

Promising Model for Promoting Quality Research and Education in Africa:

Regional Initiative in Science and Education (RISE) Model

Africa Forum on Science, Technology and Innovation

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Prof. Mohamed H.A. Hassan

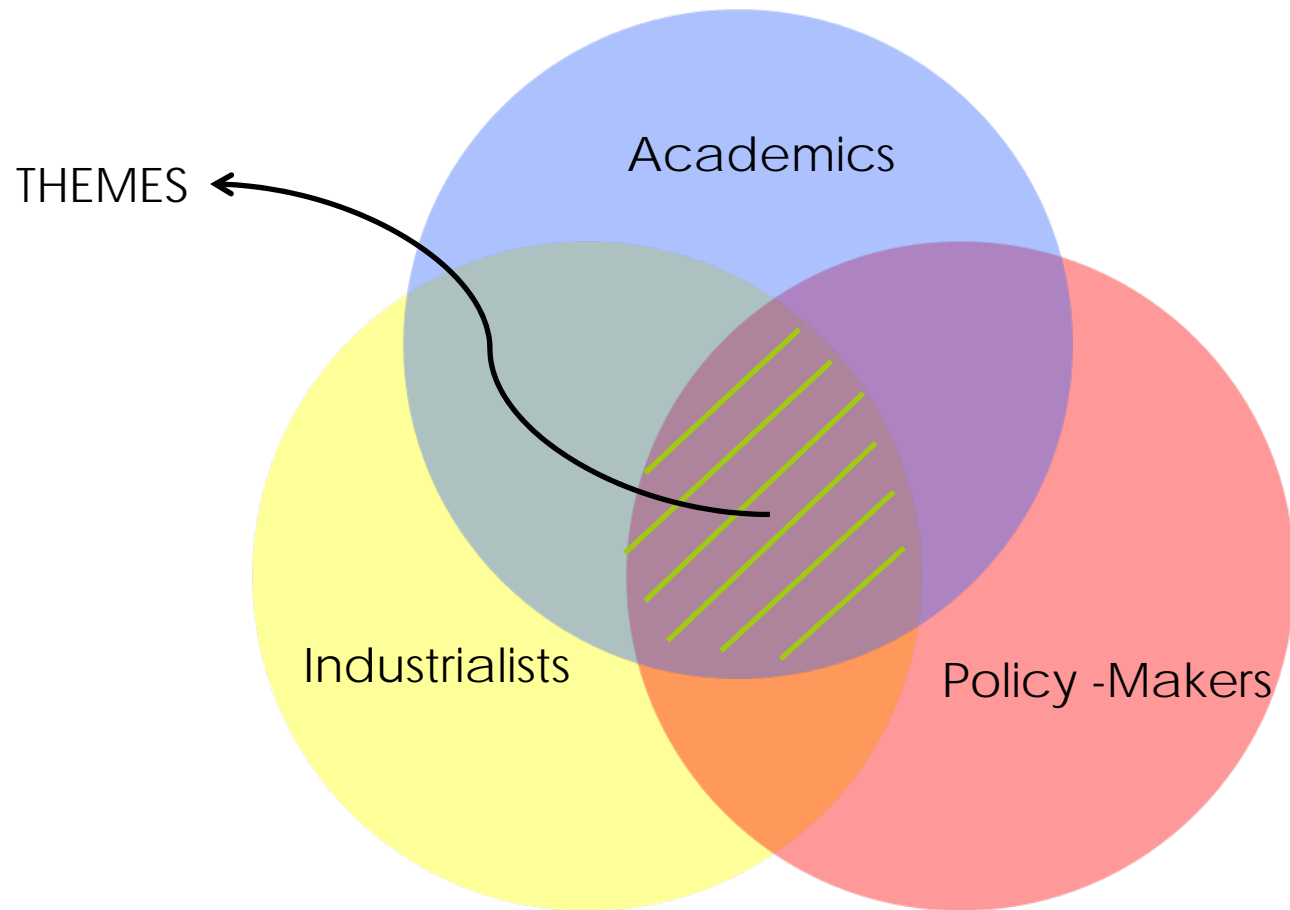
RISE Goals: *Three interrelated goals*

- Increase number and quality of academic staff in African universities: training and retaining a new generation of **problem-solving** S&T research leaders in African universities
- Build sustainable capacity of African universities in providing quality postgraduate education to young talented African scientists
- Build Africa's capacity to apply STI to generate wealth and solve real-life problems

RISE Networks

- Selection of topics
- Selection and nature of networks
- Funding and administration
- Early results
- Benefits
- Expansion and sustainability

Selection of Topics



Selection of Topics

- Planning workshop (Nairobi 2007): consultation with various stakeholders



Selection of Topics

- Materials science
- Chemistry (natural products and biochemistry)
- Mathematics (modeling)
- Informatics, instrumentation, software engineering
- Energy (Renewable)
- Water (Management and Quality)

RISE Networks

- Selection of priority areas
- **Selection and nature of networks**
- Funding and administration
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Selection and nature of networks

- Open call for proposals in selected themes
- Merit-based, competitive selection by international committees of renowned scientists, in two stages : concept notes and fully developed proposals
- Eligible proposals are networks of competent research and training institutes: each involving at least 3 different universities in 3 different countries in sub-Saharan Africa
- Each selected network must have a clear strategy for training a good number of MSc and PhD students as well as a joint research plan for academic staff and students. Each network member (node) is expected to take part in implementing the strategy

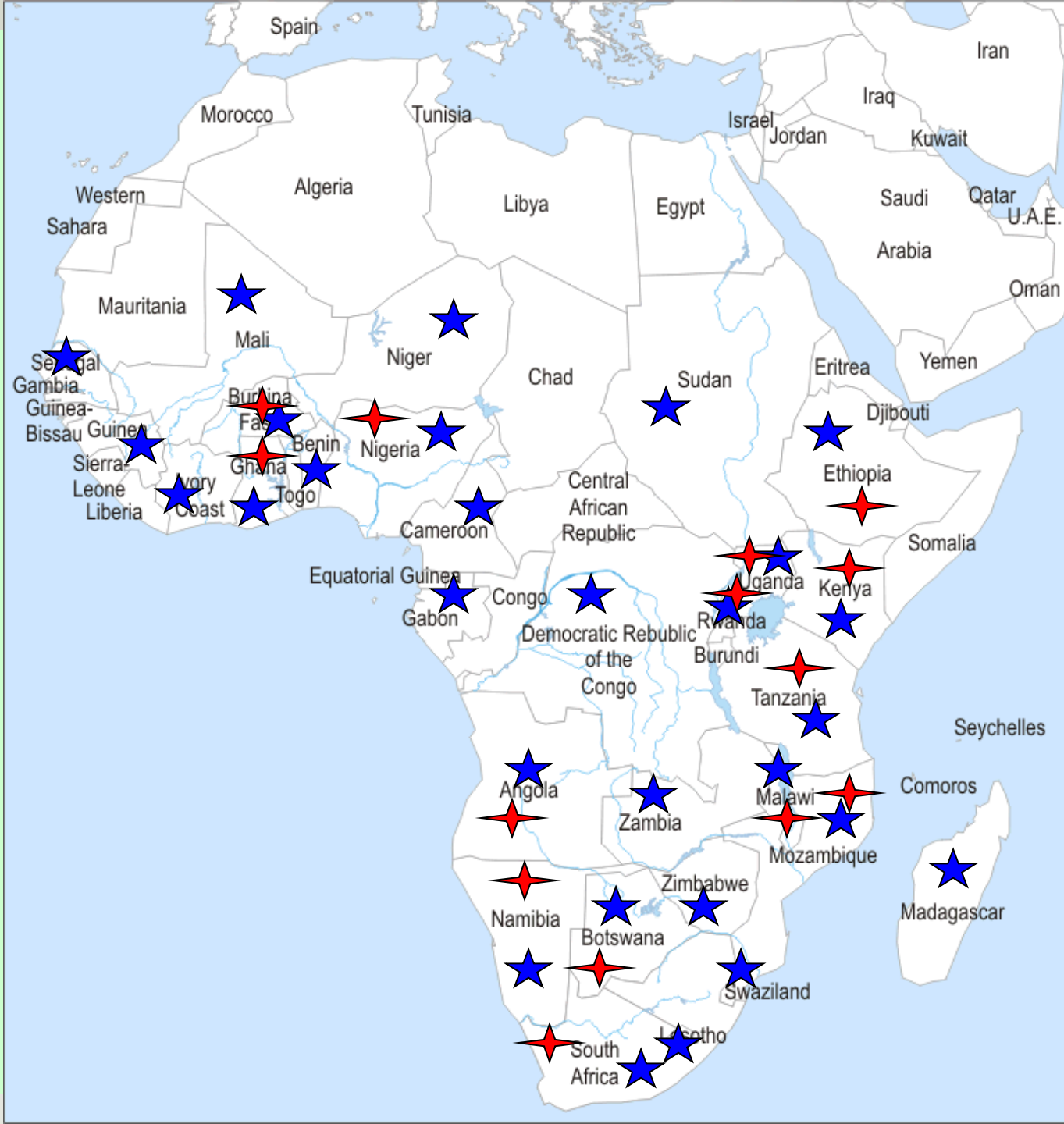


48 concept proposals
involving 29 countries*



12 full proposals
involving 14 countries*

*Symbols indicate
countries, not specific
cities.



5 Networks selected:

AMSEN ★
(SA, Botswana, Kenya, Namibia, Nigeria)

AFNNET ✦
(Uganda, Kenya, Tanzania)

SABINA ✨
(Malawi, Namibia, Tanzania, SA)

SSAWRN ◆
(SA, Botswana, Mozambique, Uganda)

WIORISE ⬠
(Tanzania, Mozambique, SA)

(Symbols indicate countries, not specific cities.)

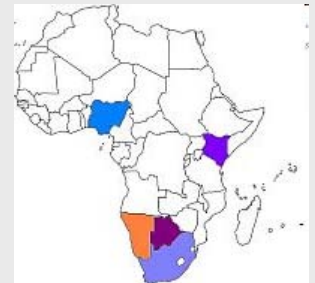


RISE - AMSEN: African Materials Science and Engineering Network

- Academic Director:
Lesley Cornish, University of the Witwatersrand, South Africa

Other participating institutions:

- University of Namibia
 - University of Nairobi, Kenya
 - Federal University of Technology, Akure, Nigeria
 - University of Botswana
- AMSEN focuses on developing the skills in materials science and engineering needed to develop and add value to the extensive mineral deposits in southern Africa.



RISE - AFNNET: African Natural Products Network

- Academic Director:
John David Kabasa, Makerere University, Uganda

Other participating institutions:

- University of Nairobi, Kenya
 - Sokoine University, Tanzania
- AFNNET seeks to develop Africa's rich biodiversity into a natural products industry of social and economic significance through coursework and research in engineering, biochemistry, environmental science, pharmacology, economic development, and nutrition.



RISE - SABINA: Southern African Biochemistry and Informatics Network

- ▣ Academic Director:
John Saka, University of Malawi

Other participating institutions:

- ▣ University of Namibia
 - ▣ University of Dar es Salaam, Tanzania
 - ▣ University of Pretoria, South Africa
 - ▣ University of the Witwatersrand, South Africa
 - ▣ CSIR, South Africa
 - ▣ Tea Research Foundation of Central Africa, Malawi
- ▣ SABINA works with natural products that have the potential to increase food security, public health, and value-added exports. Its research emphasis is on biochemistry and chemistry of natural products.



RISE - SSAWRN: Sub-Saharan Africa Water Resources Network

- Academic Director:
Denis Hughes, Rhodes University, South Africa

Other participating institutions:

- Eduardo Mondlane University, Mozambique
 - University of Botswana
 - Makerere University, Uganda
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- SSAWRN focuses on the most pressing water issues of sub-Saharan Africa, including rising use, declining quality, insufficient research and teaching capacity, inadequate weather stations, and the likelihood of increased variability of water supplies associated with future climates.



RISE - WIO: Western Indian Ocean Regional Initiative

- Academic Director:
Margareth Kyewalyanga, University of Dar es Salaam,
Tanzania

Other participating institutions:

- Eduardo Mondlane University, Mozambique
 - University of Cape Town, South Africa
 - University of Mauritius
- WIO provides research and training in skills associated with the utilization of coastal and marine resources and protection of the coastal and marine environment.



RISE Networks

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Funding and administration

- Funded by Carnegie Corporation US\$5M grant 2011-2013
- Leveraged US\$2M from other sources
- Each network receives US\$800K over three years; majority for PhD/MSc training
- Each network has its own secretariat at one member university; substantial autonomy on academic, administrative and financial management
- Coordination and general administration provided by Science Initiative Group (SIG) at IAS , Princeton.
- Africa-based secretariat: Agreement signed with AUST-Abuja

RISE Networks

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- Selection and nature of networks
- Funding and administration
- **Early results**
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Early results

- Completed: 20 MSc; 6 PhD
- Currently enrolled: 40 MSc; 59 PhD
- Workshop proceedings, conference papers, journal publications
- At least 5 patent applications submitted

Early results

	Currently Enrolled		Completed		Total
	MSc	PhD	MSc	PhD	
AMSEN	7	14	3	0	24
AFNNET	12	13	8	4	37
SABINA	4	9	3	1	17
SSAWRN	11	13	1	1	6
WIO	6	10	5	0	21
Totals	40	59	20	6	125

RISE Networks

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- **Benefits**
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Benefits

- Acquisition of major scientific instrumentation with pooled funds
- Improved collaboration among universities; promoting a culture of co-supervision and quality assurance.
- Establishment of joint MSc curriculum in natural products involving 3 universities (Kenya, Tanzania, Uganda)
- Encouraging stronger institutions to support weaker ones
- Enabling students to gain skills not available at home and strengthening their capacity to conduct top quality research in an African environment

RISE Networks

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- **Expansion and sustainability**

Expansion and sustainability

- More universities per network
- More networks (biological sciences)
 - Competitively selected
 - Targeted fields
 - Targeted geographic areas (e.g. west and north Africa)
- Links with non-African universities
 - Visiting professors
 - Students and staff exchange
- **Product development and commercialization**
- African co-secretariat: AUST-Abuja
- Financial support: African and non-African governments, AfDB, World Bank, AU, ...



Thank you

Mohamed H.A. Hassan
hassan@ictp.it

Further information: www.ias.edu/sig