

**FIVE YEARS OF MATERIALS  
SCIENCE AND SOLAR ENERGY  
FOR EASTERN AND SOUTHERN  
AFRICA (MSSEESA) NETWORK**

**J. Buchweishaija, M. Samiji, & T. Otit  
MSSEESA, University of Dar es Salaam,  
P.O. Box 35063, Dar es Salaam,  
Tanzania.**

# Presentation outline

- **Background:**  
Establishment and Membership
- **Rationale/Justification**
- **Mission and Vision**
- **Objectives**
- **Strategic development issues**
- **Organizational structure**
- **Activities for the past five years**
- **Experiences/Challenges**
- **Conclusion**

# Background

## **Establishment**

The network acronymed MSSEESA, was formally established on 9<sup>th</sup> October 2004 in a meeting held at Makerere University and attended by delegates from all materials science and solar energy research groups in the Eastern and Southern African sub-region with the exception of Addis Ababa University.

# Membership

Membership is open to materials science and solar energy research groups in the region. Currently the network has five nodes, from 4 Chapters:

- University of Dar es Salaam (Departments of Physics and Chemistry), Tanzania Chapter.
- Moi University (Department of Physics), Kenya Chapter.
- University of Nairobi (Department of Physics), Kenya Chapter.
- Makerere University (Department of Physics), Uganda Chapter
- University of Zambia (Department of Physics and Chemistry), Zambia Chapter.

## Rationale/Justification

- The Eastern and Southern Africa region has several University Departments that are engaged in teaching and research activities in materials science and Solar energy among other fields.
- These Departments through their respective research groups already had informal cooperation through the coordination of IPPS, Uppsala Sweden.

## **Situational Analysis revealed the following common issues:**

- Shortage of Academic Staff to conduct postgraduate training, supervision and research;
- Un-sustainability of research activities after donor-funded project(s) has come to an end;
- Inadequate funding from Government that has affected performance in research activities
- Poor gender balance amongst students and staff in science disciplines.

The Network could be used to address the Common weaknesses in the sub-region and act as a platform for strengthening:

- Sharing of research facilities;
- Joint offering of courses/programmes;
- Student/staff exchange;
- Joint supervision of postgraduate students;
- Information exchange and provision;
- Organization of conferences, workshops, colleges, etc

# Mission of MSSEESA Network

The network is an international partnership aiming at enhancing the development and application of science in the area of Materials Science and Solar Energy in the Eastern and Southern Africa region and to foster efficient and effective use of human and infrastructure capacity in advanced research in these areas as well as promoting socio-economic and industrial development in the sub-region.

# Vision

The vision of the Network is that MSSEESA becomes a laboratory of ideas or a think-tank to assist member institutions in formulating strategies and directions regarding Materials Science and Solar Energy research and related activities in the sub-region.

## General Objective

To enhance human and infrastructure capacity in advanced research in materials science and solar energy. Thus MSSEESA aims at strengthening the research facilities & activities and Postgraduate Training programmes by complementing activities of Materials Science and Solar energy in the various institutions of the sub-region.

## Specific objectives

- To assist countries in the sub-region to build and sustain a critical mass of credible scientists through postgraduate training and research in the areas of materials science and solar energy that are of critical importance of sustainable socio-economic development.
- To coordinate activities of materials sciences and solar energy in the various universities in the sub region;
- To attract talent and induce competent young scientists with a gender equity distribution to work in their own countries

## Specific objectives cont...

- To provide avenues for international cooperation and links in areas of Materials Science and Solar energy;
- To promote joint research ventures amongst the members of the Network;
- To assist in the dissemination and exchange of information
- To implement cost effective utilization of available resources in the sub-region.

**To achieve the objectives of the Network the following strategic developmental issues have been identified:**

- Strengthening joint postgraduate training and expanding MSc and PhD programmes. Thus collaborating institutions to harmonize the postgraduate curricular as well as policies related to the development and approval of postgraduate programmes.

## Strategies cont...

- Establishing regular and flexible technical training courses linked with equipment manufacturers. It may be cost-effective to conduct collective training rather than to sponsor several individual trainings at scattered different locations.
- Broadening intake of participants, the scope and duration of sub-regional courses (e.g., *Thin Film Technology College*) to cover other related topics;

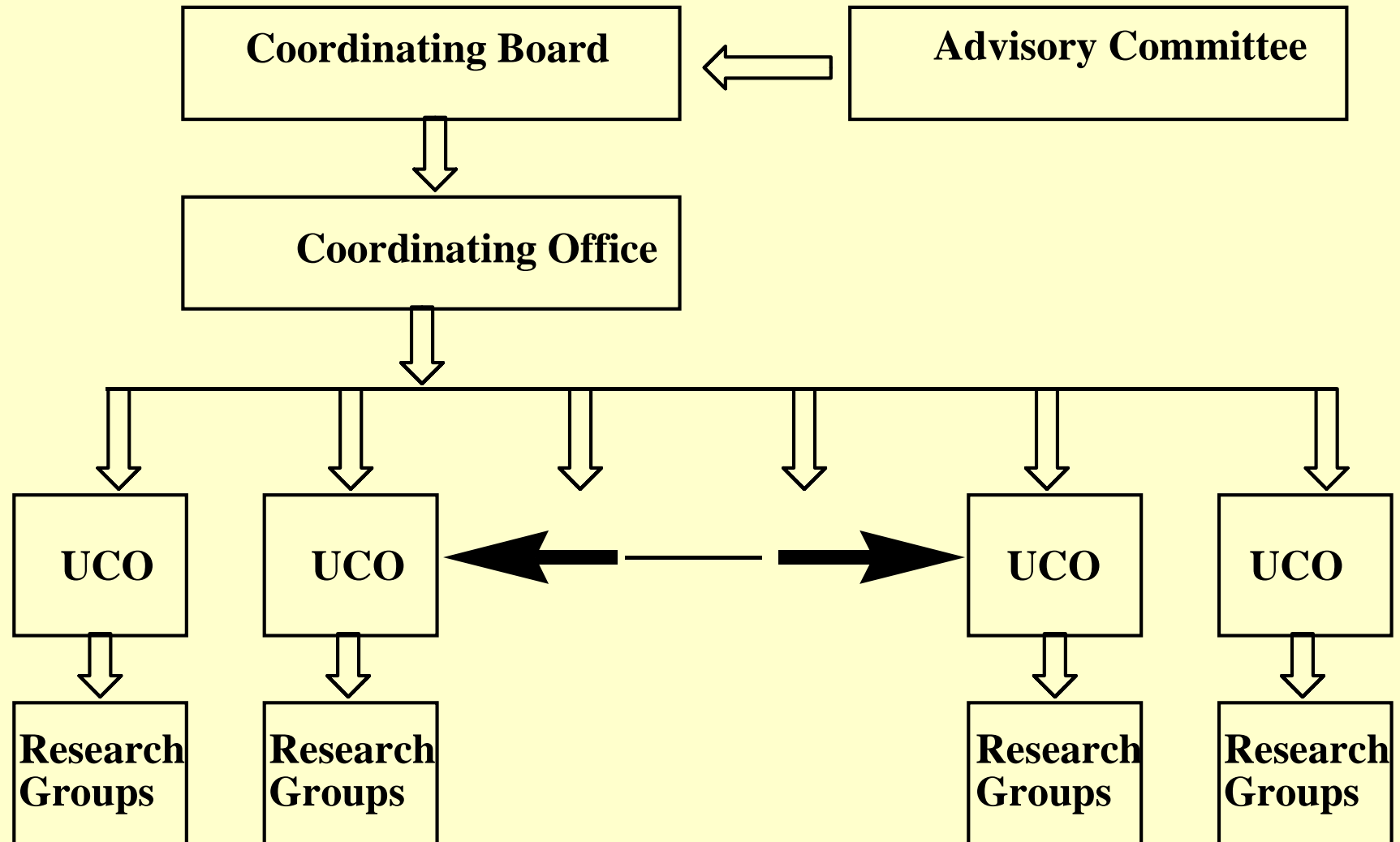
## Strategies cont...

- Auditing the resources that can be shared, in terms of equipment, exposure, experience, personnel and research interests/activities. This can be facilitated through exchange of students/ researchers in the region. This fact also addresses the shortage of academic staff;

## Strategies cont...

- Establishing a platform for dissemination of information amongst those working in the field of Materials Science and Solar Energy in the region.
- Introducing tailor-made multi-disciplinary M.Sc. and Ph.D programmes.

# Organizational Structure



# ACTIVITIES FOR THE PAST FIVE YEARS

## ➤ **REGISTRATION OF MSSEESA CHAPTERS:**

- MSSEESA Tanzania Chapter officially registered by the Tz Registrar of Societies on 11<sup>th</sup> May 2006 and Launched on 24<sup>th</sup> July 2006.
- MSSEESA Zambia Chapter officially registered on 16<sup>th</sup> November 2006 and Launched on 23<sup>rd</sup> March 2007.

- MSSEESA Kenya Chapter and MSSEESA Uganda Chapter are in the final stages of registration.
- Registered chapters have already signed MOU with their universities.

## ➤ **STRATEGIC PLAN DEVELOPMENT**

- The network has already prepared its five years strategic plan which will guide the network's activities.

## ➤ **COLLEGE ON THIN FILM**

- MSSEESA Tanzania chapter conducted the 9<sup>th</sup> College on Thin Film Technology from 24<sup>th</sup> July to 4<sup>th</sup> August 2006.
- The college attracted participants from all nodes including others Universities from Rwanda, Lesotho and Malawi.
- This activity was funded by University of Dar es Salaam, ISP, Uppsala Sweden and ICTP.

## ➤ **INFORM WORKSHOP**

- MSSEESA organized four days Training workshop on literature search for young scientists in Physics and Mathematics at University of Dar es Salaam, Tanzania from 6<sup>th</sup> to 10<sup>th</sup> August 2007.
- Facilitated by experts from Uppsala University, Sweden.
- The workshop training attracted participants from Tanzania, Kenya, Uganda, Ethiopia, Rwanda and Zambia.
- Financed by ISP.

## ➤ **RESEARCH PROPOSAL WRITTING**

- The Network submitted a grant proposal to Carnegie-IAS Regional Initiative in Science and Education (RISE) - 2008. It was not funded.
- The Network also submitted a grant application proposal to IPPS for funding, which was presented to the ISP reference Group meeting in Addis Ababa, October 2008.

It was granted SEK 200,000 for year 2009.

## ➤ **NETWORK MEETINGS**

- The Network held its first Annual Coordinating Board meeting on 4<sup>th</sup> April 2009 in Dar es Salaam, Tanzania as per constitution.
- The meeting endorsed establishment of the first Coordinating office under the Tanzania chapter and Prof. R.T. Kivaisi was endorsed as a chief coordinator of the network for the triennium starting 1<sup>st</sup> January 2009.

## ➤ **HARMONIZATION OF POSTGRADUATE PROGRAMMES**

- The network undertook a harmonization of Masters programme in Physics as the first budgetary activity for year 2009.
- Committee Members met in Nairobi for 2 days from 24-26/07/2009.
- This activity is in progress and the outcome will be presented at the next extraordinary meeting scheduled on October 16, 2009.

## ➤ **INTERNATIONAL CONFERENCE**

- The network will hold the conference in Materials Science and Solar Energy in October between 13<sup>th</sup> – 15<sup>th</sup> 2009.
- Preparation is in the advanced stage.
- The conference will attract about 60 participants from the region.

# EXPERIENCES AND CHALLENGES

## **Funding Problem:**

- Currently we have enough candidates for postgraduate studies but no funds to support training.
- Change of Sida policy some chapters like Tanzania and Uganda no longer get support to sustain research activities.

# Conclusions

## Future development

- Development of Research proposals to attract funding.
- Implementation of the network's strategic plan.
- Development of Outreach programmes.

**THANK YOU**

**ASANTE SANA**