



# FORESTRY EDUCATION IN SUB-SAHARAN AFRICA



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## CONTEXT

The inception of forestry education in Sub-Saharan African (SSA) in the 1920s and 1930s was largely patterned after models already in place in Europe and North America. Much training was at a technician level, and those trained were largely absorbed into the public sector to manage natural forests and plantations. Up to 1970 there were very few institutions teaching forestry in Sub-Saharan Africa, and the majority of them were still producing technicians only. Professional education was available only in South Africa, Côte d'Ivoire and Nigeria, making most countries depend on schools in Europe, North America and Australia for professional education. The number of forestry professionals was very small, and largely employed as administrators of the sector. In the 1970s, professional forestry education was initiated in Eastern Africa (Uganda, Tanzania, Ethiopia and Kenya), later also in some other countries (Ghana, Burkina Faso, Mali, Cameroon) and, quite recently, in Zambia and Malawi. South Africa has also expanded from one school to three professional forestry schools.

A global rise of interest in forests and forestry in the last couple of decades, particularly focusing on the environmental and social development potentials of trees and forests, has increased the number of forestry stakeholders. The traditional boundaries of the forestry sector are stretched, and now also embrace aspects such as management of trees outside forests, social forestry, community-based forest management, agroforestry, non-wood forest products and a wide range of environmental subjects. This has spurred a fundamental global paradigm shift in which empowerment of local populations to manage natural resources, including forests, has emerged. Forests are seen in terms of broad and multiple values, contributing directly to rural livelihood systems, and as an integral component of land use and tenure regimes. Unfortunately, existing forestry schools are neither large enough nor equipped to cope with these changes, and they lack the necessary human resources. Slow adjustments have led to an increased recruitment of quasi-forestry personnel from related fields into forestry activities. This has not only impaired the expansion of forestry education, it has also weakened, in a substantial way, the role of foresters in managing forests and tree resources.

In addition, economic reforms that are being implemented by practically all SSA countries have led to a downsizing of government civil services, with the consequence that the private sector, local communities and civil society are increasingly assuming decentralised responsibilities for resource management. Governments are no longer the dominant and "safe" market for forestry graduates as it used to be, thereby constraining their employment opportunities. Government support for forestry education is also declining and other sectors are not able to fill these gaps. As educational programmes are increa-

singly becoming commercialised it is becoming more difficult to find willing payers for forestry education. This in turn has made forestry education less attractive at a time when interest and stakeholders in forestry are increasing. The real technical and professional forestry needs created by these changes exceed by far the supply from forestry schools. However, these needs are not expressed in terms of job opportunities. Most forestry graduates have to contend with finding jobs in the NGO world, often completely unrelated to their training. Forestry schools (which are still largely publicly owned and managed) continue to receive very limited support, and some technical schools have been closed or operate only intermittently. This will eventually have serious repercussions for the future management of forests.

Despite some efforts to incorporate recent developments into forestry curricula, significant educational challenges to the overall management of the forestry sector remain. Not least is there a need to re-build public confidence in forestry practices and in the profession of forestry, eroded by many years of debate on neglected management of forests and increasing malpractices in the sector. The goal of achieving sustainable management of forests will remain elusive unless remedial measures are taken soon.

It is in this context that one of the studies commissioned by the "SFM in Africa" project was to look at the forest education sector in SSA. Specifically, the study sought to identify and analyse lessons learnt and key trends (both in a historical and present context) that have shaped and are significant in forming the future direction of forestry education on the continent.

The report by James Legilisho-Kiyiapi is available on AFORNET's website: [www.afor.net.org](http://www.afor.net.org)

## SOME KEY ISSUES TO BE ADDRESSED

### Declining investment in forestry education and training

Forestry education programmes in SSA are too few in relation to real needs. The capacity of forestry schools is low in terms of physical facilities and human resources. There is declining public support as well as very little investment in forestry education from the national private sector.

### Current systems of forestry education are not sufficiently relevant

In most cases, educational material lack local context. A recent symposium on "Building Agricultural and Natural Resources Education in Africa: Quality and Relevance of Tertiary Education", questioned the effectiveness of the current training programmes in reversing land degradation and improving livelihoods of small-scale farmers. The symposium strongly advocated integrated teaching of agriculture, forestry, livestock and other natural resources management



*Very few forestry educational institutions have access to this type of facilities for student training.*

disciplines in educational programmes, and called for radical institutional reforms and responsiveness to socio-political and economic realities. Further, the lack of balance between technician and professional training was highlighted. Curricular content is rather narrowly focused on forests only and not responsive to needs of the research, industry and local community clientele.

The expanded forestry mandates has created much confusion in terms of institutional response. There are no general guidelines or benchmarks on how to respond new themes and directions. For example, what is the right balance between forestry and agroforestry, or between biophysical sciences and social sciences in the curriculum?

### **Practising foresters are not fully aware of recent developments and the dynamics of the forestry and related sectors**

The recent XII World Forestry Congress in Quebec, Canada, made the following observations on this issue: "It noted that the forestry profession does not reflect the diversity of stakeholders involved in forests. Education needs to adapt to new elements in forestry practice, including social sciences and communication skills. But funding for forestry education is declining in many parts of the world, and training institutions often operate in isolation. Continuing education and professional accreditation are being implemented in many developed countries to maintain public confidence in the forestry profession".

There is therefore need for the sector to address emerging issues and work with non-traditional stakeholders like local communities, NGOs and the private sector. For this in-service refresher courses/workshops are necessary to equip the sector staff with the skills to deal with their changing environment.

### **Synergies between forestry education and research are poorly exploited**

In many SSA countries, forestry research and educational institutions are not taking full advantage of available physical and manpower resources to enhance quality research and delivery of results to end

users, or to build synergy in training by backing theory with field experiences. There is therefore a case for strengthening research programmes at universities to complement teaching and to forge collaboration between universities, training schools and research institutes.

### **Limited collaboration among schools of forestry**

There is very limited collaboration among forestry institutions as well as between forestry and related institutions at national and regional levels. In spite of an obvious potential, the emerging geo-political and economic blocks have not yet led to increased collaboration in training and research institutions within SSA sub-regions. There is therefore a need for common standards and mutual recognition as well as better sharing of the scarce capacity at national and regional levels.

### **Declining status of forestry education**

Forestry education is increasingly becoming less attractive to students, mainly as a result of declining employment opportunities (despite the increased real needs in the sector), privatisation of education and decline in funding of forestry education.

## **LESSONS LEARNT**

### **Decreasing investment in forestry education and training**

Public and private sector investments in forestry education continue to decline. Much of the investment in forestry schools is donor driven and has been changing focus over time. Forestry assistance in the past four decades focussed on industrial forestry (predominant in the late 1960s and 70s), social forestry (1980s), environmental forestry and agroforestry (1980s-90s) and, more recently, on natural resource management.

The last two decades have seen a worrying trend of declining enrolments into forestry educational programmes, attributed mainly to low investments in forestry education. This is partly due to economic reforms implemented by practically all SSA countries, which have resulted in the retrenchment of public sector employees, including those in forestry, as well as less government support for forestry education. Investments in technical level training have been particularly reduced and in some cases terminated. There is an apparent increase in professional level education at the expense of technical level training. Student enrolments are still largely in favour of male students despite major international push for gender balance in the last decade.

### **Making systems of forestry education relevant and attractive**

The influence of temperate zone forestry education, with its early emphasis on plantation forestry and

wood industry raw material supply, also resulted in a rather narrow view of forestry and forestry education in SSA. As a result, forestry graduates have made limited contributions to transforming livelihoods of poor rural people and to addressing new and emerging issues in the sector. There is therefore a need to improve sector linkages with other land use programmes and to social and economic development needs. However, institutions have very limited capacity in terms of human, physical and financial resources to respond to too frequent paradigm changes and too many new emerging issues. Therefore, little progress has been achieved in many countries.

In addition, there is an apparent lack of connection between forestry schools producing manpower and national forestry agencies charged with implementation of forestry programmes. In most cases, there is no national policy to guide forestry education vis-à-vis national forest sector needs and insufficient efforts have been made to re-orient forestry education to emerging needs. However, there are some notable successes. For example, in the period 1993-2002 the ICRAF based African Network for Agroforestry Education (ANAFE) has supported 67 education and training institutions in Africa to incorporate multidisciplinary approaches to natural resource management in their curricula. Forestry institutions are responding to curriculum change and embracing new ideas in forest management. Aspects such as extension and participatory forest management, non-timber forest values, biodiversity conservation, and agroforestry are now finding their way into mainstream forestry training curricula. In a few cases, forestry education has been integrated into broader natural resources management education programmes. An example is the recent merger of the programmes of the Faculty of Forest Resources and Wildlife Management with those of the School of Environmental

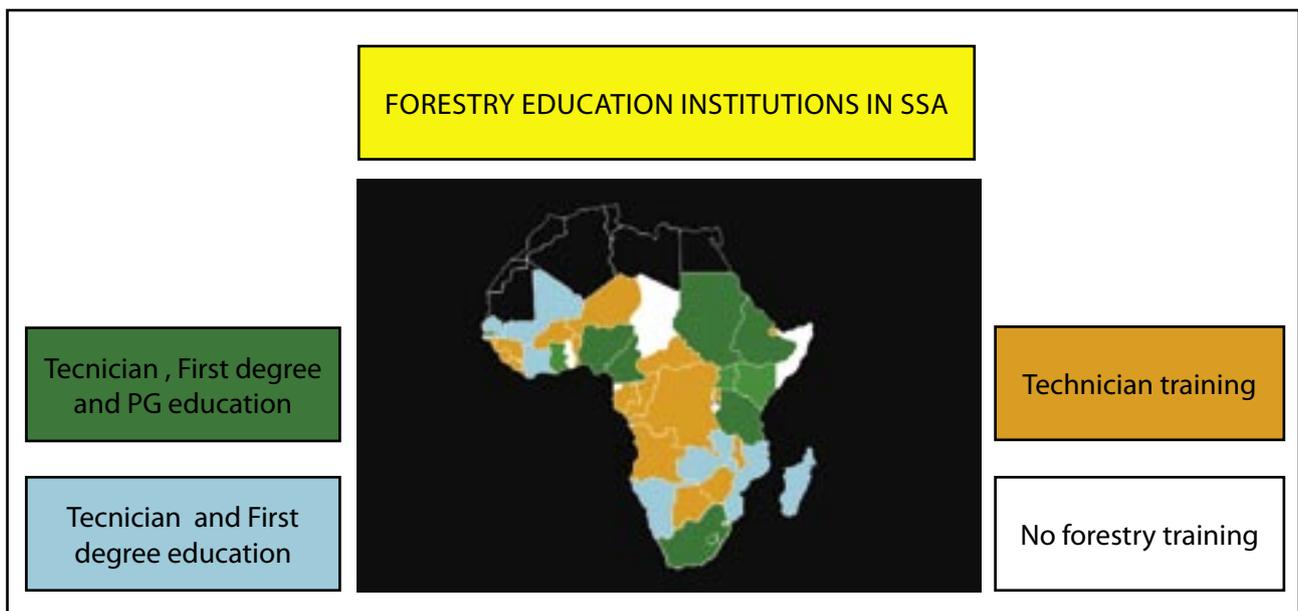
Studies of Moi University in Kenya.

The active role and involvement of non-public sector organisations in rural development and natural resources management are creating new job opportunities for forestry graduates, an increasing number of whom are now working with various NGOs. This opening can be greatly enhanced if university and forestry training colleges sought to build collaboration with local and international NGOs especially those dealing with natural resource management. The broadening scope of forestry issues coupled with curriculum reforms will open a much larger and diversified job market for forestry professionals.

### Continuing education for serving foresters

Curriculum reviews, even when they are reasonably rapid and efficient in responding to new issues and stakeholder needs, will not alone cater for all new knowledge and skill needs of the forestry profession. There will always be time lags between the emergence of a new issue and its incorporation into curricula, and between teaching graduates about the new issue and the time when these graduates are in positions where they can professionally apply the new knowledge. These time lags, in combination with the increasingly complex and multidisciplinary nature of, and frequent paradigm shifts in, land resource management, will inevitably result in gaps and inadequacies in current professional education.

Thus, there is a strong case for having comprehensive and efficiently responsive programmes for continuing education of serving foresters. Workshops, short- and medium-term training courses, internships and other mechanisms addressing specific aspects and emerging issues could form the basis for such programmes. Although some short courses and workshops addressing such emerging training needs have been organised in many countries and regions of



SSA in the last couple of decades, they have normally been of an ad hoc nature and more often than not been initiated by NGOs, donors and/or international organisations. Very few have been run by national universities and forest services, and no university and technical college have established regular continuing education programmes.

### **Synergies between forestry education and research are poorly exploited**

In most SSA countries, as well as between countries, there is not much interaction between forestry educational and research establishments. Educational institutions normally have some capacity for research and can provide training for staff from research institutions. However, the poorly-resourced research institutions, those who would benefit most from collaborative arrangements, generally interact less with educational institutions. On the other hand, many educational institutions are often unaware of the real problems and potentials as well as new developments in science and technology.

A few regional networks have recently been formed and are playing important roles in forging collaboration between all kinds of institutions involved with forest research. They include the two apex forestry networks in SSA, viz. the Forestry Research Network for Sub-Saharan Africa (FORNESSA) and the African Forest Research Network (AFORNET).

### **Collaboration among schools of forestry**

Forestry education in Africa was originally developed with a regional approach, through concerted efforts spearheaded by FAO, to ensure that forestry schools in each important eco-region of the continent were founded on solid theoretical and socio-economic frameworks. However, the political dispensation of the emerging independent African states had immense influence on the direction of forestry education. Forestry development agendas were pushed

through narrow national interests and compromised the benefits anticipated from a regional approach to training. Many forestry schools sprang up all over the sub-continent, for the most part leading to duplication of programmes and sub-optimal use of limited physical and intellectual resources.

There is a somewhat anomalous situation in that there is a serious regional imbalance in forest education capacity, where the region and countries with the largest forest resources (Central Africa) have no significant capacity at all, whereas Eastern and Southern African countries, with considerably less forests, have an over-capacity.

A lesson learnt is therefore that there is an urgent need to again consider forestry education from regional needs and job market perspectives. Collaboration should seek to ensure that existing national institutional capacities are fully utilised to enhance diversity, complementarities and quality of programmes in a regional setting. The FAO report of the expert consultation on forestry education held in Rabat, Morocco, in 2001, identified regional networking and inter-institutional exchange of knowledge and experience as one concrete way of supporting and strengthening forestry education. One such initiative is RIFFEAC (the French acronym for Network of Forestry Schools in Central Africa) network. The network was created by eight forestry schools and research institutions in October 2001 with a view of improving the quality of training to respond to the needs of sustainable management of forest ecosystems in the Congo Basin. The ICRAF based ANAFE has also made very significant contributions in this regard.

## **THE WAY FORWARD**

### **Making systems of forestry education relevant and attractive**

In order to take into account the needs of an increasing number of stakeholders in forestry and to make forestry attractive, there is a need to develop a long term vision of how forestry should evolve and tailor educational systems accordingly. More specifically we need to:

- ✿ Undertake a revision of forestry capacity building needs and plan capacity development programmes to meet needs in and outside the public sector.
- ✿ Broaden the scope of forestry education with an emphasis on management of natural resources.
- ✿ Tailor forestry education to meet demands from various stakeholders, e.g. public forest services, rural communities, consumers and the private sector.
- ✿ Rationalise the intake of students in relation to potential needs.



*Continuing education and refresher courses are necessary to keep foresters up-to-date with new developments.*

- ✿ Promote networking between education, development and research institutions at national, regional and international levels.

- ✿ Make research an integral part of the work of education institutions.

- ✿ Establish close linkage between education institutions, public forest administrations, private sector, civil society and NGOs.

- ✿ Develop educational materials with local and national relevance.

- ✿ Establish continuing education programmes in forestry for serving foresters, with universities and training colleges taking the lead to establish regular refresher courses.

- ✿ Increase financing of forestry education and training, e.g. by broadening funding sources.

### **Promote cooperation in forestry education at all levels**

This can be done by:

- ✿ Facilitating the design of programmes that promote synergy among research, education and development at national and regional levels.

- ✿ Identifying research, education and development areas and activities of common interest for national and regional collaboration.

- ✿ Scaling up initiatives that link research with education and extension (e.g. networks and local NGOs).

- ✿ Establishing (or re-establish) regional advisory facilities, committee and the like, like the defunct FAO Advisory Committee on Forestry Education in Africa.

- ✿ Promoting and strengthening regional and sub-regional networks like AFORNET, FORNESSA and ANAFE.

- ✿ Promoting and strengthening staff exchange programmes across countries.

The project, "SFM in Africa" for short, has been jointly managed by the African Forest Research Network (AFORNET) at the African Academy of Sciences (AAS), the Royal Swedish Academy of Agriculture and Forestry (KSLA) and the Forest Department of the United Nations Food and Agriculture Organisation (FAO).

The policy briefs are based on commissioned reports which are available in full at the web site [www.afornet.org](http://www.afornet.org). The reports contain all relevant references to information sources used.