International Partnership
Teaching, Learning and Education

Challenges and Best Practices!!
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OUTLINE

• History of Education/Partnership
• Current Trends
• Examples
• Challenges
• Way Forward /Expectations
# History of Modern Education in Ethiopia

## Pre-1941
- **1926**: Beginning of national formal education system (<100 yrs)
- **1940**: Addis Ababa Technical School established
- **1941**: Establishment of Ministry of Education and Fine Arts (before 75 yrs)

## 1942 - 1974
- **1949**: Cornerstone laid for 1st Ethiopian university (HSIU)
- **1952**: Imperial College of Engineering opened
- **1954**: Ethio-Swedish Institute of Building Technology established
- **1957**: Second Ethiopian university (Asmara) inaugurated
- **1958**: College of Agricultural and Mechanical Arts (Alemaya) established
- **1963**: Bahir Dar Technical School established
...Civil Eng. Education

1974 - 1991

• Haromaya transformed to University
• 1987 Arba Minch Water Technology Institute (AWTI) Established (Now AMU)

Post 1991

• Extensive Expansion Basic/Elementary/Second/Higher Education
• Recently, 32 Universities (8 more 40 could become 50)
• Result of 70/30 (60/40) policy
History of Partnership

• Early to mid 20 century it was almost international even for primary and secondary /West-India.../
• Direct teaching and funding support and linkage with foreign government and universities until beginning of seventies
• Students were going abroad for even undergraduate programs / of course for MSc and PhD (rare)
• Ethiopianization Started from mid-seventies example / Faculty of Technology of AAU – 1953 to 1970, Deans were from abroad
• AAU, Never University Presidents were from abroad
Partnership Higher Education

- **Substantial Gap** in Higher Education Capacity
  - North/South Partnership
    - Full Scholarship (2 to 5/6 years)
    - Sandwich Programs (Some)
    - Internationals as Home Base Professors
    - Curriculum adaptation...
  - This was for **both MSc and PhD**
Current Trends

• **MScs** almost Local
• **PhD** shifting to fully local?? or hybrid
  – Home base / 100% (differs with field)
  – Home grown / with research visit
  – Fully locally advised
  – Main advisor abroad / local co-advisors
  – External (International)/ Internal examiners
• Research / capacity building / win win partnership
Current …

• North / South partnership continues but with different perspective

• Benefiting Both / Win Win
  – Higher Education Capacity Development
  – Curriculum Development
  – Student Exchange
  – Faculty Exchange
  – Joint Program/Research
  – Advising / Examining / Short Research Visit by PhD candidates / Access to Laboratory…
Examples

- EIWR
- SIDA
- DAAD
- OTHER
EIWR ESTABLISHMENT

...... established by AAU Senate on August 17, 2011 as full-fledged autonomous institute in collaboration with MoE, USAID, Africa-US Higher Education Initiative (HED) & UConn

ULTIMATE VISION

EIWR TO BECOME REGIONAL ...INTERNATIONAL WATER CENTRE OF EXCELLENCE
Helping to Build Ethiopia’s Water Future
## Partnership & Collaboration

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<td>Brings industrial university linkage</td>
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<td>Alabama A&amp;M University</td>
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<td>Brings together international /Financers/ Universities</td>
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EIWR Development Strategy / Phase III (Background)

The EIWR will be built in three distinct phases over ten years:

- **Y1-Y2 (2 years) Phase I: Start-up and Launch (2011-12)**
  - launching the Institute.
  - curriculum development,
  - professional development, training, and
  - a number of pilot projects

- **Y3-Y5 (3 years) Phase II: Development (2013-15)**
  - established rigorously-tested methods of objectively measuring the impact and cost effectiveness of initiatives.

- **Y6-Y10 (5 years) Phase III Steady-State (2016-2020)**
  - institution-building process
  - characterized by increasing self-sufficiency by Ethiopian universities.
  - US institutions will still be involved
What were provided?

Partnership Manifestation

(Project Period)

- Financial Support to MSc and PhD Applicants
- Curriculum Development
- Support in availing advisors / link to UConn Library and journals
- Research visit support
- Laboratory and Research Station Establishment
- Logistical support
- Financial Support to Institute for Conferences ...
- Website Development & Support
- Local /AAU: campus, faculties and support availing teaching and lab space
ORGANIZATIONAL STRUCTURE OF EIWR

AAU President

Vice President for Research and Technology Transfer

Advisory Board

EIWR Director

Academic Council

Management Council

Education

Research

Outreach / Community Services

Administration & Finance

IT & Knowledge Management

Registrar

Water Resource Engineering and Management

Water and Health
Program 1: Water Resources Engineering and Management (WREM)

surface, ground water and irrigation water management streams

Program 2: Water and Health (WaHe)

Two specializations ("Water & Wastewater Treatment"), "Water & Public Health"

Program 3: Integrated River Basin Management (Transboundary Issues)

Coming ? Water for Agriculture
**Education...**

Current: > 90 Graduate Students

From: 26 Universities (80%) / Other Institutions and Private

PhD/MSc (%) Enrolled (160)

- **Current**: 58
- **Graduated**: 26
- **Withdrawn**: 16

PhD (%)

- **Total**: 99
- **Current**: 25
- **Graduated**: 2
- **Withdrawn**: 2

MSc (%)

- **Total**: 61
- **Current**: 34
- **Graduated**: 64
- **Withdrawn**: 2
Education.../Gender

PhD/MSc (Enrolled %)
Total (160)

- Male: 72
- Female: 28

PhD (Enrolled %)
Total (99)

- Male: 73
- Female: 27

MSc (Enrolled %)
Total (61)

- Male: 70
- Female: 30
Research themes

**WREM**
- Erosion and sedimentation
- Soil water and runoff generation
- Water resources structure operation
- Trans-boundary
- Drought and flooding

**WATER & HEALTH**
- Water quality, sanitation, hygiene and health risk
- Wetlands and groundwater
- Rainwater harvesting
- Waste water treatment and technologies
- Heavy metals
- Fluoride
Research Location/Distribution

Legend:
- River
- Regional Boundary
- International Boundary
- Lake
- River Basin
- Abay
- Awash
- Ayisha
- Baro Akobo
- Benishangul
- Gende Dawa
- Mereb Gash
- Ogaden
- Omo Gibe
- Rift Valley
- Tekeze
- Wabi Shebele

Research locations

ETHIOPIAN INSTITUTE OF WATER RESOURCES
Research Assets

1. Rain gauges and Compact weather sensors (Upper Blue Nile River Basin)

2. Eddy covariance measurement (Awash River Basin Wonji Sugarcane farm)

3. Hydrologic measurements Stations Establishment (Melka Kunture/ upper Awash Basin)

4. Malaria research measurements (Omo – Ghibe River Basin)
1. Rain gauges and Compact weather sensors

EIWR has about 53 rain gauge and five weather sensors located at upper blue Nile.
2. Eddy covariance measurement *(Awash River Basin_Wonji Sugarcane farm)*

Students working on the instrument installation with the farm researchers
Recent Developments

Concept Note / HEP II - Submitted to USAID

- A Water and Agriculture Education, Outreach, and Research Alliance (WAEORA) to Improve Food Security in Ethiopia
  
  - Objective 1:
    Build Ethiopia's capacity in water for agriculture research and innovation through the training of highly effective water for agriculture PhDs with a new Water for Agriculture Education, Outreach and Research Alliance.

  - Objective 2:
    Integrate the Alliance's partners to conduct community driven research and innovation with academic, NGO, GO and the private sector partners to ensure scientifically informed and sustainable solutions to food security challenges.

  - Objective 3:
    Increase the number of women with PhD degrees in water for agriculture through enhanced recruitment, mentoring and support networks.

  - Objective 4:
    Develop the capacity of the Alliance's faculty, staff and students to address current and future water-related challenges.
Recent

- **ACE II – Water Management**
  - Partner with College and Institutes of AAU
  - World Bank Competition for East and Southern Africa
  - AAU won the regional Water Management Center of Excellence
  - EIWR is Partner of this ACE in Water Management
AAU / SIDA Partnership for Graduate Programs (Awarded Agency)

• Areas
  – Full Scholarship / Previously and some now too
  – Short research visits (3 months)
  – Visiting professors (Block course / advising / examiners)
  – Conference / Workshop attendance
  – e-library
  – Journal Subscription
  – Publication fees
AAU/ DAAD Partnership

• Full Scholarship
• Sandwich
• Home Grown PhD
• Short Research Visit
• Mobility Support

• (Most technical/engineering PhD holders from Germany – Not now)
Others

- Enquiry Based Learning - Nexus (4 Universities)
- TUM Water Energy Food Nexus (5 Universities)
- CNRD (12 Universities)
  - Student/Faculty exchange; Program design; Research cooperation
  - PhD support
- UM /University of Michigan – Short visit/ Student exchange/ Curriculum Devt.
- IIT Delhi / Video conference
  - MSc/Meng courses via video conference
Challenges??

- Gap in **Faculties** for Graduate Programs
- Gap in **Research Facilities** – Research Laboratories
- Limited **Access to journals / libraries**
- Lack of **Advisors / Examiners**
- Policy Implication : **Quantity vs Quality**
...Challenges

• **Transition to hybrid** International Partnership in education research and then to **mainly to local** not well understood

• **Two problems, Sometimes:**
  – North consider South as **Liaison officer or logistic coordinators**
  – South consider North as **freelance donors**
Way forward

• Understand the **major shift to hybrid** approach
• **Both** full scholarship and full local higher education could be **present**
• **Win / Win** : Both benefit from International scientific research and education
• Substantial improvement in IT
• Giving **priority to** ensuring **Quality** International Education and Research
Expectation / PIRE

- Institutionally, be active participants in research and publication of results
- Benefit to our PhD / MSc candidates through active participation in the Research
- Creating the ground for ensuring scaling up of the methodologies... in other areas and nationally.
- Etc..
Thank You!!