FORESTRY EDUCATION AS A CORPORATE SOCIAL RESPONSIBILITY IN UGANDA

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ABSTRACT

The forest sector is undergoing profound changes. The new perceptions of forests and forestry as complex soft systems; the changing roles of public, private sector and of civil society; the changing perceptions of the social, economic and environmental values of different types of forests; and the globalisation and commoditisation of many forest products and services. Society increasingly sees forests as producers of public goods and not private commodities. These changes present both strategic and practical challenges, constraints and opportunities for forestry education. Forestry education will, both by necessity and design, continue to adapt to the changing technologies and practices relevant to society. Therefore, forestry graduates need to become more flexible, adaptable, and need to be proficient in communicative processes including interpersonal skills, experienced in procedures of integration, and committed to continuous learning. The important changes in forestry education include the shift from teacher-to student-centred learning and rapid technological developments. If forestry education is to meet its new challenges, it needs to undergo deep transformation. This paper discusses the changing social perceptions and demands onto the forest sector and their implications to forestry education. It reflect on the current status of forestry education, and describes the drivers for change in the delivery of forest education in Uganda.

Key words: Community Forestry, practical training, student-centred, tertiary education, Uganda

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1. Introduction

Forestry education, like the forestry sector itself, has evolved in response to changing markets, social attitudes and political goals and instruments. While research and education have contributed to their evolution, they have played a smaller role in the more recent economic, economic and social changes. There is a risk that forestry as a profession may become marginalized. Key decisions regarding forest policy practices will increasingly be made by individuals or organizations who lack adequate understanding of ecological diversity and ecosystem functions, fundamental issues in sustainable forest management and conservation, and the important social, economic, technical and cultural dimensions of forestry (Abel, 1989).

Forestry has been defined as the art, science and business of managing forested landscapes to sustain a desired balance between forest conservation values, products, and services (Innes and Hoen, 2005). Therefore, forestry must be responsive to changes in policy trends and other changes in society.

Just as changes are perceived in forestry practice, innovations are also emerging within education which have direct relevance to the development of forestry education. Likewise, within the broad sector of natural resources-related education and training, many have arisen due, particularly, to an intense debate about the need for improvement in the forestry education. In order to address the need for fundamental change in forestry education, it is important to focus not only upon issues relating to forestry practice, but also upon a range of educational issues which have a critical effect on the quality and effectiveness of forestry education. This reflects a paradigm shift in education and training from approaches rooted in content-led didactism towards pedagogical approaches based upon learning and participation, and related to the real needs of learners and of society. This major change in the way that forestry is increasingly being practiced has not yet influenced the university curricula.

According to Podlubny (2002),

> "Gone are the days of training programs that present technologists/technicians for a wide spectrum of technical jobs performed by rangers, conservation officers and industry forest technologists. These jobs were highly field-oriented and that the people working within the forests at a very practical level. The programs of today still provide the

academic and field lab background to the job of a technologist but the trend is towards a higher technology component and a greater emphasis on forest ecology and forest landscape

Present day education of forestry technicians and technologists is not only in the form of field work, mapping, scaling and data collection, but also in communication, collaborative management, GIS, computers, adaptive management, stand establishment, silviculture, supervision and landscape management (Podlubny 2002).

In a new focus on forestry education, forest practitioners and forest workers will have to re-define their role and modify their educational training to reflect changing needs. Challenging working environments compatible with a new generation of high-tech forest practitioners need to be established by employers. Information technology will revolutionalize the delivery of forestry resources education and procedures and motivation for life-long learning.

In the face of such responsibilities, forestry education should also equip its graduates with a strong sense of ethics towards the forest, the broader environment and society. This ethical training must equip future foresters to play a more active role in the evolution of forestry and prepare them for change. It must also equip them to resist suggested changes that are in conflict with the broader management objectives and societal values (Baron and Byrne, 1999). They must understand and be able to effectively communicate the social, cultural, economic and ecological constraints that render public demands for certain changes impractical or contrary to the very values society wishes to sustain.

These are not trivial challenges. Our response will determine in large part whether forestry continues as a profession or is replaced by some disciplines and institutional arrangement with which to regulate the relationship between the present six billion humans and the 60% of the world's "original" forests that are reported to remain (Kamugisha, 1993).

This paper has started with a presentation of the reciprocal relationships between society and its education system. This is followed by a description of the factors inducing change in society and highlighting the associated emerging trends in education.

With the changing role of the forest sector, globalization and forestry policy shifts, educational institutions have to equip their graduates with a variety of non-traditional skills. There is therefore a need to reform the curricula and delivery of forest education. We use our personal experiences for more general reflection on the challenges of forestry education at Makerere University. By way of conclusion, we propose some recommendations for the future directions of forestry education in Uganda.

2. Factors inducing change in society

The nature of forestry is changing rapidly, with social components becoming as important as the traditional biophysical components. The role of participatory approaches to forestry has increased dramatically, and meeting the needs of people is now seen as a primary function of forestry (Innes, 2005). Increasingly, such needs are being defined through bottom-up approaches, by governments or present foresters and forest scientists are poorly equipped to deal with such change, that necessitates much broader nets of knowledge than has previously been required. At the undergraduate level, forestry programs are failing to teach the skills necessary for successful participation in this new form of forestry. Scientists who are genuinely interdisciplinary may have difficulties finding employment, and current academic reward systems do not cope well with individual contributions to team efforts. The problem extends to the forestry profession, with many professional foresters being ill-equipped for their new roles, while at the same time they and/or their employers remain reluctant to enter into any form of re-training.

Modern forestry in developed countries is increasingly becoming less production or mono-purpose oriented and more multipurpose oriented. The production sphere itself has been infiltrated by demands for delivery of public goods such as carbon sequestration, biodiversity conservation, environmental certification, outdoor recreation and multipurpose uses of various types, as a further consequence the number and type of actors and institutions involved in forest management is rapidly changing (Vedeld and Krogh, 2005).

The key factors that cause changes within the forest sector have been summarised under economic, social, political and environmental factors.

Competition for use of and control over natural resources is increasing as a result of pressures from growing populations and the diverse interests of user groups. In the context of current trends of democratization, decentralization and devolution of authority, communities now have both a greater need and more opportunities to participate in natural resource management.

Greater stakeholder involvement in the decision-making process can also result in conflict among the various stakeholders. Disagreement over access rights, lack of consensus on management objectives and lack of information or misunderstandings emerge in most settings. These conflicts present a challenge to rural development and forest sector.

Concurrently, the demand from employers for professional foresters, and from students for forestry degrees, in the traditional mould has also progressively diminished in many countries (Innes, 2005). These changes challenge the viability of many forestry education institutions.

Vedeld and Krogh (2005), provides an integrative perspective of the complexity and uncertainty of human and natural systems, which asserts that human behavior and nature's dynamics are linked in an evolving systems; the seeming paradox of change and stability inherent in evolving systems is the essence of sustainable futures; the multipurpose re-orientation in forestry as an example of natural resource management displays the need for development of management proficiency not only related to multipurpose management, but also to handle social issues and interactions between conflicting actors.

At the national level, changes are also evident. There is pressure to devolve forest management to rural communities and local government units. Forestry departments in many countries are shrinking as a result of tight public finances or the transfer of forestry-related functions to other (often environmentally-oriented) Ministries and yet they grapple with new, multiple roles, which sometimes contradict or compromise each other (Bawden, 2000).

There has been transition of former centrally-planned economies to market-based economies; in structural adjustment programmes promoted by international lending institutions, which led many national governments to reduce public sector expenditures

and price distortions; and the increasing globalisation of the world's economy, with trade and capital liberalisation and currency reform.

3. Emerging trends in the education

Over the past 10 years, there has been a change in the attitudes of authorities involved in natural resource management from the traditional top-down to a bottom-up approach, accomplished by involving local communities in the management process. This requires well-trained professional extension agents. Tertiary "education" has evolved from a linear process in which knowledge was seen to be transferred from teacher to student to a more collaborative process in which the "teacher" facilitates the "student" learning (Schamhart, 1994). It is also evolving from the traditional undergraduate/ postgraduate on-campus mode to one which is both more flexible and more continuing.

Interdisciplinarity in forestry education

Forestry is a regarded as a dynamic system is characterized by global, societal, structural, sectoral and technological changes, all of which have implications for forestry education, specifically, on the demand, type and capabilities of forestry professionals, fundamental philosophy of forestry education, capabilities of forestry faculty, and on forestry institutional re-engineering and change. To maintain its relevance and to ensure its sustainability forestry education must adopt appropriate changes in response to the dynamic environment.

Today, in many developing countries, there are pressing social problems (poverty, food security, AIDS) that cannot be resolved by a single disciplinary perspective (Boden, 1996; Bawden, 2000). Second, students have expressed their opinion against the artificial fragmentation of knowledge, asking for more connected learning and coherence in the curriculum. Third, potential employers want graduates who are prepared to meet the multidisciplinary needs of the work world, integrating what they have learned in disparate fields. Fourth, administrators hope to make more efficient use of resources and equipment by sharing them across disciplines. Fifth, there are dynamic changes in knowledge construction, blurring disciplinary boundaries across

interdisciplinarity is not only about integration (Boden, 1996), but involves both cognitive and normative transformation processes between sets of knowledge, carefully securing coherence.

Much of these problems have already been discussed, it is crucial that the staff have conscious conceptions what interdisciplinarity is and how they plan to promote interdisciplinary thinking and practice through their teaching activities. This is not yet the case at Makerere University. The students on their side must have enough skills in different subjects and be able to generate sufficient distance to the different epistemologies to handle complex issues of translation and integration.

3.2. Theoretical knowledge, practical skills and attitude goals

In the 21st Century, in an evolving forest working environment, forest workers will need higher levels of training than in the past and forest practitioners will need to redefine their roles and responsibilities and modify their educational needs in a new focus on forest education. The learning environment will increasingly transform from didactic to interactive problem-based learning, aided by Information technology, to keep pace with the new "internet generation" students who are challenging conventional teaching procedures. University lecturer, emerging as creative facilitators of knowledge, will have a profound influence on the development of forest education (Nordin and Comeau, 2003).

Instructional approaches to promote interdisciplinary learning are also proliferating. They are often based on active learning strategies and promote higher-order critical-thinking skills (defined as analysis, synthesis, application and evaluation). These methods include collaborative learning, discovery and problem-based learning; writing and math across the curriculum, and methods of assessment that are multidimensional, including qualitative and quantitative measures, normed measures, and self-assessments. Boden (1996), argues that student portfolios are increasingly used to document interdisciplinary learning outcomes. The Internet provides unlimited possibilities to engage individuals from across the disciplines in on-line discussions and problem-solving.

To accomplish this task requires a set of learning steps and theoretical

knowledge, practical skills and attitude changes (Box 1).

Box 1. Theoretical knowledge, practical skills and attitude goals

Theoretical knowledge required (Bloom, 1956)

- Ability to assess the value of a certain phenomena for a given goal (criticize, decide, select)
- Ability to synthesize and put together knowledge to new sets of knowledge, patterns and ways of work (suggest, generalize, organize, produce, deduct)
- Ability to analyse and understand so well that one can decomposes knowledge in separate entities and find links (split up, identify, classify, compare)
- Ability to evaluate and synthesize information from a variety of specialists when developing resource management plans
- Ability to use knowledge in new settings (read, use demonstrate, measures, register)
- Ability to understand and formulate the knowledge in own words (prove, explain, translate, recognize, interpret)
- Ability to think critically about forestry issues as opposed to applying standard prescriptions

Practical skills needed (Simpson, 1982)

- Ability to innovate and develop skills, and be able to select action and method and further develop it (change, innovate, improve, complete)
- Ability to refine complex skills, use efficiently, fast and safe combinations of skills, working methods of complex patterns (improve, arrange, prepare, produce)
- Ability to prepare mentally, physically and emotionally for the practical task (utilize, prepare, concentrate, show interest)
- Ability to perceive a situation through recognition, registration and sensing
- An innovative approach to working with the public to address forest management problems.

Attitudes (Kratwohl, 1982)

- Ability to develop and profile a consistent value set from which action can be taken and that is developed into a deeply rooted basic norm set, and with stable and consistent personality and pattern of behaviour
- Ability to organize a set of values/norms, abstract and generalize a set of committed norms and values, and decide upon what values that are important for one's action
- Ability to appreciate, recognize and prefer certain meaning, attitudes and norms to others, engage and commit to the work of certain values and norms
- Ability to work in teams that include individuals with a variety of perspectives
- Ability to listen and address public questions and concerns and to explain the principles of environmentally responsible forest management practices.