

Silvopastoralism and Sustainable Management
18-24 April
Lugo, Spain 2004

CONGRESS OBJECTIVES

The **overall objective** of this International Congress was to come up with a statement for the importance of silvopastoralism for sustainable land use; outline potential and present key policies and research issues to improve sustainability, enhance biodiversity and increase profits from forest and pastoral lands in rural and mountain areas of Europe thus contributing to stabilisation of population in the less favoured areas and preventing fires and erosion.

The specific objectives were:

- To assess the objectives of silvopastoralism in Europe;
- To investigate the role of silvopastoralism in reducing fire and erosion risks especially in Southern Europe and increasing biodiversity and rural prosperity in Europe;
- To identify future research and policy needs for exploiting the potential of silvopastoral systems
- To propose alternative systems to meet specific needs for agronomic and forestry land and
- To outline the future perspectives of silvopastoral systems in Europe and in a global context.

CONGRESS OVERVIEW

The congress was attended by 200 participants from more than 50 countries. A total of 181 papers, related primarily to silvopastoralism in Europe but also covering a wider global perspective were submitted. These were organised into 5 main sessions as follows:

Session 1: Silvopastoral systems: Main types and designs

Session 2: Productivity, quality and management of silvopastoral systems

Session 3: Ecological implications of silvopastoral systems: biodiversity and sustainable management

Session 4: Economic, social and cultural benefits of silvopastoral systems

Session 5: Future perspectives of silvopastoral systems in a global context.

SUMMARY-SILVOPASTORAL SYSTEMS CONCLUSIONS

Silvopastoralism is an ancient way of managing forestland and more recently a way of managing pasture land. It leads to increases in production than from forestry in the short, medium and long term and as a structurally diverse ecological system and a multiple product system often is a sustainable use of land.

If managed in a sustainable way silvopastoralism can enhance biodiversity and contribute to the preservation of many endangered species that depend on ecotones between

woodlands and open landscapes. Areas managed for silvopastoralism can reduce fire and erosion risk in forests, creating the necessary balance between full ground cover (erosion control) and shrub control (fire risk). In this context, manipulation of the type and density of grazing animals can greatly influence the biological and socioeconomic outcomes from the system. Silvopastoral systems can favourably impact biodiversity, landscape and rural welfare issues which underpin agri-environment objectives through a number of attributes including efficient nutrient cycling, buffering against non-point source pollution, fulfilling animal welfare criteria, employment generation and income enhancement, reversal of rural abandonment and creation of viable rural communities. Also, the silvopastoralism production improves the landscape of the countryside and it could be used for ecotourism projects.

In the policy arena, silvopastoral systems can contribute to reduction of livestock grazing pressure, better nutrient management and amelioration of animal living conditions if introduced to intensive or semi-intensive farming systems. Silvopastoralism aligns closely with current key EU policy for intensively managed pasturelands which will be decoupled of subsidies from production to a more area-based system of payment with strict environmental and other cross-compliance measures attached. In a more worldwide context, silvopastoralism can be a mechanism to create land use systems with levels of carbon sequestration which are higher than those from pasture land and which can buffer the more adverse effects of climate change.

Silvopastoralism can create multifunctional landscapes which can be used for realising a range of purposes including nutrient-enriched waste disposal systems that meet crop fertiliser requirements; a range of plant, livestock and socio-economic products; key recreational educational, conservation and landscape resources, and conserving animal autochthonous breeds. The general public expects to see all these benefits in return for public investment and as a cultural right. In the latter context, the re-creation and maintenance of traditional patterns of land use including transhumance and forest grazing are of fundamental importance in the preservation of national heritage and respect for the countryside.

FUTURE RESEARCH PERSPECTIVES

Whilst the above benefits of silvopastoral systems are more or less known, the potential to integrate silvopastoralism into current land use systems is poorly researched. In this context, valuable lessons can be learned from global experiences in similar land use systems. Key research issues that emerged can be grouped into six categories:-

- a. Inventory of silvopastoral resources and current research
- b. Component evaluation
- c. Ecological interaction
- d. System management
- e. Socio-economic, human and cultural aspects
- f. Dissemination of information to land-users.

- a. *Inventory of silvopastoral resources and available research*

There is a need to consolidate the knowledge base, summarize recent progress and make this available to a wide range of countries across Europe especially, including the ten new accession countries.

Key outcomes could be (i) *Dissemination of the findings of the congress* (ii) *Creating an inventory of the systems already practiced or researched in a way that can be easily interrogated* (iii) *Establishment of research groups and networks (particularly benefiting from global expertise) to discuss and share knowledge.*

b. *Component evaluation*

(i) Modelling of the growth of **trees** in a range of cases to enable them to be integrated into novel and traditional systems. The potential of new forage trees such as *Morus alba* and *Robinia pseudoacacia* between others and legume trees. Implications of climate change on tree selection.

(ii) Influence of trees on pasture, especially within reduced fertiliser inputs or as a sink for sludge disposal. Quality of pasture for animal production.

(iii) Animal feeding, health, stocking rate and welfare issues.

c. *Ecological interactions*

The impact of a range of climates and soils on factors which are specifically related to sustainable management and products of multiple outputs. Concentrate especially on nutrient management to meet policy objectives.

(i) Experience in North America where woody plants have been successfully used as riparian buffers and in reduction of non-point source pollution through silvopastoral practices should be used in the European environment.

(ii) The ecophysiology of trees and pasture as systems and their subsequent response to disturbance, whether by grazing, fire etc.

(iii) The carbon economy of silvopastoral systems.

(iv) The mitigation of climate warming

(v) The role played by silvopastoralism in the conservation of biodiversity

d. *Management*

The integration of biological and ecological components and their interaction into sustainable management systems to meet a range of objectives. These may need to consider economic, cultural and social needs of farmers.

(i) Modelling as a predictive tool in vegetation management.

(ii) Ecological and landscape assessments for land use options.

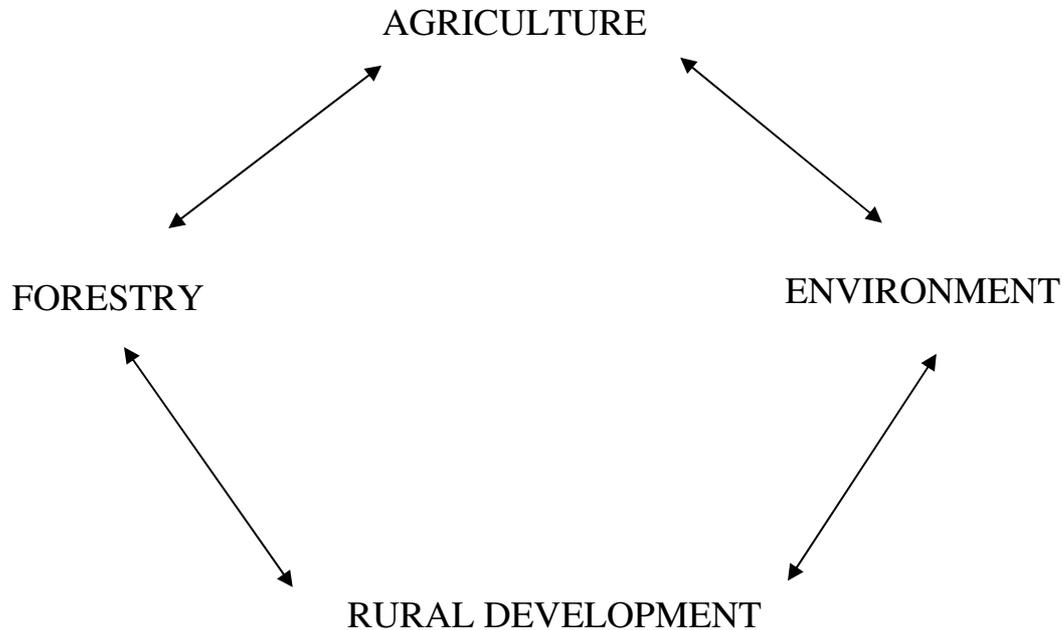
(iii) Management for specific issues such as fire and erosion control and nutrient conservation,

- (iv) Silvopastoralism in organic and integrated farming systems.
- e. *Socio-economic human and cultural aspects*
- Adaptation of systems to the particular socio-economic needs of the EU member states.
- (i) Preservation and encouragement of traditional versus new systems (reduction of conflict between wood preservation and conservation of traditional silvopastoralism activities).
 - (ii) Transhumance and silvopastoralism
 - (iii) Quantification of non-market values from silvopastoral systems and their integration into viable farm businesses.
 - (iv) Synthesis of agricultural, forest and environmental policy drivers within silvopastoral systems.
 - (v) Increased understanding of the motivations and potential and actual responses to policy and economic alternatives of landowners and silvopastoral enterprises.
 - (vi) Inventory and assessment of traditional ecological knowledge, as well information needs, of silvopastoral practitioners
- f. *Dissemination to land-users*
- As silvopastoral systems cut cross a range of disciplinary boundaries, there is a need to develop broad spectrum technology transfer mechanisms and train extension workers to disseminate this information.
- (i) Development of knowledge-based systems for technology transfer.
 - (ii) Dissemination to meet policy objectives.
 - (iii) Use of networks to target specific issue scenarios.
 - (iv) Assessment of the effectiveness of technology transfer and adaptive use of feedback from practitioners.

RECAPITULATION

1. A series of research issues need to be addressed to underpin policy directives and technology transfer. These can be grouped under - Inventory of resource and research; Component evaluation, Ecological interaction, Management, Socio economic, human and cultural; dissemination.² There is a need to invest in technology transfer through training of extension workers and develop new

- dissemination mechanisms involving the farmer, researcher and advisor. The importance of farmers on these systems will definitively promote sustainable land use.
3. There is currently no policy on silvopastoralism in relation to its position among:-



4. There is a need for a silvopastoralism policy in the context of:

- The reformed CAP. Inclusion of silvopastoralism in the Single Payment Scheme (SPS).
- The strengthening of Rural Development as the second pillar of the CAP
- Decoupling of subsidy from production
- Expansion of the EU
- The comments made by the members of the SAFE Project in Toulouse, April 2004 on the "Implementation of the Mid-Term Review of CAP related to agroforestry" should be seen alongside this Statement.

The most notable outcomes are:-

1. The definition of 'woodland' should be clarified to ensure that it does not lead to the removal of trees from farmed landscapes.
2. In Guidance Document AGRI/2254/2003 of the Agriculture Directorate General of the European Commission the threshold recommended for 'woodland' (and hence exclusion from payment under the SPS), is >50 trees/ha. Exceptions listed should cover 'agroforestry'.
3. Agroforestry should remain classified as agriculture in wording of Article 5 of Regulation 24/9/01.
4. Fifty trees/ha is an acceptable definition of woodland for the purpose of 1782/03 but should be classified to say "50 trees ha⁻¹ of more than 15 cm diameter at breast height".
5. For silvopastoral systems, SPS can be maintained provided that no more than 50% of the non-shaded pasture production is maintained.

6. The EU should clarify that they have the flexibility to allow multiple activities within parcels in their national IACS systems (e.g. forestry and cropping in the same parcel).
7. Trees planted at agroforestry spacings do not constitute a perennial crop.
8. National definition of 'good agricultural and environmental condition' could include the phrase 'well-managed agroforestry is recognised as a mechanism of improving landscape and environmental diversity'.

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