



# 2<sup>nd</sup> National Round Table Forum on “Energy accessibility & efficiency in Kenya”

– Report –  
10<sup>th</sup> March 2017



Ministry of Education  
Science and Technology



AFRICAN VIRTUAL UNIVERSITY  
UNIVERSITE VIRTUELLE AFRICAINE  
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| <b>Project</b>      | <i>Enhancing Energy Accessibility &amp; Efficiency through establishing sustainable STI Support National Networks with a regional dimension in East Africa</i> |
| <b>Acronym</b>      | <b>ENRICH</b>  |
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### **ENRICH consortium:**

#### European Union:

- University of Alicante, Spain (Coordinator)
- Glasgow Caledonian University, United Kingdom

#### East Africa:

- African Virtual University, Kenya
- Moi University, Kenya
- Mzumbe University, Tanzania
- Makerere University, Uganda
- Inter-University Council of East Africa, Uganda
- Directorate of Research management & Development, Ministry of Education, Science and Technology, Kenya
- Tanzanian Commission for Science and Technology, Tanzania
- Uganda national council for science and technology, Uganda

### **SUCCEED Network consortium:**

#### European Union:

- University of Alicante, Spain (Coordinator)

#### East Africa:

- Université du Burundi, Burundi
- Moi University, Kenya
- University of Rwanda, Rwanda
- Mzumbe University, Tanzania
- Makerere University, Uganda
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The present document was developed and edited by the partner institutions of the ACP S&T and ACP/Edulink Projects ENRICH '*Enhancing Energy Accessibility & Efficiency through establishing sustainable STI Support National Networks with a regional dimension in East Africa*' and SUCCEED Network '*East African Higher Education Network on Sustainable and Energy Efficient Campus Development*', under the coordination of the University of Alicante (Spain).

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## **FOREWORD**

Energy deficit and energy poverty have become a major obstacle to growth and development in Eastern Africa. One of the major energy issues is price volatility and energy security. Eastern Africa suffers from high prices in the energy market and shrinking natural energy resources. Restricted access to energy resources is hampering the East African region from sustainable development.

Despite the energy emergency in the region, support from research institutes and academia is inadequate to address this situation. However, at the policy level, various countries have stressed the importance of energy access and quality research and innovations. Unfortunately, there is a mismatch between policies, political decisions and societal needs.

### ***ENRICH***

Launched in February 2014, the three-year project ENRICH is an ACP S&T project (contract number FED/2013/330-235) funded by the European Commission, which aims to promote quality science, technology and innovation (STI) support services in Kenya, Tanzania and Uganda, and strengthen co-operation links in the energy sector at national and regional level among academia, researchers, industries and policy makers. Regional co-operation in the energy and environment sectors in East African countries will be promoted by establishing three national networks to support STI and a regional portal with a database of experts. This infrastructure will foster regional dialogue improving the flow of communication between the levels of policy and operation. Managers and researchers will be trained in crucial aspects of innovation management and will replicate these trainings through national support networks. Collaboration and dialogue with policy makers will take place at national (round tables) and regional (supranational conferences) level.

### ***SUCCEED Network***

Launched in October 2013, the three-year project SUCCEED Network is an ACP/Edulink project (contract number FED/2013/320-274) funded by the European Commission, which aims to promote East African university campuses as “living laboratories” for sustainability and energy efficiency, in particular by establishing a sustainable campus development platform to foster collaborative learning and action for energy access and efficiency, with the idea of contributing to solve the problems described above. The project will do this via a set of activities with the objective of improving institutional, academic and cooperation building which should result in a stronger institutional background, an enriched academic offer in renewable energy and energy efficiency, and an increased attractiveness for relevant stakeholders in order to establish new cooperation schemes in the field of energy.

## OBJECTIVES OF THE NATIONAL ROUND TABLE

The National Round Table Forum *Energy accessibility & efficiency in Kenya* was held on 10<sup>th</sup> March 2017 at the Nairobi Campus of Moi University. It was organised in the framework of the ENRICH & Succeed Network ACP S&T and ACP/Edulink projects.

The aim of the event was to bring together the main stakeholders in the field of energy in Kenya (including higher management and researchers from Higher Education Institutions, research & project managers, policy makers, managers from energy industries, experts) to exchange ideas and discuss energy issues at a national level in Kenya.

The **specific objectives** of the National Round Table were to:

- Discuss problems and issues in the field of Energy affecting National Stakeholders, with the idea of identifying where the Higher Education System could contribute with specific services/input.
- Enhance awareness of the real needs of Science, Technology and Innovation (STI) related to energy access and efficiency in Kenya.
- Encourage dialogue and strengthen co-operation links in the energy sector at national level among academia, researchers, industries and policy makers.
- Present the ENRICH & Succeed Network projects and their developments.

## PARTICIPANTS



The National Round Table brought together several relevant stakeholders in the field of Energy in Kenya, including:

| Institution   | Name                 | Role   |
|---|----------------------|--|
| Technical University of Kenya                             | Prof. Jackson Odote  | Professor                                      |
| Moi University  | Prof. Simiyu Sitati  | Dean   |
|   | Prof. Jamin Masinde  | Associate Professor                            |
|   | Prof. Edwin Ataro    | ICT Director                                   |
|   | Dr. Charles Nzila    | Lecturer                                       |
|   | Prof. Ann Nagulu     | Commission for University Education            |
|   | Ms. Irene Chepkoech  | ICT Operations and Maintenance                 |
|   | Prof. Loice Maru     | Director, Moi Nairobi Campus                   |
|   | Ms. Peninah Kibushi  | Administration                                 |
| National Commission for Science Technology and Innovation | Dr. David Otwoma     | Chief Scientist                                |
| African Virtual University                                | Mr. Tom Ojwang       | Research Officer                               |
| Jomo Kenyatta University of Agriculture and Technology    | Dr. Margaret Gichuki | Research Fellow                                |
| DRMD, Ministry of Education                               | Dr. George Ombakho   | Director, Research                             |
|   | Dr. Eric Mwangi      | Deputy Director, Research                      |
|   | Mr. Jacob K. Njagih  | Assistant Director, Research                   |
| Mandera County Government                                 | Abdi Hassan Abey     | Research Manager- Mandera County Senate Office |

## ROUND TABLE

**DISCUSSION POINTS: 'Round Table 1: Contribution of the Higher Education system to solve issues in the field of Energy affecting National Stakeholders in Kenya'**



Moderator: Dr. Charles Nzila, Moi University

Panellists:

1. David Otwoma – Chief Science Secretary, National Commission For Science Technology and Innovation
2. Dr. Margaret Gichuki – Researcher and Lecturer in environmental management and climate change at the Insitutue of Energy and Environmental Technology, Jomo Kenyatta University of Agriculture and Technology
3. Prof. Jackson Odote - Associate Professor, School Physical Sciences and Technology, Technical University of Kenya

**Dr. Charles Nzila** –Summarized some of the recommendations as

- Increase interaction between higher education institutions and the industry
- Review of higher education institutions curriculum



- Higher Education Institutions encouraged to source funding both at National and international levels
- Improved logistics and infrastructure in improving, facilitating and convening energy access and efficiency meetings

**Dr. David Otwoma** presented the National Commission for Science, Technology and Innovation whose role is to advise the Government and regulate matters of Science, Technology and Innovation. The Commission has been providing funds for research, masters, PhDs, research chair (5 years) although this role has now moved to the newly formed National Research Fund. The commission works closely with organizations tasked with generating and regulating the energy sector i.e. Kenyan Regulating Commission and Rural Electrification Entity. The main sources of energy in Kenya are geothermal, petroleum, solar and hydro (problematic due to unreliable rainfall). Kenya has also developed the 2009-2029 Least Cost Power Development Plan which lays out the best way to develop affordable energy. For this, economic factors must be considered carefully in order to align business, government and lower cost generation facilities. As previously reported during the National stakeholder forum, NACOSTI has Renewable Energy (RE) as a priority in research funding with an example being the National STI Call on RE and engineering themes in 2011/2012. NACOSTI closely with the Ministry of Energy and other closely related agencies and organizations hold regular expert consultations for a review and update the Kenyan energy STI priorities.

**Dr. Margaret Gichuhi** stated that the Institute of Energy and Environmental Technology in Jomo Kenyatta University offers energy courses in a range of study programmes, and is working to emphasise energy more in their various degrees, particularly in their Environmental Impact Assessment programme and with regards to applications in Agriculture. Researchers' at the institute are encouraged to develop proposals for funding under the National Research Fund. Other funding opportunities that the institute explores are the international funding opportunities like under Japan International Corporation Agency (JICA).

**Prof. Jackson Odote** from Technical University of Kenya Stated that it is necessary to develop skills based curriculum in order to increase employability of graduating students. He insisted on the need to involve industry while developing the curriculum.

***DISCUSSION POINTS: 'Round Table 2: STI support services on energy access and efficiency and real needs in Kenya'***



**Moderator:** Prof. Edwin Ataro, Professor and Director, ICT, Moi University

**Panellists:**

1. Prof. Simiyu Sitati – Dean, Moi University
2. Dr. David Otwoma – Chief, National Commission for Science, Technology and Innovation (NACOSTI), Kenya
3. Dr. Eric Mwangi – Deputy Director, Ministry of Education, Science and Technology

**Prof. Edwin Ataro** gave a brief outline of the ENRICH and SUCCEED projects and their objectives.

**Prof. Simiyu Sitati** stated that Moi University has a policy in place which requires stakeholders to be involved while preparing the curriculum. He encouraged other universities to have guidelines that compel them to involve stakeholders. He noted the gap that exists in Kenya in the area of petroleum industry.

**Dr. Eric Mwangi** stated that the Ministry of Education, Science and Technology has been involved in the implementation of the 8<sup>th</sup> Africa –Europe partnership on Science, Technology and Innovation. He noted that the last meeting on energy was held in Algeria in 2016. Mentioned that it is important to consider what Energy can do in solving society challenges and resilience, and that it is important to lobby for funding to further develop energy projects and networks. Ongoing Bilateral cooperation with European Member states. European

Commission include programs under Horizon 2020 under the societal changes topics and Marie Curie Actions.

**Dr. David Otwoma** stated that the University of Nairobi was running two programs on solar energy. One programme which was ongoing is the professionals on solar PV which involves basic, intermediate and advanced levels. The other course was on advanced solar grid installations. He noted that Strathmore University was a classic example on solar installations and is even generating enough energy for being sold to go to the national grid. He noted that the biggest challenge was on solar maintenance in the region especially due to dust.

***Presentation of the STI Support National Network: East Africa Energy Access and Efficiency Network (EAENet) - Prof. Edwin Ataro***

The main objectives of the Network were outlined as:

1. To address the scientific, technological and innovation divide on energy access and efficiency among East Africa Community (EAC) member states.
2. To strengthen STI framework in EAC countries to enable creation, update and use of scientific knowledge in energy access and efficiency.
3. To enhance the use of STI in energy access and efficiency as a key enabler for poverty reduction, growth and socio-economic development.
4. To benchmark with the industrialized countries in addressing energy access and efficiency.

From the presentation of the network goals and potential benefits the following issues were raised:

1. Issues of initial sustainability plan.
2. Network can enhance opportunities on Europe – Africa cooperation in science and technology
3. National Commission for science and Technology would be ready to join and subscribe

## CONCLUSIONS AND RECOMMENDATIONS

- From the participants' contributions, it was evident that there are already a number of expert groups and initiatives within the universities and the other national organizations and private sector to carry out research and commercialization, with a priority on the Renewable Energy agenda.
- There is a need to set up or update the existing data base on Renewable Energy experts and the various ongoing programs. A coordination point as well as funding would be necessary to carry out this activity.
- There are a variety of funding initiatives supporting Renewable Energy research among HEI. There is a need to link up all these funding initiatives through a coordinated effort. A national university or entity is required and perhaps EAENet could be the appropriate initiative to propel this process.
- In the next few months, clear strategies to support EAENet need to be identified. The EAENet should be supported regionally as well as from other international cooperation partners and agencies.

## ANNEXES

The agenda can be downloaded at:

[https://www.dropbox.com/s/gxo5eoo09dj739v/ENRICH%20%26%20SUCCEED%20AGENDA\\_2nd%20National%20Roundtable\\_Nairobi.pdf?dl=0](https://www.dropbox.com/s/gxo5eoo09dj739v/ENRICH%20%26%20SUCCEED%20AGENDA_2nd%20National%20Roundtable_Nairobi.pdf?dl=0)