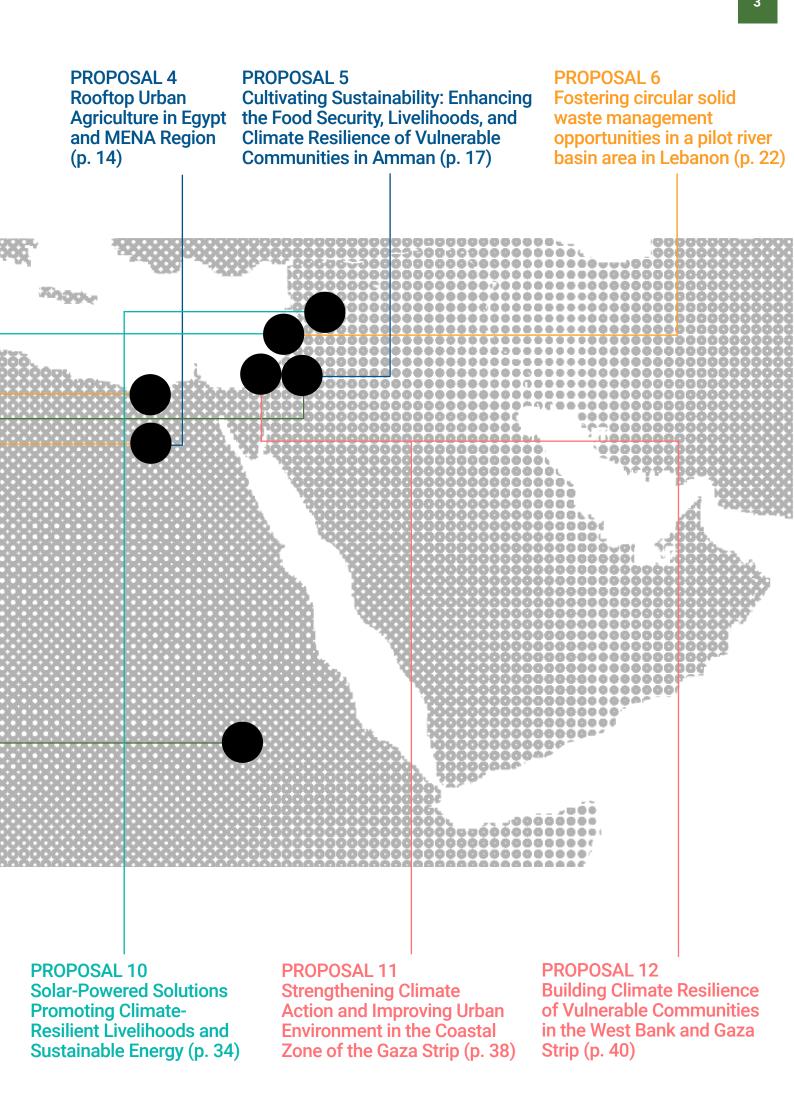


UN-HABITAT CLIMATE CHANGE PROPOSALS IN THE ARAB REGION







CLIMATE CHANGE ADAPTATION AND URBAN WATER SECURITY

As the most water-stressed region in the world, the demand for urban water supply in the Arab region has grown steadily in the last decades. This is in addition to the higher frequency and intensity of floods and flash floods. UN-Habitat is committed to support urban water resilience through integrated water resources management, innovation in water technology, nature-based solutions and resilient infrastructure, and water-sensitive urban planning



PROPOSAL 1 **Urban Stormwater Recycling** System





PARTNERS

Ministry of equipment and housing Ministry of environment National agency of sewage Ministry of agriculture **Municipalities**

TIMEFRAME

18 Months

LOCATION

Greater Tunis Municipalities



ESTIMATED BUDGET 1,000,000 USD



TARGET BENEFICIARY GROUP

3 municipalities, 20 small urban farmers, 2000 inhabitants.

Situated in the world's most water scare region, Tunisia is one of the most water scarce countries in the world. In 2017, 367 cubic meters (m3) of water were available per capita to its almost 12 million inhabitants, compared to a regional average of 526 m3 and a global average of 5,700 m3. Urban growth, rising demand, and the need to support agricultural irrigation in rural areas, are continuously adding pressure to the already scare water resources in the country. Concurrently, the infrastructure in Tunis is in a poor condition, causing urban system paralyses when the city experiences rain in winter. The existing storm water network continues to be insufficient in handling the flux in water quantities despite multiple interventions from the national water distribution utility. Moreover, currently most of the stormwater is disposed of through the sanitation networks for used water, which prevents its collection and re-use. Therefore, in light of this situation, there is an urgent need to utilise stormwater to bridge the gap between water supply and the rising demand in Tunisia.

DESCRIPTION

Historically, stormwater was perceived as a precious resource that was collected, treated, and reused mainly for drinking and other activities in some areas of Tunisia. This project has an overarching aim of bringing back this tradition, which has been lost due to modern concepts and construction techniques, through refreshing people's memories and emphasizing the importance of this side-lined resource.

Successful urban water management interacts with the urban hydrological cycle in diverse ways and provides multiple benefits to cities. These benefits include 1) providing water security through the efficient use of the available water sources, 2) protecting and restoring waterways and wetlands, and 3) mitigating flood risk and damage. This project aims to develop a comprehensive urban stormwater recycling system to respond to water scarcity in Tunisia through constructing an underground network/reservoir. The stormwater collected stormwater will then be treated and distributed to be used locally in multiple ways including drinking and irrigation of agricultural land and public green spaces. With the availability of an adequate irrigation system from stormwater within the city, small farmers might be encouraged to continue their work in the city. In turn, the urban agriculture production, quality, and quantity will be enhanced. Also, nearby residents, institutions and start-ups can be provided with a fresh source of water and promote the philosophy of reuse and the preservation of natural water resources among their networks.

The project will adopt a participatory planning process, which includes local and national governments, civil society, line ministries and, where applicable, the international aid community. The water code policies, projects, and regional plans will be defined to provide the basis of the integrated water management system. Most importantly, the private sector will be involved in the process from the project development to its implementation with the aim of encouraging investments.

Under this project UN-Habitat will work in close collaboration with the Ministry of equipment, the ministry of agriculture and the ministry of local affairs, as well as the relevant governorates and municipalities throughout the project – including project design, implementation, and monitoring.

EXPECTEDACCOMPLISHMENTS

Outcome 1: Enhanced Stormwater reuse through estbalishing a stormwater collection, treatment and resue network

Outcome 2: Strengthened institutional capacities to integrate stormwater harvesting techniques into municipal water management for the selected African Clean Cities Platform (ACCP) cities in Tunisia

The project's expected accomplishments include:

- Provision of an irrigation system for public green spaces, public gardens, and small farms.
- Provision of alternative drinking water source within the city.
- Encouragement of urban farming within the municipal boarders.

- Encouragement of stormwater reuse and preservation of water resources.

PROPOSAL 2 Building Urban Climate Resilience in Amman and Petra through Adaptation Measures and Capacities to Withstand Impacts of Flash Floods



Jordan—and the region as a whole—cannot achieve or obtain sustainable development while disasters continue to undermine economic growth and social progress. Floods are the most frequent natural disaster in Jordan, resulting in over 395 deaths, affecting over 650,000 people over the last century, and incurring economic losses estimated at \$29 million over the last 30 years.

The year 2022 ended with significant flooding affecting the residents and visitors of major cities across Jordan. Thousands of tourists evacuated the World Heritage Site of Petra, as heavy rains led to cascading water streams and flash flooding. Petra provides significant socioeconomic contributions to the country and region, but, with no Flood Early Warning System, the sudden rainfall poured down with frightening velocity and volumes, severely harming communities and the heritage site on which livelihoods and wellbeing across Jordan depends on. Natural heritage is a priority in the 2021 Nationally Determined Contributions (NDC), whereby the Tourism sector adaptation priorities include safeguarding tourism sites from climate change impacts, especially floods and heatwaves, through climate proofing studies and climate impact prevention for sites.

Meanwhile, Amman city, an urban tourist hotspot, has been under substantial pressures prior to and since the influx of Syrian refugees, whereby the limited water resources, land, and ecosystems has affected the resilience and sustainability of environmental systems and processes. This has been evident in the past, as heavy rains have paralyzed the city, affecting schools, transportation, livelihoods, and the power grid, thus exacerbating vulnerabilities for the poorest segments of the Jordanians and Syrian refugees and deteriorated access to quality basic services.

This project is informed by the prioritized action needed to develop Flood Early Warning Systems and adaptive measures to mitigate the increasing risk of flash floods in the context of increasing urbanization and climate change risks.

DESCRIPTION

Flash floods are unpredictable by nature, and Amman

and Petra have gone from long periods of no water to sudden and extreme hazards in minutes, resulting in deaths, grave economic losses, and damages to vital infrastructure. UN-Habitat's previous assessment of the flood hazard risk in Amman has shown that flash flood unpredictability will continue to be deadly and destructive unless urgent action is taken to enhance the adaptive capacity of the city.

Accordingly, this project aims to build the urban climate resilience in Amman and Petra and enhance the adaptive measures and capacities of the local governments and communities to withstand the impacts of flash floods. This will focus on introducing Flood Early Warning Systems (FEWS), developing a disaster preparedness and response plan, and implementing pilot adaptation measures.

FEWS are renowned as an essential part of disaster risk management measures that aid in mitigating the socioeconomic impacts of flash floods. FEWS are made up of four interconnected components:

Flood risk assessments and knowledge.

- Local hazard monitoring (forecasts) and warning service.

- Flood risk distribution and communication service.

Community response capabilities.

This multifunctional system promotes community readiness for extreme weather events by providing warnings and enhancing awareness of risks and proper responses. The smart city technology utilized in FEWS predicts the weather and the magnitude, time, location, and anticipated damages of the approaching flood as part of the warning. To anticipate a flood occurrence, the system employs sensor data to assess water levels at important places in local water basins or flood defences.

EXPECTEDACCOMPLISHMENTS

Outcome 1: Reduced exposure and increased adaptive capacity of Amman and Petra Cities to flash flood-related risks and hazards

Outcome 2: Strengthened institutional capacities to integrate climate change-related risks into sectoral policies and management practices

Outcome 3: Strengthened awareness and ownership of adaptation and climate changerelated risk reduction processes at national and local levels

PROPOSAL 3

Improving resilience to flood risk for vulnerable communities in Kassala State



11 SUSTAINABLE CITIE AND COMMUNITIES

PARTNERS

State Ministry of Planning and Public Utilities State Ministry of Social Welfare Humanitarian Aid Commission **Civil Society Organizations**

TIMEFRAME

24 Months



LOCATION

Kassala State, Eastern Sudan



ESTIMATED BUDGET 3,000,000 USD

TARGET **BENEFICIARY GROUP**

Government staff, civil society organizations and community leaders in flood prone areas.

Situated in the world's most water scare region, Kassala State, with a population of 346,000 (2020) in Eastern Sudan, has been suffering the impacts of recurrent annual floods, resulting in loss of lives and damage to agricultural crops, housing, urban settlements, and key infrastructure such as roads and bridges. In July-August 2020, 27,000 people were affected by heavy rains and subsequent flooding (OCHA, 2020). Some areas of Kassala city and the delta of Gash River located 70km northwest to Kassala city, are highly exposed and especially vulnerable to recurrent flood risk. The flood risks, exacerbated by climate change, are expected to continue threatening the vulnerable urban settlements in the area. There is an urgent need to incorporate disaster risk reduction and building community resilience into urban and settlement planning.

UN-Habitat has been operating in Sudan, supporting urban and regional planning, disaster risk reduction and recovery, community-based approach to the housing, land and property rights, provision of basic services and infrastructure, and promotion of environmentally sensitive, affordable, and flood-resistant housing construction techniques. Its previous work in Eastern Sudan, targeting rehabilitation of basic infrastructure for internally displaced people (IDPs) and refugees, has piloted several approaches for affordable and appropriate construction materials and techniques (including stabilized soil block: SSB). The construction materials and techniques were proven to be suitable and effective where flood risk reduction is needed. and self-help construction is desirable

DESCRIPTION

The project aims to build resilience of communities to the impact of climate change, by supporting the communities and local authorities of areas affected by recurring floods in Kassala State. The project is intended to support the identification of flood prone areas and the development of spatial planning away from flood prone areas. This spatial planning includes the development of reintegration and resettlement plans for communities in flood prone areas; the construction of basic service infrastructure and prototype housing using environmentally sensitive, affordable, and flood-resistant construction materials and techniques; and the clarification of land tenure through a participatory model. The activities are conducted through building the capacities of the State Ministry of Physical Planning and Public Utilities, State Ministry of Social Welfare, civil society organizations, community leaders in flood prone areas and other key stakeholders. It is aimed at directing the sustainable urban growth away from flood prone areas, as well as building capacity of communities and authorities for disaster preparedness at the local level, through communitybased actions. The project builds on the principles of "building back better" and "leaving no one behind". The project's overarching objective is to build resilience of communities in Kassala to the recurrent flood risk.

EXPECTEDACCOMPLISHMENTS

Outcome 1: Reintegration and/or resettlement planning away from the flood prone areas to safer areas is developed and supported with access to land tenure and basic service infrastructure.

Outcome 2: Disaster preparedness of local communities is enhanced through community-based actions.

The project's expected accomplishments include:

- Enhanced capacities of government staff to manage flood risk and conduct land demarcation and registration.
- Identification of flood prone areas and their inclusion in spatial plans
- Sustainable urban growth is directed away from flood prone areas
- Adoption of flood-resistant construction and community-based actions
- Construction of basic service infrastructure, facilities and prototype housing using flood resistant building design, materials, and technique

SUSTAINABLE URBAN FOOD SYSTEMS

As food systems are under pressure in the Arab region, UN-Habitat is keen to better understand urban food systems and the interactions between all the components involved in the production, processing, distribution, consumption, and waste of food and enhance urban-rural linkages to shorten supply chains



PROPOSAL 4 Rooftop Urban Agriculture in Egypt and MENA Region





Egyptian cities suffer from the loss of space and biodiversity,food security threats, increasing pollution, water scarcity, and heat stresses exacerbated by climate change. However, significant space is available with limited productive use, primarily in the form of rooftops, as well as remaining mismanaged public spaces.

Urban vegetation, mainly green roofs, offer solutions that have been partially proven from ad-hoc initiatives that have evolved in Egypt over the past decade. Stakeholder consultations implemented by UN-Habitat in Egypt between July and September of 2022 further confirmed the interest and readiness of local entrepreneurs. Results from the ad-hoc initiatives to date indicate the interest in the topic, the achievable green jobs, the interest of women in specific, and the need for support for expansion. Furthermore, science indicated further benefits related to:

- impact on mitigation through carbon capture of vegetation; the reduction in air conditioning needs in buildings as heat is mitigated; and local/hyperlocal production of food with less transport emissions.

- impact on improving food security, general resilience, and adaptation capacity through diversified availability of food sources and technologies; improved local capacities for local production; improved safety and social inclusion due to the nature of the business; and enhanced biodiversity in the city through mitigating the impact of city infrastructure on urban wildlife and pollinators, among other benefits.

DESCRIPTION

The purpose of the project is to unlock the market potential of urban agriculture in dense cities and to enable 'greening' urban agglomerations from above. Against this backdrop, the project aims to develop a nation-wide gender-inclusive rollout of urban agriculture interventions to enable green and resilient cities and communities through multi-level climate action in 3 selected urban areas/cities in Egypt, followed by the replication and up-scaling in other cities in the MENA region. It shall do so through the following key areas of activity:

Baseline study and selection of urban agglomerations and communities targeted.
Market study and value chain analysis

- Training and technical Assistance

- Business development services (BDS) and Access-

to-Finance (A2F) facility (targeted incubation and accelerator cycles)

- Marketplace development

Sub-granting and access to finance implementation
 Policy development, dissemination and sustainability

This shall be achieved through the following approaches:

1. Community Resilience, Adaptation, and Social Inclusion: Enhance neighborhood-level and city-level cohesion, integration of marginalized and vulnerable groups, and improve community resilience and ability to adapt to stresses of climate impacts.

2. Capacity building and ToT: Build local capacities in urban agriculture and rooftop gardening in specific, and urban vegetation conservation and expansion in general, as well as local production of supplies and equipment, with focus on enhancing existing capacities of local experts and trainers and dedicated business development service providers (BDSPs).

3. Marketplace development: Develop a virtual marketplace with quality standards and certification schemes.

4. Strategic Planning for City-level climate action: Develop national and sub-national strategies and guidelines for rooftop gardening and urban agriculture.

 Green Jobs, business development and A2F: Provide incubation and acceleration services for enterprises and entrepreneurs and a dedicated access-to-finance (A2F) facility, and enhance existing fabrication labs catering to the sector-specific needs.
 Monitoring: Monitor baseline and impact of city wide Heat Island Effect and aggregate GHG reduction impacts.

7. Dissemination: Extensive dissemination of results (through seminars, study tours, and final conference) in the MENA region among cities of relevant similarities and challenges.

EXPECTEDACCOMPLISHMENTS

At least 20% of surface of the selected significant urban areas successfully established as green surfaces.

- 100 entrepreneurs and startups reach marketaccess stage through incubator and accelerator services and seed funding.

- 1000 women benefit from training and revenue-generation activity identified as green job functions.

- Heat island effect reduced by 15% and average air conditioning needs in beneficiary buildings reduced by 20%.

- Online marketplace developed and steadily increasing.

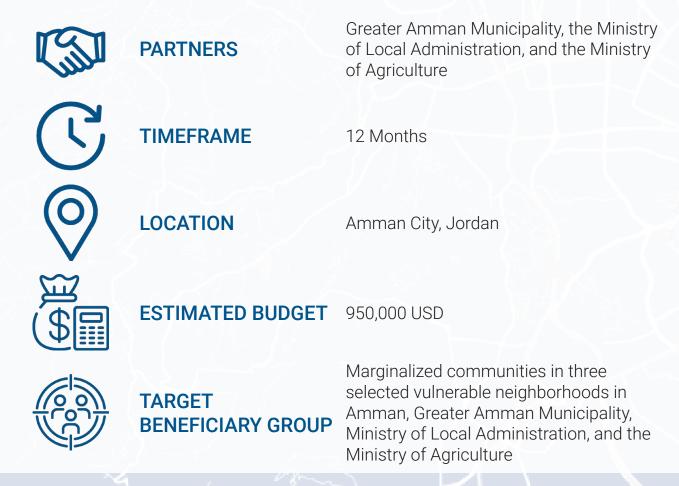
- Sector-specific guidelines for promotion of local production and SME support are developed and mainstreamed in at least 4 universities (incl. at least one university outside Cairo) and disseminated among stakeholders (public and private).

 Policy-environment for local production of enabling products and supplies enhanced.
 Urban Agriculture marketplace for

smallholders established.

PROPOSAL 5 Cultivating Sustainability: Enhancing the Food Security, Livelihoods, and Climate Resilience of Vulnerable Communities in Amman





In 2022, the UN General Assembly called for urgent action to realize the human right to a healthy environment, officially recognizing that one of the factors on which health and quality of life directly depend on is sustainably produced food to eat, which requires empowering communities and improving national legislative frameworks. This echoed His Majesty King Abdullah II in 2021, who described food security as the "biggest challenge". Jordan's 2021 Nationally Determined Contributions (NDC) includes "Improving sustainable productivity of food chains" as one of the priority areas in the agriculture sector. This requires promoting efficiency and sustainability in the food chain.

Food security has become more challenging due to supply disruptions caused by the Ukraine Crisis impacting the affordability and availability of many food products; the ongoing economic impacts of COVID-19 that are translated in the rising cost of living; and the impacts of climate change and extreme weather events, such as droughts, increased water scarcity, heat waves, and flash floods, affecting local production. In 2021, food prices increased by 25%, while household income stagnated, and unemployment increased. With food prices reaching unparalleled inflation, vulnerable host communities and refugees have been disproportionately affected. The worsening hunger has the potential to put the Jordanian national security and social stability in danger, affecting the entire region. However, Jordan, and the region, are not prepared to manage the increasingly urgent calls for action.

To address these emerging humanitarian crises, food security has become a national priority by the Royal Court through the Jordan Economic Modernization Vision, which prioritizes the need for efforts that tackle climate change, food security, and water challenges. Strengthening the food security position through sustainable urban agriculture is a core pillar of this Vision, whereby adopting sustainable practices and investing in innovative solutions can provide high quality, nutritious, fresh food, while protecting one of our most precious resources, water.

DESCRIPTION

The way Jordan addresses food insecurity may determine the socioeconomic future of the Kingdom—and stability of the region as a whole.

There is a need for inclusive and sufficient food systems in urban areas that can meet consumer demand and improve climate resilience. There are many benefits to growing food in urban areas, such as fewer food miles, improved food access, economic sustainability, neighborhood beautification, climate change mitigation and adaptation, community safety, the empowerment of small businesses, greater opportunities for interpersonal connection, and education opportunities. To this end, the aim of this project is to improve food security and sustainable livelihoods of vulnerable communities in Amman by introducing the concept of urban farming, water harvesting, and climate-smart agriculture methods as means to improve socioeconomic conditions and increase self-sufficiency.

This project introduces the concept of collaborative urban farming through the establishment of households, schools, and communities' urban farms, that are connected to water harvesting systems. The vulnerable communities in the selected locations will be engaged throughout the project and will be the direct beneficiaries from the training and urban farms. Eventually they will be able to develop their own household and community farms that will contribute to their food security and enhance social inclusion.

Theprojectfollowsanintegrated and holistic approach to food security, water use rationalization, and sustainable land use practices by raising awareness and building the capacities of local communities and governmental staff at all levels regarding the sustainable urban farming techniques and water harvesting at household and at neighborhood levels. It can help establish necessary urban-rural linkages to ensure the effective spatial flows of products, services, and information/expertise between urban and rural areas, thus reducing food miles and lack of coordination. This project ensures the sustainable green growth and recovery of Amman and the equitable and sustainable access to food through empowering communities as agents of change who are responsible for production and consumption. Therefore, this project can create the foundation to achieve the national vision for a sustainable and climate-smart food system.

EXPECTEDACCOMPLISHMENTS

This project intends to have a cumulative multiplier effect that will bring agriculture into the city through the optimal use of water, vacant lands, public spaces, and rooftops, which will, accordingly, improve the food security of vulnerable communities in Amman. On the long run, innovative, sustainable, and lowcost solutions will decrease food miles and carbon footprint, increase economic security/sustainability, create small businesses and green cities, provide educational/livelihood opportunities, and produce high-quality products, increasing the resilience of communities to climate change.

Outcome 1: Enhanced food security and socioeconomic conditions of vulnerable communities in Amman through sustainable urban agriculture interventions.

Outcome 2: Ensured sustainability, scalability, and replicability of climate-smart agriculture methods through knowledge exchange and awareness raising of vulnerable communities in Amman

Outcome 3: Strengthened capacities of the Greater Amman Municipality and other national governmental institutions to mainstream urban farming in land use planning and policies

CLIMATE CHANGE MITIGATION

UN-Habitat will continue to advocate for the adoption of renewable energy generation in urban areas, using solar rooftops on public buildings and in housing projects. UN-Habitat will also continue to support the shift to low-carbon, accessible, affordable and inclusive public transport, integrated with better facilities for walking and cycling -



PROPOSAL 6 Fostering circular solid waste management opportunities in a pilot river basin area in Lebanon



Ministry of Environment, Ministry of Industry, Ministry of Economy and Trade, Ministry of Interior and Municipalities, Chambers of commerce, Targeted Union of Municipality (UoM) and registered municipalities within the union, Civil Society Organizations (CSOs) from the private sector (e.g., industrial associations, commerce/farmers associations), academia or NGOs, and UNIDO

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TIMEFRAME

LOCATION

PARTNERS

36 Months

One Union of Municipality located on a degraded river basin in Lebanon, to be selected within the project scope based on specific criteria



TARGET BENEFICIARY GROUP

5,000,000 USD

Selected UoM, in addition to businesses, industries, agricultural activities and general community within the jurisdiction area covered by the UoM

According to the 2020 State of the Environment Report , the efficient implementation of the Integrated Solid Waste Management Law of Lebanon (Law No. 80 (2018)) requires among others 1- the implementation of the polluter pays principle, 2- the decentralization of service provision, 3- the adoption of a cost recovery system, 4- the filling of infrastructural gaps, and, last but not least, 5- major upgrades in the regulatory and institutional framework and enforcement capacity of national and local authorities. In this context, unions of municipalities (UoMs) constitute a major player which, if provided with the needed solid waste management strategies and instruments, can bring about change to relatively large jurisdiction areas.

As a result, it is proposed to select a UoM located in close proximity to a river basin and undertake a detailed baseline urban profiling exercise to collect data and develop maps with respect to industrial activity, solid waste management, and other relevant indicators with the ultimate objectives of 1-informing the development of an integrated solid waste management plan for the union, 2- supporting in the strengthening of local infrastructure for solid waste management, and 3- promoting circular economy opportunities within selected priority solid waste value chains and implementing related pilot projects. The integrated solid waste management plan will consider local specificities as identified through the urban profiling exercise, and will identify regulatory, institutional, and economic instruments (taxes, cost recovery schemes, etc.), which are needed to improve the financial capacity of local authorities and enable them to sustain a proper solid waste management system within their areas. Awareness-raising and capacity-building activities will also be implemented to ensure sustainable project outcomes. The project will build on the experience of the United Nations Industrial Development Organization (UNIDO) in industrial mapping and in mainstreaming circular economy principles in industrial value chains as well as on the United Nations Human Settlements Programme (UN-Habitat) experience in urban profiling, planning and sustainable environmental management in urban and peri-urban settings.

DESCRIPTION

The project will be implemented by UNIDO and UN-Habitat in partnership with the Ministry of

Environment, Ministry of Industry, Ministry of Economy and Trade, and Ministry of Interior and Municipalities, and in collaboration with the chambers of commerce and relevant civil society organizations from the private sector (e.g., industrial associations, commerce/farmers associations), academia and NGOs.

The project will include the following components:

- Component 1: Selection and urban profiling of one UoM as project intervention area

- Component 2: Development of an Integrated Solid Waste Management (ISWM) plan for the selected UoM

- Component 3: Concrete pilot interventions to address priority infrastructural needs and enhance circular economy opportunities within priority solid waste value chains in target area

- Component 4: Data information system

- Component 5: Awareness raising and capacity building

EXPECTEDACCOMPLISHMENTS

The project will enhance solid waste management within the jurisdiction area of a UoM located on a degraded river basin of Lebanon. This project will have the following outcomes:

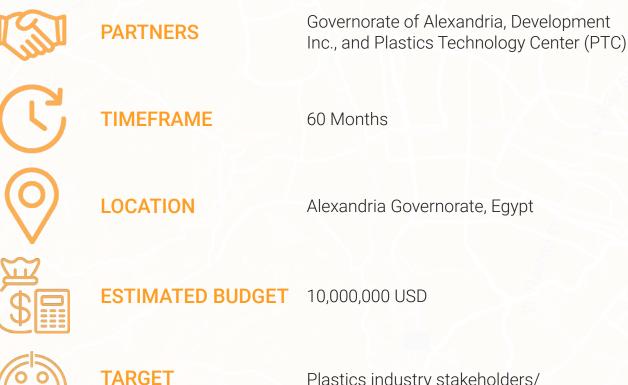
Outcome 1: Reduced random solid waste disposal in rivers, sea, and lands

Outcome 2: Reduced greenhouse gas emissions from haphazard burning of solid wastes

Outcome 3: Enhanced livelihood conditions through the creation of economic opportunities from the circular solid waste management solutions which will be provided in the pilot river basin area.

PROPOSAL 7 Accelerating the Circular Economy for Plastics in Alexandria





BENEFICIARY GROUP

Plastics industry stakeholders/ entrepreneurs; inhabitants of Alexandria

About 670 kt/yr plastic waste produced in Egypt and in Alexandria, approx. 12.7kg/capita.yr is leaking into the environment, contributing to both littering in urban areas and marine litter in the Mediterranean. In an effort to address such challenges, the governorate of Alexandria joined UN Habitat's "Wase-Wise Cities Programme" committed to transforming the sector. UNHABITAT with Alexandria and JICA support implemented the Waste Wise City Tool (WaCT) facilitating Municipal Solid Waste data collection and M&E activity as the first solid steps to support subsequent circular economy interventions. A key gap/opportunity noted is the high demand for clean recyclates not met by current local production capacities.

DESCRIPTION

The overarching objective of the project is to reduce plastic waste and accelerate the plastics Circular Economy in the city of Alexandria. The project aims to build on UN-Habitat's support to Alexandria and accelerate Circular Economy through developing:

- A Material Resources Facility (MRF) for clean streams and MRF dirty streams,

- Parallel introduction of the innovative and proven solution of Recyclates of Glass and Plastics (ROGP) enabled through the collaboration of UNHABITAT with major partners in the industry (MoU with Development Inc., Diageo, Nestle Waters, PepsiCo, and IBI Group).

- Introduction of a network of Reverse Vending Machines (RVMs) to accelerate the cleanstream flow of plastic bottles (reverse supply chain) and to accelerate awareness and behaviour change.

- Create and innovation hub for continued innovation (incubator and accelerator programme). The strategy for interventions shall be to address the key gaps assessed in the standard industry and in early-adoption of innovation through the following steps:

1. Revision of the Waste Wise City Tool implementation with focus on the plastic streams in Alexandria.

2. Conducting a second round of extensive stakeholder consultations with the industry players and government authorities.

3. Providing the interventions that shall accelerate circular economy practices that are facing

resistance to change (key interventions identified: clean and dirty streams MRF; ROGP facilities; and Innovation Hub for continued impact).

EXPECTEDACCOMPLISHMENTS

Outcome 1: Enabling the Governorate of Alexandria to move from data management and analysis (Waste Wise City Tool) to actual implementation of projects and interventions.

Outcome 2: Establishing a successful reverse supply chain (including a clean stream) of plastic bottles in Alexandria.

Outcome 3: Establishing an ROGP facility producing market-ready products (urban furniture, etc) of recycled glass and plastics composites.

Outcome 4: Successfully engage the informal sector players and enhance their quality of life, health, and safety, through collaboration and integration.

Outcome 5: Accelerating innovation among entrepreneurs in Alexandria addressing circular economy challenges and establishing an innovation hub to sustain results in the future.

PROPOSAL 8 "Her City" & Scaling Up Cycling and Micromobility Solutions in Egypt





The project shall aim to establish the next phase of development in the domain of sustainable Egypt is in a very early stage of car-dependence despite the apparent congestion in the dense cities. Car ownership is low at about 60 cars/1000 inhabitants (but density is high and air pollution is significant due to low fuel quality). However, despite the low car ownership, the steady economic growth implies the likely acceleration of car-ownership and continued dependence if no adequate policies are set in place to enable mode-shifting (shifting from car use towards diverse alternatives). This shift is not likely unless the entire experience is comfortable and streamlined, i.e. last-mile solutions are essential for true mode-shifts, and to ensure an adequate door-to-door experience, especially for vulnerable groups, women, children, and persons with disabilities. The experience of women in specific has be subject to extensive investigation by UNHABITAT Egypt, culminating in a landmark report on Gender Mainstreaming in transport in Egypt finalized in 2022, further stressing gaps in last-mile experiences for women in specific. Beyond walking and private cycling in Egypt, further forms of micromobility and microvehicles are emerging, for both personal use and for commercial activities. Potential implications for climate change, public space conservation, and other sustainability progress are of utmost importance for large and dense megacities. With substantial stakeholder consultations and interventions further enabled through the 27th Conference of Parties (COP27) for Climate Change held in Egypt, this topic among many others was further brought to the foreground of climate action advocacy. Furthermore. UNHABITAT's intervention to introduce Egypt's first public Bike Sharing System, Cairo Bike, showed results indicating the very high demand for such last mile solutions.

DESCRIPTION

The project shall aim to establish the next phase of development in the domain of sustainable mobility in Egypt, shifting from the attention to mass transport megaprojects and towards last-mile solutions, in order to achieve the vision of safe and enjoyable door-to-door commuter experiences in dense cities of Egypt with focus on gender mainstreaming and the use of UNHABITAT's Her City tools.

Egypt's fist public bike sharing project Cairo Bike has proven successful since its launch in Q4 2022 under

the auspices of the Prime Minister of Egypt. However a significant gender gap is noted among the involved labor (maintenance, supervision, administration, etc) and also among the users (about 80% of users are male). Furthermore, modes of transport are still being introduced in an adhoc manner with limited integration, resulting in an uncomfortable experience for commuters, rather than consistent quality, pricing and safety standards.

The project proposed herein aims to introduce a gender-sensitive scale-up of the bikeshare system and to integrate it with other modes of transport as well, such as complementary modes (e.g. shared scooters) or trunk modes (e.g. metro lines and buses), including integration of payment systems, planning standards, marketing, etc. This shall be done through a "5 E" approach to promotion of cycling: Education, Encouragement, Engineering, Enforcement, and Evaluation.

EXPECTEDACCOMPLISHMENTS Outcome 1: Establishing a cycling and

micromobility academy targeting women operational throughout the project duration (teaching cycling, topics of sustainable mobility, and practical skills including maintenance).

Outcome 2: Tripling the engagement of women in bikesharing services in Egypt (both supply and demand side).

Outcome 3: Tripling the fleet of bike sharing in Egypt through gender-sensitive scale-up in Greater Cairo and Alexandria.

Outcome 4: Tripling the carbon-reduction impact of Egypt's public bike share system..

Outcome 5: Integrating the payment systems and quality standards of sustainable urban mobility options in the target areas.

Outcome 6: Conducting a gender mainstreaming assessment for the target areas in alignment with the Her City tool

Outcome 7: Establishing Complete Streets designs and tripling the kilometers of cycling lanes in Greater Cairo and Alexandria in accordance with the Egyptian Code for Bicycle Infrastructure.

INTEGRATED APPROACH TO ADAPTATION & MITIGATION

An integrated approach to climate change in urban areas is needed to adapt to climate change impacts while limiting further GHG emissions. UN-Habitat aims to integrate renewable energy sources and sustainable solid waste management solutions to support the adaptation of cities and urban areas.



PROPOSAL 9 Mitigation of climate change implications in Lebanese cities through integrated area-based multi-sectoral approaches



PARTNERS

Ministry of Environment; Ministry of Energy and Water; Ministry of Interior and Municipalities; Targeted UoMs and registered municipalities within unions; Civil Society Organizations (CSOs) including academia; UN sister agencies; Private sector

TIMEFRAME

LOCATION

36 Months

6 Unions of Municipalities (UoM) of Sahel Zahrani, Iglim Kharroub Chemali, Nabatyieh, Ftouh Keserouan, Beqaa Awsat, and Minnieh

ESTIMATED BUDGET

10,000,000 USD



TARGET

UoMs and the General population residing **BENEFICIARY GROUP** in targeted (1,150,000 persons)

According to the Ministry of Environment, Lebanon faces various challenges that increase the sensitivity of different sectors to climate change. The future temperature increase according to the climate models endangers the diverse natural environment of Lebanon. By 2040 the temperatures are expected to increase by around 1°C on the coast and 2°C in the mainland, and by 2090 they will be 3.5°C and 5°C higher, respectively. Due to the increasing temperatures, the local electricity infrastructure needs to cope with the increased demand for cooling in a context where public electricity supply is almost inexistent. In addition, Lebanon's arid/semi-arid climate makes it poor in water resources availability and vulnerable to the impacts of climate change; the estimated changes in the precipitation rates will put tremendous pressure on national water security and impact the agricultural sector, which uses around 70% of the available water for irrigation.

A recent study (Baaklini, 2018) on the impact of climate change on the temporal distribution of water resources in Lebanon, found that in the 1960s and 1970s, 30% of the snowmelt used to be available as water supply after April; however, this percentage has dropped to 18%. These changes will have dramatic effects on Lebanon's hydrological cycle and will increase vulnerability to climate change related water shortages, especially that water pollution is rampant; water conservation remains largely a slogan; chronic water shortages persist; access to safe and improved water resources remains low; unconventional water resources continue to be untapped; and institutions remain in need of financial and technical support.

The situation for the solid waste sector is equally alarming whereby only 20% of the overall waste stream is diverted from disposal and the remaining 80% continue to be discharged in landfills and dumpsites (MoE et al., 2020) thus significantly contributing to GHG emissions. The latter waste contains large amounts of recyclable materials, which, if recovered, could offset the extraction and use of raw materials and help in achieving circular economy. It also contains a large organic fraction, which could be converted to organic fertilizers, and/or could be transformed into alternative fuels (biomass, biogas).

Finally, urban centres are a major consumer of energy due to concentrated population, businesses, and sometimes industries. Knowing that thermal energy production is a major emitter of GHG emissions, maximizing energy efficiency and renewable energy use in urban centers significantly helps in addressing climate change risks associated with the concentrated use of conventional thermal energy.

DESCRIPTION

This project will work on mitigating and adapting to climate change implications in Lebanon's urban centres through the development and implementation of multi-sectoral adaptation projects related to the water and wastewater, solid waste management and energy sectors. Project beneficiaries will be selected through a consultative process involving local authorities (municipalities) and stakeholders with the intent to maximize the engagement of most vulnerable community groups. The project adopts a participatory hands-on approach where local actors and stakeholders are actively engaged throughout the project phases. Awareness raising and capacity building are mainstreamed throughout the project's components. Ensuring proper operation, maintenance and sustainability of the achieved works and outputs is an integral part of the project design. The targeted sectors have the following main interventions: Water sector:

 Providing alternative sustainable water sources (water harvesting, wastewater reuse)
 Achieving water saving (water efficient irrigation and use of automatic water saving devices)
 Treating industrial wastewater

Energy sector:

- Implementing a feasibility study to assess the potential for the use of different types of renewable energy (solar, wind, geothermal, etc) at the targeted UoMs

- Implementing physical interventions at privately owned buildings such as households, businesses, public institutions and industries - Implementing publicly owned lighting interventions such as at streets, parks, bus station levels, etc.

Solid waste sector:

 Developing integrated solid waste management plans for the selected UoMs
 Identifying priority solid waste value chains (industrial, businesses, agricultural) at the targeted UoMs and assessment of related circular economy opportunities

- Implementing pilot interventions for the promotion of circular economy across identified priority value chains

- Implementing projects targeting the reuse of construction and demolition debris resulting from the Beirut port explosion and associated reconstruction efforts to rehabilitate quarry sites of the targeted UoMs (filling, compaction, placement of topsoil and greening)

EXPECTEDACCOMPLISHMENTS

Outcome 1: - Resilient water solutions implemented

Outcome 2: - Integratedsolidwastemanagementplansdeveloped

Outcome 3: - Circular economy pilot projects implemented

Outcome 4: - Quarry rehabilitation projects implemented

Outcome 5: - Privately and publicly owned renewable energy projects implemented

Outcome 6: - Training of engineers and architects of the target area on Water Sensitive Urban Design and Build Back Better approaches

Outcome 7: - Capacity-building of local municipalities to run and replicate implemented interventions

Outcome 8: - Awareness-raising of several actors including general community



PROPOSAL 10 Solar-Powered Solutions Promoting Climate-Resilient Livelihoods and Sustainable Energy





LOCATION

Rural Damascus and Deir Ez-Zor, Syria

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ESTIMATED BUDGET

1,800,000 USD



TARGET BENEFICIARY GROUP

200,000 residents

Over the past few decades, climate change has caused a shift in annual precipitation level towards permanently drier conditions in Syria resulting in recurring droughts. From 1900 until 2005, Syria experienced six significant droughts and between 2006 and 2011 Syria has witnessed an intense drought. Furthermore, the average level of precipitation in these years was the lowest of any drought-ridden period in the last century. The drought caused agricultural failure, in turn increasing poverty and economic hardship, which resulted in internal migration from rural to urban areas.

Due to the droughts in Syria, inhabitants started to rely more on pumping underground water for drinking and irrigation using fossil fuels. In Syria, the agriculture sector is responsible for 20% of the country's GDP and for a significant share of employment (World Bank, 2010). With significant increases in population since 2003, demand for food and water have also increased adding more pressure on the already scarce resources. To adapt to climate change, there is a need to adopt alternative clean, and sustainable power sources to extract water such as solar power. Solar-powered water pumps can supply not only drinking water but also water for livestock and irrigation. Solar water pumps are useful for small-community irrigation, as well as large-scale irrigation that requires large amounts of water.

In Rural Damascus and Deir Ez-Zor, agriculture accounts for up to 80% water resource utilisation, and the constant challenge has been to produce more food to meet the needs of a growing population. Moreover, the population is predominantly farmers, who heavily dependent on agriculture, natural resources, and livestock for both subsistence and semi-income.

DESCRIPTION

The conflict in Deir Ezzor caused severe damage to the area's main energy sources and infrastructure which has led to a loss in power generation capacity specifically loss in energy needed to pump water. The consequences of these damaged electrical facilities include sporadic power, and reliance on generators that depend on oil derivatives to extract water from the Euphrates River which led to polluting the environment through increased greenhouse gas emissions. In addition, the studies indicated that locally powered generators have a direct impact on the contamination of soils and plants with lead and this influence is widely spread due to weather conditions and wind as well as the geographic location.

The project's objective is to strengthen climate resilience and improve living conditions of communities suffering from water shortages by supporting solar water pumping systems to ensure continuous and sustainable services, access to clean and safe water, and reduce pollution to the environment through decreasing dependence on oil derivatives to extract water. The project interventions aim to equip drinking water stations (including purification) with solar pumping systems. Once implementation is complete, the water station will provide clean drinking water directly from the raw source to the distribution systems, as well as ensure adequate water supplies to high elevations and storage facilities and provide adequate pressures and flow rates during daily use and emergencies.

EXPECTEDACCOMPLISHMENTS

Outcome 1: - Target community, including internally displaced people (IDPs), has access to safe and reliable water sources that rely on renewable energy for extraction.

Outcome 2: - Stakeholders are capacitated on the operation and maintenance of solar pumping systems.

URBAN RESILIENCE

UN-Habitat is committed to raising urban resilience and adaptive capacities of cities and communities. This includes mainstreaming climate change considerations into local spatial planning and urban policies as well as raising awareness on climate change.



PROPOSAL 11 Strengthening Climate Action and Improving Urban Environment in the Coastal Zone of the Gaza Strip



Ministry of Local Government (MoLG), Municipal Development and Lending Fund (MDLF), and the ten local government units (LGUs) in the Gaza Strip that have administrative and planning jurisdiction to the coastal area

TIMEFRAME

PARTNERS

24 Months

LOCATION

Coastal zone of the Gaza strip

ESTIMATED BUDGET 650,000 USD

TARGET BENEFICIARY GROUP Municipalities along the coastal zone in the Gaza Strip and vulnerable community groups, including youth, women, the elderly and people with disabilities

The extent and health of Gaza coastal ecosystem have been deteriorating due to the intensive use of coastal zones, as well as to the harmful impacts of human activities inland. Building and infrastructure development at Gaza coastal area have contributed to land subsidence and saltwater intrusion in groundwater. Sewage, agriculture and other industrial activities have significantly increased seawater pollution in coastal areas, while natural resource extraction, fishing and energy generation are all associated with ecosystem disturbances and habitat loss. As a result, biodiversity loss and ecosystem depletion are accelerating. While coastal degradation poses increasing threats to coastal communities and economies, the impacts of climate change have compounded and accelerated ecosystem degradation. Indeed, coastal communities and economic activities are expected to be among the most vulnerable and exposed to the impacts of climate variability and climate extremes. More recent studies indicate that climate change, and sea level rise on which most urban areas in Gaza reside, are occurring at much faster rates and therefore pose even greater risks than previously anticipated. Therefore, there is growing demand and support for climate adaptation efforts that reduce the vulnerability of poor urban coastal populations to natural hazards. The National Urban Policy for Palestine of 2022 prioritized the need for adaptation to climate change through the development of local adaptation plans and projects highlighting that the funding for adaptation has been limited and is still to incorporate urban impacts, particularly on vulnerable groups, limiting the ability of the government and local authorities to reach poverty reduction and achieve the Sustainable Development Goals (SDG), including SDG 13 - take urgent action to combat climate change and its impacts. The limited capacities of government agencies in charge of urban planning tend to generate challenges of poor planning quality, underestimated risks, selection of inappropriate technologies, and sub-optimal returns on investment.

DESCRIPTION

The project aims mainly to improve the urban environment conditions in the coastal zone of the Gaza Strip and identify urgent climate change

adaptation actions that move towards fostering a better urban future in the Gaza Strip. The project will adopt a participatory spatial planning approach, in which local communities and LGUs collectively work on developing integrated and responsive sub-regional plan based on the conducted social and economic mapping activities. In addition, the project will promote the participation of vulnerable community groups, including youth, women, the elderly and people with disabilities, to reflect their visions and ambitions during planning and in the design and implementation of public spaces or other catalytic interventions that will be prioritized in the sub-regional plan. It is also envisaged that cross-city collaboration networks will strengthen, empower local actors and ease exchange of strategies and planning best practices amongst targeted municipalities, especially those that still have to cope with the impacts of wars and build back better.

EXPECTEDACCOMPLISHMENTS

Outcome 1: Strengthened capacities of local governments in fostering resilience and adapting to climate change impacts to improve the coastal environment

Outcome 2: Communities benefit from climatesmart and inclusive public spaces which contribute to climate action

PROPOSAL 12 Building Climate Resilience of Vulnerable Communities in the West Bank and Gaza Strip



National partners include: Ministry of Local Government (MoLG), the National Center for Risk Management (PalDRM), the Environmental Quality Authority (EQA), and the Ministry of Agriculture (MoA). UN-Habitat will liaise with relevant UN entities, especially, UNEP, FAO, and WFP

TIMEFRAME

PARTNERS

24 Months

LOCATION

The West Bank and Gaza Strip, Palestine



ESTIMATED BUDGET

1,500,000 USD

Three communities, namely Qarawet Bani Hassan in Salfit Governorate, north of the West Bank, Idna in Hebron Governorate, south of the West Bank, and Abasan Al Kabira in Khan Younis governorate in the Gaza Strip



TARGET BENEFICIARY GROUP

Climate change and its prevailing impacts have increased the vulnerability and exposure of communities to natural hazards. Combined with the fast pace of uncontrolled urbanization and demographic shifts, people living in urban areas now face accumulated urban risks. UN-Habitat's Climate Change Strategy for the Arab Region (2022-2025) reports that the Arab region is one of the regions most affected by climate change; yet most countries of the Arab region are among the least contributors to climate change. The Arab world is vulnerable to water scarcity, droughts, floods, land degradation, heatwaves and other extreme weather events, which significantly affect food security. Furthermore, while green spaces are crucial in tackling the impacts of climate change, the share of public spaces in Arab cities is only 2 per cent of total area as of 2016 compared to an average of 12 per cent in Europe . In Palestine, the main impacts of climate change are experienced in the forms of water scarcity, droughts, snowstorms, flash floods, rising sea levels and floods, air and water pollution generated from natural causes, daily human activities and Israeli occupation, which imposes high restrictions on the Palestinian control over natural resources. The politically fragile situation continues with impacts of restricted movement on people and goods affecting the environment negatively since there are limited options for expansion of Palestinian communities and other livelihood opportunities, including agriculture. This implies increasing encroachment on protected areas with negative impacts on the rich flora and fauna of West Bank, primarily in Area C. Palestine also has limited availability of public and green spaces, especially in peri-urban and urban areas. Palestine will be significantly affected by climate change with climate models for the Eastern Mediterranean region showing mean temperature increases between 3 to 5°C by mid-century and mean annual rainfall reductions of 10-50 per cent.

DESCRIPTION

This project will target three communities, namely Qarawet Bani Hassan in Salfit Governorate, north of the West Bank, Idna in Hebron Governorate, south of the West Bank, and Abasan Al Kabira in Khan Younis governorate in the Gaza Strip. Qarawet Bani Hassan is a municipal council in Areas B and C (91 per cent in Area C) classified as an urban community with an estimated population of 6,275 in 2023, including 48.4 per cent females. Idna is also a municipal council in Areas B and C (65 per cent in Area C), classified as an urban community with an estimated population of 30,076, including 48.9 per cent females. As f or Abasan Al Kabira, a municipal council classified as an urban community, its population estimate for 2023 stands at 31672, including 49.3 per cent females.

The project will first focus on utilizing the City-Resilience Profiling Tool (CRPT) for each community, which provides a transversal diagnosis and pathway to resilience-based sustainable urban development. Following a multi-sectorial and multi-scale approach, the CRPT uses a diagnostic methodology to determine shocks and stresses facing a city and establishes prioritized, fit-for-purpose actions for resilience allowing cities to capitalize on their existing data., exploring the following five critical and interdependent dimensions: spatial attributes, organizational attributes, physical attributes, functional attributes, and time. The CRPT provides cities with the necessary framework to evaluate urban resilience and develop Actions for Resilience (A4R) tailored to their city, where urban resilience is defined as the measurable ability of any urban system, with its inhabitants, to maintain continuity through all shocks and stresses, while positively adapting and transforming toward sustainability. Therefore, a resilient city assesses, plans and acts to prepare for and respond to hazards - natural and human-made, sudden and slow-onset, expected and unexpected in order to protect and enhance people's lives, secure development gains, foster an investible environment, and drive positive change. Using this tool, UN-Habitat will lead efforts towards assisting the selected local governments to deliver on targets set out in globally agreed inter-governmental frameworks, in particular. This will include developing an A4R plan, as well as integrating climate change considerations in spatial planning through adapting existing local outline plans to revisit land uses and identify gaps in basic services, including electricity, water, and transportation. These efforts will be complemented by capacity building initiatives for the targeted local governments to enhance their capacities with regards to climate change governance.

Furthermore, UN-Habitat will also support catalytic interventions to tackle climate change in both communities through placemaking initiatives, namely through developing green and climate-smart public spaces powered by solar energy and adapted with innovative technologies for the generation of green electricity (the technologies will be determined after a feasibility study is conducted at the start of the project). The public spaces will also include shared urban farming plots and organic composting bins for the benefit of the communities at large. These initiatives are expected to be established on lands, which are designated as public lands and will support enhancing the revenues available to the local government units through the sale of organic food products. This will be complemented by the formulation of community-led committees to lead efforts on raising awareness on climate change, managing and maintaining the urban farming plots, and ensuring that mechanisms are in place to support sustainability.

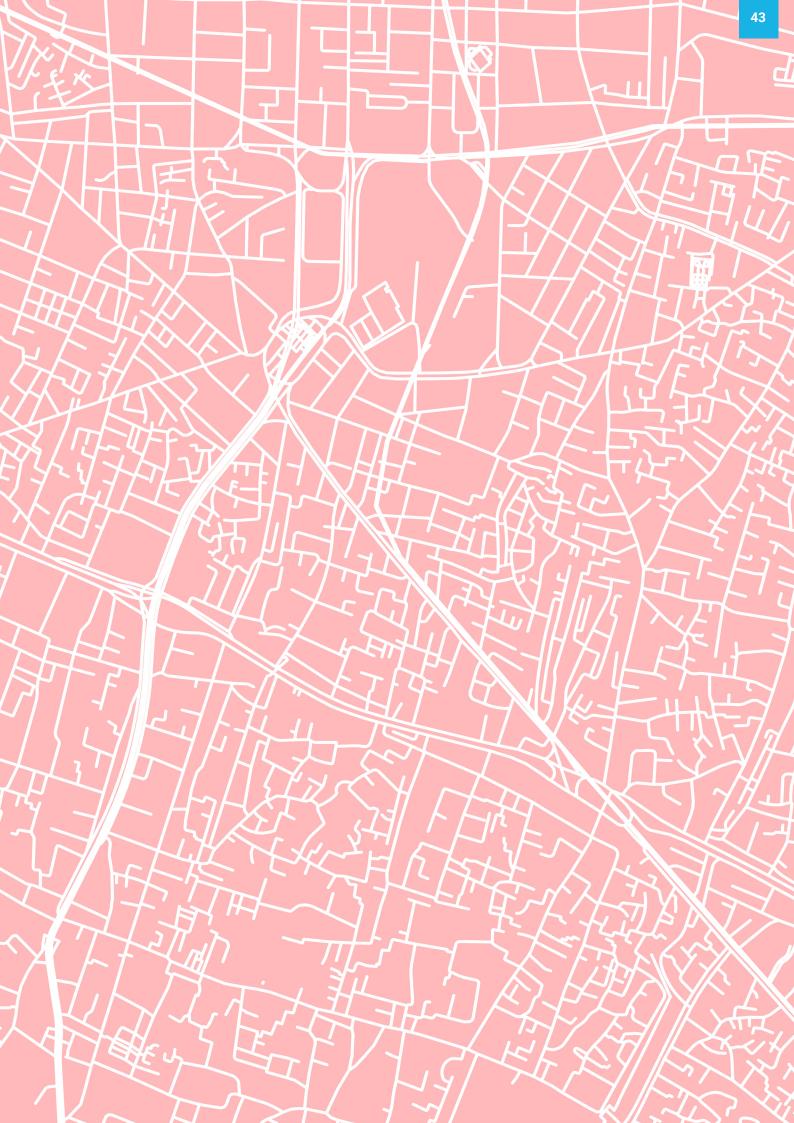
EXPECTEDACCOMPLISHMENTS

The project aims at fostering resilience on the local level to mitigate the increasing tolls of climate change, while taking into consideration several themes of social inclusion including human rights, gender-based discrimination, older persons, children and youth and disability. Following a participatory approach, and utilizing the CRPT, the project will identify the factors affecting the resilience of the targeted communities and the groups impacted the most. This will assist in identifying local environmental interventions that benefit the most vulnerable groups in the communities. The project will provide a learning opportunity to strengthen the institutional and local capacity for resiliencebased sustainable development and will lead pilot interventions in developing climate-smart public spaces.

Outcome 1: Strengthened capacities of local governments in fostering resilience and adapting to climate change impacts

Outcome 2: Climate-smart and inclusive public spaces with urban farming plots implemented

Outcome 3: Community awareness and involvement with regards to climate change action enhanced







For Further Details:

Yasmine Mostafa Climate Change Focal Point Regional Office for Arab States

yasmine.mostafa@un.org



87 Tahreer Street, Dokki, Giza, Egypt

www.unhabitat.org

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