Agroforestry education and training in European institutions

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Abstract. Integrated land uses, many now referred to as agroforestry, have a long history in Europe. In the past, the main trend was the movement of agricultural and pastoral activities into forests. The introduction of trees into non-forested (or once forested) lands is a much more recent occurrence, particularly the cultivation of high value fruit and nut trees in the Mediterranean countries, hedgerows/windbreaks in northwestern Europe and windbreaks in eastern Europe and the southern Soviet Union. Environmental concerns of intensive agriculture are increasing the demand for alternate production systems such as agroforestry. Education and training in agroforestry in Europe is very diverse because of the country specific issues regarding land use.

Introduction

Agroforestry dates back to very early times of land use in almost all of Europe. ‘Integrated land-use’, as it would be called today, was the common approach to utilizing natural resources. The main direction of development was to introduce agricultural and/or pastoral practices into the forest. The trend was enforced with increases in population, technical progress and exclusive use of lands for either agriculture or animal husbandry. The encroachment of forest lands continued until industrialization which started at different times in different areas and in some areas just recently. In Central Europe, for instance, the prime roles of forests once were the provision of oak and beech mast (acorns) for wildlife, cattle grazing, collection of forest litter, and edible products, hunting, etc. Timber production as the main objective started only about 200 years ago, and the importance of other forest benefits, such as recreation, environmental improvement, etc., emerged only a few decades ago. In some areas, such as the Mediterranean zone, northern Scandinavia and in most mountain ranges, use of forests for range management is still of high importance.

More recently, the cultivation of trees outside forest land on fields and pastures has gained importance. The outstanding example is the planting of poplars and other tree species like chestnut, olives, figs, etc., in the Mediterranean countries, hedgerows/windbreaks in northwestern Europe, and as
forest-windbreak belts in eastern Europe, especially the Ukraine and southern Russia.

Thus, agroforestry, in its broader sense, is still widespread in many parts of Europe, but it is often overlooked or not considered an optimal land use by policy makers. This may change. Severe problems of excess food production in the EEC countries calls for alternative uses of farmlands. This is supported by environmental concerns, for which agroforestry may well offer feasible options.

**Agroforestry education: site specific and demand-oriented**

Agroforestry development in Europe will have to be site-specific. There are obvious differences and disparities between regions and even within small areas, for both natural and socio-economic reasons. Practices will range from reindeer management in Scandinavia to cattle grazing in the macchia from the dehesa-system in Spain and Portugal to the alm-management in the Alps, with a wide range of transition forms in between.

The same applies to tree-crop interfaces. Whereas silvopastoral systems obviously prevail on marginal sites, agrosilvicultural systems may be applicable on the best soils and in intensively managed areas with close links to horticultural systems and to agro-industries. Agroforestry may even be an option for solving socio-economic problems, such as labor shortages in specific rural areas.

There is an obvious demand to reduce excess agricultural production through land uses which are economically and environmentally acceptable. There is a demand to recultivate marginal or degraded lands, and to diversify production. There also is a demand to reduce agro-chemical pollution.

It cannot be denied that there are many constraints which impede agroforestry in Europe, and there are good reasons to keep other highly-productive current land use systems. However, agroforestry does already exist, and agroforestry offers prospects for the future and needs to be discussed. In addition, European countries have declared their responsibility and readiness to assist countries in the tropics and subtropics in rural development. Agroforestry has been identified as one option for overcoming many of the prevailing problems and constraints, and is internationally accepted as an approach to future-oriented land use. There is an increasing demand for know-how in agroforestry, and Europe is expected to accept the challenge and to contribute to worldwide efforts.