THE NORTH-SOUTH CO-OPERATION IN BUILDING S & T CAPACITIES IN DEVELOPING COUNTRIES

THE CASE OF KIGALI INSTITUTE OF SCIENCE, TECHNOLOGY AND MANAGEMENT (KIST) IN RWANDA

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THE PRESENTATION

- Introduction
- Background on Rwanda
- KIST – The Beginnings
- KIST - Six years on
- Barriers to building S & T capacities in the South
- Possible Interventions from the North
- Conclusion

INTRODUCTION

- The world is changing at the rapid pace driven by S & T
- S & T revolution is not yet making a significant impact in the South
- Business as usual will leave an ever-growing gap between the North and the South. Therefore the need to build S & T capacities in the South
- Universities can play a key role in this especially thru North-South cooperation. This needs to be supported

RWANDA – LAND OF A THOUSAND HILLS

- Land area 26,340 sq.kms (Wales (UK) 20,761,Scotland (UK) 30,414, Maryland (USA) 25,500))
- Location 120km South of Equator
- Population approximately 8 million
- Population Density = 400+ per sq.km
- Pop. Growth rate = 3%
- 54% Female & 46% Male
- Capital City: Kigali
- Kinyarwanda, English, French, Swahili

The Beginnings

From Military to Education

- KIST established Nov. 1997 using facilities of former Military Academy
- Initial funding by UNDP, Japan & The Netherlands thru UNDP Trust Fund

KIST……SIX YEARS ON

- *Initially 209 students, now 3,500*
- *Graduates todate= 758 (diploma) and 489 (Degrees)*
- *Additional built area=18,000 m2*

Faculties

- Technology (for Diploma & Degrees)
- Science (Service)
- Management (for Diploma & Degrees)
- School of Languages/Studies (Service)
- Centre for Continuing Education (for Certificates, Diploma & Degrees)

Programme features

- Computer skills for all
- Bilingual Training (French & English) for all
- Practical training in labs & workshops
- Industrial attachment
- Community Attachment
- Project work

Practical Training in workshops & labs

New Engineering Labs

Students' Projects

Simple rural roads and bridges

People must cross but there was no bridge…

….Foot bridge under construction

Cutting the ribbon (April 2002)
First pedestrian suspended bridge in Rwanda

The sick can now reach hospital

Other staff and students projects under the Centre for Innovation and Technology Transfer (CITT)

- Energy and Environmental Management
- Water Supply Technologies
- Crop post Harvesting and Storage
- Sanitation and Waste Management
- Low Cost Housing
- Rural Transportation

Energy and Environmental Management

- Over 90 % of the people depend on wood energy
- Forests are shrinking
- The focus is on efficient utilization of renewable energy

At Family Level

The Solar Cookit
(US $3)

The Rocket Cookstove
(US $2)

Hay Basket (US $2)

Efficient Community Cooking Stoves

Briquettes Technology

1 Sack of Charcoal = $5,1 Sack of Briquettes = $1

Year 2001 - KIST wins award – The Bread Oven

- 42 World-wide organisations entered Ashden awards
- KIST entered Improved Fuel Efficient Oven
- KIST wins top award

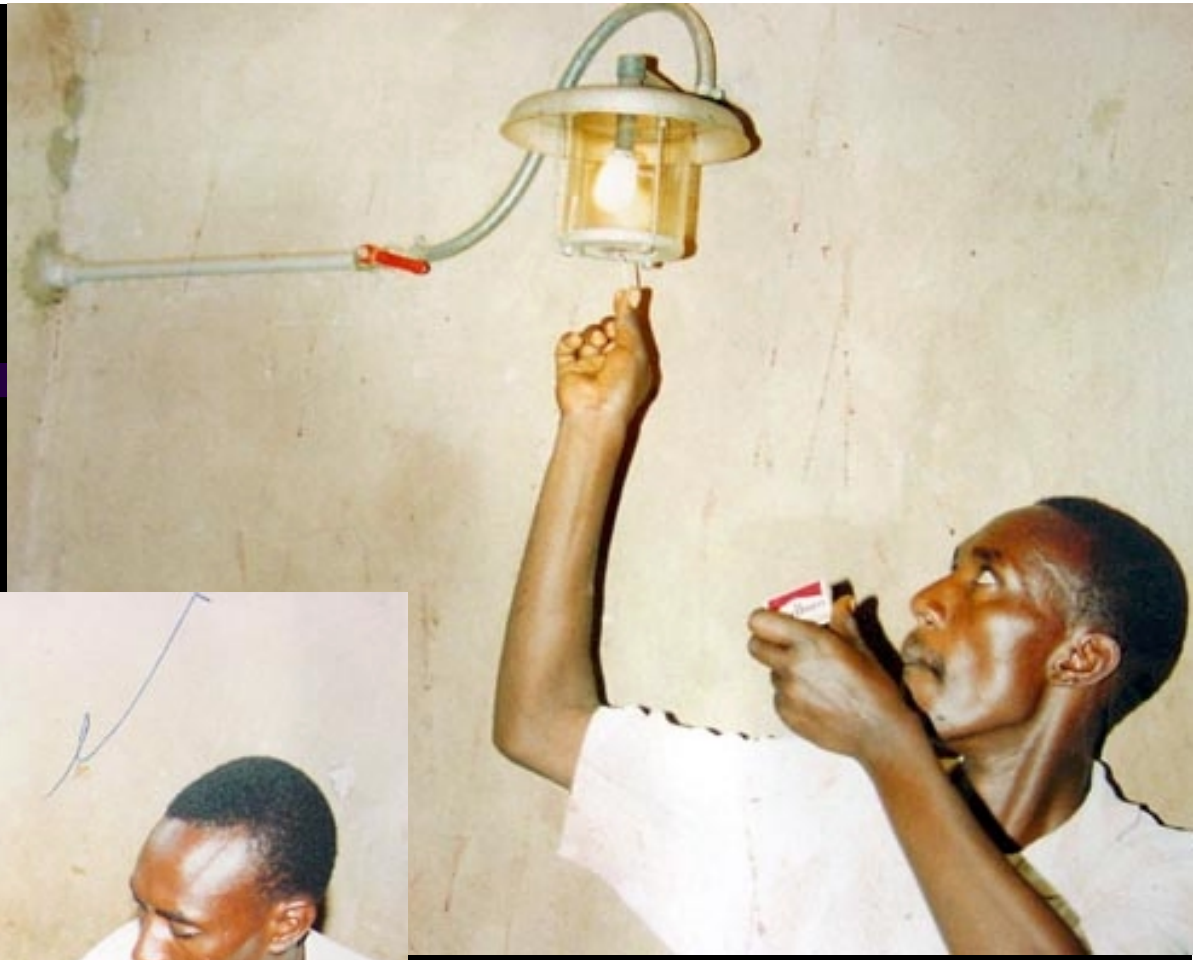
Princess Anne presents award (Feb. 2001)

Cyangugu Prison, Biogas Production

Cyangugu Prison, Biogas cooking

Biogas production for families

Biogas Cooking & Lighting



ICT Capacity Building at KIST

- Department of Computer Engineering & Information Technology for Diplomas & Degrees
- African Virtual University Programmes
- ICT Technician Training Under DFID:

- Software development and management (4 months)
- Networking (4 months)
- Hardware maintenance (4 months), etc

d) ICT Regional Training & Research Centre under the World Bank's Development Gateway Foundation

ICT Technician Training

Capacity Building Through Entrepreneurship Development

- Entrepreneurship Development Centre at KIST
- Provision of start-up funds under Entrepreneurship Development Fund (EDF)
- Incubator facility with sheds for rent, mentoring services and common facilities for workshops, etc

Barriers to building S & T capacities in the South

- Lack of S & T policy at National Level
- Lack of trained and experienced personnel
- Brain Drain
- Brain – in – the – Drain
- Training and Research institutions not well developed or supported
- Low R&D investment
- Poor access to ICT

Possible Interventions by the North

- Help developing S&T policies at National level
- Support accelerated training of S&T personnel
- Consider proper retention schemes for skilled personnel
- Increase efforts to provide better access to ICT

Possible Interventions by the North (Cont..)

- Establish and promote national and regional Centres of Excellence in S & T
- **Support universities as they play a key role in building S & T capacities**
- **Develop and support North-South co-operation between universities**

Conclusion

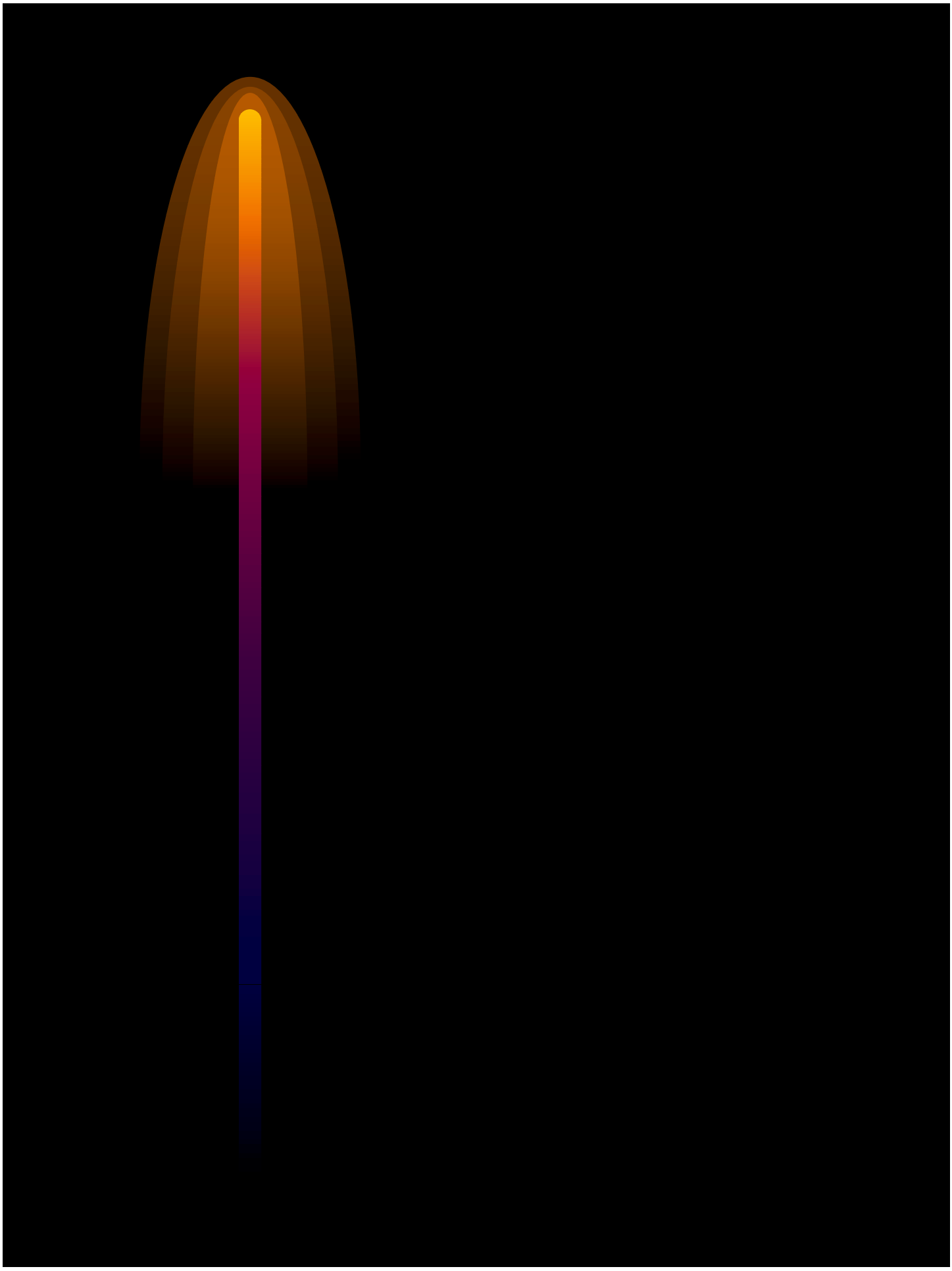
The North can play a significant role in strengthening S & T capacities in the South. The South has also a lot to offer to the North particularly in research co-operation.

Murakoze.....

Ahsante

Merci Beaucoup

Thank you!



Solar water heating system in operation, washing for the sick, Gikonko Hospital-Butare

Entrepreneurship Development thru Cottage Industries at KIST

Entrepreneurship Development thru Cottage Industries at KIST (Ctd)

Variety of Programmes

- Full-time – **for Diploma and Degrees**
- Part-time – **Incl. AVU and Distance Learning**
- Short-term – **under “In Service Training”**
- Outreach Programmes – **Under CITT and Cottage Industries**

People can now get to the market

Some challenges facing Rwanda

- Highest population density in Africa (up to 1000 per sq. km)
- High population growth rate (3%) – Population to double by 2020
- Predominantly agricultural economy-based on subsistence farming with no mechanisation.
- Working population (91%) are involved in agriculture, 7% in the service sector and 2% in the industrial sector

Cont..

- Depends mainly on coffee and tea for export earnings.
- Widespread poverty = 59% below poverty line
- Access to safe water = 44% (Note – over 80% of diseases in Rwanda are waterborne)
- Address severe environmental degradation
- Serious human resource problem in all skills areas especially after 1994 Genocide