Improving Energy Access and Livelihoods through Mini-Grids

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Workshop on Mainstreaming and Implementing the Water-Energy-Nexus for Sustainable Development in the African Region

SACREEE
SADC CENTRE FOR RENEWABLE ENERGY & ENERGY EFFICIENCY
Presentation Outlines and Key questions

Outline
- About SACREEE
- The SACREEE Nexus Approach
- Project activities and Implementing partners
- Link to Gender and Energy
- UNIDO NEXUS program

Key questions
- What are the challenges in mainstreaming and implementing water and energy nexus in Southern Africa region?
- What are important factors to tackle with these challenges to ensure water and energy nexus in the region?
- How does the SACREEE NEXUS approach stimulate economic development?
SACREEE – THE SADC CENTRE FOR RENEWABLE ENERGY AND ENERGY EFFICIENCY

• SACREEE was established in 2015 by the SADC Energy Ministers and endorsed by 35th SADC Council of Ministers Meeting -Decision 61 with a mandate to promote
  – increased access to modern energy services
  – improved energy security across the SADC Region
 through the promotion of market based adoption of renewable energy and energy efficient technologies and energy services.

• In 2017, SADC Energy Ministers mandated SACREEE to support SADC Secretariat in monitoring the implementation of the Regional Renewable Energy and Energy Efficiency Strategy and Action Plan (REEESAP).

• SACREEE is established on a sustainable basis through Member States contributions, Donor funding and cost recovery from services offered to projects.

Partnerships are key! The SACREEE core supporters
SHORT-TO-MEDIUM TERM SACREEE FOCUS AREAS

Policy

- Energy Data and Knowledge Platform
- Energy Efficiency
- Energy Access including Clean Cooking
- Nexus – Energy/Water/Agriculture/Health/Gender
- Small Hydro Power Development
- Resource Assessment and Grid Integration
- Energy and Gender Mainstreaming
- Entrepreneurship Support
- Early Stage Project Development

Capacity Building

Knowledge Management

Financing
Programs under implementation

- SADC Renewable Energy Entrepreneurship Support Facility – *with IRENA*
- Renewable Energy Resource Assessment and Zoning study for the Africa Clean Energy Corridor (ACEC) – *with IRENA, SAPP and RERA*
- SADC Program on Gender and Sustainable Energy – *with NREL*
- Development of the SADC Industrial Energy Efficiency Programme (SIEEP) – *with EU TAF*
- SADC regional EE lighting and appliances initiative – *with UNIDO and Sida*
- Regional Status Report on Renewable Energy and Energy Efficiency – *with UNIDO and REN 21*
- SACREEE is partner in the Global Network of Regional Sustainable Energy Centers (GN-SEC) – coordinated by UNIDO
SACREEE NEXUS Approach - Improving Energy Access and Livelihoods through Mini-Grids
The SADC Water, Energy and Food Security Nexus Dialogue Programme

- To enhance coordination in planning amongst the sectors
- To facilitate a nexus framework that would assist in prioritising nexus investment in the region
- Phase 1 (from 2015 to 2018): development of a Regional Nexus Framework, and identification of Nexus projects
- Phase II (2019 to 2022): implementation of identified nexus projects.

collaboration with the Global Water Partnership
More information on the SADC program ➡️ HERE

A Water-Energy-Food (WEF) Working Group is currently formalised, comprising Directorates responsible for Water, Energy, Food Security and Industrialisation at the Secretariat in order to drive coordination – will report annually to respective sectoral Ministers.

The SACREEE NEXUS project directly contributes to the implementation of the nexus framework of SADC.
SACREEE Program on ENERGY-AGRICULTURE-WATER-FOOD NEXUS

Objectives of the Program

1. To promote an **integrated energy-water-food nexus** approach to **energy access** through renewable energy powered and well managed mini-grids;

2. To improve livelihoods and contribute to the attainment of SDGs in remote communities in the SADC Region through pilot projects, and,

3. To establish links with other agencies dealing with energy, water and food nexus including health.

Partners

DFID, SADC Water Desk, Rural Electrification Agencies
The approach

- Identification of Project Sites
- Piloting of Nexus Projects on the Sites
- SADC wide prioritization of NEXUS investment projects
- Policy discourse on NEXUS and its adoption
  - Institutionalisation of sectoral decision making and planning
Project Activities – Focus areas

• The activities are centred around 4 focus areas:
  
  - Integration of renewable energy and water supply technologies
  - Creation of sustainable management structures
  - Creation of sustainable value chains of agricultural produce to markets
  - Institutionalisation of cross-sectoral decision making and planning at SADC level
Project Activities - Mini-grids for livelihood development

- Electricity for other services
  - Agricultural processing - driving machines, packaging, bottling
  - Agricultural post harvest - milling, drying, driving machines
  - Community - lighting, refrigeration, powering devices, etc

- Electricity for water supply
  - On-farm for - irrigation
  - Community - drinking and sanitation
Project Activities

• **Piloting phase:**
  1. Identify remote agricultural based communities (smallholder farmers) without access to energy and perennial water, one each in Madagascar, Mozambique, Namibia, Tanzania, Zambia and Zimbabwe.
  2. Identify energy resources (small hydro, solar or wind energy) that will power the mini-grids.
  3. Design and build mini-grids (energy generation and distribution).
  4. Design and build irrigation systems.
  5. Design and empower management structures for both mini-grids and irrigation systems.
  6. Identify and strengthen value chains of produce to markets for the agricultural projects.

• **Long – term:**
  – Institutionalise the energy-water-food nexus planning and decision making process at SADC level

• **Estimated budget for the pilot phase:** (6 sites *$900,000 = $5.4 million)
SELECTION CRITERIA FOR PILOT PROJECTS

• Phase 1: pilot projects in 6 countries;

• They have been selected based on having Rural Electrification Agencies and Energy Institutes involved with energy access

• Partnerships have already been discussed with these institutions
Some of Key Implementing Partners

- SACREEE
- CRIDF
- FUNAE
- Rural Energy Agency (REA) Tanzania
- Rural Electrification Authority Zambia
- Rural Electrification Agency
- NEI
- The Private Sector

www.sacreee.org
Expected outcomes

• Increased access to clean and affordable renewable energy

• Increased access to clean water services

• Increased agricultural productivity due to access to irrigation facilities

• Improved livelihoods as a result of increased agricultural outputs, markets and incomes

• Cross-sectoral planning and decision making adopted and applied in infrastructure provision
Strong linkages to the SADC PROGRAM ON GENDER AND SUSTAINABLE ENERGY

Objectives of the Program

The program contributes towards increased access to modern, affordable, and reliable energy services, energy security and environmental sustainability by tailoring national and regional policies, projects and programs to the energy needs of men and women.

Specific objectives:
1. Steer and support the development of gender-sensitive policies & strategies.
2. Improve knowledge management, awareness creation and advocacy on gender and energy issues
3. Build and strengthen capacities in gender mainstreaming in energy policies and projects
4. Implement gender-responsive investment and business promotion in sustainable energy development in the SADC region

Partners

NREL, UNEP’s Africa Women Energy Entrepreneurs Framework (AWEEF)
Joint meeting of all African Regional Sustainable Centres took place at the COP23 in 2017 in Bonn on the NEXUS topic.

Joint NEXUS position paper has been agreed.
UNIDO|IIASA|GEF PROJECT
INTEGRATED SOLUTIONS FOR WATER, ENERGY and LAND (ISWEL)

Project outputs

- **Tools and databases** with open access (such as scenario exploration, projections on water, energy and land use requirements), identifying synergies and tradeoffs

- Menus of **possible solutions** (context specific) to achieve Water_Energy_Food security within the context of sustainability and associated investments

- Resources to support **capacity strengthening** both within global and regional case studies in universities, ministries, transboundary organisations and financing institutions, and

- Cutting edge **scientific publications** (peer reviewed evidence) and associated ‘digestible’ communications

- **Technical Cooperation** (spin-off) **Projects** applying the Integrated Water-Energy-Land methodology (Cabo-Verde, South Africa, etc).