Initial Stakeholder Meeting Report
Grazed oak woodlands in Sardinia

Work-package group 2: High Natural and Cultural Value (HNCV) agroforestry
Specific group: Grazed oak woodlands in Sardinia
Date of meeting: 9 July 2014
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Location of meeting: Foresta Demaniale di Monte Pisanu (Bono), Sardinia, Italy
Responsible of WP2 activity: Antonello Franca
Responsible of participative approach for WP2 activity: Giovanna Seddaiu.
Authors of report: A. Pisanelli (CNR IBAF), F. Camilli (CNR IBIMET), G. Seddaiu (NRD), A. Franca (CNR ISPAAM)
Contact: a.franca@cspm.ss.cnr.it

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1. Context

The AGFORWARD research project (January 2014-December 2017), funded by the European Commission, is promoting agroforestry practices in Europe that will advance sustainable rural development. The project has four objectives:

1) to understand the context and extent of agroforestry in Europe,
2) to identify, develop and field-test innovations (through participatory research) to improve the benefits and viability of agroforestry systems in Europe,
3) to evaluate innovative agroforestry designs and practices at a field-, farm- and landscape scale, and
4) to promote the wider adoption of appropriate agroforestry systems in Europe through policy development and dissemination.

This report describes one of about 40 initial stakeholder workshops to address objective 2. Further details of the project can be found on the AGFORWARD website: www.agforward.eu

2. Description of the system

Sardinia is the second largest island of the Mediterranean basin with a surface of about 24090 km^2, and is located in a central position in the western Mediterranean area. The area includes mountains divided by plateaux and plains of historical and cultural interest. Following the guidelines of EC regulation 1257/99, about 90% of the territory has been classified as disadvantaged areas. Forests occupy about 5800 km^2 mainly within the hilly and mountain areas of the island. About 2000 km^2 are public and managed by the EFS (Ente Foreste della Sardegna, the Regional Forestry Office). The Sardinian rural landscape is largely characterized by a mosaic of agrosilvopastoral systems at different levels of complexity (Figure 1).

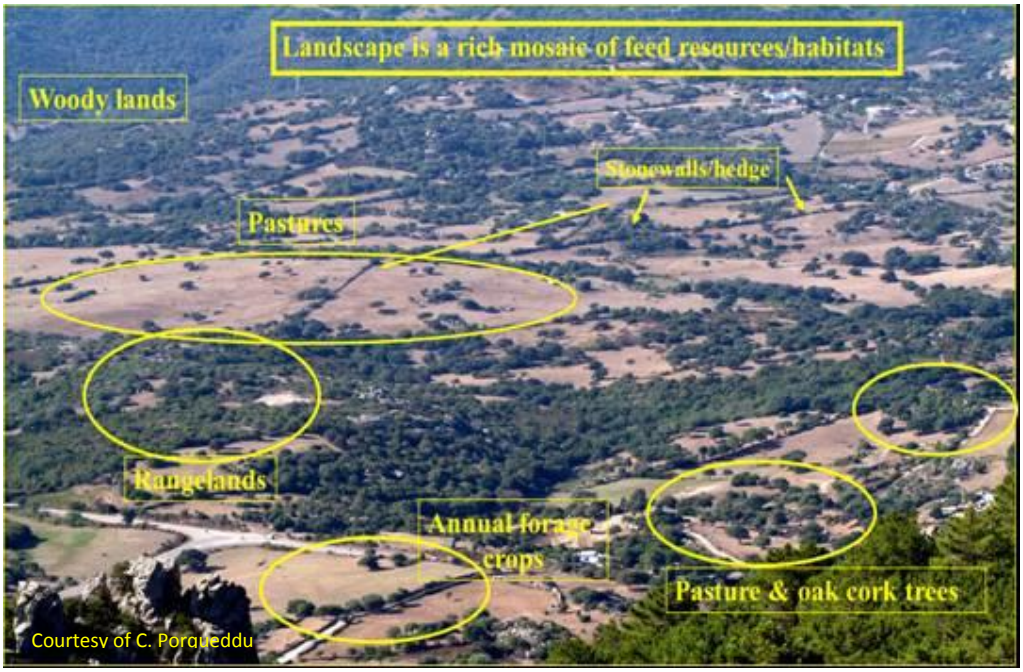

Figure 1. A view of a typical rural landscape in Sardinia

The agrosilvopastoral system ranges from grazed forests to wooded grasslands where scattered *Quercus* spp. (holm oak, cork oak and deciduous oak) trees are mixed with permanent or temporary pastures or intercropped with cereals and/or fodder crops (Seddaiu et al., 2014)Semi-extensive livestock farming systems occupy more than the 50% of the regional surface across plain, hill and mountain areas; in total there are about 15000 km^2 of pastures, meadows, and forage crops, Mediterranean maquis and forests are grazed by dairy sheep (Figure 3 and 4), beef cattle, goats, and pigs. Half of this grazed land belongs to the category "other wooded areas" (areas with tree coverage lower than 10%, or higher than 10% but with trees or shrubs below 5 m height) and these occupy 26% of the total regional surface.

Figures 2 and 3. Semi-extensive livestock farming systems occupy more than the 50% of Sardinia

The silvopastoral systems of Sardinia are characterized by *Quercus* spp trees: holm oak (*Quercus ilex*), cork oak (*Quercus suber*) and deciduous oak (*Quercus pubescens*). The holm oak dominates the forest landscape of Sardinia as it can adapt to the wide altitudinal range from about sea level to above 1400 m (Camarda and Valsecchi, 1983). Regarding the forest vegetation of *Quercus suber*, Sardinia alone has 90% of the Italian coverage of these woods amounting to about 100,000 ha. North-Western Sardinia wooded pastures have been described as neutroacidophile cork-oak meso-woods on volcanic substrata. They occur at altitudes between 50 and 700 m and are mainly

subjected to intense pastoral use. Deciduous oak woods occur on the carbonated substrata of Northern Sardinia, non-carbonated substrata of central-northern Sardinia between 200 and 1000 m; on basalts, metamorphites and granite between 750-1000 m in Central Sardinia (Gennargentu, Barbagia, Montiferru and Goceano sub-regions) (Caballero et al., 2009).

3. Management of silvopastoral areas

Sardinian silvopastoral areas are mostly under private ownership. However public ownership occurs at Limbara, Monte Linas-Marganai, Sette-Fratelli, Sinis-Montiferru, and Marghine-Planargia. Apart from cultivated pastures in the lowlands, the majority of the silvopastoral areas are upland pastures inclusive of Mediterranean forest and open bushland in the hilly and mountainous areas (Porqueddu and Franca, 2013). In the public lands, livestock farmers share grazing rights and agree on the partitioning of the grazing area. Subsidies have so far kept most systems viable even if incomes are low. However the sustainability of such family businesses is under threat: in Sardinia the ratio between over 50 and under 35 years-old farmers is 10:1. The regional government provides consulting services and financial support (low grazing-fees in public lands), but private cheese making and cheese marketing co-operation are the main economic drivers. For example: indigenous cattle breeds such as Sardo-Modicana or Bruno Sarda can adapt to harsh environments and are of interest for the production of quality cheese such as Casizolu from the Sardo-Modicana.

Abandonment of marginal lands or intensification of favourable areas are the dominant land use trends in Sardinia, leading to functional degradation of the agrosilvopastoral systems in both cases and, thus, to negative impacts on production, local economy and landscape.

High nature value territories

Preliminary studies of High Nature Value (HNV) areas show that in Sardinia they cover roughly 50% of the utilized agricultural area UAA), mostly represented by grazed grasslands and rangelands. The current EU HNV maps refer to about 1,200,000 ha for Sardinian HNV farmland area, equal to the 65.4% of the agricultural land, one of the highest proportions of all Italian regions except in the Italian Alpine region (Valle d'Aosta, Trentino-Alto Adige, and Liguria). About 30% of Sardinian forests (176450 ha) can be considered HNV forest areas, on the basis of the guidelines provided by the European Evaluation Network for Rural Development, which is consistent with the National Forest Inventory (NFI) data (Porqueddu and Franca, 2013).

The above results suggest that there is at least 1 million ha that is considered to be of high nature value, a surface equal to the total UAA. In these areas, high levels of plant biodiversity emerge from the interaction between ecological factors and agropastoral management and grazing activity. However both abandonment and overgrazing can cause negative effects due to the effect of grazing species, stocking rate and grassland management on the natural and agronomic value of the system (Moreno et al., 2014).

4. Pre-meeting activities

The complexity of the issues and challenges linked with the management of silvopastoral systems and the need to capture the different perspectives of the various stakeholders about these systems, without asking leading questions and/or risking to have misinterpretations of the aspects listed in the original AGFORWARD questionnaire led Antonello Franca and Giovanna Seddaiu (Work-package 2 (WP2) staff of the partner CNR) to revise the format for the meeting with the intention that new aspects would emerge. This proposal was shared with Andrea Pisanelli and Francesca Camilli and approved by the CNR team. Hence before the meeting around 30 stakeholders were contacted and during April-May 2014 fifteen of them were singularly interviewed (all the farmers and some of the institutional stakeholders) or were asked to fulfil the questionnaire when the interview was not possible for time constraints (mainly institutional stakeholders). In this latter case, there were direct contacts by telephone with the WP2 staff of CNR in order to clarify issues and help with the interpretation of the questionnaire. Some officers from the public forestry service (Policy makers, EFS and Corpo Forestale dello Stato) also completed the questionnaire.

5. Stakeholder meeting

The meeting was held in a public forest area "Foresta Demaniale, Monte Pisanu" managed by Ente Foreste della Sardegna, Sardinia Region (Figure 4).

Figure 4. Foresta Demaniale, Monte Pisanu, Sardinia Region

The meeting started with an overview of the AGFORWARD project made by Andrea Pisanelli and Antonello Franca. Afterwards, Antonello provided a general description of silvopastoral systems and highlighted the objectives of the meeting. A characterisation of the participants is provided in Table 1 and the meeting agenda overleaf. Participants at the meeting comprised 15 stakeholders (Figures 5 and 6). Four AGFORWARD researchers attended the workshop (A. Franca, G. Seddaiu, A. Pisanelli and C. Porqueddu). The agenda of the meeting was:

- Presentation of the AGFORWARD Project
- Introduction to WP2 workshop, and presentation of participants
- Description of silvopastoral systems in Sardinia
- Additional selection of positive and negative aspects
- Final choice of three positive and negative aspects
- Discussion: questions and answers, followed by buffet

Table 1. Organisations and roles of stakeholders participating at the meeting

Role/organisation	Number of participants
Ente Foreste Sardegna	3
Farmers	5
Researchers*	2
Policy makers	3
Corpo Forestale e Vigilanza Ambientale	2

**Researchers attending the meeting, not directly involved in AGFORWARD, were Maria Sitzia and Agostino Pintus of AGRIS, working for the Regional Agency for Research in Agriculture.*

Figures 5 and 6. Participants to the meeting and a phase of the working session of the meeting

6. Positive and negative aspects of agroforestry

Giovanna Seddaiu outlined the agenda for the meeting and explained the modalities of the participative approach. Then, she briefly reported the results of the pre-meeting activity by showing two flip-charts with the most relevant positive and negative aspects of the silvopastoral systems in Sardinia (Table 2).

Table 2. Positive and negative aspects of agroforestry initially identified in the meeting

Positive aspects	• Quality of the animal products • Production of timber, cork, fruits • Animal health and welfare • Reduction of fire risk • Biodiversity and wildlife habitat • Diversification of products
Negative aspects	• Complexity of work • Control of animals • Administrative/normative constraints • Management costs • Wildlife impacts e.g. wild pigs out of control • Mechanization

The rank of the negative and positive aspects was obtained by calculating the weighted average of the score for each aspect and considering only the scores from 1 to 5.

7. Discussion

The presentation of the results was followed by a discussion of impressions and opinions. Many participants clarified their views and reinforced some of the aspects listed. Then, participants were asked to think and discuss about additional aspects, both positive and negative, that were not included in the lists but that could be considered important. Participants wrote the new aspects onto post-its (Figure 7) and briefly explained the reasons for proposing their addition to the lists. The new aspects are listed in Table 3.

Figure 8. Participants integrated positive and negative aspects adding a post-it to the lists in the flip-charts.

Table 3. Additional positive and negative aspects of agroforestry identified in the meeting

Additional positive aspects	• Landscape aesthetical value • Conservation of the local environmental, social and cultural heritage • Value of knowledge • Touristic and recreational values • Multi-functionality of the agroforestry systems • Soil protection
Additional negative Aspects	• Low forage and animal productivity • Lack of coordination between agroforestry and environmental policies • Lack of suitable financial and normative instruments supporting agro-forestry systems at local scale • Lack of coordination and synergies among stakeholders • Lack of communication • Farm fragmentation • Absence of product traceability • Inadequate and/or lack of implementation of the existing technologies supporting productivity at farm scale • Lack of skills and technical guidelines concerning silvopastoral systems • Negative impacts of wildlife animals such as wild sheep, deer, wild boars

After this step, each participant was asked to vote the three most relevant positive and negative aspects according to his/her perceptions and knowledge (Figure 9).

Figure 9. Participants identified the most critical issues to be discussed during the meeting

The three most highly-ranked **positive** aspects were:

- High quality value of the products and product diversification,
- High value of the cultural landscape, and
- Reduction of fire risk.

The three most highly-ranked **critical** issues were:

- Need to increase the fodder production,
- Need to implement a more rational and sustainable management of silvopastoral systems, and
- The need to maintain and sustain human settlements with their sustainable economic activities in the rural territory.

8. Potential innovations looking forward

Based on the above selections, the following discussion was focused on the most important critical issues to be possibly addressed during the AGFORWARD project. The discussion among the stakeholders raised the need to improve the qualitative and quantitative production of the pasture component of the silvopastoral systems as the main research challenge to be addressed during the AGFORWARD project.

This research issue could be integrated by the adoption of wider strategies focused on:

i) the development and the implementation of appropriate management frameworks for Sardinian agrosilvopastoral systems aiming to:
   i. increase productivity of all the components of the system (for example, identifying the adequate stocking rate, protecting resources from wildlife animals damage);
   ii. promote synergies between grazing animals, the pasture and the tree components;
   iii. determine the appropriate stocking rate (animals per hectare) and the tools to protect silvopastoral resources from the wildlife animals;

ii) providing farmers with appropriate tools to facilitate the access to public subsides available in the Common Agricultural Policy which could favour the protection of the rural lands and their positive externalities;
iii) improving communication and sharing of knowledge among stakeholders.

All participants showed to be interested in being involved in the research activities implemented within the framework of AGFORWARD project.

One issue to emerge from the meeting was the suggestion to implement strategies within the regional agrarian policy with the aim to further develop and maintain the existing agro-silvopastoral systems. In particular, a lack of specific measures in supporting agroforestry interventions in the 2014-2020 Rural Development Plan (RDP) of the Region of Sardinia was highlighted. During the meeting, some of the stakeholders invited the Sardinian AGFORWARD staff to prepare a first draft proposal for possible measures for agroforestry to be addressed in the Regional Agricultural Department that could be financially supported in the RDP. The draft was prepared by Antonello Franca and Giovanna Seddaiu and circulated among the participants of the meeting. So far, four stakeholders have revised the draft.

9. References

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