



African Network for
Agriculture, Agroforestry
& Natural Resources Education



Revitalizing Forestry Education in East Africa: The Dar es Salaam Declaration



from 27th to 29th May 2010

Contents

| | |
|---|-----|
| Acronyms and Abbreviations | iii |
| Acknowledgements | iv |
| Executive Summary..... | v |
| 1. Introduction..... | 1 |
| 1.1 Participants, organizers and the programme..... | 1 |
| 1.2 Key Note Address: The essence of Forestry Colloquia | 3 |
| 2. Outputs..... | 6 |
| 2.1 Consensus on Forestry Education Issues | 6 |
| 2.2 Strategies for addressing forestry educational weaknesses | 9 |
| 3. The Dar es Salaam Declaration 2010 | 14 |
| 4. Development of Project concepts on the agreed areas | 14 |
| 5. Institutional commitments..... | 14 |
| 6. Way forward..... | 14 |
| 7. Closing remarks..... | 15 |
| 8. Appendices..... | 16 |

Acronyms and Abbreviations

| | |
|-------|---|
| ANAFE | African Network for Agriculture, Agroforestry and Natural Resources Education |
| IPFE | International Partnership for Forestry Education |
| SUA | Sokoine University of Agriculture |
| ECA | Eastern and Central Africa |
| SA | Southern Africa |
| WA | West Africa |
| FAO | Food and Agricultural Organization of the United Nations |
| NPFP | National Forestry Programme Facility |
| VC | Vice Chancellor |
| AFF | African Forestry Forum |
| BSc. | Bachelor of Science Degree |
| MSc. | Master of Science Degree |
| PhD | Doctor of Philosophy |
| ACFE | Advisory Committee on Forestry Education |
| FITI | Forestry Industry Training Institute |
| ICT | Information Communication Technology |
| NEPAD | New Partnership for Africa's Development |
| ICRAF | International Centre for Research in Agroforestry |
| SADC | Southern Africa Development Community |
| IYF | International Year of Forests |

Acknowledgements

The African Network for Agriculture, Agroforestry and Natural Resources Education (ANAFE) is grateful to FAO for supporting the Forum through the National Forestry Programme Facility (NFPPF). The excellent work undertaken by Prof. Gillah and Professor Yonika Ngaga in coordinating the Forum is highly appreciated. The vital commitment by the resource persons in giving vital information on the on forestry education and curriculum was very useful in arriving at the deliberations of the Forum. The work undertaken by the national consultants is highly appreciated for generating factual information to guide discussions on ways of improving the forestry curriculum.

We sincerely appreciate the workshop secretariat from ANAFE and SUA for working tirelessly to make the workshop a success. The commitment of participants in actively and openly discussing the Forum agenda is appreciated. We are also grateful to the different presenters who gave very articulate presentations that are captured in this report. Our sincere thanks go to the management of Protea Hotel for working to ensure the comfort and safety of all participants.

Executive Summary

1. Rationale for the Forum

There have been rapid changes in the forestry education that call for a review in the curriculum of forestry. Past reviews have been undertaken in the form of disjointed additions under the same institutional settings. The Forestry Education Roundtable Forum was convened to develop regional priorities and approaches to reviewing the forestry curriculum. It was informed by national surveys undertaken in Kenya, Uganda, Tanzania and Ethiopia that were commissioned after the 2007 symposium on Forestry Education. The Forum brought together key participants dealing with forestry education from Eastern, Southern and West Africa to develop a framework for undertaking a comprehensive review of forestry education.

2. Forum Objectives

The Forum was convened with the following four objectives;

- 1) Develop a consensus on forestry education issues for the Eastern Africa region
- 2) Develop a clear strategy of addressing forestry education weaknesses
- 3) Draft proposal for funding activities in the agreed strategy
- 4) Establish a firm commitment for collaboration among the institutions of learning in Forestry in Eastern Africa

3. Key Findings

3.1 Training levels of Forestry education

Four distinct levels of training; Pre-college level (Secondary and primary schools), artisanal and technician level, undergraduate level and postgraduate levels. The content and depth of coverage of matters of forestry are different at each level. The curriculum needs to be designed in such a way that one level feeds into the other to avoid duplication of efforts.

3.2 Need for Comprehensive curriculum review

It was established that there have been significant changes on the roles of a forester, operational environment of the forester and the contents of forestry education. There have been efforts in the past to make forestry education all inclusive by incorporating emerging issues. The institutional frameworks remain largely the same thereby undermining success of the proposed changes. A comprehensive review taking a collaborative regional approach was thus recommended.

3.3. Re-branding of Forestry Education

The waning demand for forestry education calls for the need to re-brand it and make it more attractive both to students and the job market. The focus needs to be on developing a curriculum that gives all round graduates that have both technical and life skills. The current graduates seem less enthusiastic about their career, an aspect that reduces the demand for forestry education.

3.4 Strengthening of research and publications

The Forum noted the need for enhanced research to generate data that supports decision making processes in forestry. Emerging issues such as Climate Change are in the domain of foresters yet we lack researchers in Africa dealing with integrated aspects of climate science such as modeling. This has to be backed up by publications for different end users. Considering that forestry education will be taught both in schools and in non formal institutions, communication of forest science is a skill that has to be learnt by practicing foresters. Knowledge management and communication strategies have to be incorporated in the forestry curriculum.

3.4 Regional Collaborative approach to improving forestry education

It was noted that the ANAFE strategy to enhance collaboration in reviewing the forestry curriculum is unique and timely. It will allow for learning of experiences from others and developing regional priorities that will make forestry education marketable on a wider scale. ANAFE will thus work with other organizations such as AFF in sensitizing institutions on the need for the desired change and lobbying for their support in realizing the same. An opportunity was noted in the International Year of Forests to be marked in 2011 where a regional theme is being developed to bring institutions together for a common goal.

3.5 Training Needs Assessment

In view of the changing trends in the content, environment and expectations of forestry education, there is need to review the target personnel in the training. The forum developed the persons needed to be trained at each level and the skills that are needed for effective performance.

3.6 The Dar es Salaam Declaration

Stakeholders came up with a 13 point communiqué indicating the priorities in advancing forestry education as summarized below;

1. Enhance technical and artisanal capacity in training (2)
2. Continuing education for serving foresters to be given consideration (5)
3. Strengthen/ Establish professional associations in forestry management
4. Establish a regional/forestry education advisory facility (2)
5. Encourage inter-institutional and inter-disciplinary sharing of information and expertise between forestry schools
6. Establish common standards on forestry education (5)
7. Consider forest specialization to open up opportunities for foresters
8. Regionalize expensive training programmes (2)
9. Develop for use locally relevant learning resources (3)
10. Strengthen linkages between education, extension and research (3)
11. Harmonize forest education across the different levels (2)
12. Mobilize forestry education support from foundations, private sector and other actors
13. Re-packaging forestry education to make it more attractive

The above areas will be developed on a regional basis for effective outputs and sharing of experiences.

4. Way forward

The following action points were agreed upon by the Forum

1. A draft of the material produced will be shared and developed into a curriculum framework.
2. Communicate the issues prioritized above to development partners
3. Communicate to the NFP Facility to help in areas that have been identified
4. ANAFE to develop and present a concept note to NFP on a regional project to mark the International Year of Forests IYF in 2011 (It was declared in 2006 that 2011 is an international year of Forests). Strategy: Prioritize a theme on IYF and engage in discussion for a meeting scheduled for February 2011 to plan for the IYF
5. ANAFE to take the priority points and mobilize institutions to develop concept notes to submit to development partners.
6. Develop a plan for a programme to be implemented in the International Year of Forests (2011)
7. The Dar es Salaam Declaration will be aired in a televised interview where Prof. Yonika Ngaga was given 15 minutes to highlight on the issues. It needs to be widely circulated to enhance ownership and wider stakeholder participation in improving forestry education.

1. Introduction

There have been rapid changes in the forestry education leading to the widening of the gap between what is being taught in forestry education and the expanded role of trees and forests. This was discovered during the Global Workshop on Improving Forestry Education that ANAFE organized in Kenya in 2007 under the auspices of the International Partnership of Forestry Education (IPFE). It was felt therefore that reforms are urgently necessary in Forestry Education to meet current and future needs. As a follow-up to this, the African Network for Agriculture, Agroforestry and Natural Resources Education (ANAFE) and Sokoine University of Agriculture (SUA) in Tanzania initiated a collaborative project on “*Revitalizing Forestry Education in East Africa*”. The project is funded by the National Forest Programme Facility of the FAO Forestry Department.

The first phase of the project entailed studies conducted in Kenya, Uganda, Ethiopia and Tanzania in 2009 to review Forestry Education Policy, coordinated by Sokoine University of Agriculture. The studies revealed a number of challenges in forestry education that require stakeholder consensus and a regional approach to addressing them. In this regard, ANAFE and SUA convened a Forestry Education Roundtable that gathered Forestry and Natural Resources Management academicians, scientists, practitioners and Ministries to present and discuss the outcomes of the studies. The workshop was held with the following objectives;

- 5) Develop a consensus on forestry education issues for the Eastern Africa region
- 6) Develop a clear strategy of addressing forestry education weaknesses
- 7) Draft proposal for funding activities in the agreed strategy
- 8) Establish a firm commitment for collaboration among the institutions of learning in Forestry in Eastern Africa

This report gives a synthesis of the plenary sessions, group reports, discussions and the action points arrived at during the workshop.

1.1 Participants, organizers and the programme

The workshop brought together 25 participants from ECA, SA, WA and Sahel comprising of Principals of Forestry Colleges, Deans of Faculty of Forestry, Local Authority personnel and forestry experts in various fields. Prof. Yonika Ngaga, the Deputy Dean, Faculty of Forestry and Nature Conservation of Sokoine University of Agriculture welcomed participants and appreciated their commitment to the process. He reminded guests of the outcome of the Regional meeting that identified challenges facing Forestry Education. This workshop provided an opportunity for an in-depth look at the challenges with the objective of developing regionally acceptable action points towards addressing them. He acknowledged the presence of the Vice Chancellor of Sokoine University Prof. Gerald Monela. He led participants in self introduction and invited the Vice Chair of ANAFE Dr. Marie Louise Avana to give her opening remarks.

Dr. Marie Louise Avana
(Vice Chair ANAFE & Lecturer, University of Dschang, Cameroon)

She thanked all for coming to this important event. She observed that the workshop was quite timely, as it was convened just after another workshop that identified curriculum review as a major concern in improving agricultural and natural resources education. She noted that the forestry sector is faced with many challenges such as Climate Change that have to be factored in curriculum review. She welcomed all on behalf of ANAFE.

FAO Representative (Fred Kafeero, Rome)

He delivered apologies from the Manager, National Forestry Programme Facility (NFPP) of FAO who would have loved to be in the forum, but had other pressing commitments. He noted that the NFPP supports action and not empty talk. He pointed out the uniqueness of the ANAFE strategy to revitalize Forestry Education using a regional approach. He informed participants that the Forestry Programme Facility is keen to develop innovative outputs from the workshop.

VC, Sokoine University – Prof Gerald Monela

He noted the high diversity of participants in terms of nationalities coming together for a common purpose of improving forestry education. He thanked the organizing committee and saluted the efforts of Dr. Aissetou Yaye, the Executive Secretary of ANAFE, Prof. August Temu and the entire ANAFE fraternity for their concerted efforts to reform forestry education. He further thanked the Executive Secretary of ANAFE for collaborating with SUA in organizing the meeting, a factor that strengthens the linkage between the two institutions. He thanked FAO for funding the programme through the NFPP. He noted that this being the second Forum from the first one held in 2007 that recommended approaches to enhancing the relevance of forestry education, action is needed to implement the recommendations. He then invited the Guest of Honour for opening the workshop.

Chief Guest

She conveyed apologies from the Director of Forestry, who got commitments that could not allow him to be at the Forum. She appreciated the organizing committee for convening this unique Forum and giving the Forest Department the honour of opening it. She commended ANAFE for initiating this important discussion that has a great potential to improve forestry education in Africa. She acknowledged importance of the issues affecting Forestry Education and observed that these are regional issues that require due attention. She emphasized on the need to not only develop recommendations but further develop mechanisms for moving them to institutions for implementation. She observed that challenges such as Climate Change and desertification make it necessary to review forestry education and equip graduates with hands-on skills in addressing them. Forestry training has been widened in response to the challenges, hence the need to widen the scope and approach to education. The sector has new multidimensional roles that have to be captured in the training and development. She noted the disparities in the percentage of land under forest cover in the region, citing Uganda and Tanzania having 30%, Ethiopia 5%, and Kenya 2.8%. Such joint approaches will be useful in developing regional approaches to improving forest cover.

On the quality of training, she challenged participants to develop mechanisms of addressing the shortages of all-round trained professionals in the region. Emerging training needs have to be factored in the curriculum, hence the need for informed reviews. She informed the Forum on the need to look at how best forestry education can be offered in the 21st Century using the scarce financial resources. It is important to determine how success will be measured and how the demand for forestry education can be enhanced with clear results. Having brought participants to a clear understanding of the context in which the Forum was organized and expectations thereof, she officially declared the Forum opened.

Dr. Aissetou Drame Yaye – Executive Secretary of ANAFE

She thanked the Chief Guest and all other guests for coming to the workshop. She thanked the FAO team through Mr. Fred Kafeero for supporting the initiative. She also acknowledged the support and interest of the African Union, African Forestry Forum (AFF) through Prof. Godwin Kowero and Prof. Temu for their earlier efforts. She assured the Guest of Honour that the team was focused and committed to develop action points that will improve forestry education in Africa. She informed participants that ANAFE has been working through universities and tertiary agricultural and natural resource education institutions to improve teaching and learning. Currently, ANAFE works directly with 131 institutions in 35 African countries and the number of partners is growing. She reminded participants on the need to develop a curriculum framework that will revitalize forestry education starting from East Africa and scale it up to other regions. She informed participants that the process started with undertaking forestry education review in the four East African countries where analysis of the demand for forestry education was looked into. Proposals for curriculum review need to be developed and curricula frameworks developed. She thanked Prof. Ngaga and Prof. Gillah of Sokoine University of Agriculture (SUA) for their support to the process.

1.2 Key Note Address: The essence of Forestry Colloquia

(Prof August Temu)

To enable participants to work on the workshop objectives from the same level of understanding, Prof. August Temu, a former Executive Secretary of ANAFE gave a chronology of developments in forestry education review. He informed participants of the need for the workshop to come up with results to be used that the world will look at and see the contribution this forum has achieved. He outlined the following sequence of developments in Forestry Education;

- 1930s to 50s – Curriculum focused mostly on training technicians to manage forest plantations
- 1950s to 1970s – Training focused on BSc. level to fill the gap of forest managers needed to oversee the different forest resources.
- 1970s to 1990s – There were a number of reviews developed due to restructuring of institutions. These reviews looked more into the placement of forestry within the institution rather than the contents of the course
- 1990s to date – a lot of challenges have come up that makes it necessary to review forestry education

In the above developments, the following limitations went unchecked in forestry training;

- Curriculum was copied from stage to stage
- Training took a regional approach until 1970s when each country developed their own training programmes
- There have been reviews but in the form of additions to the curriculum and not complete improvement
- The training was tailored to meet public service with limited industrial training
- A major limitation persisted in getting locally contextualized learning resources
- Linkages were few but developments were made to enhance the linkages. Programmes covering farm forestry, social forestry and Agroforestry were developed but within training level with less interaction with the field.
- There was a low demand of forestry education in late 1990s with unemployment of forestry graduates setting in.
- Integrated natural resource management was introduced but was not institutionalized. This made forestry to begin losing ground
- Multidisciplinarity and social aspects of Forestry were developed, but largely in mind and not in practice.

Forest practitioners on the other hand experienced the following challenges;

- Policy and management issues learnt did not apply directly in the field
- Decision making in matters of forestry management involved more than what was learnt including politics and executive decisions limiting the practitioners from making decisions based on their expert judgment.
- Forest valuation was complicated by the multiple roles of forests as the training given was largely in favor of plantation forests and conservation aspects.
- The role of the forester was changed, but institutional framework remained the same.
- Recently, globalization and climate change have come in to further complicate management of forests.

Discussions following the key note address brought out the following key issues;

- An advisory Committee on Forestry Education (ACFE) was formed in 1956 by FAO, but it was closed in 2007 when these issues had reached a peak level that critically needed the office. It was recommended that FAO needs to consider re-opening the forestry education office as its functions are highly needed.
- The carbon issue lies with the forester advising farmers on the type of trees to plant – carbon is to be looked at as an added value but not the main issue
- Schools have taken some modules that take crosscutting issues hence the need to factor what is taught in schools in the review process.

- Revising the curriculum has to be done cautiously as some of the emerging issues could have been covered in the wider forestry curriculum
- There is need to re-tool foresters to enhance their skills in address emerging issues
- There is need to re-evaluate the motive of training. Forestry graduates have poor skills and attitude, which impedes on their ability to perform effectively. We need to produce practical foresters and not administrators. They need to embrace real skills.
- There are opportunities that foresters have to but we have few and shy foresters hence we need to reverse this
- It is important to re-set the objectives of producing foresters, but some of the professors are quite rigid. A change in mindset on the part of the trainers is needed. Such a forum is important in initiating this change.
- The forestry curricula need review, but the process cannot be rushed as substantial data is needed so that the review is as accurate as possible.
- The re-establishment of a Forestry Education Office is one of the strong recommendations from the workshop.

The FAO representative in the meeting Mr. Fred Kafeero concurred on the need to re-open a Forest Education Office. He informed participants that there are discussions on reforming forestry education but it deals with reforming the forestry department, which may not dwell more on management aspects with limited input to the curriculum. He reiterated on the need to develop a long term strategy.

2. Outputs

2.1 Consensus on Forestry Education Issues

Participants deliberated on the issues affecting forest education from the surveys conducted in the three East African countries. The following are the key findings from the country surveys on forestry education;

2.1.1 Tanzania – Prof. Madoffe

- The ownership of forests is by the government, which is faced with challenges of low funding, and emerging issues such as Climate Change
- Universities develop their own training needs programme. The BSc Programme in Forestry started in 1973 in SUA. It was considered narrow as it did not adequately address the challenges facing the forestry sector.
- A curriculum review was done in 2007 and 6 courses came up.
- To further address the challenges, the faculty has proposed 6 other BSc programmes by the year 2011
- The Forestry Industry Training Institute (FITI) undertakes their reviews annually.

The following weaknesses exist in the current training

- Lack of intensive practical skills
- Poor interaction in the forest disciplines
- Mismatch of training and the job market
- Regional and international forestry issues are not well articulated in the training
- Irregular review of curriculum
- Deficiency of graduates in problem solving skills
- Curriculum of technical colleges is developed independently from that of the universities, yet the training areas have many similarities

In the discussion, the following issues were raised;

- The re-training of forest employees by the Local Government may not be given priority as there are other pressing needs such as primary education
- Training is undertaken by the forestry and bee keeping division and not by the institutions
- Districts are operating at different levels from the local government hence the need to harmonize the two as they both deal with forest training and management.

2.1.2 Uganda (Dr. Wilson Kasolo)

The surveys undertaken in Uganda outlined the following key findings;

- There is an improvement in MSc and PhD level training
- Technical level training and BSc training have gone down

- There is an upsurge in upgrading of the technical level staff with many enrolling for degree programmes.

The following challenges face forestry training in Uganda;

- Limited teaching resources
- Declining employment opportunities
- Poor skills of lobbying and advocacy by the trainees

To address limitations to forestry training in Uganda, the following priority actions were recommended;

- Review programmes to include new ones that respond to emerging needs
- Enhance networking and collaboration between different institutions dealing with forestry education
- Review the curriculum

2.1.3 Kenya (Dr. Eliud Kireger)

The following challenges face the forestry sector in Kenya;

- Multiple licensing for product exploitation
- Under-valuation of forestry resources
- Depletion of forest cover

The following challenges were identified in forestry training;

- Declining resource persons due to brain drain and brain wash
- Limited facilities for practical training
- High rate of change of leadership in institutions hence interrupted developments
- Low funding in forestry education
- Attitude towards forestry education is poor due to a high level of unemployment

It was reported that reviews in curricula are undertaken every 5 years, but takes the approach of additions rather than a complete review. The additions are not fully mainstreamed in the forestry education as the institutional frameworks remain the same. The following were the proposed areas that need to be addressed;

- Develop curricula that addresses multiple functions of forests
- Develop ways of enhancing Social Forestry (Farm forestry, community forestry, urban forestry and Agroforestry)
- Involve all the stakeholders in the review and development process
- Address land use conflicts between forestry, wildlife and agriculture

Two possible curricula frameworks were recommended;

- a) Start at a broad basic level with students equipped with knowledge on all disciplines related to forest management at the undergraduate level and then specialize at higher levels

- b) Have general courses in the first two years and specialize at the upper level of the BSc training in the different disciplines such as Agroforestry.

2.1.4 Ethiopia - Dessie Gessesse

The following are the key aspects of forestry training in Ethiopia;

- Training programmes have been on for certificate and diploma courses, but diploma training was halted in 2005
- BSc and MSc are ongoing with reviews done every 5 years
- There is a quarter system as science and technology courses take 70% of intake while 30% goes to social sciences, where forestry is covered under agricultural programmes. This is a proposal that is yet to be implemented. Learning from the conflict between forestry and agriculture in Kenya, such a move may have detrimental effects to forestry education.

The following aspects were deemed necessary to be factored in the forestry training;

- Course sequencing to enable learners to know emerging issues early and develop ways of addressing them
- Equipping of graduates with life skills that are currently lacking in the curriculum
- Improving the mode of delivery of forestry education
- Using innovative methodologies in teaching
- Undertaking regional and regular curricula reviews
- Review of the assessment modes
- Increase the use of ICT in forestry training

Unlike in the other two countries, Ethiopia reported a growing demand for foresters. The stoppage of Diploma level training was worrying as technicians are needed for forestry management. The rush to upgrade and get degrees needs to be re-evaluated as BSc level training is largely managerial.

2.1.5 African Forestry Forum project on Forestry Education (Prof Ishengoma & Prof. Kowero)

The African Forestry Forum (AFF) has been involved in matters of forestry management that have a direct relation with the training needs. From the AFF perspective, the following aspects need to be captured in the forestry curriculum review;

- There is need to strengthen the research component to give forestry education a strong base
- Training and mentoring needs to be enhanced
- Emerging issues have been identified but we need scientific evidence in the form of facts
- Need for revision of curricula
- Need to strengthen existing networks
- Staff recruitment and refresher courses are needed
- Upgrading of equipment used in the labs and the field is vital

- Some administrative settings do not allow for speedy improvements, hence the need to undertake institutional reviews as well
- Extension services need to be improved to have it combined with practical demonstrations
- Developing ways of actively engaging the youth in forestry activities is important
- Market information on wood and non wood products is lacking hence learners need to be equipped with this information.
- Staff exchange and exchange visits and development of learning material is needed
- Technical forestry education support and improvement of pedagogical skills is a necessity

Comments from the discussion

The following pertinent issues were by consensus agreed upon as part of the intervention plan in reforming forestry education from the above presentations;

1. The approach of NEPAD to postgraduate training is regional and the same approach can be up-scaled to the region
2. The old forestry inventory is being replaced by inventory of tree resources in terms of services and products and in their many levels at which they occur. There is need to develop material and enhance pedagogical skills in imparting this knowledge
3. The activities of ANAFE and AFF have a strong correlation on the outcomes of the surveys from the country presentations. It will thus be imperative to develop approaches for undertaking joint initiatives towards addressing the challenges.
4. Support and encouragement for lecturers to publish is needed. Many research programmes are undertaken by universities, but publications in peer review journals are few.
5. Extension services providers are few hence the need to engage governments in addressing the issue as it is a policy matter.
6. ANAFE's work in improving the capacity of lecturers by spearheading the development of contextualized learning material is an initiative that needs to be widened to capture issues in forestry education. ANAFE's experience in facilitating review of curricula will be useful in informing the process of forestry curricula review.

2.2 Strategies for addressing forestry educational weaknesses

Having identified the weaknesses in the forestry training and practice, participants developed a three-step strategy for addressing them. The first step involved identification of the thematic areas to focus under the different training levels (artisanal, undergraduate and postgraduate level). This was done through group discussions that yielded the following key outputs;

2.2.1 Artisanal level training themes

- Training needs and curriculum alignment
- Institutional frameworks and governance
- Policy development and implementation
- Enhancing linkages between training, research and extension
- Re-branding forestry to make it attractive and lucrative
- Resource mobilization approaches

Observations

1. It was noted that there are efforts to step up revenue collection from forest enterprises, but there is no motivation for this as all the proceeds are taken to the Central Government and nothing comes back directly for the supporting the initiatives. Incentives establishment and management of forest enterprises need to be factored in the review.
2. Training at this level needs to be tailored towards self employment. Businesses such as nursery operation needs to be included as most commercial nurseries at the moment are operated by non-professionals. It will be necessary to undertake tracer studies to determine where trained foresters are even as we work on strategies to train more.
3. Enhancing staff sufficiency is an issue to be addressed as currently most sections have frozen recruitment yet there is high brain drain, retirement and loss of staff due to natural attrition.
4. Management training for administrators in forest colleges is recommended in the review

2.2.2 BSc Level Training Themes

- Assessment of demand for the training courses
- Overlap between forestry courses and other disciplines
- Development of context specific curricula
- Enterprise focused curriculum for forestry training
- Evaluation modes and course coding
- Mainstreaming of emerging issues
- Sequencing of courses for optimal concept development by the learner i.e. giving learners courses at the right stage
- Selection of the trainees
- Practical skills and field attachments
- Resource mobilization

Observations

1. As much as undergraduate level trains managers, there is need to enhance practical skills
2. Wide understanding of forest issues at this level is important
3. Harmonization between the undergraduate and artisanal level curricula is important
4. A balance between research and training needs to be achieved. Lecturers need to be incentivized to undertake research that will involve students.
5. Local context materials need to be developed
6. Linkages between universities and the private sector needs to be strengthened both practically by having liaison offices and having courses on regional and international relations
7. Other aspects such as wildlife and biodiversity conservation need to be factored in the training.

2.2.3 Postgraduate Level Training Themes

- Research skills focusing more on applied research
- Scientific and non scientific writing skills
- Development of specialized regional programmes on emerging issues
- Validation of indigenous knowledge through research
- Training and research on strategic issues

Observations

- Publications should form the bulk of outputs at this level
- Specialization in aspects that have been done by expatriates such as climate change modeling is needed
- Improved North-South linkages was strongly recommended
- Exchange programmes and cross-institutional supervision needs to be factored in the training for wider exposure of students and lecturers

The second level in addressing challenges was to develop a desirable pool of courses at each level. To do this, an analysis was done for who is being trained and the skills needed.

Artisanal and technician level

The following categories of professionals need to be trained at the artisanal level and the complementary skills needed;

Table 1: Categories of artisanal level training and skills needed

| Who is being trained | Skills needed | Specialization |
|--|--|---|
| Research Assistant | <ul style="list-style-type: none"> • Data collection and entry • Preliminary data analysis • Report writing | Teaching |
| College instructor | <ul style="list-style-type: none"> • Teaching and demonstration | Teaching |
| Sawmill supervisor | <ul style="list-style-type: none"> • Sawmilling skills • Human Resource Management | Supervision |
| Lab Technician | <ul style="list-style-type: none"> • Demonstration skills | Experimentation |
| Forest supervisor (plantation and natural forests) | <ul style="list-style-type: none"> • Plantation establishment and management • Law enforcement | Tree seed technology & tree nursery establishment |
| Extension agent | <ul style="list-style-type: none"> • Communication skills • Facilitation and coordination | Forest extension |
| Tree nursery manager | <ul style="list-style-type: none"> • Tree nursery operations | Forest Industry |
| Logging supervisor | <ul style="list-style-type: none"> • Logging | Forest Industry |
| Secondary school teacher | <ul style="list-style-type: none"> • Pedagogical skills | Teaching |
| Community trainer | <ul style="list-style-type: none"> • Social dynamics | Training |
| Entrepreneur | <ul style="list-style-type: none"> • Business management | Forest business |
| District Assistant Forest | <ul style="list-style-type: none"> • Planning | Forest management |

| | | |
|----------------------|--|-----------------------|
| Officer | <ul style="list-style-type: none"> • Human resource management | |
| Assistant Supervisor | <ul style="list-style-type: none"> • Forest surveying and mapping | Forest administration |

II. Undergraduate level

Table 2: Categories of undergraduate level training and skills needed

| Who is being trained | Skills needed | Specialization |
|------------------------|--|--------------------|
| Managers | <ul style="list-style-type: none"> • Leadership skills • Communication skills • Resource management skills • Analytical skills • Resource mobilization • ICT competence skills | Forest management |
| Entrepreneurs | <ul style="list-style-type: none"> • Business management skills • Marketing skills • Product development skills • ICT competence skills | Entrepreneurship |
| Conservationists | <ul style="list-style-type: none"> • Resource assessment skills • Resource management skills • ICT competence skills | Conservation |
| Land Use Planners | <ul style="list-style-type: none"> • Resource Assessment skills • Resource management skills • Planning skills • ICT competence skills | Land use planning |
| Trainers | <ul style="list-style-type: none"> • Communication skills • Pedagogical skills • ICT competence skills | Training |
| Researchers | <ul style="list-style-type: none"> • Analytical skills • Communication skills • Design and management skills • ICT competence skills | Research |
| Policy Makers | <ul style="list-style-type: none"> • Communication skills • Negotiation skills • Monitoring and Evaluation Skills • ICT competence skills | Policy development |
| Forestry Extensionists | <ul style="list-style-type: none"> • Communication skills • ICT competence skills | Extension methods |

III Postgraduate training

Table21: Categories of postgraduate level training and skills needed

| Who is being trained | Skills needed | Specialization |
|----------------------|---|--|
| Resource Managers | <ul style="list-style-type: none"> • Sustainable Resource Management • Planning | All round managers looking at the bigger picture |

| | | |
|------------------------------|---|---|
| | <ul style="list-style-type: none"> • Communication • Human and finance management • Fund raising • Monitoring and evaluation • Development of policies • Networking • Resource modeling | |
| Commercial Resource Managers | <ul style="list-style-type: none"> • Marketing and trade • Business and finance management • Public Relations • Negotiation skills • Economic analysis • Product development • Quality control and management • Operations research and control • Resource and human management | All round managers looking at the bigger picture |
| Scientists | <ul style="list-style-type: none"> • Diagnostic skills • Innovation • Generation of knowledge • Training • Proposal development and writing • Data analysis/modeling and Presentation • Scientific writing • Dissemination of scientific findings • Networking • Communication • Consultancies | All aspects of natural sciences i.e. silviculture, entomology, economics, soil science etc. |
| Administrators | <ul style="list-style-type: none"> • Policy analysis • Policy making • Coordination of issues • Communication • Negotiating skills • Diplomacy • Conflict management and resolution • Development planning • Human and financial management • Budgeting | Forest administration |

Comments

- Interuniversity collaboration in the training is an important component
- Emerging issues need to be incorporated in the curriculum

3. The Dar es Salaam Declaration 2010

In order to concretize the issues raised and develop a joint action plan, priority areas of focus to improve forestry education were identified synthesized and distilled into a 13 point “Dar es Salaam Declaration” outlined below;

1. Enhance technical and artisanal capacity in training (2)
2. Continuing education for serving foresters to be given consideration (5)
3. Strengthen/ Establish professional associations in forestry management
4. Establish a regional/forestry education advisory facility (2)
5. Encourage inter-institutional and inter-disciplinary sharing of information and expertise between forestry schools
6. Establish common standards on forestry education (5)
7. Consider forest specialization to open up opportunities for foresters
8. Regionalize expensive training programmes (2)
9. Develop for use locally relevant learning resources (3)
10. Strengthen linkages between education, extension and research (3)
11. Harmonize forest education across the different levels (2)
12. Mobilize forestry education support from foundations, private sector and other actors
13. Re-packaging forestry education to make it more attractive

4. Development of Project concepts on the agreed areas

ANAFE was facilitating a write-shop workshop in ICRAF for the SADC. It was resolved that a team of representatives from the meeting be engaged in developing concept notes. The outputs of these will be communicated to the other stakeholders in due course.

5. Institutional commitments

All the participants present were advised to start developing ways of initiating the process of curriculum review in their respective institutions. This is important considering that curriculum review takes long and its timing varies from one institution to another. ANAFE will keep the linkage with universities and organize fora that will enhance advocacy for the need to review curricula.

6. Way forward

The following action points were agreed upon by consensus in the Forum;

1. A draft of the material produced will be shared and developed into a curriculum framework.
2. Communicate the issues prioritized above to development partners
3. Communicate to the NFP Facility to help in areas that have been identified
4. ANAFE to develop and present a concept note to NFP on a regional project to mark the International Year of Forests IYF in 2011 (It was declared in 2006 that 2011 is an

international year of Forests). Strategy: Prioritize a theme on IYF and engage in discussion for a meeting scheduled for February 2011 to plan for the IYF

5. The above areas have to be captured in a declaration
6. ANAFE to take the priority points and mobilize institutions to develop concept notes to submit to development partners.
7. Develop a plan for a programme to be implemented in the International Year of Forests (2011)
8. The Dar es Salaam Declaration will be aired in a televised interview where Prof. Yonika Ngaga was given 15 minutes to highlight on the issues.

7. Closing remarks

(Dr. Aissetou Drame Yaye – Executive Secretary of ANAFE)

Following the successful deliberations of the Forum culminating in an authoritative declaration, the Executive Secretary of ANAFE Dr. Aissetou Drame Yaye conveyed her appreciation to all the participants for their openness and meticulous commitment to discussions. She described the ownership by stakeholders of both the process and outcome of the Forum as a great milestone in improving Forestry Education. Efforts to review the forestry curriculum could thus be initiated at institutional level with ANAFE facilitating sharing of experiences and enhanced collaboration. She assured participants that ANAFE as a Pan African Network will take on the mandate given to it by the Forum and in line with her vision and mission to see into it that action is taken on the deliberations. She informed members of the need to strengthen ANAFE as a strategic link for getting coordinated institutional commitment to reviewing the forestry curriculum. She informed participants that a team will be constituted to immediately embark on developing proposals as resource mobilization is urgent for implementing the deliberations of the Forum. She encouraged participants to collaborate objectively and develop efforts in addressing the issues raised at the Forum. She once more thanked the National Forestry Programme Facility (NFPPF) of FAO for supporting the Forum and informed FAO through its representative Mr. Fred Kafeero of the need to support actions that have emerged from the Forum. She thanked the secretariat, Sokoine University of Agriculture, the hotel and all participants for their commitment to the success of the Forum and declared it adjourned.

8. Appendices

Appendix 1: List of Participants

| | Name & E-mail address | Position and Institution | Region |
|----|--|---|---------------|
| 1. | Yaye, Dr. Aissetou a.yaye@cgiar.org | Executive Secretary of ANAFE c/o ICRAF, Box 30677 – 00100 Nairobi, Kenya | ECA |
| 2. | Chakeredza, Dr. Sebastian s.chakeredza@cgiar.org | ANAFE Network Manager, c/o ICRAF, Box 30677 – 00100 Nairobi, Kenya | ECA |
| 3. | Ishengoma, Prof. Romanus ishengomarc@yahoo.com | Sokoine University of Agriculture; P.O. Box 3009, Morogoro, Tanzania | ECA |
| 4. | Kaboggoza, Prof. John R. S. kaboggoza@forest.mak.ac.ug | Faculty of Forestry and Nature Conservation, Makerere University, P.O. Box 7062, Kampala, Uganda | ECA |
| 5. | Kowero, Prof. Godwin g.kowero@cgiar.org | Executive Secretary, African Forest Forum c/o ICRAF, Box 30677 – 00100 Nairobi, Kenya | ECA |
| 6. | Fortunata, Dr. Msoffe | Chief Park Warden (In-Charge) Udzungwa National Park P. O. Box 949 Njiro, Tanzania | ECA |
| 7. | Ndege, Mr. Tom t.ndege@cgiar.org | Administrative Assistant, ANAFE c/o ICRAF, Box 30677 – 00100 Nairobi, Kenya | ECA |
| 8. | Chirwa, Prof. Paxie paxie.chirwa@up.ac.za | Forestry Chair, University of Pretoria, Faculty of Natural and Agricultural Sciences, ROOM 4-11, Lynwood Rd, Pretoria 0002 S. Africa | SA |

| | | | |
|-----|---|---|-----|
| 9. | Lepetu, Dr. Joyce jlepetu@bca.bw jlepetu@yahoo.com | Lecturer, Botswana College of Agriculture Private Bag, 0027 Gaborone, Botswana. | SA |
| 10. | Ngaga, Prof Yonika yngaga@yahoo.co.uk ngaga@suanet.ac.tz | Faculty of Forestry and Nature Conservation, Sokoine University, P.O. Box 3009, Morogoro, Tanzania | ECA |
| 11. | Madoffe, Prof. S. S. Madoffe@suanet.ac.tz or Madoffe@yahoo.co.uk | Sokoine University of Agriculture Department of Forestry Biology Faculty of Forestry and Nature Conservation P.O. Box 3010, Morogoro, Tanzania | ECA |
| 12. | Aucha, Mr. James jamesaucha@gmail.com | Programme Assistant, ANAFE c/o ICRAF, Box 30677 – 00100 Nairobi, Kenya | ECA |
| 13. | Kung'u, Prof. James B. Kungu.james@ku.ac.ke Kungu_james@yahoo.com | Chairman, Dept. of Environmental Sciences, Kenyatta University, P.O. Box 43844-00100, Nairobi, Kenya | ECA |
| 14. | Nabanoga, Dr. Gorettie dean@forest.mak.ac.ug nabanoga@forest.mak.ac.uk | Dean, Faculty of Forestry and Nature Conservation, Makerere University; P.O. Box 7062, Kampala, Uganda | ECA |
| 15. | Senganimalunje Ms Trinitas tcasengani@yahoo.com | Principal, Malawi College of Forestry and Wildlife Private Bag, Dedza, Malawi | SA |
| 16. | Mupangwa John, ejmupangwa@yahoo.com | | ECA |
| 17. | Temu, Prof. August a.temu@cgiar.org | ICRAF Representative on the ANAFE Board P. O. Box 30677 00100, Nairobi, Kenya | ECA |
| 18. | Avana, Dr. Marie Louise avanatie@yahoo.fr | Vice Chair, ANAFE Board Cameroun C/O P. O. Box 30677 00100, Nairobi, Kenya | WA |
| 19. | Saka, Prof. John | Chair, ANAFE Board | SA |

| | | | |
|-----|---|---|-----|
| | jsaka@chanco.unima.mw | | |
| 20. | Kireger, Dr. Eliud limorutuk@yahoo.co.uk | Principal, Kabianga University College, Moi University P. O. Box 3900, Eldoret, Kenya. | ECA |
| 21. | Gessesse, Dr. Dessie Gessesse.dessie@gmail.com | Wondo Genet Forestry College, Ethiopia | ECA |
| 22. | Kasolo, Dr. Wilson nfc@infocom.co.ug | Principal, Nyabieya Forestry College, Uganda | ECA |

Appendix 2: Workshop Programme

| Time | Activity | Facilitator |
|---|---|---|
| 0830 – 0900 hrs | Registration | Tom Ndege & James Aucha |
| 0900 – 0915 hrs | Welcome remarks and introduction of participants | Prof. Gillah/Nganga, Chair |
| 0915 – 0935 hrs | Keynote presentation: The Essence of Global Forestry Education colloquia | Prof. August Temu |
| 0935 – 0950 hrs | Workshop objectives | Dr. Aissetou Yaye |
| 0950 – 1030hrs | Opening Remarks | Official from the Ministry |
| 1030 – 1100 hrs | Health Break | |
| 1100 – 1120 hrs | Forestry Education Report on Tanzania | Prof. S.S. Madoffe |
| 1120 – 1140 hrs | Forestry Education Report on Uganda | Dr. Wilson Kasolo |
| 1140 – 1200 hrs | Forestry Education Report on Kenya | Dr. Eliud Kireger |
| 1200 – 1220 hrs | Forestry Education Report on Ethiopia | Dr. Gessesse Dessie |
| 1220 – 1300 hrs | Discussion on above reports | Chair: Gillah/Nganga |
| 1300 – 1400 hrs | Lunch Break | |
| 1400 – 1430 hrs | African Forest Forum project on Forestry Education (20 minutes presentation and 10 minute discussion) | Prof Ishengoma/Kowero |
| 1430 – 1500 hrs | Group formation and tasks on challenges facing Forestry education and solutions (3 groups: Technician and artisanal; Undergraduate and Post graduate) | ANAFE and SUA |
| 1500 – 1600 hrs | Group work | Group leaders |
| 1600 – 1630 hrs | Health break | |
| 1630 – 1730 hrs | Group work continues | Chair: Gillah/Nganga |
| 1730 hrs | Closure for day 1 | Chair: Gillah/Nganga |
| Day 2: 28th May 2010 – Forestry Curricula Frameworks Development : Prof John Kaboggoza, Makerere University | | |
| 0800 – 0930 hrs | Group presentation and discussion on Technical and artisanal education and | Ms. Trinitas Senganimalunje, Malawi College |

| | | |
|--|--|---|
| | curricula | |
| 0930 – 1030 hrs | Group presentation and discussion on Undergraduate educ and curricula | Goretie Nabanoga Makerere University |
| 1030-1100 | Health Break | |
| 1100 – 1230 hrs | Group presentation and discussion on Postgraduate educ and curricula | Prof. Paxie Chirwa |
| 1230 – 1300 hrs | Group formation and tasks: Development of Forestry curriculum frameworks | ANAFE and SUA |
| 1300 – 1400 hrs | Lunch | |
| 1400 – 1530 hrs | Group working session | Group leaders |
| 1530 – 1600 hrs | Health break | |
| 1600 – 1730 hrs | Group presentation and discussion | Prof: Chair |
| | End of Day 2 | |
| 1530 – 1630 hrs | | |
| | 1. | |
| 1630 – 1730 hrs | Refining the curricular frameworks developed by groups | Group leaders |
| | | |
| Day 3: Development of a strategy for addressing Forestry Education weaknesses and Funding: Prof August Temu, ICRAF, Chair | | |
| 0800 -0930 hrs | Taking into account other stakeholders' views in curriculum content | |
| | <ul style="list-style-type: none"> 2. Students' perspectives 3. Private Sector 4. Policy makers 5. Producer Organization | Almamy Dampha, African Union Commission Chair Representative of SUA Association of Students Prof. Peter Gondo |
| | Donor perspective | Mr. Fred Kafeero, NFPF |
| 0930 -1030 | General discussions | |
| 1030 -1100 | Health Break | |
| 1100-1230 | Strategies for moving forestry education forward and funding mechanisms Discussions | ANAFE and SUA |
| 1230-1300 | Workshop synthesis | (Rapporteur General) |
| 1300-1330 | Workshop closure | |
| 1330 -1430 | Lunch | |