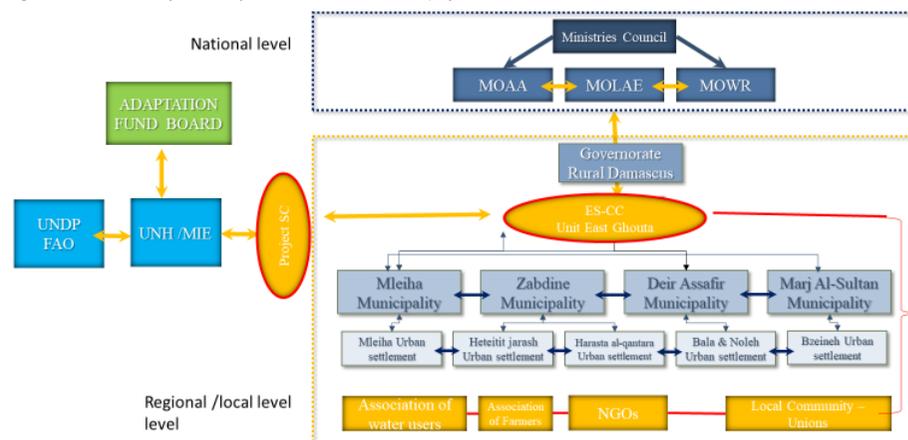


Table 21 Stakeholders in the PSC

Project Steering Committee (PSC)	
Stakeholders	
Ministry of Local Administration and Environment	Chair + 1 (2)
MoLAE D ES	Member (2)
UN-Habitat	Secretariat (2)
UNDP	Member (1)
FAO	Member (1)
Governorate Rural Damascus	Member (1)
Target municipalities	Member (4-5)

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Under decree N 2674 dated 1/12/2019 from MoLAE a Project technical Committees was established, including chairs, co-chairs and members for the development phase of the project. The Committee already functioned to support the development of this project proposal, including approving proposed Project Execution Entities, activities, budgets, etc. Besides that, an AF project coordination unit with the consortium of UN-Habitat, UNDP and FAO was established. On 14 October 2020, during a joint meeting it was agreed to establish a PSC.

Table 22 Stakeholders in the PAC

Project Technical Committee (PAC)	
Stakeholders	
Ministry of Local Administration and Environment)	Chair (2)
Ministry of Water Resources	Member (2)
Ministry of Agriculture and Agrarian Reform, incl. gender focal point (Director of Rural Woman Development)	Member (2)

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Representatives from Rural Damascus governorate Environment directorate	Member (1)
Representatives from target municipalities /villages	Invitees (4)
Representatives target communities, water and farmer associations and women and youth unions	Invitees
Related additional expert (private companies) consult entity when needed	2/3

### Key stakeholders and roles and responsibilities

Table 23 Overview main stakeholders and roles and responsibilities

Government			
Stakeholder		Role and responsibility (policy / M&E, implementation, etc)	
Main	Sub + Commissions	Current government	In the Project
MoLAE	ES CC	<ul style="list-style-type: none"> <li>- Manage the environment</li> <li>- Manage decentralisation (role governorates / municipalities)</li> <li>- Support development spatial master plans, city plans and municipality level local plans</li> <li>- Develop recovery plans on city level &amp; governorate</li> <li>- Regulations related to above</li> <li>- Coordinate with international agencies for Syrian projects</li> </ul>	<ul style="list-style-type: none"> <li>- Chair PSC</li> <li>- Coordinate PAC</li> <li>- Nominate the additional related invitees to PAC</li> <li>- Ensure compliance to National technical standards related to environment</li> <li>- Coordinate through consultations workshops with direct beneficiaries from Municipalities representors of target project municipalities</li> <li>- Guide project administration with Ministry of Foreign Affairs.</li> <li>- Audit, following up and monitoring the implementing of all project's activities (Technical and financial) incorporation with authorities and organization</li> </ul>
Governorate Rural Damascus	Environmental (MoLAE) departments	<ul style="list-style-type: none"> <li>- Implanting regional and governorate level plans of water and land management</li> <li>- Ensure implementing laws, legitimations of urban expansions</li> <li>- Support local plans of water supply and maintenance systems</li> <li>- Support local farms developments plans</li> <li>- Coordinate with related cities councils and community representors</li> </ul>	<ul style="list-style-type: none"> <li>- Member PSC</li> <li>- Member PAC (technical staff)</li> <li>- Guide local implementation of the project, including ensuring the process complies with local plans and regulations</li> <li>- Coordinate with target municipal councils and community representatives</li> <li>- Facilitate project awareness raising and capacity building activities in target municipalities</li> </ul>
MOLAE/ Governorate Rural Damascus Municipalities of Meiha, Zebdine, Deir alassafir, Marj sultan	Environmental (MoLAE) departments	<ul style="list-style-type: none"> <li>- Implanting regional and governorate level plans of water and land managements</li> <li>- Ensure implementing laws, legitimations of urban expansions</li> <li>- Support local plans of water suppl and maintenance systems</li> <li>- Support implementation of local recovery plans</li> <li>- Coordination with governorate and all community members and NGOs, unions</li> </ul>	<ul style="list-style-type: none"> <li>- Member PSC</li> <li>- Member PAC (technical staff)</li> <li>- Support local implementation of the project, including ensuring the process complies with local plans and regulations</li> <li>- Advise on implementation, including any amendments needed</li> </ul>
	Rural Women and youth development unions	<ul style="list-style-type: none"> <li>- Represent women and youth</li> <li>- Improve women and youth quality of life and support enhancing social cohesion in cities / villages</li> <li>- Coordinate with municipalities</li> <li>- Make recommendations to municipalities / governorates on development paths</li> <li>- Conduct awareness workshops / meetings sessions</li> </ul>	<ul style="list-style-type: none"> <li>- Invite to the PAC</li> <li>- Identify women and youth specific needs in project implementation and advise on how to engage women and youth</li> <li>- Support women and youth capacity building activities</li> </ul>

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	Water use and farmer associations	<ul style="list-style-type: none"> <li>- Represent water users and farmers</li> <li>- Improve water users and farmers quality of life</li> <li>- Coordinate with municipalities</li> <li>- Make recommendations to municipalities / governorates on development paths</li> <li>- Conduct awareness workshops / meetings sessions on new approaches / technologies</li> </ul>	<ul style="list-style-type: none"> <li>- Invite to the PAC</li> <li>- Identify water user / farmer needs in project implementation and advise on how to water users / farmers</li> <li>- Support water user / farmer capacity building activities</li> </ul>
MoWR		<ul style="list-style-type: none"> <li>- Manage water resource surface &amp; ground water</li> <li>- Strategic plans &amp; regulations / laws to protect and manage water sheds &amp; ground water</li> <li>- Operate and maintenance the water plants and</li> <li>- Supply drinking water networks</li> <li>- Supply domestic water network</li> <li>- Wastewater treatments plants strategies &amp; plans</li> </ul>	<ul style="list-style-type: none"> <li>- Member PAC</li> <li>- Technical advise on activities, including ensuring alignment with plans and regulations / standards</li> <li>- Provide related data required</li> </ul>
MoAAR		<ul style="list-style-type: none"> <li>- Manage agriculture and irrigation</li> <li>- Develop Agricultural &amp; livestock strategic plans</li> <li>- Support development of regional and local agriculture plans</li> <li>- Periodic Assessments and reports</li> <li>- Evaluations of land &amp; fields productivities</li> <li>- Support farmers with tangible tools</li> <li>- Assure crops and trees equipment raw materials</li> </ul>	<ul style="list-style-type: none"> <li>- Member PAC</li> <li>- Technical advise on activities, including ensuring alignment with plans and regulations / standards</li> </ul> <p>47. Provide related data required</p>
<b>Non-government</b>			
UN-Habitat		<ul style="list-style-type: none"> <li>- Support building inclusive, safe, resilient and sustainable cities and communities.</li> </ul>	<ul style="list-style-type: none"> <li>- MIE</li> <li>- Secretariat PSC</li> <li>- Execute comp 1</li> </ul>
UNDP		<ul style="list-style-type: none"> <li>- Promote technical and investment cooperation among nations and advocates for change and connects countries to knowledge, experience and resources to help people build a better life for themselves.</li> </ul>	<ul style="list-style-type: none"> <li>- Member PSC</li> <li>- Execute comp 2</li> </ul> <p>48.</p>
FAO		<ul style="list-style-type: none"> <li>- Leads international efforts to defeat hunger and improve nutrition and food security.</li> </ul>	<ul style="list-style-type: none"> <li>- Member PSC</li> <li>- Execute comp 3</li> </ul> <p>49.</p>

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#### Legal and financial arrangements

UN-Habitat and MoLAE (with the AF DA) will sign a joint **Memorandum of Understanding** to which this Project Document will be attached, to ensure that all partners are fully committed to the project.

UN-Habitat will contract Project Execution Entities through **UN to UN agreement**, where a percentage of PSC (of the Implementing Entity Management Fee) will be passed through to executing entities (as percentage over the executing entity components). To contract a UN agency, UN to UN agreements are used. This is also the case if a UN implementing entity contracts a UN agency as executing entity. A fixed mechanism of these UN to UN agreements is that a certain percentage (7 % over the executed outputs budget) of the overhead (MIE fee) is passed through to the contracted entity. This means no double overheads are calculated but that overheads are deducted from the managing agency. The contracts with UNDP and FAO will be cleared by UN-Habitat ROAS / HQ. The financial proposal for this project has already been cleared by UN-Habitat, UNDP and FAO internally.

As UN-habitat has been requested by MoLAE and UNDP and FAO to execute component 1 (see letter in part IV), execution fees over component 1 have been reduced from 9.5 percent to 1.5 percent. This

resulted in a reduction of the total execution fees from 9.5 percent to max 7.81, percent. [The calculation is as follows:](#)

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Figure 20: calculation of execution fee for component 1 and for total

Component		Amount	Executoiuns Fees %	Execution Fees Amount
Component 1		\$ 1,748,095	1.50%	\$ 26,221.43
Component 2		\$ 4,566,916	9.50%	\$ 433,857.01
Component 3		\$ 2,179,439	9.50%	\$ 207,046.73
	A	<u>\$ 8,494,450</u>	B	<u>\$ 667,125.16</u>
Applicable Execution % Over All Componenets	C = B / A	7.85%		
Total Components and Execution Fees Amount	D = A + B	\$ 9,161,575.30		
Exceusion Fees Amount	E = D * C	\$ 719,518.90		
Total Project Cost	F	\$ 9,213,969.04		
Project Exceution Fees %	G = E / F	7.81%		
Management Fees %	H	8.50%		
Project Management Fees	I = F * H	\$ 783,187.37		
Amount of Financing Requested	J = F + I	<u>\$ 9,997,156.41</u>		

[The 1.5 % cap is applied to component 1. This reduces the total % of the executing fees over the three components to 7.85 %. As the % of the execution fee is calculated over the components + the execution fee together, the final total execution fee comes to 7.81 %.](#)

UN-Habitat will develop an operational manual that clearly outlines the roles and responsibilities of the key project stakeholders and contain all the necessary tools, forms and templates required to administer the project. The operation manual will be shared with the PSC for inputs. While UN-Habitat takes responsibility of audits in line with AF requirements (each year), all contractors will be required to have 'external' audits of their budgets. The contractors will also be required to support the independent final evaluation.

**Roles and responsibilities for environmental and social risks management / AF ESP and GP compliance**

UN-Habitat will be responsible for environmental and social risks management of the project, including implementation of the Project ESMF/P. An AF and UN-H policies and reporting compliance expert will be part of the UN-Habitat project team. This expert will also supervise the EEs on the implementation of the Project ESMF/P. Guidelines showing how to comply to the AF ESP and GP will be shared with the EEs and they will be guided on the process, including monitoring. A Safeguarding system compliance expert will also be part of the UN-habitat Syria Country project team. Monitoring project staff will require having expertise on environmental and social risk management and be familiar with the AF safeguarding system. The UN-Habitat Syria Country project team will be backstopped by UN-Habitat HQ and ROAS, with experts on climate change, human rights, environmental and social risks managements and gender policies.

In Syria, government stakeholders responsible for compliance to national environmental and social policies and standards will be part of the PSC and or PAC, as well as a gender focal point [appointed by](#) MoLAE.

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All project-related ToR's and contracts will include clauses stating contractors will need to comply to the AF ESP, especially principle 1 (law), 4 (human rights), 5 (gender), 6 and 13 (labour and safety), 8 (involuntary resettlement and 11/12 (emissions / pollution) and to the AF GP. [Agreements \(Memorandum of Understanding, UN to UN agreement, agreement of cooperation\)](#) will include a statement that project teams need to be gender balanced.

### **Gender approach UNDP and FAO**

Recognizing that gender Justice is a precondition and accelerator for achieving the Sustainable Development Goals, UNDP is committed to strengthening gender equality and women's empowerment. UNDP adopts women's right at heart of all its work, community centred approach, nexus and survival centred approach. UNDP supports the gender justice and empowerment of women and girls through targeted gender-specific interventions and addresses gender concerns by integrating and mainstreaming Gender throughout the project cycle including HR processes, extending opportunities to access leadership, job, information, etc. which is measured by IASC Gender and Age monitoring tool (GAM). To achieve this, UNDP will rely on gender analysis and sex-disaggregated data and pursue integrated, cross-sectoral approaches to address interconnected development challenges. UNDP gender mainstreaming is grounded in the core principles: a) human rights, b) Women and men active agents of change, c) "Leaving no one behind", d) Transforming gender and power relations, e) Engaging men and boys, f) Contextualization, and g) Innovation. UNDP has a dedicated gender analyst capacity supported with focal points and project staff. They work on ensuring that project staff and volunteers are gender sensitive by providing required technical support and trainings. Annex XX: attached UNDP Gender Equality Strategy 2018-2021)

FAO, as executing entity for component-3, has a solid gender architecture to ensure consistent and coherent delivery of gender work across the Organization. As a cross-cutting theme in FAO's strategic framework, FAO's gender architecture includes the Gender Team in the Inclusive Rural Transformation and Gender Equity Division; the Regional Gender Officers based in FAO's Regional Offices; and the gender focal points in FAO headquarters divisions and in the decentralized offices (sub regional and country offices).

FAO-Syria office has a gender focal point to act as a resource person for gender mainstreaming and serve as a catalyst for gender issues in his/her respective division/office. Gender focal points in decentralized offices are also expected to raise awareness and support the integration of gender-sensitive outputs and indicators. In addition, FAO-Syria staff are gender-balanced and all should complete the mandatory online course: Achieving Gender Equality in FAO's work. Please see <http://www.fao.org/3/a-i3205e.pdf> and <http://www.fao.org/3/i3578e/i3578e.pdf> for FAO policy on gender equality.

The proposed studies and assessments (i.e. output-1 of component-3) will be fine-tuning each activity' design to be implemented in the context of applying gender equality. Specifically, it will explore/identify the existing gender relations and inequalities, their causes and impact on the economic and social development of rural areas, and on food security and nutrition.

At implementation phase, FAO interventions will be gender-responsive in their design and implementation, to ensure equal opportunities for men and women and participate in and benefit from the whole activities of component-3.

FAO is committed to placing accountability to people affected by disaster and conflict at the core of its emergency policy and practice. Accountability to affected populations (AAP) is a people-centred approach, sensitive to the dignity of all human beings, the varying needs of different segments within a community, and the importance of ensuring that women, men, girls and boys can equally access and benefit from assistance. Accordingly, FAO is clearly stipulate the gender dimension in all signed letter of agreement with downstream partners.

Adaptive management: when changes in project activities or additional activities are required, these will need to go through a new risks screening and impact assessment process in compliance with AF, UN-habitat and national policies and standards. When this is required, this will be led by UN-Habitat and the PSC would need to approve the changes.

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### Launch of the project

At the launch of the project, UN-Habitat's will organize an **inception workshop** inviting members of the PSC, EEs and other key stakeholders. The project approach and the proposed outputs and outcomes of the project will be presented and discussed with the purpose to solicit feedback and inputs in a participatory manner. Comments and feedback will be incorporated in project frameworks and workplans. The Inception Workshop aims to:

- (i) Enhance participants' understanding of the project objectives and activities and take ownership of the project
- (ii) Discuss and confirm the organizational structure of the project, including roles and responsibilities
- (iii) Confirm / agree upon project monitoring framework and workplan
- (iv) Confirm / agree upon project risks management framework
- (v) Discuss and agree upon project knowledge management framework and plan
- (vi) Confirm / agree upon the project Environmental and social Risks Management Plan
- (vii) Agree on the annual work plan for year one.

The inception workshop will be organised within three months after signing the project agreement between the Adaptation Fund and the UN-Habitat.

## B. Measures for financial and project risk management

Under guidance of the project manager, supported by the National Project coordinator, Monitoring Officers will monitor the status of financial and project management risks, including those measures required to avoid, minimise or mitigate these risks, throughout the project (please see also Section Part III.D).

The table below gives an overview of overall potential project management and financial risks, an assessment of the significance of the pertaining risks in terms of likelihood and impact and outlines measures that have been embedded in the project design in order to manage and/or mitigate these risks.

Table 24 overview of financial and management risks and measures to mitigate these

Potential risks	Likelihood (1-5)	Impact (1-5)	Mitigation measures	Indicator to verify
<b>Institutional</b>				
1 Delay of project start-up because critical staff is not in place and / or lengthy contracting process, incl. negotiations with execution entities	3 Med	3 Med	1.1 UN-Habitat appointed critical staff at UN-H ROAS and Syria CO required to start the project, incl. putting project staff in place and preparing the inception workshop immediately after signed project agreement between UN-Habitat and the AF; 1.2 All execution entities have been identified and proposed project activities and budgets have already been agreed upon. 1.3. UN-habitat commits to organise the inception workshop within three months of the signed project agreement between UN-Habitat the AF	The inception workshop was organised within three months of the signed project agreement between UN-Habitat;  Execution entities to execute activities in the 1st project year are contracted within six months after the inception workshop
2 Loss of government support (at ministerial and municipal level) for the project and activities because of elections and related functions of the project steering committee, which may result in lack of prioritization of AF	1 Low	3 Med	2.1 National Project Steering Committee (PSC) have already been formed during the project preparation phase and these have approved proposed project activities and budgets, etc. This shows a participatory and inclusive project design process took place with ownership of the project as a result. If due to elections, new members of the PSCs will need to be selected, this will be requested by UN-Habitat and AF DA as soon as possible and records of decisions made during earlier PSC will be shared. 2.2 UN-Habitat will establish agreements with the	Confirming steering committee members and roles and responsibilities during inception workshop + report  Government focal point to coordinate SC appointed at inception workshop

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project activities or different pace of execution of activities			MoLAE (with non-changing AF DA) (through MoU) to ensure above	MoU signed within 6 months six months after the inception workshop
3 A lack of coordination between and within national government Ministries and Departments and municipalities	1 Low	3 Med	3.1 National PSC is to ensure coordination. Representatives from the target municipalities are invited to the PSC. 3.2 Roles and responsibilities related to project implementation of PSC members, also for operation, maintenance and sustainability of activities, have already been identified and focal points within the ministries and municipalities will be appointed through an official letter. 3.3 Should UN-Habitat observe coordination problems, the agency will try to resolve issues directly with government focal point and / or concerned parties	See above
4 Capacity constraints of executing entities, local institutions, communities and the private sector may limit the effective implementation of interventions	1 Low	3 Med	4.1 The project has a strong capacity building activities, designed to operate, maintain, sustain and replicate project activities, esp. at the community level 4.2 UN-Habitat will have dedicated project staff with required expertise in natural resource management, climate change, technical design, M&E and safeguards to ensure quality control from UN-Habitat side.	Capacity building indicators to be established  Critical staff as mentioned being part of project staff
5 Communities may not adopt activities during or after the AF project, including infrastructure maintenance	2 Low	4 High	5.1 A strong participatory approach at the community level is used and will be used during project implementation to ensure ownership and support of communities to the realised interventions in the targeted project areas. UN-Habitat works with the MoLAE and Municipalities in the target area, to build on relations already established. 5.2 Capacity building and training of communities will be undertaken to improve their awareness and understanding of the benefits of the activities, including operation and maintenance of concrete interventions under component 2 and 3.	See above
Financial management and Requisite Institutional Capacity				
6 Complexity of financial management and procurement. Certain administrative processes could delay the project execution or could lack integrity or needed capacity	2 Low	2 Low	6.1 Financial management arrangements have been defined during project preparation, including identification of all executing entities, which already agreed on the activities and budgets (see also 1.2. above); 6.2 UN-Habitat's control framework, under the financial rules and regulations of the UN secretariat, will ensure documentation of clearly defined roles and responsibilities for management, internal auditors, the governing body, other personnel and demonstrates proof of payment / disbursement; In line with AF and UN-Habitat policies, audits will take place at the end of the project. 6.3 Activity specific procurement will be managed by the executing entities as agreed through UN to UN agreements (with relevant conditions, incl. evidence of recognised procurement policies and procedures and specific terms and conditions for timely	Timely audit reports (inception and yearly + following UN-H regulations)  Timely evidence of recognised procurement policies and procedures provided by Execution Entities

			disbursement of funds for project activities while at the same time ensure provisions on good financial management, hence minimizing the risk of fund mismanagement or corruption). <a href="#">6.4 A project-specific Project Management Plan will be prepared by the executing agencies with implementing partner.</a>	
7 Inflation and instability of the national currency leading to budget issues and increased prices for infrastructure delivery	3 Med	1 Low	7.1 All budgets will be in US\$ 7.2 Include clauses in all contract, incl. with private sector, that they can't increase the costs during the project duration.	All budgets in US\$  Clauses in all contract, incl. with private sector, that they can't increase the costs during the project duration.
Physical				
8 Political instability in the target localities inhibits movement and access to target areas	3 Med	4 High	8.1 The selected project sites are labelled as being safe. However, UN-habitat will only let field work proceed if agreed with the UN security unit; <a href="#">safety and potential instability will be monitored continuously.</a> 8.2 Execution entities will require having permanent field staff at project sites, recuing the need to travel 7.3 If target areas are not accessible, UN-Habitat and the proposed execution entities will identify alternative intervention locations and request approval from the SC and AF	Permanent field staff at project locations
Environmental				
9 Poor weather conditions (especially in winter) affect implementation of activities	2 Low	1 Low	9.1 UN-Habitat and the proposed execution entities have developed their work plan according to expected weather conditions and the majority of activities should be able to be carried out despite severe weather conditions as they are inside closed areas. If unexpected weather patterns occur, the proposed activities and work plan will be reviewed to make practical adaptations.	Work plans avoiding critical concrete works being planned in winter
<a href="#">10. Covid-19 spread, leading to inaccessibility of target area and / or delays of project activities</a>	3 Med	3 Med	<a href="#">10.1 See also Covid-19 risks response in annex 5, including procedures</a> <a href="#">10.2 UN-habitat will only let field work proceed if agreed with the UN security unit; safety and potential instability will be monitored continuously.</a> <a href="#">10.3 Execution entities will require having permanent field staff at project sites, recuing the need to travel</a> <a href="#">10.4 If possible, activities will proceed online.</a> <a href="#">10.5 If activities cannot be pursued due to Covid-19, alternative startegies and options will be considered</a>	<a href="#">Monitoring of Covid-19 risks response in annex 5, including procedures</a>  <a href="#">UN security unit recommendations</a>

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### C. Measures for environmental and social risks management

Part II.K of this proposal shows the outcome of the environmental and social risks screening / impacts assessment that has been conducted for this project to comply to the AF ESP and GP. In Part II.H it shows what consultations have been conducted to identify potential environmental and social risks and

impacts, including with key stakeholders such as UN agencies and beneficiary groups (i.e. potentially vulnerable groups, including women and youth). Part III.A describes the allocated roles and responsibilities for environmental and social risk management, including to implement the project ESMF/P. A designated budget for environmental and social risks management, including the implementation of the ESMF/P, has been included in part III.G. In Annex 5, all the details of the risks screening, impact assessment, ESMF/P, incl. the risks monitoring system and budget, are provided.

Based on the screening against the 15 AF principles, the project has been categorised as a “B” category project in terms of the environmental and social risks it poses. According to the Syrian’s EIA Regulations, no EIAs were required for the proposed project activities (see also part II.E). Below table provides an overview of the project requirements to the AF ESP and GP and what has been done to ensure this compliance.

Table 25 ESP and GP compliance requirements and how the proposal complies to these requirements

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ESP and GP compliance requirements	Project compliance to the AF ESP and GP	Reference / evidence
Have all potential environmental and social risks been identified for all project/programme activities prior to funding approval?	All potential environmental and social risks (incl. for gender and considering their significance) have been identified for all project/programme activities at the project preparation phase. An ESMF/P report (annexes 5 and 6) in compliance with the AF ESP and GP and in line with national requirements for conducting ESIA's has been prepared; Outcomes have been consolidated in the proposal	Part II.H Part II.K  Annex 5 (ESP annex)  Annex 6 GP annex)
Has the environmental and social assessment been completed before the project/programme proposal submission to the Adaptation Fund, and its findings included in the proposal document?	In compliance with the AF ESP and GP and national requirements for conducting ESIA's, above reports have been reviewed and approved by MoLAE. Outcomes have been consolidated in the proposal.	
Has an ESMP been developed and does this include safeguard measures to be implemented during a project/programme?	A project ESMF/P has been developed, including safeguarding measures. The following has been included in the ESMF/P: <ul style="list-style-type: none"> <li>- Allocated roles and responsibilities environmental and social risk management / implement of the ESMF/P</li> <li>- Opportunities for adaptive management</li> <li>- Arrangements to supervise executing entities for implementation of ESMF/P</li> <li>- Budget provision to manage environmental and social risks / implement of the ESMF/P</li> <li>- Measures to avoid, minimize, or mitigate potential risks</li> <li>- Risks monitoring system / indicators</li> <li>- Grievance mechanism</li> </ul>	Part III.A (roles and responsibilities for env. and social risk management)  Annex 5 (ESP annex)
Will a grievance mechanism be put in place and how will it be made widely known to identified and potentially affected parties	A project grievance mechanism will be put in place, as described in the ESMF/P. It will be made widely known to identified and potentially affected parties through community mobilisers, posters and online content	Annex 5 (ESP annex)

## D. Arrangements for monitoring, reporting and evaluation

### M & E Framework and plan

Monitoring and Evaluation (M & E) arrangements for this project will be in compliance with the AF M&E guidelines and ESP and GP and with UN-Habitat M & E policies and guidelines. This means, as a minimum, the following will be monitored and evaluated: project Milestones, Financial data, Procurement data, Risks assessment, ESP Compliance, GP Compliance, Project indicators, Lessons learned, project Results. The M & E of progress in achieving project results will be based on targets and indicators (also for gender) established in the Project Results Framework (see Part III.E).

The annual project performance reports (PPRs) will include a section on the status of implementation of any environmental and social management plan, including those measures required to avoid, minimize,

or mitigate environmental and social risks. The reports shall also include, if necessary, a description of any corrective actions that are deemed necessary. The terminal evaluation report will include an evaluation of the project's performance with respect to environmental and social risks.

UN-Habitat will ensure timely and high-quality M & E by keeping oversight of the process by providing guidance to the Project Execution Entities and national government partners through full briefing of M & E requirements. Where possible, the M & E process will be participatory, involving key stakeholders at national, municipal and communities. Project activities will be monitored by the UN-H Syria CO with dedicated monitoring staff, which will require having expertise of M & E compliance to the AF ESP and GP. The M & E framework and plan will also need to be endorsed by the PSC. Audits of the project's financial management will follow AF regulations and rules and applicable audit policies. The M&E plan will be implemented as proposed in the table below.

Table 26. M & E plan

Type of M&E Activities	Responsible Parties	Time Frame	Reporting
Inception Workshop and Report	UN-Habitat ROAS & Syria project managers Coordinated with: Steering Committee and UNDP and FAO	Workshop: within first three months of signing between AF and UN-habitat Report: within one month after inception workshop	Inception Report, including 1 <sup>st</sup> year workplan, monitoring framework and plan; project risks management framework and plan; environmental and social risks management framework and plan; knowledge management strategy
Periodic status/ progress reports	UN-Habitat ROAS & Syria project managers Coordinated with: Project EE and auditors	Annually	Annual Report, mid-term, final
Compliance with ESP and GP		Annual, as well as upon receipt of complaints, grievances or queries	Annual Report, mid-term, final
Audits		As per AF	Audit Reports
Terminal project performance report		No later than project completion	Terminal project performance report
Final Evaluation	UN-Habitat ROAS & Syria project managers Coordinated with: External consultants and Project EE	No later than project completion	Final Evaluation Report
Community consultations / workshops / trainings, etc.	Project EE	Within one week after each event	Documentation
Visits to field sites	UN-Habitat ROAS & Syria project managers Coordinated with: Steering Committee	At least every year	Field visit Report
Video with 'before' and 'after' the project	UN-Habitat ROAS & Syria project managers Coordinated with: Steering Committee	Video one: before start of concrete interventions Video two: after completion concrete interventions	Video compilation of project results

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For the M & E budget and a breakdown of how MIE fees will be utilized in the supervision of the M & E function, please see the detailed budget (Part III.G). For related data, targets and indicators, please see the project proposal results framework (Part III.E).

#### M&E Activities

##### a) Inception workshop and PSC meetings

During the first PSC meeting, which will be organized in conjunction with the project Inception Workshop. The Committees will monitor / review project progress and provide technical guidance. During the first PSC meeting, the following will be reviewed: the project organizational structure, includes roles and responsibilities, the project monitoring framework and workplan, the project risks management framework, the project knowledge management framework and plan,

the project Environmental and social Risks Management Plan and annual work plan for year one. The PSC will meet every six months, and ad-hoc meetings will be held as needed.

- b) Periodic project monitoring and terminal project performance reporting**  
Annual project performance monitoring will be conducted using the AF PPRs template. This will include monitoring of project: Milestones; Financial data; Procurement data; Risks assessment; ESP Compliance; GP Compliance; Project indicators; Lessons learned; Project Results
- c) ESMF/P implementation monitoring**  
The implementation of the project Environment and Social Management Framework / Plan (ESMF/P) as described in annex 5 will be monitored. The ESMF/P includes monitoring indicators and responsibilities for identified potential risks, impacts and mitigation measures. A dedicated budget for monitoring the compliance to the AF ESP and GP has been included in Part III.G
- d) Financial Audits**  
A professional, certified and independent organization will review the financial management of the project and adherence to required standards and regulations.
- e) Final Evaluation**  
No later than project completion, a final evaluation will be conducted following AF and UN-Habitat policies and guidelines. It will be conducted by an independent team of international and national experts in consultation with executing entities and national stakeholders as a participatory process.
- f) Community Level Participatory Monitoring**  
Part of the detailed project monitoring framework and plan will be identified through activities to involve Project Execution Entities and beneficiaries at the community level in monitoring activities. This would include community-level monitoring of Gender and Youth responsiveness and impact of the project.
- g) Periodic Project Site Visits**  
Members of the PSC and representatives of UN-Habitat will visit project sited and hold meetings with the local stakeholders to monitor the implementation of project activities.
- h) Video with 'before' and 'after' the project**  
Also, as part of the knowledge management strategy and plan, a video recording project results will be produced using 'birds' eye' views and recording of project activities and beneficiaries

#### Reporting

- a) Inception Workshop and Report**  
Within one month after the inception workshop, an Inception Report will be submitted to the AF and project steering committees' members. Reports will include: (i) agreement on organizational structure of the project, including roles and responsibilities; (ii) monitoring framework and workplan; (iii) project risks management framework; (iv) knowledge management framework and plan; (v) Environmental and social Risks Management Plan; (vi) year one work plan.
- b) Annual project performance reports, including final report**  
The Annual project performance reports, which will be submitted to the AF, will include:
  - (1) Milestones
  - (2) Financial data
  - (3) Procurement data
  - (4) Risks assessment
  - (5) ESP Compliance
  - (6) GP Compliance
  - (7) Project indicators
  - (8) Lessons learned
  - (9) Project Results to measure targets against baseline
- c) Community Level Meeting /Workshop / Training Reports and site visit**

Reports on all community-level meetings, workshops, and training will be prepared by Project Execution Entities within one week of the event. Photo documented site visit reports, also to monitor women participation, will also be prepared by Project Execution Entities.

**d) Final Evaluation Report**

Independent consultant will prepare the Final Evaluation report in line with AF and UN-habitat evaluation policies and guidelines and norms and standards for evaluation in the UN system.

## E. Project proposal results framework

Table 27. Project results framework with indicators, their baseline, targets, risks & assumptions and verification means

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Expected Result	Indicators	Baseline data	Targets	Means of verification (where and how)	Assumptions (external factors or risks)	Frequency	Responsibility
<b>Component 1</b>							
<b>Outcome 1.</b> Capacities and commitment of national and sub-national government institutions, communities and vulnerable groups to assess, plan and manage climate change-induced and post-crises water and land challenges have been strengthened and knowledge and lessons learned for replication collected and shared and integrated into strategies and regulations  (in line with AF outcomes 2, 3, 7 and 8)	Capacity of national and municipal government staff to develop, implement and update INRM strategy in which climate change is mainstreamed increased: No. of national-level staff - Total - Women No of municipal-level staff - Total - Women	0 0 0 0	20 40% 40 20%	Assess capacity of staff	Agree on how to assess capacity	Baseline, mid-term and end	UN-H in coordination with GoS
	Percentage of direct targeted population aware of predicted adverse impacts of climate change, and of appropriate responses - Total - Women - Youth	0 0 0	Mid-20%; end 50% Mid-20%; end 50% Mid-10%; end 20%	Survey beneficiary groups participating in assessment and planning processes	Target direct beneficiaries involved in the project	Baseline, mid-term and end	UN-H in coordination with GoS
	Climate change priorities are integrated into INRM strategy and related regulations - INRM with CC mainstreamed - Regulations updated - Number of partner cities that integrate the conservation of land, water and biodiversity in their urban planning processes (Institutional outcome) - Number of human settlements (UN-H DoC 3 -CC- outcome 3.2) - Number of partner cities implementing integrated policies and plans towards mitigation and adaptation to climate change (Institutional outcome) - Number of human settlements with regional or district plans UN-H DoC 3 -CC- outcome 3.3)	0 0 0 0	1 1 4 4	Strategy and regulation review  Strategy review and count of human settlements covered  Strategy review and count of human settlements covered	Agree on requirements for mainstreaming and updating; Agree on how to assess if conservation of land, water and biodiversity is integrated in the planning; Agree on what should be included in the plans	Baseline, mid-term and end	UN-H in coordination with GoS
	Innovations adaptation practices are encouraged and / or accelerated at regional, national and / or subnational level through: - Replication guidelines at national level - Workshop to replicate approach - GoS number of participants in international	0 0	1 2	Guideline review; Workshop reports review Mission reports	Ensure international knowledge sharing events are 'recognised' CC events	Baseline, mid-term and end	UN-H in coordination with GoS

		knowledge sharing events - <a href="#">UN system in Syria – disseminated through decentralised hubs – KM documents disseminated</a> - <a href="#">UN-Habitat CoP – KM document shared</a>	0 0 0	4 1 1				
<b>Output 1.1.</b> Inception workshop and coordination mechanism  *In line with AF output 2.1.1	No. of staff trained / participated in workshops - Total - Women Coordination mechanism established	0 0 0	40 40 % 1	Count on attendance sheets Review pictures	Quotas may be needed	Every meeting	UN-H in coordination with GoS	
<b>Output 1.2</b> Capacity strengthening package  *In line with AF output 2.1.1	No. of staff trained / participated in workshops - Total - Women	0 0	200 40 %	Count on attendance sheets Review pictures	Quotas may be needed	Every meeting	UN-H in coordination with GoS	
<b>Output 1.3</b> Detailed Hydrogeological study, CC VA and future outlook for the region  *In line with AF output 3.2.2.	No of tools and guidelines developed and shared with relevant stakeholders and - Detailed Hydrogeological study - CC VA - Future outlook for the region	0 0 0	1 1 1	Review tools and guidelines; Survey if tools have been shared and with whom	Agree on requirements for products	Baseline, mid-term and end	UN-H in coordination with GoS	
<b>Output 1.4</b> Gaps analyses and recommendations for managing water and land  *In line with AF output 3.2.2.	No of tools and guidelines developed and shared with relevant stakeholders: - Gaps analyses and recommendations for managing water and land	0	1	Review tools and guidelines; Survey if tools have been shared and with whom	Agree on requirements recommendation document	Baseline, mid-term and end	UN-H in coordination with GoS	
<b>Output 1.5.</b> INRM Strategy and action plan (with CC mainstreamed)  *In line with AF output 7.1	No of tools and guidelines developed and shared with relevant stakeholders and municipalities covered - INRM Strategy and action plan (with CC mainstreamed) - Regulations updated (based on recommendations above) - Municipalities covered (Also in line with UN-H DoC 3 - CC - outcome area 3.3)	0 0 0	1 1 4	Review tools and guidelines; Survey if tools have been shared and with whom Review strategy and regulations and count municipalities covered	Agree on requirements for mainstreaming and updating regulations;	Baseline, mid-term and end	UN-H in coordination with GoS	
<b>Output 1.6</b> M & E plan for above + replication mechanism  *In line with AF output 8.2	No. of key findings on effective, efficient adaptation practices, products and technologies generated: - Replication mechanism - Project results video online	0 0	1 1	Assess if replication mechanism is functional through ToR and meetings and check if video is online	Agree on criteria for functional replication mechanism	Baseline, mid-term and end	UN-H in coordination with GoS	
<b>Output 1.7</b> Formal adoption of strategy document	See output 1.5							



<p><b>Output 2.3.</b> Mobile wastewater treatment plants to use non-conventional water resources identified (concrete intervention)</p> <p>*In line with AF Output 2.1.1 and 3.2.2. and 4.1.2. and 8.2</p>	<p>No. of staff trained to operate, maintain and sustain the WWTPs</p> <ul style="list-style-type: none"> <li>- Total</li> <li>- Women</li> </ul> <p>No of tools and guidelines developed and shared with relevant stakeholders:</p> <ul style="list-style-type: none"> <li>- O &amp; M and exit strategy plan,</li> </ul> <p>No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change:</p> <ul style="list-style-type: none"> <li>- No of mobile WWTP</li> <li>- Quantity of water treated</li> </ul> <p>No. of key findings on effective, efficient adaptation practices, products and technologies generated</p> <ul style="list-style-type: none"> <li>- Replication guidelines on mobile WWTP</li> </ul>	<p>0</p> <p>0</p> <p>0</p> <p>0</p> <p>0</p> <p>0</p>	<p>30</p> <p>30%</p> <p>1</p> <p>1</p> <p>3,840 m3/day</p> <p>1</p>	<p>Assess capacity of staff</p> <p>Guidelines and exit strategy developed</p> <p>Wastewater treatment plant installed</p> <p>Wastewater treatment plant operated</p>	<p>Develop and agree on a criteria for capacity assessment</p> <p>Exit strategy agreed with relevant stakeholders</p> <p>Delivery of Mobile treatment plant units on time</p> <p>Measures of quantity of treated wastewater water indicates meeting standards &amp; verify targeted capacity. of treated water</p>	<p>Baseline, mid-term and end</p>	<p>UNDP in cooperation with UN-H and GoS</p>
<p><b>Output 2.4.</b> Rehabilitated irrigation canals to divert treated water for irrigation purposed (concrete intervention)</p> <p>*In line with AF Output 4.1.2</p>	<p>No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change:</p> <ul style="list-style-type: none"> <li>- Meter of rehabilitated irrigation canals</li> </ul>	<p>0</p>	<p>48,000m</p>	<p>Report of delivery of work</p>	<p>Delivery of work accepted by recipient local Authority</p>	<p>Baseline, mid-term and end</p>	<p>UNDP in cooperation with UN-H and GoS</p>
<p><b>Component 3</b></p>							
<p><b>Outcome 3.</b> Resilience of water-dependent livelihoods and security of income (through reduced water demand), especially for vulnerable groups has increased through:</p> <ul style="list-style-type: none"> <li>- Protection of water resources (and prevention of contamination of surface and groundwater resources / wells)</li> <li>- Raising water use efficiency, using high efficiency irrigation methods</li> <li>- Improved agricultural practices / climate smart</li> </ul>	<p>Capacity of national and municipal and local extension/water engineers staff and farmers to operate, maintain and sustain / replicate the agriculture technology, smart applications and alternative livelihoods strengthened:</p> <p>No. of national-level staff</p> <ul style="list-style-type: none"> <li>- Total</li> <li>- Women</li> </ul> <p>No of municipal-level staff</p> <ul style="list-style-type: none"> <li>- Total</li> <li>- Women</li> </ul> <p>Percentage of population aware of predicted adverse impacts of climate change, and of appropriate adaptive responses under this component</p> <ul style="list-style-type: none"> <li>- Total</li> <li>- Women</li> <li>- Youth</li> </ul>	<p>0</p> <p>0</p> <p>0</p> <p>0</p> <p>0</p> <p>0</p> <p>0</p> <p>0</p>	<p>20</p> <p>30%</p> <p>40</p> <p>20%</p> <p>Mid-20%; end 50%</p> <p>Mid-20%; end 50%</p> <p>Mid-10%; end 20%</p>	<p>Count number and % participating in trainings / workshops</p> <p>Review training / workshop reports, attendance sheets and photos (with women)</p> <p>Count + % / survey beneficiary groups participating in assessment and planning processes</p>	<p>Ensure women participation (if needed through quotas)</p> <p>Target direct beneficiaries involved in the project</p>	<p>Baseline, mid-term and end</p> <p>Baseline, mid-term and end</p>	<p>FAO in coordination with UN-H and GoS</p> <p>FAO in coordination with UN-H and GoS</p>

<p>agriculture practices such as crop rotation, introduce drought tolerant crops and trees</p> <p>- Alternative or diversified livelihoods;</p>	<p>Percentage of households and communities having more secure (i.e. increased income) through access to climate smart agriculture practices / livelihoods</p> <ul style="list-style-type: none"> <li>- Total</li> <li>- Women</li> <li>- Youth</li> </ul>	<p>0</p> <p>0</p> <p>0</p>	<p>Mid-5%; end 15%</p> <p>Mid-5%; end 15%</p> <p>Mid-2%; end 8%</p>	<p>Count + % / survey beneficiary groups with increased income</p>	<p>Target direct beneficiaries involved in the project</p>	<p>Baseline, mid-term and end</p>	<p>FAO in coordination with UN-H and GoS</p>
<p>And capacities to operate, maintain and sustain these systems/practices have been strengthened</p> <p>(in line with AF outcomes 2, 3 and 6 and 8).</p>	<p>Innovations adaptation practices are rolled-out and encouraged at national and / or subnational level through:</p> <ul style="list-style-type: none"> <li>- Workshop to replicate approach</li> </ul>	<p>0</p>	<p>2</p>	<p>Count workshop reports review content</p>	<p>Workshops / guidelines should explain how interventions can be installed, operated, maintained, replicated</p>	<p>Baseline, mid-term and end</p>	<p>FAO in coordination with UN-H and GoS</p>
<p><b>Output 3.1.</b> Studies and assessments to detail the proposed interventions</p> <p>*In line with AF output 3.2.2. and 8.2</p>	<p>No of tools and guidelines developed and shared with relevant stakeholders:</p> <ul style="list-style-type: none"> <li>- Inception report</li> <li>- Report of assessments</li> <li>- Report on technical specifications</li> </ul> <p>No. of key findings on effective, efficient adaptation practices, products and technologies generated</p> <ul style="list-style-type: none"> <li>- Capitalization exercise on replication of below interventions at the end of the project</li> </ul>	<p>0</p> <p>0</p> <p>0</p> <p>0</p>	<p>1</p> <p>1</p> <p>3</p> <p>1</p>	<p>Count number of reports / guidelines and review content</p>	<p>Assessments and specification reports should provide info for technical design of interventions; Guidelines should explain how interventions can be installed, operated, maintained, replicated</p>	<p>Baseline, mid-term and end</p>	<p>FAO in coordination with UN-H and GoS</p>
<p><b>Output 3.2.</b> Introduction of water efficient agricultural technology</p> <p>*In line with AF output 2.1.1 and 3.2.2. and 6.1.</p>	<p>No. of staff and people trained to operate, maintain and sustain / replicate the water efficient agriculture technology</p> <ul style="list-style-type: none"> <li>- Total</li> <li>- Women</li> </ul> <p>No of tools and guidelines developed and shared with relevant stakeholders:</p> <ul style="list-style-type: none"> <li>- O &amp; M and exit strategy plan for output 3.2.</li> </ul> <p>No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies</p> <ul style="list-style-type: none"> <li>- Ha irrigated by efficient irrigation systems of treated water and wells</li> <li>- Ha of agriculture land levelled by laser</li> <li>- No of ground water wells rehabilitated and equipped with solar pumps</li> </ul>	<p>0</p> <p>0</p> <p>0</p> <p>0</p> <p>0</p> <p>0</p>	<p>100</p> <p>30 %</p> <p>1</p> <p>90 Ha</p> <p>200 Ha</p> <p>6</p>	<p>Count no and % people trained + review photos (with women)</p> <p>Count no and meter system + review photos (with women)</p> <p>Review progress reports from FAO resilience officers, partners and M&amp;E report</p>	<p>Wastewater treatment unit is installed in time and function to complete the irrigation system Water users association is established on time and legalised by the partners</p>	<p>Baseline, mid-term and end</p>	<p>FAO in coordination with UN-H and GoS</p>

	<ul style="list-style-type: none"> <li>- No of climate stations installed</li> <li>- No of stream flow gauge stations installed</li> <li>- No of groundwater monitoring systems installed</li> <li>- No of laser levelling device operated</li> </ul>	<p>0 0 0 0</p>	<p>1 1 1 1</p>				
<p><b>Output 3.3.</b> Adoption of climate-smart agriculture practices for improved soil fertility and enhanced water use efficiency</p> <p>*In line with AF output 2.1.1 and 3.2.2. and 6.1.1</p>	<p>No. of staff and people trained to operate, maintain and sustain / replicate climate smart agriculture practices</p> <ul style="list-style-type: none"> <li>- Total, of which:</li> <li>- Farmers</li> <li>- Technicians</li> <li>- Women</li> <li>- Youth</li> </ul> <p>No of tools and guidelines developed and shared with relevant stakeholders:</p> <ul style="list-style-type: none"> <li>- O &amp; M, and exit strategy plan (capitalisation exercise) for output 3.3.</li> <li>- No of famers applying climate smart agriculture adaptation practices such as crop rotation</li> <li>- No of nurseries to produce drought tolerant crops</li> </ul>	<p>0 0 0 0 0</p> <p>0 0 0 0</p>	<p>240 80 % 20 % 30 % 15 %</p> <p>1 2600 1</p>	<p>Count no and % people trained + review photos (with women)</p> <p>Count no of famers (and women) applying climate smart agriculture adaptation practices + review photos (with women)</p> <p>Review progress reports from FAO resilience officers, partners and M&amp;E report</p>	<p>Involve all farmers from the start to ensure acceptance of practices</p>	<p>Baseline, mid-term and end</p>	<p>FAO in coordination with UN-H and GoS</p>
<p><b>Output 3.4.</b> <a href="#">Promote sustainable livelihood opportunity through crop residuals management and support to rural women</a></p> <p>*In line with AF output 2.1.1 and 3.2.2. and 6.1.1.</p>	<p>No. of staff and people trained to operate, maintain and sustain / replicate alternative livelihood opportunities</p> <ul style="list-style-type: none"> <li>- Total</li> <li>- Women</li> </ul> <p>No of tools and guidelines developed and shared with relevant stakeholders:</p> <ul style="list-style-type: none"> <li>- O &amp; M and exit strategy plan (capitalisation exercise) for output 3.4</li> </ul> <p>No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies</p> <ul style="list-style-type: none"> <li>- Number of alternative / sustainable / climate change resilient livelihoods created through crop residuals management and rural women empowerment</li> </ul>	<p>0 0</p> <p>0 0</p>	<p>900 30 %</p> <p>1 6 crushers 200 sets of tools 1 sell point for marketing women products</p>	<p>Count no and % people trained + review photos (with women)</p> <p>Count number of alternative / sustainable / climate change resilient livelihoods created + review photos (with women)</p> <p>Review progress reports from FAO resilience officers, partners and M&amp;E report</p>	<p>Involve local communities and institutions from the beginning to ensure commitment to the registration and maintenance of the livelihood opportunities</p>	<p>Baseline, mid-term and end</p>	<p>FAO in coordination with UN-H and GoS</p>

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Table 28. Indicative Core Indicator Targets

Impact-level results	Core indicator	Targets		Comment
		Direct	Indirect	
Increased adaptive capacity of communities to respond to the impacts of climate change	Number of beneficiaries Component 1	T: 81,700 (target communities) W:50-60 % Y:32-37 %  Directly participating workshops: T: 200 W: 20-40 %	T Eastern Ghouta: 145,000 W:50-60 % Y:32-37 %	Beneficiaries under component 1 and 2 are regarded the inhabitants of target communities, as these will all benefit. Under component 3 parts of these communities are targeted (see also overview table 1 and 6)
	Number of beneficiaries Component 2	T: 66,000 (target communities) W:50-60 % Y:32-37 %  Directly participating workshops: T: 30 W: 20-40 %		
	Number of beneficiaries Component 3	T:30,940 (target population within communities) W:50-60 % Y:32-37 %  Directly participating workshops: T: 30 W: 20-40 %		
	Assets produced, developed, improved, or strengthened (component 2)	<ul style="list-style-type: none"> <li>- Sewerage network (16 km)</li> <li>- Mobile WWTP (3,840 m3/day)</li> <li>- Irrigation canals 48 km)</li> </ul>		All 'concrete' adaptation activities are designed to increase climate change-related water scarcity resilience
	Increase income, or avoided decrease in income	<p>Percentage of households and communities having more secure (i.e increased income) through access to climate smart agriculture practices / livelihoods</p> <ul style="list-style-type: none"> <li>- Total 15%</li> <li>- Women 15%</li> <li>- Youth 08%</li> </ul> <p>Assets produced to support above:</p> <ul style="list-style-type: none"> <li>- Ha of agriculture land irrigated by above efficient irrigation systems: 90 ha</li> <li>- Ground water wells rehabilitated and equipped with solar pumps: 6</li> <li>- No of famers applying climate smart agriculture adaptation practices such as crop rotation: 2600)</li> <li>- No of nurseries to produce drought tolerant crops and trees (1)</li> </ul>		The 'concrete' adaptation activities related to the WWTPs and irrigation interventions are designed to support increased resilience of the agriculture livelihoods
UN-H DoCs	UN-H DoC 3: Number of people living in partner cities and human settlements less vulnerable to climate change impacts (Human impact) - Number of people	T: 81,700 (target communities) W:50-60 % Y:32-37 %		

\*Methodology to apply: <https://www.adaptation-fund.org/wp-content/uploads/2016/04/AF-Core-Indicator-Methodologies.pdf>

## F. Project alignment with the Adaptation Fund results framework

Table 29. Project alignment with the Adaptation Fund results framework

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Project Outcome	Project Outcome Indicator	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
<b>Outcome 1</b> Strengthened commitment and capacities of national and Eastern Ghouta government institutions, communities and vulnerable groups to assess, plan and manage scarce natural resources (especially water and land) in an efficient, coordinated, sustainable and climate resilient way, also considering recovery needs; knowledge and lessons have been captured and shared for replication integrated in strategies and regulations.	Capacity of national and municipal government staff to develop, implement and update INRM strategy in which climate change is mainstreamed: No. of national-level staff - Total - Women No of municipal-level staff - Total - Women	<b>Outcome 2:</b> Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	1,748,095
	Percentage of direct targeted population aware of predicted adverse impacts of climate change, and of appropriate responses - Total - Women - Youth	<b>Outcome 3:</b> Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses	
	Climate change priorities are integrated into INRM strategy and related regulations - INRM with CC mainstreamed - Regulations updated	<b>Outcome 7:</b> Improved policies and regulations that promote and enforce resilience measures	7. Climate change priorities are integrated into national development strategy	
	Innovations adaptation practices are encouraged and / or accelerated at regional, national and / or subnational level: - Replication guidelines at national level - Workshop to replicate approach - GoS number of participants in international knowledge sharing events	<b>Outcome 8:</b> support the development and diffusion of innovative adaptation practices, tools and technologies	8. Innovations adaptation practices are rolled-out, scaled up, encouraged and / or accelerated at regional, national and / or subnational level	
<b>Outcome 2</b> Increased access to municipal and community-level efficient, sustainable and climate change resilient water supply systems for urban and agriculture purposes, using innovative and replicable techniques through: - Use of non-conventional water resources - Reduction of losses / leakages of wastewater and from canals / irrigation systems And strengthened	Capacity of national and municipal government staff to operate, maintain and sustain the WWTP and related sewerage and irrigation network: No. of national-level staff - Total - Women No of municipal-level staff - Total - Women	<b>Outcome 2:</b> Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	4,566,916
	Percentage of direct targeted population aware of predicted adverse impacts of climate change, and of appropriate responses under this component - Total - Women - Youth	<b>Outcome 3:</b> Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.2. Percentage of targeted population applying appropriate adaptation responses	

capacities to operate, maintain and sustain these systems	Type of physical infrastructure improved to withstand climate change and variability-induced stress: <ul style="list-style-type: none"> <li>- Sewerage network</li> <li>- Mobile WWTP</li> <li>- Irrigation canals</li> </ul>	<b>Outcome 4:</b> Increased adaptive capacity within relevant development sector services and infrastructure assets	4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	
	Innovations adaptation practices are rolled-out and encouraged at national and / or subnational level through: <ul style="list-style-type: none"> <li>- Replication guidelines at national level</li> <li>- Workshop to replicate approach</li> </ul>	<b>Outcome 8:</b> support the development and diffusion of innovative adaptation practices, tools and technologies	8. Innovations adaptation practices are rolled-out, scaled up, encouraged and / or accelerated at regional, national and / or subnational level	
<b>Outcome 3</b> Increased resilience of water-dependent livelihoods and related income (through reduced water demand), especially for vulnerable groups through: <ul style="list-style-type: none"> <li>- Protection of water resources (and prevention of contamination of surface and groundwater resources / wells)</li> <li>- Raising water use efficiency, using high efficiency irrigation methods</li> <li>- Improved agricultural practices (changing sowing dates, drought tolerant crops, conservation agriculture</li> <li>- Alternative or diversified livelihoods;</li> </ul> And strengthened capacities to operate, maintain and sustain these systems	Capacity of national and municipal and local extension/water engineers staff and farmers to operate, maintain and sustain / replicate the agriculture technology, smart applications and alternative livelihoods straightened: No. of national-level staff <ul style="list-style-type: none"> <li>- Total</li> <li>- Women</li> </ul> No of municipal-level staff <ul style="list-style-type: none"> <li>- Total</li> <li>- Women</li> </ul>	<b>Outcome 2:</b> Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	2,179,439
	Percentage of direct targeted population aware of predicted adverse impacts of climate change, and of appropriate responses under this component <ul style="list-style-type: none"> <li>- Total</li> <li>- Women</li> <li>- Youth</li> </ul>	<b>Outcome 3:</b> Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.2. Percentage of targeted population applying appropriate adaptation responses	
	Percentage of households and communities having more secure (i.e. increased income) through access to climate smart agriculture practices / livelihoods <ul style="list-style-type: none"> <li>- Total</li> <li>- Women</li> <li>- Youth</li> </ul>	<b>Outcome 6:</b> Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 Percentage of households and communities having more secure (increased) access to livelihood assets 6.2. Percentage of targeted population with sustained climate-resilient livelihoods	
	Innovations adaptation practices are rolled-out and encouraged at national and / or subnational level through: <ul style="list-style-type: none"> <li>- Workshop to replicate approach</li> </ul>	<b>Outcome 8:</b> support the development and diffusion of innovative adaptation practices, tools and technologies	8. Innovations adaptation practices are rolled-out, scaled up, encouraged and / or accelerated at regional, national and / or subnational level	
<b>Project Output</b>	<b>Project Output Indicator</b>	<b>Fund Output</b>	<b>Fund Output Indicator</b>	<b>Grant Amount (USD)</b>
1.1. Inception workshop and coordination	No. of staff trained and participated in workshops	<b>Output 2.1:</b> Strengthened capacity	2.1.1. No. of staff trained to respond	302,128

mechanism 1.2. Capacity strengthening package	- Total - Women Coordination mechanism established	of national and regional centres and networks to respond rapidly to extreme weather events	to, and mitigate impacts of, climate-related events	
1.3. Detailed Hydrogeological study, CC VA and future outlook for the region	No of tools and guidelines developed and shared with relevant stakeholders and - Detailed Hydrogeological study - CC VA - Future outlook for the region	<b>Output 3.2</b> Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	3.2.2 No of tools and guidelines developed and shared with relevant stakeholders	617,364
1.4. Gaps analyses and recommendations for managing water and land 1.5. INRM Strategy and action plan 1.7. Formal adoption of strategy document	No of tools and guidelines developed and shared with relevant stakeholders and municipalities covered - Gaps analyses and recommendations for managing water and land - INRM Strategy and action plan (with CC mainstreamed) - Regulations updated (based on recommendations above) - Municipalities covered	<b>Output 7:</b> Improved integration of climate-resilience strategies into country development plans	7.1. No. of policies introduced or adjusted to address climate change risks (by sector)	517,564
1.6. M & E plan for above + replication mechanism	No. of key findings on effective, efficient adaptation practices, products and technologies generated: - Replication mechanism - Project results video online	<b>Output 8:</b> Viable innovations are rolled-out scaled up, encouraged and / or accelerated	8.2. No. of key findings on effective, efficient adaptation practices, products and technologies generated	311,039
2.3. Mobile wastewater treatment plants to use non-conventional water resources identified	No. of staff trained to operate, maintain and sustain the WWTPs and outputs 2.2. and 2.4. - Total - Women	<b>Output 2.1:</b> Strengthened capacity of national and regional centres and networks to respond rapidly to extreme weather events	2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate-related events	See below AF output 4
2.1. Assessment and verification / technical specification and engineering studies, including surveys required for detailed design of below interventions	No of tools and guidelines developed and shared with relevant stakeholders and: - Detailed engineering studies and designs of below interventions	<b>Output 3.2</b> Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	3.2.2 No of tools and guidelines developed and shared with relevant stakeholders	114,300
2.3. Mobile wastewater treatment plants to use non-conventional water resources identified	No of tools and guidelines developed and shared with relevant stakeholders and: - O & M and exit strategy plan, also for outputs 2.2. and 2.4			See below AF output 4
2.2. Rehabilitated sewage network to divert wastewater towards the WWTPs	No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change: - Meter of rehabilitated sewerage network	<b>Output 4:</b> Vulnerable physical, natural, and social assets strengthened in response to climate change impacts, including variability	4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability	296,250

2.3. Mobile wastewater treatment plants to use non-conventional water resources identified	No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change: - No of WWTPs Quantity of water treated		and change	4,049,313
2.4. Rehabilitated irrigation canals to divert treated water for irrigation purposed	No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change: - Meter of rehabilitated irrigation canals			107,053
2.3. Mobile wastewater treatment plants to use non-conventional water resources identified	No. of key findings on effective, efficient adaptation practices, products and technologies generated - Guidelines on mobile WWTP	<b>Output 8:</b> Viable innovations are rolled-out scaled up, encouraged and / or accelerated	8.2. No. of key findings on effective, efficient adaptation practices, products and technologies generated	See above AF output 4
3.2. Introduction of water efficient agricultural technology	No. of staff and people trained to operate, maintain and sustain the interventions - Total - Women	<b>Output 2.1:</b> Strengthened capacity of national and regional centres and networks to respond rapidly to extreme weather events	2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate-related events	
3.3. Adoption of climate-smart agriculture practices for improved soil fertility and enhanced water use efficiency				
3.4. <a href="#">Promote sustainable livelihood opportunity through crop residuals management and support to rural women</a>				
3.1. Studies and assessments to detail the proposed interventions	No of tools and guidelines developed and shared with relevant stakeholders - Inception report - Report of assessments - Report on technical specifications	<b>Output 3.2</b> Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	3.2.2 No of tools and guidelines developed and shared with relevant stakeholders	Part of 174,133
3.2. Introduction of water efficient agricultural technology	No of tools and guidelines developed and shared with relevant stakeholders: - O & M and exit strategy plan			See below AF output 6
3.3. Adoption of climate-smart agriculture practices for improved soil fertility and enhanced water use efficiency				
3.4. <a href="#">Promote sustainable livelihood opportunity through crop residuals management and support to rural women</a>				
3.2. Introduction of water efficient agricultural technology	No. and type of adaptation assets (tangible and intangible) created or	Output 6: Targeted individual and community	6.1.1.No. and type of adaptation assets (tangible and	924,158

3.3. Adoption of climate-smart agriculture practices for improved soil fertility and enhanced water use efficiency	strengthened in support of individual or community livelihood strategies - Ha irrigated by efficient irrigation systems of treated water and wells	livelihood strategies strengthened in relation to climate change impacts, including variability	intangible) created or strengthened in support of individual or community livelihood strategies	814,243
3.4. <a href="#">Promote sustainable livelihood opportunity through crop residuals management and support to rural women</a>	- Ha of agriculture land levelled by laser - No of ground water wells rehabilitated and equipped with solar pumps - No of climate stations installed - No of stream flow gauge stations installed - No of groundwater monitoring systems installed - No of laser levelling device operated No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies Number of alternative / sustainable / climate change resilient livelihoods created through crop residuals management and rural women empowerment			266,906
3.1. Studies and assessments to detail the proposed interventions	No. of key findings on effective, efficient adaptation practices, products and technologies generated - Capitalization exercise on replication of below interventions at the end of the project Innovations adaptation practices are rolled-out and encouraged at national and / or subnational level through: - Workshop to replicate approach	<b>Output 8:</b> Viable innovations are rolled-out scaled up, encouraged and / or accelerated	8.2. No. of key findings on effective, efficient adaptation practices, products and technologies generated	Part of 174,133

## G. Detailed Budget

Table 30. Project budget overview

Project Components	Expected Concrete Outputs	Expected Concrete Outcomes	TOTAL	Year			
				1 12 m	2 12 m	3 12 m	4 6 m
Component 1	Output 1.1.	Outcome 1.1	176,064	176,064	-	-	-
	Output 1.2.		126,064	126,064	-	-	-
	Output 1.3.		617,364	617,364	-	-	-
	Output 1.4.		81,000	-	81,000	-	-
	Output 1.5.		227,564	-	227,564	-	-
	Output 1.6.		311,039	18,940	100,400	97,753	93,946
	Output 1.7.		209,000	-	93,400	62,900	52,700
<b>TOTAL</b>		<b>1,748,095</b>	<b>938,432</b>	<b>502,364</b>	<b>160,853</b>	<b>148,646</b>	
Component 2	Output 2.1.	Outcome 2.1	114,300	114,300	-	-	-
	Output 2.2.		296,250	296,250	-	-	-
	Output 2.3.		4,049,313	3,942,413	126,800	80,100	-
	Output 2.4.		107,053	107,053	-	-	-
<b>TOTAL</b>		<b>4,566,916</b>	<b>4,360,018</b>	<b>126,800</b>	<b>80,100</b>	<b>-</b>	
Component 3	Output 3.1.	Outcome 3.1	174,133	141,705	5,407	5,407	21,614
	Output 3.2.		924,158	384,500	420,882	76,130	42,646
	Output 3.3.		814,242	300,825	383,325	74,588	55,504
	Output 3.4.		266,906	17,439	132,554	87,023	29,890
<b>TOTAL</b>		<b>2,179,439</b>	<b>844,469</b>	<b>942,168</b>	<b>243,148</b>	<b>149,654</b>	
<b>Sub-total Project Components Costs</b>			<b>8,494,450</b>	<b>6,142,917</b>	<b>1,571,332</b>	<b>483,901</b>	<b>296,300</b>
Project Execution Costs	Project oversight (international)		33,000	-	-	22,000	11,000
	Project coordinator (international)		80,000	-	-	50,000	30,000
	Project coordinator / manager (national)		60,500	-	-	44,000	16,500
	Admin / finance (national)		84,000	24,000	24,000	24,000	12,000
	Safeguarding system (AF) compliance (national)		34,100	9,300	9,300	9,300	6,200
	M & E and communication (national)		47,250	13,500	13,500	13,500	6,750
	Travel		44,044	13,552	13,552	10,164	6,776
	Operations		274,246	88,601	81,401	68,900	35,344
	Audits		15,000	-	-	-	15,000
	Terminal evaluation		47,379	-	-	-	47,379
<b>Sub-total Project Execution Costs (max 9.5 %)</b>			<b>7.81%</b>	<b>719,519</b>	<b>148,963</b>	<b>141,753</b>	<b>241,864</b>
<b>SUB-TOTAL Component + execution fee</b>				<b>9,213,969</b>	<b>6,291,870</b>	<b>1,713,085</b>	<b>725,765</b>
Project Cycle Management Fee	UN-H ROAS Project Support Costs: AF and UN-H policies compliance Progress / evaluation Travel	1.4%	128,996	88,087	23,962	10,160	6,767
	UN-H HQ Project Support Costs: Overall project supervision, incl. compliance to UN-H policies and standards (gender, human rights, climate change, etc.)	7.1%	654,191	446,723	121,828	51,520	34,311
<b>Sub-total Project Cycle Management Fee (max 8.5 %)</b>			<b>8.50%</b>	<b>783,187</b>	<b>534,810</b>	<b>145,810</b>	<b>61,880</b>
<b>Amount of Financing Requested</b>				<b>9,997,156</b>	<b>6,826,680</b>	<b>1,858,695</b>	<b>787,454</b>

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Project Components	Expected Concrete Outputs
Component 1	Output 1.1.
	Output 1.2.
	Output 1.3.
	Output 1.4.
	Output 1.5.
	Output 1.6.
	Output 1.7.
<b>TOTAL</b>	
Component 2	Output 2.1.
	Output 2.2.
	Output 2.3.
	Output 2.4.
<b>TOTAL</b>	
Component 3	Output 3.1.
	Output 3.2.
	Output 3.3.
	Output 3.4.
<b>TOTAL</b>	
<b>Sub-total Project Components Costs</b>	
Project Execution Costs	Project oversight (international)
	Project coordinator (international)
	Project coordinator / manager (national)
	Admin / finance (national)
	Safeguarding system (AF) compliance (national)
	M & E and communication (national)
	Travel
	Operations
	Audits
	Terminal evaluation
<b>Sub-total Project Execution Costs (max 9.5 %)</b>	
<b>SUB-TOTAL Component + execution fee</b>	
<b>Sub-total Project Cycle Management Fee (max 8.5 %)</b>	
<b>Amount of Financing Requested</b>	

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Amount of Financing Requested

Field Code Changed

Table 31 Budget notes component 1

Activities		Notes / Staff	TOTAL	Year 1	Year 2	Year 3	Year 4	No.	Unit	
<b>Project components</b>										
Output 1.1	1.1.1 1.1.2	Project oversight (international)	5,500	5,500	-	-	-	1	Month	
		Project coordinator (international)	10,000	10,000	-	-	-	1	Month	
		Component 1 Coordinator / manager (National)	11,000	11,000	-	-	-	1	Month	
		Governance / planning specialist (National)	9,400	9,400	-	-	-	1	Month	
		SDG specialist (National)	5,000	5,000	-	-	-	1	Month	
		Water management / hydrology specialist (National)	8,000	8,000	-	-	-	1	Month	
		Climate Change modelling and VA specialist (National)	8,000	8,000	-	-	-	1	Month	
		INRM (modelling + remote sensing expert / firm (International)	24,000	24,000	-	-	-	1	Month	
		Climate Change specialist (International)	20,000	20,000	-	-	-	1	Month	
		Safeguarding system specialist / firm Syria	20,000	20,000	-	-	-	1	Lump sum	
		Inception workshop	5,000	5,000	-	-	-	1	Lump sum	
		ESCCU equipment and materials	30,000	30,000	-	-	-	1	Lump sum	
		Awareness raising materials	10,000	10,000	-	-	-	1	Lump sum	
		Travel international (missions)	10,164	10,164	-	-	-	1	Lump sum	
<b>Sub-total</b>			<b>176,064</b>	<b>176,064</b>	-	-	-			
Output 1.2	1.2.1 1.2.2 1.2.3	Project oversight (international)	5,500	5,500	-	-	-	1	Month	
		Project coordinator (international)	10,000	10,000	-	-	-	1	Month	
		Component 1 Coordinator / manager (National)	11,000	11,000	-	-	-	1	Month	
		Governance / planning specialist (National)	9,400	9,400	-	-	-	1	Month	
		SDG specialist (National)	5,000	5,000	-	-	-	1	Month	
		Water management / hydrology specialist (National)	8,000	8,000	-	-	-	1	Month	
		Climate Change modelling and VA specialist (National)	8,000	8,000	-	-	-	1	Month	
		INRM (modelling + remote sensing expert / firm (International)	24,000	24,000	-	-	-	1	Month	
		Climate Change specialist (International)	20,000	20,000	-	-	-	1	Month	
		Workshops	5,000	5,000	-	-	-	1	Lump sum	
		Trainings	10,000	10,000	-	-	-	1	Lump sum	
		Travel international (missions)	10,164	10,164	-	-	-	1	Lump sum	
		<b>Sub-total</b>			<b>126,064</b>	<b>126,064</b>	-	-	-	
		Output 1.3	1.3.1 1.3.2 1.3.3	Project oversight (international)	11,000	11,000	-	-	-	1
Project coordinator (international)	30,000			30,000	-	-	-	1	Month	
Component 1 Coordinator / manager (National)	44,000			44,000	-	-	-	1	Month	
Governance / planning specialist (National)	37,600			37,600	-	-	-	1	Month	
SDG specialist (National)	20,000			20,000	-	-	-	1	Month	
Water management / hydrology specialist (National)	32,000			32,000	-	-	-	1	Month	
Climate Change modelling and VA specialist (National)	32,000			32,000	-	-	-	1	Month	
Spatial planner (National)	26,400			26,400	-	-	-	1	Month	
Database - GIS - remote sensing specialist (National)	20,000			20,000	-	-	-	1	Month	
Engineering specialist (National)	20,800			20,800	-	-	-	1	Month	
Local Security Associate	22,400			22,400	-	-	-	1	Month	
INRM (modelling + remote sensing expert / firm (International)	96,000			96,000	-	-	-	1	Month	
Climate Change specialist (International)	80,000			80,000	-	-	-	1	Month	
Measurement / assessment equipment (esp hydrology)	50,000			50,000	-	-	-	1	Month	
Database	30,000			30,000	-	-	-	1	Month	
Geo information apps for field collection data	20,000			20,000	-	-	-	1	Month	
Workshops	15,000			15,000	-	-	-	1	Lump sum	
Travel international (missions)	10,164			10,164	-	-	-	1	Lump sum	
Travel local (field visits)	20,000			20,000	-	-	-	1	Month	
<b>Sub-total</b>			<b>617,364</b>	<b>617,364</b>	-	-	-			
Output 1.4	1.4.1	Project oversight (international)	5,500	-	5,500	-	-	1	Month	
		Project coordinator (international)	10,000	-	10,000	-	-	1	Month	
		Component 1 Coordinator / manager (National)	11,000	-	11,000	-	-	1	Month	
		Governance / planning specialist (National)	9,400	-	9,400	-	-	1	Month	
		Water management / hydrology specialist (National)	8,000	-	8,000	-	-	1	Month	
		Climate Change modelling and VA specialist (National)	8,000	-	8,000	-	-	1	Month	
		Climate Change specialist (International)	20,000	-	20,000	-	-	1	Month	
		Spatial planner (National)	6,600	-	6,600	-	-	1	Month	
		Workshops	2,500	-	2,500	-	-	1	Lump sum	
		<b>Sub-total</b>			<b>81,000</b>	<b>81,000</b>	-	-	-	
Output 1.5	1.5.1 1.5.2 1.5.3 1.5.4 1.5.5 1.5.6 1.5.7	Project oversight (international)	5,500	-	5,500	-	-	1	Month	
		Project coordinator (international)	10,000	-	10,000	-	-	1	Month	
		Component 1 Coordinator / manager (National)	22,000	-	22,000	-	-	1	Month	
		Governance / planning specialist (National)	18,800	-	18,800	-	-	1	Month	
		Water management / hydrology specialist	16,000	-	16,000	-	-	1	Month	
		Spatial planner (National)	13,200	-	13,200	-	-	1	Month	
		Climate Change modelling and VA specialist (National)	16,000	-	16,000	-	-	1	Month	
		Database - GIS - remote sensing specialist	10,000	-	10,000	-	-	1	Month	
		Engineering specialist (National) (Raed)	10,400	-	10,400	-	-	1	Month	
		INRM (modelling + remote sensing expert / firm (International)	48,000	-	48,000	-	-	1	Month	
		Climate Change specialist (International)	40,000	-	40,000	-	-	1	Month	
Workshops	7,500	-	7,500	-	-	1	Month			
Travel international (missions)	10,164	-	10,164	-	-	1	Month			
<b>Sub-total</b>			<b>227,564</b>	<b>227,564</b>	-	-	-			

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Activities		Notes / Staff
<b>Project components</b>		
Output 1.1	1.1.1 1.1.2	Project oversight (international)
		Project coordinator (international)
		Component 1 Coordinator / manager (National)
		Governance / planning specialist (National)
		SDG specialist (National)
		Water management / hydrology specialist (National)
		Climate Change modelling and VA specialist (National)
		INRM (modelling + remote sensing expert / firm (International)
		Climate Change specialist (International)
		Safeguarding system specialist / firm Syria
		Inception workshop
		ESCCU equipment and materials
		Awareness raising materials
		Travel international (missions)
<b>Sub-total</b>		
Output 1.2	1.2.1 1.2.2 1.2.3	Project oversight (international)
		Project coordinator (international)
		Component 1 Coordinator / manager (National)
		Governance / planning specialist (National)
		SDG specialist (National)
		Water management / hydrology specialist (National)
		Climate Change modelling and VA specialist (National)
		INRM (modelling + remote sensing expert / firm (International)
		Climate Change specialist (International)
		Workshops
Trainings		
Travel international (missions)		
<b>Sub-total</b>		
Output 1.3	1.3.1 1.3.2 1.3.3	Project oversight (international)
		Project coordinator (international)
		Component 1 Coordinator / manager (National)
		Governance / planning specialist (National)
		SDG specialist (National)
		Water management / hydrology specialist (National)
		Climate Change modelling and VA specialist (National)
		Spatial planner (National)
		Database - GIS - remote sensing specialist (National)
		Engineering specialist (National)
Local Security Associate		
INRM (modelling + remote sensing expert / firm (International)		
Climate Change specialist (International)		
Measurement / assessment equipment (esp hydrology)		
Database		
Geo information apps for field collection data		
Workshops		
Travel international (missions)		
Travel local (field visits)		
<b>Sub-total</b>		

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Activities	Notes / Staff	TOTAL	Year				No.	Unit	
			1	2	3	4			
<b>Project components</b>									
Output 1.6	1.6.1	Project coordinator (international)	10,000	-	10,000	-	-	1	Month
	1.6.2	Component 1 Coordinator / manager (National)	33,000	-	11,000	11,000	11,000	1	Month
	1.6.3	Governance / planning specialist (National)	9,400	-	9,400	-	-	1	Month
	1.6.4	M & E specialist	45,000	-	18,000	18,000	9,000	1	Month
	1.6.5	INRM (modelling + remote sensing expert / firm (International)	24,000	-	24,000	-	-	1	Month
	1.6.6	Climate Change specialist (International)	120,000	-	20,000	60,000	40,000	1	Month
		Workshops	7,500	-	2,500	2,500	2,500	1	Month
		Communication / visualisation, incl project baseline and result videos	37,880	18,940	-	-	18,940	1	Lump sum
		International travel MoLAE to CC events (as per of knowledge sharing)	18,750	-	-	6,253	12,506	1	Lump sum
		<b>Sub-total</b>	<b>311,039</b>	<b>18,940</b>	<b>100,400</b>	<b>97,753</b>	<b>93,546</b>		
Output 1.7	1.7.1	Project oversight (international)	5,500	-	5,500	-	-	1	Month
	1.7.2	Component 1 Coordinator / manager (National)	10,000	-	10,000	-	-	1	Month
		Component 1 Coordinator / manager (National)	38,500	-	22,000	11,000	5,500	1	Month
		Governance / planning specialist (National)	23,500	-	9,400	9,400	4,700	1	Month
		INRM (modelling + remote sensing expert / firm (International)	24,000	-	24,000	-	-	1	Month
		Climate Change specialist (International)	100,000	-	20,000	40,000	40,000	1	Month
		Workshops	7,500	-	2,500	2,500	2,500	1	Month
	<b>Sub-total</b>	<b>209,000</b>		<b>93,400</b>	<b>62,900</b>	<b>52,700</b>			
<b>TOTAL Component 1</b>		<b>1,748,955</b>	<b>938,432</b>	<b>502,364</b>	<b>160,653</b>	<b>146,646</b>			

Table 32. Budget notes component 2

Activities	Notes / Staff	TOTAL	Year				No.	Unit	
			1	2	3	4			
<b>Project components</b>									
Output 2.1	2.1.1	Component 2 Coordinator (National)	19,200	19,200	-	-	-	1	Monthly salary
	2.1.2	Project Technical Officer (National)	15,000	15,000	-	-	-	1	Monthly salary
	2.1.3	Engineers / Technicians (National)	38,400	38,400	-	-	-	4	Monthly salary
		Monitoring & Evaluation Officer (National)	9,600	9,600	-	-	-	1	Monthly salary
		Field Works	32,100	32,100	-	-	-	1	Lump Sum
	<b>Sub-total</b>	<b>114,300</b>	<b>114,300</b>						
Output 2.2	2.2.1	Component 2 Coordinator (National)	4,800	4,800	-	-	-	1	Monthly salary
	2.2.2	Project Technical Officer (National)	3,750	3,750	-	-	-	1	Monthly salary
		Engineers / Technicians (National)	9,600	9,600	-	-	-	2	Monthly salary
		Monitoring & Evaluation (National)	2,400	2,400	-	-	-	1	Monthly salary
		Field Visits	3,200	3,200	-	-	-	1	Lump Sum
		Rehabilitate sewage networks in Zebdin	192,500	192,500	-	-	-	1	Lump Sum
	Rehabilitate sewage networks in Deir Al Asafir	80,000	80,000	-	-	-	1	Lump Sum	
	<b>Sub-total</b>	<b>296,250</b>	<b>296,250</b>						
Output 2.3	2.3.1	Component 2 Coordinator (National)	67,200	-	38,400	28,800	-	1	Monthly salary
	2.3.2	Project Technical Officer (National)	52,500	-	30,000	22,500	-	1	Monthly salary
	2.3.3	Engineers / Technicians (National)	38,400	4,800	19,200	14,400	-	1	Monthly salary
	2.3.4	Monitoring & Evaluation Officer (National)	33,600	-	19,200	14,400	-	1	Monthly salary
	2.3.5	Field Visits	6,400	6,400	-	-	-	1	Lump Sum
		Operational and maintenance plan & Guideline / exit strategy	20,000	-	20,000	-	-	1	Lump Sum
		SBR Containers for 55000 persons	3,236,750	3,236,750	-	-	-	1	Lump Sum
		Civil, Mechanical, Electrical and site preparatory work (incl. SBR containers)	363,000	363,000	-	-	-	1	Lump Sum
		Laboratory with equipment for testing treated discharge	31,000	31,000	-	-	-	1	Lump Sum
		Filter Press ( Sludge and odor treatment )	170,463	170,463	-	-	-	1	Lump Sum
	Electric Generator 200 KVA with fuel tank and accessories	30,000	30,000	-	-	-	1	Lump Sum	
	<b>Sub-total</b>	<b>4,049,313</b>	<b>3,842,413</b>	<b>126,800</b>	<b>80,100</b>				
Output 2.4	2.4.1	Component 2 Coordinator (National)	4,800	4,800	-	-	-	1	Monthly salary
	2.4.2	Project Technical Officer (National)	3,750	3,750	-	-	-	1	Monthly salary
		Engineers / Technicians (National)	4,800	4,800	-	-	-	1	Monthly salary
		Monitoring & Evaluation (National)	2,400	2,400	-	-	-	1	Monthly salary
		Field Visits	3,200	3,200	-	-	-	1	Lump Sum
		Rehabilitation of Al Zebdin canal	31,501	31,501	-	-	-	1	Lump Sum
		Rehabilitation of Al Field canal	19,688	19,688	-	-	-	1	Lump Sum
		Rehabilitation of Marj al Sultan canal	17,226	17,226	-	-	-	1	Lump Sum
	<b>Sub-total</b>	<b>107,053</b>	<b>107,053</b>						
<b>TOTAL Component 2</b>		<b>4,566,916</b>	<b>4,360,016</b>	<b>126,800</b>	<b>80,100</b>				

Output 1.5	1.5.1	Project oversight (international)							
	1.5.2	Project coordinator (international)							
	1.5.3	Component 1 Coordinator / manager (National)							
	1.5.4	Governance / planning specialist (National)							
	1.5.5	Water management / hydrology specialist							
	1.5.6	Specialist planner (National)							
	1.5.7	Climate Change modelling and VA specialist (National)							
		Database - GIS - remote sensing specialist							
		INRM (modelling + remote sensing expert / firm (International)							
		Climate Change specialist (International)							
	Workshops								
	Travel international (missions)								
	<b>Sub-total</b>								
Output 1.6	1.6.1	Project oversight (international)							
	1.6.2	Project coordinator (international)							
	1.6.3	Component 1 Coordinator / manager (National)							
	1.6.4	Governance / planning specialist (National)							
	1.6.5	M & E specialist							
	1.6.6	INRM (modelling + remote sensing expert / firm (International)							
	Climate Change specialist (International)								
	Workshops								
	Communication / visualisation, incl project baseline and international travel MoLAE to CC events (as per of knowledge sharing)								
	<b>Sub-total</b>								
Output 1.7	1.7.1	Project oversight (international)							
	1.7.2	Component 1 Coordinator / manager (National)							
		Governance / planning specialist (National)							
		INRM (modelling + remote sensing expert / firm (International)							
		Climate Change specialist (International)							
	Workshops								
	<b>Sub-total</b>								
<b>TOTAL Component 1</b>									

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Field Code Changed

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Activities	Notes / Staff
Project components	

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Field Code Changed

Output 2.1	2.1.1	Component 2 Coordinator (National)							
	2.1.2	Project Technical Officer (National)							
	2.1.3	Engineers / Technicians (National)							
		Monitoring & Evaluation Officer (National)							
		Field Works							
	<b>Sub-total</b>								
Output 2.2	2.2.1	Component 2 Coordinator (National)							
	2.2.2	Project Technical Officer (National)							
		Engineers / Technicians (National)							
		Monitoring & Evaluation (National)							
		Field Visits							
		Rehabilitate sewage networks in Zebdin							
		Rehabilitate sewage networks in Deir Al Asafir							
	<b>Sub-total</b>								
Output 2.3	2.3.1	Component 2 Coordinator (National)							
	2.3.2	Project Technical Officer (National)							
	2.3.3	Engineers / Technicians (National)							
	2.3.4	Monitoring & Evaluation Officer (National)							
	2.3.5	Field Visits							
		Operational and maintenance plan & Guideline / exit strategy							
	SBR Containers for 55000 persons								
	Civil, Mechanical, Electrical and site preparatory work (incl. SBR containers)								
	Laboratory with equipment for testing treated discharge								
	Filter Press ( Sludge and odor treatment )								
	Electric Generator 200 KVA with fuel tank and accessories								
	<b>Sub-total</b>								
Output 2.4	2.4.1	Component 2 Coordinator (National)							
	2.4.2	Project Technical Officer (National)							
		Engineers / Technicians (National)							
		Monitoring & Evaluation (National)							
		Field Visits							
	Rehabilitation of Al Zebdin canal								
	Rehabilitation of Al Field canal								
	Rehabilitation of Al Haroush canal								
	Rehabilitation of Marj al Sultan canal								
	<b>Sub-total</b>								
<b>Deleted: TOTAL Component 2</b>									

Table 33. Budget notes component 3

Activities	Notes / Staff	TOTAL	Year	Year	Year	Year	No.	Unit			
			1	2	3	4					
<b>Project components</b>											
Output 3.1	3.1.1	AF Programme Coordinator	23,500	23,500	-	-	-	1	Monthly salary		
		Resident engineers for carrying out assessment, design and	14,400	14,400	-	-	-	3	Monthly salary		
		Admin (HR, Finance, IT & Security) Support	10,500	10,500	-	-	-	1	Monthly salary		
		Project Manager	11,600	11,600	-	-	-	1	Monthly salary		
		Operations Officer	5,338	5,338	-	-	-	1	Monthly salary		
		Crop Production Officer	5,000	5,000	-	-	-	1	Monthly salary		
		Livestock Officer	5,000	5,000	-	-	-	1	Monthly salary		
		Crop Production and livestock Officers by IC&I	6,400	6,400	-	-	-	2	Monthly salary		
		Farmer Field School Officer/Training Officer	-	-	-	-	-	1	Monthly salary		
		Natural Resources & Climate Change Expert	13,200	3,300	4,400	4,400	1,100	1	Monthly salary		
		EIA Specialists	4,800	4,800	-	-	-	1	Monthly salary		
		Water needs assessment studies	10,000	10,000	-	-	-	1	Provision		
		Irrigation Engineer Officer	5,000	5,000	-	-	-	1	Monthly salary		
		Data collection for Baseline/Endline surveys - enumerators (IC&I)	8,000	4,000	-	-	4,000	1	Provision		
		Community engagement & Data collection/analysis for the required assessments and studies	3,500	3,500	-	-	-	1	Field work		
		Technical Support Services	2,014	2,014	-	-	-	1	Secondment rate		
		FAO Resilience officer in Damascus	2,300	2,300	-	-	-	1	Monthly salary		
		Workshop to discuss the studies findings/designs	3,500	3,500	-	-	-	1	workshop		
		Capitalization workshop	10,000	-	-	-	10,000	1	workshop		
		Office rent and upkeeping	6,746	6,746	-	-	-	1	Monthly allocation		
		Field office Vehicle operating and maintenance etc	1,200	1,200	-	-	-	1	Per vehicle		
		Reporting cost	5,035	1,007	1,007	1,007	2,014	1	Secondment rate		
		M & E Cost	4,500	-	-	-	4,500	1	Lump sum		
		Contribution to project running cost (Office Space and Service	5,600	5,600	-	-	-	1	Provision		
		Staff accommodation cost	3,000	3,000	-	-	-	1	Monthly allocation		
		Printing of studies and dissemination	4,000	4,000	-	-	-	1	Provision		
		<b>Sub-total</b>		<b>174,133</b>	<b>141,795</b>	<b>5,407</b>	<b>5,407</b>	<b>21,614</b>			
		Output 3.2	3.2.1 3.2.2	AF Programme Coordinator	3,917	-	1,959	-	1,959	1	Monthly salary
				Project Manager	20,300	2,900	8,700	8,700	-	1	Monthly salary
				Admin (HR, Finance, IT & Security) Support	17,500	1,750	5,250	5,250	5,250	1	Monthly salary
				Operations Officer	10,675	-	3,559	3,558	3,558	1	Monthly salary
				Irrigation Engineer Officer	15,000	5,000	5,000	5,000	-	1	Monthly salary
Natural Resources & Climate Change Expert	6,600			1,650	2,200	2,200	550	1	Monthly salary		
Procurement Associate	4,000			-	4,000	-	-	1	Monthly salary		
Modern irrigation systems for treated water	228,000			-	228,000	-	-	-	1	Beneficiary	
Logistic Associate	3,000			-	1,500	1,500	-	1	Monthly salary		
LoA for promotion of modern irrigation techniques and laser levelling	20,000			-	20,000	-	-	1	Provision		
Ground water wells rehabilitated with solar equipment	222,000			222,000	-	-	-	1	Provision		
Modern irrigation systems for ground water	47,500			-	47,500	-	-	1	Beneficiary		
Office rent and upkeeping	3,373			-	1,125	1,124	1,124	1	Monthly allocation		
Field office Vehicle operating and maintenance etc	4,200			-	600	600	-	1	Per vehicle		
M & E Cost	2,250			-	-	-	2,250	1	Lump sum		
Contribution to project running cost (Office Space and Service	2,800			-	-	-	-	1	Provision		
Laser leveling device rehabilitation	50,000			50,000	934	933	933	1	Provision		
Laser leveling device operation	15,000			-	5,000	5,000	5,000	1	Provision		
Superintendence	6,000			-	3,000	3,000	-	1	Provision		
Technical Support Services	2,014			-	2,014	-	-	1	Secondment rate		
Staff accommodation cost	7,500			1,500	2,000	2,000	2,000	1	Monthly allocation		
AF Programme Coordinator	3,917			-	1,959	-	1,958	1	Monthly salary		
Project Manager	14,500			2,900	5,800	5,800	-	1	Monthly salary		
Admin (HR, Finance, IT & Security) Support	17,500			1,750	5,250	5,250	5,250	1	Monthly salary		
Procurement Associate	4,000			2,000	2,000	-	-	1	Monthly salary		
Logistic Associate	9,000			-	4,500	4,500	-	1	Monthly salary		
Operations Officer	10,675			-	3,559	3,558	3,558	1	Monthly salary		
Natural Resources & Climate Change Expert	6,600			1,650	2,200	2,200	550	1	Monthly salary		
Water Officer	18,000			4,500	9,000	4,500	-	1	Monthly salary		
Resident engineers (IC&I)	14,400			2,400	4,800	4,800	2,400	1	Monthly salary		
Procurement and Installation of climate station	25,000			25,000	-	-	-	1	Provision		
Procurement and installation of the stream-gauge station	18,000			18,000	-	-	-	1	Provision		
Procurement and Installation of datalogger groundwater monitoring	40,000			40,000	-	-	-	1	Provision		
Contract for operation and training of climate equipment	10,000			-	10,000	-	-	1	Provision		
Resident engineers for carrying out assessment, design and	5,000			-	3,000	2,000	-	1	Provision		
Superintendence	4,500			-	4,500	-	-	1	Contract		
Office rent and upkeeping	3,373			-	1,125	1,124	1,124	1	Monthly allocation		
M & E Cost	2,250			-	-	-	2,250	1	Lump sum		
Technical Support Services	2,014			-	2,014	-	-	1	Secondment rate		
Field office Vehicle operating and maintenance etc	1,500			-	900	600	-	1	Per vehicle		
Contribution to project running cost (Office Space and Service	2,800			-	934	933	933	1	Provision		
Staff accommodation cost	7,500			1,500	2,000	2,000	2,000	1	Monthly allocation		
LoA for water resource management and establishing/training WUAs	15,000	-	15,000	-	-	1	Provision				
<b>Sub-total</b>		<b>924,158</b>	<b>384,500</b>	<b>420,862</b>	<b>76,130</b>	<b>42,646</b>					

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Project components

Activities	Notes / Staff	TOTAL	Year	Year	Year	Year	No.	Unit		
			1	2	3	4				
<b>Project components</b>										
Output 3.3	3.3.1 3.3.2	Logistic Associate	4,500	-	2,250	2,250	-	1	Monthly salary	
		Resident Eng for nursery	9,600	3,200	4,800	1,600	-	2	Monthly salary	
		FAO Resilience officer in Damascus	6,900	-	2,300	2,300	2,300	1	Monthly salary	
		Natural Resources & Climate Change Expert	6,600	1,650	2,200	2,200	550	1	Monthly salary	
		Operations Officer	21,348	5,337	5,337	5,337	5,337	1	Monthly salary	
		Admin (HR, Finance, IT & Security) Support	17,500	1,750	5,250	5,250	5,250	1	Monthly salary	
		Procurement Associate	4,000	-	2,000	2,000	-	1	Monthly salary	
		Printing of training materials and visibility	1,500	-	1,500	-	-	-	1	Provision
		LoA for operation, training and saplings distribution	16,000	-	-	8,000	8,000	1	Provision	
		LoA for FFS on GAP, crop rotation and intercropping as Climate Smart	55,000	-	55,000	-	-	-	1	Provision
		FFS expert and Agronomists (IC&I)	9,600	-	4,800	4,800	-	-	1	Monthly salary
		ToT for extensionists on innovative crop management techniques	8,000	-	8,000	-	-	-	1	Provision
		Procurement of seeds packages for intercropping	108,000	-	108,000	-	-	-	1	Beneficiary
		Procurement of seeds packages for crop rotation	108,000	-	108,000	-	-	-	1	Beneficiary
		Establishment of fruit tree nursery equipped with solar system	271,350	271,350	-	-	-	-	1	Provision
		M & E Cost	2,250	-	-	-	2,250	1	Lump sum	
		Field office Vehicle operating and maintenance etc	1,200	-	300	600	300	1	Per vehicle	
		Office rent and upkeeping	3,373	-	1,125	1,124	1,124	1	Monthly allocation	
		Contribution to project running cost (Office Space and Service	2,800	-	934	933	933	1	Provision	
		Superintendence	1,500	-	1,500	-	-	-	1	Contract
		Staff accommodation cost	7,500	1,500	2,000	2,000	2,000	1	Monthly allocation	
		AF Programme Coordinator	3,917	-	1,959	-	1,958	1	Monthly salary	
		Procurement Associate	4,000	-	2,000	2,000	-	-	1	Monthly salary
		Operations Officer	21,350	5,338	5,338	5,337	5,337	1	Monthly salary	
		Admin (HR, Finance, IT & Security) Support	17,500	1,750	5,250	5,250	5,250	1	Monthly salary	
		Logistic Associate	4,500	-	2,250	2,250	-	-	1	Monthly salary
		Project Manager	17,400	2,900	5,800	5,800	2,900	1	Monthly salary	
		Natural Resources & Climate Change Expert	6,600	1,650	2,200	2,200	550	1	Monthly salary	
		Procurement of abiotic and biotic tolerant origins fruit trees	5,000	-	5,000	-	-	-	1	Provision
		Superintendence	1,500	-	1,500	-	-	-	1	Contract
		Technical Support Services	2,014	-	2,014	-	-	-	1	Secondment rate
		Office rent and upkeeping	3,373	-	1,125	1,124	1,124	1	Monthly allocation	
		Contribution to project running cost (Office Space and Service	2,800	-	934	933	933	1	Provision	
Field office Vehicle operating and maintenance etc	900	-	-	600	300	1	Per vehicle			
M & E Cost	2,250	-	-	-	2,250	1	Lump sum			
Staff accommodation cost	7,500	1,500	2,000	2,000	2,000	1	Monthly allocation			
Capacity building for extension services (IT equipments, furnitures and	20,000	-	20,000	-	-	-	1	Provision		
<b>Sub-total</b>		<b>814,242</b>	<b>300,825</b>	<b>383,325</b>	<b>74,588</b>	<b>35,564</b>				
Output 3.4	3.4.1	AF Programme Coordinator	7,834	-	3,917	-	3,917	1	Monthly salary	
		Project Manager	23,200	5,800	5,800	5,800	5,800	1	Monthly salary	
		FAO Resilience officer in Damascus	6,900	-	2,300	2,300	2,300	1	Monthly salary	
		Natural Resources & Climate Change Expert	13,200	3,300	4,400	4,400	1,100	1	Monthly salary	
		Operations Officer	16,013	5,339	5,358	5,358	5,358	1	Monthly salary	
		Procurement Associate	4,000	-	4,000	-	-	-	1	Monthly salary
		Logistic Associate	1,500	-	750	750	-	-	1	Monthly salary
		ToT on management of farmer residuals for composting and silage for	8,000	-	8,000	-	-	-	1	Provision
		LoA for FFS, practical training for the farmers on management of farm	20,000	-	10,000	10,000	-	-	1	Provision
		FFS expert and Agronomists (IC&I)	6,400	-	3,200	3,200	-	-	1	Monthly salary
		Procurement and distribution of crushers	30,000	-	30,000	-	-	-	1	unit
		Procurement of tools for rural women empowerment	50,000	-	25,000	25,000	-	-	1	sets
		Technical Support Services	2,014	-	2,014	-	-	-	1	Secondment rate
		M & E Cost	4,500	-	-	-	4,500	1	Lump sum	
		Superintendence	4,500	-	1,500	3,000	-	-	1	Contract
		Office rent and upkeeping	6,744	-	2,248	2,248	2,248	1	Monthly allocation	
		Contribution to project running cost (Office Space and Service	5,601	-	1,867	1,867	1,867	1	Provision	
Field office Vehicle operating and maintenance etc	1,500	-	-	900	600	1	Per vehicle			
Staff accommodation cost	15,000	3,000	4,000	4,000	4,000	1	Monthly allocation			
Procurement and distribution of tools for the compost making to	40,000	-	20,000	20,000	-	-	1	sets		
<b>Sub-total</b>		<b>266,906</b>	<b>17,439</b>	<b>132,554</b>	<b>87,623</b>	<b>29,890</b>				
<b>TOTAL Component 3</b>		<b>2,179,439</b>	<b>844,469</b>	<b>942,168</b>	<b>243,148</b>	<b>149,654</b>				
<b>TOTAL Components</b>		<b>8,494,450</b>	<b>6,142,917</b>	<b>1,571,332</b>	<b>483,901</b>	<b>296,300</b>				

Output 3.1	3.1.1	AF Programme Coordinator							
		Resident engineers for carrying out assessment, design							
		Admin (HR, Finance, IT & Security) Support							
		Project Manager							
		Operations Officer							
		Crop Production Officer							
		Livestock Officer							
		Crop Production and livestock Officers by IC&I							
		Farmer Field School Officer/Training Officer							
		Natural Resources & Climate Change Expert							
		EIA Specialists							
		Water needs assessment studies							
		Irrigation Engineer Officer							
		Data collection for baseline/Endline surveys - enumerate							
		Community engagement & data collection/analysis for the							
		Technical Support Services							
		FAO Resilience officer in Damascus							
		Workshop to discuss the studies findings/designs							
		Capitalization workshop							
		Office rent and upkeeping							
Field office Vehicle operating and maintenance etc									
Reporting cost									
M & E Cost									
Contribution to project running cost (Office Space and Ser									
Staff accommodation cost									
Printing of studies and dissemination									
<b>Sub-total</b>									

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Output 3.2	3.2.1 3.2.2	AF Programme Coordinator							
		Project Manager							
		Admin (HR, Finance, IT & Security) Support							
		Operations Officer							
		Irrigation Engineer Officer							
		Natural Resources & Climate Change Expert							
		Procurement Associate							
		Modern irrigation systems for treated water							
		LoA for promotion of modern irrigation techniques and te							
		Ground water wells rehabilitated with solar equipment							
		Modern irrigation systems for ground water							
		Office rent and upkeeping							
		Field office Vehicle operating and maintenance etc							
		M & E Cost							
		Contribution to project running cost (Office Space and Ser							
		Laser leveling device rehabilitation							
		Laser leveling device operation							
		Superintendence							
		Technical Support Services							
		Staff accommodation cost							
AF Programme Coordinator									
Project Manager									
Admin (HR, Finance, IT & Security) Support									
Procurement Associate									
Logistic Associate									
Operations Officer									
Natural Resources & Climate Change Expert									
Water Officer									
Resident engineers (IC&I)									
Procurement and installation of climate station									
Procurement and installation of the stream-gauge station									
Procurement and installation of solarized groundwater m									
Contract for operation and training of climate equipment									
Resident engineers for carrying out assessment, design									
Superintendence									
Office rent and upkeeping									
M & E Cost									
Technical Support Services									
Field office Vehicle operating and maintenance etc									
Contribution to project running cost (Office Space and Ser									
Staff accommodation cost									
LoA for water resource management and establishing/tra									
<b>Sub-total</b>									

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Sub-total

Output 3.3	3.3.1 3.3.2	AF Programme Coordinator							
		Project Manager							
		Logistic Associate							
		Resident Eng for nursery							
		FAO Resilience officer in Damascus							
		Natural Resources & Climate Change Expert							
		Operations Officer							
		Admin (HR, Finance, IT & Security) Support							
		Procurement Associate							
		Logistic Associate							
		Project Manager							
		Natural Resources & Climate Change Expert							
		Procurement of abiotic and biotic tolerant origins fruit tree							
		Superintendence							
		Technical Support Services							
		Contribution to project running cost (Office Space and Ser							
		Field office Vehicle operating and maintenance etc							
		M & E Cost							
		Staff accommodation cost							
		Capacity building for extension services (IT equipments, t							
<b>Sub-total</b>									

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Sub-total

Output 3.4	3.4.1	AF Programme Coordinator							
		Project Manager							
		FAO Resilience officer in Damascus							
		Natural Resources & Climate Change Expert							
		Operations Officer							
		Procurement Associate							
		Logistic Associate							
		ToT on management of farmer residuals for composting							
		LoA for FFS, practical training for the farmers on management							
		FFS expert and Agronomists (IC&I)							
		Procurement and distribution of crushers							
		Procurement of tools for rural women empowerment							
		Technical Support Services							
M & E Cost									
Superintendence									
Office rent and upkeeping									
Contribution to project running cost (Office Space and Ser									
Field office Vehicle operating and maintenance etc									
M & E Cost									
Staff accommodation cost									
Procurement and distribution of tools for the compost mak									
<b>Sub-total</b>									
<b>TOTAL Component 3</b>									

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Sub-total

Table 34. Budget notes execution fees and MIE fees

Project execution costs										
Project execution	Staff Syria CO	Project oversight (international: 8 % of which 5.5 % under comp 1)	33,000	-	-	22,000	11,000	1	Month	
		Project coordinator/manager (international: 21.5 %, of which 12 % under comp 1)	80,000	-	-	50,000	30,000	1	Month	
		Project manager (National: 100%, of which 74% under comp 1)	60,500	-	-	44,000	16,500	1	Month	
		Admin / finance (national) (50 %)	84,000	24,000	24,000	24,000	12,000	1	Month	
		Safeguarding system, incl. gender (AF) compliance (national) (28 %)	34,100	9,300	9,300	9,300	6,200	1	Month	
	Operations	M & E and communication (national) (25 %)	47,250	13,500	13,500	13,500	6,750	1	Month	
		Travel	44,844	13,552	13,552	10,164	6,778	1	Mission	
		Office Rental Cost in Damascus	34,650	9,900	9,900	9,900	4,950	1	Month	
		Office Security Costs Share (LCSSB Budget)	47,250	13,500	13,500	13,500	6,750	1	Month	
		Common Services Cost Share (Damascus Office Hub, EDD, UN Clinic, Communication Cost (ICT licences, FTTB Internet, Mobile Voice Data)	52,500	15,000	15,000	15,000	7,500	1	Month	
		Armored Vehicle / Soft Skin Operations & Maintenance	21,000	6,000	6,000	6,000	3,000	1	Month	
		Office Operating Costs (Utilities, Diesel, Maintenance, Stationary, Petty)	21,000	6,000	6,000	6,000	3,000	1	Month	
		Hotel Accommodation Cost for International Staff AT Approved UN Pre	69,646	25,001	25,001	12,500	7,144	1	Month	
		Equipment (computers)	7,200	7,200	-	-	-	1	Per item	
		Audits	15,000	-	-	-	15,000	1	Per item	
	Terminal evaluation	47,379	-	-	-	47,379	1	Per item		
	TOTAL Execution cost		719,519	148,953	141,753	241,864	186,949			
	TOTAL Project costs		9,213,969	6,291,870	1,713,085	725,765	483,249			
	Project cycle management fee costs									
	Project cycle management	1.25%	LUNH ROAS Project oversight (P5) (4%)	30,240	20,850	5,822	2,382	1,566	1	Month
LUNH ROAS PMO (4%)			23,520	16,061	4,373	1,852	1,234	1	Month	
LUNH ROAS PMA (40%)			61,416	41,938	11,418	4,838	3,222	1	Month	
Total		115,176	78,849	21,413	9,072	6,042				
0.15%		LUNH ROAS M & E (esp ESP and GP), incl. Travel	13,820	8,438	2,569	1,088	725			
7.1%	UNHRC/FPSC - Overall project supervision, incl. compliance to UNH and AF policies (gender, human rights, climate change, etc.). Part of this fee will be passed-through to UNDP and FAO as this is the modality under UN to UN agreements.	654,191	446,723	121,628	51,529	34,311				
TOTAL management		8.50%	783,187	534,810	145,610	61,889	41,078			
TOTAL amount of financing requested			9,997,156	6,826,680	1,858,695	787,454	527,327			

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Activities	Notes / Staff
TOTAL Components	
Project execution costs	
Staff Syria CO	Project oversight (international: 8 % of which 5.5 % under comp 1)
	Project coordinator/manager (international: 21.5 %, of which 12 % under comp 1)
	Project manager (National: 100%, of which 74% under comp 1)
	Admin / finance (national) (50 %)
	Safeguarding system, incl. gender (AF) compliance (national) (28 %)
	M & E and communication (national) (25 %)
Travel	Travel
Operations	Office Rental Cost in Damascus
	Office Security Costs Share (LCSSB Budget)
	Common Services Cost Share (Damascus Office Hub, EDD, Communication Cost (ICT licences, FTTB Internet, Mobile Voice Data)
	Armored Vehicle / Soft Skin Operations & Maintenance
	Office Operating Costs (Utilities, Diesel, Maintenance, Stationary, Petty)
	Hotel Accommodation Cost for International Staff AT Approved UN Pre
	Equipment (computers)
Audits	Audits
Terminal evaluation	Terminal evaluation
TOTAL Execution costs 7.84%	
TOTAL Project costs	
Project cycle management fee costs	
1.25%	LUNH ROAS Project oversight (4%)
	LUNH ROAS PMO (4%)
	LUNH ROAS PMA (40%)
	Total
0.15%	LUNH ROAS M & E (esp ESP and GP), incl. Travel
7.1%	UNHRC/FPSC - Overall project supervision, incl. compliance to UNH and AF policies (gender, human rights, climate change, etc.). Part of this fee will be passed-through to UNDP and FAO as this is the modality under UN to UN agreements.
TOTAL management fee 8.50%	
TOTAL amount of financing requested	

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Figure 21: calculation of execution fee for component 1 and for total

Component	Amount	Executoiuns Fees %	Execution Fees Amount
Component 1	\$ 1,748,095	1.50%	\$ 26,221.43
Component 2	\$ 4,566,916	9.50%	\$ 433,857.01
Component 3	\$ 2,179,439	9.50%	\$ 207,046.73
A	\$ 8,494,450	B	\$ 667,125.16

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Applicable Execution % Over All Componentets	C = B / A	7.85%
Total Components and Execution Fees Amount	D = A + B	\$ 9,161,575.30
Excusion Fees Amount	E = D * C	\$ 719,518.90
Total Project Cost	F	\$ 9,213,969.04
Project Execution Fees %	G = E / F	7.81%
Management Fees %	H	8.50%
Project Management Fees	I = F * H	\$ 783,187.37
Amount of Financing Requested	J = F + I	\$ 9,997,156.41

The 1.5 % cap is applied to component 1. This reduces the total % of the executing fees over the three components to 7.85 %. As the % of the execution fee is calculated over the components + the execution fee together, the final total execution fee comes to 7.81 %.

Management fee breakdown is presented in table 34. The breakdown shows whom from the UN-habitat regional office (ROAS) will be involved and what budget is allocated to M & E and travel. From the

remaining 7.1 % part will be passed through to UNDP and FAO in complicate with UN to UN agreements modalities and part is allocated for supervision and quality assurance by UN-Habitat HQ.

Table 35, M & E budget

M&E								
Type of M & E Activity	Activity	Entity	Row	Total	1	2	3	4
Measurements of means of verification (baseline assessment and M & E plans) as part of inception	Inception Workshop	UN-H CO		5,000	5,000			
	Reports preparation and EE compliance to AF ESP and GP	UN-H ROAS		-	See Overall project monitoring and evaluation (from cycle management fee)			
Direct Project Monitoring and Quality Assurance including annual progress and financial reporting, project revisions, technical assistance and ESP and GP compliance (from execution fee M & E and safeguards)	M & E UN-H offices	UN-H CO		81,350	22,800	22,800	22,800	12,950
Overall project monitoring and evaluation (from cycle management fee)		UN-H ROAS		13,820	9,438	2,569	1,088	725
Audits	In line with AF requirements			-	-	-	-	15,000
Terminal evaluation		Independent		47,379				47,379
<b>Total</b>				<b>147,549</b>	<b>37,238</b>	<b>25,369</b>	<b>23,888</b>	<b>76,054</b>
From Project Execution fee				143,729	22,800	22,800	22,800	75,329
From Project Cycle Management fee				13,820	9,438	2,569	1,088	725

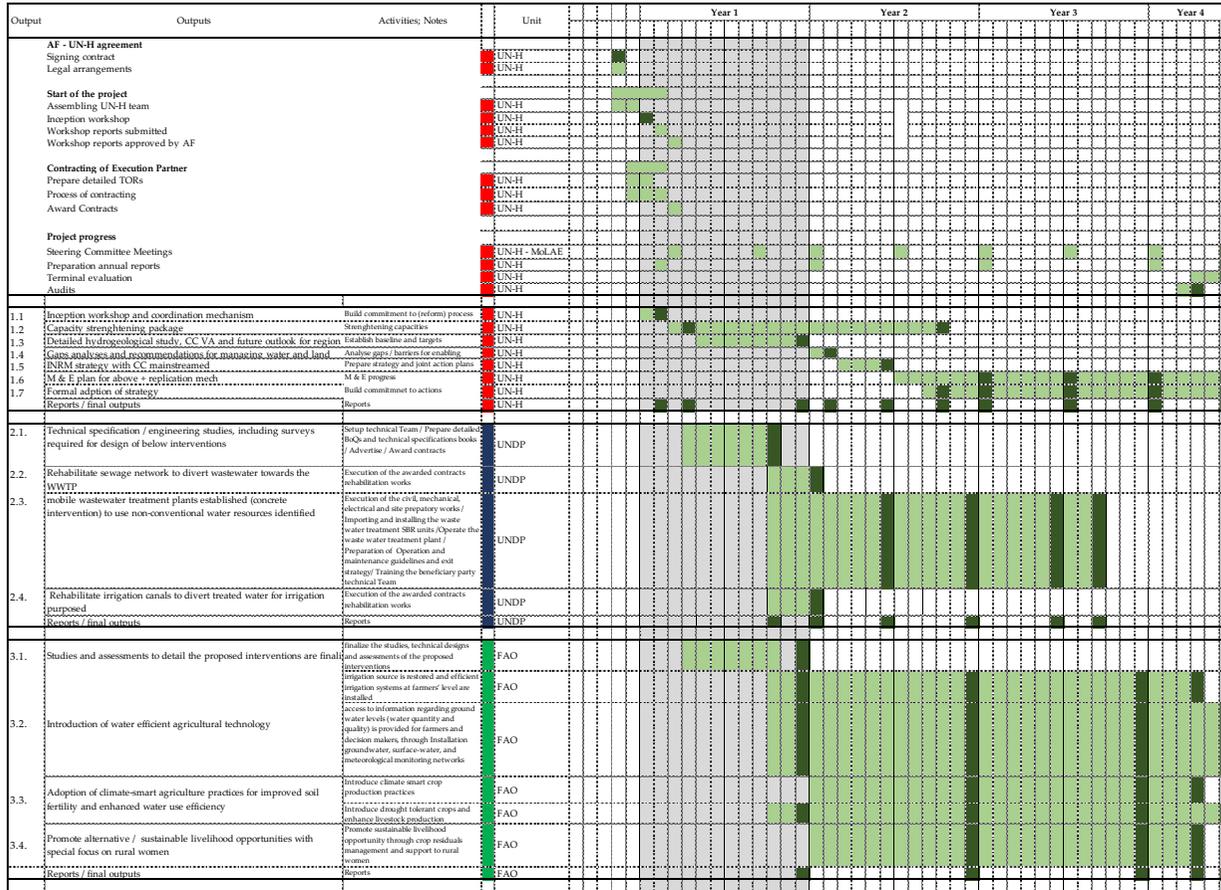
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Type of M & E Activity	Activity
Measurements of means of verification (baseline assessment and M & E plans) as part of inception	Inception Work Reports prepara and EE compli to AF ESP and
Direct Project Monitoring and Quality Assurance including annual progress and financial reporting, project revisions, technical assistance and ESP and GP compliance (from execution fee M & E and safeguards)	M & E UN-H of
Overall project monitoring and evaluation (from cycle management fee)	
Audits	In line with AF requirements
Terminal evaluation	
<b>Total</b>	
From Project Execution fee	
From Project Cycle Management fee	

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Figure 22 Milestones



UN-Habitat  
UNDP  
FAO

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## H. Disbursement schedule

Table 36, Disbursement schedule

	Year 1	Year 2	Year 3	Year 4
<b>Schedule</b>	1 <sup>st</sup> disbursement –	2 <sup>nd</sup> disbursement – One Year after project inception	3 <sup>rd</sup> disbursement - Two years after project inception	4 <sup>th</sup> disbursement – Three years after project inception
<b>Milestones</b>	Milestones <ul style="list-style-type: none"> <li>▪ Upon agreement signature between UN-H and AF</li> </ul>	Milestones <ul style="list-style-type: none"> <li>▪ Upon financial report indicating disbursement of at least 50% of funds of 1<sup>st</sup> year and or:</li> <li>▪ Upon First Annual Report</li> </ul>	Milestones <ul style="list-style-type: none"> <li>▪ Upon financial report indicating disbursement of at least 50% of funds of 2<sup>nd</sup> year and / or:</li> <li>▪ Upon Second Annual Report</li> </ul>	Milestones <ul style="list-style-type: none"> <li>▪ Upon financial report indicating disbursement of at least 50% of funds of 3<sup>rd</sup> year and / or:</li> <li>▪ Upon Third Annual Report</li> </ul>

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Schedule date	Upon Signing	One Year after project inception	Two years after project inception	Three years after project inception	Total
A. Project Funds (US\$)	6,142,915	1,571,323	483,906	296,306	8,494,450
B. Programme Execution (US\$)	148,413	141,238	240,986	188,881	719,519
C. Programme Cycle Mgt	534,657	145,570	61,673	41,287	783,187
<b>TOTAL (US\$)</b>	<b>6,825,985</b>	<b>1,858,131</b>	<b>786,566</b>	<b>526,474</b>	<b>9,997,156</b>

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## PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

### A. Record of endorsement on behalf of the government

Rawan Al Azem National Focal Point to Adaptation Fund  Hassan Jneidan Deputy minister of the MoLAE	Date: 14 January 2021
--	-----------------------

Syrian Arab Republic  
Ministry of Local Administration & Environment



الجمهورية العربية السورية  
وزارة الإدارة المحلية والبيئة

**Letter of Endorsement by Syrian Arab Republic**



[Date : 14 Jan 2021 ]

ADAPTATION FUND

To: Adaptation Fund Board  
c/ Adaptation Fund Board Secretariat  
Email: Secretariat@Adaptation-Fund.org  
Fax: ٢٠٢ ٥٢٢ ٣٢٤٠/٥

**Subject:** Endorsement for the project "Increasing the climate change resilience of communities in Eastern Ghouta in Rural Damascus, Syria, to water scarcity challenges through integrated natural resource management and immediate adaptation interventions"

In my capacity as designated authority for the Adaptation Fund in the Syria, I confirm that the above project returns and oversight will be by the Ministry of Local Administration and Environment, and it is single country project proposal is in accordance with the government's priorities, especially those in the INDC, in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Eastern Ghouta in Rural Damascus, Syria.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by UN-Habitat. Component two will be executed by UNDP, and component three will be executed by FAO, and component one will be executed by UN-Habitat.

Sincerely,

Ms. Rawan Al Azem  
National Focal Point to Adaptation Fund



Mr. Hassan Jneidan  
Deputy Minister of  
Ministry of Local Administration and Environment



Syria - Damascus, Yousef Azmeh Seq      Tel: +963 11 2215527/3      web: [www.mola.gov.sy](http://www.mola.gov.sy)  
Fax: +963 11 221-911      Email: [info@mola.gov.sy](mailto:info@mola.gov.sy)



### Letter of Endorsement by UNDP and FAO

13/01/2021

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

**Subject: UNDP and FAO endorsement of UN-Habitat being the Multilateral Implementing Entity, as well as executing entity of component 1 for the proposed AF project 'Increasing the climate change resilience of communities in Eastern Ghouta in Rural Damascus, Syria, to water scarcity challenges through integrated natural resource management and immediate adaptation interventions**

In my capacity as head of agency in Syria, I endorse UN-Habitat as Multilateral Implementing Entity, as well as executing entity for component 1 for the proposed AF project 'Increasing the climate change resilience of communities in Eastern Ghouta in Rural Damascus, Syria, to water scarcity challenges through integrated natural resource management and immediate adaptation interventions

Sincerely,

**Ramla Khalidi**  
UNDP Syria Representative

**Mike Robson**  
FAO Syria Representative

*For Thierry Ntambwiriza*

## B. Implementing Entity certification

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans, especially the Syrian NDC, and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.

Raf Tuts 

Implementing Entity Coordinator

Date: 14 January 2021

Tel. and email: [Raf.tuts@un.org](mailto:Raf.tuts@un.org)

Project Contact Person: Ryan Knox; Erfan Ali

Tel. And Email: [ryan.knox@un.org](mailto:ryan.knox@un.org) +963940077763 [Erfan.ali@un.org](mailto:Erfan.ali@un.org)

## Annex 1: Project theory of change

Table 37. Project theory of change

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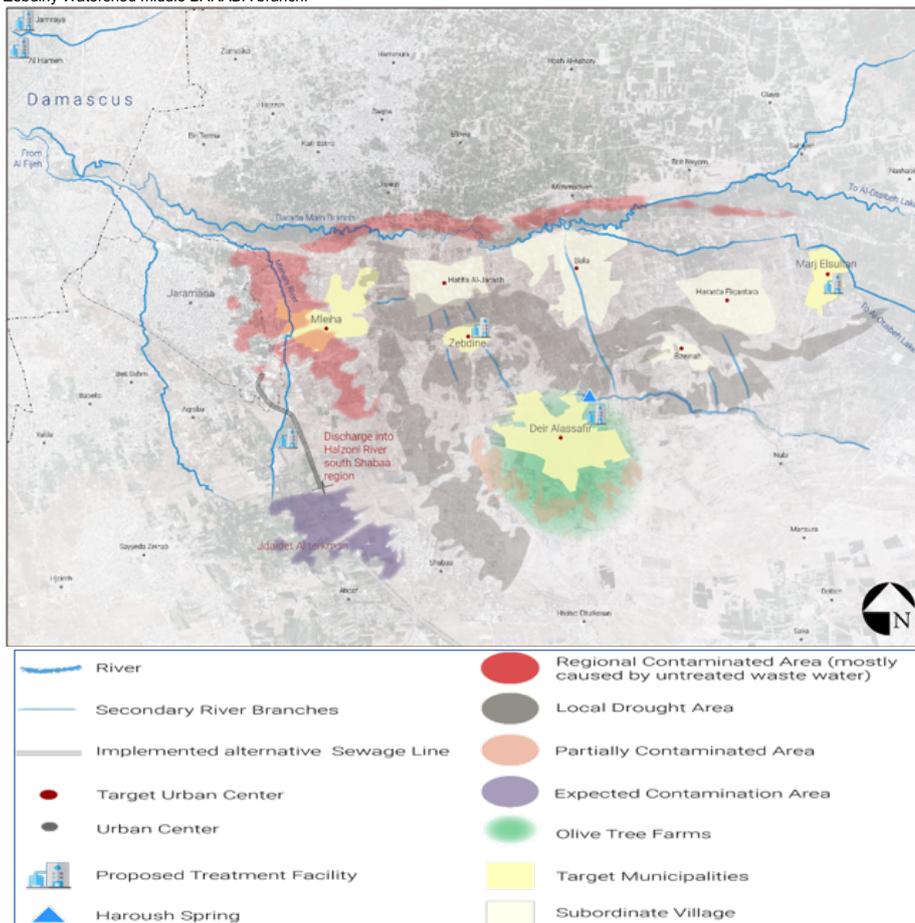
What is the problem to solve?	What is the key audience?	Entry point to reach audience?	What steps are needed to bring about change?	What is the measurable effect (output)?	What are the benefits (outcomes)?	What is the long-term impact?
Lack of sustainable solutions for water-use in consideration of declining water resources in urban and rural areas due to a combination of climate change (i.e. less rain, more droughts, high temperatures) and higher pressure on basic services due to the crisis induced impact (i.e. rapid, unplanned urbanization, damaged infrastructure assets, pollution, etc.)	<ul style="list-style-type: none"> <li>- Policy makers (ministries)                             <ol style="list-style-type: none"> <li>Environment / climate change</li> <li>Water management</li> <li>Agriculture</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>- Water strategy / plans</li> <li>- Spatial strategy / plans</li> <li>- Regulations</li> <li>- Capacity building (assessments)</li> </ul>	<ul style="list-style-type: none"> <li>- Better matching (future) demand and supply through integrated water and spatial planning and management, considering climate change projections and impacts, especially on vulnerable groups.</li> <li>- This requires strategies, adjustment of regulations and studies, incl. at watershed level, climate change risks / vulnerabilities, etc.</li> </ul>	<ul style="list-style-type: none"> <li>- Integrated National Resource management strategy for Easter Ghouta, including studies, assessments, adjustment of regulations (if needed) and consideration of climate change and fragility issues</li> <li>- Capacity strengthening package</li> <li>- Replication mechanism</li> <li>- Facilitation of a participatory and integrated assessments, panning and decision-making process</li> </ul>	<p>Component 1</p> <p>Capacities and commitment of national and sub-national government institutions to assess, plan and manage climate change-induced and post-crises water and land challenges have been strengthened and knowledge and lessons learned for replication collected and shared and integrated into strategies and regulations</p>	<ul style="list-style-type: none"> <li>- Reduced pressure on water resources</li> <li>- Reduce pressure on urban services system / drinking water</li> <li>- Enhanced social cohesion</li> <li>- Opportunities for returnees improved (esp. income and stability in water resources)</li> <li>- Increased productivity and sustainability of livelihoods for most vulnerable</li> <li>- Reduce need to migrate to large urban areas</li> </ul>
	<ul style="list-style-type: none"> <li>- Governorate and urban managers (Municipalities)                             <ol style="list-style-type: none"> <li>Governors/ mayors</li> <li>Planners</li> <li>Water managers</li> <li>Agriculture / irrigation managers</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>- Governorate strategies / plans</li> <li>- Urban recovery plans</li> <li>- Planning and decision-making processes and capacity building</li> </ul>				
	<ul style="list-style-type: none"> <li>- Vulnerable groups (communities and associations)                             <ol style="list-style-type: none"> <li>Poor / informal</li> <li>IDPs</li> <li>Returnees</li> <li>Women &amp; youth + elderly, disabled, etc.</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>- Inclusion of communities and vulnerable groups in assessment, planning and decision-making processes and climate change resilient livelihood skills building and as beneficiaries of concrete interventions</li> </ul>				
<b>Key assumptions</b>	<b>Key assumptions</b>	<b>Key assumptions</b>	<b>Key assumptions</b>	<b>Key assumptions</b>	<b>Key assumptions</b>	<b>Stakeholders</b>
<ul style="list-style-type: none"> <li>- Water demand is also increasing due to population growth, urbanization and returnees; pollution is spreading</li> </ul>	<ul style="list-style-type: none"> <li>- Mayors for main decision making</li> <li>- Combined water and spatial planning is required</li> <li>- Most of water is used in agriculture</li> </ul>	<ul style="list-style-type: none"> <li>- Water management (supply, demand, techniques) is not holistic, integrated and up-to-date</li> <li>- Water and climate change are not integrated in spatial strategies and local plans</li> <li>- Majority of DPs, returnees, poor and women work in agriculture that depends on water</li> </ul>	<ul style="list-style-type: none"> <li>- Water interventions are scattered and mainly focus on groundwater use, which is often polluted</li> <li>- Integrated water resource and spatial management strategies are tools to guide development and enhance social cohesion</li> <li>- Studies and assessments will be required</li> </ul>	<ul style="list-style-type: none"> <li>- Concrete effects plans is difficult to measure</li> </ul>	<ul style="list-style-type: none"> <li>- Good practices and lessons on innovative techniques are scarce in the region</li> <li>- Treated waste water reuse can be cost effective and sustainable techniques, especially when groundwater is not an alternative due to depletion and polluted</li> </ul>	

## Annex 2: Details on Component 1

### Integrated natural Resource Management to cope with climate change and crisis-related water challenges

Figure 23. Eastern Ghouta Barada Branches. The Target area in yellow cover five Municipalities (Mleiha, Zebdine, Deir Alassafi, Marj Elsultan and their related villages and towns. The 4 settlements are located along the Mleihani watershed / east BARADA branch and Zebdiny Watershed middle BARADA branch.

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#### Rationale / justification for Integrated Natural (Water and Land) Management approach

"We must urgently scale up investments in healthy watersheds and water infrastructure, with dramatic improvements in the efficiency of water use, said UN Secretary-General Mr. Guterres during the last World Water Day, adding that the world must anticipate and respond to climate risks at every level of water management<sup>24</sup>. Moreover, wastewater should be recognised as a valuable resource.<sup>25</sup>

<sup>24</sup> <https://news.un.org/en/story/2020/03/1059952>

<sup>25</sup> <https://news.un.org/en/story/2017/03/553722-wastewater-should-be-recognized-valuable-resource-un-says-world-water-day>

The traditional institutional divide between water and land planning / management is under pressure due to governance issues that address the environmental and socioeconomic circumstances, like scarcity of water, expansion on farm land, extreme weather and urbanization. This leads to water management moving into the governance arena of spatial planning, and spatial planning needs to reconsider its notions of water issues. Along planning / management frontiers, groundwater resources management and land uses interact in the case of agriculture, clean water supply systems and socio-economic urban development.<sup>26</sup>

For example, clean water and sewage management need to be responsive to demographic changes, such as urban growth, and climate change, leading e.g. to reduced rainfall impacting drainage of agriculture land.<sup>27</sup> Another example is the need of more space for rivers or drainage channels to reduce flood risks, which calls for solutions for upstream–downstream problems and land policy schemes that provide retention areas. This can be considered as the spatial turn in flood-risk management. Thus, successful water management depends on the success of spatial development strategies.

#### **Objective component 1**

Strengthening the capacities of national and sub-national government institutions, communities and vulnerable groups to assess, plan and manage climate change-induced and post-crisis water and land challenges in an efficient, sustainable and climate resilient way, including sharing lessons and replication, also considering recovery needs, and enable stakeholders to:

- Better understand the complexity of the regional water system (supply options and demands, now and in the future, also considering climate risks)
- Better understand and compare solutions to match supply and demand
- Have transparent insight in the possible cost allocations
- Balance economic, social and ecological values
- Have insight in the impact of updated or new strategies and regulations on the water balance, quality.
- Integrate recovery needs

This would be done by developing an Integrated Climate-resilient Natural (i.e. water and land) Resources Management strategy (and enabling factors) also considering recovery needs. Such a strategy would promote a wide range of new approaches, including: i) long-term planning at the river basin / catchment scale, informed by integrated catchment management principles; ii) explicit consideration of the trends, risks and impacts of extreme climatic events and their interactions in catchments of various scales; iii) consideration of all landscapes (ie urban, agricultural, forest, as well as conservation areas) within Eastern Ghouta; iv) the use of innovative technologies; v) diversification of water sources, including the use of non-traditional sources.

Such as strategy, including assessments under component 1 is also needed to verify the suitability and effectiveness of proposed interventions under comp 2/3 (and if any adjustments are needed) through outcomes of assessments under comp 1. Therefore component 1 will start early year one and output 2 / 3 in year 2 of the project. Institutional enabling conditions need to be created for managing scarce resources in an efficient and coordinated, sustainable and climate resilient way. These include:

#### **1. Support Governance and participation**

- Put in place Multi-level (vertical-horizontal) governance to ensure participatory and coordinated planning and decision-making on:
  - Water resources
  - Land resources
  - Climate change risks
  - Crisis recovery
- Reform policies, regulations, plans and institutions for multi-level governance and mainstreaming of climate change and recovery needs

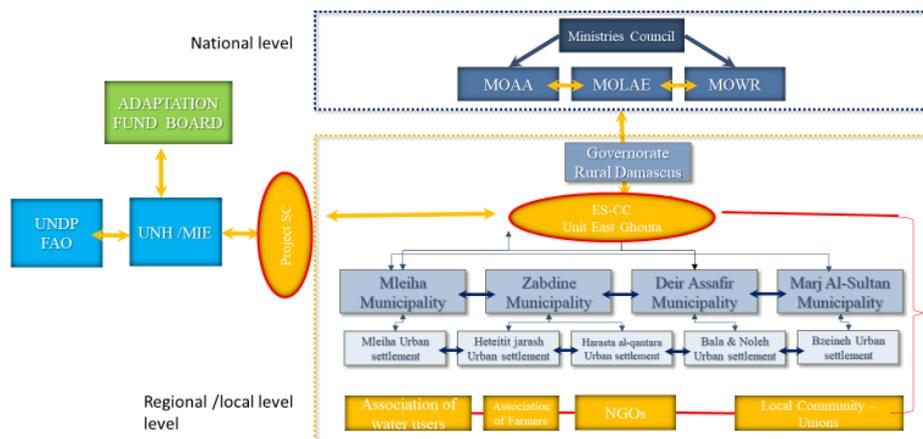
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<sup>26</sup> Tom Scholten, Thomas Hartmann & Tejo Spit (2019): The spatial component of integrative water resources management: differentiating integration of land and water governance, International Journal of Water Resources Development, DOI: 10.1080/07900627.2019.1566055

<sup>27</sup> Tom Scholten, Thomas Hartmann & Tejo Spit (2019): The spatial component of integrative water resources management: differentiating integration of land and water governance, International Journal of Water Resources Development, DOI: 10.1080/07900627.2019.1566055

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Figure 24, proposed governance system



## 2. Information and learning

- Ensure data and information (regional and local) is accessible through the CC unit. Implement 'easy-to-use' data collection and management solutions. Data / info required:
  - Larger system / area-based (watershed) to match supply and demand options and link to land uses (agriculture, etc.)
    - Available water resources (supply), including treated wastewater
    - Water demand (population growth, sectoral needs) and land uses
    - Crisis impacts and recovery needs, including water quality / pollution
  - For the horizontal planning frontier:
    - Short-term dynamics due to periodic drought, excessive rainwater, floods etc., with consequences on the surface. The fluent frontier copes with long-term dynamics where the equilibrium between land and water shifts (due to irreversible outcomes of climate change on the scale of humanity).<sup>28</sup>
  - For the vertical planning frontier:
    - Medium-term dynamics (a combination of periodic drought or excessive rainwater) affecting the interaction between surface and subsurface on a shorter term (fluctuating groundwater levels) and a longer term (depletion or contamination of groundwater resources).<sup>29</sup>
  - For above climate change risks need to be mapped
- Training and skill development for above

## 3. Promoting climate change resilience, sustainability and efficient use of resources water and land (also through diversity and connectivity).

- Using water and land management approaches / methods that will be robust for threats but flexible in response to emerging futures
  - Integrated Water-land management (replicable)
  - Area-based assessment and planning (linking stakeholder priorities, including of those most vulnerable), which
  - Climate change impacts / vulnerabilities assessment and planning
  - Crisis impacts and needs assessment and planning

28 Idem

29 I Smith, D.M., Matthews, J.H., Bharati, L., Borgomeo, E., McCartney, M., Mauroner, A., Nicol, A., Rodriguez, D., Sadoff, C., Suhardiman, D., Timboe, I., Amarnath, G., and Anisha, N. 2019. "Adaptation's thirst: Accelerating the convergence of water and climate action." *Background Paper prepared for the 2019 report of the Global Commission on Adaptation*, Rotterdam and Washington, DC. Available online at [www.gca.org](http://www.gca.org).

**Possible tools for water resources assessment and planning, also considering climate change and recovery needs**

Figure 25. Comparison of potential / example tools to use (INRM expert / firm)

Tool	Organization	Purpose	Approach / process	Case study	Geographical domain	Indicators (flow account)
<a href="#">Water Accounting Plus (WA+)</a>	IHS Delft / IWMI (FAO, ADB funded)	Insights into the state of the water resources	<ul style="list-style-type: none"> <li>Irrigation system: flow account - ground observations (data bases)</li> <li>River basin: government data &amp; remote sensing (sheets)</li> <li>Country: depleting accounting – global datasets &amp; modelling (maps and tables)</li> </ul>	Jordan	Irrigation; River basin; Country	Precipitation Discharge Groundwater levels Reservoir storage Surface and groundwater withdrawal Outflow Return flow Productivity/ economic productivity
Artificial intelligence model	<a href="#">Frontier Ventures - AquaVest</a>	Optimising water infrastructure for multiple users: to reduce fresh water extraction, increase water recycling and reuse, and find innovative ways of recovering water resources.	<ul style="list-style-type: none"> <li>Holistic approach to develop regional water master plans and investment strategies</li> <li>Maps the available water resources and expected future water demand of all water users (data collection)</li> <li>Explore different system solutions - including water technology options - to match future supply and demand at lowest costs.</li> <li>Define future scenarios up to 20 years ahead (changing water supply &amp; demand, new policies etc. )</li> <li>Agree on the investment options:                             <ul style="list-style-type: none"> <li>Water treatment technology</li> <li>Water storage solutions</li> <li>Water transport options</li> </ul> </li> </ul>	Netherlands	Water basin / regional	

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Figure 26. Steps, activities and deliverables

Steps	Detailed tasks / activities	Deliverables
<p>1. Build commitment to (reform) process 50. (2 months)</p>	<p>Awareness and multi-stakeholder dialogue and coordination, including:</p> <p>1.1. Kick-off / inception workshop, including agreed upon:</p> <ul style="list-style-type: none"> <li>▪ Objectives</li> <li>▪ Scale (basin and timeframe)</li> <li>▪ Key Performance Indicators (KPIs) (aligned with SDGs)</li> <li>▪ Stakeholder map and roles</li> </ul> <p>1.2. Establish a horizontal and vertical coordination mechanism on water, land, climate change and recovery supporting the operation of the Environment Safety and Climate Change technical Unit (ESCCU) in Eastern Ghouta (1)</p>	<ul style="list-style-type: none"> <li>- Inception workshop report</li> <li>- Awareness raising materials</li> <li>- ToR to establish and operate ESCCU at MoLAE and in Eastern Ghouts including coordination mechanism / committee</li> <li>- ESCCU dedicated office in Ghouta</li> </ul>
<p>2. Strengthening Capacities (2 months)</p>	<p>2.1. Assessment of capacity gaps and needs 2.2. Series of Workshops (multi-level) 2.3. Series of trainings (4 steps - inputs &amp; analysis &amp; outputs &amp; report / M &amp; E and coordination vertically) + GIS and updating of strategy</p>	<ul style="list-style-type: none"> <li>- Report of capacity gaps and needs</li> <li>- Workshop reports</li> <li>- Training reports and guidelines</li> </ul>
<p>3. Establish baseline and targets (data gathering and assessments)  + Assess future outlook for the region (8 months)</p>	<p>Develop data collection and processing method and model and provide systems and equipment to collect and process it, including identification of gaps and needs.</p> <p>3.1. Collect data, conduct field assessments and develop maps on <b>current</b>:</p> <ul style="list-style-type: none"> <li>- Hydrology / water balance - volumes and qualities (groundwater, surface water, drinking water, wastewater, etc.)</li> <li>- Land uses (agriculture; urban, natural, etc.)</li> <li>- Existing water infrastructure (water treatment; water distribution; water storage)</li> </ul> <p>3.2. Identify / map the expected <b>future changes</b> in water supply and demand of all water users considering:</p> <ul style="list-style-type: none"> <li>- Population growth / economic growth (increasing demand)</li> <li>- Climate change trends, projections, impacts and vulnerabilities</li> <li>- Develop scenario's based on above</li> </ul> <p>Through:</p> <ul style="list-style-type: none"> <li>- Area-based assessment and planning approach</li> <li>- Consultations with key actors, (through workshops)</li> </ul> <p>3.3. Establish model, database and maps for above</p>	<ul style="list-style-type: none"> <li>- Method and model</li> <li>- Geo information apps for field collected data</li> <li>- Geo data base</li> <li>- Hydrology study, incl.             <ul style="list-style-type: none"> <li>a. List and maps of available water and land resources (supply options) within the target watershed</li> </ul> </li> <li>- CC VA, incl.             <ul style="list-style-type: none"> <li>a. List and map of climate change risks / vulnerabilities (e.g. hotspot areas water scarcity, floods, etc.)</li> <li>b. List and map of response needs, including crisis response needs (i.e. damages and water quality / pollution)</li> </ul> </li> <li>- Area-based plan with above, incl             <ul style="list-style-type: none"> <li>a. List and map of water and land demand, now and in the future</li> </ul> </li> <li>- Workshop reports</li> </ul>

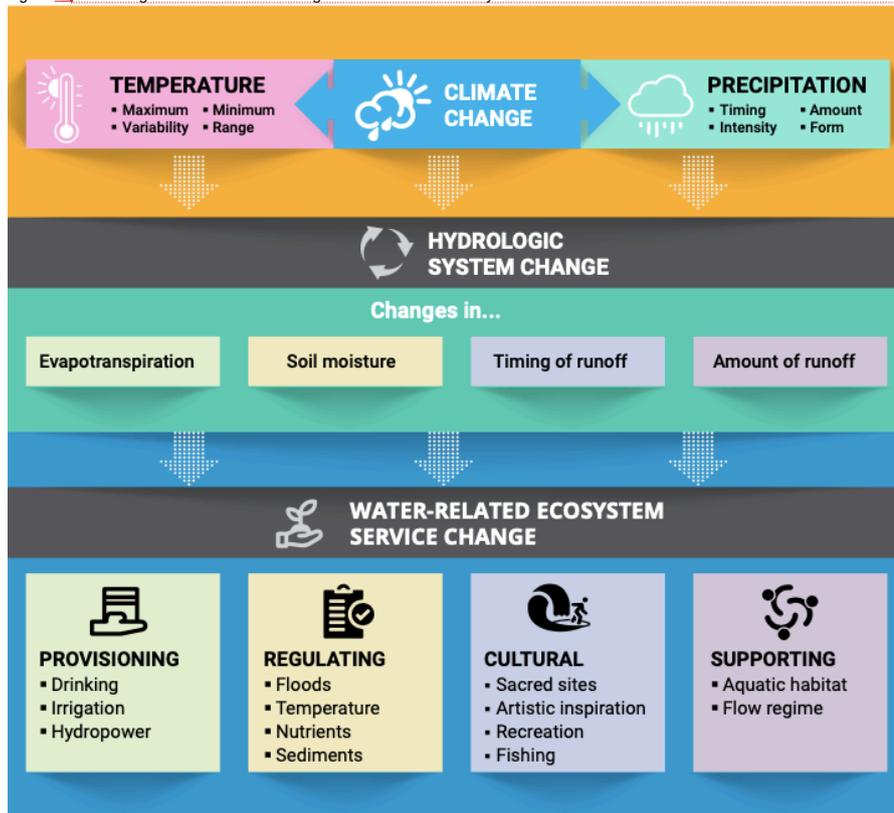
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Steps	Detailed tasks / activities	Deliverables
4. Analyse gaps / barriers (to establish enabling action framework) 51. (2 months)	4.1. Identify water and land resource management functions required Identify management needs and constraints / barriers - Area-based assessment and planning approach - Consultations with key actors, (through workshop)	- Stocktaking and gap analyses report of current policies, strategies / plans, regulations - Workshop reports
5. Prepare strategy and joint action plan(s) (with participatory process) 52. (4 months)	5.1. Explore different system solutions - including water technology options - to match future supply and demand at lowest costs for 3-5 year perspective and beyond 5.2. Agree on the investment options, e.g. o Water treatment locations and technology o Water storage solutions o Water transport options - Through scenarios workshop	- List and map of identified efficient water and land use options, including concrete measures - Strategy on above and below - Analyses (verification) report of proposed concrete adaptation measures under component 2 and 3 and recommendations for adjustments, if any
	5.3. Support establishing an enabling environment (multi-level governance, policies, plans, regulations, information management mechanism, other) 5.4. Develop a replicable methodology 5.5. Develop risks screening methodology	- Recommendations to reform / adjust or develop policies, strategies / plans, regulations, knowledge management mechanism - Action plan(s) - Replication mechanism of approach and techniques - Risks assessment method
	5.6. Define institutional roles & management instruments	- Roles and responsibilities map and report and ToR
	5.7. Run simulations	- Long term investment plan per scenario with scoring on KPI's
	6. Monitor and Evaluate progress 53. (2 months initially but continues through project duration)	6.1. Discuss every scenario in detail 6.2. Discuss sensitivity analyses 6.3. Knowledge gap analysis 6.4. Proposed next steps 6.5. Develop indicators to track progress toward IWLRM and water/land infrastructure development framework 6.6. Lessons learned and replication mechanism
7. Build commitment to actions (related to action plan above) 54. (2 months initially but continues through project duration)	7.1. Support technical and Institutional adoption	- Workshop / meeting - Formal adoption of strategy document
	7.2. Identify potential financing for identified interventions	- List of potential budget sources and other funding options

## Background

Figure 27. Cascading Effects of Climate Change on Water-related Ecosystem Services<sup>30</sup>

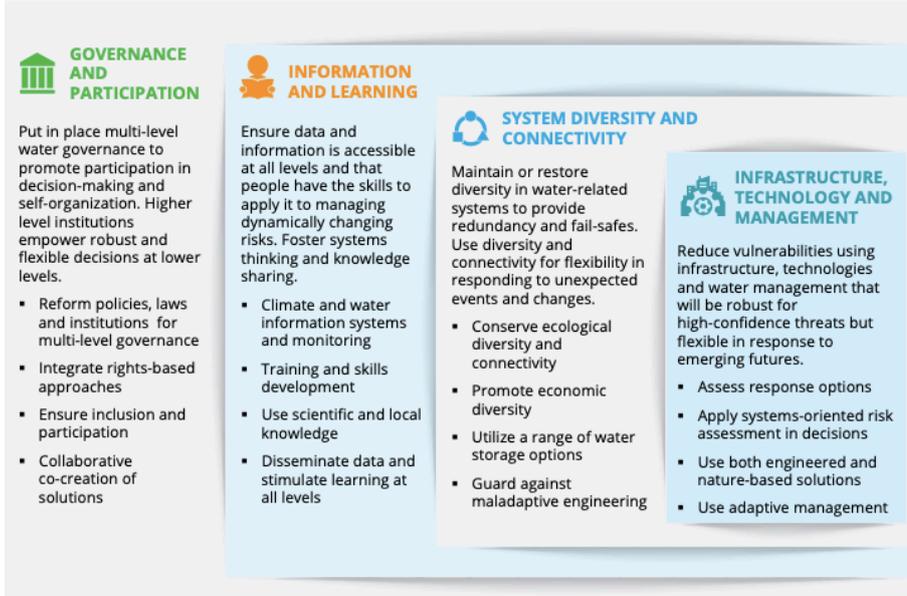
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<sup>30</sup> Smith, D.M., Matthews, J.H., Bharati, L., Borgomeo, E., McCartney, M., Mauroner, A., Nicol, A., Rodriguez, D., Sadoff, C., Suhardiman, D., Timboe, I., Amarnath, G., and Anisha, N. 2019. "Adaptation's thirst: Accelerating the convergence of water and climate action." *Background Paper prepared for the 2019 report of the Global Commission on Adaptation*, Rotterdam and Washington, DC. Available online at [www.gca.org](http://www.gca.org).

Figure 28. Action framework for climate resilient water management

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## Annex 3: Details on Component 2

### Problem description (related to climate change – water challenges)

As a common feature, the targeted area is being negatively affected by climate change, rising temperatures, reducing rainfall and more frequent extreme events resulted in reduced availability of water (both surface and groundwater). The whole area is facing increased vulnerability to pollution and failure of crops and trees which is the main source of livelihoods for the livelihoods of communities and farmers.

The targeted areas Al Mleiha, Zebdine, Deir El Assafir and Marj El sultan are facing a considerable challenge in securing clean water for drinking and agricultural use the ground eater , river streams and canal are heavily polluted by waste water discharge , currently all water is discharged to river streams and canal, due to shortage of water (due to cc) the farmers are using the polluted water for agriculture, More , securing drinking water is another challenge, the main source for drinking water is ground eater which is heavily polluted , However since it is heavily polluted, it is not used.

Main Rivers and branches, in the targeted area, which are main source of irrigations, were blocked or narrowed due to residues and debris were dumped in during the past ten years, this prevented the natural flow of water and in occurrence of extreme whether condition during the winter season, the water floods over the sides causing damages to the agricultural lands and imposing another stress on the vulnerable communities. On other hand, most of the sewage networks in the targeted area were either fully or partially damaged, this excreted another pressure on the limited water resources, the leakages polluted the surrounding lands and surface water.

Output 2.1 Technical specification / engineering studies, including surveys required for design of below interventions	2.1.1 Assessment and verification
	2.1.2 Prepare detailed technical specification for the Wastewater treatment plants, rehabilitation of wastewater networks and irrigation canal
	2.1.3 Site surveys and preparation of details BOQ for the below outputs

The Studies will ensure appropriate design of the concrete interventions

Output 2.2 Rehabilitate Sewage Networks	2.2.1 Excavation works
	2.2.2 Replacement of damaged pipes or pipes that leakage

The rehabilitation of sewage networks will eliminate pollutions to the land and surface water and protect the limited water resources

### Location + Suitability

The parts of sewage networks to be rehabilitated are selected as being leaking causing pollution inside the city and to the agricultural lands. As follow:

- In Zebdin, 1100 m of 30 cm diameter sewage networks pipes needs to be replaced with a 80 cm diameter sewage networks pipes, the sewage pipes getting out of Al Mleiha are being dumped in this 30 cm diameter sewage pipe in Zebdin which is not sufficient, causing sewer flooding and pollution.
- In Deir Al Asafir around 500 meters of sewage networks will need to be constructed in different area are causing pollutions inside the urban city and to the agricultural lands.

### Budget + Cost-effectiveness

#	Location	Number of Beneficiaries	Distance (m)	Pipes Diameter (cm)	Cost (USD) /person	Total Cost
1	Zebdin	8000	1100	80	27.50	
2	Deir Al Asafir	12000	500	50	8.21	
<b>Total</b>		20,000	1600	-	-	\$296,250

The overall cost effectiveness for this activity is \$15/person. Note the cost include the excavation works and cement Pipelines & supporting staff

**Alternatives solutions**

The rehabilitation is targeting the key priority location relevant to project targeted area and scope the selected target relation. The selected sewage pipelines are damaged and leaching to the soil and surrounding area causing a high pollution. Thus, the alternated for this output is limited. An alternative solution could be to implement new sewage networks, which is not costly effective.

**Beneficiaries (direct and indirect) + Benefits**

	Deir Al Asafir	Zebdine
<b>Total direct</b>	<b>12,000</b>	<b>8,000</b>
Female	50%	55%
Youth	37%	35%

The indirect beneficiaries of this output will be the total residents and farmers in target area of the project. Total 70,000, female 55 %. Eliminating pollution from sewage network will improve hygiene and health conditions for the local communities. [The beneficiaries will receive equal impact and benefits.](#)

**Operation + maintenance needs and arrangements + responsible entity**

Maintenance for the sewage networks project is the Municipality’s responsibility. Arrangements will be done with the stakeholders in the Governorate of Rural Damascus to cover the cost of operation of maintenance.

**Sustainability needs and arrangements, incl. replication and upscaling + responsible entity**

The qualification and quality of the material will be used in rehabilitation will be in accordance with the highest standards agreed by Syrian Engineering Syndicates for similar work. The pipelines that will be installed are sulfate resistant with lifecycle more than 25 years. After delivering the works from the project, the municipalities supported by technicians at sewage directorate will be responsible for regular monitoring and maintenance of the rehabilitated networks in case of any breakdown and will conduct regular monitoring to detect any leakages. The cost will be covered from the investment budget that is allocated yearly for each municipality.

**(Inter)National technical standards and regulations**

Expected concrete output / intervention	Relevant rules, regulations, standards, and procedures (to comply to AF principle 1)	Process / steps to comply	Authorizing offices
Output 2.2.	<ul style="list-style-type: none"> <li>- Technical condition book and Specification for rehabilitation of sewage networks, As per Executive order for EIA, No 818 2013,</li> <li>55.</li> <li>56. It is not required to have ES for the rehabilitation of parts of sewage networks with this scope,</li> </ul>	<ul style="list-style-type: none"> <li>- TORs to be prepared, verified, and issued by the Engineering Department and studies at sewage directorate.</li> <li>- Competitive procurement process to be done to select a company with licenses for engineering activities.</li> <li>- The contract implementation will be closely monitored by the Project Implementing Unit and technical committee</li> </ul>	<ul style="list-style-type: none"> <li>MOWR</li> <li>Technical Engineering Department and studies at sewage directorate.</li> <li>MoLAE EIA department</li> <li>MoLAE</li> <li>Environmental safety Directorate</li> </ul>

<b>Output 2.3</b> mobile wastewater treatment plants established (concrete intervention) to use non-conventional water resources identified (and divert treated water for irrigation purposes)	2.3.1 Undertake civil and site preparatory work this include
	2.3.2 Excavation work for the collection cement container, concrete base for the container, pipeline outlet for the treated water
	2.3.3 Construction of the cement collection container of wastewater discharge input, installation of the outlet pipeline outlet for the treated water, electrical connections, and sludge collection containers
	2.3.4 Install and operate waste treatment plants
	2.3.5 Capacity strengthening package required for operating, maintaining, and sustaining the intervention, incl. O & M and exit strategy plan developed

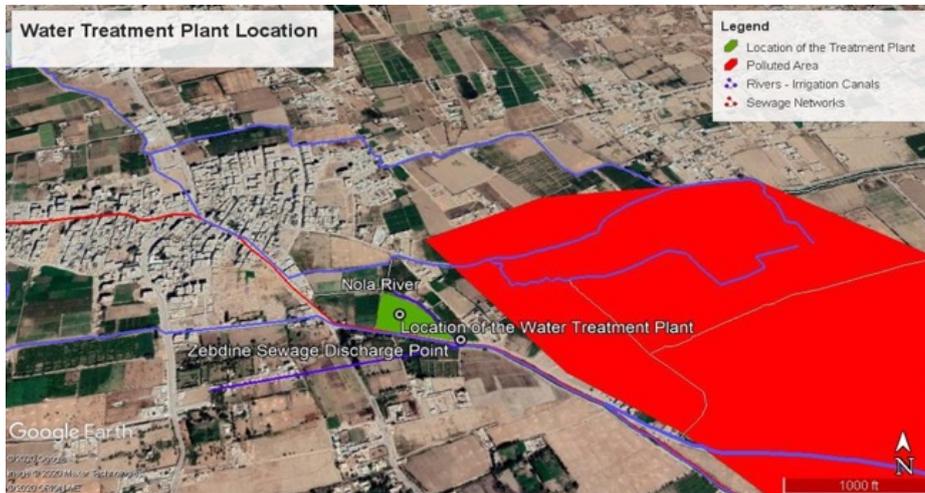
Through this measure instalment of wastewater treatment plant clean water for irrigation will be secured, ground and surface water will be protected from pollution, the livelihood of the local communities will be supported.

**Location + Suitability**

Site surveys and measurements results of pollutant parameters and recent fact findings made by MoLAE & MoWR technical team in 2020 indicate that the major source of pollution is the untreated wastewater coming from the targeted Municipalities by treating the discharge of Al Mleiha and Zebdine all neighboring areas will benefit from removal of pollution, the following town Deir El Asafir will no longer receive any wastewater discharge that is already running in the Natural channels throughout the Fields and the agricultural areas of the three cities **see map** and this will improve the quality of surface water and agricultural areas. Moreover currently the discharge is reaching to all surrounding rivers, streams and natural springs, setting the wastewater treatment plant at this site will lift pollution on the nearby Al-Haroush spring and the river channels connected to it (Nola, Ain Al-Tineh, and Zebdine Al-Sharqi), for those reason we can consider that this location is suitable.

In Zebdin Real Estate # 472, this place is located very close to the sewage networks final discharge outlet, it is also allocated by the Government departments to be used as a water treatment plant and the land is located very close to the main natural irrigation canals which irrigates most of the agricultural lands of Zebdin and part of Nola around 2,000,000 m2 Zebdin and 1,000,000 m2 Nola.





**Budget + Cost-effectiveness**

Noting the following:

- a. During the consultation and joint technical discussions with MoLAE, MoWR management and irrigation and Directorates of Water resources management and the General Company for wastewater, two technologies for mobile treatment plant were considered, Moving Bed Biofilm Reactor (MBBR) and Sequencing batch reactor (SBR). Both technologies are suitable for the capacity that we are targeting and treat the discharge to meet the technology can meet the specification for treated water category A so it can be used safely discharged in the natural irrigation channel that are natural streams and in irrigation, in our project we considered the SBR technology as being cost effective and fit with the fund for this project is within budget estimates. This technology can be scaled up to meet capacity up to 10,000m3 or more
- b. The cost effectiveness was taken considering two main parameters: the number of beneficiaries (\$/person) and the space of benefited land that would be irrigated from the treated water (\$/m2) both factors are multiplied to determine the exact cost effectiveness (the more the factor is low the more cost effective it is.)
- c. The quantity of discharge resulting from the current residents of Zebdine and Al Mleiha is 3,840 m3/day. However, the wastewater is designed for 4,400 m3/day. This was done to have a safety factor in case of any increase of no of returnees or any sudden increase in flow for unpredicted reason. The cost effectiveness included the cost of the treatment plant, site preparatory works including civil (Base for the treatment plant, the collection containers, connection lines between the dump and mobile treatment plant, and between the mobile treatment plant and the irrigation canals, mechanical and electrical, and sludge treatment, skilled staff for managing and overseeing the work.)
- d. The wastewater treatment plant is an automated unit and requires continues electricity as per internal available similar the use of electricity is 8-10 KW/hr (Max). Details of energy use will be required within the specification. In the evaluation of the proposal, energy use will be a key element to be assessed. Energy will be generated / compensated by solar PV. for pumping the wastewater (inlet).
- e. The SBR is a system which works with activated sludge principle technology uses part of the sludge in the treatment, the remaining will be emptied from the treatment tanks and collected in a special tank then it will be dewatered and compressed to minimize the volume and extract the water, the extracted water will be entered again to be treated. Once the sludge has been effectively dewatered and compressed, it can be buried underground in a sanitary landfill, it can

be used as a feed in within a small biogas units in farms or can be used as a fertilizer, depending on its chemical composition this will be further coordinated during the implementation.

The overall cost of the implementation of the above-mentioned water treatment plants is \$4,049,313 so the overall cost effectiveness for 48,000 beneficiaries \$84 /person and for the 3,000,000 m2 of benefited lands both from irrigation (2,000,000 m2 of Zebdine 1,000,000 m2 of Bala).

#### Alternatives solutions

The alternatives to prevent water contamination are very limited. The most cost effective is to install a mobile wastewater treatment plant, also as these can be moved to another location if needed in the future (flexible use). Another option is to establish a new wastewater network to transfer the current wastewater network discharge to Adra central wastewater treatment plant for Damascus city, which is currently out of service due to destruction resulted during the past ten years of instability. That option is more costly considering the topography of the Area. Moreover, it will deprive the local communities from using the treated water for irrigation and adversely affect their livelihood. Another alternative is to install multiple small mobile wastewater treatment plants in the rest of the areas (Zebdin, Deir Al Asafir and Marj Al Sultan) but the problem here is that, due to the natural geographic area and the natural water level in the area, the sewage discharge of Al Mleiha pollutes the areas that will be rehabilitated by pollution control cleaned by the installed mobile treatment plants, so this will not benefit the area if the source of pollution is not treated, which is Al Mleiha sewage discharge.

#### Beneficiaries (direct and indirect) + Benefits

	Total direct		Total indirect	
	Zebdine	Al Mleiha	Marj Al sultan	Deir Al Asafir
<b>Total direct</b>	<b>8,000</b>	<b>40,000</b>	<b>3000</b>	<b>12,000</b>
Female	55%	60%	55%	50%
Youth	35 %	32%	37%	37%
Farmers	95% of total population work in agriculture with 65% women	30% of total population work in agriculture with 40% women	80% of total population work in agriculture with 45% women	65% of total population work in agriculture with 45 % women

The instalment of compact mobile wastewater treatment plant will remove pollution resulted from 3,840 m3/day of raw waste currently discharged into natural river streams and agricultural land and enhance the quality of surface, underground water, and soil in the surrounding area. [The beneficiaries will receive equal impact and benefits](#)

The treated discharge will be used for irrigation more than 2,000,000 m2 in Zebdin and 1,000,000 m2 Bala supporting the livelihood of the resident mainly females from agricultural production. More than 300,000,000 m2 in Deir Al Asafir will no longer receive any pollution. Having clean water will enable farmers to invest in their land by farming a high quality of plants and crops. This will not only improve the livelihood, but it improves the quality for agricultural product and might open opportunities for Agro-industries and expand local external trade (this will be supported by the activities under component 3). Moreover, the targeted area used to be one of the main internal touristic area for the residents of Damascus and rural Damascus, by eliminating the pollution source this will, Mleiha and Zabidine other cities in East Ghoutta will regain their visitors from Damascus families due to positive impact of rehabilitating the farms and this will revive the touristic business for local community.

#### Operation + maintenance needs and arrangements + responsible entity

The Directorate of sewage of Ministry of water resources and irrigation hold the responsibility of operation and maintenance of the mobile treatment plants. During the life of the project, the contractor that will provide the WWTP will be requested to include in his offer provision of onsite operation and maintenance training for technicians and engineers at the sewage department and municipality in coordination with. Ministry of Local administration and environment Furthermore, a technical expert will support development of operation and maintenance plan and guidelines that will be used as a reference.

After final delivery, the Directorate of Sewage will be responsible to undertake and cover the cost of operation and maintenance as per its mandate.

**Sustainability needs and arrangements, incl. replication and upscaling + responsible entity**

This intervention will be sustained through ensuring that the equipment and spare part supplied will guarantee long-term sound operation of the treatment plants that foster the achievement of the prerequisites at the plant level needed to secure a technical enabling environment for climate change adaptation through treated water re-use. Also, the probability of upscaling at the site level is high as the technology used could be easily up scaled by adding another container depending on the needs.

At the national level, currently, a national committee including representatives from Ministry of water resources and irrigation and Ministry of Local Administration and Environment are preparing a national master plan for decentralized local wastewater treatment plant for small communities. The same technology can be upscaled to other areas with similar context; The developed technical specification and BOQ, operational, maintenance and monitoring plans and guidelines will be disseminated to be used as a reference by the Directorates of sewage technical department at municipalities. The Department of water resources is the entity responsible for the operation and sustainability of the water treatment plant.

**(Inter)National technical standards and regulations**

The technology used fits with the Syrian national plan for treating wastewater discharge at community level and to install small treatment plants for each area.

Expected concrete output / intervention	Relevant rules, regulations, standards and procedures (to comply to AF principle 1)	Process / steps to comply	Authorizing offices
Output 2.3	<ul style="list-style-type: none"> <li>- Environmental Protection Law No. 12 of 2012</li> <li>- Approved Standard No./2580/2008/related to shed treated water in the general sewer Network.</li> <li>- Approved Standard No./2752/2008/ related to the use of treated water in irrigating crops and trees</li> <li>- Approved Standard No./3474/2009/To dispose of treated water in watershed</li> <li>- Approved Standard No./2665/2002/for safe use of permitted waste resulting from wastewater treatment plants</li> <li>- EIA executive order No, 818, 2013, Annex 1, Item 12.1.2</li> </ul>	<ul style="list-style-type: none"> <li>- TORs to be prepared verified and issued by the Engineering &amp; studies Department</li> <li>- Competitive procurement process to be done to select a company</li> <li>- The contract with the company shall be formulated to ensure that the listed laws are adhered to. mainly the quality of treated water</li> <li>- The contract implementation will be closely monitored by the Project Implementing Unit and the technical committee that will be established including representative from all stakeholder</li> </ul>	<ul style="list-style-type: none"> <li>MoWR Engineering &amp; studies department at Sewage directorate</li> <li>MoLAE EIA department</li> <li>MoLAE Environmental safety Directorate</li> </ul>

<b>Output 2.4.</b> Rehabilitate irrigation canals to divert treated water for irrigation purposed and to allow	2.4.1. Removal of residual/ debris from irrigation canal (stream bed)
	2.4.2. Rehabilitation of channel sides

Rehabilitating the irrigation canal will promote natural and safe water flow, preventing floods on both sides of rivers and their branches, decrease water loss and secure water to the lands of farmers enabling them watering their crops and trees. In addition, the rehabilitation of sewage networks will eliminate pollutions to the land and surface water and protect the limited water resources.

**Location + Suitability**

Based on the consultation and community dialogue and discussion, rehabilitation of irrigation canal was of one of high priority and need were agreed, the rehabilitation of these canals will allow the flow of water

that will be used to irrigate agricultural land at the sides of the canal, which encourages the return of farmers to their lands.

Through this output 48 Km will be rehabilitated allowing safe water flow by preventing flooding on both sides and branches of rivers by removing places of constriction along the streams resulted from the presence of stones, silt, sediments, muck and various types of dredges, and debris and soil embankments dumped into these canals. The targeted irrigation canals are natural canal and part of the one where the treated water will be discharged, in addition to the canals that are closed and causing problems to the agricultural lands, as following:

- a. Around 12 kilometers of Al Zebdini River in Zebdin
- b. Around 12 kilometers of Al Feid River in Deir Al Asafir
- c. Around 12 kilometers of Al Haroush River in Deir Al Asafir
- d. Around 12 kilometers of Marj Al Sultan River in Marj Al Sultan

**Budget (USD) + Cost-effectiveness**

#	River	Beneficiaries	Cost Effectiveness (USD /person)
1	Al Zebdini	8,000	4.58
2	Al Feid	12,000	2.06
3	Al Haroush	3,000	8.23
4	Marj al Sultan	3,800	7.40

The overall cost of this activity is \$ \$107,053 (including staff and additional costs.) knowing that the total number of beneficiaries is 26,000 the overall cost effectiveness is \$4 / person.

**Alternatives solutions**

The other alternate is to establish a new irrigation channel instead of the natural stream's irrigation channel, establishing new channels is much more costly and considered non cost effective.

**Beneficiaries (direct and indirect) + Benefits**

	Deir Al Asafir	Hosh Dwair	Marj Al sultan +	Zebdine
<b>Total direct</b>	<b>12,000</b>	<b>3,000</b>	<b>3,000</b>	<b>8,000</b>
Female	50%	55%	55%	55%
Youth	37%	35%	37%	35 %
farmers	65% of total population work in agriculture with 45 % women	65% of total population work in agriculture with 45 % women	80% of total population work in agriculture with 45% women	95% of total population work in agriculture with 65% women

The continuous flow of water will [enable](#) the resident famers to invest in their agricultural and promote the return of IDPs, the agricultural land that can be invested to reach more than 7,000,000,000 m2. [The beneficiaries will receive equal impact and benefits](#)

**Operation + maintenance needs and arrangements + responsible entity**

Maintenance for the irrigation canals is the responsibility of the Department of Water Resources at Ministry of water resources and Irrigation to be coordinated with Municipality's council and farmers Association in the targeted. Arrangements will be done with the Department of Water Resources to undertake and cover the cost of regular maintenance after completion of work.

**Sustainability needs and arrangements, incl. replication and upscaling + responsible entity**

The Directorate of water resources in cooperation with targeted Municipalities will ensure sustainability of the activities through regular monitoring, more over both will include in their plan upscaling the activities to surrounding area to ensure continuous flow of water. In cooperation with the municipalities, there will be an awareness session for local farmers and communities to motivate and promote their involvement in protection of canal and river streams.

**(Inter)National technical standards and regulations**

Expected concrete output / intervention	Relevant rules, regulations, standards and procedures (to comply to AF principle 1)	Process / steps to comply	Authorizing offices
Output 2.4	- Environmental Protection Law No. 12 of 2012 59.	<ul style="list-style-type: none"><li>- TORs and technical specification to be prepared, Verified, and issued by the Engineering Department and studies at Water resources directorate.</li><li>- Competitive procurement process to be done to select a company with licenses for engineering activities</li><li>- The contract implementation will be closely monitored by the Project Implementing Unit and technical committee</li></ul>	MoWR Directorate for management of Water resources  MoLAE Directorate of environmental safety

## Annex 4: Details on Component 3

### Problem description and climate change impacts / vulnerability statement

The targeted areas are part of Eastern Ghouta, which was considered to be the food basket for Damascus city. It was famous for its fruit, vegetable and dairy products production. It benefited from its proximity to Damascus city as the main market for its agriculture production.

Before the crisis, the targeted area was planted with 60% of fruit trees and 40% of vegetables. Livestock was also an important source for income in the area. About 60-90% of the population were working in agriculture. Apricot, olive, apple, almond and others were the main fruit varieties. At the same time, summer and winter vegetable production were produced (mainly tomato, cucumber, squash, legumes and others). Livestock production was also an important source of income (sheep, cattle and beekeeping).

Crops and trees are susceptible to ecological and climatic stresses, such as frost during initial growth stages, or to rainfall retention and high temperatures during the maturity stage. Climate change is therefore a critical issue in Eastern Ghouta.

Droughts has been increased during recent decades, in term of severity, frequency and negative effects on the natural resources in the region. Among the most important negative effects of the 2007/08 and 2008/2009 droughts on Rural Damascus governorate, especially the eastern regions, including a decrease in rainfall below their long-term rates by about 40%, a decline in agricultural production mainly for wheat which is the core of food security. Dissemination and promotion of drought tolerant crops is very important to address this challenge. As for animal production, the number of sheep in Rural Damascus decreased by 15% and cows by 9%, and the production of sheep's milk, derivatives and meat decreased (14% and 13% respectively).

The main source for irrigation in agriculture was ground water wells. The unmanaged use of water has caused a drop in ground water level. There are two rivers that pass through the targeted area (Barada and Awaj). The water flows in the rivers is mainly during the November to May period. The wastewater management networks were linked to the river, so unfortunately the river water was mixed with untreated wastewater, and farmers were using the untreated wastewater for irrigation.

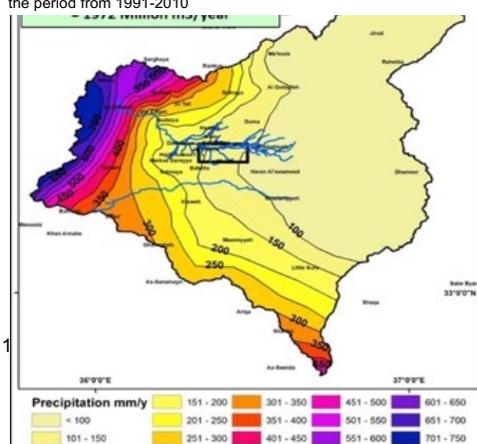
The main climate change related problems facing farmers in the area were related to:

- Expansion of urbanization which caused degradation in the agricultural land and loss of biodiversity. At the same time, intensification of the agriculture system was needed, at the expense of environment
- Drought, which is contributing to the decrease in ground water levels (this in a country already suffering from scarce water resources)
- The use of untreated waste water for irrigation, which could contribute to the salinization of the soil and contamination with nitrate pollution.
- Ground water pollution as a result for the proximity with big city (Damascus) and as a result of human activities including agriculture (including the use of agro-chemicals)

During the crisis, particularly in the period (2013-2017) the targeted areas have witnessed severe security issues, due to fighting and the crisis. The majority of farmers have abandoned their land, which has worsened the land degradation problem (particularly soil quality).

By 2017-2018 about 50-80% of the farmers in the area had returned to their lands. However, all fruit trees had been cut in the targeted areas which represent about 30-80% of the total cultivated area (the percentage depend on the location). About 70% of animals were lost. Most farmers who returned to their lands have lost all

Figure 29; Spatial distribution of long-term mean annual precipitation in Barada and Awaj Basin derived by interpolation of station data for the period from 1991-2010



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or most of their production assets. Climate change impacts have been magnified by this underlying vulnerability. As a result, farmers are using negative techniques to cope with the bad economic situation in this part of the country. Currently, farmers are planting mainly vegetables. Livestock is another activity which has restarted despite the difficult conditions. However, the vegetables are irrigated with untreated wastewater. Farmers are currently burning the crop residues which has a negative impact on both the soil and the air quality. At the same time, with interventions aiming to increase/restore the number of livestock, there will be a concern on the management of manure which has an impact on the environment.

It is important to mention that a number of groundwater wells were also destroyed during the crisis in Eastern Ghouta. These wells had previously been authorized based on studies for ground water levels. It would be important to rehabilitate these wells, mainly in order to prevent the unauthorized digging of further wells which would have an impact on water resources. The scarcity of water, irregular hydrology, and increasing water demands and drought events have important economic, social, and environmental consequences. Water and agriculture policies for climate change adaptation measures will therefore be an essential part of the management approach.

#### **Adaptation measure outcome (to address the problem and needs)**

Based on the above FAO is proposing the following set of activities based on two principles:

1. Introduce and promote climate-smart practices in the area, to make the system more adapted to climate change, but at the same time show the farmers alternative ways of production or practices that could still generate income for them and their families
2. Increase households' resilience to climate change through diversification of income, integration of crop and livestock production and introduce livelihood opportunities that are sustainable and adapted to climate change. This will also contribute to the improvement of the food and nutrition security situation in the targeted area.

This will be done through the following approach:

1. To tackle the problem of resuming production in Eastern Ghouta while avoiding irrigating with waste water and the unsustainable use of water resources, two of the targeted areas will be irrigated using the **treated** wastewater (Zebdine and Deir Alassafi) – see component 2. The other two locations will be irrigated from ground water after rehabilitating the ground water wells. At the same time, and for all the four locations, FAO will introduce efficient use of water resources through modern irrigation techniques. Water user associations will also be established in order to increase local community participation in the management of natural resources. At the same time, access to information is very important to enable farmers and decision makers to design their plans based on reliable information on water quantity and quality available in the area. This will have an impact on the planning of the type of cultivation to be planted in the area.
2. To tackle the problem related to the need to introduce climate-smart practices to adapt to climate change and take advantage of farmers returning to their lands willing to try alternative solutions while enhancing soil quality and reducing their dependence on chemicals. FAO will promote the use of sustainable crop management systems to manage soil organic content and carbon sequestration (with incidental mitigation benefits). This will be done through use of cover crops and crop rotation. At the same time, FAO will work on introducing drought-tolerant crop varieties to the farmers
3. To tackle the vulnerability of farmers, and in order to support the farmers' communities in the targeted areas to be more resilient to climate shocks, FAO will introduce and promote a range of sustainable agriculture-based livelihood opportunities. FAO will focus on the most vulnerable categories (rural women) and help them improve their livelihood. The livelihood opportunities will be based on adaptation practices. FAO is proposing to introduce the concept of organic fertilizers and locally produced fodder using crop residues rather than burning these residues. By this farmers can reduce their dependence on chemical inputs and concentrated feed that are highly dependent on energy for production, while using local available resources and turning them to sustainable use as a livelihood opportunity to help farmers to move from being vulnerable and food/nutrition insecure towards a more climate resilient state. On the other hand, FAO will support rural women and improve their capacity to process and market their products using

techniques that are based on food safety and quality and taking into account the impact on the climate.

The details of this intervention will be built on:

- Studies and assessments to understand the current situation, challenges and recommended actions. This will be done in total cooperation with the Keyline ministries and local communities
- The use of FAO concepts on:
  - Farmers field schools
  - Climate smart agriculture

Output 3.1. Studies and assessments to detail the proposed interventions are finalized	Activity 3.1.1 finalize the studies, technical designs and assessments of the proposed interventions
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In complete cooperation with the Keyline ministries (i.e. MoLA&E, MAAR and MoWR), the first 6 months of the project will be used by FAO team to finalize all required studies that started during the formulation of the project. This is to provide a technically sound basis for the proposed interventions

**Location and suitability**

The studies, assessments and technical design will cover all the proposed interventions under this component, and it will be conducted in the four targeted locations in full engagement of the local communities and full cooperation with the Keyline ministries. During this period, consultation with Keyline ministries and local communities will be conducted to make sure that the designed interventions take into account national priorities, communities' needs and the local conditions. This will include:

1. Natural resource assessment to assess the current situation of the natural resources. This is important to feed the planning for all water related activities and also for crop patterns selected under this component
2. Technical design of the wells to be rehabilitated
3. Technical design for the modern irrigation techniques
4. Understanding of the obstacles towards applying cover crops and crop rotation in the targeted areas. Then formulate suggestion and recommendation and design the implementation plan
5. Technical design and technical specifications and implementation plan plus economic feasibility of the proposed livelihood opportunities
6. Understand the needs of rural women in light of climate change and design interventions that provides the best solution in light of adaptation to climate change

**Budget and cost and cost-effectiveness**

The total cost of this output will be 174,133 USD (Cost per beneficiary is USD 6). The cost will feed the interventions below and thus benefit the total number of beneficiaries under FAO component (30,790 persons). The studies will help to feed the implementation plan and the technical design to make sure that interventions are built on a sound technical basis in addition to responding to local conditions and community needs.

**Alternatives solutions**

Theoretically, it is possible to conduct desk research and remotely prepare all required interventions' designs, technical specifications of inputs/goods and generate the BoQ for wells rehabilitations and solar systems without interacting engaging the concerned target communities and local expertise. Such alternative conduction for the studies and assessments will likely results in non-informed decision and non-based need interventions which subsequently be time, efforts and cost wasting. Direct Data collection and validation, field assessments and studies in participatory with local communities will be eventually meet the precise requirements in sustainable way.

**Beneficiaries (direct and indirect) + Benefit**

The direct number of beneficiaries is all FAO targeted beneficiaries throughout the targeted intervention proposed under the remaining three inputs. The indirect beneficiaries are the local communities in the four targeted areas who will benefit from the impact of adaptation practices adapted, and also from improved quantity and quality of production. Women headed households will benefit as well from the designed interventions based on their needs. Women and youth percentage will be from 30% to 60% from the total number of beneficiaries depend on the type of activity.

**Operation + maintenance needs and arrangements + responsible entity**

The studies will be conducted by FAO technical team in FAO Syria (crop production officer, livestock production officer, water officer, FAO resilience officer in Rural Damascus, the M&E team). The technical design of the studies will be discussed with the technical team and the Adaptation fund group in FAO regional office in Cairo and FAO HQ. The studies will be discussed and implemented with the Keyline ministries (ministry of local administration and environment, ministry of agriculture and agrarian reform and the ministry of water resources). Technical staff from the ministries will provide their technical experience and support for the implementation. It is also important to involve local communities to make sure that their needs are well captured and reflected in the studies.

**Sustainability needs and arrangements, incl. replication and upscaling + responsible entity**

The studies will help FAO and Keyline ministries to design interventions based on local conditions and in line with national priorities which will help to take into account the suitability of the results.

**(Inter)National technical standards and regulations**

The national protocol set by ministry of foreign affairs needs to be followed to conduct the studies and assessments.

Output 3.2. Introduction of water efficient agricultural technology	Activity 3.2.1 irrigation source is restored and efficient irrigation systems at farmers' level are installed
	Activity 3.2.2 access to information regarding ground water levels (water quantity and quality) is provided for farmers and decision makers, through Installation groundwater, surface-water, and meteorological monitoring networks

Agriculture in Syria is one of the most vulnerable sectors to climate change. Higher temperature, reduced precipitation and higher evapo-transpiration will decrease soil moisture and increase aridity, which will affect the overall agricultural yield of crops and trees. Crops and trees face water shortages due to increased water demand and decreased water availability for irrigation while rainfed agriculture is expected to show a decrease in surface area and/or productivity.

Such a situation can lead to unsustainable natural resource management and may expose the rural population to poverty. Therefore, adaptation to climate change is vital to support the livelihood of rural populations, sustain the viability of the agriculture sector and maintain an acceptable level of food security.

Throughout the natural resources assessment activity, stakeholders can be empowered to respond to adaptation to climate change by helping them explore consequences of proposed initiatives, allowing informed choices among alternatives, and securing knowledge that the consequences have been thoroughly investigated. This will build climate resilience while promoting sustainable development.

Field implementation of climate-resilient agronomic systems and technologies, prevention and restoration of climate-induced soil and water degradation, and awareness raising are appropriate adaptations measures that are agreed on with line ministries. These measures are embedded in priority list of interventions that FAO listed and include:

- Raising irrigation efficiency in irrigated agriculture through development of field irrigation and usage of efficient irrigation technologies, the promotion of alternative crops and trees of less water consumption, and the establishment of water users' associations.
- Using groundwater storage in a sustainable manner, especially the renewed for agriculture to compensate for the shortfall in surface water imports (Conjunctive use of surface and groundwater)
- Using treated sewage water in irrigation without damaging soils and plants and where applicable
- Strengthening water monitoring systems, agro-meteorological stations and early warning system.
- Improving management of rain-fed agriculture and apply supplementary irrigation.
- Identify crop varieties which are low water demanding, and resistant to drought, high temperatures, pests, and/or soil salinity, as well as livestock breeds climate-adapted, disease-resistant and highly productive.

- Finding different patterns of agriculture on the basis of availability of water to rationalize water consumption and dispose of prevailing salinity in soil.
- Build institutional and technical capacity on climate modelling, hydrological modelling, NRA, irrigation management and mainstreaming adaptation measures into water management (this will be linked/coordinated with UN-Habitat component – first component of the project).
- Mainstreaming CC adaptation into environmental, agriculture and water issues through the pilot projects.

Activity 3.2.1 irrigation source is restored and efficient irrigation systems at farmers' level are installed

**Location + Suitability**

This activity will include the following:

1. To complement the wastewater treatment accomplished under UNDP component, an efficient irrigation system will be installed in farmers lands in the areas that will benefit from the treated wastewater (two locations). The efficient irrigation systems will include promotion of modern irrigation techniques and laser levelling for the soil to increase the efficiency of irrigation.
2. In the two remaining target areas, six ground water wells will be rehabilitated and equipped with solar pumps, so the farmers who will not have access to water resulted from the wastewater treatment can as well benefit from access to water.

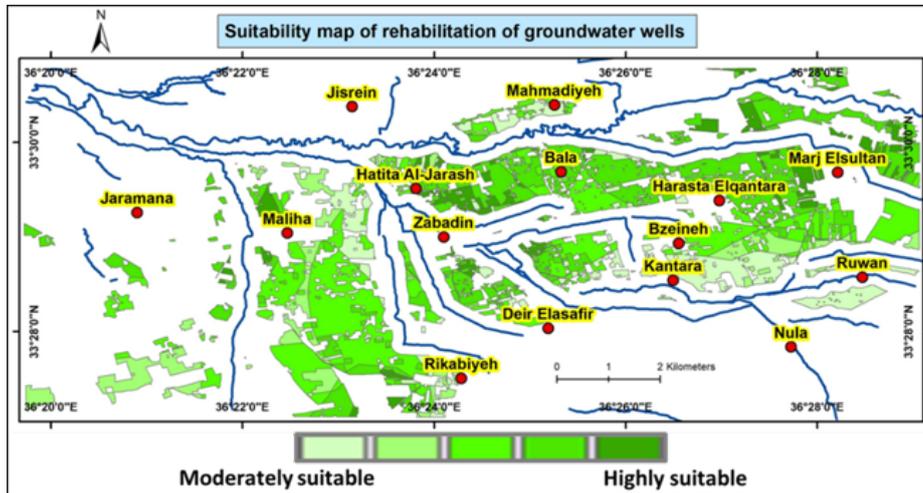
For the first action: Installing efficient irrigation system is an excellent way to save water. The spread of untreated wastewater from urban areas poses urgent problems in Eastern Ghouta, which mainly threaten the groundwater wells that are still used for drinking and irrigation purposes. The use of untreated wastewater in irrigation has made it worse and led to pollution of surface, ground water and soil in many areas of Eastern Ghouta, making them a threat to public health. Hence, it is absolutely necessary to remove the sources of pollution that threaten the natural resources in Eastern Ghouta by treating wastewater and re-using it for irrigation. The use of efficient irrigation systems will maximize the utilization of treated wastewater by reducing water losses and increasing agricultural production. Its application is considered very suitable for irrigation in Eastern Ghouta for the following reasons:

1. Reducing water loss: It is known that modern irrigation system typically uses a quarter to half the amount of water used by traditional (surface) irrigation. Hence, this irrigation system is very water saving.
2. Environment-friendly: Because modern irrigation is highly efficient, it does not cause surface runoff, and thus there is less chance of soil erosion. On the other hand, drip irrigation reduces the weed growth compared to furrows and sprinkler irrigation systems.
3. Better growth of plants: Water infiltrates slowly and deeply into the soil, putting moisture exactly where it's required-at the plant's roots. In addition, the drip system helps deliver fertilizers and nutrients to the roots of each plant. As a result, plants grow faster when they are watered and fertilized uniformly without stress created by lack of water or nutrients.



For the second intervention, a map for the suitable areas for rehabilitating groundwater wells is produced using the methodology of overlay analysis of six criteria (thematic maps), which were classified according to their impact on suitability as follows:

1. Groundwater depth: the shallower the groundwater, the more suitable the area is for rehabilitating wells.
2. Water Quality (Nitrate): the fresher the groundwater in the area, the more suitable the area for rehabilitating wells.
3. Degraded agricultural lands: priority was given to agricultural areas that had deteriorated in recent years.
4. Proximity to Barada River and irrigation canals: priority was given to areas that are relatively far from Barada River and its branches
5. Soil Suitability for cultivation: the soil map as well as the conducted physical and chemical analyses of soil samples show that soil is suitable for cultivation all over the target area.
6. Thickness of the aquifer: the thicker the aquifer, the more suitable the area is for rehabilitating wells.

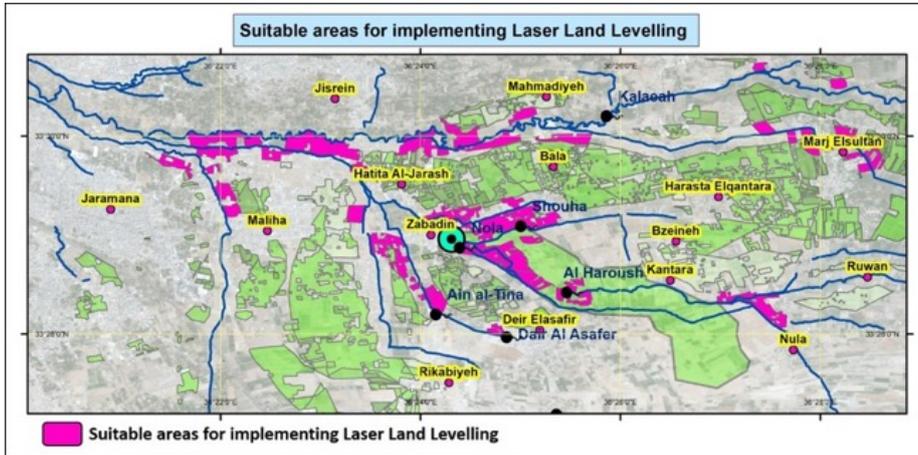


This intervention is considered one of the most urgent and important interventions that farmers of Eastern Ghouta need due to the following facts:

- Reproduction winter and summer crops and trees by irrigating about 30 hectares of land that was severely degraded during the crisis.
- Its rapid and tangible results in increasing agricultural production and supporting farmers' livelihoods.
- Encouraging the displaced people to return to their villages and invest their lands.
- Supporting the most vulnerable communities/ groups that depend on agriculture as their sole source of income.

While for laser land levelling, it is one of the most important technologies used to create flat fields with a certain degree of desired slope for cultivation as it results in higher crop yields and more efficient use of irrigation systems. The application of this technology in Eastern Ghouta has several benefits, including:

- Water saving
- Homogenous plant Growth (uniformity in crop maturity)
- Time, energy and cost savings
- Environment- friendly



It will take into account the following:

- Crop deteriorated areas
- Slops/ topography
- Close to water streams

The interventions needs to start in the second half of the first year, directly after the inception phase.

**Budget (USD) + Cost-effectiveness**

The total cost of this activity is 712,629 USD. The cost per beneficiary is about USD 83. Regarding the waterlogging and salinization that frequently affect some areas of Eastern Ghouta, farmers are demanding the installation of drainage system to solve these problems through lowering the water table to a safe depth to facilitate agricultural activities. However, based on the results of the rapid natural resources assessment in this region and in view of the potential climate change, solving the problems of waterlogging and salinization through rehabilitating groundwater wells is more effective, sustainable and less expensive than installing a drainage system, provided that pumping is done in specific quantities (safe yield) to ensure the lowering of groundwater level without depleting the aquifer and that the water quality is suitable. Given that waterlogging occurs mainly in wet years and only in certain months, the implementation of a drainage system would not be useful in dry years which are expected to increase in frequency as a result of climate change.

Laser levelling is a faster technique of field levelling, demanding fewer work hours to complete. Since it produces a high yield with less energy spent observing and modifying farm irrigation systems, it is a cost-effective technique of field preparation. It decreases water losses significantly and protects soil and waterways from erosion. In addition, it reduces the seed rate, fertilizers, chemicals and fuel requirements.

**Alternatives solutions**

The traditional irrigation methods (e.g. Surface irrigation) requires much higher quantity of water per unit area compared to drip irrigation system that saves 40-50% of water. Moreover, surface irrigation rely on gravity and land topology, unless the land has appropriate slope additional quantity of water is required to irrigate. Given the climate changes and water scarcity, it is no longer affordable and sustainable to leave small vulnerable farmers apply this traditional method. In other words, traditional irrigation methods with certain water resource will leave some many small farmers in the area without irrigation depending on rainfalls which are more frequently unstable in term of rates and distribution.

The other possible solution for wells rehabilitation is to dig new wells which causes additional depletion on groundwater. Moreover, it will be much more costly compared to rehabilitation works. In addition to this, the Wells to be rehabilitated have been authorised by the government based on studies to identify water levels and other sustainability issues

Equipping the rehabilitated wells with solar system for pumping water can be replaced using fuel (i.e. diesel) as source of power. From cost effectiveness point of view, solar system is proven that as much more sustainable and costs effective at long term. The cost of fuel is increasingly become unaffordable to small farmers in addition to the fact that fuel availability in the country is questioned. The alternative solution for laser levelling is to level the land by applying additional tillage operations. This traditional method is considered as major soil erosion and high soil moisture loss which is unsustainable, from cost point of view, it required tractors and highest fuel and labor costs which are not available/affordable by small farmers and cannot be technically recommended by FAO

#### **Beneficiaries (direct and indirect) + Benefits**

Total number of beneficiaries is 8,550 persons who will benefit from access to sustainable resources of water and use of modern irrigation systems. Beneficiaries will receive as well capacity building training on crop, water requirements; irrigation scheduling and operation and management for the wells.

In more details, the training topics are:

- Emphasis will be placed on enhancing water use efficiency in small-scale irrigation. Much attention will be given to ToT hands-on training.
- Conduct training on good agriculture practices, such as efficient small-scale drip irrigation techniques and solar energy applications for irrigation.
- Conduct training about the calculation of crop water requirements, fertility and fertilizers, irrigation management (including irrigation scheduling),
- Conduct field days training for farmers on project relevant features including explanation of how the irrigation system works and practical support of installation and operation of new drip irrigation systems.
- Organize workshop to share and disseminate findings, lessons learned, good practices and recommendations

As per FAO rules and regulation 30% of the beneficiaries should be women and youth.

#### **Operation + maintenance needs and arrangements + responsible entity**

Maintenance requirements will be minimal when the well productivity, crop water requirements, area to be irrigated and irrigation scheduling are properly calculated/ designed before selecting and installing the pump, solar panels and irrigation network. Small-scale solar powered irrigation systems are relatively easy to install operate and maintain. Water users' associations/groups will be established and members will be trained to take care of operation and maintenance activities. One of the main maintenance tasks that will have to be done frequently is cleaning the solar panels to keep them working efficiently. Submersible pumps are cooled by water. Therefore, there must be sufficient water inflow for the submersible pump's maximum output in order to prevent dry run and/or air intake. Proper design will help ensure this.

The following arrangements needed with the Keyline ministries and the project management and local communities:

- Unlicensed wells (especially those that were drilled during the crisis) should be avoided, and licensed wells should be selected while taking into account government plans for urban planning and expansion.
- Establishing a licensed Water User Associations/Groups (WUAs/Gs) to ensure proper community management of the irrigation water:
  - A Water User Association/Group will be established for each site and managed by an elected board concerned to water management.
  - The WUAs will be established in parallel with the implementation of the activities of this intervention.
  - Pumped groundwater will be efficiently distributed among beneficiaries according to irrigation schedules that will be developed by the technical support team based on calculated crop water requirements.

Water User Associations/groups will participate in operating and maintaining efficient irrigation systems (in cooperation with the ministry of water resources) and in identifying the more efficient 'collective' irrigation options associated with the treated wastewater. This intervention will be implemented through FAO technical team (water for irrigation officer, the resilience officer in Rural Damascus, M&E team). The

intervention will be backstopped by FAO technical teams in the regional office in Cairo and FAO HQ in Rome in coordination with Keyline ministries. The intervention will be implemented in full coordination and cooperation with the ministry of water resources, ministry of agriculture and agrarian reform, and ministry of local administration and environment. Clear rules and regulation for operating and managing these facilities/assets will be set during the implementation in line with national relevant roles and resolutions and to be supervised by ministry of water resources.

**Sustainability needs and arrangements, incl. replication and upscaling + responsible entity**

Emphasis must be placed on safe pumping (safe yield) from wells by conducting periodic measurements of groundwater depth to ensure the safe investment of groundwater so that it does not lead to a drawdown in water table at a rate that exceeds what is planned, especially in dry years. Frequently monitoring the pumped water, testing quality and compare against the national standard. Solar water pumps are environment-friendly as they do not require any fuel to operate, and thus they do not produce harmful pollutants which keeps the air and soil clean.

It is expected that the application of laser land levelling in Eastern Ghouta will reduce water consumption and increase productivity at a relatively high rates without any disturbing and harmful effects on the productive resilience of the ecosystem. This will support farmers' livelihood and increase their income.

The WUA and the capacity building for the farmers will help as well to sustain the results of this intervention beyond the project period. It is expected that farmers will clearly realize the impact of applying solar energy technology in reducing the bill of operating costs in the long term, as well as the impact of efficient irrigation systems in reducing water consumption and increasing productivity. This, in turn, will encourage more farmers to form new Water User Associations/groups and repeat this intervention in other areas inside and outside Eastern Ghouta. The combination of natural resource assessment of a given location, and then deciding the type of intervention and then crop pattern is a very promising approach that could be scaled up and implemented in other locations. This would require a capitalization exercise with all key stakeholders in order to adopt this approach. FAO in coordination with keyline ministries and local communities will set a business model for WUA.

**(Inter)National technical standards and regulations**

According to the EIA executive procedures (Resolution# 818 in 2013), this intervention does not require a full environmental impact study. Water use in Syria, including the target area (Eastern Ghouta), is regulated by the Law No. 31 of 16 November 2005 on Water legislation with its amendment (Resolution No. 23 of 2008). Regarding this intervention, however, the rules mentioned in chapter (6, 9 and 10) of this law must be met, as chapter-6 refers to licenses for well digging and for pumping installations, chapter-9 refers for drilling and chapter-10 refers to the establishment of the Water User Associations.

Activity 3.2.2 access to information regarding ground water levels (water quantity and quality) is provided for farmers and decision makers, through Installation groundwater, surface-water, and meteorological monitoring networks

**Location + Suitability**

Obtaining accurate and timely measurements of the groundwater level is absolutely essential to ensure that water resources are managed in a sustainable manner, so that groundwater is extracted in quantities that do not lead to depletion of the aquifer (safe yield). Such measurements also help in calculating the aquifer budget, especially the amount of renewable recharge from surface water.

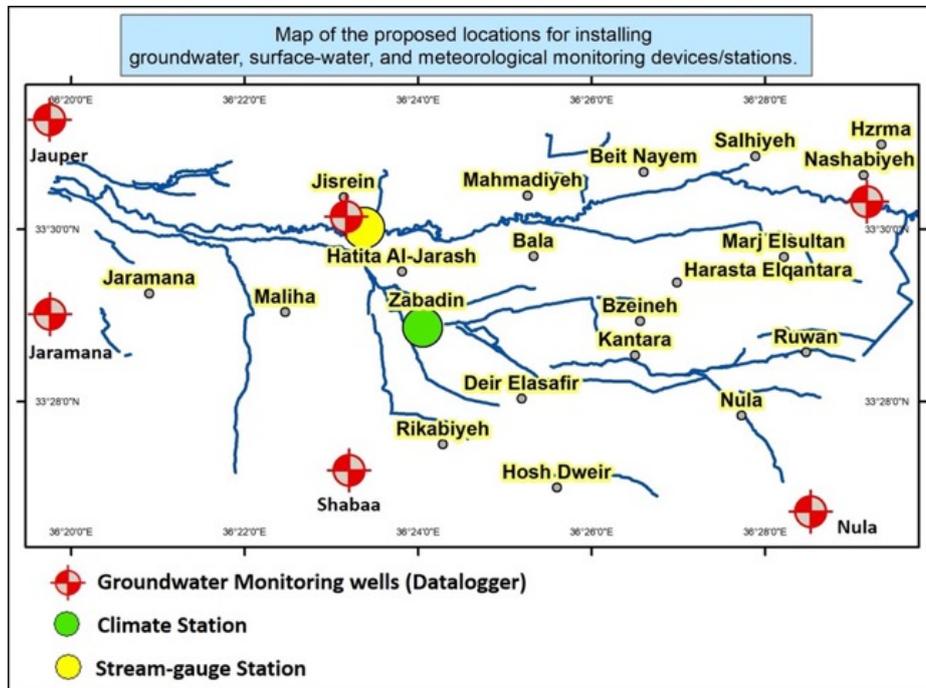
Successful and sustainable management of water resources in any watershed requires the ability to monitor the elements of the hydrological cycle, especially climate parameters and surface runoff (discharge), in addition to monitoring groundwater levels and quality and their changes over time. The importance of continuous monitoring of surface and groundwater in Eastern Ghouta is largely evident due to its great variations over time, which is mainly attributed to its direct connotation with climatic conditions, in addition to the impact of human activities. Several studies showed the close relationship between groundwater levels and the surface water flowing through the Barada River, which penetrates the Eastern Ghotta on its way to the dry and salty lake of Al-Otaiba.

Installing a climate station for measuring all climate parameters: this will be applied given the fact that the target villages are spread over a relatively small area, installing a single climate station is sufficient to monitor all the climatic elements prevailing in this area. By considering the locations of the two pre-

existing climate stations located at El-Mazze (Damascus city) and at the international airport, it is recommended to install the climate station in the town of Zabadin to be approximately halfway between these two stations.

Installing a stream flow gauge station: For monitoring the flow rate of Barada River in the region, it is appropriate to install a measuring gauge station on the main course of the river near the village of Jisrein. The pre-existing bridge near this village provides an optimal location for installing a runoff measuring station, as it is located just before the point where the river splits into two branches.

Installing a groundwater monitoring network (including quality tools): There is a need for a large number of monitoring wells, especially in areas adjacent to the course of the river and areas where groundwater is pumped in large quantities. The farmers of the villages of Eastern Ghouta depend on the groundwater to secure irrigation needs at times when there is little or no discharge of Barada River, which increases the pressure on the groundwater resources, leading to a drawdown in water table, especially in drought years.



**Budget (USD) + Cost-effectiveness**

The total cost is USD 211,529 (cost per beneficiary is USD 3). However, this calculation does not consider the decision makers in the Keyline ministries and other partners as another real beneficiaries. Not having this activity, would mean to continue the ongoing production plans with no accurate information on the level of ground water, which could cause depletion to natural resources and increase vulnerability to climate change through uninformed agriculture practices.

Alternatives solutions

Indeed, there is no other solution or alternative, either to have such stations that provide the decision makers with accurate information on surface and groundwater levels and available water resources in general so that they conduct informed-decision that sustainably benefit the local communities in their

main livelihoods or to leave the limited available water resources being managed blindly without information and understanding on what is going on.

#### Beneficiaries (direct and indirect) + Benefits

All farmers households in the four targeted areas are considered beneficiaries (about 4,000 households). The benefit would be availability of information on water quantity and quality, then deciding what crop pattern and production system could be followed under climate change conditions

#### Operation + maintenance needs and arrangements + responsible entity

Ministry of water resources would be responsible for the management and operation of these units. Possible cooperation with WUAs. This intervention will be implemented through FAO technical team (water for irrigation officer, the resilience officer in Rural Damascus, M&E team). The intervention will be backstopped by FAO technical teams in the regional office in Cairo and FAO HQ in Rome in coordination with Keyline ministries.

#### Sustainability needs and arrangements, incl. replication and upscaling + responsible entity

As this will be part of the work conducted by the ministry of water resources, and as there will be capacity building programme for the technicians of relevant keyline ministries, then the intervention is expected to be sustainable, as it reflects on national priorities and the need of local communities.

#### (Inter)National technical standards and regulations

Water Legislation Law# 31 in 2005.

For more details about cost effectiveness of output-3.2 please see below table. This table summarizes the effectiveness of the proposed climate-resilient interventions that would result in cost effectiveness and sustainable use of resources

The effective climate resilient intervention	The non-effective alternative	Indicators*			
		Saving water (conservation of natural resources)	Increasing agricultural productivity in comparison with the non-effective alternative	Reducing pollution	Saving time, energy, and related cost
<a href="#">Installing Efficient Irrigation Systems on fields irrigated through the rehabilitated wells</a>	Traditional (Surface) irrigation	Positive estimated at 40 to 50 %	Positive estimated at 20 to 30%	No impact is expected	Positive. Related cost saving is about 15% for long term investment
<a href="#">Installing Efficient Irrigation Systems on fields irrigated through the proposed mobile treatment plant</a>	Traditional (Surface) irrigation	Positive estimated at 40 to 50 %	Positive estimated at 20 to 25%	Positive (very important). Water related health problems and cost associated with will be reduced.	Positive. Related cost saving is about 15% for long term investment
<a href="#">Installing Solar Water Pump Systems on the wells to be rehabilitated</a>	Fuel Pumping system	No impact is expected	No impact is expected	Positive (environment-friendly). Water related health problems and cost associated with will be reduced.	Positive. Related cost saving is about 30% to 40 % for long term investment
<a href="#">Rehabilitation of 6 groundwater wells in areas where groundwater is shallow</a>	Installing of a drainage system to solve the waterlogging & salinization problems	Restricted by monitoring to ensure groundwater sustainability	Positive. Estimated increase of productivity by 100% compared with supplementary irrigation	No impact is expected	Positive. Related cost saving (supplementary irrigation via water tanks) is about 20 % for long term investment
<a href="#">Installation groundwater, surface-water, and</a>	-	Very important for the sustainability of water resources	Better estimated crop water requirement and irrigation	Positive. Avoiding unsuitable water	Positive

<u>meteorological monitoring networks</u>			<u>scheduling would result in productivity increase estimated at 15%</u>	<u>for irrigation</u>	
<u>Introducing Laser land levelling</u>	<u>Traditional land levelling</u>	<u>Positive estimated at 20 to 35%</u>	<u>Positive estimated at 20 to 25%</u>	<u>No impact is expected</u>	<u>Positive Related cost saving is expected at 30%</u>

\* Figures are estimated according to FAO SY experience in similar projects

Output 3.3 Adoption of climate-smart agriculture practices for improved soil fertility and enhanced water use efficiency	Activity 3.3.1 Introduce climate smart crop production practices
	Activity 3.3.2 Introduce drought tolerant crops and enhance livestock production

The on-going crisis in Syria has increased the impact of climate change in the target areas. In addition to drought, trees were cut completely, some lands were abandoned for long period and farmers have used untreated wastewater for irrigation. All this has caused land degradation and salinization in some lands. Consequently, production has decreased, and farmers became more vulnerable to climate shock.

The interventions under this output aims to:

- Enhance the quality of soil through set of interventions that aim at enhance soil quality
- Reduce the dependence on chemicals for agriculture production
- Improve agriculture practices to become more resilient towards climate change
- Introduce crop patterns and fruit/crop varieties that are tolerant to drought and other problems in the area
- Diversify the income of farmers and help them restore their livelihood so they can become adapted to climate change

#### Activity 3.3.1 Introduce climate smart crop production practices

##### **Location + Suitability**

This intervention will be applied in the same locations proposed by UNDP (WWTP) and in the activity 3.2.1. The first 6 month of the project (the inception phase, first part of the project period) will be used to understand the constraints on applying crop rotation and intercropping in the target areas, and design the implementation plans with the exact selections to apply this intervention. Then the second half of the first year of the project, will be used to design the crop pattern, and the technical specifications and start the procurement process. The second year will be used to apply the pilot, and then in the third year a scaling up will take place for crop rotation and intercropping. The intervention depends on the finalization of UNDP activities and FAO activities in wells rehabilitation and installation of efficient irrigation system. So, the intervention may risk starting in the second half of the second year or the first half of the third year (taking into account the seasonality of the selected crops and trees).

The purpose of the activity is to build on water availability and water use efficiency concept. In particular, crops and trees to be used in the areas irrigated through the WWTP – which should comply with Syrian standards in this regard.

FAO will promote under this intervention the use of intercropping and crop rotation. Intercropping is one of the climate smart agriculture practices aiming to increase the resilience of specific crop systems against disturbances brought about by climate change. The specific adaptation goal is to partially or entirely replace mineral fertilizer inputs, reduce the need for chemical pesticides, and/or mechanical soil tillage.

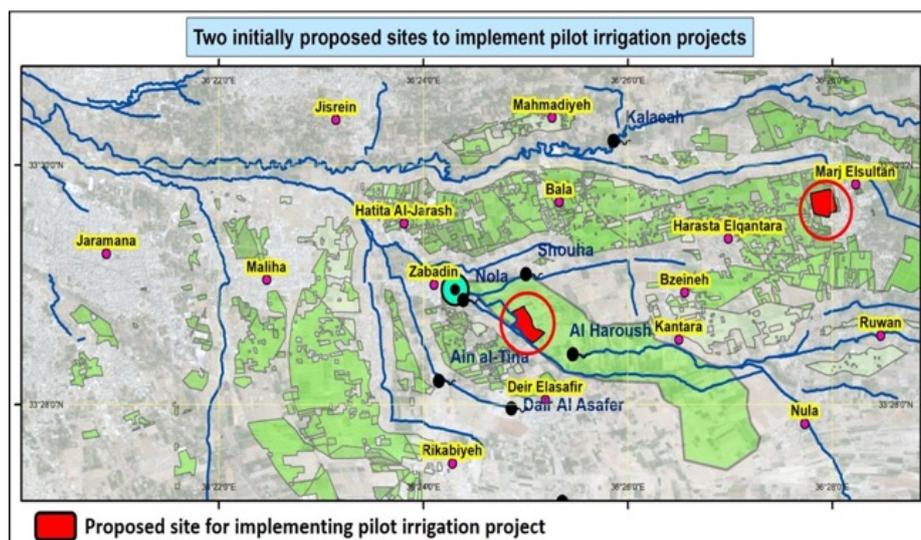
Crop rotation: during the crisis, in the targeted areas, fruit trees were completely cut which raises the risk of soil degradation. Crop rotation composed of annual crops and trees could help reduce the risk of soil erosion, and balancing the C/N ratio and could help in improved soil compaction and water management either through improved drainage or reduced evaporation

The fruits/crops and trees for both practices will be selected based on:

- Their adaptation to local conditions
- Water requirement
- Nutrient and organic matter level in the soil
- Farmers acceptance
- Market demand

The intervention will be conducted based on the results of the first output and will include the following actions:

- Raise farmers' awareness on the concept and its impact from both economic and environmental point of views.
- Farmer field school approach will be used for farmers to learn and start testing this practice in their own farms
- Based on the results of the inception phase, the support to farmers will be provided to solve the constraints for using this practice (this might include direct provision of inputs or support to inputs availability for the farmers)
- Conduct a pilot to link water availability and quality with crop pattern, then measure water productivity and production in order to scale the activity up for the next year
- Provide capacity building programme to the farmers through farmer field school using FAO concept on Climate Smart Agriculture
- Capacity building targeted for the extension services in the target areas in order to be able to provide technical support and follow up with farmers on this concept and introducing innovative E-extension techniques that could include the use of social media methods to communicate with farmers
- At the end of the intervention, lessons learned and good practices will be shared with relevant stakeholders to enable them to adapt this practice in their future programmes



#### Budget (USD) + Cost-effectiveness

Total cost is USD 396,690. The total number of beneficiaries is 3,620. Cost per beneficiary is USD 109. Diversification of crops increases the climate change resilience of targeted households, through providing them with various source of income, in a way that if one crop fails as a result of climate shock, then other crops might resist. The current practices depend on one crop only or using varieties that are

not quite drought tolerant, so by not doing this activity, there is a risk that farmers can accelerate land degradation, soil pollution and water depletion.

#### **Alternatives solutions**

Possible alternative is to distribute fertilizers and pesticides so that farmers increase their few crops productivity by applying more chemicals. Away from the natural resources pollution and the sustainability of this alternative solution, it will be much expensive to implement (the price of 1 ton of UREA fertilizer equals to about 3 tons of drought tolerant crop seeds).

Using current local market prices, the average cost of the required agricultural inputs and services (fertilizers, pesticides, using traditional operations) is estimated by USD 560 per 1000 m2 of land. By introducing the appropriate crop rotation and intercropping systems that are climate change adaptive, farmers can save up to 50-60% of the costs for production inputs (mainly fertilizers and pesticides) which amounts to about USD 280 to 336 per 1000 m2 of land. Additional savings can be derived from lowering the irrigation and tillage traditional operations which is estimated by USD 100. However, actual figures on savings and cost effectiveness of this intervention will be precisely calculated during the planned for studies and assessments phase of the project.

#### **Beneficiaries (direct and indirect) + Benefits**

The expected number of beneficiaries is 3,620 persons. According to FAO rules, 30% of the total beneficiaries should be women and youth. The beneficiaries will benefit from capacity building on the concept of crop rotation and intercropping as well as the provision of seed packages. 20 technicians in the extension services will benefit from training on this concept and from introducing innovative E-extension techniques. All targeted local communities will benefit from improved food availability in the area.

#### **Operation + maintenance needs and arrangements + responsible entity**

The intervention will be conducted in farmers' own lands. The farmer field school will be selected from public owned land of the extension units or the municipality in the targeted areas. Another solution for this could be to ask a well-known farmer in the area to have the farmers field school in his land.

The capacity building for farmers and technicians, as well as the use of farmers field school will have long term impact and will enable the farmers, beyond the target areas, to apply the concept of cover crops and trees rotation even after the project is finalized. The capitalization exercise and the dissemination of lessons learned, and good practices will as well help other partners to adapt this climate resilience technique in their future programmes. However, it is strongly recommended to take into account local conditions before spreading the technique into new areas.

The involvement of local communities in various steps of the project from designing into implementation is important for the sustainability of the results.

This intervention will be implemented through FAO technical team (crop production officer, water for irrigation officer, the resilience officer in Rural Damascus, M&E team). The intervention will be backstopped by FAO technical teams in the regional office in Cairo and FAO HQ in Rome.

The intervention will be implemented in full coordination and cooperation with the ministry of agriculture and agrarian reform, ministry of water resources and ministry of local administration and environment. FAO will design the technical specifications of the crops and trees to be introduced based on the ministry of agriculture national standards and will design the training material and programme. The ministry of local administration and environment will be responsible for the overall coordination with the partners, on the environment impact of this intervention and make sure that the intervention is in line with the environment standards. The ministry of agriculture will be responsible and consulted to make sure that the intervention is in line with agriculture plans in the targeted areas, and with the national standards.

- Cost and logistic arrangements for workshops for raising awareness and training sessions
- Cost and logistic arrangements for the tools and equipment to support farmers to adopt this process

#### **Sustainability needs and arrangements, incl. replication and upscaling + responsible entity**

Intercropping will reduce the insect/mite pest populations because of the diversity of the crops and trees grown. This will protect the environment in the long term by reducing the residual load of pesticide in the environment.

A mixture of various crops and trees gives often a better coverage of the soil leaving less space for the development of weeds so it will minimize labour cost on the control of weeds as well as for the pest control. It also reduces soil erosion. Mixing crops and trees will also increase the total production and farm profitability than when the same crops and trees are grown separately as well as providing 2 or more different food crops and trees for the farm family in one cropping season. Varieties will be local and adapted to the local conditions and familiar to farmers, which will facilitate the possibility to scale up such intervention. However, this should be always linked to quality and quantity of water available which will be conducted in the second output, and with market and consumer preference.

#### **(Inter)National technical standards and regulations**

Crops and trees should be registered at the ministry of agriculture and regulations in this regard (in terms of water demand and agro-ecological zones) should be followed. If some of seed and tools need to be imported, then the ministerial resolution of the ministry of agriculture number 31/T date 5/2/2013 should be followed.

#### **Activity 3.3.2 Introduce drought tolerant crops and trees and enhance livestock production**

##### **Location + Suitability**

During the inception phase under the first output, the drought tolerant varieties will be decided in agreement with the ministry of agriculture and agrarian reform and the local communities. The inception phase will also identify the main constraints to introduce these varieties and provide implementation plan for solving this issue. One of the examples could be to establish a nursery to produce seedlings of drought tolerant varieties. This is to take into account the sustainability of this intervention. Through the nursery farmers in the targeted areas will have access to seedlings to replant their lands and adapt with the climate change.

This intervention will support the efforts of the ministry of agriculture in using new crops and trees tolerant to drought.

Activities:

- Establishment of the nursery using the varieties that are identified within the inception phase of the project
- Install modern irrigation techniques in the nursery with solar panel, in case the level of ground water permits to use this technique
- Raising awareness for farmers on Good Agriculture Practices using FAO approach on Climate Smart Agriculture,
- Supporting extension services to provide good technical advice to farmers.

The design of this intervention and the establishment should start during the first year of the project. The production will start in the third year of the project. The training component will be implemented when the nursery starts production (so in the third year)

##### **Budget (USD) + Cost-effectiveness**

The total cost is 417,554 USD. Cost per beneficiary is 31.6 USD (considering that the seedlings will benefit 12,000 persons in the four target areas). It is expected that the nursery will start production in the third year of the project. When the nursery reaches its maximum production capacity, it is expected that more farmer in the targeted area and even adjacent areas will benefit from seedlings availability. Not introducing drought tolerant crops and trees, would mean that farmers would use crops and trees or varieties that are water demanding which means more depletion of water resources and vulnerability to climate change.

##### **Alternatives solutions**

Possible alternative is pay farmers cash money to procure saplings and restore their fruits trees which is their main livelihood. Doing so, will result in planting unknown varieties from unreliable sources which most like be a susceptible to biotic/abiotic stresses. It will be very expensive and time consuming to leave the small farmers look for saplings from private sectors which is very limited in the country. Establishing nursery for continuous distribution and planting of the biotic/abiotic tolerant and high-yielding fruits saplings will save about 50 to 60% (260-300 USD per year) of the production costs and inputs required per 1000 m2. Additionally, there will be about 100-200 USD as a gain/benefit from having improved productive fruits trees per unit area. However, actual figures on savings and cost effectiveness

of this intervention will be precisely calculated during the planned for studies and assessments phase of the project.

**Beneficiaries (direct and indirect) + Benefits**

The nursery will be established in one of the four targeted areas under this project. The exact location will be identified during the inception period based on the types of varieties to be selected. The area of the nursery is about (10,000m<sup>2</sup>) to produce seedlings. 5-10 persons will work in the nursery. The production will benefit about 12,000 persons in the four targeted areas by this project. 1,200 beneficiaries will benefit from training programme on Good Agriculture Practices and 20 technicians/extensionists will be trained through special training course/s. All local communities of the targeted areas will benefit from the greater availability of dairy products in the markets.

**Operation + maintenance needs and arrangements + responsible entity**

The involvement of local communities in various steps of the project from designing into implementation is important for the sustainability of the results. This intervention will be implemented through FAO technical team (crop production officer, water for irrigation officer, the resilience officer in Rural Damascus, M&E team). The intervention will be backstopped by FAO technical teams in the regional office in Cairo and FAO HQ in Rome.

The intervention will be implemented in full coordination and cooperation with the ministry of agriculture and agrarian reform, ministry of water resources and ministry of local administration and environment. FAO will design the technical specifications, and the design of the nurseries will be based on the ministry of agriculture national standards. The ministry of local administration and environment will be responsible for the overall coordination with the partners, on the environment impact of this intervention and make sure that the intervention is in line with the environment standards. The ministry of agriculture will be responsible for the management and maintenance of the nursery when the project is finalized.

- Cost of civil work to establish the nursery
- Cost of the tools, equipment and seed for the nursery
- Cost of the training and raising awareness

**Sustainability needs and arrangements, incl. replication and upscaling + responsible entity**

The nursery will be linked with the investment plan (business model) of the extension services in order to keep the production beyond the project period. The directorate of agriculture in rural Damascus is the entity responsible for the operation and sustainability of the nursery.

The focus on drought tolerant crops and trees that could still generate income for farmers, could be scaled up to include other locations in the country.

**(Inter)National technical standards and regulations**

The nursery will be established by a decision from the minister of agriculture. The decision will identify the structure and operational regulations of the nursery. For the plant handling (seed) the national law N. 31/T date 5/2/2013 would be applied.

Output 3.4 Promote alternate sustainable livelihood opportunities with special focus on rural women	Activity 3.4.1 Promote sustainable livelihood opportunity through crop residuals management and support to rural women
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The Crisis in Syria has had a severe impact on livelihood of farmers who lost their production assets. This has increased negative coping strategies which could contribute to the climate change such as burning of crop residues, and/or abandonment of their production which may increase land degradation. The crisis has led to an increase in the number of women-headed households (expectedly about 50%), who have consequently assumed more responsibilities and heavier workloads to support their families in the absence of men from the home and the community. Additionally, women contribution to agriculture production in the targeted areas is very crucial, and as a result for the crisis, their access to agriculture inputs has been restricted. Therefore, this contributes to increases in negative coping mechanisms, including disposal of productive assets, and drastically reducing food consumption and diversification affecting the nutrition status. This impact has magnified and also expected to increase further with the impact of climate change. So, it is very important to tackle this problem from livelihood point of view and adaptation to climate change.

The interventions proposed under this output are designed to provide farmers (with special focus on women headed households) in the targeted areas with alternative livelihood opportunities that could benefit both the adaptation to climate change and at the same time build the resilience of targeted communities to climate change.

Activity 3.4.1 Promote sustainable livelihood opportunity through crop residuals management and support to rural women

**Location + Suitability**

This intervention will include the management of crop residuals as compost (organic fertilizers) and as fodder for livestock. It will also include support to rural women with livelihood opportunities that could include for example processing of local products (vegetables and dairy) or marketing of these products.

In Syria, crops and trees residues production and usage as livestock feed is not as common as it is in neighbouring countries and the project will provide an opportunity to use it in this area. Moreover, livestock are essential to the livelihoods of many residents of the target area, who are vulnerable to climate change and its impact on their production, as a source of income and food. Therefore, providing fodders during the year is necessary to preserve the livestock and increase their productivity and thus build their resilience to climate change.

This activity aims to promote utilizing locally available crops and trees and their residues as more nutritious and sustainable feed to improve the productivity and subsequently livelihoods of smallholding livestock farmers. Pilot interventions will be implemented in the three targeted villages proposed in the project (Mlieha, Zebdien and Deir Alasafir), and the exact sites will be carefully selected after extensive consultation with line ministry, project management, the technical staff and local communities.

The preserved fodder will serve as a safety net for vulnerable and smallholding livestock farmers especially during dry winters when fodder tends to be extremely scarce. In addition, during the project activities, other crops and trees that consume less water such as barley and rye may be tested together with the participation of farmers, depending on feasibility in each location. At the same time, having diversified sources of feed available for the livestock herders through the year, could help reduce the dependence on imported concentrated feed (which is also highly energy demanding).

On the other hand, Soil organic matter plays a critical role in sustaining soil fertility, and compost is a rich source of organic matter that can deploy crop residues, animal waste, food garbage and even certain types of municipal and industrial waste. The ultimate objective is to improve soil productivity, reduce the contamination of ground water, maintaining sustainable agricultural production and prevent land degradation that arises from soil pollution and loss of organic matter and the overuse of inorganic fertilizers. This intervention could as well benefit from the organic products from wastewater treatment plant (WWTP) that will be accomplished under UNDP component.

The success of this intervention could be scaled up to extend the availability of alternative fertilizers (organic fertilizers). Demand on rural women products is usually considerable. Particularly if local varieties and improved traditional practices are used. Aspects related to food safety and quality would need to be emphasized. In addition to good processing practices or good packaging practices using tools, equipment and methods that doesn't contribute to climate change.

The following activities are proposed:

- Based on the results of the implementation plans and technical studies under the first output in this component, design a plan for rural women support, crops and trees residues (fodder) processing using local crops and trees in the areas
- Design the crops and trees residues (fodder) making protocol to minimize the emission of greenhouse gases
- Provide 2 crushers for each location
- Apply a pilot in a demonstration field on the processing of crops and trees residues (fodder) in the three villages.
- Introduce composting as a small scale business for farmers groups
- a management and maintenance plan will be designed for crushers in cooperation with the extension services in the targeted locations

- Form farmers groups and provide them with the needed technical support and tools to start the processing
- Establish rural women groups, provide them with training on food safety and quality, in addition to business management (taking into account the aspect of climate change)
- Provide the needed equipment and tools for the women groups

This intervention can start during the second year of the project.

#### **Budget (USD) + Cost-effectiveness**

Total cost is 266,906 USD. Cost per beneficiary is 49.4 USD. The estimated production capacity of one crusher is 1 ton/hour. The 1 ton is enough to feed 1 sheep for three months (particularly during wintertime when no feed is available) and one month for each cow. Each crusher can work for at least 5 hours per day. Taking into account that the crushers will work to process crop residuals for summer and winter crops and trees which means that the crushers could work throughout the year.

For organic fertilizers. Each beneficiary will need 400-500 L/donum. The farmers apply compost once per season. The farmer will need about 40 days to produce one pile of compost (about 400 L), and it is possible to produce more than one pile at the same time. So, the remaining amount after using the required quantity could be sold in the market. Not using organic fertilizers would mean to continue the use of chemical fertilizers and increase level of soil and ground water pollution which would require expensive treatment process to reverse this impact. In the other hand, increasing availability of environment friendly inputs would help farmers to adapt to climate change and reduce the contribution to climate change.

#### **Alternatives solutions**

The alternative for management of crop residuals as compost and feed for animals can be distributing concentrated animal feeds and chemical fertilizers to farmers and herders. Current cost estimate for the feeds requirement of one cows per month is USD 500 to 700. Hence, training and equipping herders and farmers to manage their farms residual is much more cost effective compared to procurement and distribution which is unsustainable as well.

#### **Beneficiaries (direct and indirect) + Benefits**

The total number of beneficiaries is 5,400 persons (disaggregated as following: 1,800 will benefit from crushers for making fodder and 2,400 persons will benefit from the composting and 1,200 persons will benefit from rural women empowerment). For the herder's households: The targeted households will be selected from those who are vulnerable small-scale breeders with an average holding size of less than 15 heads of sheep per household, and less than 4 cows.

The beneficiaries will receive the following support:

- Capacity building on the processing of crops and trees residues (fodder)
- Access to crushers to support the processing of crops and trees residues (fodder). Each community will receive 2 crushers.

For the compost: The farmers will also receive tools to help them in compost making and use the compost for their own production. The improvement of livestock and crop production will benefit the local communities in the targeted areas through more availability of food and less impact of climate change. This means that about 20,000 households will indirectly benefit from this intervention

Women headed households will be prioritized, and targeted rural women will benefit from:

- Access to sustainable livelihood opportunities
- Capacity building to improve their technical and management skills

#### **Operation + maintenance needs and arrangements + responsible entity**

Two crushers will be provided to the extension units or the municipality in each location of the three targeted locations. A plan for the use of crushers by farmers needs to be designed in consultation with local communities in order to maintain the benefit from these crushers after the project period. The maintenance of the crushers will be under the responsibilities of the extension unit or the municipality in the of four targeted locations after the delivery of the crushers. The crushers will be procured from local markets, based on technical specification designed by FAO and in line with national standards. This activity will build on the use of crop residues from intercropping and crop rotation. Another source of

compost would be the secondary products from the wastewater treatment plant rehabilitated by UNDP under component 2. Farmers will apply the compost in their own private lands. The capacity building for farmers and technicians will help to sustain this technique beyond the project period.

This intervention will be implemented through FAO technical team (crop production officer, livestock officer, the resilience officer in Rural Damascus, M&E team). The intervention will be backstopped by FAO technical teams in the regional office in Cairo and FAO HQ in Rome. The intervention will be implemented in full coordination and cooperation with the ministry of agriculture and agrarian reform, ministry of water resources and ministry of local administration and environment. FAO will design the technical specifications for compost making following the technical guidance in this regard and the national standards. The ministry of local administration and environment will be responsible for the overall coordination with the partners, on the environment impact of this intervention and make sure that the intervention is in line with the environment standards. For rural women, the support will be provided to women groups established as per the ministry of agriculture roles and regulations.

**Sustainability needs and arrangements, incl. replication and upscaling + responsible entity**

The capacity building to technicians, farmers and herders and women groups will guarantee sustainability beyond the project period. The use of the products of rural women and local crops and trees in the crop's residues for fodder and compost processing is another guarantee. The participatory approach in decision making with the local communities can also help the engagement of the communities in applying this knowledge beyond the project period.

Feed is the major challenge for livestock production. The introduction of simple new techniques using local resources available is good step towards addressing this problem. So, based on the result of this project and other FAO on-going projects, there is a good opportunity to scale up this intervention to include other locations and use other crops and trees. The lack of fertilizers is big challenge for farmers. At the same time, reduce the dependency of chemical fertilizers is important to reduce the pollution of ground water. The success of this intervention could be scaled up to extend the availability of alternative fertilizers (organic fertilizers)

- Cost of crushers
- Cost of training and raising awareness
- Cost of tools for the compost making to targeted farmers
- Cost of tools and equipment for rural women

**(Inter)National technical standards and regulations**

The ministry of agriculture law n. 158 includes regulations on the use of fertilizers. Ministry of agriculture ministerial decision on rural women groups support. FAO technical standards for compost making and applying follow the national standards

## Annex 5: ESIA-ESMF/P

Content:

- 1.1. Introduction, purpose, method, project overview / summary of project risks management approach
- 1.2. Risks screening and categorization
- 1.3. Environmental and social impact assessment (quantification)
- 1.4. Environmental and social management plan, including monitoring

### 1.1. Introduction, including summary description of the project/ programme

#### Introduction

Social and environmental policies are essential tools to prevent and / or mitigate undue harm of projects and project activities to people and their environment. In line with the Adaptation Fund's Environmental and Social Policy (ESP) and UN-Habitat's Environmental and Social Safeguard Policy (ESSP), UN-Habitat and partners are required to categorize the risk of the project as a whole and to manage any potential environmental and social risks and impacts. This Environmental and Social Management Framework / Plan (ESMF/P) has been prepared by UN Habitat Syria.

#### Purpose

The purpose of this ESIA-ESMF/P document is to demonstrate (in an overview) how this project complies to the AF ESP. The document shows what potential environmental and social risks and co-benefits and opportunities have been identified per project activity, the potential impacts of the risks and how these will be managed. This ESMF/P will be used as a framework plan for to be developed final Environmental and Social Management Plans (ESMPs) which will be developed for the inception phase of the project with the most up-to-date data.

#### Methodology

To ensure compliance with the AF ESP, all proposed project activities have been screened against the 15 AF principles (i.e. safeguards) to identify potential environmental and social risks and to assess related potential impacts. Where risks have been identified, impacts have been assessed and where needed, measures to avoid or mitigate risks and impact, identified (+ monitoring arrangements).

As part of the ESIA-ESMF/P, risks screening sheets have been completed for proposed activities under component 2 and 3. These have been shared with the MoLAE to identify if any additional ESIA's were required by Syrian law. The outcomes of the risks screening have been consolidated in the proposal, including in the budget. The risks screening sheets are included below.

Analyses are based on collected disaggregated data focused on identification of climate change related needs, limitations, constraints and requirements specific for marginalized and vulnerable groups, especially of women and youth. Activity prioritization has been done in consultations with project beneficiary groups.

## Overview / summary of project risks management approach

The following table provides an overview/summary of the management approach for project risks. Additional detail for project-level mitigations, verification and monitoring is provided in Table 46.

Table 38. overview / summary of project risks management approach.

ESP principle	Initial environmental or social risks present Y/N	Potential risk description	Impacts assessment	Safeguard measures	Monitoring indicator(s) and method	Responsibility and frequency	
1 - Compliance with the law	Yes	Potential low risk of non-compliance with laws/standards		Include standard clause in MoU / all contract with reference to laws / standards	Review MoUs, all contracts	UN-H with MoLAE Inception phase	Deleted: 3837 Deleted: as per table in Part II.L Deleted: No
2 - Access and equity	No						
3 - Marginalized and vulnerable Groups	Yes, potentially	Potential adverse impacts on vulnerable groups have been identified in general. However, not all specific needs, limitation and constraints / concerns may be identified / up to date when the project commences.	Specific needs, limitation and constraints of target groups may not be fully identified / up to date when project commences  Target population: T: 81,700 W: 50-60% Y: 32-37 % F: 30-95%	All beneficiary groups will be consulted again during the inception phase to verify and further identify all specific needs, limitation and constraints. Related to that the ESMF/P will be updated.	Check consultation reports with latest data on identified specific needs, limitation and constraints of beneficiary groups; updated ESMF/P	UN-H in coordination with MoLAE, UNDP and FAO  Inception phase and any consultation report	Deleted: P
4 - Human rights	No						
5 - Gender equality and women's empowerment	Yes	Risks related to limited awareness of gender approach and baseline		Share information on gender policies and approach and baseline with project actors	Keep Minutes of consultation meetings and review of grievance register	UN-H/ UNDP and FAO Regular monitoring	Deleted: No Deleted: IP
6 - Core labour rights	Yes	Potential low risk of non-involvement of local employment, non-local procurement, non-compliance worker rights and limited facilities		Include measures to maximise local employment and procurement, include standard clauses in all MoUs and contracts on worker rights and have Contractor provide or facilitate access to facilities	Review of local procurement and employment records; workers grievance mechanism in place, review of grievance register; and appropriate H&S and sanitary facilities provided	Contractor/ UNDP and FAO Inception phase and regular site inspections	Deleted: No Deleted: IP
7 - Indigenous peoples	No						
8 - Involuntary resettlement	Yes	Potential low risks of physical displacement and		Include standard clause in MoU / all contracts;	Review MoUs, all contracts prior to signing; Keep Minutes	UN-H/ UNDP and FAO	Deleted: No Deleted: IP

ESP principle	Initial environmental or social risks present Y/N	Potential risk description	Impacts assessment	Safeguard measures	Monitoring indicator(s) and method	Responsibility and frequency
		<a href="#">economic displacement</a>		<ul style="list-style-type: none"> <li><a href="#">Stating no physical displacement will take place due to project activities (unless project beneficiaries request this)</a></li> <li><a href="#">Stating no economic displacement (even informal) will be take place due to project activities (unless project beneficiaries request this)</a></li> </ul>	<a href="#">of consultation meetings; Review of grievance register; and regular site monitoring</a>	<a href="#">Inception phase and regular site inspections</a>
9 – Protection of natural habitats	No					
10 – Conservation of biological diversity	No					
11 – Climate change	<a href="#">Yes</a>	<a href="#">Potential risk of increased GHG Emissions due to Project Emissions (such as pumping)</a>		<a href="#">Exact project-related energy use to be determined during project inception phase and where feasible, 'extra' energy use to be compensated through installation of solar PV</a>	<a href="#">Recording, monitoring and review of energy use</a>	<a href="#">Contractor/ UNDP and FAO</a> <a href="#">Regular monitoring</a>
12 – Pollution prevention and resource efficiency	<a href="#">Yes</a>	<a href="#">Potential risk of lack of waste management procedure and risks related to potential spills</a>		<a href="#">A Waste Management Procedure / plan will be developed</a> <a href="#">A Spill Prevention and Response Procedure must be developed</a>	<a href="#">Regular site inspections</a>	<a href="#">Contractor/ UNDP and FAO</a> <a href="#">Regular site inspections</a>
13 – Public health	<a href="#">Yes</a>	<a href="#">Potential risks related to Occupational and Community Health and Safety; Contractor-Community Interactions and Security; Vector borne diseases; Emergency Response and Preparedness; Security; Covid-19</a>		<a href="#">Mitigations include development of:</a> <ul style="list-style-type: none"> <li><a href="#">Occupational Health and safety Plan</a></li> <li><a href="#">Worker Code of Conduct/Training</a></li> <li><a href="#">Vector Borne and Communicable Diseases Procedure</a></li> <li><a href="#">Emergency Preparedness and Response Procedure</a></li> </ul>		<a href="#">Contractor/ UNDP and FAO</a> <a href="#">Inception phase and regular site inspections</a>

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ESP principle	Initial environmental or social risks present Y/N	Potential risk description	Impacts assessment	Safeguard measures	Monitoring indicator(s) and method	Responsibility and frequency
				<ul style="list-style-type: none"> <li><a href="#">Security and Human Rights Management Procedure</a></li> <li><a href="#">Covid-19 Protocol</a></li> </ul>		
14 – Physical and cultural heritage	Yes	<a href="#">Potential risk of chance finds</a>		<a href="#">Chance Finds Procedure will be developed</a>	<a href="#">Site inspection</a>	<a href="#">Contractor/ UNDP and FAO</a> <a href="#">Site inspection as required</a>
15 – Lands and soil conservation	No					

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## 1.2. Screening and categorization

Based on the screening against the 15 AF principles, the project has been categorised as a “B” category project in terms of the environmental and social risks it poses. See Part II.L.

Normative, planning and capacity development activities under Component 1 consist of assessments and strategy development and capacity development. The project will ensure beneficiary groups will be equally represented and equal benefit from the project activities. This is done through a participatory planning approach. Quotas will be used ensure different groups are represented equally.

Activities under Components 2 and 3 are ‘concrete’ adaptation actions. Because of the scope of the proposed activities, which are numerous and localized, and, where possible, managed by communities who have a stake in avoiding environmental and social risks and impacts, potential direct impacts will be minimal and indirect impacts and transboundary impacts are highly unlikely. Given this, cumulative impacts are also unlikely. As a result, the entire project is regarded as a medium risk (Category B) project. As for the proposed WWTP (output 2.3), measures are taken to ensure water quality is in compliance with standards for irrigation.

In compliance with the Syrian EIA Regulations, particularly Environmental protection law (2012) and Executive order for EIA, 2008 and 2013, environmental approval has been granted for all proposed project activities, meaning no further ESIA's are required by Syrian law (see also part II.E)

For an overview of project activities' screening results against the 15 AF principles see below table. For details, see the next section.

Table 39. Overview of environmental and social impacts and risks for which further assessments and management are required\*

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
1. <i>Compliance with the Law</i>	X	
16. <i>Access and Equity</i>	X	
17. <i>Marginalized and Vulnerable Groups</i>		X
18. <i>Human Rights</i>	X	
19. <i>Gender Equity and Women's Empowerment</i>	X	
20. <i>Core Labour Rights</i>	X	
21. <i>Indigenous Peoples</i>	X	
22. <i>Involuntary Resettlement</i>	X	
23. <i>Protection of Natural Habitats</i>	X	
24. <i>Conservation of Biological Diversity</i>	X	
25. <i>Climate Change</i>	X	
26. <i>Pollution Prevention and Resource Efficiency</i>	X	
27. <i>Public Health</i>	X	
28. <i>Physical and Cultural Heritage</i>	X	
29. <i>Lands and Soil Conservation</i>	X	

\* Further details on initial risk screening and additional actions and proposed mitigations required for compliance with AF ESP and Gender Policies are given in Annex 5 and 6.

Table 40 Overview of typical potential environmental and social risk areas in Syria

Checklist of environmental and social principles	Potential Risk/impact Area
<i>Principle 1: Compliance with the Law</i>	• <i>Non-compliance with laws / standards</i>

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<a href="#">Principle 3: Marginalised and Vulnerable Groups</a>	<ul style="list-style-type: none"> <li>• <a href="#">Potential adverse impacts on vulnerable groups</a></li> </ul>
<a href="#">Principle 6: Core Labour Rights</a>	<ul style="list-style-type: none"> <li>• <a href="#">Non-involvement of local employment</a></li> <li>• <a href="#">Non-local procurement</a></li> <li>• <a href="#">Non-compliance for worker rights</a></li> <li>• <a href="#">Limited facilities</a></li> </ul>
<a href="#">Principle 8: Involuntary Resettlement</a>	<ul style="list-style-type: none"> <li>• <a href="#">Physical displacement</a></li> <li>• <a href="#">Economic displacement</a></li> </ul>
<a href="#">Principle 11: Climate Change</a>	<ul style="list-style-type: none"> <li>• <a href="#">Increased GHG Emissions due to Project Emissions (such as pumping)</a></li> </ul>
<a href="#">Principle 12: Pollution Prevention and Resource Efficiency</a>	<ul style="list-style-type: none"> <li>• <a href="#">Lack of waste management procedure</a></li> <li>• <a href="#">Spills</a></li> </ul>
<a href="#">Principle 13: Public Health</a>	<ul style="list-style-type: none"> <li>• <a href="#">Lack of occupational and community health and safety risk assessment</a></li> <li>• <a href="#">Lack of occupational health and safety</a></li> <li>• <a href="#">Lack of Contractor-Community interactions and security training</a></li> <li>• <a href="#">Increase in vector borne and communicable diseases</a></li> <li>• <a href="#">Limited emergency response, local capacity and equipment</a></li> <li>• <a href="#">Contextual security risk is moderate to high in Eastern Ghouta which is to be monitored over the course of the project</a></li> <li>• <a href="#">Project-based risk to security and human rights is acceptable with mitigations</a></li> <li>• <a href="#">Project-induced risk to social cohesion is acceptable with mitigations</a></li> <li>• <a href="#">Increase potential for stolen items</a></li> <li>• <a href="#">Increase risk of Covid-19 transmission without protocols</a></li> </ul>
<a href="#">Principle 14: Physical and Cultural Heritage</a>	<ul style="list-style-type: none"> <li>• <a href="#">Potential chance finds (archaeological, graves)</a></li> </ul>

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Table 41. Overview of project activities' screening results against the 15 AF risk areas / principles (in line with table 39). For more details see country-specific ESIA reports

Detailed outputs / activities	Risk screening result	Explanation why triggered or not
<b>Component 1:</b>		
1.1. Inception workshop and coordination mechanism	No potential risk identified	Activities involve assessment and planning processes. Potential risks considered are those related to unequal access and equity, also for vulnerable groups and gender, throughout the assessment and planning processes and identification of gender sensitive action plans.  UN-H, UNDP and FAO will involve beneficiary groups, including identified vulnerable groups (and women and youth) in the activities. Targets and quotas will be used. These will be verified during the project inception phase specific baseline and targets and action plans per execution entity, also to involve women and youth and other vulnerable groups. Therefore, no potential risk is identified.
1.2. Capacity strengthening package		
1.3. Hydrogeological study, CC VA and future outlook for the region		
1.4. Gaps analyses and recommendations for managing water and land		
1.5. INRM Strategy and action plan (with CC mainstreamed)		
1.6. M & E plan for above + replication mechanism		
1.7. Formal adoption of strategy document		
<b>Component 2:</b>		
2.1. Assessment and verification / technical specification and engineering studies, including surveys required for detailed design of below interventions	Potential risks identified related to AF risk area 3: Marginalized and vulnerable Groups a	Potential adverse impact of vulnerable groups has been identified in general. However, not all specific needs, limitation and constraints / concerns may be identified / up to date when the project commences. Moreover, there may be a risk of workers coming into contact with effluent through damaged networks and existing sources of effluent discharge  As for other potential risks, these have not been triggered because of the information provided and project activity design aiming to reduce any risk - see also risks screening sheets.
2.2. Rehabilitated sewage network to divert wastewater towards the WWTPs (concrete intervention)		
2.3. Installed mobile wastewater treatment plants to use non-conventional water resources identified (concrete intervention)		
2.4 Rehabilitated irrigation canals to divert treated water for irrigation purposed (concrete intervention)		
<b>Component 3:</b>		
3.1. Studies and assessments to detail the proposed interventions	Potential risks identified related to AF risk area 3: Marginalized and vulnerable Groups	Potential adverse impact of vulnerable groups has been identified in general. However, not all specific needs, limitation and constraints / concerns may be identified / up to date when the project commences.  As for other potential risks, these have not been triggered because of the information provided and project activity design aiming to reduce any risk - see also risks screening sheets.
3.1. Introduction of water efficient agricultural technology		
3.2. Adoption of climate-smart agriculture practices for improved soil fertility and enhanced water use efficiency		
3.3. Promote alternate sustainable livelihood opportunities in silage crops and trees residues and organic fertilizer production		

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## Details and results of the risks screening process

### Principle 1: Compliance with the Law.

#### Screening result: no potential risk

**Explanation:** During project preparation, all relevant rules, regulations and standards have been identified for all proposed project activities, including procedures / steps to comply to these. These are shown in Part II.E. The MoLAE has provided environmental approval (see document below) of the proposed project activities, which means no further ESIs are required by Syrian law no / 12 / 2012. Therefore, no potential risk of non-compliance exists. A translation of the letter can be found below the letter

Figure 3Q. Environmental approval letter from the MoLAE (stating no further ESIA is required by Syrian law)

Syrian Arab Republic  
Ministry of Local Administration & Environment

الجمهورية العربية السورية  
وزارة الإدارة المحلية والبيئة

رقم: / ٢٠٢٠ / ١٢ / ٢٠٢٠  
تاريخ: ٢٠٢٠ / ١٢ / ٢٠٢٠

**الموضوع : خطاب موافقة ، بخصوص عدم الحاجة إلى مزيد من دراسة اضافية لتقييم الأثر البيئي لجميع الأنشطة**

إشارة إلى مقترح مشروع " تعزيز قدرة المجتمعات على مواجهة تغير المناخ من خلال الإدارة المتكاملة للموارد الطبيعية في الغوطة الشرقية بمحافظة ريف دمشق والتدخلات الفورية للتكيف والمقدم لصندوق التكيف " والمتضمن أنشطة تنفيذية للمكونات ١ و ٢ و ٣ ، الواردة ضمن وثيقة المشروع واستناداً إلى التعليمات التنفيذية لتقييم الأثر البيئي رقم ٨١٨ لعام ٢٠١٣ ، نؤكد أن الأنشطة المتعلقة بالمشروع تتوافق مع القانون البيئي رقم ١٢ لعام ٢٠١٢ ، ولا تحتاج إلى دراسة اضافية لتقييم الأثر البيئي وبالمقابل ستقوم الوزارة بتحديد الاشتراطات البيئية لكامل الأنشطة التنفيذية في مرحلة بدء المشروع وفق المعايير البيئية الوطنية .

مديرة السلامة البيئية /خبيرة تقييم الأثر البيئي/  
م. رويدة النهار

معاون وزير الإدارة المحلية والبيئة  
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Syrian Arab Republic  
Ministry of Local Administration & Environment

ياه الصرف الصحي في بلدة زبدین

رة المجتمعات على مواجهة تغير المناخ من خلال  
ن دمشق،  
٢٠٢٠/١٢/٢٠٢٠، والذي تم من خلاله تحديد محطة  
ي بلدة زبدین ، نبين لكم ما يلي:  
بالقرب من مصب التصريف النهائي لشبكات  
بلدية زبدین، وإقراره من اللجنة الفنية للمشروع  
كمحطة لمعالجة المياه وتقع الأرض بالقرب من  
ة في زبدین وجزء من نولا حوالي ٢.٠٠٠.٠٠٠  
أن هذا الموقع مناسب.

بينة):  
ولكنها تختلف عن المعالجة التقليدية بأن جميع  
تقليدية على أحواض متعددة، ولذلك لا تتضمن  
دة وحدات معالجة بالتوازي بحيث تكفي لمعالجة  
ل ) وستلحق بوحدات معالجة ثالثة إن تطلب  
لمعالجة والناتجة عن محطات المعالجة لأغراض  
إلى المسطحات المائية.

ت العضوية الواردة للمحطة.  
المحطة حيث يتمتع بتقنية التحكم في التشغيل  
ة (بما في ذلك إزالة المغذيات مثل النتروجين  
سافة إلى مناسبتها لمعالجة الصرف الصناعي.  
حدات المعالجة، الجزء المتبقي سيتم تعزيله من

Syria- Damascus, Yousef AzmehSeqTel:  
Fax: +963 11 2320726

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Date: 17-02-2021

Ref: 2 17

subject: Approval letter, regarding no further EIA screening needed for all the activities.

Reference to the final AF CC project "Increasing the climate change resilience of communities in Eastern Ghoutta in Rural Damascus to water scarcity challenges through integrated natural resource management and immediate adaptation interventions"

which contain the executing activities related to component 1 , 2 and 3 in the full proposal Document ,And based on the executive instructions of the Environmental Impact Assessment No. 818 of 2013, we affirm that the project's related activities, are in compliance with the Environmental LAW N 12 year 2012 and don't need further EIA ,However ,the Ministry of local Administration and Environment will define requirements conditions for all the activities at the inception phase of project aligned with the national environment regulations .

Safety Atmosphere Directorate

Eng. Rouida Alnahar / EIA Expert /

Deputy Minister of Local Administration and  
Environment

Eng. Hassan Jneidan

Syria- Damascus, Yousef Azmeh Seq

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Email: [info@mola.gov.sy](mailto:info@mola.gov.sy)

During the inception phase a detailed list of environmental conditions will be identified related to laws / standards (in line with part II.E) for the proposed project activities.

## Principle 2: Access and Equity.

### Screening result: no potential risk

**Explanation:** Project beneficiaries (i.e. population; groups) have been mapped (see tables 1 and 6). Community consultations and focus groups discussions have been conducted per beneficiary group to identify possible rivals, disputants and concerns related to equal access of project benefits (see part II.H). There will be neither discrimination nor favouritism in accessing project/programme benefits. Project benefits will be allocated and distributed equally through a participatory process and through joint decision-making using water user and agriculture and water use associations and women and youth

**Deleted:** Translation of the letter below.

**The subject:** provide environmental approval to establish wastewater treatment plant in Zibdin Village  
Under the scope of coordination for project proposal "Increasing the climate change resilience of communities in Eastern Ghouta in Rural Damascus to water scarcity challenges through integrated natural resource management".  
Reference to the minutes of meeting No. 166/64 dated 13/12/2020, where through the meeting, it was decided to set a wastewater treatment plant for Mleiha, Zebdine, in Zebdine Town, we clarify the following:

<#>**The location:** Zebdine Town, property No.472, which is located near the final outlet of sewage network for Zebdine and Mleiha the site was allocated by the municipality of Zebdine, the Project Advisory Technical Committee on behalf of the Ministry of Water Resources, and MOLAE, approved the use of this property as waste water treatment plant, where the land is situated near principal natural irrigation network that provide water for the majority of agricultural lands in Zebdine and part of Nola, about 2,000,000 square meters in Zebdine, and 1,000,000 square meter in Nola, accordingly, we consider the location suitable for the project.

<#>**technical specifications for the plant:** the technical method is SBR, (Biological treatment) The sequencing batch reactor (SBR) is a fill-and draw activated sludge system for wastewater treatment, which is different from the traditional technic that in this system, wastewater is added to a single "batch" or "Tank", however the traditional one use many tanks so SBR treatment does not include primer and final discharge tanks.

<#>Units are prefabricated and ready to install in place, where many treatment units will be installed in parallel, and able to satisfy current needs, and future need up to 4400 square meters, and will be enforced by Tertiary units if needed to meet the Syrian Standard for treated waste water from waste water treatment plant for Irrigation Category "A", the Syrian Standard for treated waste water for water bodies

<#>The SBR features:

<#>suitable for high loads in regard of quality and quantity and organic load included in the flow to the plant.

<#>Require the minimum attention from the plant operator since it is automatic.

<#>Provide final treated water with high quality (include removing undesirable components such as Nitrogen, and Fosfor)

<#>Appropriate for small and mid-size settlement, furthermore, it is suitable for industrial water treatment.

Sludge system: part of the sludge will be used in operating treatment units; the rest will be removed from treatment units every (3-4 months) will be collected in tanks.

The project committed to the Primary treatment for the sludge, where a device will be installed to remove water and apply pressure, the sludge will be accumulated and transferred to be used as fertilizer, after checking and analyzing its components, or used as raw material for biogas units, or it will be transferred to the garbage. And a coordination will be set with MOLAE to identify and adopt the most suitable action in this regard, in addition to coordination with FAO and MoAA, in case the test results indicates that it is appropriate to be used as fertilizer in component 3 activities.

<#>**The environmental impact of the activity:** screening and site measurements results indicate in regard of pollution factors, and the results of the recent facts finding field missions by technical staff of MOLAE and MOWR of 2020, the principal source of pollution is the untreated water of waste water generated from the targeted municipalities, through the treatment process in Mleiha and Zebdin and all the neighbor area will benefit from removing the pollution, in addition DerAlassafir also, since it will not receive no longer

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groups. Under component 1, various groups will be equally involved, in assessment and planning processes (if needed through quotas).

**Principle 3: Marginalized and Vulnerable Groups.**

**Screening result: potential risk that not specific needs, limitation and constraints / concerns may be identified / up to date when the project commences.**

*Explanation:* Project beneficiaries (i.e. population; groups) have been mapped (see tables 1 and 6), including marginalised and vulnerable groups. Disaggregated data at the district and municipal and activity beneficiary level has been used to identify and quantify marginalized and vulnerable groups. Also, UNHCR has been consulted to specifically identify potential risks and needs of marginalised and vulnerable groups. Community consultations and focus groups discussions have been conducted (see part II.H.) to specific needs, limitations, constraints / concerns. However, not all specific needs, limitations, constraints / concerns may have been captured or are up-to-date.

**Principle 4: Human Rights.**

**Screening result: no potential risk**

*Explanation:* The MoLAE states that 'the Syrian Constitution assures all Syrian citizen human rights.' During project preparation and execution, international human rights are respected and where applicable, promoted. During project preparation, possible human rights issues have been identified by assessing whether human rights have been ratified or not (see below), and to confirm and understand possible issues through consultation with OHCHR.

**Principle 5: Gender Equality and Women's Empowerment.**

**Screening result: no potential risk**

*Explanation:* the project ensures that gender equality and women's and youth empowerment is ensured for all project activities. During project preparation, this has been done through detailed stakeholder mapping (see also principle 3) including identification of specific needs of women and youth. UN Women and UNICEF have also been consulted to specifically identify potential risks and needs of women. A specific 'gender' approach and baseline section has been developed (see annex 6). Arrangements that ensure equal participation in project activities and consultations and equal access to benefits have been identified in this gender approach and baseline.

**Principle 6: Core Labour Rights.**

**Screening result: no potential risk**

*Explanation:* the project ensures that all project activities meet the core labour rights and that possible risks have been identified and if existing, prevented or mitigated. During project preparation, this was done by identifying possible compliance issues by analysing if Syria ratified the conventions and to confirm and understand possible issues through consultations with ILO. Any agreement / contract signed will include reference to compliance with ILO labour standards. Moreover, the executing entities are UN agencies, which should comply to the ILO labour standards as a principle.

**Principle 7: Indigenous Peoples.**

**Screening result: no potential risk**

*Explanation:* the project ensures that project activities are consistent with the rights and responsibilities set forth in the UN Declaration on the Rights of Indigenous Peoples by ensuring that possible issues are identified and mitigated / prevented. During project preparation, the project determined that no indigenous people are present in the project / programme target areas. This has been determined through stakeholder mapping (through desk research and expert and community consultations). Although Syria did not ratify the ILO Convention 169 and other applicable international instruments relating to indigenous peoples, this is not a major issue as no indigenous people are present in the target area and because of standard measures under safeguard area 6 (see above).

**Principle 8: Involuntary Resettlement.**

**Screening result: no potential risk**

*Explanation:* the project determined that no physical or economic displacement will take place due to the project/programme. This has been determined by mapping project target sites land ownership (private, public) and land use, also informally, and through consulting communities / users on the possible risk of resettlement and to get agreement on proposed interventions (i.e. no interventions will take place without

the consent of inhabitants in the targeted areas). Land owners, private or public, have agreed with using their land for project activities.

#### Principle 9: Protection of Natural Habitats.

##### Screening result: no potential risk

*Explanation:* the project ensures that no unjustified conversion or degradation of critical natural habitats will take place because of project activities. During project preparation, it has been checked if any critical natural habitats exist in the target location, including their location, characteristics and critical value (i.e. legal protection status, common knowledge or traditional knowledge), as well as possible negative impacts on these due to project activities. This has been done by checking below.

National plans and legal documents:	20 km north / east of the target area is recognised natural habitat for fauna; however, due to the crisis situation, many species were lost
Convention on Wetlands (Ramsar, Iran, 1971) <sup>31</sup>	Not in or close to target area
UNESCO Man and the Biosphere Programme <sup>32</sup>	Not in or close to target area

#### Principle 10: Conservation of Biological Diversity.

##### Screening result: no potential risk

*Explanation:* the project ensures that any significant or unjustified reduction or loss of biological diversity because of project activities will be avoided. During project preparation, it has been checked if any important biodiversity exist in the target location, including their protection status and other recognised inventories as well as possible negative impacts on these due to project activities. According to the IUCN red list the only critically endangered species in the project target area is the Barada Spring Minnow (fish). The project won't have a negative impact on this species because the target streams are polluted and limited life exist in it. However, the project could have a positive impact on restoring the species.

National plans and legal documents:	Due to the crisis, many agriculture fruit trees were lost in the target area
IUCN Red List of Threatened Species: <sup>33</sup>	Barada spring minnow. The Barada spring minnow is non-existent in the target area due to pollution of streams and drought.



#### Principle 11: Climate Change.

##### Screening result: no potential risk

*Explanation:* the project will ensure that project activities will not result in any significant or unjustified increase in greenhouse gas emissions or other drivers of climate change.

The wastewater treatment plant is an automated unit and requires continuous electricity as per internal available similar the use of electricity is 8-10 KW/hr (Max). Details of energy use will be required within the specification. In the evaluation of the proposal, energy use will be a key element to be assessed. Energy use will be generated / compensated by solar PV and backed-up by a generator. Power generation options will be further reviewed during project implementation. As for the irrigation systems and related energy use for pumping and distribution of water, this will also be compensated with solar PV.

#### Principle 12: Pollution Prevention and Resource Efficiency.

##### Screening result: no potential risk

*Explanation:* the project aims to maximize energy efficiency and minimizing material resource and prevents waste and pollution due to project activities through analysis of possible risks of inefficiencies in

<sup>31</sup> <https://www.ramsar.org/wetland/syrian-arab-republic>

<sup>32</sup> <https://en.unesco.org/biosphere/arab-states>

<sup>33</sup> <https://www.iucnredlist.org/search/map?query=syria&searchType=species>

energy and material resource use and waste and pollution risks of each activity – which has been done during project preparation. The whole project is designed to use resources as efficient as possible by reducing pollution and using treated wastewater as a source for agriculture irrigation.

**Principle 13: Public Health.**

**Screening result: no potential risk**

*Explanation:* the project will ensure that potentially negative impacts on public health are avoided. To avoid potential negative health impacts for project activities and other activities safety signs and equipment will be provided in line with core labour rights (155 and 187). Although the project intends to improve the quality of water for irrigation, water quality monitoring will take place as part of core activities.

**Principle 14: Physical and Cultural Heritage.**

**Screening result: no potential risk**

*Explanation:* the project ensures that the alteration, damage, or removal of any physical cultural resources, cultural sites, and sites with unique natural values recognized as such at the community, national or international level due to project activities will be avoided. During project preparation, It has been checked if physical or cultural heritage sites are present or near project sites, as well as possible risks of impacts on these due to project activities. According to the Syrian government and UNESCO<sup>34</sup>, the Ancient city of Damascus is a heritage site close to the project target area. However, the proposed project interventions will have no impact on the city.

**Principle 15: Lands and Soil Conservation.**

**Screening result: no potential risk**

*Explanation:* The project ensures no negative impacts lands and soil conservation will result from project activities. All proposed project activities aim to enhance sustainable land and soil use, especially for agriculture use. No excavations will take place.

**1.3. Environmental and social impact assessment**

Table 42: summary of project activities' screening and assessment results against the 15 AF risk areas / principles

Output / activities	Potential risk / impact	Impact assessment
2.1 2.2 2.3 2.4	Risk area 3: Potential adverse impacts on vulnerable groups have been identified in general. However, not all specific needs, limitation and constraints / concerns may be identified / up to date when the project commences.	Specific needs, limitation and constraints of target groups may not be fully identified / up to date when project commences
3.1 3.2 3.3 3.4		Target population: T: 81,700 W: 50-60% Y: 32-37 % F: 30-95%

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**1.4. Environmental and social management framework / plan**

Content:

- Allocated roles and responsibilities environmental and social risk management / implement of the ESMF/P
- Opportunities for adaptive management
- Arrangements to supervise executing entities for implementation of ESMF/P
- Budget provision to manage environmental and social risks / implement of the ESMF/P
- Measures to avoid, minimize, or mitigate potential risks
- Risks monitoring system / indicators
- Grievance mechanism

<sup>34</sup> <https://whc.unesco.org/en/statesparties/sy>

### Allocated roles and responsibilities for environmental and social risk management / implementation of the ESMF/P

UN-Habitat will be responsible for environmental and social risks management of the project, including implementation of the Project ESMF/P. An AF and UN-H policies and reporting compliance expert will be part of the UN-Habitat project team. This expert will also supervise the EEs on the implementation of the Project ESMF/P. Guidelines showing how to comply to the AF ESP and GP will be shared with the EEs and they will be guided on the process, including monitoring. A Safeguarding system compliance expert will also be part of the UN-habitat Syria Country project team. Monitoring project staff will require having expertise on environmental and social risk management and be familiar with the AF safeguarding system. The UN-Habitat Syria Country project team will be backstopped by UN-Habitat HQ and ROAS, with experts on climate change, human rights, environmental and social risks managements and gender policies.

#### Roles and Responsibilities

Table 43. Roles and Responsibilities for Direct Contracting

Team	Role	Responsibility
UN Habitat Team	Syria CO Project Management	<ul style="list-style-type: none"> <li>Overview below</li> </ul>
	Syria CO Project coordinator	<ul style="list-style-type: none"> <li>Coordination with execution entities and public authorities</li> <li>Appoint project grievance mechanism focal point to implement the Grievance Redress Mechanism</li> </ul>
	AF and UN-H policies and reporting compliance expert	<ul style="list-style-type: none"> <li>Prepare guidelines for execution entities (in cooperation with below)</li> <li>ESMP monitoring</li> <li>Reporting</li> <li>Documentation of site, interviews with beneficiaries</li> </ul>
Safeguard Consultant Team	ESS Support, Monitoring and Training	<ul style="list-style-type: none"> <li>Prepare / update ESMPs at inception phase</li> <li>Implement Training</li> </ul>
Execution Entity / Contractor	Project Lead / Manager	<ul style="list-style-type: none"> <li>Reporting and updating UN Habitat Team and ensuring project execution, including but not limited to:                             <ul style="list-style-type: none"> <li>Co-develop ESMP with Safeguard Consultant Team</li> <li>Implement ESMP</li> <li>Report on ESMP safeguard activities and key performance indicators to UN Habitat</li> </ul> </li> </ul>

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In Syria, government stakeholders responsible for compliance to national environmental and social policies and standards will be part of the PSC and or PAC, as well as a gender focal point from MoLAE.

All project-related ToR's and contracts will include clauses stating contractors will need to comply to the AF ESP, especially principle 1 (law), 4 (human rights), 5 (gender), 6 and 13 (labour and safety), 8 (involuntary resettlement and 11/12 (emissions / pollution) and to the AF GP. This includes:

- Principle 1: References to laws and standards to which the project activity will need to comply will be included in all legal agreements with all sub-contractors, including steps and responsibilities for compliance.
- Principle 4: References to relevant Humans rights declarations will be included in all legal agreements with all sub-contractors.
- Principle 5: Reference to relevant gender policies and approach and baseline
- Principle 6: Employment and working conditions following ILO standards will be included in legal agreements with all sub-contractors.
- Principle 8: Statement that no involuntary resettlement will take place due to project activities
- Principle 11: Commitment to avoiding GHG emission, where possible
- Principle 12: Statement waste will be handled appropriately
- Principle 13: Ensure that ICSC international health and safety standards are clearly accessible and understood. e.g. by putting clearly visible signs detailing health and safety standards to be located at projects sites and by supplying protective equipment.

Minimum requirements and standard clauses will include:

**Principle 1: Compliance with the laws**

Potential risk / impact	Mitigation
Non-compliance with laws / standards	<ul style="list-style-type: none"> <li>• Include standard clause in MoU / all contract with reference to laws / standards as described in this proposal (Part II.E)</li> </ul>

**Principle 4: Human Rights**

Potential risk / impact	Mitigation
Limited awareness on human rights	<ul style="list-style-type: none"> <li>• Share information on human rights with project beneficiary groups at the inception phase of the project</li> </ul>

**Principle 5: Gender Equality and Women's Empowerment.**

Potential risk / impact	Mitigation
Limited awareness of gender approach and baseline	<ul style="list-style-type: none"> <li>• Share information on gender policies and approach and baseline with project actors</li> </ul>

**Principle 6 Core labour rights**

Potential risk / impact	Mitigation
Non-involvement Local Employment	<ul style="list-style-type: none"> <li>• Measures to maximise local employment</li> <li>• Work with local community on verification of local workers where feasible</li> </ul>
Non-Local Procurement	<ul style="list-style-type: none"> <li>• Measures to maximise local procurement</li> <li>• Work with local community on verification of local suppliers where feasible</li> </ul>
Non-compliance Worker Rights	<ul style="list-style-type: none"> <li>• Include standard clause in MoU / all contracts:               <ul style="list-style-type: none"> <li>○ HR policy aligned with local law, IFC PS2 and ILO Core Conventions</li> <li>○ Worker Grievance Mechanism will be established</li> <li>○ Enforce minimum age expectations (according to ILO) and GoS minimum age)</li> <li>○ Measures to ensure Contractor adopts project HR Policy standards (either contractually or through monitoring)</li> <li>○ Ensure all employees are provided with a written employment contract before start of works</li> <li>○ Provide details of the transport arrangements for all workers to and from their accommodation (dedicated or in the local community)</li> <li>○ Refer to Occupational Health and Safety Procedures</li> </ul> </li> </ul>
Limited Facilities	<ul style="list-style-type: none"> <li>• Contractor to provide or facilitate access to necessary worker facilities which include but are not limited to: toilets, rest areas, smoking areas, canteen and potable drinking water to WHO standards</li> <li>• All worker facilities and accommodation will be cleaned, maintained and centrally managed</li> </ul>

**Principle 8: Involuntary resettlement**

Potential risk / impact	Mitigation
Physical Displacement	<ul style="list-style-type: none"> <li>• Include standard clause in MoU / all contracts:               <ul style="list-style-type: none"> <li>○ Stating no physical displacement will take place due to project activities (unless project beneficiaries request this)</li> </ul> </li> </ul>
Economic Displacement	<ul style="list-style-type: none"> <li>• Include standard clause in MoU / all contracts:               <ul style="list-style-type: none"> <li>○ Stating no economic displacement (even informal) will be take place due to project activities (unless project beneficiaries request this)</li> </ul> </li> </ul>

**Principle 11 climate change**

Potential risk / impact	Mitigation
Increased GHG Emissions due to Project	<ul style="list-style-type: none"> <li>• Exact project-related energy use to be determined during project inception phase and where feasible, 'extra' energy use to be compensated through installation of solar PV</li> </ul>

Potential risk / impact	Mitigation
Emissions (such as from WWTP and pumping)	

### Principle 12 Pollution Prevention and Resource Efficiency

#### Waste management

Potential risk / impact	Mitigation
Lack of Waste Management procedure	<p>A Waste Management Procedure / plan will be developed and at a minimum include the following mitigations:</p> <ul style="list-style-type: none"> <li>• Identification of appropriate waste management to handle, treat and / or recycle waste, including land fill if required</li> <li>• Procedure to handle / treat any sludge</li> <li>• Regular inspections schedule</li> </ul>

#### Spills

Potential risk / impact	Mitigation
Spills	<p>A Spill Prevention and Response Procedure must be developed and at a minimum include the following mitigations:</p> <ul style="list-style-type: none"> <li>• Have suitable drip trays and spill kits to manage any accidental minor releases</li> <li>• All refuelling/fuel handling to be undertaken in a dedicated bunded area away from activities and surface water bodies</li> <li>• The dedicated secure fuel storage area must be bunded</li> <li>• Equip all heavy machinery with absorbent rags to respond to any minor spills of liquid fuels, oil or grease</li> </ul>

### Principle 13 Health

Potential risk / impact	Mitigation
Lack of Health and Safety Risk Assessment	<ul style="list-style-type: none"> <li>• To be conducted prior to construction</li> </ul>
Lack of Occupational Health and Safety	<p>Occupational Health and Safety Procedures must be developed, specific to each Project output, for the following:</p> <ul style="list-style-type: none"> <li>• Working at Height</li> <li>• Heavy Lifting</li> <li>• Working in Confined Spaces</li> <li>• Excavation Works</li> <li>• Hot Work</li> <li>• Working and Scaffolding</li> <li>• Electrical Safety</li> <li>• Working with Machinery</li> <li>• Site Clearance (debris management, unexploded ordinances)</li> <li>• Collapsing Structures</li> <li>• Handling of Hazardous Materials</li> <li>• Weather Conditions</li> <li>• Lone Working</li> <li>• Material Transport (unloading and storage)</li> <li>• Earthmoving and Concreting</li> <li>• Permit to Work System</li> <li>• Lock Out Tag Out (LOTO) System</li> <li>• Minimum Mandatory PPE (incl. shoes, helmets, gloves, high-visibility vest, safety glasses)</li> <li>• Proper Safety Signage</li> <li>• Medical Clinic and First Aid</li> <li>• Housekeeping</li> </ul>
Lack of Community Health and Safety Risk Assessment	<ul style="list-style-type: none"> <li>• To be conducted prior to construction</li> </ul>
Lack of Contractor-Community Interactions and Security	<p>A Worker Code of Conduct/Training must be developed and at a minimum must:</p> <ul style="list-style-type: none"> <li>• Outline general requirements and expectations on security interaction with community and external stakeholders, respectful, polite, and honest behaviour is expected from all employees</li> <li>• Outline requirements on conflict avoidance and sensitivity to local cultures, traditions</li> </ul>

Potential risk / impact	Mitigation
	<ul style="list-style-type: none"> <li>and lifestyles.</li> <li>• Ensure that no workers are to engage with the local community except via an appointed representative</li> <li>• Ensure zero tolerance of illegal activities by all personnel including: prostitution; illegal sale or purchase of alcohol; the sale, purchase or consumption of drugs; gambling and fighting</li> <li>• Be included as part of induction and signed by all employees</li> </ul>
<b>Increase in Vector Borne and Communicable Diseases</b>	<p>A Vector Borne and Communicable Diseases Procedure must be developed and at a minimum must:</p> <ul style="list-style-type: none"> <li>• Limit the spread of vector borne disease and communicable diseases</li> </ul>
<b>Limited emergency Response Local Capacity and Equipment</b>	<ul style="list-style-type: none"> <li>• Audit and gap assessment of local capacity</li> <li>• Coordinate with local emergency response teams (fire, EMS, police, hospital) and implement mitigations to address gaps</li> </ul>
<b>Limited Emergency Preparedness and Response</b>	<p>An Emergency Preparedness and Response Procedure must be developed and at a minimum must:</p> <ul style="list-style-type: none"> <li>• Define individual emergency response actions for all potential scenarios</li> <li>• Define a schedule of emergency drills and scenarios</li> <li>• Establish an Emergency Response Team with dedicated resources and equipment</li> <li>• Ensure emergency communications system is in place and reliable</li> <li>• Implement a drill schedule and provide reports</li> <li>• Define COVID-19 procedure (see below)</li> </ul>
<b>Security and Human Rights</b>	<ul style="list-style-type: none"> <li>• Develop Security and Human Rights Management Procedure that is in alignment with UNDSS SOP, IFC PS4 and the Voluntary Principles of Human Rights</li> <li>• All private security personnel to receive procedural or knowledge training in: <ul style="list-style-type: none"> <li>• Guard-post orders and procedures</li> <li>• Proper conduct and ethics/human rights</li> <li>• Rules of engagement and use of force</li> <li>• Community interaction and community grievance mechanism</li> </ul> </li> <li>• Engage the public security force through the correct hierarchy and channels early in the process to set up good working relationship and improve opportunities for influence on the adoption of International Standards.</li> </ul>
<b>Stolen Items</b>	<ul style="list-style-type: none"> <li>• In the case of public spaces, the municipality will assign a guard</li> </ul>
<b>No Covid-19 protocol.</b>	<ul style="list-style-type: none"> <li>• A Health and Safety Risk Assessment of each project activity, including supply chains and associated facilities, against International Standards needs to be carried out including specific alignment with IFC PS2 (Labour and Working Conditions) as well as IFC PS4 (Community Health and Safety and Security).</li> </ul> <p>The assessment involves a four-step process:</p> <ol style="list-style-type: none"> <li>1. Conduct a Health and Safety Risk Assessment to identify the potential risk and impact of COVID-19 on project activities, including supply chains and associated facilities.</li> <li>2. Develop and implement mitigation measures to manage health risks for each project activity (to be provided in the ESMPs during the project inception phase).</li> <li>3. If despite the implementation of mitigation measures a positive COVID-19 case is identified, then alternative "lower risk" activities will be proposed.</li> <li>4. If "lower risk" activities are not an option, then activities will be delayed/postponed.</li> </ol> <p>Contractors should start to implement COVID-19 mitigation measures now, even if the virus has not arrived in the communities they are operating within. The following is a list of mitigation measures to prevent the spread of COVID-19 in the workplace that must be implemented at each work site:</p> <ul style="list-style-type: none"> <li>• Ensure workplaces are clean and hygienic. Surfaces (e.g. desks and tables) and objects (e.g. telephones, keyboards) need to be wiped with disinfectant regularly</li> <li>• Promote regular and thorough hand washing</li> <li>• Put sanitising hand rub dispensers in prominent places around the workplace and ensure these dispensers are regularly refilled</li> <li>• Display posters promoting hand washing, and ensure that workers have access to places where they can wash their hands with soap and water</li> <li>• Brief workers that if COVID 19 starts spreading in your community anyone with even a mild cough or low grade fever needs to stay at home</li> <li>• Where N95 masks are not available, ordinary surgical face masks will be provided</li> </ul>

Potential risk / impact	Mitigation
	The World Health Organisation (WHO) has additional information and best practice approaches to occupational health and safety during the COVID-19 outbreak. The International Finance Corporation (IFC), also provides specific guidance regarding preventing and managing health risks of COVID-19 in the workplace and support for workers.

#### Principle 14 Physical and Cultural Heritage

Potential risk / impact	Mitigation
<u>Chance Finds</u>	<p>A Chance Finds Procedure must be developed and requires:</p> <ul style="list-style-type: none"> <li>• Stop work in the event of a find and cordon off until next steps are agreed</li> <li>• Identify relevant national authority for communication in the event of a chance find</li> <li>• In the event of a find, prepare Next-step Action Plan (if required)</li> <li>• Liaise with Competent Authority to arrange oversight of the excavation works and storage and transportation of any finds</li> </ul>

**Adaptive management:** when changes in project activities or additional activities are required, these will need to go through a new risks screening and impact assessment process in compliance with AF, UN-habitat and national policies and standards. When this is required, this will be led by UN-Habitat and the PSC would need to approve the changes.

#### Arrangements to supervise executing entities for implementation of ESMF/P

Table 44 Capacity of potential executing entities to carry-out gender responsive activities

Potential executing entity	Skills and expertise to provide gender mainstreaming inputs	Specific requirements execution entities for compliance	Capacity building needs
UNDP	Yes (UN core value)	<ul style="list-style-type: none"> <li>- Appoint an ESP compliance and gender focal point</li> <li>- Capacity to comply to the AF ESP and implementation of the ESMF/P guided by UN-Habitat</li> <li>- Capacity to comply to the AF GP (see annex 6).</li> </ul>	<ul style="list-style-type: none"> <li>- Awareness on requirements</li> <li>- Share guidelines for execution entities to comply and to ensure 'opportunities' are identified and exploited</li> </ul>
FAO			
MoLAE (non execution)	Limited (as government entity)	<ul style="list-style-type: none"> <li>- Appoint an ESP compliance and gender focal point</li> <li>- Capacity to comply to the AF ESP and implementation of the ESMF/P guided by UN-Habitat</li> <li>- Capacity to comply to the AF GP (see annex 6).</li> </ul>	<ul style="list-style-type: none"> <li>- Awareness on requirements</li> <li>- Share guidelines to comply and to ensure 'opportunities' are identified and exploited</li> <li>- Support development baseline and approach before project start + reporting requirements</li> </ul>

#### Budget provision to manage environmental and social risks (incl. gender) / implement of the ESMF/P

Dedicated safeguard / gender compliance staff time is allocated under project execution fees for USD: 34,100. This person will be supported by UN-Habitat ROAS and HQ safeguard / gender specialists. Under component 1, ESIA-ESMF/P specialist firm will be hired to develop the ESMPs at inception phase for USD: 20,000 These persons and / firm will ensure compliance and develop ESP and GP compliance guidelines and action plans for execution entities and guide these execution entities through the process, including baselines and reporting requirements. Costs for risks mitigation measures are integrated in the budget, including e.g. PV installation and water quality monitoring.

**Measures to avoid, minimize, or mitigate potential risks**

Table 45. Overview of project activities' screening and assessment results (in line with risks screening sheets for the project), against the 15 AF risk areas / principles, including measures to avoid or mitigate risks / impacts

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Project outputs / activities	Potential risk / impact	Impact assessment	Measures to avoid or mitigate risks / impacts	M & E arrangements	
				Indicator and method	Responsibility and frequency
2.1 2.2 2.3 2.4 3.1. 3.2 3.3 3.4	Principle 3: Potential adverse impacts on vulnerable groups have been identified in general. However, not all specific needs, limitation and constraints / concerns may be identified / up to date when the project commences.	Specific needs, limitation and constraints of target groups may not be fully identified / up to date when project commences  Target population: T: 81,700 W: 50-60% Y: 32-37 % F: 30-95%	All beneficiary groups will be consulted again during the inception phase to verify and further identify all specific needs, limitation and constraints. Related to that the ESMF/IP will be updated.	Check consultation reports with latest data on identified specific needs, limitation and constraints of beneficiary groups; updated ESMF/IP	UN-H in coordination with MoLAE, UNDP and FAO  Inception phase and any consultation report

Table 46. sets out the general Environmental and Social (E&S) commitments/policies to avoid, minimise or mitigate potential risks, that are to be fulfilled by the Contractor, supported by UN Habitat, EE and the Safeguard Consultant Team, during the Project activities as they relate to the E&S impacts attributable to the construction of works.

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Table 46 Detailed program-level mitigation policies

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
<b>A. General Requirements</b>				
A1. Responsibilities and Liabilities	Ensure that all workers, suppliers and possible subcontractors are familiar and comply with the requirements and specifications of each ESMP.  Review Contracts to ensure that Environmental and Social Safeguards (ESS) requirements are included	Contracts	Contractor/ UN Habitat	Review of Contracts to ensure that ESS requirements are included
	Adjust each ESMP to the specific Project, define the frequency of the monitoring procedure and share it with UN Habitat and donor. Identify if further Management Plans have to be prepared.	Final Project-specific ESMP	Contractor/ UN Habitat/ Safeguard Consulting Team	Review prior to finalisation of Project-specific ESMP
A2. Resources allocated to ESS Management	Assign ESS responsible staff and define the requirements and responsibilities. Typically responsible for contact with stakeholders (Community Liaison Officer (CLO))	Final Project-specific ESMP	UN Habitat/EE	Review prior to finalization of Project-specific ESMP

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
<b>A. General Requirements</b>				
A3. Reporting	Reporting of progress and incidents, accidents, observations, near misses	Final Project -specific ESMP Reporting protocol for Major Incidents	UN Habitat/ EE	Review prior to finalization of Project-specific ESMP
A4. ESS Training	Provided as required during implementation for UN Habitat and IP team	Training performed and recorded	Safeguard Consultant Team	Review of training records

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
<b>B. Protection of the Environment</b>				
B1. Emissions and dust	Use to the extent possible, vehicles in appropriate technical conditions.	Technical Specification Sheet	Contractor/ EE	Prior to commencement of works and each time new equipment/ vehicle is used at the site. Visual inspection on regular basis
	Ensure that vehicle engines and equipment on site are not left running unnecessarily.	Engines switched off	Contractor/ EE	Site inspection
	Best practice to ensure minimisation of dust emissions during dry and windy conditions (e.g. proper stockpiling, watering etc.).	Watering conducted, no dust emissions are observed, no workers' grievances	Contractor/ EE / IP	Regular site inspection Review of grievance records
	Exact project-related energy use to be determined during project inception phase and where feasible, "extra" energy use to be compensated through installation of solar PV	Recording of energy use	Contractor/ EE	Regular monitoring and review of energy use
B2. Noise and vibration	Avoid operations and vehicle movements at night.	No work conducted between 10 pm and 7 am No grievances received	Contractor/ EE	Random site inspection Review of grievance records Review of accident/incident records
	Set traffic speed limits.	Speed signs installed Accident/incident reports	Contractor/ EE	Random site inspection Review of grievance records Review of accident/incident records

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Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
<b>B. Protection of the Environment</b>				
	<a href="#">Position equipment as far as possible from sensitive areas (neighbouring communities)</a>	<a href="#">Distances between equipment and receptors are kept</a>	<a href="#">Contractor/EE</a>	<a href="#">Once prior to commencement of works</a> <a href="#">Review of grievance records</a>
<a href="#">B3. Wastewater management</a>	<a href="#">Ensure access to toilet facilities or portable toilet facilities that will be serviced on a weekly basis</a>	<a href="#">Visual inspection of condition of facilities</a>	<a href="#">Contractor/EE</a>	<a href="#">Random site inspection</a>
	<a href="#">Control surface water and where appropriate incorporate storm water management into project designs</a>	<a href="#">Visual inspection, design review</a>	<a href="#">Contractor/EE</a>	<a href="#">Regular site inspection</a> <a href="#">Final project design</a>
<a href="#">B4. Pollution prevention</a>	<a href="#">Ensure all works carried out minimise pollution risk (e.g. liquid effluents, air emissions, noise and vibration management, vehicle and equipment maintenance and selection, fuel, oil and chemical storage and handling) including the whole duration of the Project.</a>	<a href="#">Ensure that potential pollutants are not stored and handled within 50 m of sensitive receptors (particularly watercourses).</a>	<a href="#">Contractor/EE</a>	<a href="#">Regular site inspection</a> <a href="#">Review of grievance records</a>
<a href="#">B5. Effluents</a>	<a href="#">Ensure appropriate containment and storage of construction wastewater, including sanitary water. No untreated effluent is discharged.</a>	<a href="#">No untreated wastewater discharge</a>	<a href="#">Contractor/EE</a>	<a href="#">Regular site inspection</a> <a href="#">Review of grievance records</a>
<a href="#">B6. Waste Management</a>	<a href="#">Identify waste management facilities and ensure disposal through treatment/removal/recycling of each of the waste types.</a>	<a href="#">Waste management procedure</a> <a href="#">Waste transfer notes</a>	<a href="#">Contractor/EE</a>	<a href="#">Inspect waste management facilities</a> <a href="#">Review of waste transfer records</a>
	<a href="#">Ensure that all wastes produced are properly collected, segregated, stored, transported and treated</a>	<a href="#">Waste collection areas existent, waste inventories</a> <a href="#">Waste transfer notes</a>	<a href="#">Contractor/EE</a>	<a href="#">Random site inspection, Review of waste inventories</a> <a href="#">Review of waste transfer records</a>
	<a href="#">Minimise the waste production to the extent possible.</a>	<a href="#">Records of waste production are kept</a> <a href="#">Waste Management Plan</a> <a href="#">Training performed and recorded</a>	<a href="#">Contractor/EE</a>	<a href="#">Monitor (e.g. monthly) the amount of waste produced</a> <a href="#">Review of training records</a>

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Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
<b>B. Protection of the Environment</b>				
	Document all waste related operations (type of wastes, quantities produced etc.).	Storage, transport and treatment of waste is documented Waste transfer notes Waste inventories	Contractor/ EE	Review of waste transfer records Review of waste inventories
	Appropriate and safe storage of fuels, construction materials, wastes and any materials that can cause spills (e.g. batteries from energy generators).	Safe storage of materials Spill prevention and response procedure Spill response and remediation equipment in place.	Contractor/ EE	Random site inspection

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Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
<b>C. Worker Health and Safety</b>				
C1. Occupational Health and Safety Plan	Develop an Occupational Health and Safety Plan	Occupational H&S Plan in place	Contractor/ Safeguard Consultant Team (for review)	Review of Occupational H&S Plan
C2. Incident reporting	Ensure all H&S related incidents (e.g. observations, accidents) on site are recorded and followed up properly.	Reporting protocol for Major Incidents	Contractor/ EE	Check incident/accident records
C3. COVID-19	Ensure workplaces are clean and hygienic including being wiped with disinfectant regularly; the availability of hand sanitising opportunities (dispensers and/or individual bottles); social distancing where possible; signage on COVID-19 protocols; self-isolation of a worker with symptoms accompanied by immediate testing of workforce. Where N95 masks are not available, ordinary surgical face masks will be provided.	Visual inspection on a regular basis	Contractor/ EE	Regular monitoring
C4. Personal protective equipment	Ensure the provision of Personal Protective Equipment (PPE) for workers (hardhats, masks, safety glasses, safety boots etc. depending on project type).	PPE used by everyone on-site	Contractor/Site Manager	Random site inspection
C5. UXO/ Damaged structure clearance	Ensure UXO clearance/damaged structure clearance obtained prior to start of works.	Documentation of clearance (Commencement of Works Letter)	Contractor/ EE	Review documentation

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
<b>C. Worker Health and Safety</b>				
C6. First-aid	Provide one trained first aiders per 50 employees and adequate amount of first aid kits on site.	Suitable first aid kits on site Ensure the presence of first aid helpers in all shifts First aid certificates	Contractor/ EE	Regular monitoring of first aid kits Review of first aider certificates Review of number of first aiders required by local legislation
C7. Access to health care	Ensure the workforce has access to primary healthcare on site, providing prescriptions and vaccinations where necessary/applicable	Healthcare available on site	Contractor/ EE	Random site inspection Review of grievance records Review of medical records (in case not confidential)
	In case more than 35 workers are present on site, ensure that a hospital, medical clinic or a health centre can be reached within a period of 45 minutes.	Medical centres in the proximity of the site.	Contractor/ EE	Medical centres in the proximity of the site identified once prior the commencement of works
<b>D. Community Health and Safety</b>				
D1. Contractor-Community Interactions and Security	Engage/ communicate/ inform communities, Ensure consultations with the local authorities and communities regarding the construction.	Minutes of Meetings Grievance Mechanism	Contractor/ EE	Review of grievance register Minutes of consultation meetings
	Initiate an efficient Grievance Mechanism to allow potentially affected individuals to raise their concerns.	Grievance Mechanism in place, grievances recorded	Contractor/ EE	Review of grievance register
	Establish a Code of Conduct taking into consideration legislation, safety rules, driving safety rules, substance abuse, environmental sensitivity, communicable diseases, gender issues (sexual harassment), respect for local beliefs and customs, community interactions etc.	Code of Conduct in place and rules shared with personnel	Contractor/ EE	Review of Code of Conduct induction records Review of reported punishable or misconduct behaviour Review of grievance records

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
<b>D. Community Health and Safety</b>				
D2. Traffic and transportation management	Use local traffic signage and collaborate with the responsible local authorities and communities. Use flagmen where appropriate and install clear and visible signage.	Warning signs	Contractor/ EE	Inspection of traffic routes, Review of grievance register
	Implement speed limits for all project vehicles. In the case of road closures, crossing for pedestrians will be provided.	Local access plan	Contractor/ EE	Review of local access plan Random site inspection Review of grievance records
	All vehicles used to transport workers to site must meet national requirements, demonstrate that their condition has been checked and approved prior to use. All drivers shall conduct daily inspections before operating a vehicle.	Technical Specification Sheet	Contractor/ EE	Prior to commencement of works and each time new equipment/ vehicle is used at the site. Visual inspection on regular basis
D3. Vector Borne and Communicable Diseases	Ensure the provision of adequate space, supply of water, adequate sewage and garbage disposal system, appropriate protection against heat, cold, damp, fire and disease-carrying animals, adequate sanitary and washing facilities, adequate lighting, and basic medical services, in accordance with all applicable health and safety regulations and norms.	Vector Borne and Communicable Diseases Procedure Appropriate conditions for workers on site	Contractor/ EE	Regular inspection Review of grievance records
D4. Emergency scenarios prevention	Ensure immediate cleaning of any spills and remediation of contaminated areas after construction.	Emergency Preparedness and Response Procedure Workers trained. Emergency Response Team (ERT) is in place	Contractor/ EE	Random site inspection after spill events One-time inspection after construction Review of training records Review of ERT
D5. Security and Human Rights	Ensure security and human rights in alignment with UNDSS SOP, IFC PS4 and the Voluntary Principles of Human Rights	Security and Human Rights Management Procedure	Contractor/ EE/UNH	Regular inspection Review of grievance records
D6. Damage to people and property	Ensure that site areas are provided with appropriate security, fencing, signage and lighting. Use hazard notices/signs/barriers to protect children and other vulnerable people from harm and prevent access to non-workers.	H&S planning of construction site done, items installed	Contractor/ EE	Inspection prior to the activities. Random site inspection Review of grievance register

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
<b>D. Community Health and Safety</b>				
D7. Involuntary resettlement	Ensure no physical displacement. Include standard clause in MoU / all contracts: Stating no physical displacement will take place due to project activities (unless project beneficiaries request this)	Contracts Resettlement Action Plan (if necessary)	Contractor/ EE	Review of Contracts
	Ensure no economic displacement. Include standard clause in MoU / all contracts: Stating no economic displacement (even informal) will be take place due to project activities (unless project beneficiaries request this)	Contracts Livelihood Restoration Plan (if necessary)	Contractor/ EE	Review of Contracts
D8. Vulnerable Groups	Ensure all vulnerable groups are consulted during inception phase and continually throughout project cycle to verify and further identify all specific needs, limitations and constraints.	Meeting Minutes Grievance Mechanism in place, grievances recorded	Contractor/ EE	Review of grievance register Minutes of consultation meetings and consultation reports

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
<b>E. Labour</b>				
E1. Worker Rights	Ensure minimum legal labour standards as per ILO regulations (child/forced labour, sexual assault, no discrimination, equal opportunities, working hours, minimum wages) are met.	Grievance Mechanism Records	Contractor	Review of Inspection reports (also from labour authorities), Review of grievance records
	Ensure that all direct and indirect workers have access to and are aware about the Workers Grievance Mechanism were they can raise workplace relevant complaints anonymously.	Workers Grievance Mechanism in place and grievances recorded	Contractor	Review of workers grievance register
	Ensure all workers have the same rights and are treated equally.	Non-discrimination policy in place	Contractor	Random site inspection Review of grievance register
E2. Local employment and procurement	Ensure local communities are preferred for the supply of goods and services to the Project and Project personnel, where appropriate.	Local Employment and Procurement Records	Contractor	Review procurement and employment records Review of grievance register

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
<b>E. Labour</b>				
<a href="#">E3. Facilities</a>	Ensure provision of OR facilitate access to necessary worker facilities which include but are not limited to: <a href="#">toilets, rest areas, smoking areas, potable drinking water to WHO standards</a>	<a href="#">Appropriate H&amp;S and sanitary facilities provided at site</a>	<a href="#">Contractor</a>	<a href="#">Regular inspection</a> <a href="#">Review of grievance records</a>
<a href="#">E4. Fossils/ Archaeological Chance Finds</a>	Establish specific procedures to manage the protection of archaeological and historical sites, chance finds and fossils. Ensure all finds of cultural heritage (e.g. graves, old ceramic, old building fragments) are reported immediately to the relevant authority and avoid excavation in the ultimate neighbourhood of a chance find, fence the chance find and await instructions from the competent authority.	<a href="#">Notification records to relevant authority</a> <a href="#">Training records.</a> <a href="#">Records about chance finds</a>	<a href="#">Contractor/ EE</a>	<a href="#">Site inspection</a>

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
<b>F. Supply Chain – Suppliers and Disposal</b>				
<a href="#">F1. Supply Chain Verification</a>	<a href="#">Verify that operations of these facilities meet Syrian national standards and are permitted.</a>	<a href="#">Visual inspection of facility operations and review of permits</a>	<a href="#">EE/ Safeguard Consultant Team</a>	<a href="#">Verification at Project commencement</a>
	<a href="#">Verify if facilities require expansion for Project works.</a>	<a href="#">Visual inspection on a quarterly basis</a>	<a href="#">EE/ Safeguard Consultant Team</a>	<a href="#">Regular quarterly monitoring</a>
<a href="#">F2. Supply Chain Monitoring</a>	Monitor the operations of these facilities for risks related to: 1. <a href="#">Controversial linkages with sanctioned entities;</a> 2. <a href="#">Exclusion list (including child labour and trafficking of arms along supply routes); and</a> 3. <a href="#">Security (number of checkpoints along supply routes)</a>	1. <a href="#">Verification of receipts of material sources</a> 2. <a href="#">Visual inspection of facility operations and supply routes</a> 3. <a href="#">Visual inspection of supply routes</a>	<a href="#">EE/ Safeguard Consultant Team</a>	<a href="#">Regular quarterly monitoring</a>

**Risks monitoring system / indicators**

The environmental and social risks management approach includes monitoring of potential risks and implementation of risks mitigation measures. This monitoring program commensurate with project activities and will report on the monitoring results to the Fund in the mid-term, annual, and terminal performance reports. Monitoring will be done to ensure that actions are taken in a timely manner and to determine if actions are appropriately mitigating the risk / impact or if they need to be modified in order to achieve the intended outcome. Annual reporting will include information about the status of implementation of this ESMF/P, including those measures required to avoid, minimize, or mitigate environmental and social risks. The reports shall also include, if necessary, a description of any corrective actions that are deemed necessary.

UN-habitat will be responsibility for environmental and social risks management, including monitoring of the implementation of the Project ESMF/P. An AF and UN-H policies and reporting compliance expert will be part of the team. A Safeguarding system compliance expert will also be part of the team. Monitoring staff part of the Supervision Unit will require having expertise in social risk management and be familiar with the AF safeguarding system. Under component 1, ESIA-ESMF/P a specialist company will be hired verify the developed ESMF/Ps at inception phase. These will include detailed guidelines for executing entities, any other contractors and the government partners to comply to the AF ESP and GP, including roles, responsibilities and monitoring. Gender specific indicators and targets have been developed as shown in the results framework. Specific budgets for risks monitoring are covered by M & E staff time under the execution fee: USD 81,350 total, USD 34,100 specifically dedicated to safeguarding / gender

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Table 47, monitoring arrangements for general risks management

Action	Indicator and method	Responsibility and frequency
Monitoring of capacity execution entities to comply	- Guidelines and action plans shared - Monitoring reports comply to requirements	UN-H within half a year from inception when reports are required
Implementation of grievance mechanism	- Grievance mechanism information is at target locations (buildings, etc.) - Grievance mechanism information is shown on UN-Habitat project website	UN-H in coordination with execution entities Within half a year from inception
Monitoring of measures to avoid or mitigate risks / impacts per output	- See table above	UN-H in coordination with execution entities When reports are required

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**Grievance Redress mechanism**

For all Project activities, a Grievance Redress Mechanism will be employed in order to receive and address Project Affected Persons concerns, complaints, and grievances about any project's environmental and social performance. The Grievance Redress Mechanism addresses affected people's concerns and complaints promptly, using an understandable and transparent process that is gender responsive, culturally appropriate, confidential (if desired) and readily accessible to all segments of the affected people at no costs and without retribution. The mechanism does not impede access to Syrian judicial or administrative remedies.

UN Habitat in coordination with the execution entities will appropriately inform Project Affected Persons about the Grievance Redress Mechanism before the commencement of project activities and throughout the lifecycle of the project through project grievance focal points (to be appointed within beneficiary groups, UN-H, UNDP or FAO).

**Communication Channels for Submitting Grievances**

Potential communication channels for submitting grievances could include those identified in the table below. When confirmed, this information will be readily available throughout project implementation and communicated during engagement activities

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Table 48. Communication Channels for Submitting Grievances

Communication Channel	Description
Engagement Activities	<ul style="list-style-type: none"><li>Grievances can be communicated during engagement activities verbally and/or written and submitted in to a comment box</li></ul>
Verbal	<ul style="list-style-type: none"><li>Grievances can be communicated directly to project focal points</li></ul>
Phone	<ul style="list-style-type: none"><li>Phone Number to be provided in relevant ESMP</li><li>Phone Number to be provided on billboard at project site location</li><li>Calls will be received from: 9AM - 5PM</li></ul>
WhatsApp	<ul style="list-style-type: none"><li>Phone Number to be provided in relevant ESMP</li><li>Phone Number to be provided on billboard at project site location</li><li>Grievances can be communicated through WhatsApp instant messaging system with audio and video support if required</li></ul>
Email	<ul style="list-style-type: none"><li>Email to be provided in relevant ESMP</li><li>Written grievances can be communicated through email</li></ul>
Comment Box	<ul style="list-style-type: none"><li>A comment box will be available at all engagement activities and at Management Team office for written grievances</li></ul>

#### Receiving Grievances

Grievances will be recorded in a Grievance Form and Grievance Register by the project's focal points within two days of receipt. A template for a Grievance Form will be developed. The project grievance focal point will assist the applicant at all stages of their grievance and ensure that their grievance is properly handled and addressed by the appropriate party. The following is the procedure for receiving grievances:

Receive a grievance: Stakeholders shall be able to use the following methods to submit a grievance:

- Phone / WhatsApp
- Email
- Verbally to project focal point

The grievance is recorded in the Grievance Form and classified in a Grievance Register by the project's grievance focal point.

If the Complaint is readily resolvable and can be dealt with immediately, the project grievance focal point takes action to address the issue directly and records the details in the Grievance Register.

1. **Grievance is formally acknowledged** through a personal meeting, phone call, or letter as appropriate, within 5 working days of submission. If the grievance is not well understood or if additional information is required, clarification should be sought from the complainant during this step.
2. **The project grievance focal point delegates the grievance** in writing to the relevant department(s)/personnel / contractor for development of an appropriate response. The project grievance focal point will estimate the subject matter of this grievance and identify the risk category. If required, the grievance may be sent for consideration of the senior management.
3. **A response is developed** by the delegated team and the project grievance focal point, with input from senior management and others, as necessary.
4. **Required actions are implemented** to deal with the issue, and completion of these is recorded on the Grievance Register.
5. **The response is signed-off** by the project grievance focal point. The sign-off may be a signature on the grievance form or in correspondence, which should be filed with the grievance to indicate agreement.
6. **The response is communicated to the affected party;** the response should be carefully coordinated. The project grievance focal point ensures that a suitable approach to communicating the response to the affected party is agreed and implemented. The response to a grievance will be provided 20 working days after receipt of the grievance.
7. **The response of the complainant is recorded** to help assess whether the grievance is closed or whether further action is needed. The project grievance focal point will use appropriate communication channels, most likely telephone or face-to-face meeting, to confirm whether the

complainant has understood and is satisfied with the response. The complainants' response should be recorded in the Grievance Register.

8. **The grievance is closed** with sign-off from the project grievance focal point, who determines whether the grievance can be closed or whether further attention and action is required. If further attention is required the project grievance focal point should return to Step 2 to re-assess the grievance and then take appropriate action. Once the project grievance focal point has assessed whether the grievance can be closed, they will sign off to approve closure of the grievance on the grievance log or by written communication.

In case the affected person is not satisfied with the decision resulting from the consideration of grievance, a stakeholder may turn to court in accordance with the existing legislation of Syria.

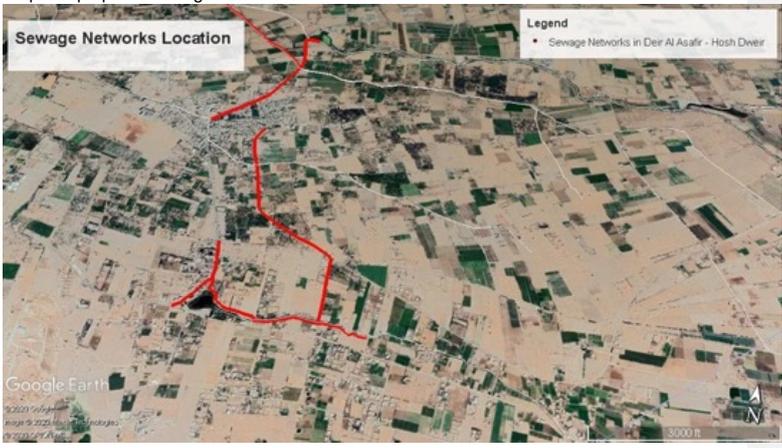
Table 49. grievance form

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<b>Grievance Form</b>	
<b>Reference No:</b>	
<i>Please enter your contact information and grievance. This information will be dealt with confidential.</i>	
<i>Please note: If you wish to remain anonymous please enter your comment/grievance in the box below without indicating any contact information – your comments will still be considered.</i>	
<b>Full Name</b>	_____
<b>Anonymous submission</b>	<input type="checkbox"/> I want to remain anonymous
<b>Please mark how you wish to be contacted (mail, telephone, e-mail).</b>	<input type="checkbox"/> <b>By Mail (Please provide mailing address):</b> _____ _____
	<input type="checkbox"/> <b>By Telephone (Please provide Telephone number):</b> _____
	<input type="checkbox"/> <b>By E-mail (please provide E-Mail address):</b> _____
<b>Preferred Language for communication</b>	<input type="checkbox"/> Arabic <input type="checkbox"/> English <input type="checkbox"/> Other, please specify: _____
<b>Description of Incident or Grievance:</b>	What happened? Where did it happen? Who did it happen to? What is the result of the problem?
<b>Date of Incident/Grievance:</b>	<input type="checkbox"/> One time incident/grievance (date _____) <input type="checkbox"/> Happened more than once (how many times? _____) <input type="checkbox"/> On-going (currently experiencing problem)
<b>What would you like to see happen to resolve the problem?</b>	

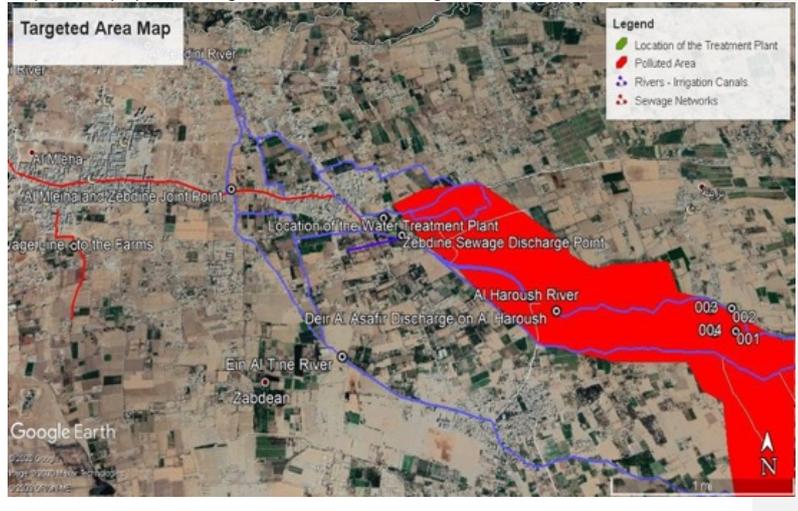
## Component 2 risks / impact screening sheet

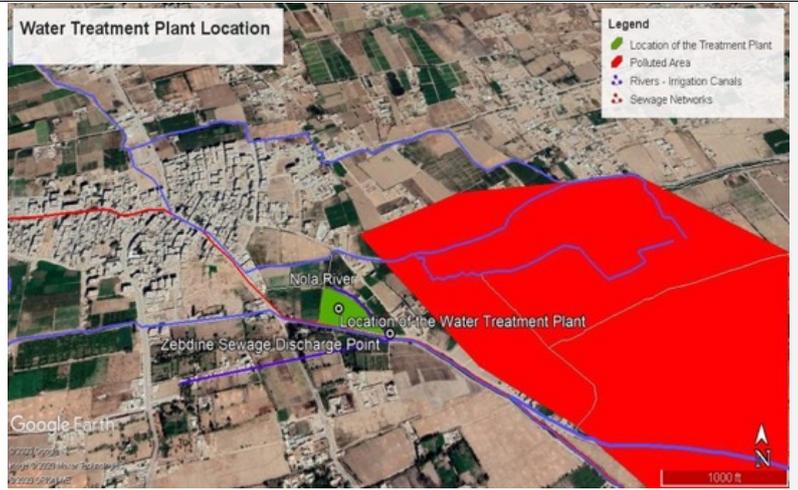
TABLE 1: GENERAL INFORMATION	
A. Name, intro and problem description and need statement	
1. Name / title proposed adaptation measure / intervention	Establishment of efficient, sustainable and climate change resilient water supply systems for urban and agriculture purposes
2. Name Country, town, community	Syria, Eastern Ghouta: - Mleiha municipality - Zebdine municipality - Deir El Assafir municipality - Hosh Dweir (village) - Marj El sultan municipality
3. Introduction	This is component 2 of the proposal, consisting of 4 outputs
4. Problem description and need statement	The target area is facing a considerable challenge in securing clean water for urban and agricultural use; the ground water, river streams and canals are polluted by waste water discharge, which farmers are currently using. These issues are being exacerbated by climate change, especially increasing droughts. There is a need to stop pollution and adapt to current and future risks, especially droughts.
5. Adaptation action (how will the measure(s) address problems and needs)	Increasing the access to municipal and community-level efficient, sustainable and climate change resilient water supply systems for urban and agriculture purposes, using innovative and replicable techniques

TABLE 2: ADAPTATION MEASURE / INTERVENTION DETAILS	
B. Location	
6. Location (map, showing issues and response action)	<p>Output 2: proposed sewage network</p> 



Output 2/3/4: proposed sewage network, WWTP and irrigation channels





Output 4: proposed irrigation channels



<p>7. Has land ownership (private; public) been identified, as well as land use (also informally and consent with intervention given)?</p>	<ul style="list-style-type: none"> <li>- The activities related to sewage network rehabilitation will be executed on an existing sewage network on public land within the municipality,</li> <li>- The land of site of the wastewater treatment plant is a public land assigned by the municipality of Zeddine (Real estate No 472)</li> <li>- The irrigation canals are within public owned land</li> </ul>
<p>8. Are there vulnerable / critical natural habitats in or close to the target</p>	<p>National plans and legal documents:</p> <p>20 km north / east of the target area is recognised natural habitat for fauna; however, due to the crisis situation, many</p>

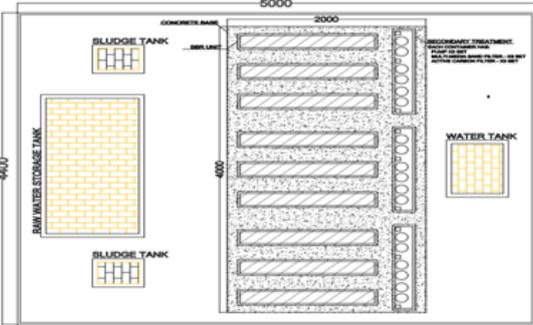
area. If so, describe	Convention on Wetlands (Ramsar, Iran, 1971) <sup>35</sup> UNESCO Man and the Biosphere Programme <sup>36</sup>	species were lost Not in or close to target area Not in or close to target area
9. Is there vulnerable biodiversity in or close to the target area. If so, describe	National plans and legal documents: IUCN Red List of Threatened Species: <sup>37</sup> 	Due to the crisis, many agriculture fruit trees were lost in the target area Barada spring minnow. The Barada spring minnow is non-existent in the target area due to pollution of streams and drought.
10. Are there heritage sites in or close to the target area? If so describe	According to the Syrian government and UNESCO <sup>38</sup> , the Ancient city of Damascus is a heritage site close to the project target area.  However, the proposed project interventions will have no impact on the city.	
11. Are there any fragile soils in the target area? If so, describe	The loss of trees and abandonment of soil as result of the crisis have caused the decrease in organic content and soil biodiversity. In addition to this, the irrigation with the untreated wastewater is causing increasing levels in salinity. If the wastewater is not treated, this will result in the soil in the targeted area becoming more fragile. In details, Zbdain and Mleeha are the most impacted areas with the fragile soil	
12. Are there lands that provide ecosystem services in the target area?	Due to the crisis, this is very limited	
<b>Specifics (design dimensions and technique) and budget required</b>		
13. Adaptation measure / intervention description (what will be developed)	<p><b>Output 2.1. technical specification / engineering studies, including surveys required for design of below intervention</b></p> <p>2.1.1 Assessment and verification 2.1.2 Prepare detailed technical specification for the Wastewater treatment plants and the rehabilitation of sewage network and irrigation canals 2.1.3 Site surveys and preparation of details BOQ for the below outputs</p> <p><b>Output 2.2: Rehabilitate Sewage Networks:</b></p> <p>2.2.1 Excavation works 2.2.2 Replacement of damaged pipes or pipes that leakage</p> <p><b>Output 2.3 Mobile wastewater treatment plants established to use non-conventional water resources identified (concrete intervention)</b></p> <p>2.3.1 Undertake civil and site preparatory work this include 2.3.2 Excavation work for the collection cement container, concrete base for the container, pipeline outlet for the treated wastewater 2.3.3 Construction of the cement collection container of wastewater discharge input, installation of the outlet pipeline for the treated water, electrical connections, and sludge collection containers 2.3.4 Install and operate waste treatment plant. 2.3.5 Capacity strengthening package required for operating, maintaining, and sustaining the intervention, incl. O &amp; M and exit strategy plan developed</p> <p><b>Output 2.4 Rehabilitate irrigation canals to divert treated water for irrigation purposed (concrete intervention)</b></p> <p>2.4.1 Removal of residual / debris from irrigation canal (stream bed) 2.4.2 Rehabilitation of channel sides</p>	

<sup>35</sup> <https://www.ramsar.org/wetland/syrian-arab-republic>

<sup>36</sup> <https://en.unesco.org/biosphere/arab-states>

<sup>37</sup> <https://www.iucnredlist.org/search/map?query=syria&searchType=species>

<sup>38</sup> <https://whc.unesco.org/en/statesparties/sy>

14. Materials to be used	<ul style="list-style-type: none"> <li>- Cement pipes</li> <li>- Cement</li> <li>- Gravel and sand</li> <li>- Steel</li> <li>- Compressors</li> <li>- Steel of PVC compact containers (ready-made) treatment units</li> <li>- Baggers (Vehicles)</li> <li>- Hand shovel</li> </ul>															
15. Dimension and other technical specifications (length, size, etc.)	<p>2.2. Sewage network rehabilitation</p> <ul style="list-style-type: none"> <li>- 1100m in Zebine ( 80 cm c pipes)</li> <li>- 500 m in Deir Al Asafir (50 cm pies)</li> </ul> <p>2.3. Wastewater treatment plant</p> <ul style="list-style-type: none"> <li>- The wastewater treatment plant will be designed to treat 4400m3/day of wastewater, the technology that will be use is Sequencing batch reactor (SBR) is a system which works with activated sludge principle and where aeration and sedimentation processes are occurred in the same tank as distinct from continuous systems. Serval tanks will be installed in parallel.</li> </ul> <div style="display: flex; align-items: center;">   </div> <p>2.4. The rehabilitation of irrigation canal will be among 48 KM in 4 locations</p> <p>Based on the results of detailed assessment, site survey and field measures, the detailed interventions' designs will be finalized and a detailed technical specifications and bill of quantities will be prepared for each activity including all details (type , size , type of material quantities ). All technical specification, conditions and requirement of work will be developed to meet of national standards for similar works and will be cleared from relevant authorizing department</p>															
16. Budget required	<p>Output 2.1: USD: 114,300  Output 2.2.: USD 296,250  Output 2.3. USD 4,049,313  Output 2.4. USD 107,053</p>															
17. Does the intervention result in extra energy use. If so, describe	<p>The wastewater treatment plant is an automated unit and requires continues electricity as per internal available similar the use of electricity is 8-10 KW/hr (Max). Details of energy use will be required within the specification. In the evaluation of the proposal, energy use will be a key element to be assessed. Energy will be generated / compensated by solar PV. for pumping the wastewater (inlet).</p>															
18. Start date of activity / works	Year 1, month 6															
19. End date of activity / works	Year 4, month 3															
<b>Beneficiaries (disaggregated, vulnerable, marginalized, etc.) and benefits</b>																
20. Beneficiaries (type and number, disaggregated)	<p>The most vulnerable groups with focus on returnees and women headed households</p> <p>Output 2.2</p> <table border="1" data-bbox="320 1648 1094 1760"> <thead> <tr> <th></th> <th>Deir Al Asafir</th> <th>Zebdine</th> </tr> </thead> <tbody> <tr> <td><b>Total direct</b></td> <td><b>12,000</b></td> <td><b>8,000</b></td> </tr> <tr> <td>Female</td> <td>50%</td> <td>55%</td> </tr> <tr> <td>Youth</td> <td>37%</td> <td>35%</td> </tr> <tr> <td>farmers</td> <td>65% of total population work</td> <td>95% of total population work in agriculture with</td> </tr> </tbody> </table>		Deir Al Asafir	Zebdine	<b>Total direct</b>	<b>12,000</b>	<b>8,000</b>	Female	50%	55%	Youth	37%	35%	farmers	65% of total population work	95% of total population work in agriculture with
	Deir Al Asafir	Zebdine														
<b>Total direct</b>	<b>12,000</b>	<b>8,000</b>														
Female	50%	55%														
Youth	37%	35%														
farmers	65% of total population work	95% of total population work in agriculture with														

		in agriculture with 45 % women	65% women	
	Output 2.3			
	<b>Total direct</b>		<b>Total indirect</b>	
	Zebdine	Al Meiha	Marj Al sultan	Deir Al Asafir
<b>Total</b>	<b>8,000</b>	<b>40,000</b>	<b>3,000</b>	<b>12,000</b>
Female	55%	60%	55%	50%
Youth	35 %	32%	37%	37%
Farmers	95% of total population work in agriculture with 65% women	30% of total population work in agriculture with 40% women	80% of total population work in agriculture with 45% women	65% of total population work in agriculture with 45 % women
	Output 2.4			
	Deir Al Asafir	Hosh Dwair	Marj Al sultan +	Zebdine
<b>Total direct</b>	<b>12,000</b>	<b>3,000</b>	<b>3,000</b>	<b>8,000</b>
Female	50%	55%	55%	55%
Youth	37%	35%	37%	35 %
farmers	65% of total population work in agriculture with 45 % women	65% of total population work in agriculture with 45 % women	80% of total population work in agriculture with 45% women	95% of total population work in agriculture with 65% women
21. How will equal access / benefits be ensured?	All targeted beneficiaries will benefit from the activities related to sewage and canal rehabilitation. For the intervention of wastewater treatment plant, all beneficiaries will benefit from pollution prevention resulted from treatment of water. As for the use of treated water in irrigation, this will be coordinated with relevant activities under component 3, where specific criteria will be set to ensure equal access and impartiality among targeted beneficiaries to use the treated water for irrigation (through water / agriculture associations and women and youth unions). Quotas will be used if needed. For the activities related to capacity building representative of local authorities responsible for operation, maintenance and monitory activities will be benefit equally from training activities.			
22. What are the economic, social and environmental benefits of proposed measures to the community, marginalized and vulnerable groups and women and youth?	<p>The proposed activities aims at building the resilience and improving the wellbeing of all indirect and direct beneficiaries.</p> <ul style="list-style-type: none"> <li>- Economically: improve the income of the main livelihood of the farmers / communities through reduced pollution / increase of clean water. Ensure the sustainable utilization / management of the natural resources in coordination with FAO</li> <li>- Socially: create common interest between community members / farmers and support / organize collective work which will results in enhancing the social cohesion – WJAs, adding value to plant residuals and other neglectable materials, diversify community income.</li> <li>- Environmentally: reduced pollution of soil and water, also having a positive impact downstream.</li> </ul>			
23. How have beneficiary communities and groups been consulted (see detailed requirements in questions below) and how will they be engaged in the future?	<p>See section II.H of the proposal.</p> <p>The MoLAE conducted consultations in coordination with the MoWR and MoAA and target municipalities and representatives of farmers, women and youth. A participatory assessment and planning process will be conducted during project implementation, ensuring representation of above in the process.</p>			
24. Have relevant local authorities (and national government) been consulted and how will they be engaged in the future?	<p>See section II.H of the proposal.</p> <p>See above</p>			
<b>C. Data and monitoring (data needs to measures effectiveness of measure - monitoring)</b>				

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25. What data is needed to measure the effectiveness of the proposed measure?	For the pollution control from wastewater: <ul style="list-style-type: none"> <li>- Measurement of pollution parameters at the beginning and at the end of the intervention at the final discharge point and surrounding area</li> <li>- A survey at the end of intervention to identify farmer satisfaction with increased access to clean water (in Cooperation COMP3).</li> <li>- Measurement of pollution parameters in surface water</li> </ul>
26. Any data / consultations missing? How to get it?	All collected data that supported the design of proposal and activities need to be re-assessed and verified before commencing setting the details specification of works required including a field and topographic surveys, actual measurement of wastewater discharges.

TABLE 3: CONTEXT AND POTENTIAL RISKS	
D. Environmental and social context and potential risks (see also questions below)	
27. Is an EIAs required by national law? If yes, has this been conducted / will it be conducted? Have outcomes been shared publicly?	According to Syrian law (Environmental protection law (2012) + Executive order for EIA, 2008), the establishment of proposed mobile WWTPs may require a Col 2 (G) EIA in order to get environmental approval. Interventions under outputs 2.2 and 2.4 don't require an EIA. MoLAE screened the proposed interventions and identified no ESIs are required (beyond assessments conducted by UN-H, UNDP and FAO). The following steps have been taken to get environmental approval: <ol style="list-style-type: none"> <li>1. Submit application to MoLAE requesting screening of proposed interventions and identification if EIAs are required.</li> <li>2. MoLAE reviewed application.</li> <li>3. MoLAE provided environmental approval of proposed interventions (see letter)</li> <li>4. Project team finalised initial ESMF in line with AF requirements</li> </ol>
28. Description of gender and youth situation. Are there any unions, organisations in the area? How will these be involved?	<ul style="list-style-type: none"> <li>- Water associations</li> <li>- Farmer association / syndicates</li> <li>- Women union</li> <li>- Women union</li> </ul> <p>Will be involved through participatory assessment and planning process lead by execution entities and MoLAE and target municipalities</p>

CHECKLIST OF POTENTIAL RISK AREAS OF NON-COMPLIANCE OF THE ACTIVITY / INTERVENTION WITHIN THE ADAPTATION FUND'S ENVIRONMENTAL AND SOCIAL AND GENDER PRINCIPLES	INITIAL ENVIRONMENTAL OR SOCIAL RISKS PRESENT YES/NO	EXPLANATION WHY YES / NO AND REFERENCE TO INFORMATION
<b>ADAPTATION FUND PRINCIPLE 1: COMPLIANCE WITH THE LAW:</b>		
<b>Requirement:</b> <i>The proposed activity should be in compliance with all applicable domestic and international law.</i>		
29. Have all relevant rules, regulations and technical standards been identified?	YES.	All relevant rules, regulations and standards have been identified for all proposed project activities. Procedures for compliance of key ones initiated. Therefore, no potential risk of non-compliance exists. This has been presented in proposal Part II.E
30. Have the procedures to comply, including authorizing offices been identified?	YES	See Part II.E
31. If an ESIA is required by national law for the proposed activity, has this been prepared and approved?	YES	According to Syrian law (Environmental protection law (2012) + Executive order for EIA, 2008), the establishment of proposed mobile WWTPs may require a Col 2 (G) EIA in order to get environmental approval. Interventions under outputs 2.2 and 2.4 don't require an EIA. MoLAE screened the proposed interventions and identified no ESIA's are required (beyond assessments conducted by UN-H, UNDP and FAO). The following steps have been taken to get environmental approval: <ul style="list-style-type: none"> <li>- Submit application to MoLAE requesting screening of proposed interventions and identification if EIAs are required.</li> <li>- MoLAE reviewed application.</li> <li>- MoLAE provided environmental approval of proposed interventions (see letter)</li> <li>- Project team finalised initial ESMF in line with AF requirements</li> </ul>
<b>ADAPTATION FUND PRINCIPLE 2: ACCESS AND EQUITY:</b>		
<b>Requirement:</b> <i>Ensure fair and equitable access to benefits of the activity</i>		
32. Have all potential beneficiaries, including marginalized and vulnerable groups been identified?	YES	All project beneficiaries (i.e. population; groups) have been mapped (see overview table 1 and 6 and part II.H) for each project output.
33. Have rivals, disputants and concerns related to equal access of project beneficiaries been identified and are measures in place to avoid these?	YES	Community consultations and focus groups discussions have been conducted per beneficiary group to identify possible rivals, disputants and concerns related to equal access of project benefits.
34. Has the process of allocating and distributing benefits equally (fair and impartial access) been described?	YES	Project benefits will be allocated and distributed equally through a participatory process and through joint decision-making using water user and agriculture associations and women and youth groups. Under output 1, various groups will be equally involved, in assessment and planning processes (if needed through quotas).

<b>ADAPTATION FUND PRINCIPLE 3: VULNERABLE AND MARGINALIZED GROUPS:</b>		
<b>Requirement:</b> <i>Avoid imposing any disproportionate adverse impacts on marginalized and vulnerable groups including children, women and girls, the elderly, indigenous people, tribal groups, displaced people, refugees, people living with disabilities, and people living with HIV/AIDS.</i>		
35. Have groups mentioned in the principle been identified and quantified?	YES	All project beneficiaries (i.e. population; groups) have been mapped (see overview table 1 and 6 and part II.H) for each project output.
36. Have the characteristics of the marginalized or vulnerable groups been described?	YES	All project beneficiaries (i.e. population; groups), including marginalised and vulnerable groups have been mapped for each project output (see overview table 1 and 6). Desk research, expert consultations and community consultations and focus group discussions have been used (see Part II.H) to identify possible risks / adverse impacts of project activities on marginalized and vulnerable beneficiary groups (i.e. specific needs, limitations, constraints and requirements of groups).
37. Have potential adverse impacts that each marginalized and vulnerable group may experience from the activity been identified and have the groups been consulted on specific needs, limitations, constraints and requirements?	NO	As per above, any potential adverse impact has been identified. However, all groups will be consulted again during the inception phase to verify and further identify all specific needs, limitation and constraints.
<b>ADAPTATION FUND PRINCIPLE 4: HUMAN RIGHTS:</b>		
<b>Requirement:</b> <i>The activity shall respect and where applicable promote international human rights</i>		
38. Has any citing of the host country in any Human Rights Council Special Procedures been identified and has the project described how to deal with potential related issues?	YES	Syria Human rights not ratified: <sup>39</sup> <input type="checkbox"/> CAT-OP - Optional Protocol of the Convention against Torture <input type="checkbox"/> CCPR-OP2-DP - Second Optional Protocol to the International Covenant on Civil and Political Rights aiming to the abolition of the death penalty <input type="checkbox"/> CED - convention for the protection of all persons from enforced disappearance <input type="checkbox"/> CED, Art.32 - interstate communication procedure under the international convention for the protection of all persons from enforced disappearance  Any agreement / contract signed will include reference to compliance with Human rights
<b>ADAPTATION FUND PRINCIPLE 5: GENDER EQUALITY AND WOMEN'S EMPOWERMENT:</b>		
<b>Requirement:</b> <i>Design and implement the activity in such a way that both women and men 1) have equal opportunities to participate; 2) receive comparable social and economic benefits; and 3) do not suffer disproportionate adverse effects during the development process</i>		
39. Has the legal and regulatory context with respect to gender equality and women's empowerment been analysed to identify any obstacles to comply?	YES	All project beneficiaries (i.e. population; groups), including women and youth groups have been mapped for each project output (see overview table 1 and 6). UN Women and UNICEF have also been consulted to specifically identify potential risks and needs of women.
40. Has the cultural, traditional, religious, or any other grounds that might result in differential allocation of benefits between men and women of the activity been analysed?	YES	See specific 'gender' (women and youth) approach and baseline

<sup>39</sup> [https://tbinternet.ohchr.org/\\_layouts/15/TreatyBodyExternal/Treaty.aspx?CountryID=170&Lang=EN](https://tbinternet.ohchr.org/_layouts/15/TreatyBodyExternal/Treaty.aspx?CountryID=170&Lang=EN)

41. Does the activity actively pursue equal participation and access to activity benefits through specific gender approach?	YES	A specific 'gender' (women and youth) approach and baseline section has been developed based on a gender assessment. See dedicated annex 6
<b>ADAPTATION FUND PRINCIPLE 6: CORE LABOUR RIGHTS:</b>		
<b>Requirement:</b> <i>The activity should meet the core labour standards as identified by the International Labour Organization and respect, promote ILO core labour standards</i>		
42. Has it been summarized how Executing Entities will comply to core labour standards?	YES	UNDP and FAO are UN agencies that will apply ILO core labour standards + see below
43. Has it been identified if the eight ILO core conventions have been ratified in project countries and if not ratified, are measures in place to avoid potential risks of non-compliance?	YES	Syria core labour rights (not) ratified <sup>40</sup> <input type="checkbox"/> Fundamental Conventions: 8 of 8 <input type="checkbox"/> Governance Conventions (Priority): 3 of 4. Not ratified: <input checked="" type="checkbox"/> <a href="#">C122 - Employment Policy Convention, 1964 (No. 122)</a> <input type="checkbox"/> Technical Conventions: 30 of 178  Any agreement / contract signed will include reference to compliance with ILO labour standards.
44. Have potential risks of non-compliance with ILO core labour standards of the activity been identified through consultations (experts and communities) and are measures in place to avoid potential risks of non-compliance?	YES	UNDP (and UN-H and FAO) and ILO cooperate together at global and regional levels on this issue. The interventions of FAO will take into account the agreed principles and the national law for labour
<b>ADAPTATION FUND PRINCIPLE 7: INDIGENOUS PEOPLE:</b>		
<b>Requirement:</b> <i>The activity shall not be inconsistent with the rights and responsibilities set forth in the UN Declaration on the Rights of Indigenous Peoples and other applicable international instruments relating to indigenous peoples.</i>		
45. Has it been assessed if indigenous people are present in the activity target area? If so:	YES	There are no indigenous people in the activity target area
46. Has it been identified if the host country ratified the ILO Convention 169?	YES	169 has not been ratified <sup>41</sup>
47. Has it been described how the project (and activity) will be consistent with UNDRIP, and particularly with regard to Free, Prior, Informed Consent (FPIC) during project design, implementation and expected outcomes related to the impacts affecting the communities of indigenous peoples?	N/A	N/A
48. Has it been described how indigenous peoples will be involved in the design and the implementation of the project and provide detailed outcomes of the	N/A	N/A

<sup>40</sup> [https://www.ilo.org/dyn/normlex/en/f?p=1000:11200:0::NO:11200:P11200\\_COUNTRY\\_ID:103023](https://www.ilo.org/dyn/normlex/en/f?p=1000:11200:0::NO:11200:P11200_COUNTRY_ID:103023)

<sup>41</sup> [https://www.ilo.org/dyn/normlex/en/f?p=1000:11210:0::NO:11210:P11210\\_COUNTRY\\_ID:102923](https://www.ilo.org/dyn/normlex/en/f?p=1000:11210:0::NO:11210:P11210_COUNTRY_ID:102923)

consultation process of the indigenous peoples?		
49. Has documented evidence of the mutually accepted process between the project and the affected communities and evidence of agreement between the parties as the outcome of the negotiations been provided?	N/A	N/A
50. Has a summary of any reports, specific cases, or complaints that have been made with respect to the rights of indigenous peoples by the Special Rapporteur and that are relevant to the project/programme been provided?	N/A	N/A
51. Has awareness about the rights of indigenous peoples and how it is a general principle in the implementation of the project been included in the project design?	N/A	N/A
<b>ADAPTATION FUND PRINCIPLE 8: INVOLUNTARY RESETTLEMENT:</b>		
<b>Requirement:</b> <i>The activity shall be designed and implemented in a way that avoids or minimizes the need for involuntary resettlement.</i>		
52. Has it been determined if physical or economic displacement is required by the activity and if it is voluntary or involuntary (through identification of land ownership and use (also informally) and consultations on consent to the activity)?	YES	<ul style="list-style-type: none"> <li>- The activities related to sewage network rehabilitation will be executed on an existing sewage network on public land within the municipality,</li> <li>- The land of site of the wastewater treatment plant is a public land assigned by the municipality of Zendine (Real estate No 472)</li> <li>- The irrigation canals are within public owned land</li> </ul> Besides, consultations took place (see part II.H). UN-H, UNDP and FAO will not allow any displacement as result of any project activity.
53. Is awareness building of involuntary resettlement and the applicable principles and procedures of the activity / project part of the project activities?	YES	See above
54. If it is involuntary: has justification for the need for involuntary resettlement been provided by demonstrating any realistic alternatives that were explored, and how the proposed involuntary resettlement has been minimized and is the least harmful solution.	N/A	N/A
55. If it is involuntary: have details of the extent of involuntary resettlement been described, including the number of people and households involved, their socio-economic situation and vulnerability, how their livelihoods will be replaced, and the resettlement alternatives and/or the full replacement cost compensation required whether the displacement is temporary or permanent?	N/A	N/A

56. If it is involuntary: have the details of the involuntary resettlement process that the activity will apply been described, and the built-in safeguards to ensure that displaced persons shall be informed of their rights in a timely manner, made aware of the grievance mechanism, consulted on their options, and offered technically, economically, and socially feasible resettlement alternatives or fair and adequate compensation? This also should include an overview of the applicable national laws and regulations.	N/A	N/A
57. If it is involuntary: has it been justified that the involuntary resettlement is feasible?	N/A	N/A
58. If it is involuntary: has the adequacy of the activity / project organisational structure to successfully implement the involuntary resettlement as well as the capacity and experience of the project/programme management with involuntary resettlement been described?	N/A	N/A
<b>ADAPTATION FUND PRINCIPLE 9: PROTECTION OF NATURAL HABITATS:</b>		
<i>Requirement: The activity shall not result in unjustified conversion or degradation of critical natural habitats</i>		
59. Has the presence in or near the activity area of natural habitats been identified?	YES	National plans and legal documents 20 km north / east of the target area is recognised natural habitat for fauna; however, due to the crisis situation, many species were lost Convention on Wetlands (Ramsar, Iran, 1971) <sup>42</sup> UNESCO Man and the Biosphere Programme <sup>43</sup> Not in or close to target area Not in or close to target area
60. Has the potential of activity to impact directly, indirectly, or cumulatively upon natural habitats been identified?	YES	Natural habitats are not close to the target areas. Downstream is a polluted and dried-up lake and adjacent desert.
61. Are there any risks management arrangement in place for potential risks identified above?	N/A	N/A
62. If such habitats exist, has the location of the critical habitat in relation to the project and why it cannot be avoided, as well as its characteristics and critical value been described?	N/A	N/A

<sup>42</sup> <https://www.ramsar.org/wetland/syrian-arab-republic>

<sup>43</sup> <https://en.unesco.org/biosphere/arab-states>

63. If such habitats exist, for each affected critical natural habitat, has an analysis on the nature and the extent of the impact including direct, indirect, cumulative, or secondary impacts been provided?	N/A	N/A
<b>ADAPTATION FUND PRINCIPLE 10: CONSERVING BIODIVERSITY:</b> <b>Requirement:</b> <i>The activity shall be designed and implemented in a way that avoids any significant or unjustified reduction or loss of biological diversity or the introduction of known invasive species.</i>		
64. Has the presence in or near the project/programme area of important biological diversity been identified?	YES	<p>National plans and legal documents: Due to the crisis, many agriculture fruit trees were lost in the target area</p> <p>IUCN Red List of Threatened Species:<sup>44</sup> Barada spring minnow The Barada spring minnow is non-existent in the target area due to pollution of streams and drought.</p> 
65. Has the potential of a significant or unjustified reduction or loss of biological diversity, and the potential to introduce known invasive species been identified?	N/A	N/A
66. If important biological diversity exists (Biological diversity), have the elements of known biological diversity importance in the project/programme area been described?	N/A	N/A
67. If important biological diversity exists (Biological diversity), has it been described why the biological diversity impact cannot be avoided?	N/A	N/A
68. Are there any risks management arrangement in place for these identified potential risks?	N/A	N/A
69. If important biological diversity exists (Invasive species), has it been described the invasive species that either may or will be introduced and why such introduction cannot be avoided?	N/A	N/A

<sup>44</sup> <https://www.iucnredlist.org/search/map?query=syria&searchType=species>

70. If important biological diversity exists (Invasive species), has evidence that this introduction is permitted in accordance with the existing regulatory framework and the results of a risk assessment analysing the potential for invasive behaviour been provided?	N/A	N/A
71. If important biological diversity exists (Invasive species), has it been described the measures to be taken to minimize the possibility of spreading the invasive species?	N/A	N/A
<b>ADAPTATION FUND PRINCIPLE 11: CLIMATE CHANGE:</b>		
<b>Requirement:</b> <i>The activity shall not result in any significant or unjustified increase in greenhouse gas emissions or other drivers of climate change.</i>		
72. When relevant, has a risk-based assessment of resulting increases in the emissions of greenhouse gasses or in other drivers of climate change been conducted?	YES	The wastewater treatment plant is automated units and require continues electricity as per internal available similar the use of electricity is 8-10 KW/hr (Max). Details of energy use will be required within the specification. In the evaluation of the proposal, energy use will be a key element to be assessed. Energy use will be generated / compensated by solar PV for pumping the wastewater (inlet ).
<b>ADAPTATION FUND PRINCIPLE 12: POLLUTION AND RESOURCE EFFICIENCY:</b>		
<b>Requirement:</b> <i>The activity shall be designed and implemented in a way that meets applicable international standards for maximizing energy efficiency and minimizing material resource use, the production of wastes, and the release of pollutants.</i>		
73. Has it been shown how the concept of minimization of resource has been applied in the activity design and how this will be effective during implementation? Are the possible inefficiencies in energy and material resource use and waste and pollution due to project activity?	YES	The wate water treatment plant will treat up to 4400 m3/day. The treated water will be reused for irrigation this will support rationalizing the use of surface and underground water resources and prevent further pollution on the resource. The residual sludge will be managed on site.
74. Does the activity included preventing waste and pollution by e.g. preparing a waste and pollution prevention and management plan for the activity or whole project/programme?	YES	The SBR is a system which works with activated sludge principle technology uses part of the sludge in the treatment, the remaining will be emptied from the treatment tanks and collected in a special tank then it will be dewatered and compressed to minimize the volume and extract the water, the extracted water will be entered again to be treated. Once the sludge has been effectively dewatered and compressed, it will be handled as per the MoLAE requirements. It can e.g. be used as a feen in l small biogas units in farms or can be used as a fertilizer, depending on its chemical composition this will be further coordinated during the implementation.
<b>ADAPTATION FUND PRINCIPLE 13: PUBLIC HEALTH:</b>		
<b>Requirement:</b> <i>The activity shall be designed and implemented in a way that avoids potentially significant negative impacts on public health.</i>		
75. Has it been demonstrated that the activity will not cause potentially significant negative impacts on public health by screening for possible risks / impacts (related to safe water, clean air, healthy workspace, safe house, communities and roads, employment and working conditions, etc. and including the results of the screening in the Proposal, including general project measures to avoid risks?	YES	The qualification of treated water will meet the National approved highest standard related to the use of treated water in irrigating crops and trees and the approved standard related to disposal of treated water in watershed and streams. This will be monitored through daily measures during the operation of the wastewater treatment plant.

<b>ADAPTATION FUND PRINCIPLE 14: PHYSICAL AND CULTURAL HERITAGE:</b>		
<b>Requirement:</b> <i>The activity shall be designed and implemented in a way that avoids the alteration, damage, or removal of any physical cultural resources, cultural sites, and sites with unique natural values recognized as such at the community, national or international level.</i>		
76. Has the presence of heritage in or near the activity been identified?	YES	According to the Syrian government and UNESCO <sup>45</sup> , the Ancient city of Damascus is a heritage site close to the project target area.
77. If heritage exists, has the cultural heritage, the location and the results of a risk assessment analysing the potential for impacting the cultural heritage been described?	N/A	N/A
78. If heritage exists, have the measures to be taken to ensure that heritage is not impacted, and if it is being accessed by communities, how this access will continue described?	N/A	N/A
<b>ADAPTATION FUND PRINCIPLE 15: LAND AND SOIL EROSION:</b>		
<b>Requirement:</b> <i>The activity shall be designed and implemented in a way that promotes soil conservation and avoids degradation or conversion of productive lands or land that provides valuable ecosystem services.</i>		
79. Soil conservation: Has the presence of fragile soils (e.g. soils on the margin of a desert area, coastal soils, soils located on steep slopes, rocky areas with very thin soil) within the activity area been identified?	YES	The loss of trees and abandonment of soil as result of the crisis have caused the decrease in organic content and soil biodiversity. In addition to this, the irrigation with the untreated wastewater is causing increasing levels in salinity. If the wastewater is not treated, this will result in the soil in the targeted area becoming more fragile. In details, Zbdain and Mleeha are the most impacted areas with the fragile soil.
80. Soil conservation: Have activities that could result in the loss of otherwise non-fragile soil been identified. If such soils exist and potential soil loss activities will take place:	YES	No loss of soil is expected. On the contrary, the intervention on reducing pollution through treatment of wastewater will improve the soil in the targeted area
81. Has the following been Identified and described? <ul style="list-style-type: none"> <li>• Soils that may be impacted by the activity</li> <li>• Activities that may lead to loss of soils.</li> <li>• Reasons why soil loss is unavoidable</li> <li>• Measures that will be taken to minimize soil loss.</li> </ul>	YES	Taking into account the current level of soil damage in the targeted areas, the interventions were designed to treat and improve the soil conditions (organic matter content and minimise land degradation)
82. Has it been described how soil conservation has been promoted to the Executing Entities?	N/A	FAO is a specialised UN agency with knowledge on soil conservation. Therefore this is not required, except that UN-H and UNDP coordinate on this.
83. Valuable lands: Have productive lands and/or lands that provide valuable ecosystem services within the activity area been identified. If such lands exist:	YES	As described in point 12, there are currently no lands that provide ecosystem in the area. UNDP interventions are working to restore this through ensuring clean water for urban and agriculture use.

<sup>45</sup> <https://whc.unesco.org/en/statesparties/sy>

<p>84. Has the following been identified and described?</p> <ul style="list-style-type: none"> <li>• Any valuable lands.</li> <li>• Activities that may lead to land degradation.</li> <li>• Reasons why using these lands is unavoidable and the alternatives that were assessed, and</li> <li>• Measures that will be taken to minimize productive land degradation or ecosystem service impacts.</li> </ul>	<p>YES</p>	<p>For UNDP suggested interventions only the first and fourth point is applicable. Treatment of wastewater and appropriate channelling and irrigation are proposed to reduce land degradation in potentially valuable lands.</p>
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TABLE 5: REMAINING POTENTIAL RISKS AND IMPACT ASSESSMENT DETAILS AND MEASURES TO AVOID / MITIGATE RISKS / IMPACTS

AF principle number and description of risks (answer NO)	Potential risk (+ description)	Impact assessment details (outcome of assessment – quantification - conducted)	Mitigation measures proposed (and agreed with beneficiaries)	Monitoring Indicators and responsibility
Principle 3 (vulnerable groups) question 37: Have potential adverse impacts that each marginalized and vulnerable group may experience from the activity been identified and have the groups been consulted on specific needs, limitations, constraints and requirements?	Potential adverse impacts on vulnerable groups have been identified in general. However, not all specific needs, limitation and constraints / concerns may be identified / up to date when the project commences.	Specific needs, limitation and constraints of target groups may not be fully identified / up to date when project commences  Target population: Mleiha: 40,000 Zebdine 8,000 Deir El Assafir: 12,000 Hosh Dweir: 3,000 Marj Al sultan: 3,000	All beneficiary groups will be consulted again during the inception phase to verify and further identify all specific needs, limitation and constraints. Related to that the ESMF/P will be updated.	Consultation reports with identified specific needs, limitation and constraints.  UNDP and UN-H

## Component 3 risks / impact screening sheet

TABLE 1: GENERAL INFORMATION

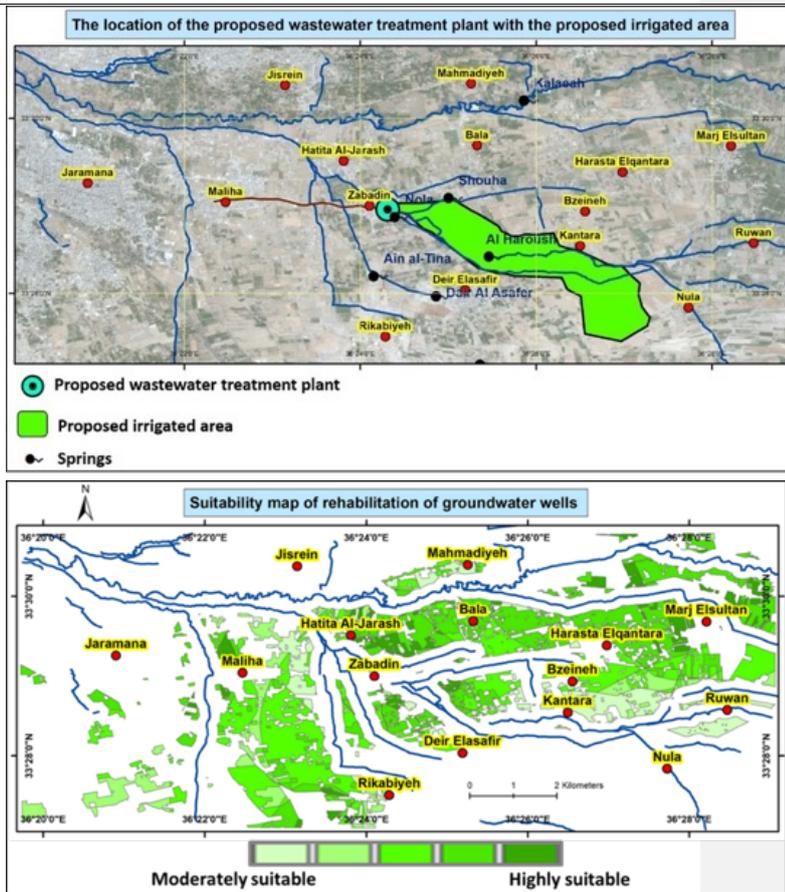
A. Name, intro and problem description and need statement	
1. Name / title proposed adaptation measure / intervention	Establishment of efficient, sustainable and climate change resilient irrigation systems and agriculture practices
2. Name Country, town, community	Syria, Eastern Ghouta: - Mleiha municipality - Zebdine municipality - Deir El Assafir municipality - Marj El sultan municipality
3. Introduction	This is component 3 of the proposal, consisting of 4 outputs
4. Problem description and need statement	<p><del>Droughts has been increased during recent decades, in term of severity, frequency and negative effects on the natural resources in the region. Among the most important negative effects of the 2007/08 and 2008/2009 droughts on Rural Damascus governorate, especially the eastern regions, including a decrease in rainfall below their long-term rates by about 40%, a decline in agricultural production (as wheat production decreased by 68% from the average long-term production, barley production decreased, 86%). As for animal production, the number of sheep in Rural Damascus decreased by 15% and cows by 9%, and the production of sheep's milk, derivatives and meat decreased (14% and 13% respectively).</del></p> <p>Moreover, due to the crisis, fruit trees have been cut, some wells damaged <u>and soil degraded in many areas due to the exit of agricultural lands from investment during the crisis period, in addition to soil polluted in some areas with wastewater discharge. There is a need to introduce sustainable practices to adapt to current and future risks, especially with regard to drought, ensuring clean water for irrigation, restoring soil and agricultural crops, enhancing the resilience of farmers in the area, and resettling returnees by creating sustainable employment opportunities and livelihoods</u></p>
5. Adaptation action (how will the measure(s) address problems and needs)	Increasing the resilience of water-dependent livelihoods and related income (through reduced water demand), especially for vulnerable groups

**Deleted:** The target area is facing a considerable challenge in securing clean water for urban and agricultural use; the ground water, river streams and canals are polluted by waste water discharge, which farmers are currently using. ¶

**Deleted:** and

TABLE 2: ADAPTATION MEASURE / INTERVENTION DETAILS

B. Location



6. Location (map, showing issues and response action)



7. Has land ownership (private; public) been identified, as well as land use (also informally and consent with intervention given?

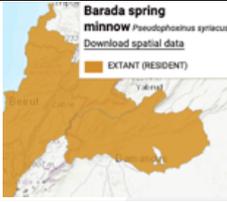
- Direct implantation of interventions will be on farmer's private land
- Farmers field schools and nurseries will be on public owned land (extension services or municipality)
- The introduction of new concepts will be first applied as pilot using public land that is accessible to farmers in order for them to see and then learn and then apply in their own lands with FAO support

8. Are there vulnerable / critical natural habitats in or close to the target area. If so, describe

National plans and legal documents:  
 Convention on Wetlands (Ramsar, Iran, 1971)<sup>46</sup>  
 UNESCO Man and the Biosphere Programme<sup>47</sup>

20 km north / east of the target area is recognised natural habitat for fauna; however, due to the crisis situation, many species were lost  
 Not in or close to target area  
 Not in or close to target area

<sup>46</sup> <https://www.ramsar.org/wetland/syrian-arab-republic>  
<sup>47</sup> <https://en.unesco.org/biosphere/arab-states>

9. Is there vulnerable biodiversity in or close to the target area. If so, describe	<p>National plans and legal documents:</p> <p>IUCN Red List of Threatened Species:<sup>48</sup></p> <p>Due to the crisis, many agriculture fruit trees were lost in the target area Barada spring minnow. The Barada spring minnow is non-existent in the target area due to pollution of streams and drought.</p> 
10. Are there heritage sites in or close to the target area? If so describe	<p>According to the Syrian government and UNESCO<sup>49</sup>, the Ancient city of Damascus is a heritage site close to the project target area.</p> <p>However, the proposed project interventions will have no impact on the city.</p>
11. Are there any fragile soils in the target area? If so, describe	<p>The loss of trees and abandonment of soil as result of the crisis have caused the decrease in organic content and soil biodiversity. In addition to this, the irrigation with the untreated wastewater is causing increasing levels in salinity. If the wastewater is not treated, this will result in the soil in the targeted area becoming more fragile. In details, Zbdain and Mleeha are the most impacted areas with the fragile soil</p>
12. Are there lands that provide ecosystem services in the target area?	<p>Due to the crisis, this is very limited</p>
<b>Specifics (design dimensions and technique) and budget required</b>	
13. Adaptation measure / intervention description (what will be developed)	<p><b>Output 3.1. Studies and assessments to detail the proposed interventions are finalized</b> <u>Activity 3.1.1 finalize the studies, technical designs and assessments of the proposed interventions</u></p> <p><b>Output 3.2. Introduction of water efficient agricultural technology</b> <u>Activity 3.2.1 irrigation source is restored and efficient irrigation systems at farmers' level are installed</u> <u>Activity 3.2.2 access to information regarding ground water levels (water quantity and quality) is provided for farmers and decision makers, through Installation groundwater, surface-water, and meteorological monitoring networks;</u></p> <p><b>Output 3.3 Adoption of climate-smart agriculture practices for improved soil fertility and enhanced water use efficiency</b> <u>Activity 3.3.1 Introduce climate smart crop production practices</u> <u>Activity 3.3.2 Introduce drought tolerant crops and trees and enhance livestock production</u></p> <p><b>Output 3.4 Promote alternate sustainable livelihood opportunities with special focus on rural women</b> <u>Activity 3.4.1 promote sustainable livelihood opportunity through crop residuals management and support to rural women</u></p> <p>Field implementation of climate-resilient agronomic systems and technologies, prevention and restoration of climate-induced soil and water degradation, and awareness raising are appropriate adaptations measures that are agreed on with line ministries. These measures could be summarized as following:</p> <ol style="list-style-type: none"> <li>1. Raising irrigation efficiency and the establishment of water users' associations.</li> <li>2. Reducing water loss by introducing the modern irrigation systems which are environment-friendly because it does not cause surface runoff, and thus there is less chance of soil erosion.</li> <li>3. Support reduce soil contamination, degradations and salinity by efficient utilization of treated sewage water in irrigation,</li> <li>4. Strengthening water monitoring systems, agro-meteorological stations and early warning system.</li> <li>5. Identify crop varieties which are low water demanding, and resistant to drought, high temperatures, pests, and/or soil salinity, as well as livestock breeds climate-adapted, disease-resistant and highly productive.</li> </ol>

<sup>48</sup> <https://www.iucnredlist.org/search/map?query=syria&searchType=species>

<sup>49</sup> <https://whc.unesco.org/en/statesparties/sy>

	<p>6. Build institutional and technical capacity on climate modelling, hydrological modelling, NRA, irrigation management and mainstreaming adaptation measures into water management.</p> <p>7. Enhance soil quality and fertility through designing and supporting appropriate crops and trees rotation and intercropping, and by also supporting the management of crops and trees residuals, secondary product of wastewater treatment, and livestock manure (compost making as organic fertilizer).</p> <p>8. Introduce adaptive crops/trees varieties that are more drought tolerant and resistant to biotic stresses (pests and diseases) which will results in much less utilization of pesticides,</p> <p>9. Restoration of productive vegetation in the target area following the severe trees</p>																														
14. Materials to be used	<ul style="list-style-type: none"> <li>- Solar systems (panels, batteries, mounting structure invertors, chargers etc)</li> <li>- Drip irrigation networks,</li> <li>- Crushers for plants residuals</li> <li>- Agriculture tools and simple equipment for composting</li> <li>- Green house equipped with pump, irrigation system, ventilation system, and other tools</li> <li>- various tools to support women</li> <li>- 4- various of crops seeds adapted to local conditions and drought</li> </ul>																														
15. Dimension and other technical specifications (length, size, etc.)	Upon finalizing the studies / assessments, detailed technical specifications for each individual item / device/tool (for items mentioned in point 15) will be documented and cleared from FAO HQ before procurement process gets initiated. Identically, the detailed interventions' designs will be finalized in parallel. All the TSs will be developed in line with the national standards and the local conditions of the targeted areas																														
16. Budget required	<p>Output 3.1: USD: 174,133</p> <p>Output 3.2: USD: 924,158</p> <p>Output 3.3: USD: 814,243</p> <p>Output 3.4: USD 266,906</p>																														
17. Does the intervention result in extra energy use. If so, describe	Solar panels will be provided for the efficient irrigation system in order to reduce the use of energy in pumping and distributing of water																														
18. Start date of activity / works	Year 1, month 6																														
19. End date of activity / works	Year 4, month 3																														
<b>Beneficiaries (disaggregated, vulnerable, marginalized, etc.) and benefits</b>																															
20. Beneficiaries (type and number, disaggregated)	<p>The most vulnerable groups with focus on returnees and women headed households</p> <table border="1"> <thead> <tr> <th></th> <th>Total</th> <th>% women</th> <th>% youth</th> <th>% farmers</th> <th>Of which women</th> </tr> </thead> <tbody> <tr> <td>Mleiha</td> <td>45,000</td> <td>60</td> <td>32</td> <td>30</td> <td>40</td> </tr> <tr> <td>Zebdine</td> <td>8,000</td> <td>55</td> <td>35</td> <td>95</td> <td>65</td> </tr> <tr> <td>Deir El Assafir</td> <td>12,000</td> <td>50</td> <td>37</td> <td>65</td> <td>45</td> </tr> <tr> <td>Marj Al sultan</td> <td>3,000</td> <td>55</td> <td>37</td> <td>80</td> <td>45</td> </tr> </tbody> </table>		Total	% women	% youth	% farmers	Of which women	Mleiha	45,000	60	32	30	40	Zebdine	8,000	55	35	95	65	Deir El Assafir	12,000	50	37	65	45	Marj Al sultan	3,000	55	37	80	45
	Total	% women	% youth	% farmers	Of which women																										
Mleiha	45,000	60	32	30	40																										
Zebdine	8,000	55	35	95	65																										
Deir El Assafir	12,000	50	37	65	45																										
Marj Al sultan	3,000	55	37	80	45																										
21. How will equal access / benefits be ensured?	<p>Upon finalizing the studies / assessments stipulated in activity 3.1.1, FAO will be developing concrete beneficiaries' selection criteria for each intervention prioritizing the vulnerability, women-headed households, disability, and creating rural employment opportunities for youth as general criteria. Then, a specific selection criterion related to the nature of each individual intervention will be set (land ownership for irrigation and crop rotation, access to both types of water treated and ground water, and others). Thus, empowering women for equity and supporting disables and youth is well considered by FAO. Quotas will be used if needed. For those local authorities / extensionists / agronomists engaged in the implementation of FAO component, based on the specialist and giving the specific mandatories, they will be equally benefiting from services, acknowledge, training, and all other possible benefits of this component.</p> <p>For pilots interventions to be implemented and any other information will be produced under FAO component, it will be definitely disseminated to all relevant stakeholders / actors and local communities and private sector as well.</p>																														
22. What are the economic, social and environmental benefits of proposed measures to the community, marginalized and vulnerable groups and women and youth?	<p>The proposed activities aims at building the resilience and improving the wellbeing of indirect and direct beneficiaries.</p> <ul style="list-style-type: none"> <li>- Economically: improve the income of the main livelihood of the farmers by increase the productivity of the land and livestock in parallel with reduce inputs required. Create new agriculturally based livelihood opportunities and ensure the sustainable utilization / management of the natural resources through applying climate-smart agriculture practices</li> <li>- Socially: create common interest between community members / farmers and support / organize collective work which will results in enhancing the social cohesion – WUAs, adding value to plant</li> </ul>																														

	<p>residuals and other neglectable materials, diversify community income.</p> <ul style="list-style-type: none"> <li>- Environmentally: the proposed climate-smart agriculture practices are mainly to enhance the sustainable utilization of the natural resources and the decontamination of the environment and restore vegetation. Please see answer#13 for details.</li> </ul> <p>The aforementioned benefits will encourage/promote returnees' movement as during the inception phase residents will communicate with their relatives and neighbours informing them about the new services and livelihoods opportunities. For those who have just returned to their villages pre- or during implementation phase, they will be supported to stay and resume their agriculture investment. Women and youth as vulnerable groups will be always prioritized to be selected as beneficiaries. This will enable/strengthen them to overcome their specific challenges and not think of displace to cities in case of youth. This could be considered as good opportunity as returnees will resume their production, so to introduce climate smart agriculture practices</p>
23. How have beneficiary communities and groups been consulted (see detailed requirements in questions below) and how will they be engaged in the future?	<p>See section II.H of the proposal.</p> <p>The MoLAE conducted consultations in coordination with the MoWR and MoAA and target municipalities and representatives of farmers, women and youth. A participatory assessment and planning process will be conducted during project implementation, ensuring representation of above in the process.</p> <p>FAO under this project and through its regular work, has been in direct contact with target local communities through field resilience officers and daily arrangements with central and local authorities to identify the problems and potential solutions. Participatory approach with target communities will continue during inception phase and during implementation. Farmers' field school is one of the participatory approach to improve the community skills/acknowledge and build their problem-solving capacity. Establishing WUAs is also another way for direct consultation for the target communities. WUAs will be responsible as well on the operation and management of irrigation sources after the project ends. their capacity will be built during the project</p>
24. Have relevant local authorities (and national government) been consulted and how will they be engaged in the future?	<p>See section II.H of the proposal.</p> <p>See above</p> <p>From FAO side, Local and central authorities are fully engaged at this preparation phase and will be fully engaged in the designing / implementation and following up. The interventions were done in full consultation with the directorate of agriculture and the directorate of water resources in Rural Damascus. For example, the nurseries would be supported and operational after the project through the directorate of agriculture</p>
<b>C. Data and monitoring (data needs to measures effectiveness of measure - monitoring)</b>	
25. What data is needed to measure the effectiveness of the proposed measure?	<p>FAO is going to conduct baseline and end line surveys in which the following measures will be quantified:</p> <ul style="list-style-type: none"> <li>- Farmers income</li> <li>- Farmers land productivity and production,</li> <li>- Farmers accessibility to water for irrigation,</li> <li>- Sustainable utilization of available natural resources</li> <li>- Negative coping strategies,</li> <li>- Food security measures,</li> <li>- Food nutrition and dairy consumption,</li> </ul>
26. Any data / consultations missing? How to get it?	<p>FAO through direct coordination with UN-H and UNDP has obtained the required data from various official sources to develop this project. However, as stipulated under activity 3.1.1 more precise data/information will be acquired/analyzed for final detailed designs before implementation takes place. Several specialists and Experts from FAOSY, FAO regional officer and HQ, field officers, MAAR, MoLA&amp;E, MoWR and others are the main sources of potential mission data.</p>

**TABLE 3: CONTEXT AND POTENTIAL RISKS**

<b>D. Environmental and social context and potential risks (see also questions below)</b>	
27. Is an EIAs required by national law? If yes, has this been conducted / will it be conducted? Have outcomes been shared publicly?	<p>According to Syrian law (Environmental protection law (2012) + Executive order for EIA, 2008), the proposed agriculture irrigation projects may require a Col 1 EIA a in order to get environmental approval. MoLAE screened the proposed interventions and identified no ESIA are required by Syrian law (beyond the assessment conducted by UN-H, UNDP and FAO). The following steps have been taken to get environmental approval:</p> <ul style="list-style-type: none"> <li>- Submit application to MoLAE requesting screening of proposed interventions and identification</li> </ul>

	<p>if EIAs are required.</p> <ul style="list-style-type: none"> <li>- MoLAE reviewed application.</li> <li>- MoLAE provided environmental approval of proposed interventions (see letter)</li> <li>- Project team finalised initial ESMF in line with AF requirements</li> </ul>
<p>28. Description of gender and youth situation. Are there any unions, organisations in the area? How will these be involved?</p>	<ul style="list-style-type: none"> <li>- Water associations</li> <li>- Farmer association / syndicates</li> <li>- Women associations/groups</li> </ul> <p>Will be involved through participatory assessment and planning process lead by execution entities and MoLAE and target municipalities. In addition to the local institutions, there are other organizations such as farmers union chamber of agri partners such as the chamber of agriculture, NGOs</p>

CHECKLIST OF POTENTIAL RISK AREAS OF NON-COMPLIANCE OF THE ACTIVITY / INTERVENTION WITHIN THE ADAPTATION FUND'S ENVIRONMENTAL AND SOCIAL AND GENDER PRINCIPLES	INITIAL ENVIRONMENTAL OR SOCIAL RISKS PRESENT YES/NO	EXPLANATION WHY YES / NO AND REFERENCE TO INFORMATION
<b>ADAPTATION FUND PRINCIPLE 1: COMPLIANCE WITH THE LAW:</b>		
<b>Requirement:</b> <i>The proposed activity should be in compliance with all applicable domestic and international law.</i>		
29. Have all relevant rules, regulations and technical standards been identified?	YES.	All relevant rules, regulations and standards have been identified for all proposed project activities. Procedures for compliance of key ones initiated. Therefore, no potential risk of non-compliance exists.  This has been presented in proposal Part II.E
30. Have the procedures to comply, including authorizing offices been identified?	YES	See Part II.E
31. If an ESIA is required by national law for the proposed activity, has this been prepared and approved?	YES	According to Syrian law (Environmental protection law (2012) + Executive order for EIA, 2008), agriculture irrigation projects may require a Col 1 EIA in order to get environmental approval. MoLAE screened the proposed interventions and identified no ESIA's are required by Syrian law (beyond the assessment conducted by UN-H, UNDP and FAO). The following steps have been taken to get environmental approval: <ul style="list-style-type: none"> <li>- Submit application to MoLAE requesting screening of proposed interventions and identification if EIAs are required.</li> <li>- MoLAE reviewed application.</li> <li>- MoLAE provided environmental approval of proposed interventions (see letter)</li> <li>- Project team finalised initial ESMF in line with AF requirements</li> </ul>
<b>ADAPTATION FUND PRINCIPLE 2: ACCESS AND EQUITY:</b>		
<b>Requirement:</b> <i>Ensure fair and equitable access to benefits of the activity</i>		
32. Have all potential beneficiaries, including marginalized and vulnerable groups been identified?	YES	All project beneficiaries (i.e. population; groups) have been mapped (see overview table 1 and 6 and part II.H) for each project output.
33. Have rivals, disputants and concerns related to equal access of project beneficiaries been identified and are measures in place to avoid these?	YES	Community consultations and focus groups discussions have been conducted per beneficiary group to identify possible rivals, disputants and concerns related to equal access of project benefits.
34. Has the process of allocating and distributing benefits equally (fair and impartial access) been described?	YES	Project benefits will be allocated and distributed equally through a participatory process and through joint decision-making using water user and agriculture associations and women and youth groups. Under output 1, various groups will be equally involved, in assessment and planning processes (if needed through quotas).

**ADAPTATION FUND PRINCIPLE 3: VULNERABLE AND MARGINALIZED GROUPS:**

<b>Requirement:</b> Avoid imposing any disproportionate adverse impacts on marginalized and vulnerable groups including children, women and girls, the elderly, indigenous people, tribal groups, displaced people, refugees, people living with disabilities, and people living with HIV/AIDS.		
35. Have groups mentioned in the principle been identified and quantified?	YES	All project beneficiaries (i.e. population; groups) have been mapped (see overview table 1 and 6 and part II.H) for each project output.
36. Have the characteristics of the marginalized or vulnerable groups been described?	YES	All project beneficiaries (i.e. population; groups), including marginalised and vulnerable groups have been mapped for each project output (see overview table 1 and 6). Desk research, expert consultations and community consultations and focus group discussions have been used (see Part II.H) to identify possible risks / adverse impacts of project activities on marginalized and vulnerable beneficiary groups (i.e. specific needs, limitations, constraints and requirements of groups).
37. Have potential adverse impacts that each marginalized and vulnerable group may experience from the activity been identified and have the groups been consulted on specific needs, limitations, constraints and requirements?	NO	As per above, any potential adverse impact has been identified. However, all groups will be consulted again during the inception phase to verify and further identify all specific needs, limitation and constraints
<b>ADAPTATION FUND PRINCIPLE 4: HUMAN RIGHTS:</b>		
<b>Requirement:</b> The activity shall respect and where applicable promote international human rights		
38. Has any citing of the host country in any Human Rights Council Special Procedures been identified and has the project described how to deal with potential related issues?	YES	<p>Syria Human rights not ratified:50</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> CAT-OP - Optional Protocol of the Convention against Torture</li> <li><input type="checkbox"/> CCPR-OP2-DP - Second Optional Protocol to the International Covenant on Civil and Political Rights aiming to the abolition of the death penalty</li> <li><input type="checkbox"/> CED - convention for the protection of all persons from enforced disappearance</li> <li><input type="checkbox"/> CED, Art.32 - interstate communication procedure under the international convention for the protection of all persons from enforced disappearance</li> </ul> <p>Any agreement / contract signed will include reference to compliance with Human rights</p>
<b>ADAPTATION FUND PRINCIPLE 5: GENDER EQUALITY AND WOMEN'S EMPOWERMENT:</b>		
<b>Requirement:</b> Design and implement the activity in such a way that both women and men 1) have equal opportunities to participate; 2) receive comparable social and economic benefits; and 3) do not suffer disproportionate adverse effects during the development process		
39. Has the legal and regulatory context with respect to gender equality and women's empowerment been analysed to identify any obstacles to comply?	YES	All project beneficiaries (i.e. population; groups), including women and youth groups have been mapped for each project output (see overview table 1 and 6). UN Women and UNICEF have also been consulted to specifically identify potential risks and needs of women.
40. Has the cultural, traditional, religious, or any other grounds that might result in differential allocation of benefits between men and women of the activity been analysed?	YES	See specific 'gender' (women and youth) approach and baseline
41. Does the actively pursue equal participation and access to activity benefits through specific gender	YES	A specific 'gender' (women and youth) approach and baseline section has been developed based on a gender assessment. See dedicated annex 6

approach?		
<b>ADAPTATION FUND PRINCIPLE 6: CORE LABOUR RIGHTS:</b>		
<b>Requirement:</b> <i>The activity should meet the core labour standards as identified by the International Labour Organization and respect, promote ILO core labour standards</i>		
42. Has it been summarized how Executing Entities will comply to core labour standards?		
43. Has it been identified if the eight ILO core conventions have been ratified in project countries and if not ratified, are measures in place to avoid potential risks of non-compliance?	YES	<p>Syria core labour rights (not) ratified<sup>51</sup></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Fundamental Conventions: 8 of 8</li> <li><input type="checkbox"/> Governance Conventions (Priority): 3 of 4. Not ratified: <ul style="list-style-type: none"> <li>▪ <a href="#">C122 - Employment Policy Convention, 1964 (No. 122)</a></li> </ul> </li> <li><input type="checkbox"/> Technical Conventions: 30 of 178</li> </ul> <p>Any agreement / contract signed will include reference to compliance with ILO labour standards.</p>
44. Have potential risks of non-compliance with ILO core labour standards of the activity been identified through consultations (experts and communities) and are measures in place to avoid potential risks of non-compliance?	YES	FAO (and UN-H and UNDP) and ILO cooperate together at global and regional levels on this issue. The interventions of FAO will take into account the agreed principles and the national law for labour
<b>ADAPTATION FUND PRINCIPLE 7: INDIGENOUS PEOPLE:</b>		
<b>Requirement:</b> <i>The activity shall not be inconsistent with the rights and responsibilities set forth in the UN Declaration on the Rights of Indigenous Peoples and other applicable international instruments relating to indigenous peoples.</i>		
45. Has it been assessed if indigenous people are present in the activity target area? If so:	YES	There are no indigenous people in the activity target area
46. Has it been identified if the host country ratified the ILO Convention 169?	YES	169 s not been ratified <sup>52</sup>
47. Has it been described how the project (and activity) will be consistent with UNDRIP, and particularly with regard to Free, Prior, Informed Consent (FPIC) during project design, implementation and expected outcomes related to the impacts affecting the communities of indigenous peoples?	N/A	N/A
48. Has it been described how indigenous peoples will be involved in the design and the implementation of the project and provide detailed outcomes of the consultation process of the indigenous peoples?	N/A	N/A

<sup>51</sup> [https://www.ilo.org/dyn/normlex/en/f?p=1000:11200:0::NO:11200:P11200\\_COUNTRY\\_ID:103023](https://www.ilo.org/dyn/normlex/en/f?p=1000:11200:0::NO:11200:P11200_COUNTRY_ID:103023)

<sup>52</sup> [https://www.ilo.org/dyn/normlex/en/f?p=1000:11210:0::NO:11210:P11210\\_COUNTRY\\_ID:102923](https://www.ilo.org/dyn/normlex/en/f?p=1000:11210:0::NO:11210:P11210_COUNTRY_ID:102923)

49. Has documented evidence of the mutually accepted process between the project and the affected communities and evidence of agreement between the parties as the outcome of the negotiations been provided?	N/A	N/A
50. Has a summary of any reports, specific cases, or complaints that have been made with respect to the rights of indigenous peoples by the Special Rapporteur and that are relevant to the project/programme been provided?	N/A	N/A
51. Has awareness about the rights of indigenous peoples and how it is a general principle in the implementation of the project been included in the project design?	N/A	N/A
<b>ADAPTATION FUND PRINCIPLE 8: INVOLUNTARY RESETTLEMENT:</b>		
<b>Requirement:</b> <i>The activity shall be designed and implemented in a way that avoids or minimizes the need for involuntary resettlement.</i>		
52. Has it been determined if physical or economic displacement is required by the activity and if it is voluntary or involuntary (through identification of land ownership and use (also informally) and consultations on consent to the activity)?	YES	<ul style="list-style-type: none"> <li>- Direct implantation of interventions will be on farmer's private land</li> <li>- Farmers field schools and nurseries will be on public owned land (extension services or municipality)</li> <li>- The introduction of new concepts will be first applied as pilot using public land that is accessible to farmers in order for them to see and then learn and then apply in their own lands with FAO support</li> </ul> <p>Besides, consultations took place (see part II.H). UN-H, UNDP and FAO will not allow any displacement as result of any project activity.</p>
53. Is awareness building of involuntary resettlement and the applicable Principles and procedures of the activity / project part of the project activities?	YES	See above
54. If it is involuntary: has justification for the need for involuntary resettlement been provided by demonstrating any realistic alternatives that were explored, and how the proposed involuntary resettlement has been minimized and is the least harmful solution.	N/A	N/A
55. If it is involuntary: have details of the extent of involuntary resettlement been described, including the number of people and households involved, their socio-economic situation and vulnerability, how their livelihoods will be replaced, and the resettlement alternatives and/or the full replacement cost compensation required whether the displacement is temporary or permanent?	N/A	N/A
56. If it is involuntary: have the details of the involuntary resettlement process that the activity will apply been described, and the built-in	N/A	N/A

safeguards to ensure that displaced persons shall be informed of their rights in a timely manner, made aware of the grievance mechanism, consulted on their options, and offered technically, economically, and socially feasible resettlement alternatives or fair and adequate compensation? This also should include an overview of the applicable national laws and regulations.		
57. If it is involuntary: has it been justified that the involuntary resettlement is feasible?	N/A	N/A
58. If it is involuntary: has the adequacy of the activity / project organisational structure to successfully implement the involuntary resettlement as well as the capacity and experience of the project/programme management with involuntary resettlement been described?	N/A	N/A
<b>ADAPTATION FUND PRINCIPLE 9: PROTECTION OF NATURAL HABITATS:</b>		
<b>Requirement:</b> <i>The activity shall not result in unjustified conversion or degradation of critical natural habitats</i>		
59. Has the presence in or near the activity area of natural habitats been identified?	YES	National plans and legal documents Convention on Wetlands (Ramsar, Iran, 1971) <sup>53</sup> UNESCO Man and the Biosphere Programme <sup>54</sup> 20 km north / east of the target area is recognised natural habitat for fauna; however, due to the crisis situation, many species were lost Not in or close to target area Not in or close to target area
60. Has the potential of activity to impact directly, indirectly, or cumulatively upon natural habitats been identified?	YES	Natural habitats are not close to the target areas. Downstream is a polluted and dried-up lake and adjacent desert.
61. Are there any risks management arrangement in place for potential risks identified above?	N/A	N/A
62. If such habitats exist, has the location of the critical habitat in relation to the project and why it cannot be avoided, as well as its characteristics and critical value been described?	N/A	N/A
63. If such habitats exist, for each affected critical natural habitat, has an analysis on the nature and the extent of the impact including direct, indirect, cumulative, or secondary impacts been provided?	N/A	N/A

<sup>53</sup> <https://www.ramsar.org/wetland/syrian-arab-republic>

<sup>54</sup> <https://en.unesco.org/biosphere/arab-states>

**ADAPTATION FUND PRINCIPLE 10: CONSERVING BIODIVERSITY:**

**Requirement:** The activity shall be designed and implemented in a way that avoids any significant or unjustified reduction or loss of biological diversity or the introduction of known invasive species.

64. Has the presence in or near the project/programme area of important biological diversity been identified?	YES	National plans and legal documents:  IUCN Red List of Threatened Species:55  Due to the crisis, many agriculture fruit trees were lost in the target area  Barada spring minnow The Barada spring minnow is non-existent in the target area due to pollution of streams and drought.	
65. Has the potential of a significant or unjustified reduction or loss of biological diversity, and the potential to introduce known invasive species been identified?	YES	For any crop variety to be introduced by intercropping or crop rotation, FAO will definitely together with MAAR (the eventual responsible) select from those Syrian adopted and certified crops and trees varieties. No unregistered/unreliable varieties. In case of promising lines/varieties, introducing any should be approved by MAAR (i.e. GCSAR) and also accepted socially by the target communities. At species level, The Syrian flora and domesticated species are well known/identified for FAO and MAAR.	
66. If important biological diversity exists (Biological diversity), have the elements of known biological diversity importance in the project/programme area been described?	N/A	N/A	
67. If important biological diversity exists (Biological diversity), has it been described why the biological diversity impact cannot be avoided?	N/A	N/A	
68. Are there any risks management arrangement in place for these identified potential risks?	N/A	N/A	
69. If important biological diversity exists (Invasive species), has it been described the invasive species that either may or will be introduced and why such introduction cannot be avoided?	N/A	N/A	
70. If important biological diversity exists (Invasive species), has evidence that this introduction is permitted in accordance with the existing regulatory framework and the results of a risk assessment analysing the potential for invasive	N/A	N/A	

behaviour been provided?		
71. If important biological diversity exists (Invasive species), has it been described the measures to be taken to minimize the possibility of spreading the invasive species?	N/A	N/A
<b>ADAPTATION FUND PRINCIPLE 11: CLIMATE CHANGE:</b>		
<b>Requirement:</b> <i>The activity shall not result in any significant or unjustified increase in greenhouse gas emissions or other drivers of climate change.</i>		
72. When relevant, has a risk-based assessment of resulting increases in the emissions of greenhouse gasses or in other drivers of climate change been conducted?	YES	The efficient irrigation system may require additional pumping and distributing of water. To compensate costs for this, Solar panels will be provided
<b>ADAPTATION FUND PRINCIPLE 12: POLLUTION AND RESOURCE EFFICIENCY:</b>		
<b>Requirement:</b> <i>The activity shall be designed and implemented in a way that meets applicable international standards for maximizing energy efficiency and minimizing material resource use, the production of wastes, and the release of pollutants.</i>		
73. Has it been shown how the concept of minimization of resource has been applied in the activity design and how this will be effective during implementation? Are there possible inefficiencies in energy and material resource use and waste and pollution due to project activity?	YES	The wastewater treatment plant will treat up to 4400 m3/day. The treated water will be reused for irrigation this will support rationalizing the use of surface and underground water resources and prevent further pollution on the resource. Treated waste water will be used to plant certain types of crops and trees according to the Syrian standards to avoid pollution. Moreover, an intervention on sustainable use of resources rather than burning them (crop residuals) is proposed to reduce emissions and energy consumption
74. Does the activity included preventing waste and pollution by e.g. preparing a waste and pollution prevention and management plan for the activity or whole project/programme?	YES	The crop residuals and manure that will result from the proposed interventions will be used in another intervention for the making of compost and/or feed.
<b>ADAPTATION FUND PRINCIPLE 13: PUBLIC HEALTH:</b>		
<b>Requirement:</b> <i>The activity shall be designed and implemented in a way that avoids potentially significant negative impacts on public health.</i>		
75. Has it been demonstrated that the activity will not cause potentially significant negative impacts on public health by screening for possible risks / impacts (related to safe water, clean air, healthy workspace, safe house, communities and roads, employment and working conditions, etc. and including the results of the screening in the Proposal, including general project measures to avoid risks?	YES	The qualification of treated water will meet the National approved standard related to the use of treated water in irrigating crops and trees and the approved standard related to disposal of treated water in watershed and streams. This will be monitored through daily measures during the operation of the waste water treatment plant (by UNDP). From similar interventions implemented by FAO in other countries or in Syria, the proposed interventions didn't show such impact. On the contrary the use of sustainable production practices and also the use of eco-friendly methods (no use for chemicals) contributes to the general improvement in the health and environment. Moreover, FAO is introducing climate smart practices and good agriculture practices that support farmers to resume production using local available resources and environment friendly methods to reduce depends on chemical inputs .
<b>ADAPTATION FUND PRINCIPLE 14: PHYSICAL AND CULTURAL HERITAGE:</b>		
<b>Requirement:</b> <i>The activity shall be designed and implemented in a way that avoids the alteration, damage, or removal of any physical cultural resources, cultural sites, and sites with unique natural values recognized as such at the community, national or international level.</i>		

76. Has the presence of heritage in or near the activity been identified?	YES	According to the Syrian government and UNESCO <sup>56</sup> , the Ancient city of Damascus is a heritage site close to the project target area.
77. If heritage exists, has the cultural heritage, the location and the results of a risk assessment analysing the potential for impacting the cultural heritage been described?	N/A	N/A
78. If heritage exists, have the measures to be taken to ensure that heritage is not impacted, and if it is being accessed by communities, how this access will continue described?	N/A	N/A
<b>ADAPTATION FUND PRINCIPLE 15: LAND AND SOIL EROSION:</b>		
<i>Requirement: The activity shall be designed and implemented in a way that promotes soil conservation and avoids degradation or conversion of productive lands or land that provides valuable ecosystem services.</i>		
79. Soil conservation: Has the presence of fragile soils (e.g. soils on the margin of a desert area, coastal soils, soils located on steep slopes, rocky areas with very thin soil) within the activity area been identified?	YES	The loss of trees and abandonment of soil as result of the crisis have caused the decrease in organic content and soil biodiversity. In addition to this, the irrigation with the untreated wastewater is causing increasing levels in salinity. If the wastewater is not treated, this will result in the soil in the targeted area becoming more fragile. In details, Zbdain and Mleeha are the most impacted areas with the fragile soil.
80. Soil conservation: Have activities that could result in the loss of otherwise non-fragile soil been identified. If such soils exist and potential soil loss activities will take place:	YES	No loss of soil is expected. On the contrary, the intervention on the use of crop rotation and organic fertilizers have been designed to improve the soil in the targeted area
81. Has the following been Identified and described? <ul style="list-style-type: none"> <li>• Soils that may be impacted by the activity</li> <li>• Activities that may lead to loss of soils;</li> <li>• Reasons why soil loss is unavoidable</li> <li>• Measures that will be taken to minimize soil loss.</li> </ul>	YES	Taking into account the current level of soil damage in the targeted areas, the interventions were designed to treat and improve the soil conditions (organic matter content and minimise land degradation)
82. Has it been described how soil conservation has been promoted to the Executing Entities?	N/A	FAO is a specialised UN agency with knowledge on soil conservation. Therefore this is not required, except that UN-H and UNDP coordinate on this.
83. Valuable lands: Have productive lands and/or lands that provide valuable ecosystem services within the activity area been identified. If such lands exist:	YES	As described in point 12, there are currently no lands that provide ecosystem in the area. FAO interventions are working to restore this through proper integration between crop and livestock production and sustainable practices

<sup>56</sup> <https://whc.unesco.org/en/statesparties/sy>

<p>84. Has the following been identified and described?</p> <ul style="list-style-type: none"><li>• Any valuable lands.</li><li>• Activities that may lead to land degradation.</li><li>• Reasons why using these lands is unavoidable and the alternatives that were assessed, and</li><li>• Measures that will be taken to minimize productive land degradation or ecosystem service impacts.</li></ul>	<p>YES</p>	<p>For FAO suggested interventions only the first and fourth point is applicable. The use of low cost efficient irrigation systems, introduce soil cover concept, climate smart practices and sustainable livelihood opportunities are proposed to reduce land degradation in potentially valuable lands.</p>
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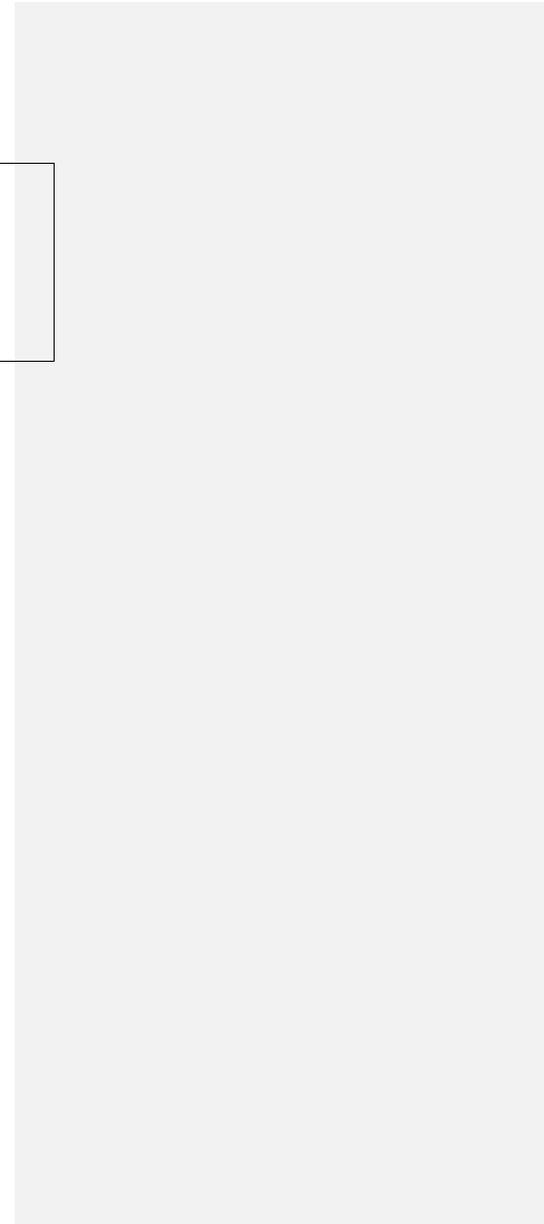


TABLE 5: REMAINING POTENTIAL RISKS AND IMPACT ASSESSMENT DETAILS AND MEASURES TO AVOID / MITIGATE RISKS / IMPACTS				
AF principle number and description of risks (answer NO)	Potential risk (+ description)	Impact assessment details (outcome of assessment – quantification - conducted)	Mitigation measures proposed (and agreed with beneficiaries)	Monitoring Indicators and responsibility
Principle 3 (vulnerable groups) question 37: Have potential adverse impacts that each marginalized and vulnerable group may experience from the activity been identified and have the groups been consulted on specific needs, limitations, constraints and requirements?	Potential adverse impact on vulnerable groups have been identified in general. However, not all specific needs, limitation and constraints / concerns may be identified / up to date when the project commences.	Specific needs, limitation and constraints of target groups may not be fully identified / up to date when project commences  Target population: Mleiha: 45,000 Zebdine 8,000 Deir El Assafir: 12,000 Marj Al sultan: 3,000	All beneficiary groups will be consulted again during the inception phase to verify and further identify all specific needs, limitation and constraints. Related to that the ESMF/P will be updated.	Consultation reports with identified specific needs, limitation and constraints.  FAO and UN-H

## Annex 6: Gender and youth approach and baseline

### Purpose

The purpose of this specific 'gender annex' is to demonstrate (in an overview) how this project will comply to the AF GP. A gender approach and data baseline has been established, which is necessary at the project start against which implementation progress and results can be measured.

In line with UN-Habitat's ESSP, the approach includes the identification and of promotion of economic, social and environmental benefits and opportunities for women and youth for each project activity (which can be seen as an additional safeguard area).

During project preparation a 'gender assessment' has been conducted to identify potential project gender equality and women's and youth empowerment issues, but also opportunities. The outcomes are summarized below, as well as arrangements that will be taken during project implementation to comply to the AF GP, including to show how the project contributes to improving gender equality, the empowerment of women and youth and the project interventions' suitability to meet the adaptation needs of targeted women and men and youth.

### Methodology

During the project preparation phase, potential gender equality and women's and youth empowerment challenges and opportunities have been identified through initial data analysis / desk research, surveys and focus group discussions with women, youth and other groups. Through these methods, specific women and youth needs and perceptions were identified, as well as potential gender-related risks and impacts, including possible concerns regarding proposed project activities.

### Specific considerations and phases

#### 1. Determinants for gender-responsive stakeholder consultations

Table 50. Stakeholders consulted to develop gender approach

Type of stakeholder	Specific stakeholder
UN agencies	- UN Women - UNICEF - FAO
Community level	- Community consultations and focus group discussions with women and youth

\*See also part II.I

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#### 2. Initial Gender Assessment

##### a. Data baseline – overview of disaggregated data (beneficiaries) in target areas.

Table 51. Data baseline – women and youth

Project components	Direct		Indirect	
	Women	Youth	Women	Youth
1	50-60% of 81,700 Participation workshop: 20-40 % of 200	32-37% of 81,700	50-60% of 145,000	32-37% of 145,000
2	50-60% of 66,000 Participation workshop: 20-40 % of 30	32-37% of 66,000	50-60% of 145,000	32-37% of 145,000
3	50-60% of 26,000 Participation workshop: 20-40 % of 30	32-37% of 26,000	50-60% of 145,000	32-37% of 145,000

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##### b. Context:

Table 52. analysis of gender-specific legal and cultural / religious context

Analysis of	
Analysis of	Syria has ratified the Convention on the Elimination of All Forms of Discrimination against Women

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legal status of women	(CEDAW).
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c. Differentiated climate change impacts on men and women and their differentiated capacities do adopt to these, gender division of labour and gender-based power structures.

Climate change has a strong impact on agricultural production systems. Rural communities are in the front lines in the battle to improve food security. At the same time, these communities must also cope with changing climate conditions. Gender is one critical dimension of this diversity. It shapes men's and women's roles and opportunities, and consequently determines their access to the resources and processes needed for dealing with climate change. Accurate climate information and the ability to interpret it allows farmers to plan and make better decisions on how to adapt to climate change. Women usually have lower access to production inputs, resources and information. This what makes women more vulnerable in time of crisis and climate change.

Table 53. Differentiated climate change impacts on men and women

Sector / Livelihood relevant to the project	Climate change impact	Gender and youth equality and empowerment issues, incl. specific Vulnerabilities / barriers to adapt	Capacity to adapt and opportunities for promoting a 'women' and 'youth' as agents of change
Agriculture	Drought / less work / <u>low productivity. Lower livelihood opportunities and family income</u>	High dependency on agriculture sector for income (around 45% women involved in agriculture) 50-60 % women headed households <u>If women can't have the capacity to diversify their income resources and make informed decisions, they will be among the most affected in the rural communities. At the same time, the knowledge of women on how they manage some agriculture activities and take care of their families' nutrition, could be underestimated in some rural communities. Under climate change conditions, the power in making decision and management of resources could not take into account women role and knowledge.</u>	Opportunities: - <u>Interventions will be gender-responsive in their design and implementation, meaning that FAO will ensure equal opportunities for men and women to participate in and benefits from the whole activities training and awareness among component-3.</u> - Involve women and youth unions and women through water user associations - Target women-headed households - <u>Design specific interventions for youth and to empower rural women and meet their special requirements</u>
Water (domestic and for irrigation)	Drought / less work		

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d. Capacity gaps affecting GP compliance

Table 54. Capacity of potential executing entities to carry-out gender responsive activities.

Potential executing entity	Skills and expertise to provide gender mainstreaming inputs	Specific requirements execution entities for compliance	Capacity building needs
UNDP	Yes (UN core value)	- Appoint ESP a compliance and gender focal point ( <u>present in country office</u> )	- Awareness on requirements
FAO		- Capacity to comply to the AF ESP and implementation of the ESMP guided by UN-Habitat - Capacity to comply to the AF GP (see annex 6).	- Share guidelines for execution entities to comply and to ensure 'opportunities' are identified and exploited
MoLAE (non execution)	Limited (as government entity)	- Appoint ESP a compliance and gender focal point: <u>MoLAE proposed the director of Rural Woman Development of the Ministry of Agriculture and Agrarian Reform</u> - Capacity to comply to the AF ESP and implementation of the ESMP guided by	- Awareness on requirements - Share guidelines for execution entities to comply and to ensure 'opportunities' are identified and exploited - Support development baseline and approach before project start

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		UN-Habitat - Capacity to comply to the AF GP (see annex 6).	+ reporting requirements
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Recognizing that gender Justice is a precondition and accelerator for achieving the Sustainable Development Goals, UNDP is committed to strengthening gender equality and women's empowerment. UNDP adopts women's right at heart of all its work, community centred approach, nexus and survival centred approach. UNDP supports the gender justice and empowerment of women and girls through targeted gender-specific interventions and addresses gender concerns by integrating and mainstreaming Gender throughout the project cycle including HR processes, extending opportunities to access leadership, job, information, etc. which is measured by IASC Gender and Age monitoring tool (GAM). To achieve this, UNDP will rely on gender analysis and sex-disaggregated data and pursue integrated, cross-sectoral approaches to address interconnected development challenges. UNDP gender mainstreaming is grounded in the core principles: a) human rights, b) Women and men active agents of change, c) "Leaving no one behind", d) Transforming gender and power relations, e) Engaging men and boys, f) Contextualization, and g) Innovation. UNDP has a dedicated gender analyst capacity supported with focal points and project staff. They work on ensuring that project staff and volunteers are gender sensitive by providing required technical support and trainings. Annex 1: attached UNDP Gender Equality Strategy 2018-2021)

Gender equality is also central to FAO's mandate to achieve food security for all by raising levels of nutrition, improving agricultural productivity and natural resource management, and improving the lives of rural populations. FAO can achieve its goals only if it simultaneously works towards gender equality and supports women's diverse roles in agriculture and rural development. Women and men often have different rights and access to and control over productive resources, services and decision-making power. They also allocate time differently, and have their own needs and priorities. It is essential that during each phase of project implementation, these differences are adequately reflected, and that gender issues are addressed from the very start and throughout the AF project cycle.

FAO will do a need assessment and will integrate the gender concept while implementing it, in order to explore the situation of rural women compared to men's and to understand the extent to which they are able to realize their rights and potential in areas where FAO is mandated to deliver the activities under the three component.

FAO interventions will be gender-responsive in their design and implementation, meaning that FAO will ensure equal opportunities for men and women to participate in and benefits from the whole activities training and awareness among the three component.

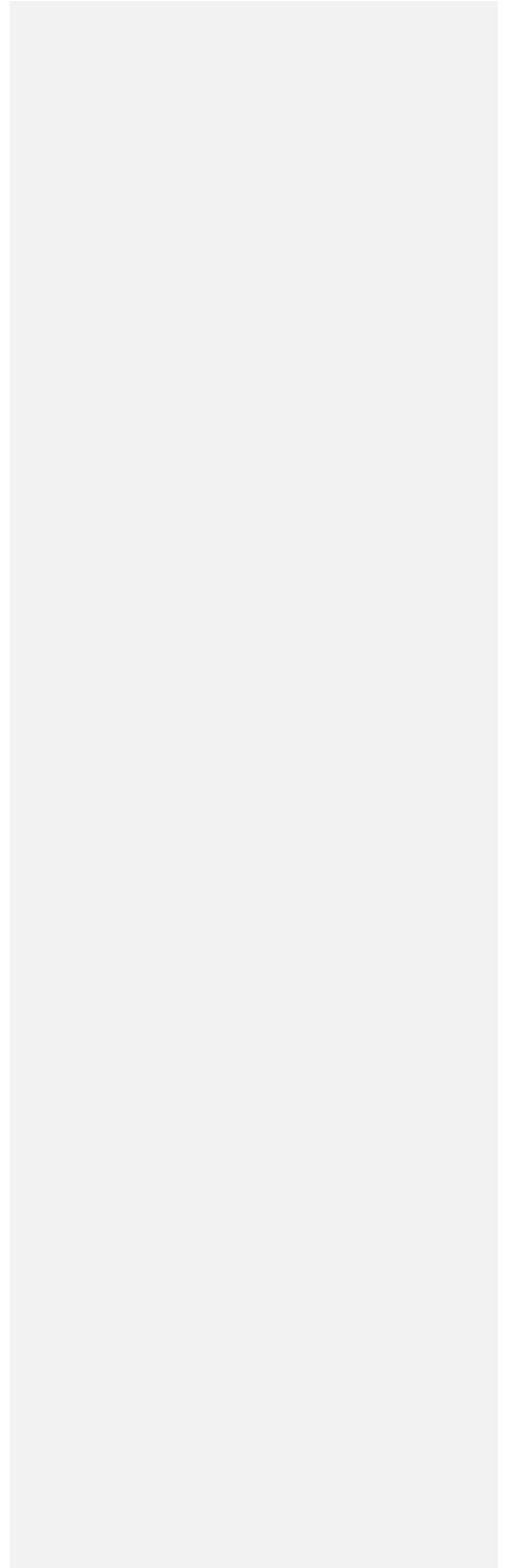
FAO is committed to placing accountability to people affected by disaster and conflict at the core of its emergency policy and practice, from preparedness and the onset of an emergency, through all phases of the program cycle. Accountability to affected populations (AAP) is a people-centred approach, sensitive to the dignity of all human beings, the varying needs of different segments within a community, and the importance of ensuring that women, men, girls and boys can equally access and benefit from assistance.

e. Opportunities for promoting a 'women' and 'youth' as agents of change

The project aims to target women (and youth) in community level skill building and trainings and to especially target women-headed households. Opportunities include:

- Target and strengthen women and youth unions and ensure participation in assessment and planning processes
- Include women and youth considerations / roles in strategies and plans
- Women to be involved in agriculture activities
- Youth to be target and if possible, lead awareness raising campaigns on adaptation to water scarcity.

- Conduct consultation to identify more specific needs and possible concerns at inception phase



### 3. Project planning and design.

Table 55. Gender baseline, goals and activities. A detailed action plan will be developed at inception phase

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Project outputs	Disaggregated beneficiaries, gender specific issues and needs / baseline	Key gender goals (to improve equality)	Entry points (to integrate gender considerations / empower women / youth)	Suitable interventions to meet specific needs and built on women and youth skills and knowledge	Additional activities needed to ensure gender perspective, incl. potential risk mitigation measures	Specific 'gender' output Indicator	Specific 'gender' targets	Budget required and allocated
1.1.	Limited participation of women and youth in assessment and planning processes	Women to be involved in assessment and planning (and if possible youth)	Women and youth groups / unions	Involve women and youth groups / unions. If non-existing, create these	Use quota if needed Check women and youth considerations in plans	% women and youth participation in assessment and planning Women and youth considerations in plans	Participation: Women: 20-40 % Youth: 15 %	A dedicated safeguard compliance staff time is allocated under project execution fees for USD 34,100
1.2.								
1.3.								
1.4.								
1.5.								
1.6.								
1.7.								
2.1.	Proposed activities will benefit all inhabitants in the target area	None and proposed activities will benefit all inhabitants	Workers participate in water associations					This persons will ensure compliance and develop ESP and GP compliance guidelines for execution entities with support from specialists at ROAS and HQ
2.2.								
2.3.								
2.4.								
3.1.	Women and youth need to be involved where possible, especially women-headed households	Involve women and youth in O & M of systems	Inception phase (output 3.1.) of the project with detailed designs, capacity strengthening activities and project activities	Women and / or youth focus point from women and youth groups / unions. Identify specific roles	Follow-up on selected focal point  Use quota if needed	Focal point identified  % women and youth participation	Participation: Women: 20-40 % Youth: 15 %	
3.2.								
3.3.								
3.4.								

#### **4. Project implementation**

UN-Habitat aims to have a gender responsive and adaptable management approach in place which, when needed, allows adjustment based on learning from earlier decisions and interventions and received feedback. This is done through having gender expertise and focal points in place, whom should identify challenges, barriers or restrictions that arise during project/programme implementation, which might hinder the equal participation of men and women in activities.

Execution entities will be supported to ensure gender is mainstreamed and to identify any challenges that may arise during project/programme implementation, which might hinder the equal participation of men and women in activities. This requires appointing a gender focal point and having quota targets for women and youth participation in project activities. Gender focal points from the government will be part of the steering committees.

The project Grievance mechanism established will be capable to accept grievances and complaints specifically related to gender equality and women's empowerment

#### **5. Performance Monitoring and Evaluation**

The gender responsive management approach includes gender responsive monitoring and evaluation, which is participatory and where 'gender disaggregated data' will be collected and analysed. Where possible, women and youth will be encouraged to participate in monitoring activities.

#### **6. Knowledge Management, Information Sharing and Reporting**

UN-Habitat aims to have a gender responsive knowledge management approach in place, where specific gender considerations are highlighted through reporting on the project/programme's commitment to gender equality and women's empowerment in all outreach, communication and information sharing efforts.

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