Developing and delivering Online Math and Science Teacher Education programs with 10 African countries

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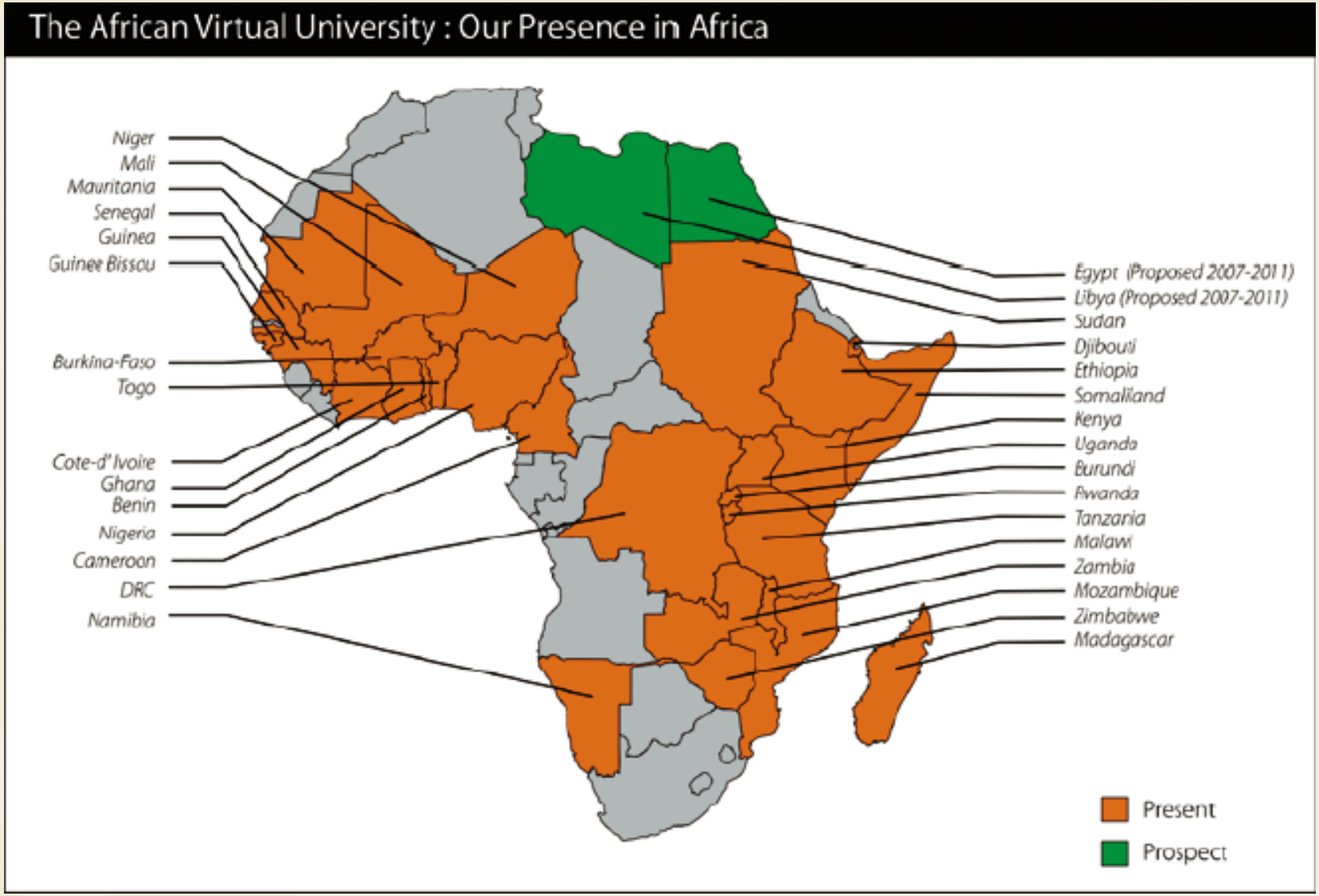
OUTLINE

- Introduction to AVU
- Education and Economic Development
- Collaborative approach to course development and delivery in 10 countries

The AVU: Strategic Direction

- **Vision**: To be the leading Pan African Open, Distance and eLearning Network
- **Mission:** To facilitate the use of effective Open Distance and eLearning (ODeL) in African Tertiary Education Institutions
- **Overall Objective**: Significantly increase access to Higher Education through ODeL
- **Focus:** Making an impact
- **Biggest Asset**: Working across boundaries and language barriers in 27 countries with + 50 institutions

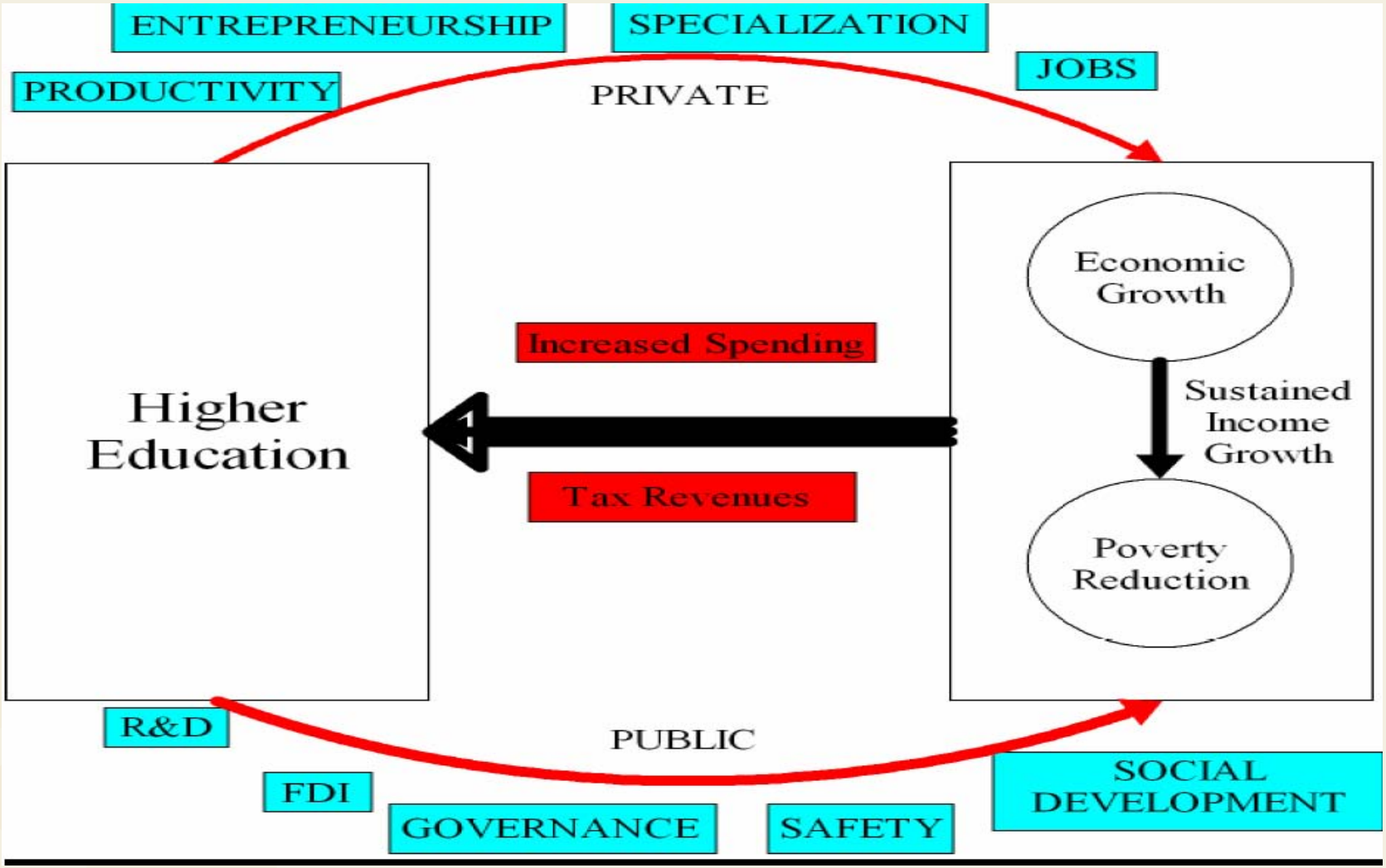
The AVU: Presence in Africa



The AVU: Expertise

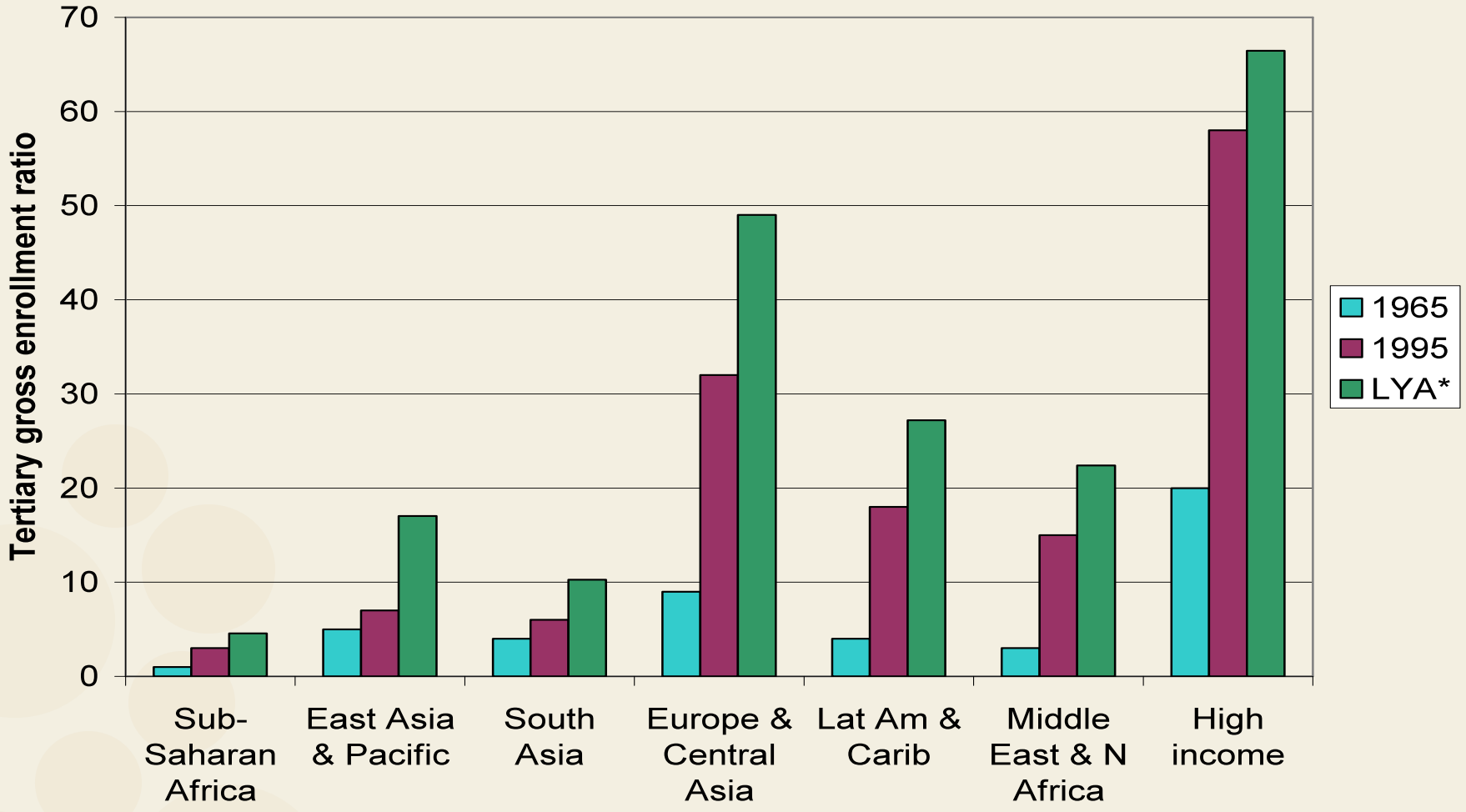
- Delivering Open Distance and eLearning Programs
- Managing large consortia
- Designing and implementing Multinational Projects
- Developing African-based educational content
- Training African university staff in eLearning
- Setting up Distance and eLearning centers
- Developing and implementing OER Strategy
- Quality Assurance Mechanism
- Policy Formulation
- Digital Library

High Education and Economic Growth



Source: Higher Education and Economic Growth in Africa- Bloom, Canning & Chan, Harvard University- 1995

Higher Education in Sub Saharan Africa



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AVU eLearning Day will be held on May 26, 2010 in Lusaka, Zambia

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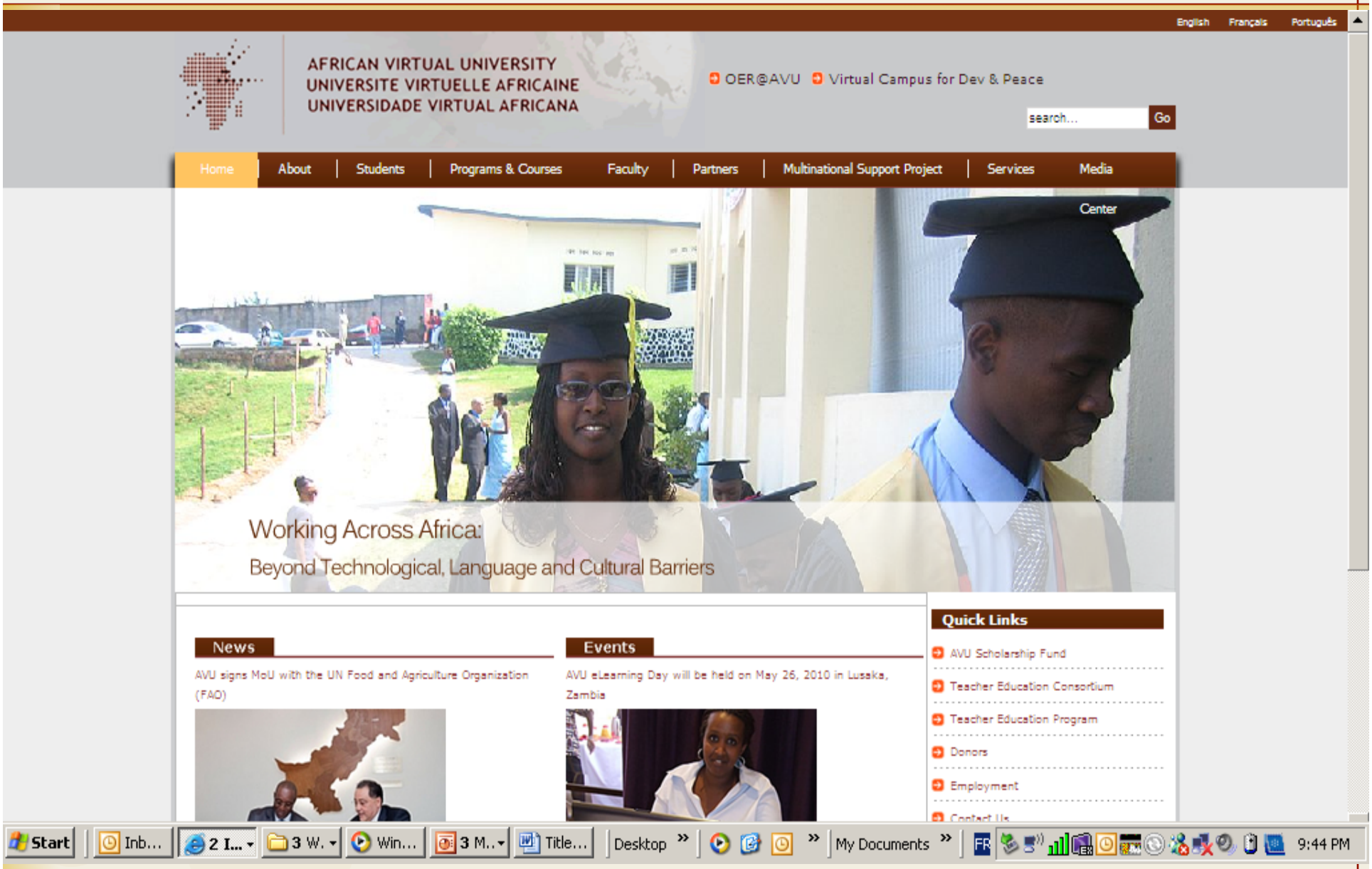
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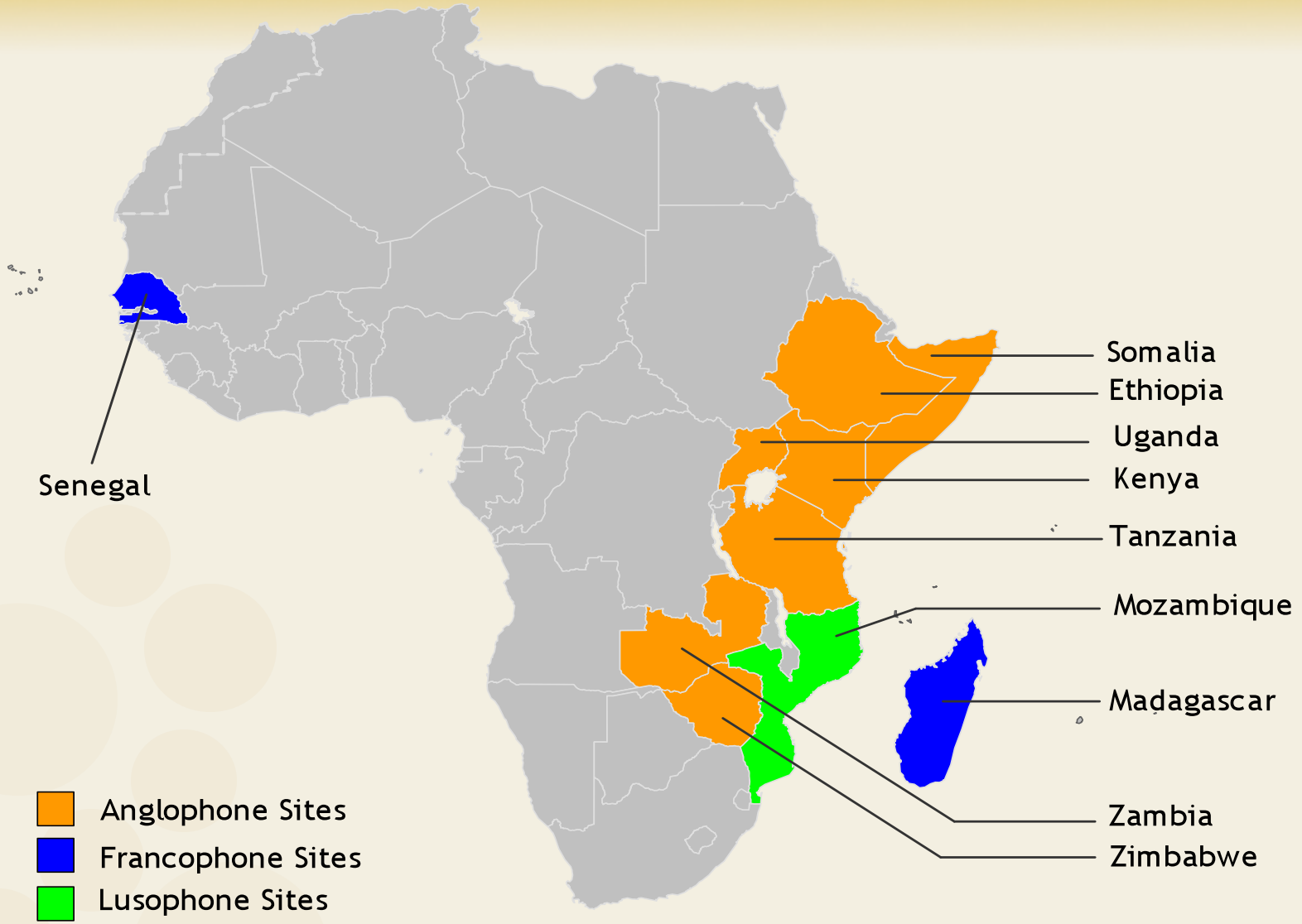
AVU Multinational Project

- 10 countries
- Funding: African Development Bank
- Project activities:
  - Open Distance eLearning Centers with internet connectivity
  - AVU capacity enhancement (ACEP)
  - An ICT integrated Teacher Education Program
  - Gender Mainstreaming

Participating Institutions

Country	Institution
Kenya	University of Nairobi
Uganda	Kyambogo University
Tanzania	Open University of Tanzania
Ethiopia	Jimma University
Mozambique	Universidade Pedagogica
Zambia	University of Zambia
Zimbabwe	University of Zimbabwe
Somalia	Amoud University, *EAU, UoH*
Madagascar	Université d'Antananarivo
Senegal	Universite Chiek Anta Diop (UCAD)

AVU Teacher Education Project - Countries



Open Distance & eLearning Centers

- **Main purpose**

  Physical hubs for development, delivery and management of ODeL Programs at Partners Institutions

- **Functions of the ODeL Centres**
  - A training facility for PI staff in ODeL
  - A delivery point for the current and future ODeL programs
  - A physical location for research
  - A revenue generating center for PIs
- **Current Status**
  - all equipment and furniture delivered and installed
  - all centers fully operational
  - Launch ceremonies done at 6 institutions

The Computers and Other Equipment

Capacity Enhancement Program

- **Main Purpose**

  Impart skills to enable partners to design, develop, deliver and manage ODeL programs

- **Key Skills Imparted**
  - Materials development for ODeL programs
  - Delivery and Technology of ODeL programs
  - Governance, Management and Financing of ODeL programs

- **Achievements**
  - 133 university staff trained
  - From 24 Institutions: 9 Francophone; 14 Anglophone; 1 Lusophone
  - 17 countries involved

ACEP Initial Workshop Senegal 2008

Participants at an ACEP Workshop, Dakar-Senegal, 2008

ACEP Concluding Workshop Nairobi 2009

Participants at an ACEP Workshop, Nairobi –Kenya, January 2009

Teacher Education

- **An ICT-integrated TE program for Math and Sciences**

- **Objectives:**
  - Improve the quality of teaching and learning in schools through use of ICTs
  - Increase the number of Mathematics, Science, and ICT basic skills teachers
  - Develop and promote research in teacher education to inform future curriculum reform
  - Establish and strengthen relevant partnerships with other teacher education initiatives in Africa

Teacher Ed. Programs: Methodology

- Policy and Curriculum Conceptualization
- Curriculum Design
- Content Development
- The Design and Development of a Quality Assurance Framework
- The Establishment of Program Teams in the Participating Institutions
- The Formation of the Teacher Education Advisory Committee
- A Pilot Study of the Teacher Education Program
- The Formation of The Teacher Education Virtual Consortium

Teacher Education : Achievements

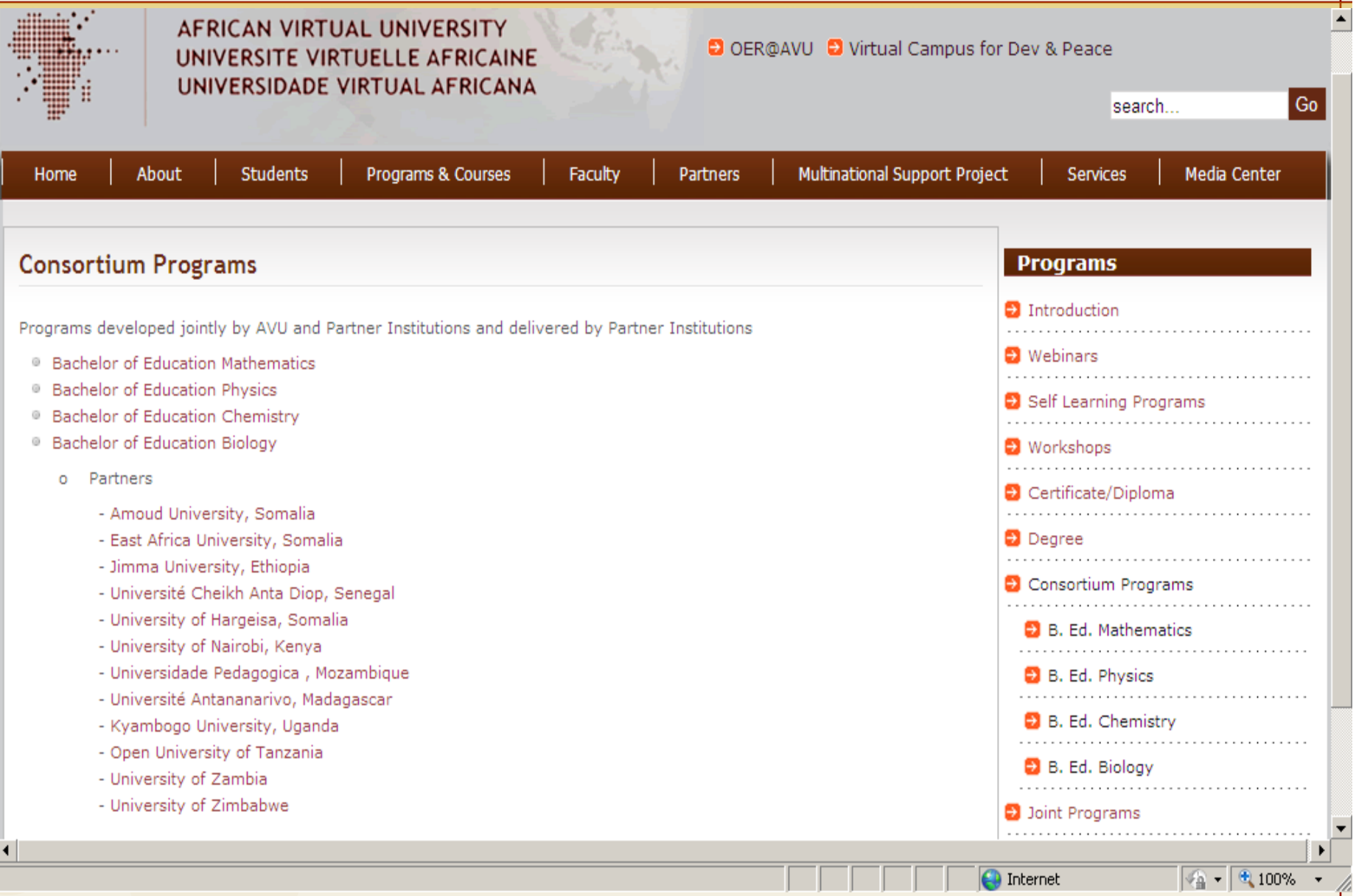
- The development of policies as well as conceptualization of the curriculum
- The development of **73 modules – to be available in 3 languages: 219 modules**
- **Modules structure as 4 Bed (Math, Phy, Che, Bio) and Diploma and Certificate programs**
- **Developers from participating universities**
- **Peer reviewer from participating universties**

Teacher Education : Achievements

- Training of more than 459 academics (authors, ACEP, use of Learning Centers)
- establishment of Moodle as Online Platform
- uploading of modules onto the LMS
- establishment of a community of practice in Teacher Education

T. Education : Implementation Status

- Translation of modules
- Production of materials : Student kits
- Uploading courses to a LMS
- Develop OER repository Portal
- Recruitment of Student in PIs: about 3000 so far, including about 1500 online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Bachelor of Education Physics
Bachelor of Education Chemistry
Bachelor of Education Biology
o Partners
- Amoud University, Somalia
- East Africa University, Somalia
- Jimma University, Ethiopia
- Université Cheikh Anta Diop, Senegal
- University of Hargeisa, Somalia
- University of Nairobi, Kenya
- Universidade Pedagogica , Mozambique
- Université Antananarivo, Madagascar
- Kyambogo University, Uganda
- Open University of Tanzania
- University of Zambia
- University of Zimbabwe
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Lessons Learned

- The value of the collaborative strategy adopted
- working across three language divides, different education systems and different social political environments requires additional time and ressources
- The social political environments in the different countries calls for a lot of flexibility

Lessons Learned

- It is possible to achieve regional integration through projects
- Collaboration strategy causes delays
- Translation of modules

Way Forward

- Expand TE consortium to more countries and universities
- Expand usage of courses to Math and science units
- OER@AVU Online interactive repository to provide worldwide access to **219 modules**
- Establish strategic partnership to achieve the above

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Teacher Education Program

What is the AVU Teacher Education Program?

The AVU Teacher Education Program is a component of the AVU Multinational Support project. The project was initiated in 2003 as part of AVU's Business Plan (2003 - 2007) with the aim of addressing the challenges of quantity and quality that plague the teacher education profession especially in sub-Saharan Africa. This program was therefore expected to make a significant contribution towards the achievement of the Millennium Development Goals in education.

The teacher education program focuses on the use of ICTs both in and across the curriculum, with a particular focus on Mathematics and Science Education. The program will have the following impact/benefits to the beneficiary countries: improve the quality of teaching and learning in Maths and sciences through the use of ICTs; increase the number of Mathematics, Sciences, and Basic Computer Science teachers by expanding access to training through the use of ODeL methodologies; develop and promote research in teacher education in order to encourage evidence-based decision-making in all aspects of teacher development; and promote regional integration and strengthen relevant partnerships with other teacher education initiatives in Africa and globally.

The African Development Bank (AfDB) has funded the development and implementation of the program in ten African countries, namely: Ethiopia, Kenya, Madagascar, Mozambique, Senegal, Somalia (post-conflict nation), Tanzania, Uganda, Zambia and Zimbabwe. In each of the countries, one participating institutions was selected to implement the program with the exception of Somalia where the UNDP Somalia granted funds for the inclusion of two more institutions in the country.

Program Development Process and Achievements

The collaborative strategy adopted by the AVU in developing and implementing the program meant that the beneficiary PIs participated actively in every stage of the program's activities. This lead to a sense of ownership of the program and resulted in the following milestones:

- Policy and Curriculum Conceptualization
- Curriculum Design
- Content Development
- The Design and Development of a Quality Assurance Framework
- The Establishment of Program Teams in the Participating Institutions
- The Formation of the Teacher Education Advisory Committee
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Multinational Project

- Introduction
- Open, Distance & eLearning Centres
- AVU Capacity Enhancement Program
- Teacher Education Program
- Gender Mainstreaming
- Teacher Education Virtual Consortium
- Photo Gallery

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