



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**





PERSPECTIVE



ETHIOPIAN INSTITUTE OF
WATER RESOURCES

PARTNERSHIP & COLLABORATION

Local Universities



Mekelle University
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Hawassa University
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Bahir Dar
University



Arba Minch
University

Brings together
five Ethiopian
Universities

Gov. & Community

- MoEdu
- MoWIE
- MoH
- MoEF
- MoFA
- Regional Water
Bureaux
- Private sectors

Brings industrial
university linkage

International Partners



University of
Connecticut



Alabama A&M
University

Brings together
international
/Financers/
Universities

EIWR DEVELOPMENT STRATEGY / PHASE III (BACKGROUND)

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

Y1-Y2 (2YEARS) PHASE I:
START-UP AND LAUNCH
(2011-12)

- launching the Institute.
- curriculum development,
- professional development, training, and
- a number of pilot projects

Y3-Y5 (3YEARS)
PHASE II: DEVELOPMENT
(2013-15)

- established rigorously-tested methods of objectively measuring the impact and cost effectiveness of initiatives.

Y6-Y10 (5YEARS) 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



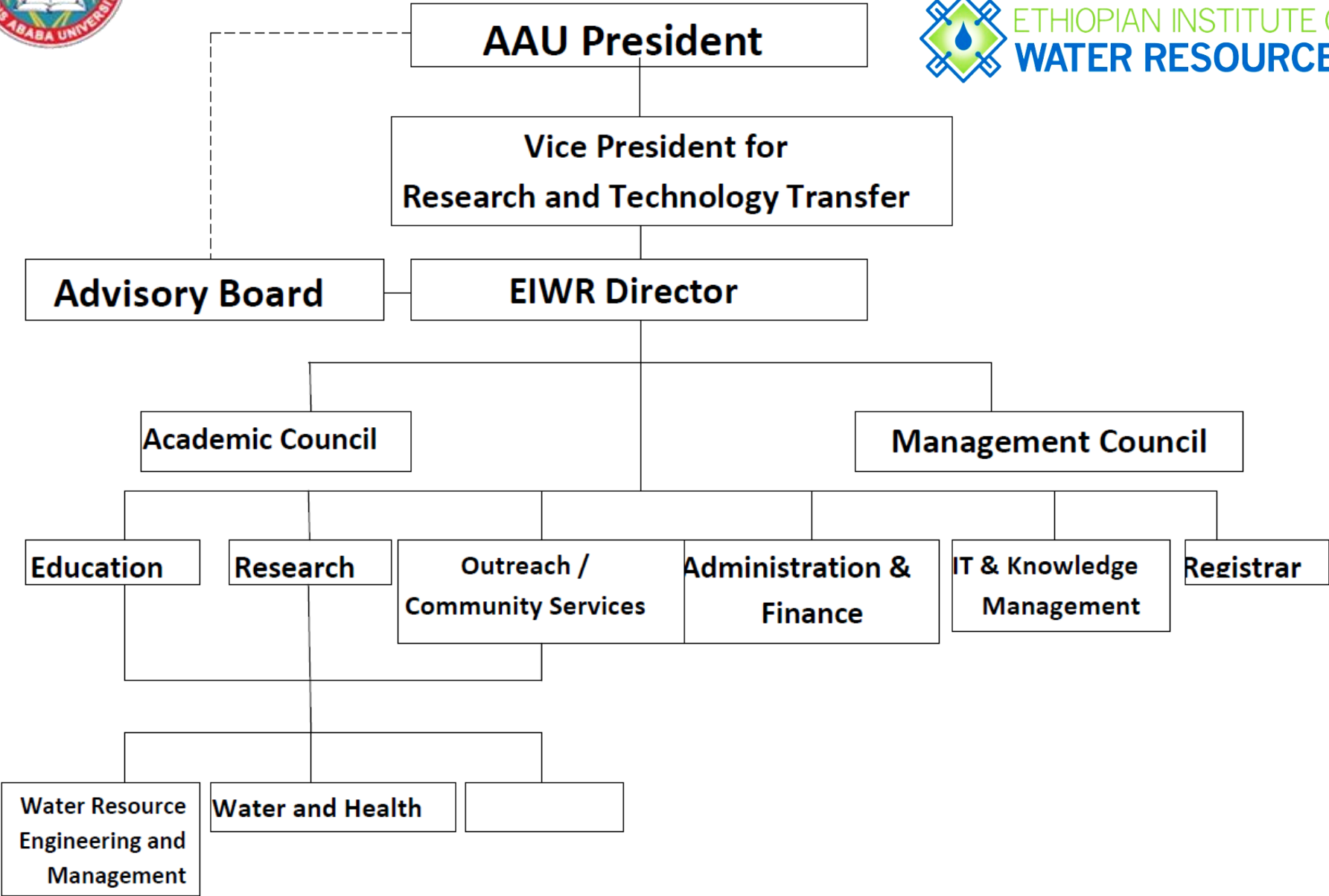
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(Project Period)

- **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





EDUCATION - PROGRAM OF STUDY

(MSc and PhD Programs and Specializations)

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

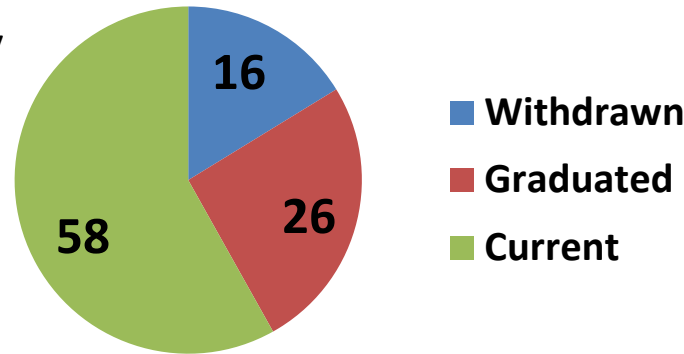


Education...

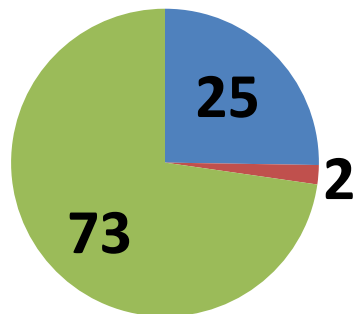
Current : > 90 Graduate
Students

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

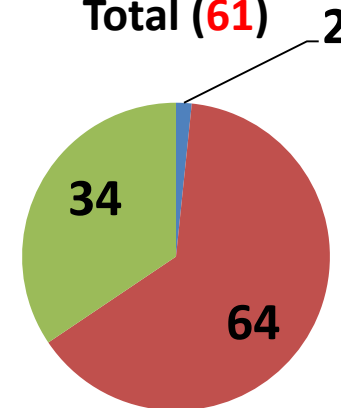
PhD/MSc (%)
Enrolled (160)



PhD (%)
Total (99)



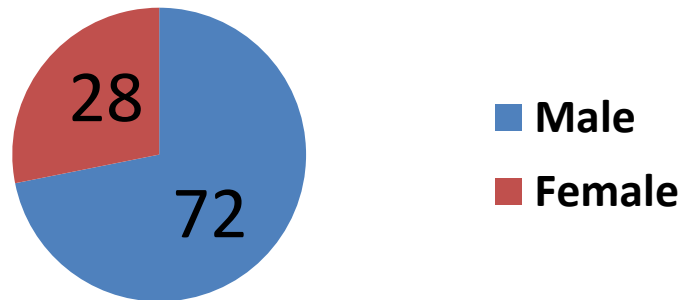
MSc (%)
Total (61)



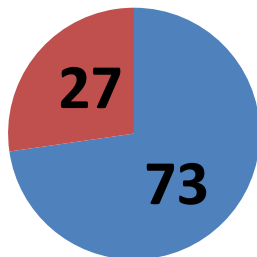


Education.../Gender

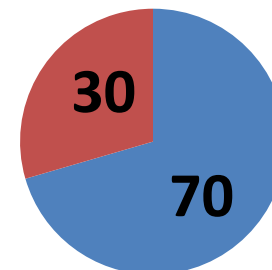
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Total (160)



PhD (Enrolled%)
Total (99)



MSc (Enrolled %)
Total (61)





Research themes

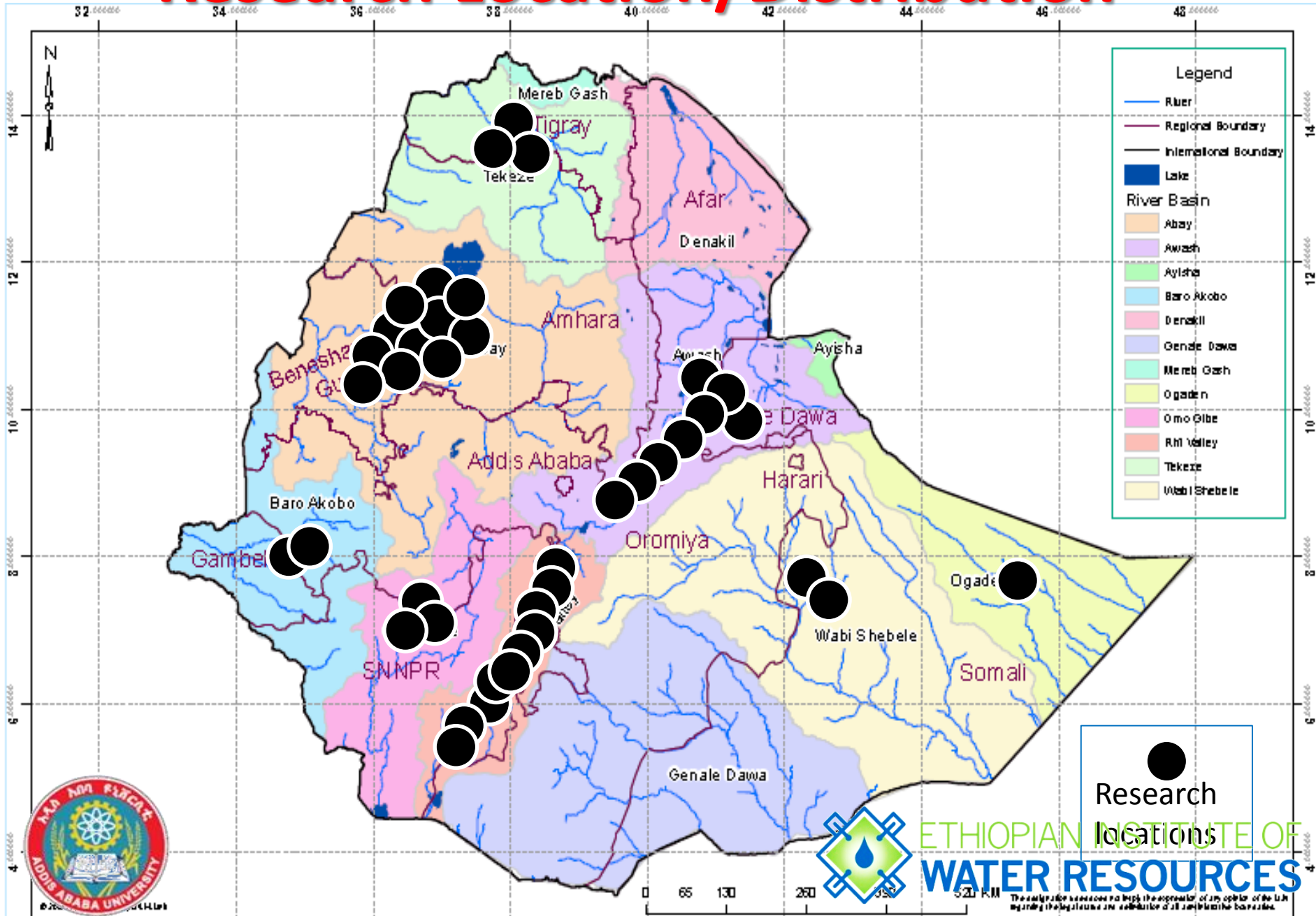
WREM

- 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



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●
Research
Locations

The analysis and conclusions are kept the approval of the author of the IWR regarding the regulations and contribution of all participating countries.

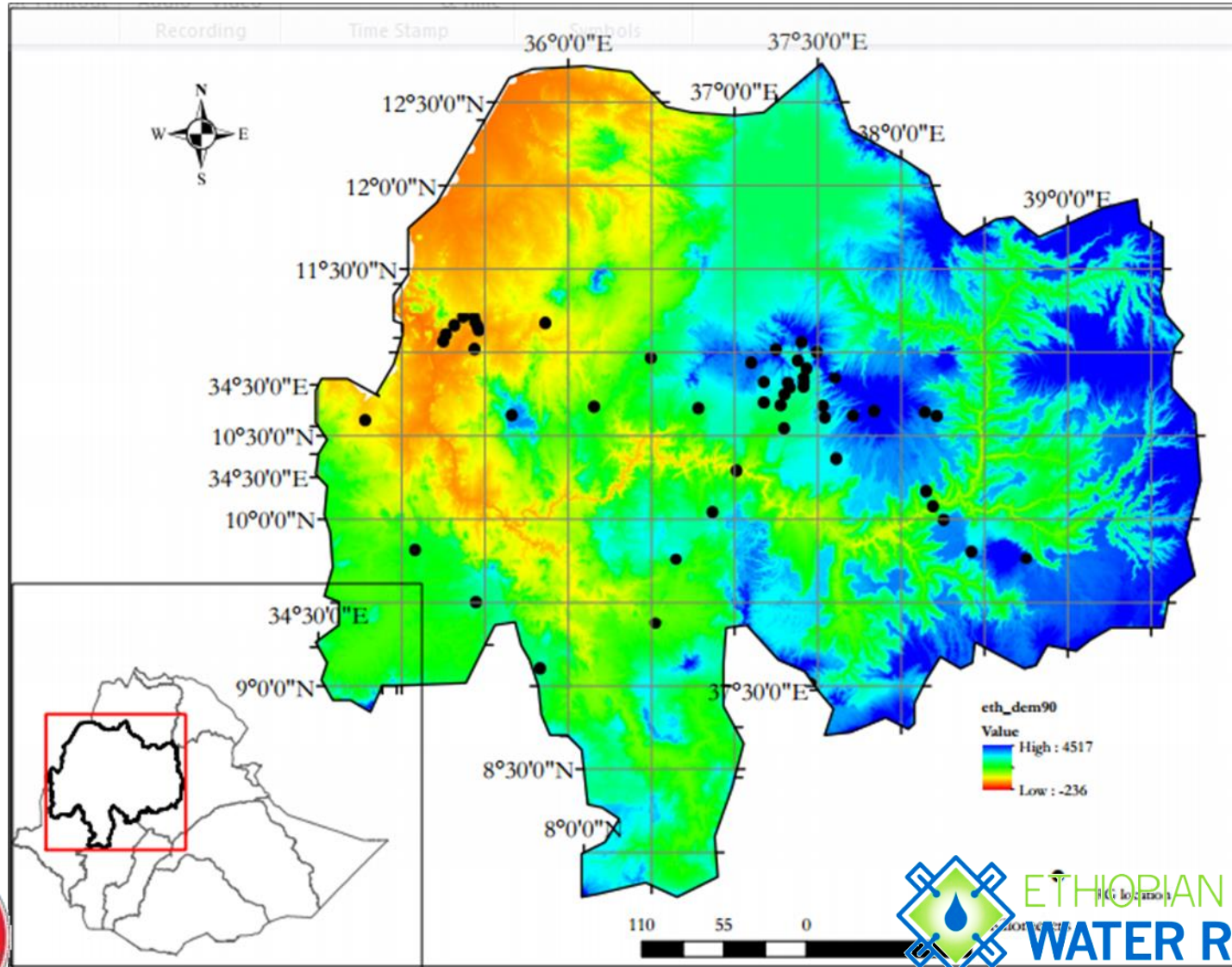


Research Assets

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



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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  ETHIOPIAN INSTITUTE OF
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- **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 !!