

UNIVERSITY OF PRETORIA



# Transition of Forestry Education from Traditional Forestry to Sustainable Forest Management

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# Background

- ✓ Forest science education at the tertiary level has had several challenges in Sub-Saharan Africa.
- ✓ In many countries the curriculum, the traditional forest education was adopted from the colonial past that was heavily skewed toward the production of forestry silviculture but this has evolved in recent years to reflect the local forest management objectives.
- ✓ Thus the traditional forestry with silviculture of mono-crop plantations has given way to forest management reflecting the complex natural forest systems in Africa.



# Background

- ✓ This has also moved from the conservation of the forest resource to forest management with people in the form of adaptive, participatory forest management.
- ✓ A modern-day forester in Africa assumes a variety of roles that constantly challenge them to remain professionally relevant in a dynamic system including the continuously expanding number of stakeholders that need to be engaged in the forestry sector cuts across political, social and economic boundaries.
- ✓ The forester's job has shifted from simply managing trees and forests for timber to managing trees and forests to achieve the interests of various stakeholders.



# Job market and the changing role of foresters

- Major changes in policies and attitudes towards forestry and foresters and thus affecting forestry education:
  - A **renewed emphasis on livelihoods** and agricultural production to address food security
  - Tree planting has moved very strongly from establishment of **forest plantations to ToF, out-grower schemes** etc
  - Greater **emphasis on the roles of communities** in forest resource management.
  - Investment in forest industries has slackened, reducing the demand for both logging
  - expertise (in the traditional sense) and wood technology experts

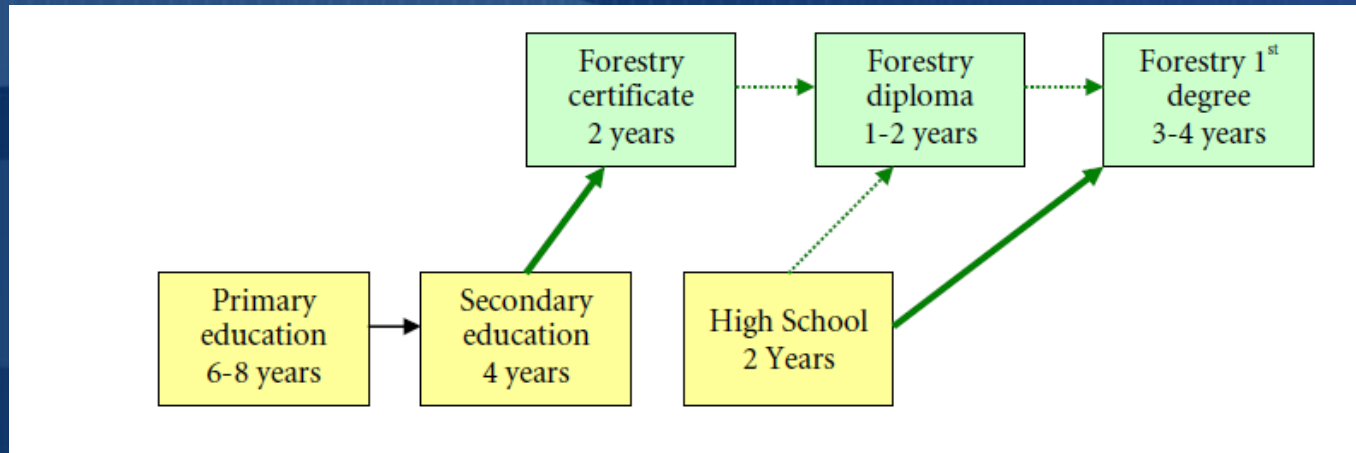


# What about the Curricula?

- Many **forestry curricula** are **patchworks**, **new areas of study** such as **biodiversity**, **social and community forestry**, **agroforestry**, etc., are opportunistically added on to existing programmes without due consideration for the overall direction of forestry programmes.
- The **need to add soft skills** such as **team leadership**, **communication** and **people management**.

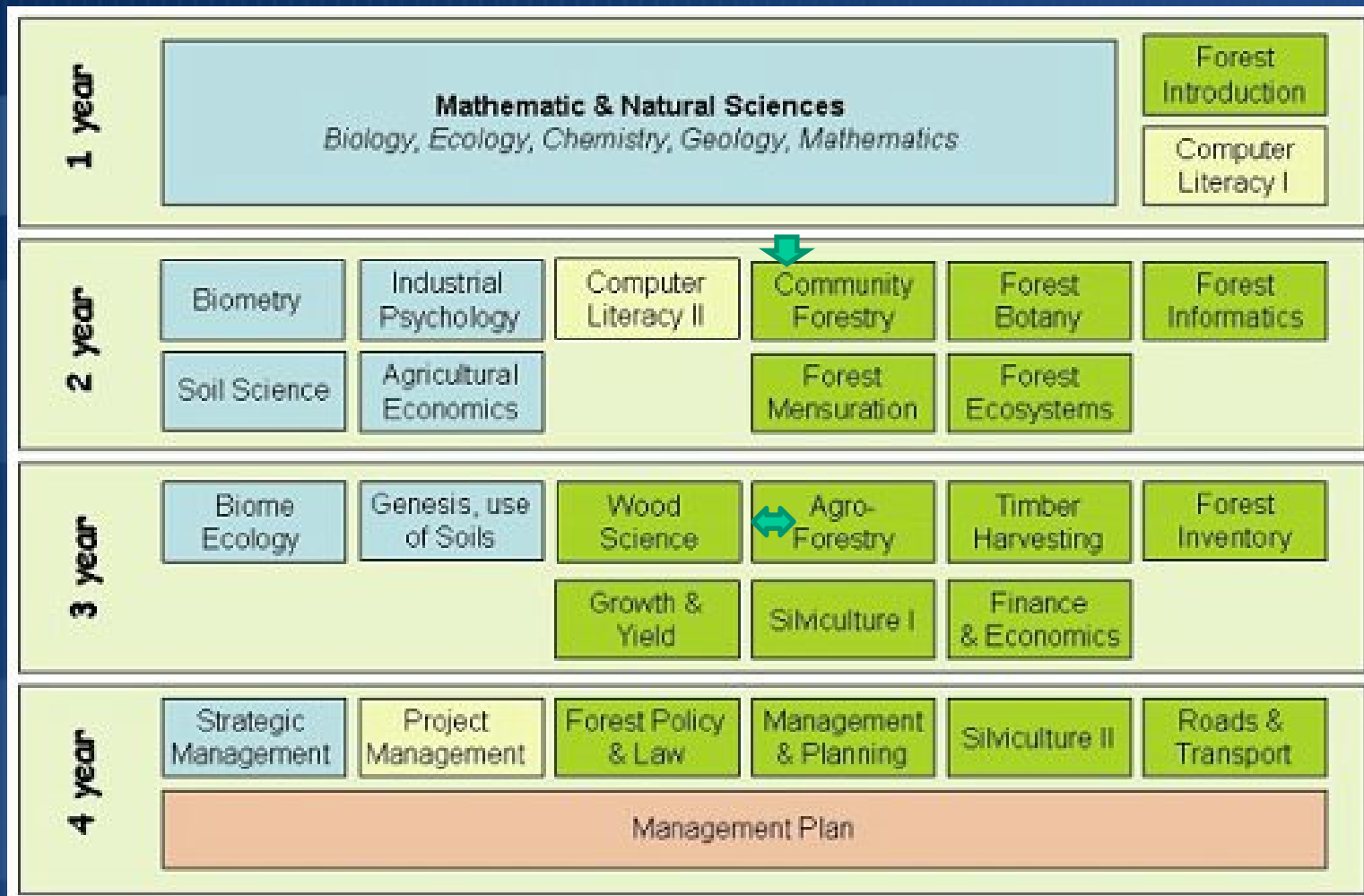


# South African general sequence of formal education and how it links with forestry education.



- Forestry certificate holders are expected to serve as foremen (leaders of teams of workers) in forest operations
- Diploma holders are sub-professional technicians, able to supervise several teams and be involved in planning operations.
- **Certificate and diploma holders would be expected to advise and support farmers in tree planting activities (e.g to our Forests under Land Claims).**

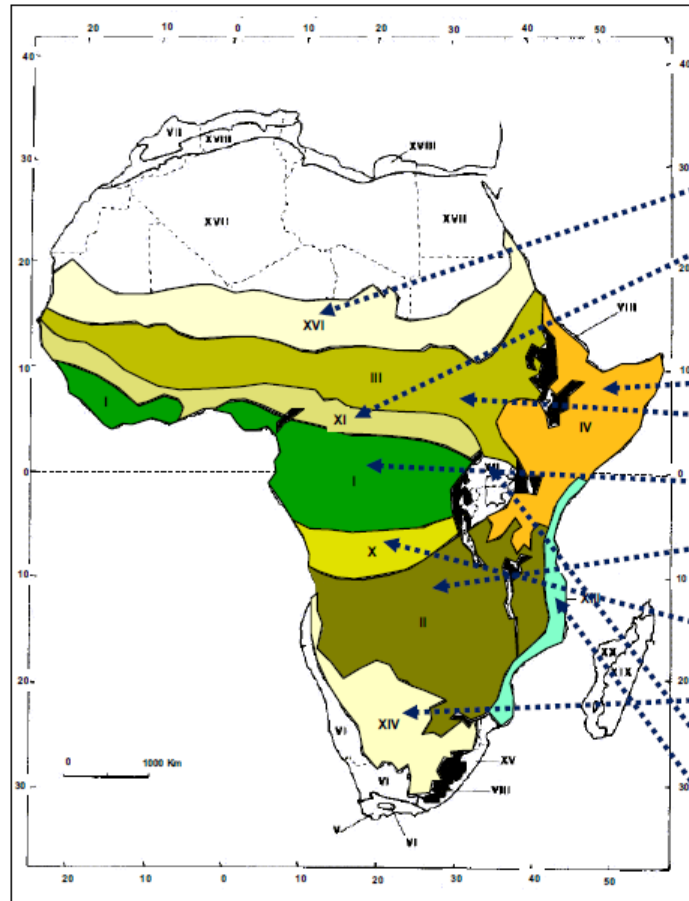




Mzuzu University (Malawi)	Stellenbosch University (South Africa)	SUA (Tanzania)	University of Ibadan (Nigeria)
<p><b>Watershed Management</b>  Policy and Law  Planning and Administration  Forest Engineering  Wood Science  Forest Products and Utilisation  <b>Environmental Management and Conservation</b>  Forest Protection  Tree Improvement  <b>Community-Based Natural Resources Management</b>  Botany  Plant Genetics  Biometry and Research Methods  Forest Economics  Forest Management Planning  <b>Agroforestry</b>  Silviculture  Introduction to Economics  Forest Ecology  Forest Management  Biochemistry  <b>Social Forestry</b>  Statistics  Forest Mensuration and Inventory  Silviculture I (Seed Technology and Nurseries)  Silviculture II ( Establishment and Tending)</p>	<p><b>Forest Science &amp; Natural Resource Management</b></p> <ul style="list-style-type: none"> <li>• Silviculture</li> <li>• Forest Management</li> <li>• Remote Sensing</li> <li>• Forest Engineering</li> <li>• Forest Economics</li> </ul> <p><b>Forest Science - For a sustainable future</b></p> <ul style="list-style-type: none"> <li>• Forest Ecologist/ Planner</li> <li>• Forestry Consultant or Contractor</li> <li>• Natural Resource Manager</li> <li>• Production Manager</li> <li>• Tree Breeder/ Timber Grower</li> <li>• Researcher/ Forestry Scientist</li> <li>• <b>Environmental Planner</b></li> <li>• Logistics Manager</li> <li>• <b>Rural Development Advisor</b></li> <li>• Extension Officer</li> <li>• <b>Land-use Manager</b></li> </ul> <p><b>*Wood Products Science/ Wood Science</b></p>	<p><b>College of Forestry, Wildlife, Tourism</b></p> <ul style="list-style-type: none"> <li>✓ Department of <b>Ecosystem and Conservation,</b></li> <li>✓ Department of Tourism and Recreation,</li> <li>✓ Department of Wildlife Management,</li> <li>✓ Department of Forest Resources Assessment and Management,</li> <li>✓ Department of Forest Technology and Wood Sciences,</li> <li>✓ <b>Department of Forest and Environment Economics</b></li> </ul>	<p><b>An integrated approach to the management of renewable natural resources</b></p> <ul style="list-style-type: none"> <li>✓ Forest Biometrics and Remote Sensing;</li> <li>✓ Forest Biology and Silviculture;</li> <li>✓ Forest Economics and Management;</li> <li>✓ Wood Science;</li> <li>✓ <b>Fisheries Management; and</b></li> <li>✓ <b>Wildlife and Range Management.</b></li> </ul>



# African Vegetation Formation



## African Vegetation Formations (White 1983)

Regional Transition Zones

XVI Sudania/Sahel

XI Guineo-Congolia/Sudania

Regional Centres of Endemism

IV Somalia-Masai

III Sudanian

I Guineo-Congolian (RF)

II Zambezian

Regional Transition Zones

X Guineo-Congol/Zambezia

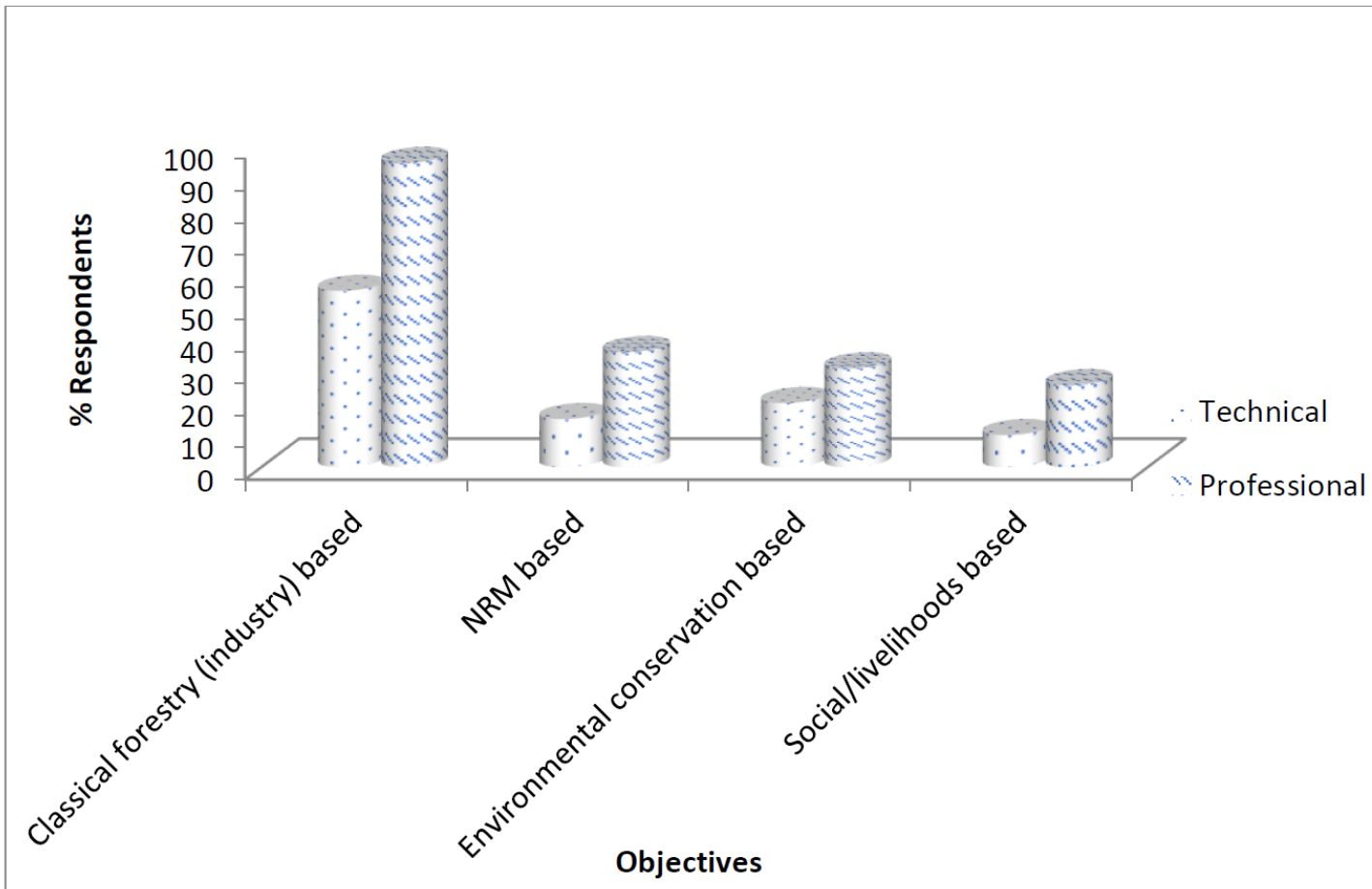
XIV Kalahari-Highveld

Regional Mosaics

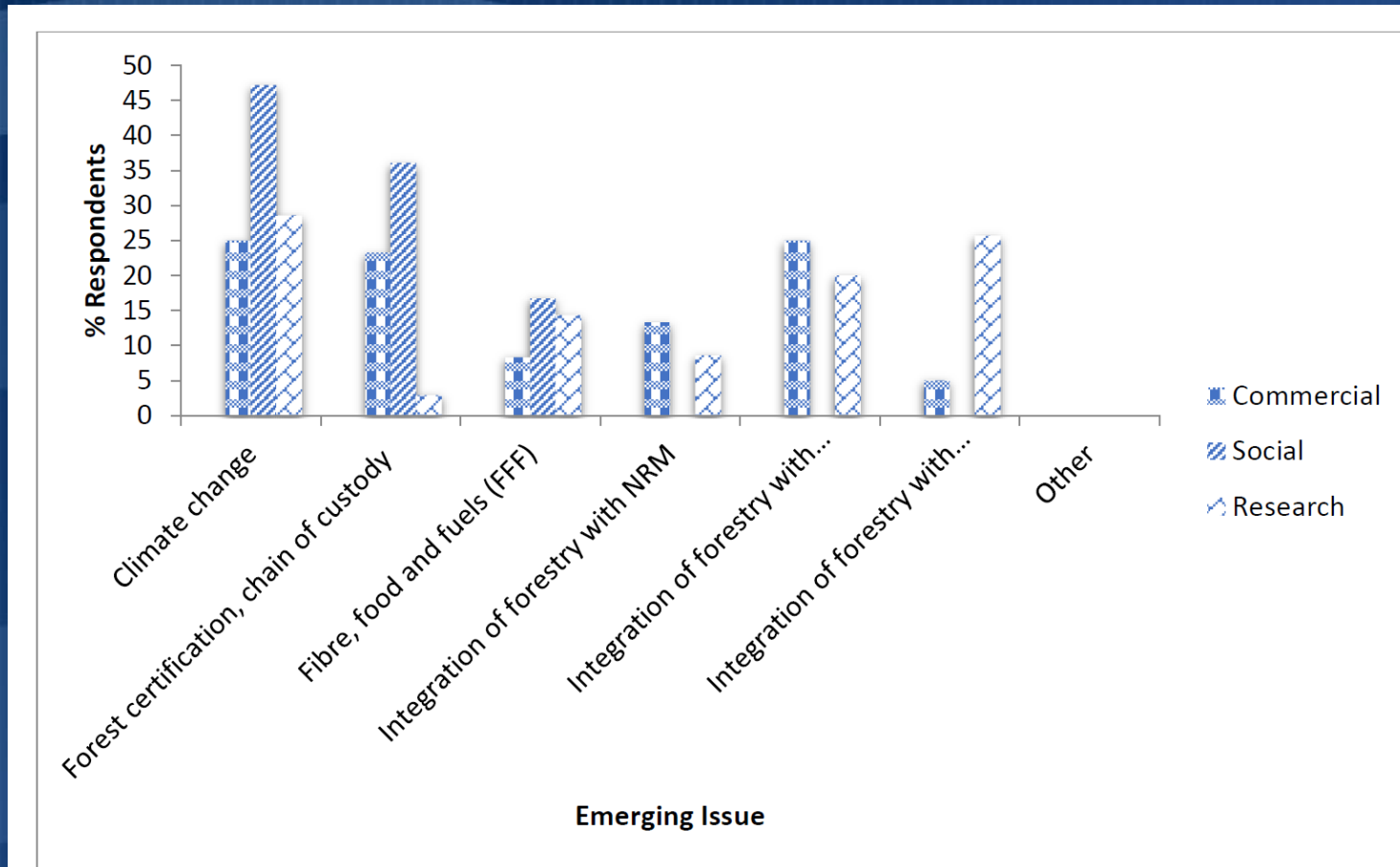
XII Lake Victoria

XIII Zanzibar-Inhambane

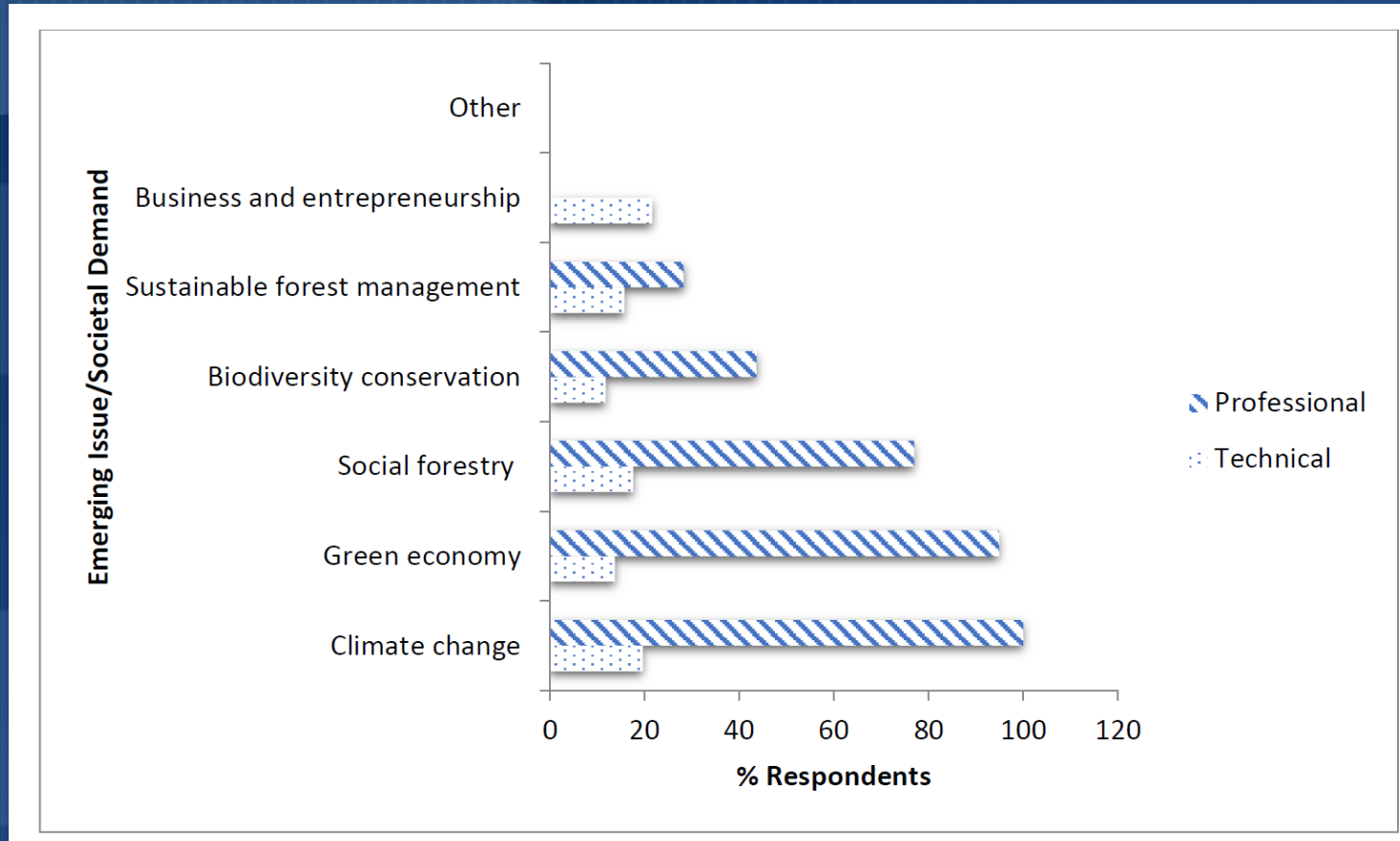
# Current Forestry Curricula emphasis (African Forest Forum 2019)



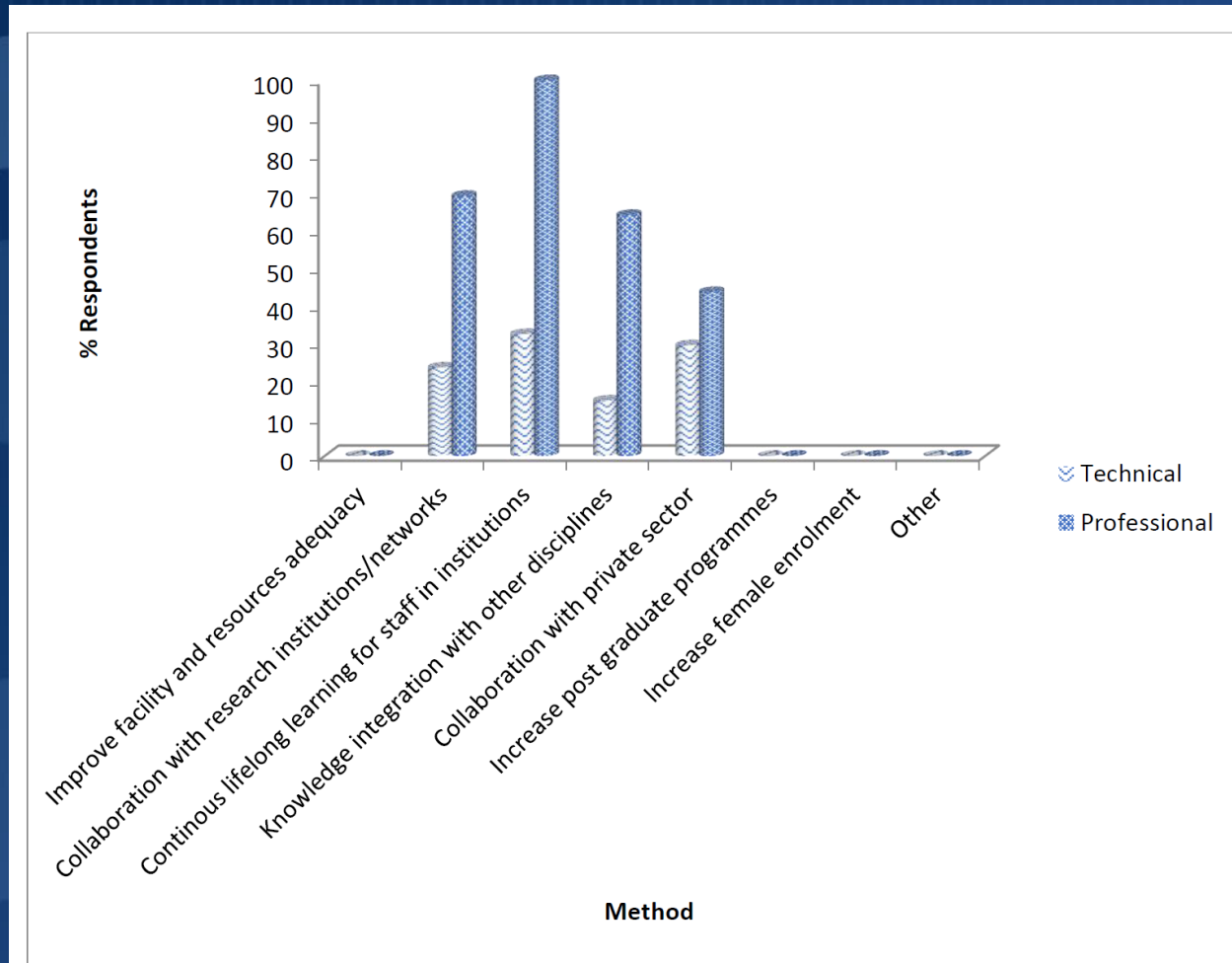
# Emerging issues deficient in current forestry curricula (African Forest Forum 2019)



# Emerging issues/societal demands which are needed in the curriculum (AFF 2019)



# How does one incorporate emerging issues into the curriculum?



# Priority Areas of The Sustainable Forest Management Framework for Africa (AU)

**PRIORITY 1.** Enhancement of the value of forests and the sustainable production, processing, marketing's and trade for forest products and ecosystem services

**PRIORITY 2.** Capacity Development and Knowledge management for SFM

**PRIORITY 3.** Political and institutional framework for Sustainable Forest Management

**PRIORITY 4.** Restoration of degraded forests and landscapes

**PRIORITY 5.** Enhanced partnerships and resource mobilization for achieving SFM

# Priority needs in forestry education

- ✓ Tree and forest systems outside forests
- ✓ knowledge in the larger field of natural resource management
- ✓ **Recognition that forests go beyond the domain of traditional timber management**
- ✓ Basic understanding of ecological processes and functioning of tropical forest ecosystems and **influencing socio-economic factors**
- ✓ **Participatory methodologies and interactive learning skills**
- ✓ Driving forces of agrarian and natural resource production systems
- ✓ **Enterprise education and communication skills**
- ✓ Typology of tree formations (in-and-outside forests): agroforestry, farm forestry, etc.



# Priority needs in forestry education

- ✓ **Collaborative management models and institutional analysis in NRM**
- ✓ **Gender equity, access to and natural resource benefit sharing**
- ✓ **HIV/AIDS impacts on natural resource management**
- ✓ **Resource and land tenure regimes**
- ✓ Forest certification schemes and their potential impact on productivity and profitability
- ✓ Criteria and indicators for sustainable forest management,
- ✓ Impacts of globalization, climate change,
- ✓ Biotechnology on forest and tree management





## Are Students Still interested?

- A poor image of forestry industry: exploitative, academically unchallenging, male-dominated,
- **A lack of awareness among school and local authority career advisors**
- A perception of poor career prospects in terms of finding jobs, levels of pay, conditions of employment, career advancement and job satisfaction
- **A decline in student interest in studying science subjects at university compared with degrees in the arts, humanities and social sciences**
- A growing estrangement from the countryside of urban youth resulting in a waning interest in working in the rural economy.



# What next now?

- Changing the name of the programme to change its image. E.g. forestry with other activities -the School of Forestry and Natural Resources
- **Amalgamating forestry programmes**
- Restructuring programmes to broaden the discipline and make them more relevant, such as adding more business courses, communication and leadership, and social courses
- **Highlighting the use of technology in the sector to counter the image of being primitive technologically**
- Expanding the programme to incorporate an additional year of industry placement as part of the educational process



Thank you

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