UN ENVIRONMENT MICRO-GRID TRAINING MEETING

UN Environment Headquarters, Nairobi

10 April 2018
UN Environment Africa Office, the Renewable Energy Solutions for Africa (RES4Africa) and other partners conducted a Micro-Grid Training Meeting for the Africa Women Energy Entrepreneurs and youths from the East Africa Community in Nairobi, Kenya on 10 April 2018. This one day meeting was held as part of the programme of the Micro-Grid Academy training that was taking place from 4 to 13 April 2018. This training was held in the framework of collaboration between UN Environment and RES4Africa under the auspices of the African Women Energy Entrepreneurs Framework (AWEEF).

Over 25 African women (working as energy entrepreneurs) and youths (who are currently graduate students in renewable energy engineering) participated in this training. Other women and youths from Europe including Italy also participated in this training to boost South-South Cooperation and share best practices. The current training focused on women entrepreneurs from four members of East African Community (Kenya, Rwanda, Tanzania and Uganda).
The objective of the training was to enhance access to energy in rural communities, local enterprises, job creation and income generation. This will positively impact on health and education services, women and youth empowerment, environmental protection and climate change mitigation.

Being conducted at the “Institute of Energy Study and Research” in the Kenya Power and Lighting Company (KPLC) facilities in Nairobi, the training used the 20 - 40kW micro-grid for hands-on training. It abetted managers and engineers to plan, design, build and operate grid connected as well as hybrid mini-grids for decentralized renewable energy solutions.

The training was organized in the context of implementation of the innovative environmental solutions, as recommended by the African Ministerial Conference on the Environment (AMCEN). AMCEN has called on countries in the region to strengthen the technical and business skills of African women entrepreneurs and youths in the energy sector.

In this framework, UN Environment Africa office convened this one-day meeting on 10 April 2018 to share best practices on renewable energy development among trainees, instructors and representatives of partners of the Micro-Grid Academy. Other UN Agencies such as UN Women, UNIDO, UN-HABITAT also took part in this meeting to share their best practices in the gender and energy sector.

The Key output of this meeting was:

- **Training Value addition recognized**: Women Entrepreneurs from East Africa Community recognized the importance of the training in terms of its content (enhancement of both technical and business skills) and its value addition to create jobs and generate incomes.
- **Experience shared**: UN Environment, UNIDO, UN Habitat shared their best practices and experiences on how they support and create business opportunities for Africa Women entrepreneurs in Energy Value chain
- **Partnership developed**: UN Environment, UNIDO, UN Habitat and convener of the training (RES4Africa) agreed to join forces: (i) to continue and replicate this training to other parts of African countries, and (ii) find a way to upscale the training through development of various business models that will create impacts and lead to job creation and income generation.
1. HIGHLIGHTS OF THE MEETING

1.1 Opening Session of the Meeting

As a main convener of this meeting, the Deputy Regional Director, UN Environment Africa office Mr. Frank Turyatunga provided welcome remarks to participants along with other UN Agencies and partners. Deputy Regional Director of UN Environment Africa Mr. Turyatunga was delighted to welcome the participants to the home of UN Environment to attend the meeting being held under the framework of the “Micro-grid training for the Africa Women Energy Entrepreneurs and Youths”. He then expressed his appreciation to the organizers and partners for making this meeting possible. He commended seeing such a wide range of women entrepreneurs and youths coming from Africa and Europe to acquire technical and business skills in the energy sector and enhance south-south cooperation.

Mr. Turyatunga stated that UN Environment is looking forward to continue working and collaborating with various partners to facilitate this Micro-Grid training in order to enhance access to energy in communities, local enterprises, job creation and income generation. He commended that this training will positively impact women and youth empowerment, health and education, environmental protection and climate change mitigation.
In a similar vein, Paolo Razzini from the United Nations Industrial Development Organization (UNIDO) stated that, in this opening session, in line with its mandate of promoting Inclusive and Sustainable Industrial Development (ISID), UNIDO has a major catalytic role in the fields of energy and climate. This includes scaling up investments in clean energy solutions; strengthening policy frameworks to create an enabling environment including funding for increased market penetration.

Vincent Kitio, from UN-Habitat addressed the meeting by focusing on the two challenges facing Africa which are poverty and climate change. He noted that UN Habitat works to ensure urban cities have proper planning to improve on better living conditions. For renewable energy use, the Micro Grid Academy teaches utilization of renewable energy e.g. solar energy which in return provides energy efficiency in electricity generation. He said that the training program enhances capacities in rural human resource ultimately creating networks and jobs to reduce poverty levels.

### 1.2 Presentations from the UN Agencies and RES4Africa

Various United Nations Agencies including UN Environment, UNIDO and UN Habitat delivered a presentation to share their practices and experiences with the women entrepreneurs and youths (Trainees), representatives of RES4Africa and other local and international instructors of the microgrid training.

The presentations from UN Environment (Energy unit and Switch Africa Green), RES4Africa, UNIDO and UN Habitat were made in line with the value addition of the MGA training. These organizations presented their current renewable energy programmes in Africa.

Paolo Razzini from the United Nations Industrial Development Organization (UNIDO) stated that in line with UNIDO’s mandate of promoting Inclusive and Sustainable Industrial Development (ISID), UNIDO has a major catalytic role in the fields of energy and climate. This includes scaling up investments in clean energy solutions including waste to energy; strengthening policy frameworks to create an enabling environment including funding for increased
market penetration of renewable energy; and the promotion of energy efficient and low-carbon technologies that advance ISID.

Mr. Paolo then talked about the UNIDO’s multi-faceted Energy Programme, which is based on three strategic pillars: (i) Industrial Energy Efficiency, (ii) Renewable Energy for Productive Uses, and (iii) Climate Policy Networks. He stated that UNIDO’s energy programme prioritizes energy security, job creation, gender mainstreaming, and energy access for enhancing the productivity of enterprises, specifically recognizing the nexus between food, water, health, and energy. Therefore it is clear that the sustainability of energy solutions lies in addressing these issues in tandem rather than individually.

Mr. Kitio from UN Habitat also explained a business case in Tanzania, in his presentation, that demonstrates empowerment of women entrepreneurs in energy sector through providing training to women on manufacturing, utilization and selling of a solar lantern. He demonstrated, in his presentation, the value addition of replacement of Kerosene Lamp that costs about USD 90 per year by the Solar lantern that costs about USD 40 per year in terms of climate change (GHG emission reduction) and affordability.

Andrea Micangelli from the Renewable Energy Solutions For Africa (RES4Africa) appreciated the African Women Energy Entrepreneurs Framework (AWEEF) secretariat for its selection of appropriate trainees (women entrepreneurs from East African Community) for this MG training and hosting of this meeting.

Prof Micangelli invited trainees to share their brief experience about the training on the technical and business skills they have acquired so far. One woman entrepreneur from Rwanda Ms. Therese Sekamana said that she learned the importance of load in a mini-grid coupled with strengthening of her business skill. In a similar vein, a women enterpreneur from Uganda Ms. Fatumah Nsereko expressed her appreciation to the organizer and convener of the training and indicated that she learnt how to factor in community needs in presenting value proposition of the Micro grid.
training. In addition, she reflected that a business model is best achieved by doing a Strength-Weakness-Opportunity-Threat (SWOT) analysis as quoted by a third beneficiary of the MGA training.

UN Environment, explained the on-going UN Environment Energy programmes in Africa in the area of Renewables, Energy Efficiency and Energy Finance and its contribution and catalytic role in enhancing investment to achieve the Sustainabel development Goals, AU Agenda 2063 and Paris agreement 2015. UN Environment reiterated that the importance of partnership with RES4Africa through African Women Energy Entrepreneurs Framework (AWEF) where it contributes to the implementation of one of the pillars of the Libreville outcome statement i.e. “capacity enhancement & developing business and technical skills”.

Ryan Ndombi, informed the meeting that AWEF is now in its implementation stages and started to identify and categorize various stakeholders and partners through creation of membership drive. He also shared the opportunity that AWEF created an opportunity of a scholarship programme for two members of AWEF and qualified women entrepreneurs once every year for a Post Graduate Diploma Programme in International Gender Studies in Iceland. This is a result of partnership developed between AWEF and the United Nations University -Gender Studies based in Iceland.
Patrick Mwesigye from Switch Africa Green (SAG) cited that the biggest challenge is the lack of appropriate policies in streamlining environmental and social issues for Micro, Small and Medium-sized Enterprises (MSMEs). The Switch Africa Green program has benefited over 3000 MSMEs in Africa through promoting business that utilize resource efficient materials and products and/or energy use. Mr. Mwesigye indicated that the best solution to empower entrepreneurs is to bring together both the government and SME’s towards achieving the shared objectives and values.

Damaris Mungai informed the meeting that the UN environment Gender and Youth program focus was to improve access to finance and create green job for women and youth in Africa. Damaris Mungai, who leads this program informed the meeting that currently, 74% of women are employed in the informal sector and therefore, support sustainable energy comparatively than men. In a developing world, inclusion of policy in gender barriers will greatly enhance environmental sustainability. To support this development, the Gender and Youth program will continue to generate gender-specific, sex- and age- disaggregated data to ensure women in minority groups’ voices are heard. Further, opportunities exist in credit resources for businesses and enhanced skills through AWEEF.
1.3 Discussions

The presentations led to an interactive discussion session with the women and youth entrepreneurs, trainers and presenters. The main goal for this session was to learn from the women entrepreneurs on the value addition of the micro-grid training and its multiplication effect to the rest of the regions. It was also focused on how to monitor and follow up with the women entrepreneurs after training to align beneficiaries to specific areas of interest. Below are some of the key points of discussions in the meeting that also includes roles and responsibilities of AWEEF:

- Emphasis should be placed on moving from training and enhancement of skills to defining business models that leads to job creation, access to finance and income generation.
- Replicate this training and increase support towards developing technical and business skills in other parts of the continent.
- Through such a training, enhance women entrepreneurs’ participation across the energy value chain. Provide training in developing successful business plans.
- Strengthen the capacity of women organizations who are already in the business of microgrid business in policy and power purchase agreement negotiations with the offtaker and communities.
- Support women entrepreneurs in the whole energy value chain including stove manufacturing sector to better engage with their customers, etc.
- The results of this training including interviews with the selected women entrepreneurs should be widely disseminated to raise awareness of women’s involvement in the African energy sector.

Further, women Entrepreneurs requested AWEEF to intensively follow up on the following actions:

- to continue facilitating partnerships and collaboration among women entrepreneurs across the region.
- to facilitate and establish a Peer-to-peer mentorship network among women entrepreneurs to be kept up to date on matters concerning the energy sector.
- identify, categorize and link major groups and stakeholders with possible partnered accredited institutions like GCF or other micro-finance institutions.
- to assist in removing barriers that hinder women entrepreneurs’ access to affordable finance by promoting innovative financial mechanisms such as developing programmes and projects to be submitted to GCF/GEF.
- to promote an inclusive enabling environment through instruments such as a guarantee facility that allows women to effectively compete in sustainable energy markets.
- AWEEF to organize a women networking event which will bring together entrepreneurs from Africa and other regions.
- AWEEF to create database of women entrepreneurs that should be shared with private sectors including the ministries of energy and other actors to ensure that women entrepreneurs are increasingly engaged across the energy value chain.
UN Environment appreciated RES4Africa for their exemplary micro-grid training offered to their women entrepreneurs and the South-South cooperation that was boosted with other European participants through sharing of best practices. UN Environment therefore expressed their keen interest towards continued future collaborations with RES4Africa to plan, organize and effectively implement capacity enhancement training of this nature that will significantly contribute to the empowerment of African Women entrepreneurs and youth in the energy sector.

Women Entrepreneurs from East Africa Community recognized the importance of the training in terms of its content (enhancement of both technical and business skills) and its value addition to create jobs and generate incomes. UN Environment, UNIDO, UN Habitat and convener of the training (RES4Africa) agreed to join forces:

- To continue and replicate this training to other parts of African countries, and
- Find a way to upscale the training through development of various business models that will create impacts and lead to job creation and income generation. In conclusion, the meeting agreed it was important as a way forward to create business models that aid in value addition as per country energy needs.
- AWEEF to continue its collaboration with UNU-GEST and encourage promising young professionals to apply for fellowships for the Post-Graduate Diploma Programme in International Gender Studies in Iceland.
- It was noted that follow-ups and Impact Assessment by the organizing partners to different countries to ensure working business models and upscaling of Microgrid engagements in the communities will be done.

Way Forward