

**Economic and Social Commission for Western Asia (ESCWA)**

Committee on Energy
Thirteenth session
Online, 20–21 September 2021



Item 5 of the provisional agenda

**Regional Initiative to Promote Small-Scale Renewable Energy
Applications in Rural Areas of the Arab Region****Summary**

The present document provides an overview of the work and activities of the Economic and Social Commission for Western Asia (ESCWA) within the framework of the Regional Initiative to Promote Small-Scale Renewable Energy Applications in Rural Areas of the Arab Region (REGEND), funded by the Swedish International Development Agency (Sida). These activities include implementing and operating small-scale renewable energy field projects in Jordan, Lebanon, and Tunisia, preparing reports and studies, developing tools, manuals, and training materials, and organizing training courses. ESCWA is working with various partners and institutions to support the expansion of the initiative and its implementation in other locations in the Arab region, so as to intensify collective efforts towards a just and inclusive energy transition.

The Committee on Energy is invited to review the regional initiative and to suggest ways of mainstreaming a business model based on an integrated approach that combines field projects, capacity-building, and policy development related to small-scale renewable energy technologies, for the advancement of rural communities and the empowerment of women.

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Introduction

1. The Economic and Social Commission for Western Asia (ESCWA) has been implementing the Regional Initiative to Promote Small-Scale Renewable Energy Applications in Rural Areas of the Arab Region (REGEND) since 2018, funded by the Swedish International Development Agency (Sida). REGEND aims to improve energy, water and food security, enhance resilience to climate change, and mainstream the Sustainable Development Goals (SDGs) into regional and national policy processes. The initiative also strives to improve the livelihoods of rural communities by encouraging investments in small-scale, environmentally friendly, and affordable renewable energy applications, while promoting gender equality and social inclusion to support rural development. The League of Arab States, represented by its Energy Department, the National Agency for Energy Management in Tunisia, and the Jordanian Ministry of Energy and Mineral Resources are participating in the initiative.

2. REGEND aims to achieve the following four expected accomplishments:

(a) **Expected accomplishment 1:** Increased knowledge of policymakers and local institutions on the socioeconomic and political dynamics and environmental consideration of Arab rural communities and understanding of appropriate small-scale renewable energy technologies that support gender mainstreaming, entrepreneurial development and address the water-energy-food and climate change nexus;

(b) **Expected accomplishment 2:** Enhanced capacity of public, private and financial institutions in ESCWA member States to apply business models for the implementation of appropriate small-scale renewable energy technologies in the productive sectors of rural areas;

(c) **Expected accomplishment 3:** Improved opportunities for rural economic development in beneficiary Arab States by creating an enabling environment for the private sector and women entrepreneurs to invest in income-generating activities by increasing use of small scale renewable energy technologies;

(d) **Expected accomplishment 4:** Regional initiative sustained beyond project timeframe.

3. Currently, REGEND is working to expand access to renewable energy in Jordan, Lebanon and Tunisia through field projects and capacity-building, so as to empower women entrepreneurs through direct benefits to gender equality, access to clean energy at affordable prices, and the application of sustainable water, food and environment practices.

I. Key achievements

4. Four field projects have been implemented in Lebanon, totalling 35 kilowatt-peak and two solar water heaters; and two projects in Tunisia with 15 kilowatt-peak producing clean electricity for beneficiaries. Eighteen field projects with a total of 181 kilowatt-peak and two solar water heater projects are still under implementation.

5. Capacity building continues as an essential pillar of the initiative, by building on the ESCWA network and its knowledge, with a view to adopting an integrated approach to addressing the rural context and establishing a business model that uses energy as an enabler, while providing the necessary knowledge to local communities to improve their quality of life and economic activities. A total of 26 capacity-building workshops were successfully organized covering 18 unique topics, and including all associated knowledge products. Six workshops were organized in Jordan, 11 in Lebanon, and nine in Tunisia. A total of 90 trainees have benefited from them.

6. REGEND has presented business models and policy reports developed through an integrated multi-stakeholder approach, and policy recommendations and strategic guidelines to improve the enabling

environment for the private sector and women entrepreneurs to invest in income-generating activities, by increasing the use of small-scale renewable energy technologies in Arab rural areas.

7. In 2021, REGEND was selected as an [SDG Good Practice](#) for its capacity-building initiatives and productive equipment on good practices related to agriculture, food processing and marketing, small-scale renewable energy technologies and water-energy-food (WEF) nexus applications in rural areas.

8. REGEND was featured in the UN High-Level Dialogue on Energy 2021 [Theme Report on Enabling SDGs Through Inclusive, Just Energy Transitions](#) by highlighting its contribution towards energy for prosperity – renewable energy, gender equality, and education.

9. REGEND was featured on [Tunisian national television in a report](#) that covered the initiative's activities related to women's empowerment and its impacts in Charban, Mahdia Governorate.

10. REGEND was commended in the [report of the twelfth session of the ESCWA Committee on Energy](#) for effectively supporting the energy-water-food nexus.

II. Field projects

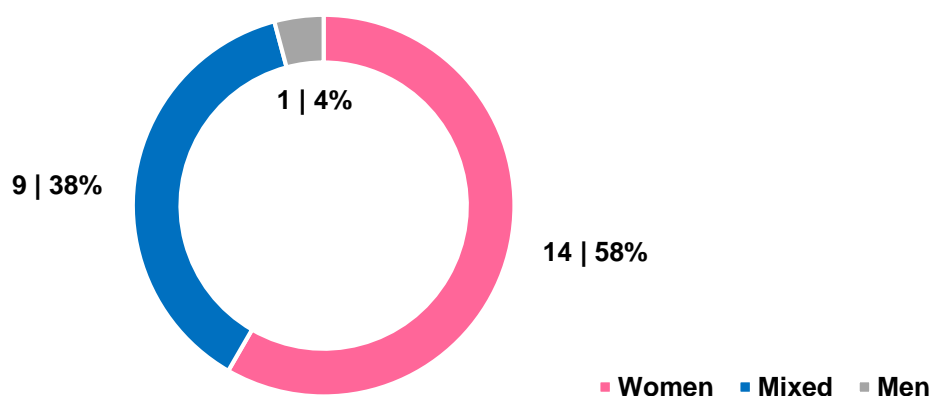
11. To date, 10 field projects have been implemented and operated in Jordan, Lebanon and Tunisia, while 14 field projects are being implemented in Jordan and Tunisia. These projects benefit cooperatives, associations, farmers and rural entrepreneurs. They include solar energy systems to generate electricity, milk cooling in farms, water heating, water pumping connected to drip irrigation networks in farms, systems for repairing and restoring electricity, lighting and water networks, and addressing thermal insulation problems in cooperatives and associations, all with the aim of improving energy efficiency.

12. Details of these projects and their beneficiaries are provided in the following table.

Country	Location	Number of projects	Capacity (kWp)	Beneficiaries	Number of beneficiaries (direct and indirect)
Jordan	Al-Achaari, Maan Governorate. Battir, Karak Governorate.	12	76	A women's agro-food manufacturing cooperative. Women entrepreneurs (agriculture and food). Farmers.	850
Lebanon	Akkar Al-Atika, Akkar Governorate. Al-Shadouf, Akkar Governorate.	7	57	A women's agro-food manufacturing cooperative. A women's cooperative for sewing and embroidery. Beekeepers cooperative. Agricultural cooperative. Town hall. Municipality clinic. The town's energy poor.	900
Tunisia	Sherbane, Mahdia Province	6	120	A cooperative for the production of milk and dairy products.	1,050

Country	Location	Number of projects	Capacity (kWp)	Beneficiaries	Number of beneficiaries (direct and indirect)
				An agricultural development association to pump drinking water. Women entrepreneurs (agriculture and food). Farmers.	
Total		25	253		2,900

13. The distribution of direct beneficiaries of field projects, by gender, is shown in the figure below.



III. Knowledge products

14. Under REGEND, ESCWA has issued several reports, studies and manuals, which have been published on its website. ESCWA is also working on developing other products.

- [Small-Scale Renewable Energy Technological Solutions in the Arab Region: Operational Toolkit – December 2020](#)

The operational toolkit aims to identify small-scale renewable energy technology solutions for the development of rural communities, so as to raise awareness and encourage investment for the adoption of small-scale renewable energy technologies to promote social benefits, entrepreneurship, gender equality, poverty reduction and job creation, as well as address challenges related to water scarcity, food security, energy poverty and climate change. The toolkit also includes case studies on implemented renewable energy technologies that have had an impact on rural communities, focusing on gender aspects, the challenges faced, and the business models used. The conclusion summarizes the main recommendations that focus on maximizing the value of renewable energy technologies to benefit rural communities and ensuring project sustainability.

- [Assessment Report of Prevailing Situations in Rural Areas in Jordan.](#)
- [Assessment Report of Prevailing Situations in Rural Areas in Tunisia.](#)
- [Assessment Report of Prevailing Situations in Rural Areas in Lebanon.](#)

Each country's report examines the social, economic and political dynamics and environmental considerations associated with productive activities by sector, requirements for accessing energy services, and the availability of supply sources and associated technologies needed to support resilience in rural communities. Each country report also provides recommendations for the pilot rural communities, where most of the project's field activities were implemented.

- [Study on Gender Mainstreaming, Social Inclusion, Human Rights Processes and Outcomes of Access to Energy in Targeted Local Communities in Jordan.](#)
- [Study on Gender Mainstreaming, Social Inclusion, Human Rights Processes and Outcomes of Access to Energy in Targeted Local Communities in Tunisia.](#)
- [Study on Gender Mainstreaming, Social Inclusion, Human Rights Processes and Outcomes of Access to Energy in Targeted Local Communities in Lebanon.](#)

The country-specific studies present findings and analyses related to gender mainstreaming processes associated with energy services. The studies indicate the main challenges and barriers that rural women face in employment and entrepreneurship in the energy sector in each country. They also highlight the potential for gender mainstreaming, identify opportunities to support the local private sector, and promote and expand the use of small-scale renewable energy technologies, emphasizing the associated environmental and climate benefits. The studies also make recommendations on the pilot rural communities where most of the field activities are carried out.

- [Good Practices Guide for Agriculture, Post-harvest Processing, Manufacturing, Packaging, and Labeling within the Framework of Training on the Sustainable Use of Energy](#)

The guide aims to develop the knowledge of workers in rural communities and of women's associations benefiting from REGEND, with theoretical and practical skills in the field of good agricultural practices related to the rationalization and use of sustainable energy, food processing operations, packaging and marketing. It also aims to pave the way for training activities to bring about a positive change in performance and behaviours, and to simplify the scientific and cognitive framework for the skills needed by individuals in rural communities, especially rural women, to meet their needs, gain their own income and achieve self-reliance in a sustainable manner that takes into account the optimal and integrated use of available natural resources.

- Case studies on the policies and regulatory, institutional and financial frameworks needed to advance small-scale renewable energy technologies and their applications for rural development in Jordan, Lebanon and Tunisia

The case studies address the policy and regulatory reforms, and financial and legal frameworks needed to promote small-scale renewable energy technologies and their applications in rural areas through an integrated approach. They also include an analysis of national rural development strategies and policies, and focus on systems assessment of rural productive activities that can promote small-scale renewable energy technologies, develop entrepreneurship, and attract private investment. They also provide a set of recommendations.

- Business model toolkits

The toolkits aim to develop policies, business models and solutions related to small-scale renewable energy technologies for the benefit of rural communities. They provide a comprehensive overview and framework for creating financially sustainable business models where social and environmental benefits are the main drivers, and cover policy, financial, social, environmental, institutional and technical aspects.

- A policy toolkit for policymakers to increase the use of small-scale renewable energy technologies

The toolkits for policymakers and decision makers aim to increase the use of small-scale renewable energy technologies by introducing good practices and business models, including regulatory and institutional frameworks, to create an enabling environment for the use of these technologies in Arab countries. The toolkits also include policy options, financing guidelines, innovative incentive mechanisms and indicators to facilitate the diffusion and use of these technologies, so as to enhance rural livelihoods through entrepreneurship, respect for human rights and gender mainstreaming.

IV. Capacity-building

15. The capacity-building programmes and topics below were developed based on the evaluation reports of the target countries and on the results of repeated field visits, and by listening to the views and needs of beneficiaries. These workshops aimed to build the capacity of male and female workers in productive activities to improve their performance, especially in rationalizing energy use and using small-scale renewable energy applications in local development to reduce the cost of electricity and dependence on imported and polluting fuels, and to supply energy in a sustainable manner.

Jordan

- [Capacity-building workshop on good agriculture practices for enhanced energy sustainability, Al-Achaari, Maan, Jordan, 23–25 June 2020.](#)
- [Capacity-building workshop on good agriculture practices for enhanced energy sustainability, Batir, Al-Karak, Jordan, 28–30 June 2020.](#)
- [Workshop on good food manufacturing and hygiene practices and hygiene requirements for food storage, Al-Achaari, Maan, Jordan, 14–16 July 2020.](#)
- [Workshop on good food manufacturing and hygiene practices and hygiene requirements for food storage, Batir, Al-Karak, Jordan, 21–23 July 2020.](#)
- [Capacity-building workshop on good food packaging, labeling, and marketing practices, Al-Achaari, Maan, Jordan, 6–8 October 2020.](#)
- [Capacity-building workshop on good food packaging, labeling, and marketing practices, Batir, Al-Karak, 13–15 October 2020.](#)

Tunisia

- [Improving the performance of the Agricultural Development Group for Rural Women "Al-Amal" and raising its efficiency, Neffatia, Tunisia, 19–21 August 2020.](#)
- [Use of small-scale renewable energy for rural development in Tunisia, Chorbane, Tunisia, 26–28 August 2020.](#)
- [Marketing techniques and mechanisms for rural women's products, Neffatia, Tunisia, 1–2 September 2020.](#)
- [Distillation and valorization of materials extracted from medicinal and aromatic plants, Neffatia, Tunisia, 2–4 September 2020.](#)
- [Capacity-building workshop on planning, management and finance, Chorbane, Tunisia, 10–12 December 2020.](#)
- [Improving the yield and quality of fruit tree plantings and adopting water-saving irrigation techniques and renewable energy technologies for pumping, irrigation, and water desalination, Chorbane, Tunisia, 21–23 December 2020.](#)

- [Workshop of rural women on packaging, customized trademarks adoption, and labeling of local products to improve their promotion, Chorbane, Tunisia, 25–27 December 2020.](#)
- [Capacity-building workshop of rural women on entrepreneurship in the agricultural sector, Neffatia, Tunisia, 25–26 February 2021.](#)
- [Capacity-building workshop of rural women on cattle breeding, Chorbane, Tunisia, 2–3 June 2021.](#)

Lebanon

- [Use of renewable energy and energy efficiency technologies and applications for rural development in Lebanon, Chaqdouf, Lebanon, 6 April 2021.](#)
- [Use of renewable energy and energy efficiency technologies and applications for rural development in Lebanon, Akkar Al-Atika, Lebanon, 7 April 2021.](#)
- [Capacity-building workshop for rural women on food manufacturing, safety and the best methods of food packaging and preservation, Akkar Al-Atika, Lebanon, 2–3 June 2021.](#)
- [Capacity-building workshop for rural women on financial management, accounting, and the economic benefits of access to sustainable and secure energy, Akkar Al-Atika, Lebanon, 21–22 June 2021.](#)
- [Training workshop for rural women on financial management, accounting, and the economic benefits of access to sustainable and secure energy, Chaqdouf, Akkar Governorate, Lebanon, 28–29 June 2021.](#)
- [Training workshop for rural women on food manufacturing and safety, and the best methods of food packaging and preservation, Chaqdouf, Akkar Governorate, Lebanon, 1–2 July 2021.](#)
- [Capacity-building workshop on projects design, drafting proposals, feasibility studies, and managing projects in the water-energy-food nexus, Akkar Al-Atika, Lebanon, 5–6 July 2021.](#)
- [Marketing through social media, and promoting productive activities using renewable energy, Chaqdouf, Akkar Governorate, Lebanon, 26–27 July 2021.](#)
- [Marketing through social media, and promoting productive activities using renewable energy, Akkar Atika, Lebanon, 28–29 July 2021.](#)
- [Sustainable and effective methods in embroidery and weaving, Chaqdouf, Akkar Governorate, Lebanon, 2–3 August 2021.](#)
- [Sustainable and effective methods in embroidery and weaving, Akkar Atika, Akkar Governorate, Lebanon, 4–5 August 2021.](#)

V. Communication strategy

16. The REGEND communication strategy continues to rely on ESCWA social media (Facebook and Twitter) to disseminate the initiative's products and knowledge activities in the three target countries, while adapting all key messages to the national context of each country.

17. In addition, continuous communication with REGEND stakeholders and beneficiaries was ensured through the Energy Section's email, which received many expressions of thanks and positive comments about the results of the initiative's activities. The communication strategy was complemented by the use of REGEND partners' social media platforms and dissemination channels. REGEND is witnessing an increasing interest from young beneficiaries who were targeted by the initiative's activities, and who attended various capacity-building workshops. Within the scope of the field projects, vocational students participated by visiting field

project sites to learn more about the design and installation of solar energy systems, where they also had the opportunity to work manually.

VI. Sustainability of REGEND

18. To ensure the initiative's long-term sustainability beyond its timeframe, the principle of sustainability has been achieved from all angles in all implemented activities, whether through the development and publication of knowledge products, specifications and high quality standards, or through long-term guarantees and required trainings. These essential future-looking measures will prove their value and effectiveness, by complementing the outputs of the initiative in a sustainable manner to ensure the continuity of its benefits. Consequently, and based on the above, ESCWA is working with various partners and institutions to support the expansion of the initiative and its implementation in other locations in the Arab region, so as to intensify collective efforts to enable a just and inclusive energy transition for all.

19. After the implementation of the initiative's integrated and comprehensive approach to capacity-building and field projects, many additional requests were received from existing beneficiaries on activities and topics they were interested in and would like to know more about. Moreover, additional requests were received from neighbouring communities for inclusion in the initiative's activities.

20. To meet all these requests, which will significantly enhance the sustainability of the initiative and its long-term impact, the REGEND team decided to integrate all capacity-building training materials and knowledge products in the ESCWA learning platform, which will be available online to all in Arabic. Through the platform, Arab communities, especially interested rural communities, will be able to access the initiative's knowledge library, which will constitute another step forward in the REGEND vision and path towards expanding the initiative thanks to a model based on knowledge transfer, which is highly appreciated by beneficiaries and their communities.

VII. Recommendations

21. The present section set out the recommendations resulting from REGEND activities.

(a) Disseminate the initiative's business model based on an integrated approach that combines field projects, capacity-building and policy development related to small-scale renewable energy technologies for the advancement of rural communities and the mainstreaming of gender empowerment;

(b) Adopt policy tools and regulatory and institutional frameworks emanating from the initiative to guide policymakers and decision makers, with the aim of increasing and facilitating investment and the use of small-scale renewable energy technologies to enhance livelihoods in Arab rural areas;

(c) Respond to a number of incoming requests for advisory and technical cooperation services from ESCWA member States, and ensure their support in disseminating and implementing the initiative's business model at the national level;

(d) Assist REGEND's national partners in using the initiative's outputs, capacity-building programmes and training materials to prepare action plans for mainstreaming small-scale renewable energy technologies into national rural development plans;

(e) Review investment project proposals prepared by rural entrepreneurs in beneficiary countries before submitting them to national and international investors, financial institutions and investment funds for consideration.
