

Setting Up Adama University

The 1st Ethiopian Technical University

TUSUR International Conference Febr. 2..3, 2012
Devoted to the 50th Anniversary of the University

By Herbert Eichele

Setting Up Adama University
1st Ethiopian Technical University



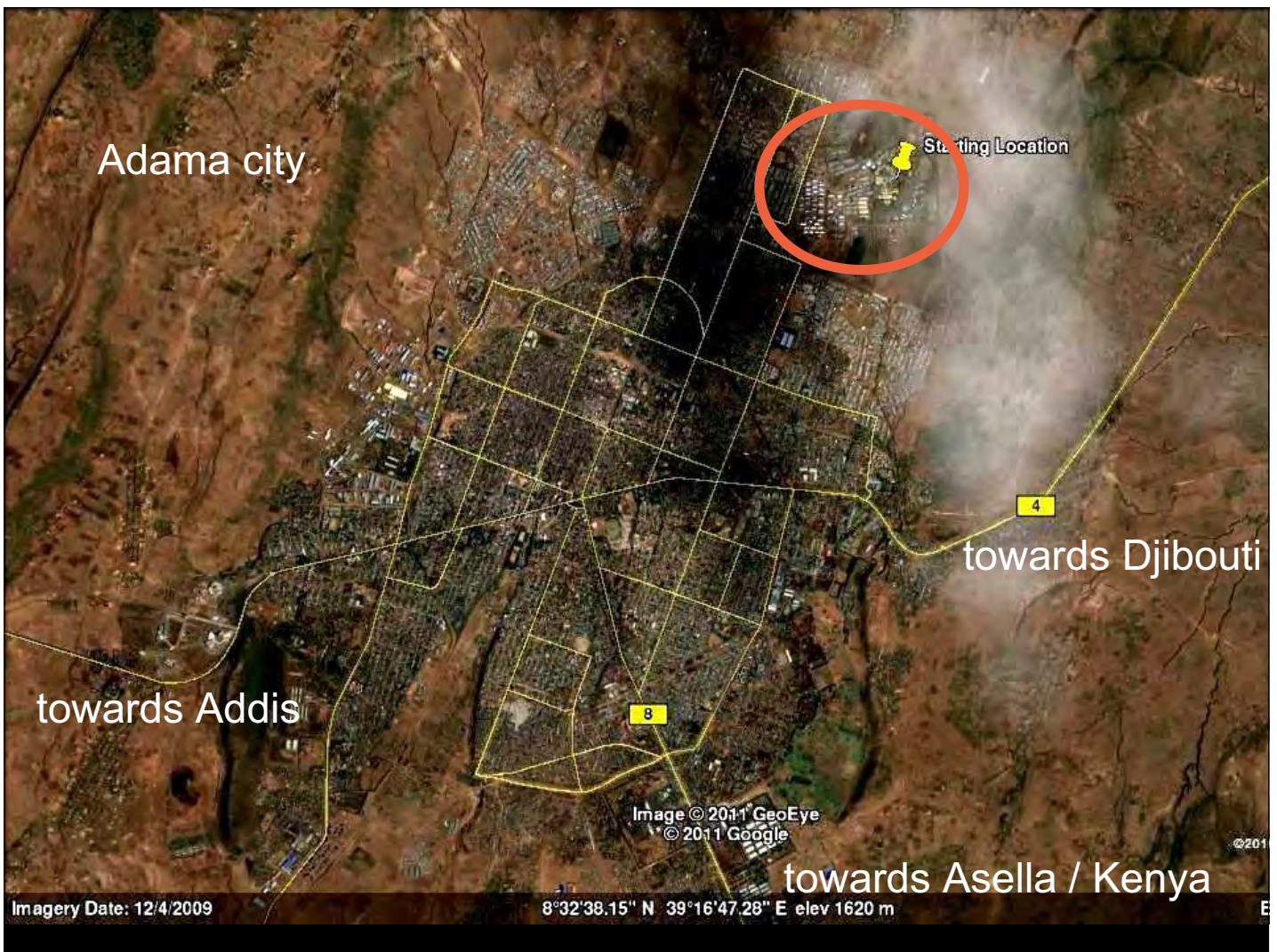
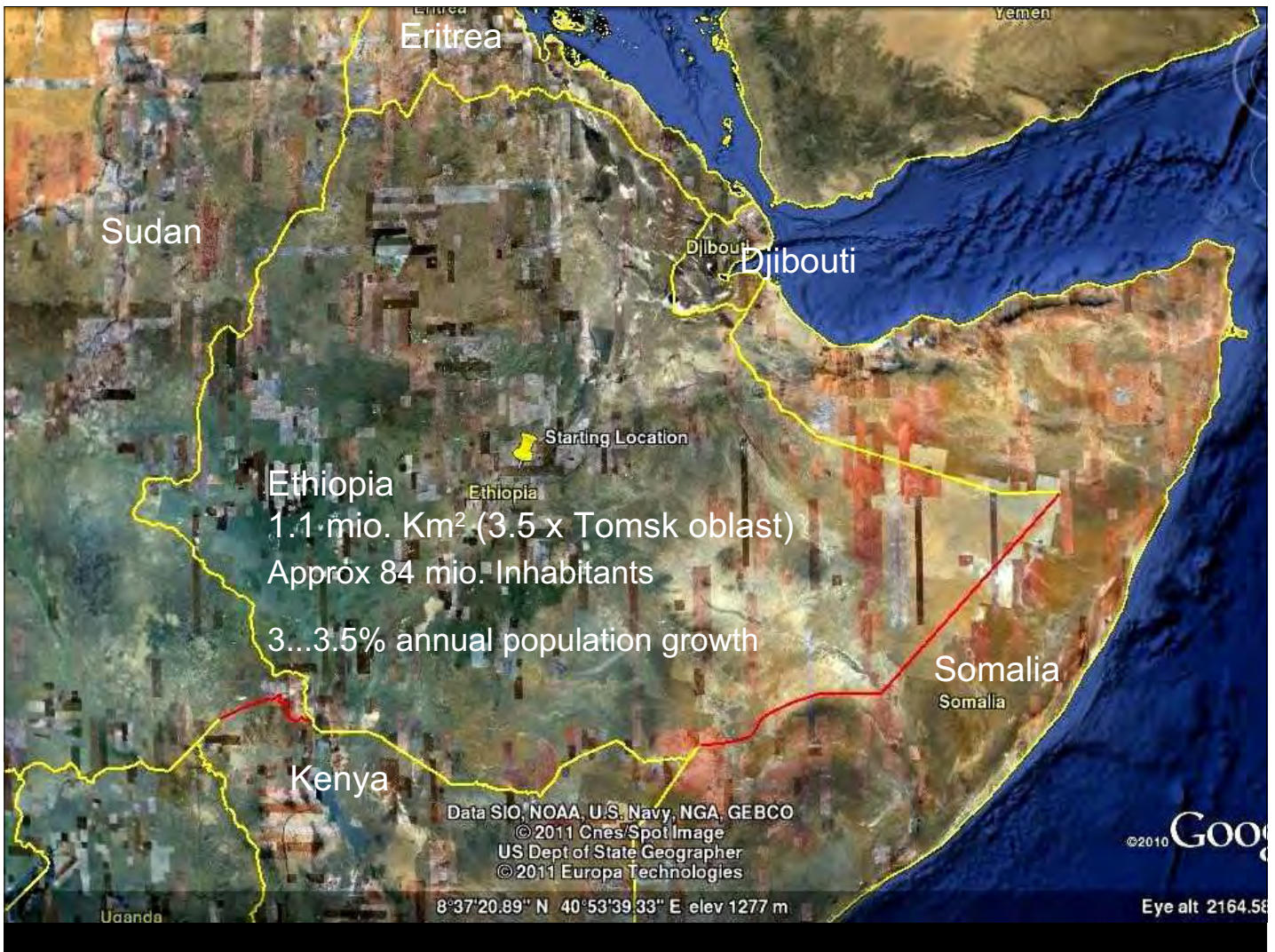
About the author

- Prof. Dr. rer. nat.
- Georg-Simon-Ohm University, Nuremberg Germany
- Former Dean and Rector of Ohm-University
- Founder President of Adama University
on leave from Germany / Bavaria
mandated by the Ethiopian government
- Honorary Doctor of TUSUR

Adama University Setup

Context







- 3 climatic zones
below 1000m altitude hot humid,
1000-2500m moderate,
above 2500m altitude cool
- Strong influence of religions / churches
45% christian-orthodox
45% muslim,
7% protestant/catholic/various sects
natural religions
- Federal democratic republic (9 regions, 2 metropolitan areas)
- Nile-waters mostly originate from Ethiopia (Blue Nile)



History

- Feudal system until end of Emperor Haile Selassie;
- 5 years Italian occupation;
- 1974 Marxist dictatorship of Mengistu;
civil war and defeat of this “Derg” (Советы)–regime 1991;
- War Ethiopia-Eritrea until 2000;
- 2005 elections with turmoils;
- 2010 elections peaceful
result: 98% pro governing party EPRDF



Political – economic situation

- Ethiopia until 2025 shall reach a mid income level
- State directed economy, recent 5years plan reach 2015
- EPRDF – Ethiopian People Revolutionary Democratic Front
- Low income, high inflation
- Chinese ubiquity
- Chinese system as role model
- Major investors from China, Turkey, India
- Germany as important donor and development assistant but minor investor
- Official language Amharic

322 Ge'ez symbols



Adama University Setup

Objectives and Concept



- Adama University (AU) shall be a model university (TU) for Ethiopia emphasizing on economic development and university-industry cooperation according to the German paradigm
- AU shall become a model university for excellence in teaching, learning and applied research
- AU be attractive in international partnerships and networks
- AU shall be Ethiopia's vocational teacher education center

- *Input to draft the document*
“Setting up Adama University – A Framework”

Objectives defined by the Ethiopian government

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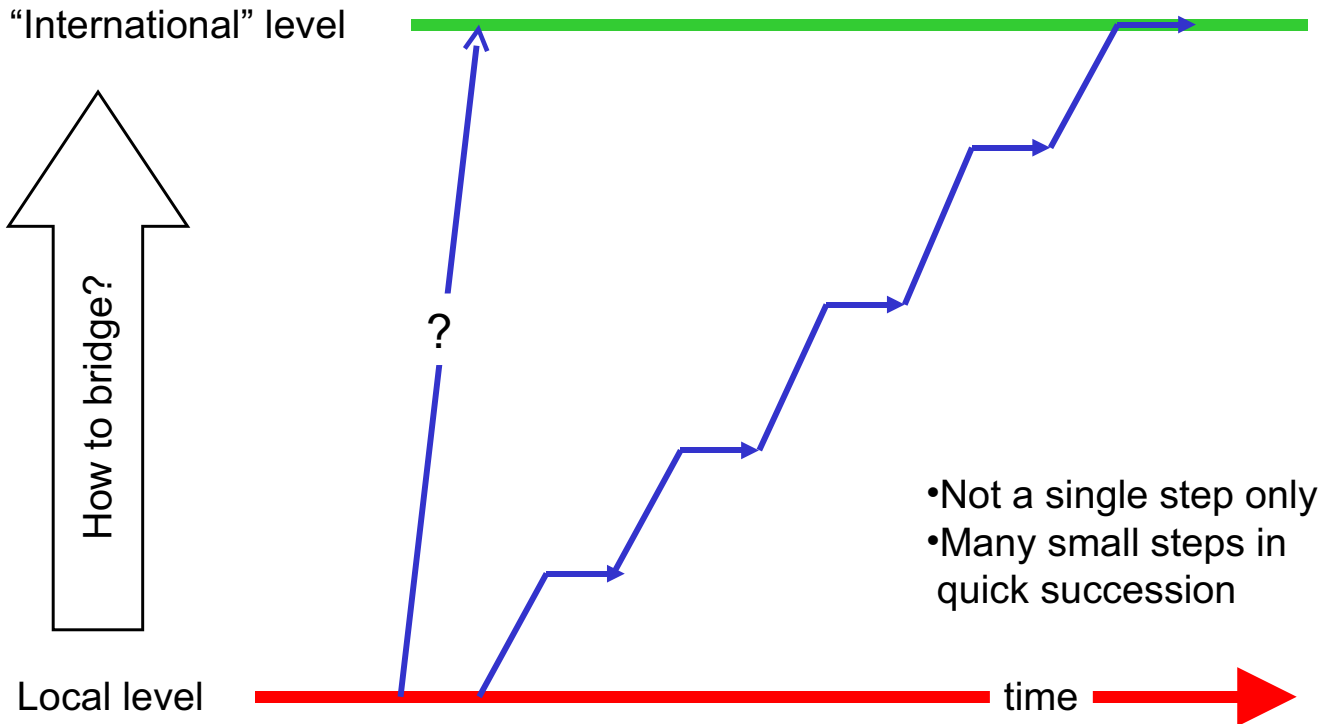


- 2005 – Ethiopia's government decided to expand the higher education sector from 8 to 21 universities
- One start-up university shall be governed by an experienced German professor and be model university
- Experiences gained from the model university shall be transferred to the other universities

- *Meanwhile 10 more universities (totaling 31) and 10 IoTs (Institutes of Technology) are being established following the Adama paradigm*

Recent history up to now

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Main problem: raising staff competence level

Adama University Setup

What has been achieved?

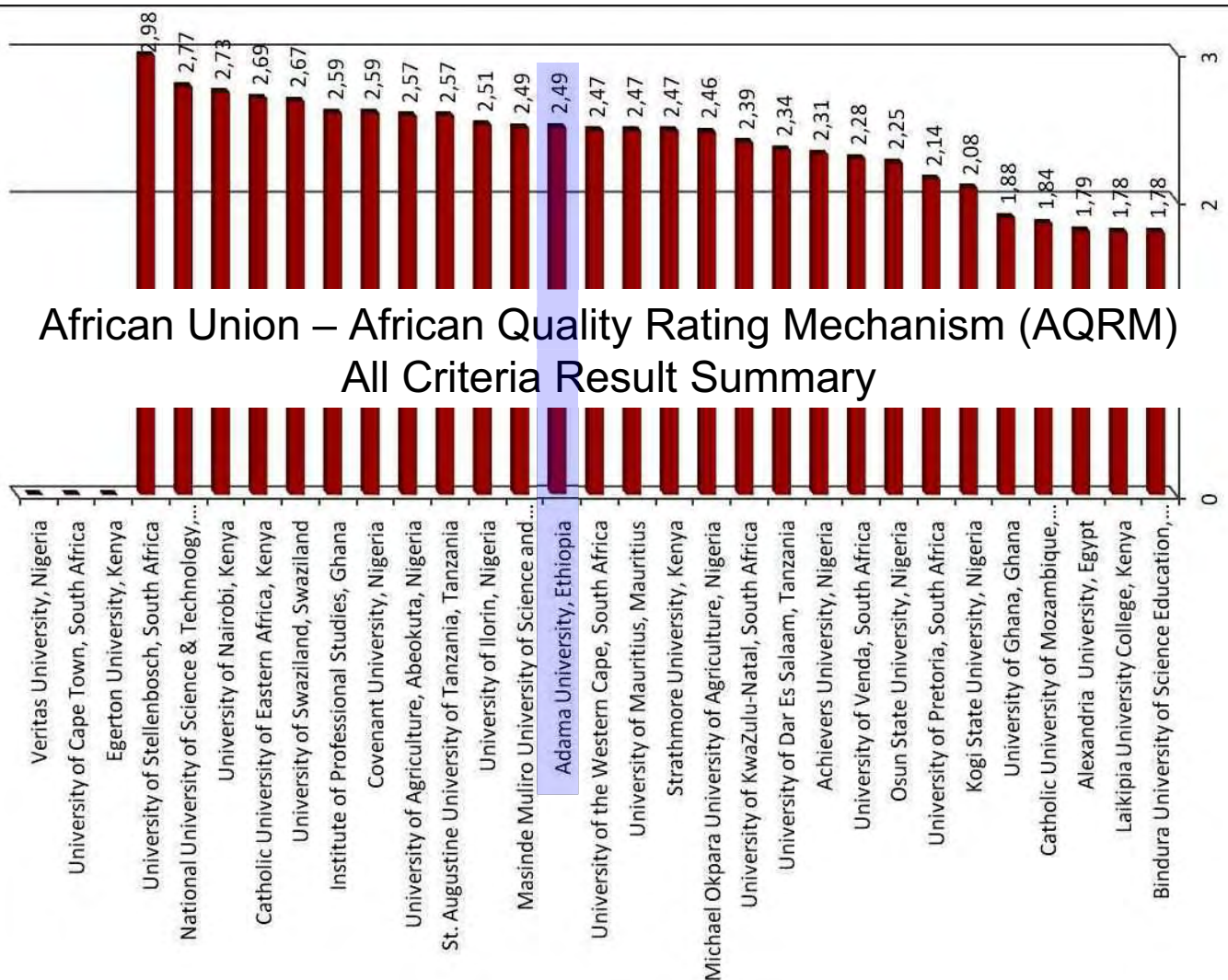


Gross data by academic year 2010/11

- 21,000 students
 - 12,000 regular (=day time)
 - 4,700 evening/weekend-students (=extension students)
 - 3,800 summer-students
 - 500 postgraduate students (MA / PhD)
- 5,100 graduations (acad. year 2009/10)
- Adama Campus (100 km south east of Addis Abeba)
- Asella Campus (75 km south of Adama)



- Recognized as “THE MODEL UNIVERSITY”
- Recognized as pivotal for Ethiopia's university reform
- 10 new universities under establishment following the AU paradigm
- 10 institutes of technology (IoT's) under establishment following the AU paradigm
- Engineering faculties re-established as schools of engineering according to the AU paradigm
- New university legislation (2009) mirrors essential characteristics of AU



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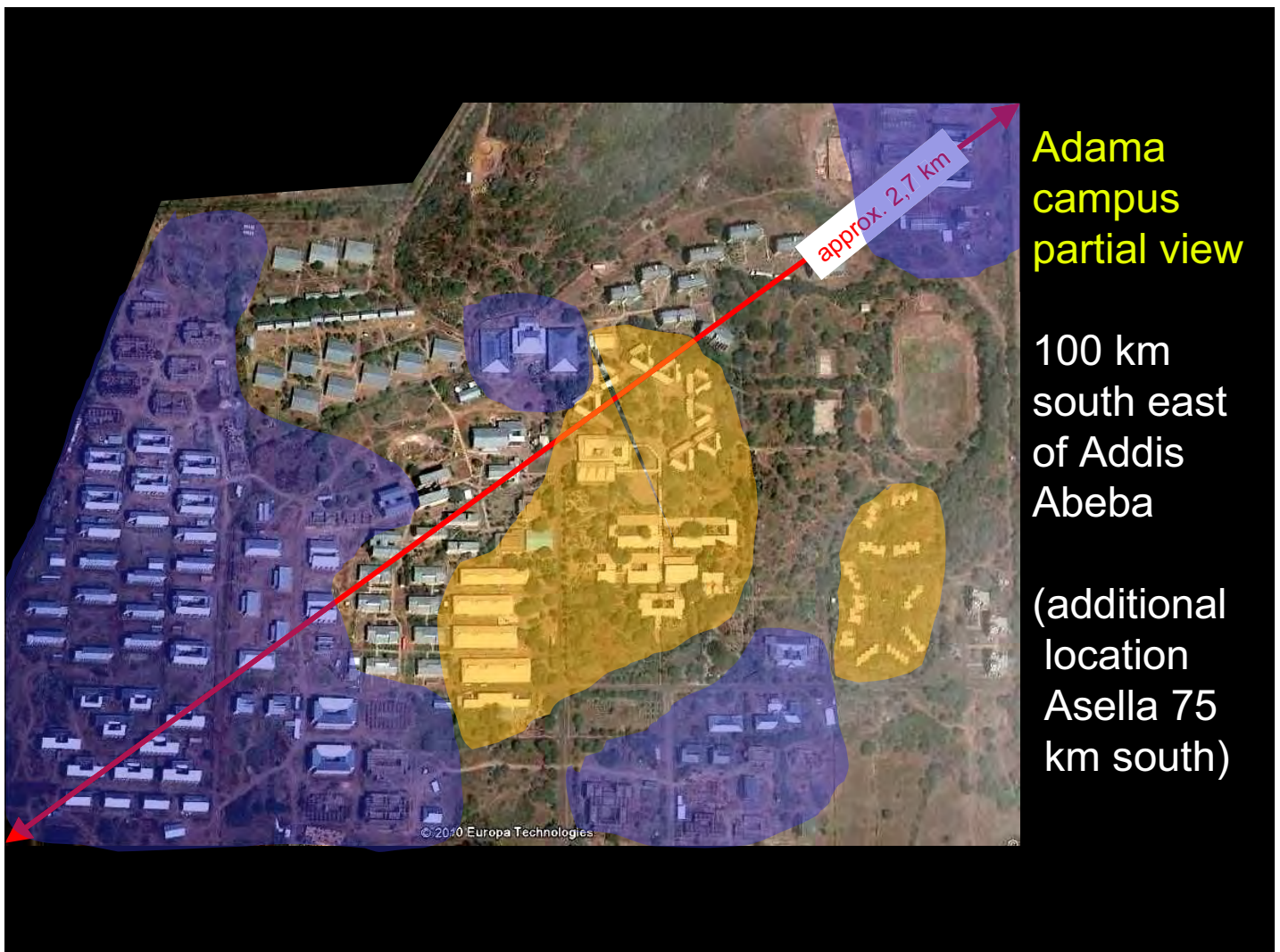


Academic structures transformation

- Science Schools with departments as subunits
- Combine related core-competences in one organizational unit (department)
- Boost teaching quality by
 - Studies boards/committees, exam boards/committees
 - Didactics-center, teaching support center
 - Deans of studies
 - Studies/course guidance, mentoring
 - Internship service
 - Curriculum design
 - Participation/involvement of students



- School of Engineering and Information Technology (SoE)
- School of Business (SoB)
- School of Pedagogy and Vocational Teacher Education (SoP)
- School of Humanities and Natural Sciences (SHN)
now School of Humanities and Law & School of Natural Sciences
- School of Agriculture (SoA)
(incl. AMAE Asella Model Agricultural Enterprise und
Artificial Insemination Institute)
- School of Health and Hospital (Medical School, SHH)
(incl. Asella University Hospital)



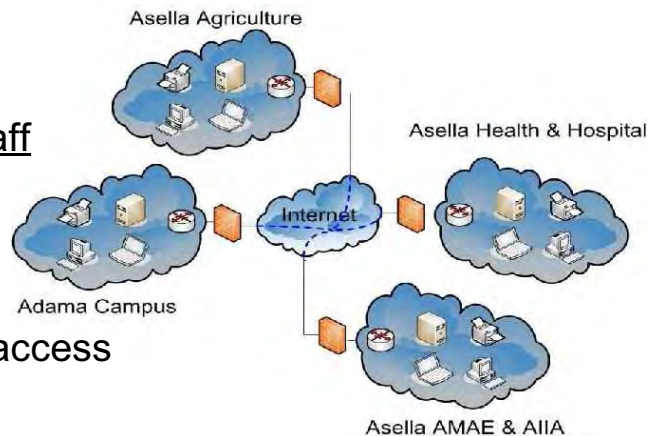
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- **March 2008**
5 PCs for 6,500 students & 1,500 staff each with internet access

- **End of 2010**
2000+ networked PCs with internet access (16.5 Mbps aggregated)
4 campuses linked as virtual private network, PC-pools open 24/7, WLAN

- On-line services now go without saying, laptop rental service



Some ICT outcomes

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Setting Up Adama University 1st Ethiopian Technical University



- **eLibrary services**
20.000+ eJournals, eBooks (each)
- **eTeaching, language labs**
- **EEORS (students admin)**



Library
Digital Library (AU internal)
eCatalogue (AU internal)
eBooks (AU internal)
eGranary Libra... (AU internal)
eJournals
Google Books
MITopencourseware
Wiki-Books
World Digital Library

Computer AU EEORS 2.0.0 - Moz... [eors - File Browser] [STRATO Communicat... Fri Jan 29, 3:49 PM

AU EEORS 2.0.0 - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://eors.adama-university.local/eors/student.php

eeors.adama-university.loc... AU EEORS 2.0.0 STRATO Communicator Admin [Admin] Logout

EEORS 2.0.0

School
Program
Academics
Course
Administration
Person
Student
Account
Profile
Registration
Examiner
Assigner
Assignment
Examination
Online
Reports

Student DoS Group

EEORS Student Administration & Management

Personal ID	Old ID	First Name	Middle Name	Sex	Program	Study Field	Student State	Batch	Group
<input type="checkbox"/> 02025664		Abebech	Addise	F	1996 -- C ...	Engineering Techn...	*	2002	1
<input type="checkbox"/> 02025738		Semira	Awel	F	2002 -- B.S...	Engineering Techn...		2002	1
<input type="checkbox"/> 01007297	R/1422/01	Ababech	Biru	F	2001 -- B.E...	Wood Science -- ...	Active	0000	1
<input type="checkbox"/> 00006309	R/3152/00	Ababo	Mammo	F	2000 -- B.A...	Afan Oromo -- 2000	Active	2000	2
<input type="checkbox"/> 01005252	R/1000/01	Abadi	Gidey	F	2001 -- B.E...	Mechanical Engine...		2001	1
<input type="checkbox"/> 00001208	R/2373/00	Abainesh	Teklemariam	F	2000 -- B.S...	CSIT App -- 2000	Active	0000	1
<input type="checkbox"/> 00001208	R/2373/00	Abainesh	Girma	F	2001 -- B.A...	Accounting -- 2001	Active	0000	1
<input type="checkbox"/> 00006532	R/2988/00	Abainesh	Seyoum	F	2000 -- B.E...	Psychology -- 2000	Active	2000	2
<input type="checkbox"/> 00001087	R/2373/00	Abaynesh	Girma	F	2000 -- B.A...	Accounting -- 2000		2000	3
<input type="checkbox"/> 01004795	R/0303/01	Abaynesh	Tadeese	F	2001 -- B.A...	Lscm -- 2001	Active	2001	1

(Page: 1 of 284) Total Records: 2832

Some ICT outcomes

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- [-] Course Timetabling
 - [-] Input Data
 - Instructional Offerings
 - Classes
 - [-] Instructors
 - Designator List
 - [-] Rooms
 - Features
 - Groups
 - Distribution Prefs
 - Reservations
 - Class Assignments
 - [-] Timetables
 - Solver
 - Timetable
 - Assigned
 - Not-assigned
 - Changes

Timetable

Abdu Abagibe Adem	7:30a	8:00a	8:30a	9:00a	9:30a	10:00a	10:30a
Mon				HPE 332 Lec 1 B511 Room1			
Tue	HPE 332 Lab 1 B511 Room2						HPE 332 Le B511 Room
Wed				HPE 332 Lec 1 B511 Room1			
Thu	HPE 332 Lab 3 B511 Room2						HPE 332 Le B511 Room
Fri	HPE 332 Lab 4 B511 Room2						

Legend

- Assigned classes:
- Required time
 - Strongly preferred time
 - Preferred time

Supported by
Purdue University / USA

Some ICT outcomes – course and classroom scheduling

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Analytic Chart of Accounts

Account Name	Account Code	Date End	Currency	Debit	Credit	Balance	Quantity	Ma
▼ Cost Units	0		ETB	0	0	-194680.00	68.00	
▶ 10000 Schools	0 - 001		ETB	0	0	32320.00	18.00	
▶ 20000 Institutes	0 - 002		ETB	0	0	0	0	
▶ 30000 Managing Board	0 - 003		ETB	0	0	0	0	
▶ 40000 Management Support Functions	0 - 004		ETB	0	0	0	0	
▼ 50000 Central Academic Units	0 - 005		ETB	0	0	-204500.00	45.00	
▶ 51000 Library	0 - 005 - 001		ETB	0	0	-135000.00	30.00	
52000 ICT	0 - 005 - 002		ETB	0	-69500.00	-69500.00	15.00	
53000 International Relation Office	0 - 005 - 003		ETB	0	0	0	0	
54000 Pedagogical Improvement Support Center	0 - 005 - 004		ETB	0	0	0	0	
55000 Culture Leisure Sports	0 - 005 - 005		ETB	0	0	0	0	
56000 Knowledge and Technology Interchange Unit	0 - 005 - 006		ETB	0	0	0	0	
57000 Central Workshop Facilities	0 - 005 - 007		ETB	0	0	0	0	
▶ 60000 Central Administration	0 - 006		ETB	0	0	0	0	
▶ 70000 Compound Services	0 - 007		ETB	0	0	0	0	
▶ Projects	0 - 008		ETB	0	0	-22500.00	5.00	
▶ 1800 - MoFED (Treasury)	1800		ETB	0	0	0	0	
▶ 1900 - MoFED (IR)	1900		ETB	0	0	-4020.00	6.00	

ERP – university wide integrated business processes

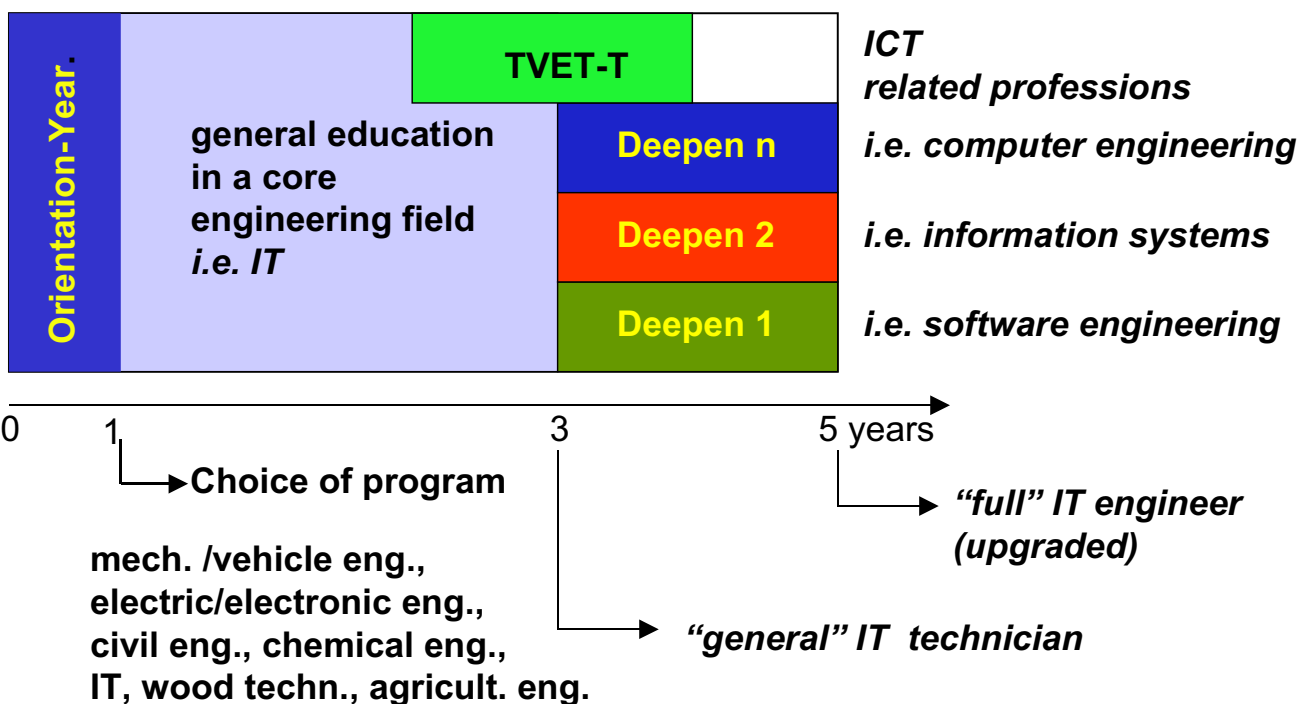
Some ICT outcomes

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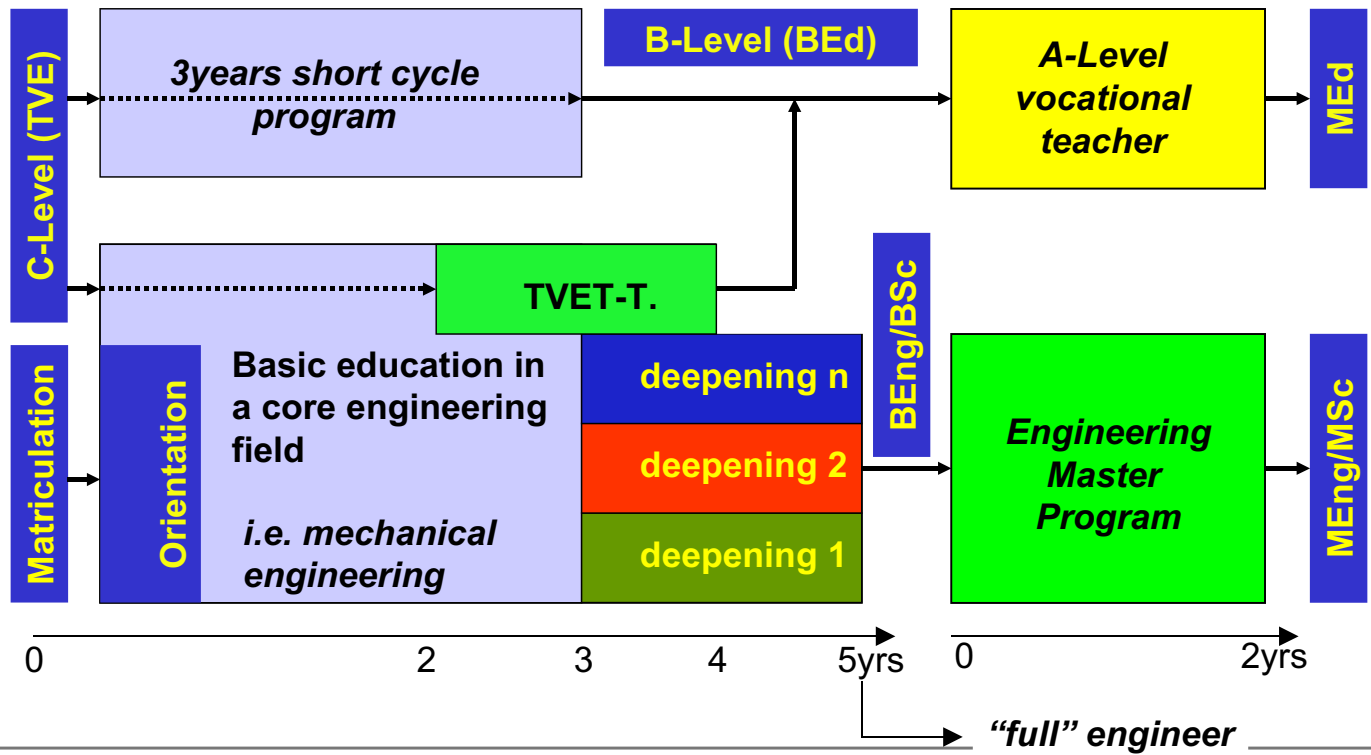
Adama University Setup

Reform of Studies

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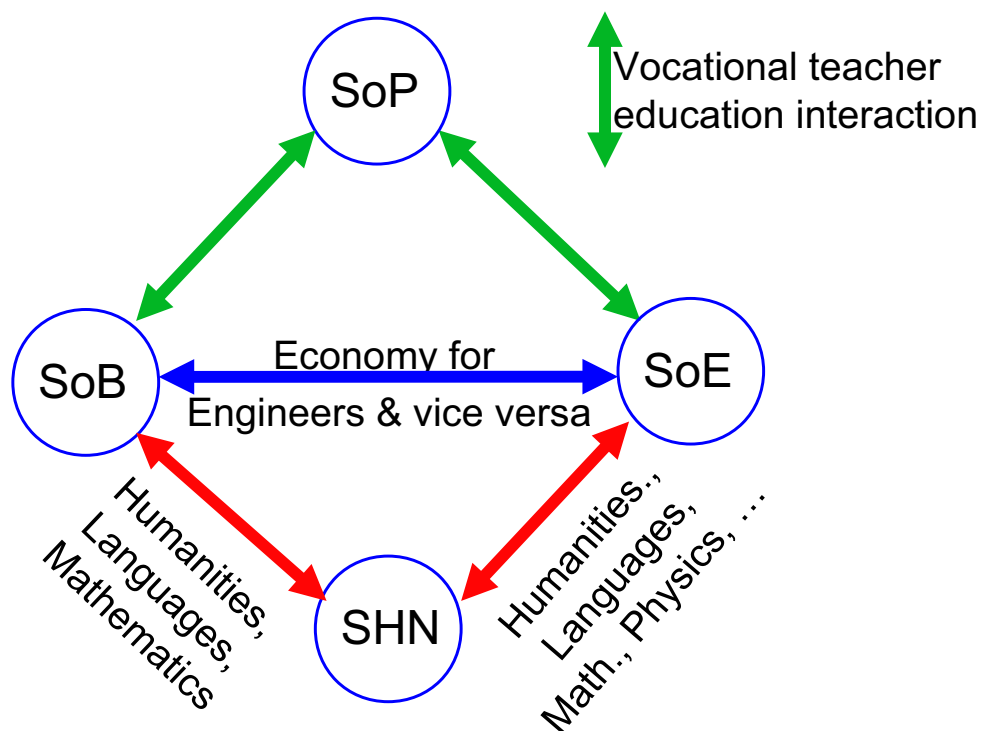


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SoE degree programs and vocational teacher education

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School interaction principle

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Human Resources Management

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- Promote / award competent staff
extra training, more responsibility, income adjustment, bonus pay, scholarships, ...
- Change work assignment of weak staff
- Internal further training
retrained staff may expect workplace enrichments
- Continuing / further training of teaching staff
Incentives: money, prestige, sabbatical, partial leave for training, certificates, ...
- Sandwich Master by Research and Doctorate by Research programs for high potential teaching staff



Characteristics of doctorate abroad ...

- Many years of absence
- Loss of mental binding to Ethiopia
- No return to Ethiopia
- No progress in / for Ethiopia, but “for BMW”
- No development of lab resources / experiences in Ethiopia
- Expensive and inefficient
- ...

Drawbacks of the hitherto approach

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- Doctorate in Ethiopia:
tackling of problems relevant for Ethiopia
- Labs are set up; gathering of local experience
- Activation of local resources
- Repeated short time stays abroad
- International embedding
- Skills and know how come to Ethiopia
- Execution in Ethiopia
- Involvement of undergraduate students
- Immediate teaching improvement, not after many years abroad only (if at all)
- ...

“by research” approach benefits

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- Relevant research – effect of Dr. / MSc by Research
 - Example: Dr. candidate Gemechu Wirtu.
 - Visits of his (German) advisor to Adama University
 - International embedding creates local competence and resources
 - Example: wood test lab established for PhD and MA research
 - Activation of available but never used resources



“by research” approach benefits - example

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Adama University Setup

Upgrade Continuation

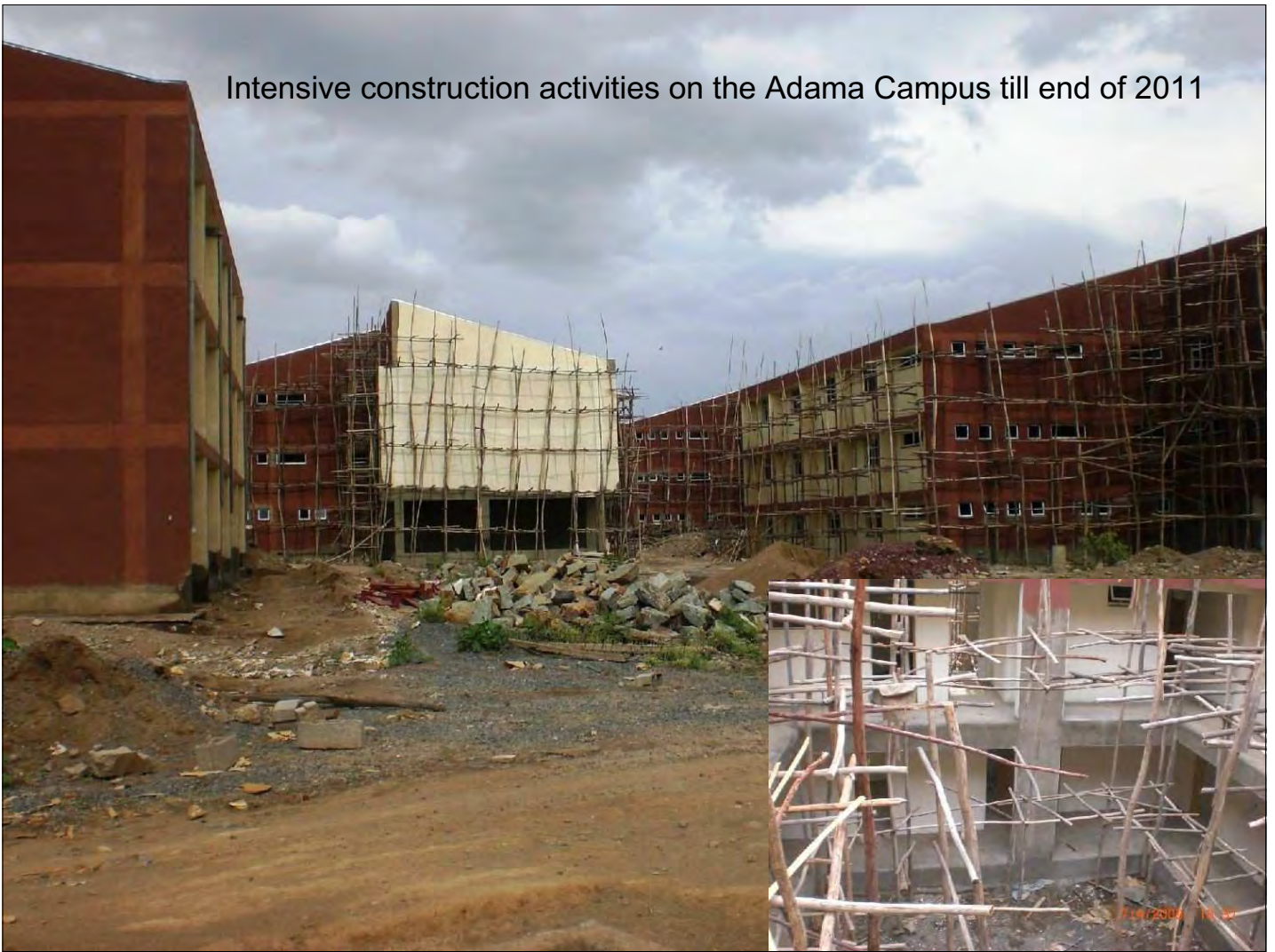


- Networking with international universities
- Tell about Ethiopia and the Ethiopian higher education
- Encourage individuals to link and collaborate with Ethiopian TUs / IoTs (incl. I U A (International University of Africa))
- Find and attract open minded researchers / professors as advisors / referees for Master- and PhD-research undertakings and/or block-teaching
- Being committed to the Ethiopian university development
- Jointly with international partners establish and run centers of excellence in Ethiopia
- ...

Adama University

Kaleidoscope

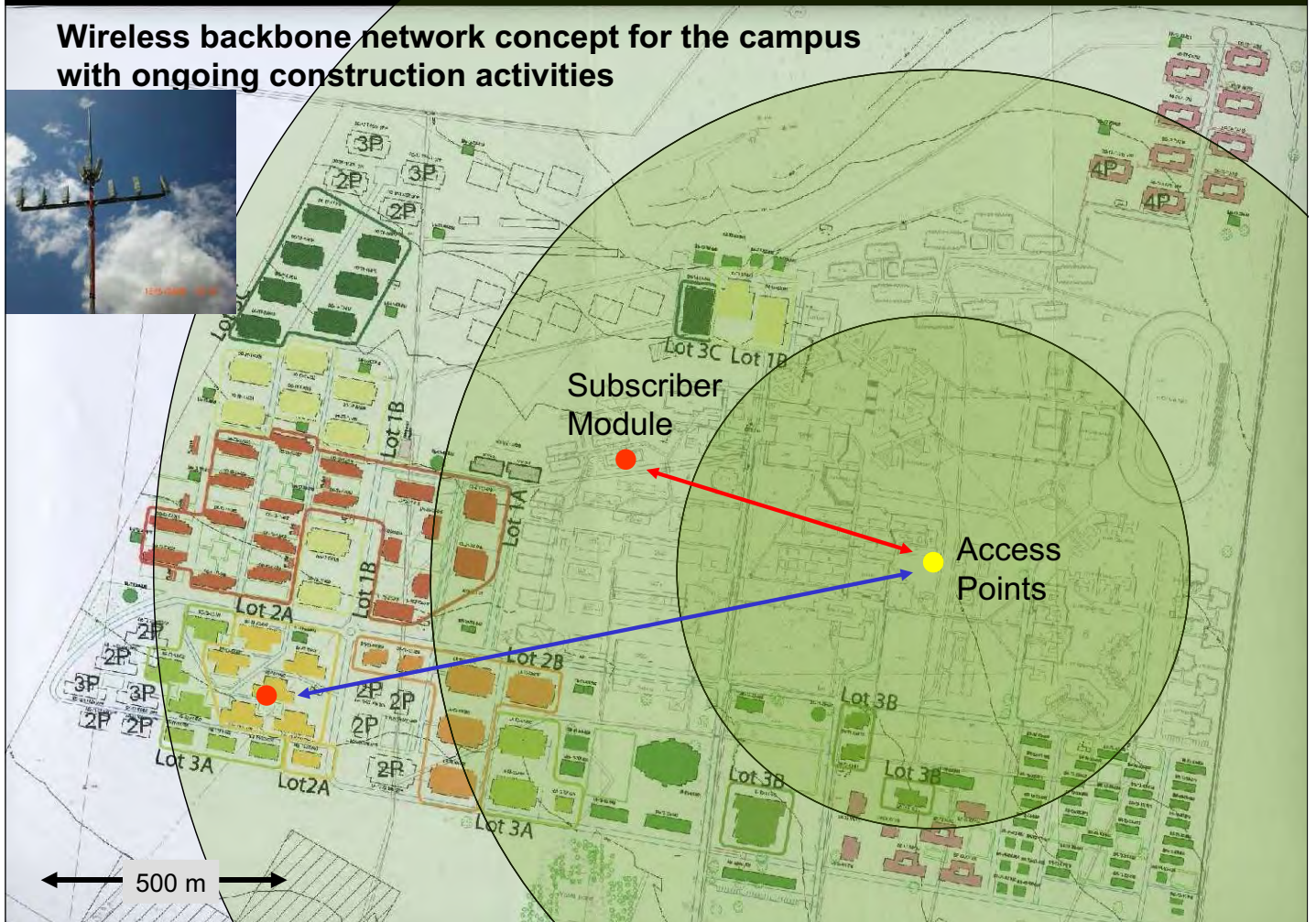
Intensive construction activities on the Adama Campus till end of 2011



Kaleidoscope

IT Infrastructure

Wireless backbone network concept for the campus with ongoing construction activities





Emergency power for the ICT-Center



The heart of the wireless net (I)



The ICT-Center's heart



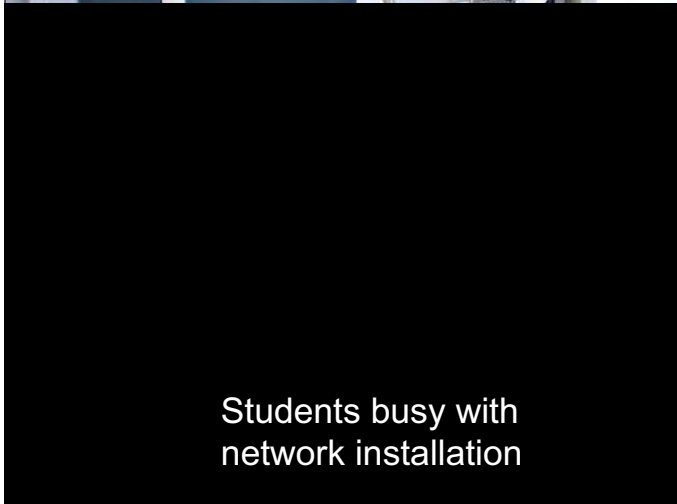
WLAN all around



The heart of the wireless net (II)



Out of this computer garbage students re-create 40 PCs



Students busy with network installation



2/9/2008 14:19



Video-conference-facility
for distant teaching in
Master programs
(import and export)

Kaleidoscope

Cooperations, R&D
Technology Transfer



Further Training Institute
(PLC, Automation, CAD, Metrology, ...)

Students' project
Bulb replacement using
semiconductor lamp in trucks





Collaboration with a fully automated bakery producing 50 tons of bread daily



A store being re-constructed as Further Training Institute (FTI) 21/10/2008 17:31

Adama University is accredited CISCO-training center



The local CISCO academy at our university registered 70 students for CISCO networking training.

infoScreen@adamauniversity.net Nov. 8, 2008

8/11/2008 9:28



Course conducted in FTI 22/11/2008 11:28



Greening FTI - surrounding 22/11/2008 11:31

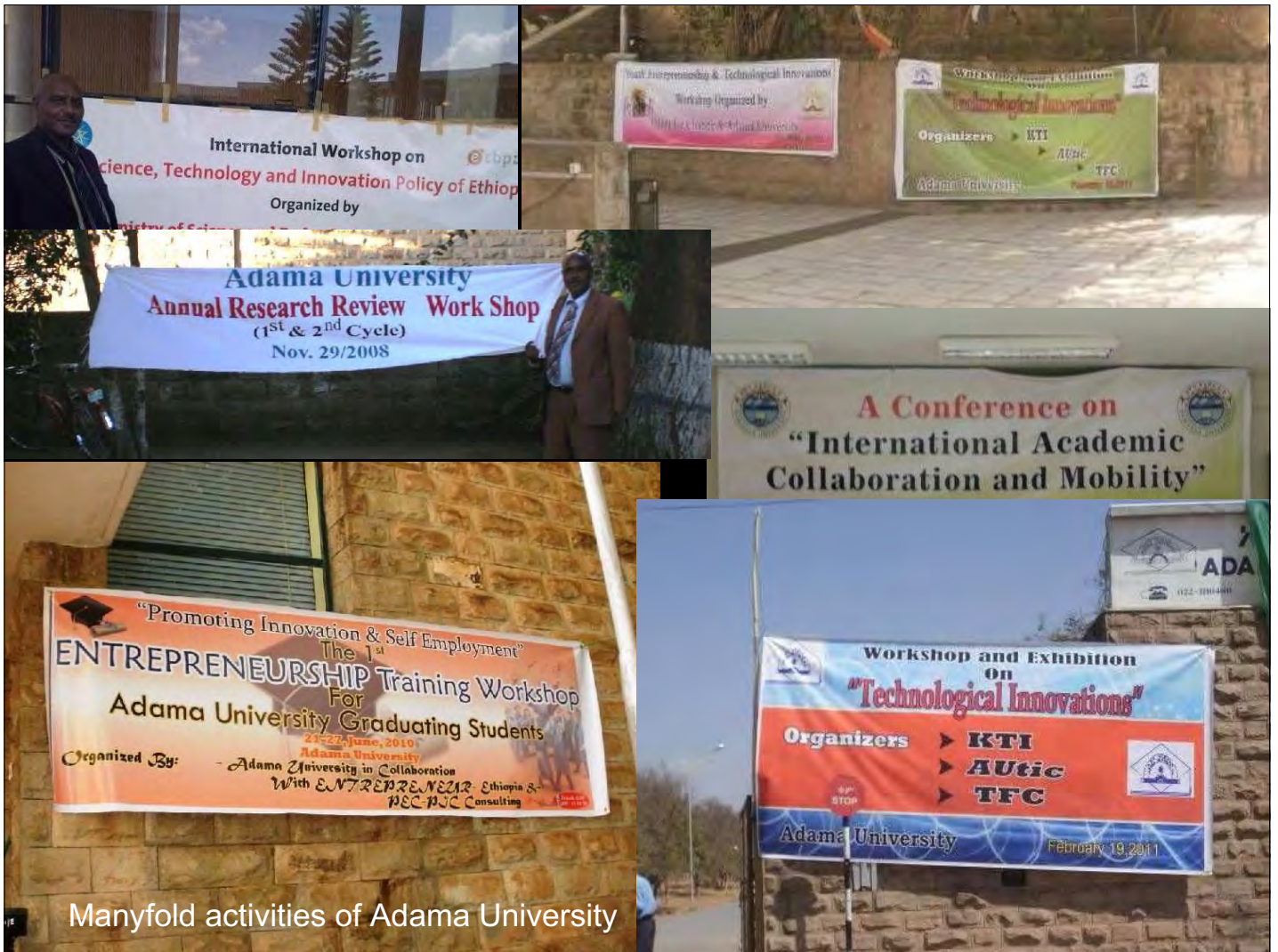
Prototype of a kitchen waste fermenter (MSc research)



Long term wind measurement
in the Aysha desert

Purpose: wind park investment



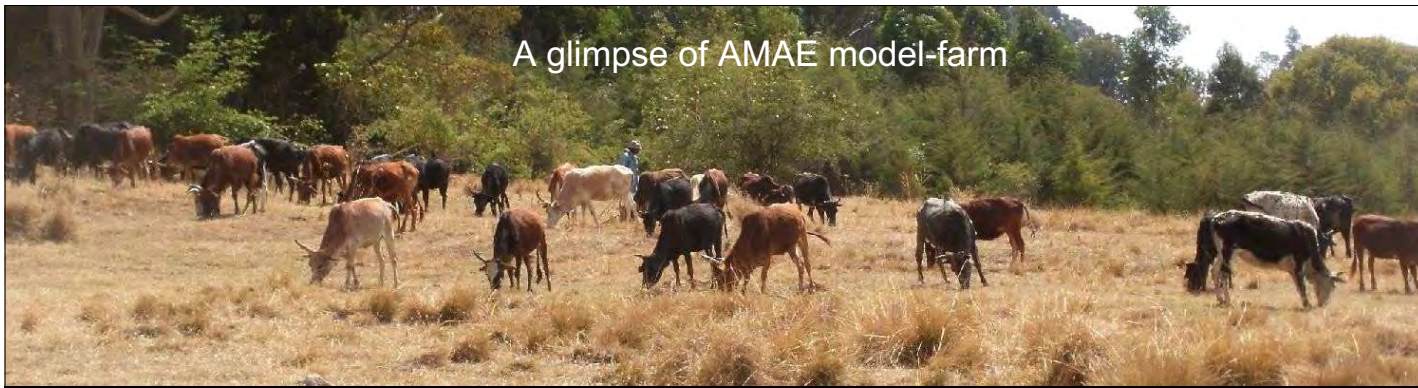


Manyfold activities of Adama University

Kaleidoscope

Agriculture & Medicine

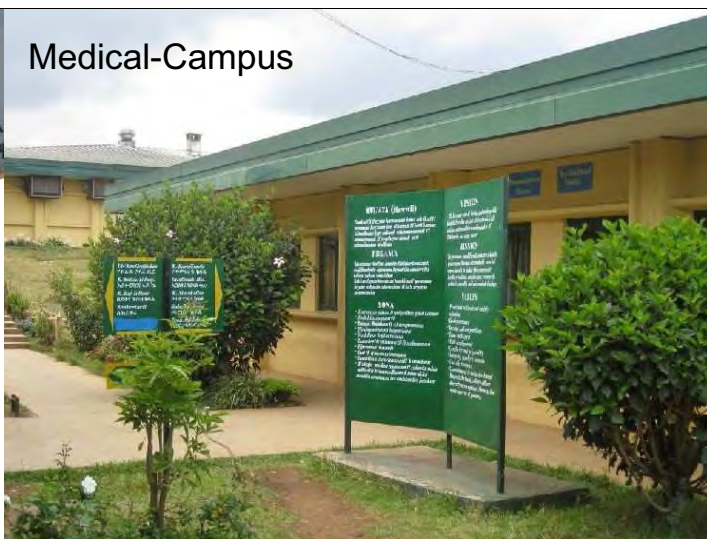
A glimpse of AMAE model-farm



Artificial insemination training course



Medical-Campus



Cooperation contract being signed to jointly set up and run the Asella Tropical Diseases Research Institute



Opening of the Asella Obstetric Fistula Treatment Center in collaboration with a Paris / France located organization



Adama University Setup

Enough for now, but only
a minor fraction of concerns

? Questions ? Comments ? Doubts ?

www.adama-university.net
www.astu.edu.et