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E/ESCWA/CL1.CCS/2020/WG.13/Report
11 May 2021
ORIGINAL: ENGLISH

Economic and Social Commission for Western Asia (ESCWA)

Report

Capacity Building Workshop on “Promotion of Small-Scale Renewable Energy Technologies and Applications and Energy Efficiency for Rural Development in Lebanon”

Akkar El Atika Public Library, Akkar, Lebanon, 07 April 2021

Summary

The UN Economic and Social Commission for Western Asia (ESCWA) organized a capacity-building workshop at the Akkar El Atika public library on 07 April 2021 titled “The Use of Renewable Energy and Energy Efficiency Technologies and Applications for Rural Development in Lebanon”. The workshop aimed at supporting the outcomes of the “Regional Initiative for Promoting Small-Scale Renewable Energy Applications in Rural Areas of the Arab Region (REGEND)” project funded by the Swedish International Development Cooperation Agency (Sida), in conducting theoretical and practical capacity building workshops to improve livelihoods, achieve economic benefits, social inclusion and gender equality in Arab rural communities, especially marginalized groups, by addressing the problem of energy poverty, water scarcity, climate change and other natural resource challenges through the application of small-scale renewable energy technologies suitable for productive activities and private enterprise development.

The workshop enabled the participants; rural women and young technical students to acquire theoretical and technical capabilities in small-scale renewable energy applications, financing and regulatory mechanisms, and energy conservation, rural development, empowerment of women, and the inter-linkages between agriculture, water and energy based on scientific foundations.

This report presents a summary of the implemented capacity building workshop, the major points resulting from the analysis of the evaluation forms, and the recommendations received from the participants.

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I. INTRODUCTION

1. The UN Economic and Social Commission for Western Asia (ESCWA) organized a capacity building workshop at Akkar El Atika public library on 07 April 2021 titled “Promotion of Small-Scale Renewable Energy Technologies and Applications and Energy Efficiency for Rural Development in Lebanon”.
2. The main objective of the workshop was to support the outcomes of the “Regional Initiative for Promoting Small-Scale Renewable Energy Applications in Rural Areas of the Arab Region (REGEND)” project funded by the Swedish International Development Cooperation Agency (Sida), in conducting theoretical and practical capacity building workshops to improve livelihoods, achieve economic benefits, social inclusion and gender equality in Arab rural communities, especially marginalized groups, by addressing the problem of energy poverty, water scarcity, climate change and other natural resource challenges through the application of small-scale renewable energy technologies suitable for productive activities and private enterprise development.
3. The workshop was attended by 21 participants representing rural women operational in productive activities and vocational school students in Akkar El Atika village in Akkar, Lebanon.
4. The workshop was conducted in one day and consisted of three sessions. Section II of this report summarizes the workshop’s recommendations while Section III provides a summary of the presentations and the main topics of discussions held during each session. Section IV reviews the organization of work, including information regarding the workshop agenda, participants and a summary of the participants evaluation outcome. The full documentation of the workshop is available at the following address:

<https://www.unescwa.org/events/capacity-building-workshop-renewable-energy-technologies>

II. RECOMMENDATIONS

5. The workshop concluded with the following participants’ recommendations:
 - a) Expand the scope of the project to address the electricity needs of the village
 - b) Secure financing for a solar, wind or hydro micro-grid for the village based on an assessment of the available natural resources in the village.
 - c) Build the awareness of local institutions, municipality and general public on the role of small-scale renewable energy applications in rural development.
 - d) Provide further capacity building for the young rural students aiming to pursue a career in renewable energy.

III. MAIN TOPICS OF DISCUSSIONS

6. Presentations and discussions are summarized in the following sections which are organized according to the substantive sessions of the workshop.

A. GENERAL OVERVIEW OF THE CURRENT STATUS OF THE LEBANESE ELECTRICITY SECTOR AND METHODS TO REDUCE ENERGY CONSUMPTION

7. This session addressed the electricity sector’s woes and their socio-economic and environmental impact, especially in rural areas. The session covered the technical and financial shortcomings in the sector and detailed the different recovery costs and tariff rates of the national utility and private generators, to lay the ground for the potential of renewable energy in minding the generation gap and provide cost savings.
8. The session also offered an outline of the opportunity cost of the electricity rationing on productive activities, especially for rural women, and on children’s study disruptions, and the use of diesel generators and its impact on cost and competitiveness of businesses.
9. The participants were provided with a wide range of measures ensuring energy conservation in lighting, electrical appliances, heating and cooling, and cooking.

10. The session concluded with a light video on energy efficiency in households and an overview of the inter-linkages between agriculture and food security, water and energy setting the foundation for the renewable energy applications to follow.

B. SMALL-SCALE RENEWABLE ENERGY APPLICATIONS IN RURAL AREAS

11. The session kick-started with outlining the differences between fossil fuels' finite and polluting nature and alternative energy infinite and clean resources. Then proceeded to highlight the various usage of renewable energy and segregate the different renewable energy resources.

12. The above was followed by two short videos detailing the current global status and potential of renewable energy in general and the role of solar energy in particular.

13. The session also included a mapping of the solar and wind potential in Lebanon, and the current status and capacity of decentralised solar energy systems in the country, before embarking in-depth into the operation and components of a renewable energy system.

14. The session highlighted the various solar energy applications and technologies, including solar heating systems, solar photovoltaic systems, solar micro-grids, solar home systems, solar farms and pumps, solar cookers and dryers.

15. Other technologies including wind systems, biogas, bioenergy and briquettes, geothermal/ ground source heating pumps, and micro-hydro were also detailed. The session concluded with a round of examples of small-scale renewable energy application for rural development and women empowerment from Lebanon and across the world.

C. POTENTIAL OF SMALL-SCALE RENEWABLE ENERGY IN LEBANON'S RURAL DEVELOPMENT

16. The session started with an overview of the role of renewable energy in rural development through the enhancement of energy security and grid reliability, and the mitigation of the impact of fuel price volatility.

17. The session then proceeded to detail the impact of renewable energy on productive activities through lower energy bills and improved business competitiveness, and the circular rural economy. The presentation also covered the role of renewable energy in women and youth empowerment through entrepreneurship and revenue creation, placing women in the decision-making seat. It presented the advantages of small-scale renewable energy applications in an integrated approach, indicating its crucial location in the water-energy-food nexus.

18. Success cases of the REGEND project in Jordan and Tunisia were presented to support these statements. In addition, the session tackled the regulations and financial frameworks and shortcomings. The session concluded with a video showcasing the in-house preparation method of a solar cooker.

D. CLOSING SESSION

19. The workshop sessions were closed by Mr. Jil Amine, Sustainable Development Officer, Climate Change and Natural Resources Sustainability Cluster (CCNRSC), ESCWA, covering the next steps in the REGEND- Lebanon project, and the upcoming capacity building workshop sessions details and framework. The closing statement emphasized the fruitful discussions during the workshop and the intention to continue coordinating and collaborating with the represented stakeholders. The participants submitted their recommendations in the disseminated evaluation forms and received certificates of attendance.

IV. ORGANIZATION OF WORK

A. DATE AND VENUE

20. The capacity-building workshop was held by ESCWA on 07 April 2021 at the public library of Akkar El Atika village in the governorate Akkar, Lebanon. The workshop activities started at 09:00 am and ended at 01:00 PM, as per the agenda and detailed concept note.

B. OPENING

21. The workshop was formally opened by Mr. Jil Amine, CCNRSC, ESCWA covering the REGEND Project, its objectives, main pillars, expected accomplishments, sustainability, and approach. Mr. Amine presented an overview of the small-scale renewable energy pilot projects and capacity-building activities that will be conducted in Akkar El Atika, highlighting the criteria that have led to the selection of the village and the needs' assessment that was conducted to inform the activities. The assessment identified the capacity building needs of the rural population, especially women, and municipality staff, in areas related to their rural livelihood activities, including food safety, quality, good manufacturing, labelling and packaging practices, marketing and digital marketing skills necessary to improve business revenues and production.

22. Remarks by Dr. Mohammad Khalil, the Head of the Municipality of Akkar El Atika followed. Dr. Khalil thanked ESCWA and Sida for their support to the local community in Akkar El Atika, especially in light of Lebanon's economic and financial crises and the pandemic. He stressed on the importance of the renewable energy project under implementation in Akkar El Atika and the capacity building support to the village's women, which is a pressing need in times where households are in desperate need of additional income.

23. The opening remarks were concluded with a discussion of the workshop's agenda and expected outcomes.

C. PARTICIPANTS

24. The workshop was attended by 21 participants representing rural women operational in productive activities and young technical students in Akkar El Atika village in Akkar, Lebanon.

D. DETAILS OF THE PRESENTERS

25. Presentations were made by the following renewable energy experts:

- Mr. Jil Amine, Sustainable Development Officer, Climate Change and Natural Resources Sustainability Cluster (CCNRSC), ESCWA.
- Mr. Omar Kaaki, Research Assistant, Climate Change and Natural Resources Sustainability Cluster (CCNRSC), ESCWA.
- Ms. Jessica Obeid, National Consultant, ESCWA

E. AGENDA

26. Presentations and discussions were made over three sessions. The agenda of the workshop is summarized below:

- a) Welcome Notes and Agenda Setting
- b) General Overview of The Current Status of The Lebanese Electricity Sector and Methods to Reduce Energy Consumption
- c) Small-Scale Renewable Energy Applications in Rural Areas
- d) Potential of Small-Scale Renewable Energy in Lebanon's Rural Development
- e) Closing Statement and Next Steps

F. EVALUATION

27. An evaluation questionnaire was distributed to the participants to assess the relevance, effectiveness, and impact of the workshop. The feedback received from the 21 respondents was positive with 100% of them

agreeing that the overall quality of the workshop met their expectations and that the sessions were successful in improving their knowledge in the tackled topics, and that the content was clear, well-structured, and presented in an interactive and engaging manner. Furthermore, 95% of the respondents agreed that the workshop achieved its purpose and objectives, 89% thought that there was enough time allocated for the workshop and for each session, and 79% agreed that the venue was suitable for the workshop, but this could be due to the fact that the workshop had to be organized at the library to make sure physical distancing due to COVID-19 is maintained.

28. Below are some of the suggestions, remarks, and needs expressed by the participants in their evaluation forms:

- a) Enlarge the circle of participation and replicate the capacity-building workshops in other villages and engage more citizens.
- b) Expand the project to cover some of the basic electricity needs of the village through micro-grids, depending on an assessment to be conducted on the dominant renewable energy resources in the village: river hydropower, solar, and wind.
- c) Install a sewage treatment network to be able to reuse the treated water for irrigation purposes.
- d) Cover the fields of embroidery and marketing in future capacity-building workshops which will be addressed by REGEND in upcoming workshops.

ANNEX I: AGENDA

Tuesday 07 April 2021	
09:00-09:30	Welcome notes
09:30-10:00	Opening Session Welcoming Remarks: <ul style="list-style-type: none"> – Dr. Mohammad Khalil, Mayor, Akkar El Atika – Mr. Jil Amine, Sustainable Development Officer, Climate Change and Natural Resources Sustainability Cluster (CCNRSC), ESCWA --REGEND Project, its objectives, main pillars, expected accomplishments, and approach, and capacity building workshops – Introduction of participants
10:00-10:30	Session 1: General Overview of The Current Status of The Lebanese Electricity Sector and Methods to Reduce Energy Consumption Ms. Jessica Obeid, Consultant, ESCWA and Mr. Jil Amine <ul style="list-style-type: none"> – Overview of the electricity sector in Lebanon, especially rural areas – Socio-economic and environmental impact of power rationing – How to reduce electricity bills? <p style="text-align: right;">Questions and answers</p>
10:30-11:15	Session 2: Small-Scale Renewable Energy Applications in Rural Areas Ms. Jessica Obeid and Mr. Omar Kaaki, Research Assistant, CCNRSC, ESCWA <ul style="list-style-type: none"> – Types of renewable energy resources of benefit to rural areas: Solar energy Wind energy Hydro power Bioenergy – Examples from Lebanon and around the world: renewable energy for rural development and women empowerment <p style="text-align: right;">Questions and answers</p>
11:15-11:45	Coffee break
	Session 3: Potential of Small-Scale Renewable Energy in Lebanon's Rural Development Ms. Jessica Obeid and Mr. Jil Amine <ul style="list-style-type: none"> – The role of renewable energy in rural development – The role of renewable energy in entrepreneurship – The role of renewable energy in women and youth empowerment – Regulations of renewable energy in Lebanon – Financing mechanisms for small-scale renewable energy – Do-it-yourself: solar cooker <p style="text-align: right;">Questions and answers</p>

12:30-13:00

Closing statement, visit to the solar water heater implemented by REGEND project and next steps.



اللجنة الاقتصادية والاجتماعية لغربي آسيا (الإسكوا)

ورشة تدريبية حول "استعمال الطاقات المتجددة صغيرة السعة
وترشيد استخدام الطاقة لفائدة التنمية الريفية في لبنان"

عكار العتيقة، عكار، لبنان
7 نيسان/أبريل 2021

البرنامج

الأربعاء 7 نيسان/أبريل 2021	
التسجيل	09:30 - 09:00
الجلسة الافتتاحية	10:00 - 09:30
كلمات ترحيبية:	
<ul style="list-style-type: none">الدكتور محمد خليل، رئيس بلدية عكار العتيقةالسيد جبل أمين، مسؤول في شؤون التنمية المستدامة، قسم الطاقة، مجموعة تغيزر المناخ واستدامة الموارد الطبيعية، الإسكوا - تقديم مشروع "REGEND" وأهدافه وأنشطته وأهداف سلسلة التريبات ومحتواهاالتعريف بالمشاركين	
الجلسة الأولى: لمحة عامة: واقع الكهرباء في لبنان وكيفية توفير استخدام الكهرباء الآنسة جيسكا عبيد، مستشارة، الإسكوا و السيد جبل أمين	10:30 - 10:00
<ul style="list-style-type: none">واقع الكهرباء في لبنان، وخصوصاً في المناطق الريفيةخسائر لبنان البيئية والاقتصادية والاجتماعية بسبب انقطاع الكهرباءكيف نخفّض فاتورتنا الكهربائية؟	
أسئلة وأجوبة	

<p>الجلسة الثانية: تكنولوجيات الطاقة المتجددة صغيرة السعة في المناطق الريفية الآنسة جيسيكاً عبيد والسيد صبر الكعكي، باحث مساعد، الإسكوا</p> <ul style="list-style-type: none"> ▪ أنواع الطاقة المتجددة ذات المنفعة في المناطق الريفية <ul style="list-style-type: none"> ○ طاقة الشمس ○ طاقة الرياح ○ طاقة المياه ○ طاقة الهواء ○ طاقة المواد المعوية ▪ أمثلة من لبنان وحول العالم: مشاريع طاقة نظيفة للتنمية الريفية وتفعيل دور المرأة <p>أسئلة وأجوبة</p>	11:15 - 10:30
استراحة قهوة	
<p>الجلسة الثالثة: إمكانات الطاقة المتجددة في المنطق الريفية الآنسة جيسيكاً عبيد والسيد جيل أمين</p> <ul style="list-style-type: none"> ▪ الطاقة المتجددة لمنفعة وإنماء الريف ▪ الطاقة المتجددة لزيادة الأعمال والإبداع ▪ الطاقة المتجددة لخلق فرص العمل، وتمكين المرأة والشباب ▪ قوانين الطاقة المتجددة في لبنان ▪ كيفية تمويل مشاريع الطاقة المتجددة صغيرة السعة ▪ نفذ بنفسك: مطبخ شمسي <p>أسئلة وأجوبة</p>	12:30 - 11:45
<p>لمحة عن التدريبات المقبلة وزيارة نظام الطاقة الشمسية في المبنى</p> <p>ختام الدورة التدريبية</p>	13:00-12:30

ANNEX II: LIST OF PARTICIPANTS

1. Sabah Ahmad Alaakk
2. Rania Mohsen Al Mir
3. Shadia Khodr Al Masri
4. Nahed Ahmad
5. Elham Al Ayoubi
6. Haifaa Ahmad Diab
7. Mohammad Ali Rustom
8. Mariam Ahmad Shameddine
9. Fatima Hussein Battikh
10. Sawsan Sami Al Assaad
11. Manar Bader Al Shakoush
12. Sarah Mohammad Al Shakoush
13. Rania Shehadi Al Shakoush
14. Nermin Ali Mohamad
15. Ahmad Abdou
16. Abdallah Khodr Derbas
17. Firas Ahmad Obeid
18. Mohammad Bassam Al Sahmarani
19. Amer Abed Kdour
20. Hassan Khaled Ghassa
21. Abdel Wahhab Al Nashar