



The MENA Region Initiative  
As a Model of NEXUS Approach  
and Renewable Energy Technologies

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الترباط من أجل المستقبل  
NETWORKING FOR THE FUTURE

المبادرة الإقليمية حول الترباط بين  
المياه والطاقة والغذاء (ميناريت)

The MENA Region Initiative As a Model of NEXUS  
Approach and Renewable Energy Technologies  
(MINARET)

MINARET Project is funded by the Swedish International Development Cooperation Agency (Sida).



## MINARET partners

MINARET project is being implemented by the National Energy Research Center / Royal Scientific Society (NERC/RSS), in partnership with Horizons for Green Development and the International Union for Conservation of Nature (IUCN).



الجمعيّة العلميّة المملكيّة  
Royal Scientific Society



Horizons  
For Green Development

## Targeted countries

Jordan, Lebanon and Tunisia are the targeted countries by MINARET. The three countries face serious development challenges including but not limited to restricted natural resources, fast growing energy demand, water scarcity, a stagnant economy and consistent presence of refugees.



## Beneficiaries

MINARET targets three municipalities; Jdaidet Chouf in Lebanon, Karak in Jordan and Monastir in Tunisia.



## About MINARET

### Background

The MENA Region Initiative as a Model of NEXUS Approach and Renewable Energy Technologies (MINARET) is a 4-year project that aims at strengthening regional cooperation between Jordan, Tunisia and Lebanon by implementing NEXUS approach integrated with renewable energy technologies to mitigate climate change impacts and combat poverty. The MENA Region Initiative as a Model of NEXUS Approach and Renewable Energy Technologies (MINARET) aims to come out with a NEXUS model that can be applied at municipal level in the MENA region countries.

### What is NEXUS?

A set of context-specific critical interlinkages between two or more natural resources used as inputs into systems providing essential services to humans, such as water, energy, and food.

### MINARET: Strategies and sustainability

MINARET is aligned with the goals of the Regional Strategy for Sweden's Development Cooperation in the Middle East and North Africa (MENA). It aims at improving living conditions for people through "environmental improvement, reduced climate impact and increased resilience to environmental impacts, climate change and natural disasters."

### MINARET's activities embrace six of the UN sustainable development goals:

- SDG 5 - Gender equality;
- SDG 6 - Clean water and sanitation;
- SDG 7 - Affordable and clean energy;
- SDG 11 - Sustainable cities and communities;
- SDG 13 - Climate action;
- SDG 17 - Partnerships for the goals



## Partners

### Royal Scientific Society (RSS)

RSS is a non-profit NGO established in 1970. It is the largest applied research institution, consultancy, and technical support service provider in Jordan, and is a regional leader in the fields of science and technology. It is aiming to build and strengthen scientific and engineering research in the areas of greatest strategic value to Jordan's long-term competitiveness and development.

### National Energy Research Center (NERC)

NERC is one of the main institutions in The Royal Scientific Society (RSS). The National Energy Research Center (NERC) was established in 1998 for the purposes of research, development and training in the fields of new renewable energy and the promotion of energy conservation in various sectors.

This centre was established to perform the following tasks and responsibilities:

- Reducing the energy burden by improving methods, incentives and advisory services for efficient energy use, to decrease total energy cost on the national level and to protect the environment.
- Educating Jordanian and regional engineers and technicians by holding training courses, seminars and workshops to enhance and develop local technical qualifications and experiences necessary for the use of new and renewable energies, in addition to energy efficiency.
- Effectively performing studies, research, and experimental projects in the field of using the local new and renewable energy sources like oil shale, wind energy, solar energy, bio-mass, and geothermal, to increase their contribution to satisfying the Kingdom's energy needs.

### Horizons for Green Development

Horizons for Green Development (HFGD) is a Jordanian non-profit organization established in 2014 committed to empowering communities through sustainable development.

As climate change heavily impacts our natural resources our mission is to contribute to alleviating water shortages, increased use of renewable energy and energy efficiency and improved food securities.

Close interaction with vulnerable societies helps us understand needs and gaps to better serve citizens. Civic engagement, initiating dialogue, strengthening capacities, income generating interventions, awareness and introduction of innovative solutions are jointly mobilized to act as change agents and improve thousands of lives.

Advocacy and lobbying for improved national legislation and policies are also inextricably incorporated throughout our programs through the close interaction with decision makers at central and local levels.

Our policies include safeguarding, gender mainstreaming, anti-corruption, transparency, CRM, and whistle-blowing.

### **International Union for the Conservation of Nature (IUCN)**

IUCN is the world's oldest and largest global environmental organization, with almost 1,300 government and NGO Members and more than 15,000 volunteer experts in 185 countries. Almost 1,000 workers in 45 offices and hundreds of partners in public, NGO, support our work and private sectors around the world.

IUCN work focuses on valuing and conserving nature, ensuring effective and equitable governance of its use, and deploying nature-based solutions to global challenges in climate, food and development. IUCN supports scientific research, manages field projects all over the world, and brings governments; NGOs, the UN and companies together to develop policy, laws and best practice.

IUCN is a great added value to the implementation of this project, benefiting from its wide network and members operating in the targeted countries, in order to foster the Regional Dimension and ensure integrated and comprehensive implementation.

## HIGHLIGHTS FROM YEAR 1

### Project launching

MINARET was launched in Jordan, Lebanon, and Tunisia with three kick off meetings in the three countries in February and March 2017.

The objective of the kick-off meetings was to inform stakeholders, governmental entities and partner organizations about the purpose of the MINARET project, project objectives, expected results, project components and phases of implementation, and the greater effect they will have on their communities.



*Launching in Monastir*



*Launching in Jordan*

### Assessments

During the first year, MINARET team held a series of workshops with all partners and stakeholders and conducted several studies and consultations that has resulted in 23 municipality and country level reports and studies:

- 18 studies on water, agriculture, energy efficiency, renewable energy and gender
- Policy assessment report
- Stakeholder identification and mapping
- Gender baseline analysis
- Socio-economic study
- An assessment of Human rights legislation in water and energy sectors.



## HIGHLIGHTS FROM YEAR 2

### MINARET first regional platform on water, energy and food NEXUS, 13<sup>th</sup> february 2018 in Monastir, Tunisia

MINARET First Regional Platform on Water, Energy and Food NEXUS provided a platform that enabled the attendees to effectively discuss and plan together how to overcome the increasing constraints their countries and the region face through fundamentally rethinking how we produce and consume energy, water, and food and make the linkages between all three. Participants from many Partner Organizations took part in the event and had an important input at the meetings, and various back-to-back interactive activities took place.

**Gender Café:** A gender corner and gender wish board were integrated, and have attracted the event participants to contribute and share their opinions towards empowering women and their importance in the community.



### Urban NEXUS workshop 14-15 February, 2018

A workshop on “Applying the Water-Energy-Food NEXUS Approach Planning” took place on 14-15 February, 2018. Workshop was conducted and supported by German Agency of International Cooperation (GIZ) / Egypt Office, and presented by Dr. Holger Hoff, Dr. Nisreen Lahham, Ruth Erlbeck and Ralph Trosse. The workshop included an introduction to the Urban Nexus and to the 2030 Agenda for Sustainable Development and participants took part on four different Urban Nexus exercises.





## HIGHLIGHTS FROM YEAR 2 - Cont'd

### Highlights

- Establishment of NEXUS taskforce committees within each of the project municipalities with clear mandate, governance structure & operating procedures.
- Development of Green Procurement Manual
- Finalized registration to Covenant of Mayors for Jdaidet el Chouf and Monastir
- Mapping of regional actors to provide technical support in the area of WEF Nexus and assist the municipalities in fundraising.



### Water & energy talk series (WE Talk) - Defining gender as a process

On the 6th of March, 2018 at Shams Al Balad, Jordan MINARET, the Swedish Embassy in Jordan and BORDA WesCA gathered over 100 people in Amman, Jordan to celebrate the International Women Day #2018IWD and to discuss how to Define Gender as a Process in the water & energy sector.

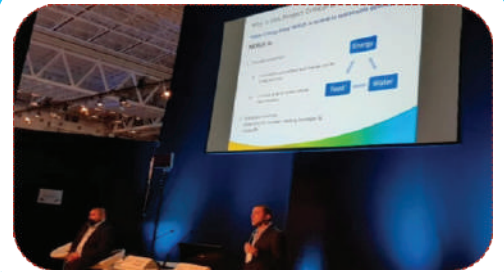


## HIGHLIGHTS FROM YEAR 3

### World Water Week 2019

**From Local Needs to Opportunities, How NEXUS is Shaping Communities.**

MINARET team presented a showcase in the World Water Week on 29 August 2019, about how MINARET enables communities to participate in transitioning their cities to renewable energy, and strengthening integrated water management, urban farming and local production. We create an environment attractive for the private sector, investors and financiers. We advocate local governments to expand the role of municipalities and incentivize them to lead in better managing the region's scarce resources



### Monitoring & Evaluation

MINARET conducted M&E course from 21-24 July 2019 attended by MINARET team from partners' organizations as well as selected participants from RSS team.

The training aimed at enhancing staff knowledge and skills in creating a common understanding of the purpose and functions of M&E. Training included other components of Project Management such as understanding critical path, causal pathways and building M&E systems.





## HIGHLIGHTS FROM YEAR 3 - Cont'd

### Our Projects in Monastir, Tunisia

#### Rainwater harvesting for use in the olympic stadium Mustapha Ben Jannat

The activity will oversee the excavation of a well and installation of a tank with a capacity of almost 750 m<sup>3</sup>, for the purpose of rainfall collection. In the Monastir municipality, a local soccer stadium roof contains a rain catchment system that is not utilized in any manner, and currently releases collected water onto the streets eventually reaching the ocean. The tank will be filled using rainwater at least twice a year.

The municipality currently waters the stadium lawn with clean potable water, costing it around \$2000 a month for a total of \$24,000 a year. The intervention will install a solar water pump at the tank to pump the collected rainwater to the stadium, saving \$24,000 a year for the municipality for a system payback period of 2 years. Using the monthly savings, the municipality will begin applying the same project in other areas and facilities in Monastir, among them a large swimming pool that uses a large amount of water resources. Areas of Influence: Energy, Water.





## Lighting of streets and municipality building

- Replacement of inefficient lighting system at the main building of Monastir Municipality with efficient LED lamps.
- Replacement of inefficient lighting system at the Central Market in Monastir Municipality with efficient LED lamps.
- Replacement of part of old inefficient street lighting units with efficient LED street lighting units.

Areas of Influence: Energy.



## Electric car

MINARET provided Monastir municipality an electric car with fast charging station powered by 20 KWp off-grid PV system with storage.

\* 50 tons of CO<sub>2</sub> emissions will be reduced.

Areas of Influence: Energy





### Nature Hub

The main aspect of the socioeconomic intervention in Tunisia involves the creation of a Nature Hub that will include a shop (Dukkan) that will support sustainable practices and sell eco-friendly hand-made products.

#### The hub will serve the following groups:

- Academia: by securing a youth center where they can receive job training, capacity building and practice in four sectors: biodiversity, climate change, renewable energy, and ecofriendly food production.
- Small enterprises; where entrepreneurship will be supported by securing the natural shop (Dukkan) to sell their hand-made products.
- Quriat island and its researchers by installing PV System as a model of the clean and renewable source of energy and small water treatment plant which will secure a clean drinking water.
- Women CBOs that will be trained on how to produce ecological products such as ecological fishing nets.

#### Voice of the Child Organization

Another social aspect will be implemented in VOC organization; an organization that supports orphans and single mothers by providing professional training for women and life unit for hosting around 12 babies at a time. The organization currently spends large monthly amounts to pay for water and electricity. MINARET will provide them with a PV system and a solar pump to reduce these amounts significantly and provide the organization with beneficial savings. These savings will permit VOC to improve and expand their services, by providing job opportunities, and supporting other CBOs like the "Local Birbasha Women" who works in waste management through plastic waste collection and sorting.

This is a perfect example of gender mainstreaming in the NEXUS approach; where renewable energy technologies can be used to improve social services provided to the most vulnerable women and babies.



## Our Projects in Karak, Jordan

### Decorative plant nursery using treated water, composting and solar pumping in Iajoun

The intervention will create the plant nursery on municipality land and will install a solar water pump and a solar farm to power it. The project aims to utilize a stream produced by a water treatment plant to irrigate decorative plants by pumping the water using solar power. This is an addition to the existing solar farm in the area that will provide the energy for all non-water pumping related needs. The project will be profitable when the municipality starts producing its own plants, saving around 50% of the annual budget allocated for this purpose. The new income will be a driving factor for the creation of jobs through the new source of income, while the income will be used to fund other Nexus projects.

The project will also assist in restoring Al-Karak's ecosystem through the regrowth and spread of plant species native to the area.

Areas of Influence: Energy, Water, Socio-economic.

#### Ecotourism Hub

The socioeconomic intervention in Jordan holds an ecotourism aspect that involves enhancing a visitor's center (Ecotourism hub) managed by the Momya Organization. The intervention will help build the capacity of the organization while fixing the visitor's center and adding signage to bring it to a fully operational level. Solar panels will be installed to provide power to the center while the reuse of gray water in farming will add the element of water management to fulfill the NEXUS approach. The center will provide services to tourists and sell them organic and homemade products with a focus on dairy, such as Jameed and Ghee, that Al-Karak is known for.



## Our Projects in Jdaidet el Chouf, Lebanon

### Farmers' project in Lower part of barouk river and channel rehabilitation of in the upper part

The project seeks to install a solar powered water pump at the Barouk River next to the canal. The pump will provide access to water to 25 different farms using a 3-kilowatt PV system, by pumping around 12 cubic meters per hour of water from a stream multiple times per week to 25 different tanks, totaling 150 cubic meters in volume per week. Farms in the area will have constant access to water that is vital for farming.

**More than 60 farmers and 25 farms will benefit from this project.**



### Water filtration using solar energy for drinking water pumping station

Installation of 20 kWp Photovoltaic system with batteries for drinking water tanks.

A PV system installed on the roofs of the two storage tanks of the water pumping station as Hybrid On-Grid system with storage to power the loads there in addition to enhancing the power quality in the station and to reduce the power losses by the transmission lines.

**22000 persons (People of Jdaideh) will have uninterrupted access to clean water 24 hours instead of 12 hours per day. Around 31,000 KWh of electricity is produced.**



## Lighting of streets and municipality building

Replacement of inefficient lighting system at the main building of Jdaideh Municipality with efficient LED lamps.

Replacement of part of old inefficient street lighting units with efficient LED street lighting units.



## Municipality building - solar energy project

Installation of PV system with batteries at the rooftop of the main building of Jdaideh Municipality with capacity of 6 kWp.

This action will produce around 10000 KWh annually from the PV system, which means that almost the total electricity needed for the building will be covered from renewable energy.







## Installation of a PV farm to reduce the need for diesel generators

Solar Farm to reduce the need for diesel generators in providing power to homes in Jdaideh Municipality and Revolving Fund managed by the Jdeideh Women's Organization.

### Revolving fund

The savings from the reduction of diesel costs will generate \$2,000 every month, which will be used to establish a revolving fund for the community. The fund's purpose is to provide relaxed loans to individuals who want to invest in eco-friendly technologies in their homes such as solar panels, solar water heaters and energy efficient LED light bulbs.

Areas of Influence: Energy, Water, Food, Socio-Economic.

The Jdeideh Women's Organization established a Water Users Association for farmers (Farmers' Cooperative). The Water Users Association will ensure cooperation between farmers through sharing knowledge and farming techniques to maximize overall yield and wellbeing of the crops. The association will also establish farming process cooperation plans between the organization and the farmers, where the organization selects the crops to be cultivated during each season.



## Gender

The MINARET project strives to be in line with the strategies of the Sustainable Development Goals (SDG 5: Gender Equality) in order to assure that gender mainstreaming is done according to the global sustainable goals for gender equality while simultaneously tackling the issue of climate change action.

The activities of MINARET project have been designed to include a gender perspective that considers the different realities and needs of men and women equally. More specifically, a gender assessment was conducted in each of the project countries in order to have actual information regarding the local municipalities' knowledge on gender and development, the gender roles and expectations of each country specially involving the use of energy and water, as well as the existing laws that mention gender and gender equality.

### **The strategic targets in MINARET gender strategy are:**

1. Women's economic empowerment
2. Increased access to resources and knowledge
3. Women's participation in decision-making processes

### **MINARET gender strategy goals are set to respond to (SDG 5) targets:**

- 5.5: Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life.
- 5.A: Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws.
- 5.B: Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women.

## Capacity Building

MINARET capacity building plan is made to respond to all of the constraints and needs identified in the needs assessment, and comply with the following areas of functions:

1. Technical capacity in project management and WEF approach
2. Functional capacity in planning, financial management and in administration and public procurement.

The content will include on-line training tools, such as e-learning on the NEXUS strategies and processes using available training modules, as well as live training sessions.

### Strategic objectives:

**Strategic Objective 1** (Individual level, competencies/skills)

Strengthen technical competencies of stakeholders involved in the strategic implementation, monitoring and evaluation of MINARET activities.

**Strategic Objective 2** (Municipal level)

Strengthening multi-sectoral and multi-stakeholder coordination at the local and regional levels for an effective implementation of MINARET.

**Strategic Objective 3** (Enabling environment dimension)

Improve the knowledge sharing and resource mobilization framework at all municipal levels of MINARET project.





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