Keynote paper

Agroforestry education and training programs: an overview

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Abstract. Agroforestry has been incorporated in education and training programs at an unprecedented level since 1982. A survey of educational institutions conducted by ICRAF in 1987 revealed that agroforestry is found as an option for specialization in undergraduate as well as in postgraduate M.Sc. diploma programs in forestry, agriculture, natural resources, and others. Courses and special seminars in agroforestry are organized in degree programs. Full undergraduate and postgraduate programs in agroforestry are being formulated and implementation started in quite a few universities, and many students are choosing agroforestry-oriented research projects for their dissertations. A good setting for higher degree training in agroforestry requires, however, staffing from combined faculties of at least agriculture, animal science and forestry; faculty commitment to a farming systems approach; and inter-departmental cooperation in teaching and research. It was difficult to assess whether these and other elements are present in existing programs where agroforestry has been incorporated. Emerging trends indicate that traditional forestry programs are broadening the scope of the discipline (from forests to integrated land-use systems) while agriculturists are recognizing that trees play important roles as soil improvers and protectors, fodder, food, fuel and other domestic and commercial purposes. New institutional structures are evolving to allow for educational programs with coursework and research projects spanning many disciplines. Nondegree training in agroforestry has seen an upsurge of activities equal, if not larger, to that in education. Attempts are being made by different institutions worldwide to inventory training opportunities; still the collection and dissemination of information is difficult. Efforts are needed at the international, regional, and national levels, to address training issues that if addressed collectively can improve the quality and effectiveness of human resource development efforts. ICRAF’s approach to promote agroforestry research through education and training is an example of an action program currently under application.

Introduction

The history of agroforestry as a science is short, 15 years at the most. However, agroforestry is only a new term for age-old practices of integrated land-use in almost all parts of the world. Even though still referred to as a ‘new area’ of scientific activity, the number of national and international research institutions, development and donor agencies, non-governmental agencies (NGOs) and others that have taken up agroforestry or agroforestry-related activities has increased rapidly over the last few years.

A group of distinguished research scientists and agroforestry leaders
worldwide met in Nairobi in July 1987, on the occasion of the Tenth Anniversary of the International Council for Research in Agroforestry (ICRAF). Their evaluation of the recent history [Steppler and Nair 1987] confirmed that agroforestry has come of age and it is here to stay.

Land-use circumstances under which existing agroforestry technologies are applied and the interactions between system components are not, in most cases, properly understood. Research results in agroforestry are, thus, scarce if compared to those available for cash and food crops.

The scarcity of knowledge on existing and potential agroforestry technologies in most tropical and subtropical countries has been largely attributed to the lack of institutional capability to confront pressing land-use problems requiring an innovative approach. Existing rigid structures in compartmentalized, conventional, disciplinary-oriented institutions in research and development programs, have been identified as major limitations for the development of integrated land-use activities. Insufficient resource allocation compounds the problem [Lundgren 1987]. It remains a fact that in spite of efforts made by international centers to integrate forestry research more closely with agriculture, livestock, social sciences, and other disciplines, few research institutions have achieved a similar integration at the national level. Most agricultural research programs continue to focus on rice, wheat and maize breeding, while forestry research continues to concentrate on tree improvement or improved utilization [Schuh 1987].

The research constraint is further aggravated by a shortage of trained and experienced professionals with knowledge and skills to integrate several disciplines that together must be combined in researching, planning and managing agroforestry [Contant 1980, Huxley 1980].

The development and implementation of agroforestry education and training programs have been impaired by several factors, among which the following have often been mentioned: rigid institutional structures that, as is the case in research and development, have not allowed for programs to cut across various disciplines; insufficient information on verified scientific methods; lack of appropriate instructional materials; and, lack of adequately prepared lecturers and trainers [Zulberti 1987].

To summarize, agroforestry research and development is constrained by rigid institutional structures and lack of trained professionals. At the same time, the training of professionals in agroforestry is equally constrained by insufficient research methodology and rigid institutional structures. Yet, agroforestry is fast becoming incorporated in education and training programs as an experimental science that can be taught. The paradox presents, no doubt, an interesting challenge to this workshop.

The critical issue is not so much the identification of recipes to teach