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How can different stakeholders contribute to rural landscape planning policy? The case study of Pralormo municipality (Italy)

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Abstract

In rural landscapes, historical values and traditional crops are in conflict with recent commercial demand and social needs. For sustainable development, it is essential to find a methodology able to conjugate cultural and historical values with socio-economic trends. In order to identify shared actions, strategies and policies for the management of rural historical site, an integrated empirical work was developed. The main goal was to understand how to promote a bottom-up planning approach, including stakeholder perceptions in policy actions and planning strategies for historical rural landscapes. Pralormo municipality (Piedmont, north-west Italy) was chosen as case study. We developed a methodological framework to understand if the participatory approach can contribute to landscape planning from the local to the regional level. Field observations, landscape and historical analysis, farmers' interviews and two focus group meetings were performed. This study shows that complex socio-cultural and economic drivers affect the future of the studied rural area. The assessment of land use scenarios can play an important role in promoting the understanding of such uncertain systems. Shared actions, strategies and policies were identified for the planning of rural historical site. In the case of Pralormo, which is transferrable to other European historical rural areas, we promoted the adoption of a new local landscape planning strategy with positive fall-out on the regional scale. Linking food and landscape quality, preserving ancient settlement, maintaining traditional land uses and promoting educational activities in farm are considered the most important issues for sustainable development.

Keywords: historical rural landscape, focus group meetings, interviews, farmers, landscape scenarios

1. Introduction

Rural landscapes are characterised by dynamic and continuous changes (Antrop, 2005). They are the result of a continuous land re-organisation to adapt their use and spatial structure to the changing of economic and social demands. According to Sandker et al. (2010), rural landscapes are considered as mosaics of land cover types providing ecosystem services and developing opportunities for the multiple needs of diverse stakeholders. In Europe since the 1950s the different rural systems have been evolving in two opposite directions: intensification and monoculture *versus* marginalization and abandon (Skaloš et al., 2011, Larcher et al., 2013). Moreover, in the European Union (EU) since 1990, several rural landscapes were in transition, losing their primary agricultural functions, traditional crops, and historical land uses (Meeus et al., 1990; Cullotta and Barbera, 2011). The European Commission's Agri-Environmental Measures (2005) refer to maintain the sustainable farming systems, to sustain traditional landscape and to promote and rural development. In Europe, many historical rural landscapes have been subjected to transformations following land abandonment or crop conversion caused by processes of polarisation towards more urbanised areas (Pedroli et al., 2016). Recently in Italy, the Italian Statistical National Institute (ISTAT) measured in 50% the loss of cultivated lands between the 1930 and 2010. Urban sprawl and land consumption played a fundamental role in this process (Romano and Zullo, 2014).

Protecting, sustaining and valorising historical agricultural landscapes are considered priorities by the international community. In 2003, the FAO GIAHS project (Globally Important Ingenious Agricultural Heritage System) addressed the relationship between agricultural heritage systems and their landscape and outlined the need to safeguard them over time. Furthermore, up to 2016, 17 historical agricultural sites had been included in the World Heritage List as 'cultural heritage' by the United Nations Educational Scientific and Cultural Organization (UNESCO, 2016). These sites are mainly recognised for their distinctive

agricultural systems and historical features such as cultivation practices, land uses, productions or traditional cultivations techniques (Gullino and Larcher, 2013). In this context, multidisciplinary studies should be applied and specific actions, policies, measures and management plans should be developed. Choi and Sirakaya (2005) and Dearborn and Stallmeyer (2009) recognised a conflict between heritage protection and tourism development and identified the need to develop policies and effective management strategies. These authors outlined that what remains unclear is how the sustainable concept can concretely assume a dynamic character and, moreover, how people's awareness changes through generations. The identification of landscape planning policies, strategies and actions for historical rural areas is a priority (Agnoletti, 2014).

1.1. Participatory process for rural landscape planning

The participatory approach allows to understand local actors' perspectives and problems and to identify strategies for supporting the agriculture (Pinto-Correia et al., 2014; Cleary and Hogan, 2016; Prasad Pant and Hambly Odame, 2016). The public participation can be used as instrument for landscape planning too (Stenseke, 2009). Moreover, following the European Landscape Convention's (ELC, 2000) recommendations concerning the need to take into account people perception in landscape planning, public consultation has recently become an increasingly important tool in the decision-making process. Jones and Stenseke (2011) illustrated and compared different experiences of public participation across Europe. Local participation evolved as a strategy in the conservation and maintenance of biological and environmental resources and historical values in cultural landscapes. In the ELC the concept of landscape was defined and 'means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors'. In general, landscape is differently understood and perceived by each stakeholder (Larcher et al., 2013). Rural

landscapes are non-static features and places that define people's livelihoods, identities, and belief systems. According to Tress et al. (2007) and Antrop (2006) landscape is considered an integrating concept that refers both to a physical reality that originates from the continuous and dynamic interaction of natural processes and human activity and to immaterial existential values and symbols that the landscape embodies.

For evaluating the sustainability of rural landscape over time according to cultural and historical values, the "active" management is considered a primary goal. Gullino et al. (2015) affirmed that a dynamic sustainability can be ensured through the evaluation of several parameters and by the definition of an integrated planning approach. In this context, the involvement of different stakeholders in the participatory process and the creation and exploration of future landscape scenarios contribute to the development of sustainable future landscapes (Bohnet and Smith, 2007; Tress and Tress, 2003). Moreover, to maintain farming activity, historical crops and traditional elements, the recognition of qualifying elements and the participation of local people are essential activities. With this approach the population becomes more aware and responsible in the management process.

1.2 Research aim

New tools and techniques, based on multi-disciplinarity, increased the ability to monitor and to explore changes in land cover over time (Pedroli et al., 2007; Barbera and Cullotta, 2012; Almeida et al., 2015). According to these authors, we developed an integrated conceptual framework. Frequently, historical values and permanences and traditional cultivations are in conflict with commercial demand and social needs. To apply a methodology able to conjugate the cultural and historical values with the socio-economic trends and create pathways for planning historical rural landscapes, a multidisclinary study was developed. The method was applied in Pralormo municipality (Piedmont, North-West Italy) as a case study.

The key goals of the research were:

- to develop an integrated empirical work promoting a bottom-up planning approach;
- to employ participatory approach (interviews) identifying problems and qualifying elements perceived by local farmers;
- to identify shared actions, strategies and policies for rural historical landscape planning.

The development of integrated empirical work proposed in this paper, should be related to the context used and to the focus' research. The methodological framework combines landscape theoretical study with different participatory approaches. This pilot application demonstrates how stakeholders participation would influence landscape planning process in rural areas.

2. Material and methods

2.1. The study area

The case study was the Pralormo municipality (44° 51' 39" North, 7° 54' 9" East) (Piedmont Region, north-west Italy) and it is characterised by several agricultural patterns and land uses. The municipality covers about 2980 ha with flat areas and hills ranging in altitude from 260 to 1300 m above sea level. The rural mosaic is a non-specialised and fragmented farm pattern of cereals (70%), grassland pasture (25%), woods (3%) and vineyards (2%). In 2013 there were 102 farms with 2042 ha of cultivated lands (Agricultural Statistical Census). Pralormo municipality represents the diversity of the characteristic mosaic of the Pianura Padana irrigated flat area. In fact, the landscape is dominated by different agricultural systems combined with small-scale mosaics of other land uses resulting in a specific landscape character.

A methodological approach to explore landscape scenarios was applied to Mértola municipality in southern Portugal by Loupa Ramos (2010). In that case, the author decided to

study this site because it was considered fragile in terms of rural landscape and classified as critical in terms of population density. By contrast, also considering the European trend (Temme and Verburg 2011), we decided to study Pralormo municipality because in this site the agricultural activity is already an important socioeconomic resource and, during the last decades it has progressively increased in terms of cultivated surface (+30%). The evolution of agriculture over time was analysed by checking the ISTAT data of the Census of Agriculture between 1980 and 2010. This unusual dynamic shows how the agricultural sector continues to represent the most important socio-economic resource for this municipality. Moreover, the area is characterised by clay soils that in the past were exploited by inhabitants for building fishponds. Since XIX century, these structures provided water for irrigation and were used for tench fishing. Today in Pralormo municipality, a total of 102 fishponds characterize the landscape. In this context, identifying actions, strategies and policies for conserving land uses and landscape features were also our research aims.

2.2. Methodological framework

We developed a methodological framework to understand how the participatory approach can contribute to landscape planning from the local to the regional level. In Italy (Fig.1), the landscape policy is based on regional regulatory constraints and requirements applied at landscape unit scale without effects on the municipality level (Fig.1A). Decisions taken at the local level, on the other hand, can influence other municipalities in the same landscape unit without effects on the regional level (Fig.1B). We considered that the empirical work proposed, starting from the municipality level, can promote the exchange in each direction by involving stakeholders from all the political levels (from municipality to regional level) (Fig. 1C). Moreover, the main political target of Pralormo was to adopt new landscape planning policy to promote and enhance the rural landscape, and its cultural and historical features,

integrating all the qualifying elements in a project of sustainable development. Resulting from our research, an integrated empirical work, actions, strategies and policies would be implemented into planning documentations of the rural historical landscapes, as well as would be involved into decision-making process.

The methodological framework applied in this research project was illustrated (Fig. 2). Firstly, with the aim to identify historical permanences of rural landscape and theoretical qualifying elements, historical and landscape analysis were performed. The first part of the research was carried out by analysing documents and references from historical archives and libraries: historical cartography and documents from the XVIII and XIX centuries were collected. The evolution of the rural landscape in Pralormo and the identification of the theoretical qualifying elements and historical permanences were also identified by the authors as experts, through field observation (including photo documentation), the historical survey and the comparison of ancient documents with present cartography and bibliography. In parallel, with the aim to identify problems and qualifying elements perceived by local farmers a participatory approach was employed. Interviews were used.

Secondly, interviews results and historical data were analysed and processed for proposing driving forces and future landscape scenarios. We used the focus group technique to question policy-makers (PM) and civil society stakeholders (CS). Table 1 lists the type of stakeholders involved during the first (interviews) and the second (focus group meetings) steps. Therefore, farmers, landowners, planners, policy administrators and experts' expectations might differ in many ways although they all refer to the same reality. For this reason, all these actors were involved in our study, using different participatory techniques.

2.3. Proposed driving forces and construction of landscape scenarios

The initial step of this participatory research was a farm survey to investigate how land is managed in Pralormo and to identify possible future landscape scenarios. A wide variety of scenarios and methods used for their development exist in the literature. Palang et al. (2000) decided to construct their scenarios using an holistic approach based on historical analysis to predict future landscapes. Kok et al. (2006) integrated historical information and narrative storylines that describe three possible directions of future change until 2030. By contrast, van Berkel et al. (2011) used interviews combining these methodologies, we built landscape scenarios integrating historical and landscape analysis and interviews.

Table 2 shows the questionnaire used for the farmers' interviews. Using this protocol, we investigated the farm structure and the rural landscape. According to Bohnet and Smith (2007), for ensuring that the researcher covered the same topics in each interview, we decided to use a qualitative semi-structured questionnaire. Questions were open, allowing follow up prompts to discuss issues and encourage explorations of topics raised by the farmers' interviews. Moreover, the survey included questions on the farm, the production activities, the land uses, and the subsidy payments received by the regional Rural Development Programme (RDP, 2007-2013). Regarding interviews, in line with Patel et al. (2007), Acs et al. (2010), and Pasăkarnis et al. (2013) we selected a group of participants based on age and farm types. In our study, we identified and interviewed 10 local farmers as representative of different farm types based on enterprise mix and land holdings younger than 50 years old. We aimed to characterise the agricultural sector and to have a significant representation in the answers, so the choice of the farmers depended on the farm type.

The results came from the interviews and the historical landscape analysis allowed to identify the proposed driving forces to be discussed during the focus group meetings, and old and new elements useful for the scenario assessment. In particular, problems and qualifying

elements perceived by farmers combined with historical permanences and theoretical qualifying elements were used and proposed.

2.4. Focus group meetings

Regarding focus group technique, two one-day meetings were organised and two main goals were achieved. The first was the discussion of interviews results and the outlining of the main driving forces of local landscape transformation, while the second was the analysis of Pralormo future landscape scenarios and participant preferences. According to Lastra-Bravo et al. (2015), driving forces can be defined as factors that influence and cause land covers and land use transformations. Several driving forces affect landscape elements, land uses and agricultural activity resulting into changes of landscape in the study area. Bürgi et al. (2004) identified five major types of driving forces: socioeconomic, political, technological, natural, and cultural. The authors outlined the importance of studying driving forces by developing interdisciplinary and integrative works. In our study, we decided to consider the driving forces as expressed by the community that represent their decisions (Schneeberger et al., 2007).

In this study, for reducing potential conflicts and influences, two small participant groups were involved by administrators and policy-makers (PM) and the other by civil society stakeholders (CS), members of local organisations and associations, residents and freelance professionals. Two focus group meetings with PM and CS were organised to identify the driving forces and their effects on rural landscape. We decided to involve PM and CS in order to understand how the rural landscape is perceived by the main users and managers and how to guide possible future transformations. In agreement with Bijlsma et al. (2011) and to prevent the influences between PM and CS, we decided to involve as stakeholders different types of actors from various organisations, local associations, administrative levels, and networks, and hence were guided by different concepts, tasks, and opinions, and by different roles. The

stakeholder panel was expected to join the main community representatives and should cover a variety of interests, aspirations, expectations and points of view. For PM, rural landscape is a medium to better target policy decisions toward landscape management and planning. For CS, rural landscape is perceived and evaluated differently, because of links to their background, interests and experiences. The integration of both opinion groups contributed to develop a bottom-up approach and identify different driving forces and possible landscape effects. In agreement with Mauchline et al. (2012), in order to generate constructive discussions and to improve the chances of reaching consensus on such technical and complex issues, only few stakeholders should be involved. According with Reed et al. (2009) and Bui et al (2016) different types of stakeholders were selected among each group. Moreover, like Breton Morris et al. (2011) and Larcher et al. (2013), each focus group followed the same steps separately to avoid influencing each other.

3. Focus group scheme

The methodology of the driving force and future scenario analyses followed the same procedure within each focus group meeting.

The main steps of each focus group were as below.

- Experts. Presentation of the research aim and interview's results. Regarding driving forces three questions were asked:
    1. Which driving forces will change Pralormo's rural landscape in the next 20 years?
    2. What effects will those driving forces have on Pralormo's rural landscape?
    3. Can you assign a score to each driving force using the classification scale (from 1 = low importance to 5 = high importance)?
- Participants. Identification of driving forces and definition of their landscape effects; discussion and classification (shared score).

- Experts. Presentation of the landscape elements that could transform and change rural landscape in the next 20 years. Regarding landscape scenarios one question was asked:
  1. Which elements would you select in relation to utility, feasibility and beauty scenarios?
- Participants. Construction of landscape scenarios.

After presentation of interview results (PowerPoint, Microsoft, Office 2010), participants discussed the themes about land use policies and landscape transformations and highlighted which driving forces might alter the rural area over the next 20 years. Then, the group was asked to imagine the effect of such driving forces on Pralormo's landscape. Afterwards, each participant wrote on individual cards what she/he believed to be the two primary possible effects caused by the previously defined driving forces. Each participant explained her/his chosen effects to the others. Experts collected the cards and immediately composed a placard that displayed the focus group's defined driving forces with their potential effects. Later, participants assigned a landscape shared score related to the importance of the driving factors over the next 20 years (1= low importance; 5= high importance) in relation to the landscape effects identified. The assignation of the values was the result of an open discussion among participants and allowed them to classify the shared driving forces.

The second part of the focus group session was the scenario evaluation. During the focus group meeting an exploratory forecasting methodology was employed. Through elaboration of the interviews, experts presented several elements that could change Pralormo's landscape in the next 20 years Adobe Photoshop (Elements 6.0). During the focus group meetings, each participant selected the elements or added others creating her/his scenarios in relation to Utility, Feasibility and Beauty, defined as follows:

- Utility: identifying the elements that improve the development and the welfare of humans and landscape;

- Feasibility: identifying the elements that are more realistic and achievable;
- Beauty: identifying the elements that improve the quality of landscape (aesthetic value).

4. Results

4.1. Historical permanences and theoretical qualifying elements

Regarding historical permanences and theoretical qualifying elements recognition, we decided to report in this paper, the most important documentation of XVIII and XIX centuries found in the archives. All the historical documents were reported in Gullino et al. (2013). The list of archives consulted, the original name of document, the year, the kind of documentation and the information acquired are reported in Table 3. The analysis of historical documents and cartography confirmed the importance of agricultural activity in Pralormo municipality. Historical literature, cartographies, figured land registers and cadastral maps allowed us to understand the historical permanences and landscape structure, with particular attention to settlements and cultivation types. The mixed landscape mosaic and the thriving agricultural activity can be considered as theoretical qualifying elements. Most of the present farms, fishponds and land use types were already present in the XIX century. Crops, woods, and grassland pasture were the main historical cultivations and were maintained for centuries. By contrast, winegrowing and orchards had greatly decreased. In the past, different autochthonous vineyards were cultivated, each one characterised by typical agricultural features and techniques. Nowadays, only a few vineyard plots are cultivated, especially in the hilly areas. Historical permanences and traditional elements were identified: historical farm buildings, fish ponds, hedgerows, woody areas, and traditional cultivations. During scenarios' evaluation (Focus group meetings) these elements were proposed and showed to participants.

4.2. Interviews' results: problems and qualifying elements perceived

The analysis of interview results permitted us to identify the problems and the qualifying elements perceived by Pralormo farmers. The 40% of farmers surveyed had a cereal address and practiced livestock. Indeed, the majority of grain production is used for the livestock activity. The analysed farms have an average extension of 20 ha. There are significant differences in farm sizes. In particular, the cereal farms are the largest (> 50 ha), while the floriculture and horticulture farms are less extensive (≤ 5 ha). The 80% of the farmers began between 1995 and 2000 and they took over old farms and plots. Their activity is mainly family-owned. The 90% of farmers interviewed transform agricultural and livestock products directly on site and sell their products in the farm or in the markets of neighboring municipalities. The 60% are educational farms and they are associated with producer cooperatives. In the last three years, the 90% of the farmers have enlarged the surface cultivated and increased production and breeding. Some of their products are typical and some are niche products highly sought after in the market. Several processed and transformed products are marked as original denomination certificated (DOC) or original denomination and guaranteed production (DOCG). Among the specialties that are produced/grown, there are several traditional agricultural products (PAT) registered and recognised by the Italian Ministry of Agriculture, Food and Forestry (list updated in 2015). The products' diversity and identity can be considered as a qualifying element. About the 50% of the farmers received regional payments during the period 2007-2013 (Council Regulation 1968/2005), most related to the laboratory of transformation and to the educational structures and projects.

Concerning rural landscape transformation, all farmers think that Pralormo landscape is changing. By contrast with national trends, this phenomenon is not strictly linked with constant urbanization: only the 20% of farmers is worried about the urban soil consumption linked with the loss of the economic value of agriculture. In the last few years intensive farming has strongly

increased (+ 25% maize production), otherwise winegrowing and natural elements decreased. The farmers though that there are many qualifying elements that should be valorised, in particular the historical farms, the fishponds, the natural elements (hedgerows and woody areas), and the system of paths and roads, assessing 4.5/5 points to Pralormo landscape. As regards the future (2020), new and not traditional cultivations (hazelnut) will lead to a deterioration of the agricultural landscape, decreasing the score (2.5/5). Recently, in this area also a new system for renewable energy production was built (photovoltaic system). Half of farmers assumed future land policy linked to agriculture and rural development sectors, and urban planning would bring significant deterioration in the rural landscape quality. These potential trends could determine the abandonment of agriculture and the development of new residential, infrastructure, and service demands.

4.3. Focus group' results: shared driving forces and effects on rural landscape

The analysis of focus groups' results permitted us to identify shared driving forces affecting rural landscape. Table 4 lists the 5 driving forces proposed by experts (E) compared with the 7 identified by policy-makers (PM) and the 4 by civil society stakeholders (CS). We can observe that some driving forces are similar: diffusion of new technologies connected with intensive production and landscape planning tools. As said by farmers, soil consumption was not identified as a potential driving force by the two groups of stakeholders. Table 5 and Table 6 show the influence on landscape over the next 20 years (landscape effects) identified by PM and CS for each driving force and their impact on the Pralormo's rural landscape.

Both groups outlined the importance of agricultural activity for the studied area. PM underscored the coexistence of two driving forces, intensive and extensive productions. The first is linked with only negative effects, the second with only positive effects on landscape quality. According to CS, the diffusion of new technologies connected with intensive

production maintains the agricultural activity and preserves the rural landscape from hydro-geological disruption, but has several negative effects. These effects are mainly related to environmental and agronomical aspects. The rural quality of life was interpreted by both groups as ‘farmer well-being’. Supporting farmers’ incomes was favorably viewed. CS think that EU policies can positively influence the landscape quality, determining positive effects (agricultural production, historical crops and the expansion of natura areas) and favoring the ecotourism demand. They highlighted that European support for farmers’ income and activity diversification brings positive results, for reinforcing traditional cultivations and producing services and other products beyond the primary goods. The reduction of farmers’ income could have only negative effects and the rural landscape would be negatively influenced by marginalization processes. PM outlined the lack of generational turnover in agriculture and demographic problems. However, they identified the support qualifying landscape elements (fishponds) as the most important driving force that could bring positive results. CS identified landscape planning tools as the most important driving force for increasing biodiversity.

Regarding the urban sector, stakeholders had contrasting opinions. PM underscored the current conflict between agricultural and urban interests caused by upgraded building stock. CS highlighted ‘strong’ local landscape planning policies. Some policies could have positive effects if correctly applied; for example, the restoration of historical buildings and rural farms.

4.4. Focus group’ results: scenarios

Starting from the *status quo* of Pralormo rural landscape (2013), new residential and industrial buildings, fishponds, hedgerows, hazelnut cultivation, monocultural system linked with intensive production, woody areas and intensive livestock were proposed (Fig. 3). Pralormo rural landscape was illustrated with these elements, results by previously analysis.

The mean ratings assigned to Utility, Feasibility, Beauty scenarios by civil society stakeholders and policy-makers was reported (Fig. 4).

Regarding the Utility scenario, both groups considered as the most useful elements: the woody areas, fishponds and hazelnut cultivation landscape. CS also outlined the development in the future of new buildings (residential and industrial) and the presence of intensive production (intensive livestock and monocultural systems). Moreover, CS identified other new elements (fruit, honey and wood production, and organic agriculture).

Regarding the Feasibility scenario, CS and PM considered fishponds as the most important landscape element. Both groups outlined woody areas, hazelnut cultivation, hedgerows and row trees as secondary elements. Intensive livestock farming and agriculture were particularly mentioned by CS. Also for this parameter, CS considered the development of new buildings as a realistic landscape element.

Regarding the Beauty scenario, both groups considered fishponds, woody areas and hedgerows and row trees as elements able to improve the visual quality of Pralormo's landscape. CS and PM had similar opinions and few elements were selected.

By contrast with farmers' opinions, energy crops were not considered by PM and CS. Analysing the three scenario preferences, it is possible to identify some elements that are at the same time useful, realistic and beautiful (fishponds, woody areas). Regarding new residential and industrial buildings, PM and CS had discordant opinions. In fact, PM considered that new residential buildings are not necessary but they are feasible and nice. CS thought that new buildings are useful and realistic.

5. Discussion

Analysis of interviews and focus group results identified shared qualifying elements. Several landscape components were considered by local farmers, policy-makers and civil

society stakeholders as potential resources. For example, woody areas and fish ponds were useful, feasible and beautiful. According to policy-makers, these landscape elements will be valorised and preserved in the near future. In our study, the recognition by society and in particular by the local stakeholders of cultural values of historical agricultural sites could be a strategy for preserving them over time. By contrast, urban sector and energy crops were not considered as possible solutions in the future. From this participatory study emerges that the changing driving forces perceived by the stakeholders are linked to market international trends, while their landscape effects are site-specific. The political response to the trend of globalisation is to apply strategies able to increase the local valorisation. The recognition and focus on traditional values and resources and the defence of traditional land uses are possible solutions for ensuring agricultural activity. Indeed, the multifunctional system, the diverse and typical agricultural products, the production of high-quality food, the transformation processes of these products and direct sales, can be regarded as having the most important potential for the Pralormo municipality. These elements can be considered as economically and socially beneficial and as constituting a win-win scenario in the global market.

5.1 How can different stakeholders contribute to landscape planning policy?

This paper shows that there are complex socio-cultural and economic drivers affecting the future(s) of the rural area studied. Regarding the conflict between landscape values and society demands on land use resources, we think that empirically based research integrating landscaping, sociological and historical approaches applied in the case study of the Pralormo municipality, can be a useful tool, first to find plausible landscape futures, and second to trigger discussions with the public regarding their aspirations. In this context, the recognition of historical permanences and theoretical elements combining with the development and assessment of land use scenarios should play an important role in promoting the understanding

of complex and uncertain decision making systems. In our study, interviews and focus group results show that the agriculture sector is the greatest driving force shaping Pralormo landscape, in the past, today and in the future. According to Loupa Ramos (2010) and Pinto-Correia et al. (2016) although policy-makers and civil society stakeholders expressed different expectations, perceptions, and attitudes in the discussions and they imagined different landscape scenarios. In this context, the application of an integrated approach is a fundamental step for participatory landscape planning. Both farmers' interviews and focus group techniques, shared actions, strategies and policies were proposed for the planning of rural historical site (Fig.5). The creation of a specific label, the direct sale in farm, the optimization of transformation food process and the intensification of mixed farming could/should be considered possible actions to apply. Linking food and landscape quality, preserving ancient settlement, conserving cultivations, maintaining traditional land uses, promoting educational activities in farm, valorizing educational farm and optimizing food quality are possible strategies. Supporting farmers' income, developing rural development programs, increasing mixed systems and implementing multifunctional system are the main policies proposed.

Regarding landscape effects identified by PM and CS, against urban sprawl and intensification farming trend, the conservation of mixed systems (low intensity, small-scale traditional mixed farming) and the promotion of a sustainable agricultural systems are also international priorities (Andersson et al., 2014; Oteroz-Rozas et al., 2015). In particular, for rural development policy in Europe improving the competitiveness of the agricultural and forestry sectors, increasing biodiversity and the quality of life in rural areas, and encouraging diversification of the rural economy are the main goals. Regarding this topic, Pedroli et al. (2016) showed that the engagement of the local community can be re-activated at the landscape level and that it can responsibly be involved in shared policies and decisions.

6. Conclusions

The case study described in this paper, based on theoretical and empirical studies reveals the main problems and offers possible solutions which should be reflected in the legislation to encourage the development of rural areas. Our results have been implemented and integrated in Pralormo municipality land use policies and could be useful for regional/national planning. In conclusion, we consider that the empirical approach used can contribute to landscape planning from the local to the regional level. In the case of Pralormo, which is transferrable to other European historical rural sites, we promoted the adoption of a new local landscape planning strategy with positive fall-out on the regional/national scale.

We think that the possible/potential solutions identify in this project could be considered a useful tools for planning historical rural sites. Moreover, linking food and landscape quality is considered an important issue for sustainable development in both rural and peri-urban areas. Also linking rural landscape with food quality and obtained products (Products of protected origin) should be considered a strategic measure and could be implemented. In fact, the multifunctional system, the diverse and typical products, production of high-quality food, the transformation processes of these products and direct sales, can be regarded as having the most important potential and value for historical rural sites. Using different measures and actions is possible to connect the concept of food - agriculture with historical, cultural, social and environmental values. It is an opportunity for the development of rural areas, for example Pralormo municipality, and at the same time a challenge.

We have shown how it is possible to apply a conceptual framework in order to better evaluate the future of rural historical landscape. We have demonstrated that the interaction between different stakeholders allowed to construct alternative visions of agricultural development and new possible scenarios. Stakeholder participation in environmental decision-making has been increasingly sought and embedded into national and international policy (Bui

et al. 2016; McKee, 2015; Kvakkestad et al. 2015; Pinto Correia and Kristensen, 2013). We think that contrary to environmental aspects, participatory studies about rural landscape are not 'translated' into specific programmes or measures. In this context, to identify shared development policies and agri-environment programmes, it is essential to analyse farmers' attitudes towards their role and their landscape management goals. In our study, local farmers were considered the first actors of the participatory process applied. With their activity, they manage large areas of the landscape and they contribute to maintain and plan it.

Despite the difficulties regarding historical rural landscapes, translating actions and strategies into practice is an essential step for ensuring traditional values. In rural planning processes it is important properly to consider the interests, preferences, problems and targets of the different stakeholders, and to understand that these positions can change and evolve (van Berkel and Verburg, 2011). We conclude that public consultation using interviews and focus group meetings is a capable method with which to assess people perceptions. Analysing personal awareness of the driving forces and transformations affecting rural landscapes and their effects in the next 20 years should be considered a way to support future local planning policies according to historical and cultural values.

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Figures

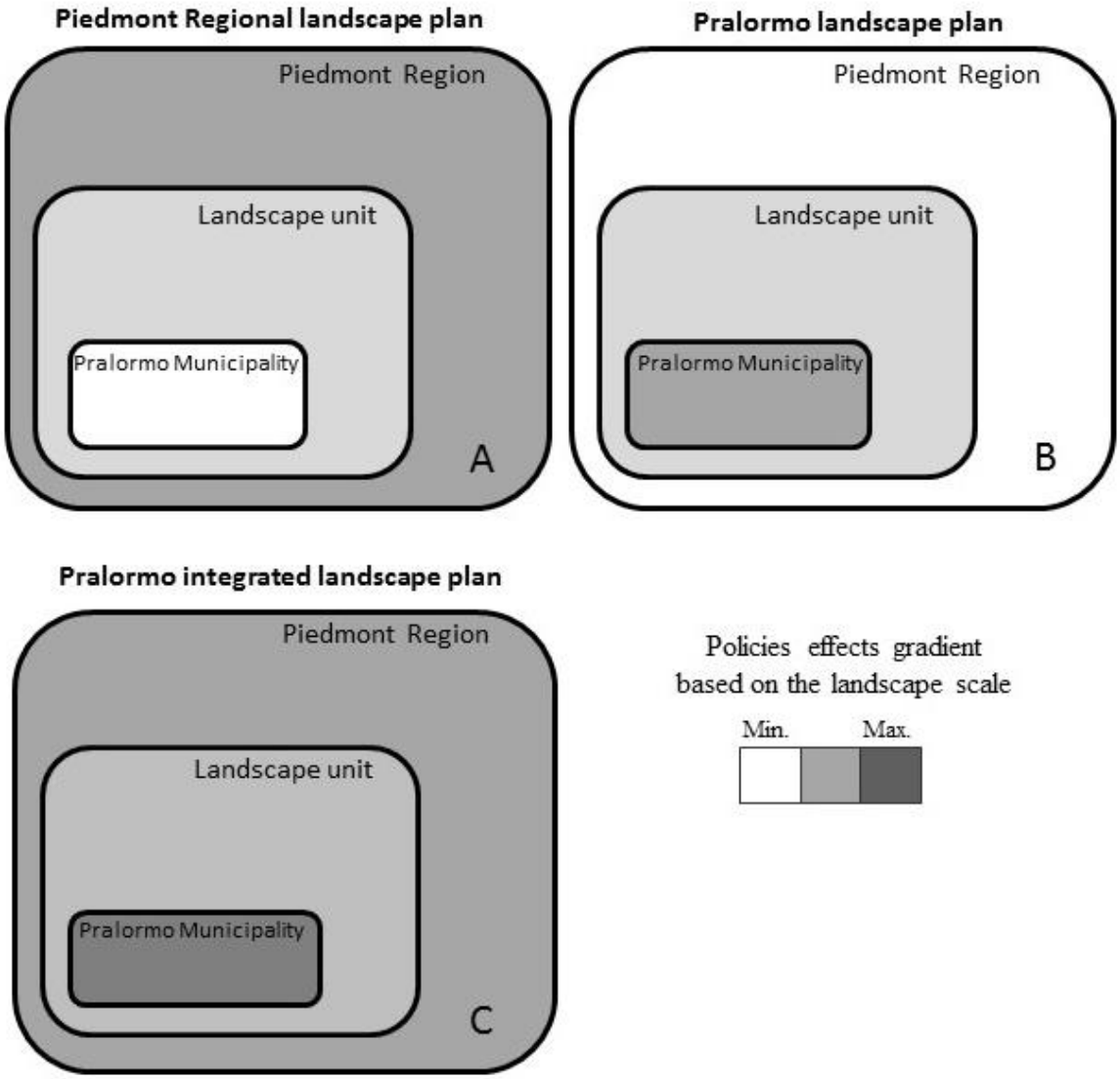

Figure 1. Scheme of the policy effects gradient at different landscape scales in Piedmont: the regional approach (A), the municipality approach (B), the integrated empirical work proposed (C).

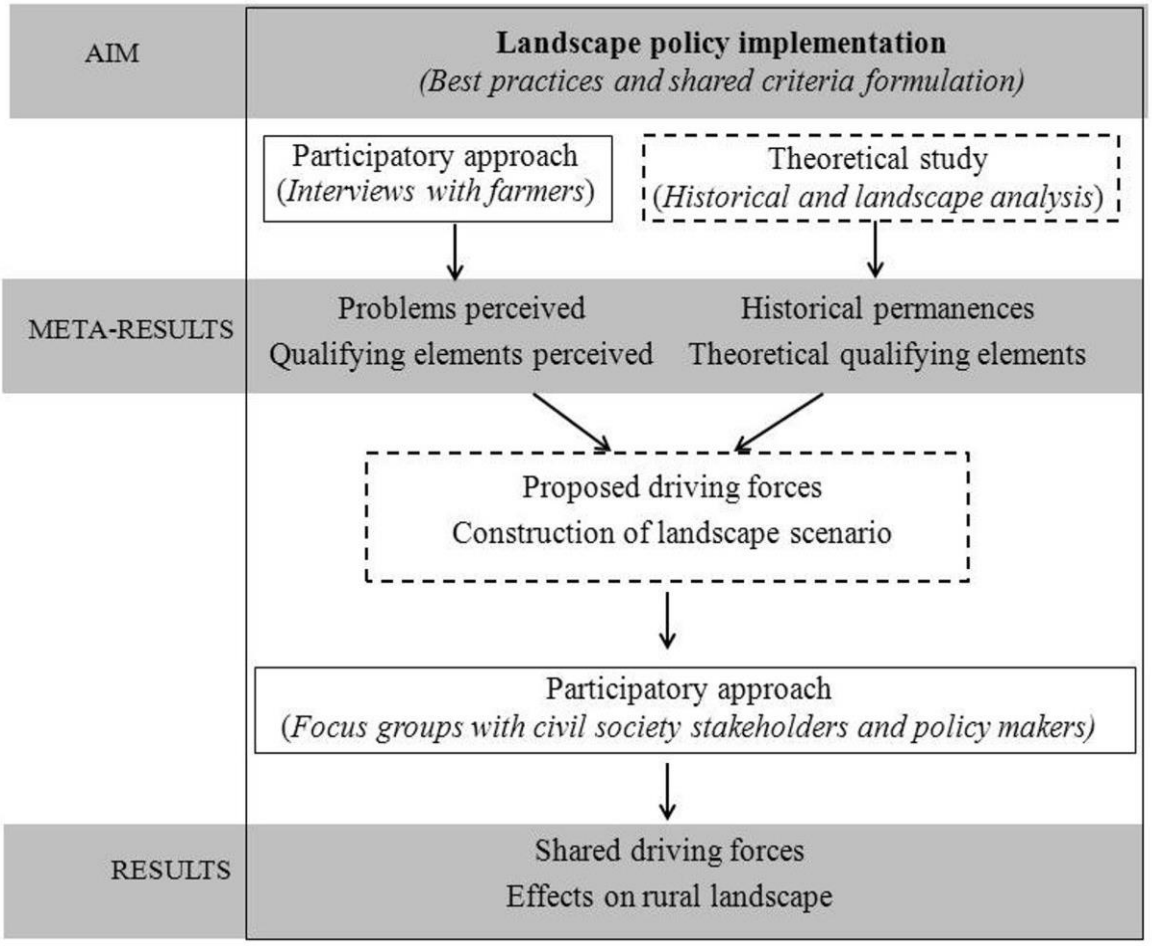

Figure 2. The methodological framework applied in the research.

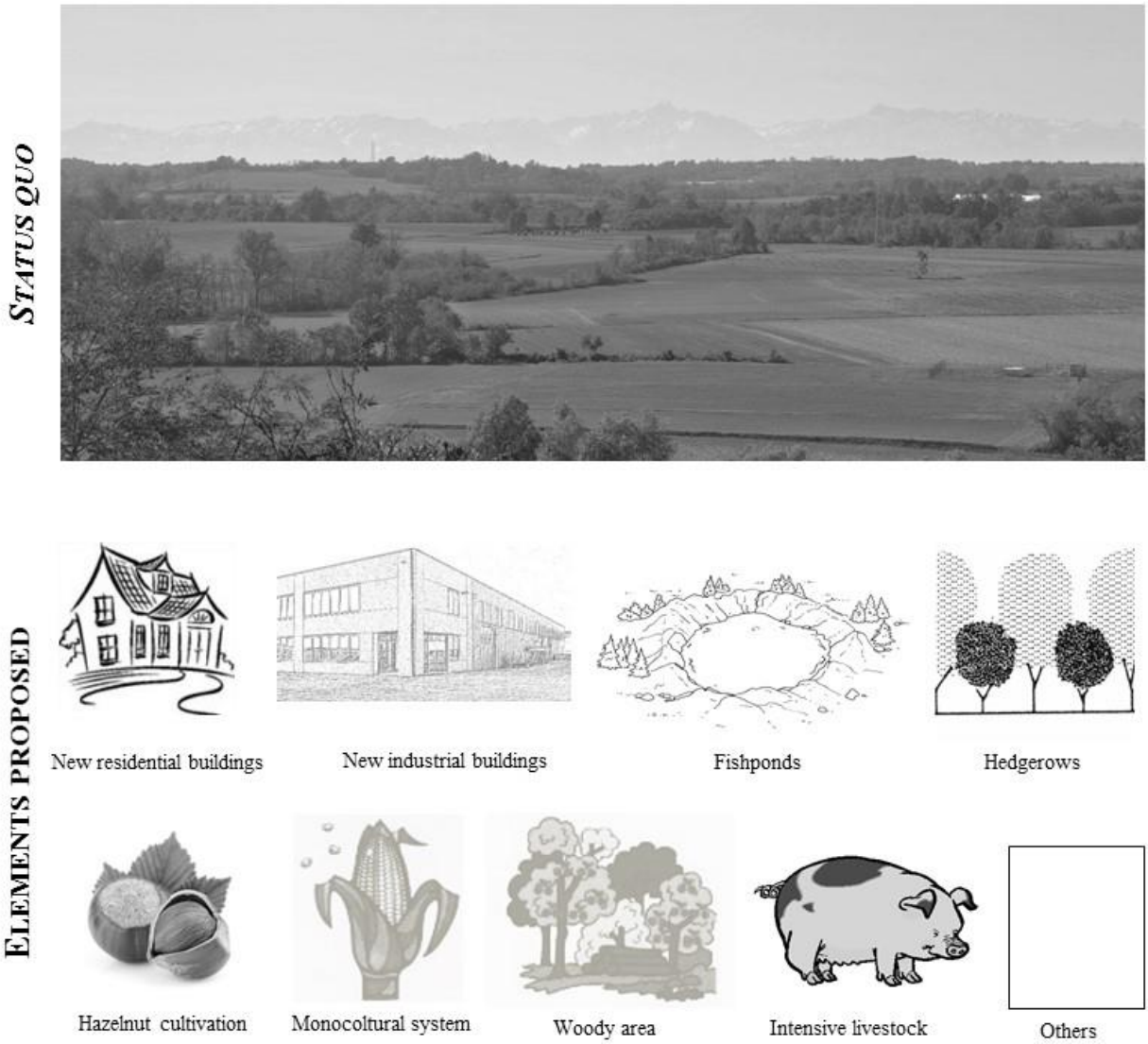

Figure 3. Landscape scenario assessment. *Status quo* of Pralormo's rural landscape and elements proposed.

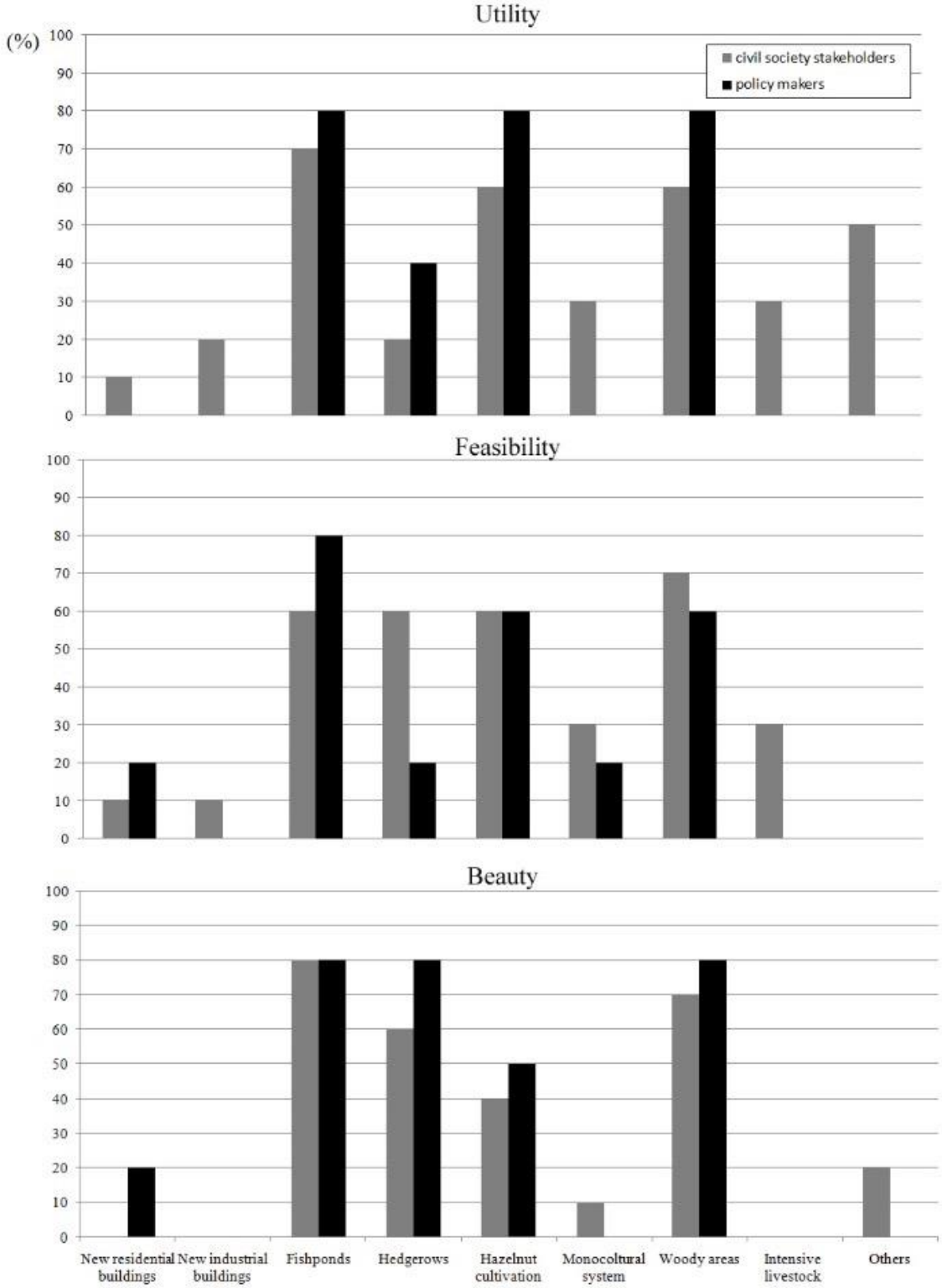

Figure 4. Mean ratings assigned to Utility, Feasibility, Beauty scenarios by civil society stakeholders and policy-makers.

Figure 5. Actions, strategies and policies identified for the rural historical landscape planning

Tables

Table 1. Type and number of stakeholders involved in interview step and focus group step. Between brackets is the number of invited people for each type.

Type of stakeholders	Participant number (invited)
Farmers interviewed	
Grain farmer	2 (2)
Livestock	2 (2)
Horticulture grower	2 (2)
Flower grower	1 (1)
Wine grower	1 (1)
Fish farmer	1 (1)
Fruit grower	1 (1)
Policy-makers focus group	
Municipality organisation	4 (5)
Regional organisation	1 (1)
Civil society stakeholders focus group	
Agricultural institution	1 (1)
Other local organisations	4 (5)
Freelance professionals	5 (6)
Researcher	1 (1)
Hotelier	0 (2)

Table 2. Questionnaire for farmers' interview

	Questions
The farm…	*What is the size of your farm?*
	When did you begin your farming activity?
	Which kinds of cultivations are practiced?
	How do you sell your products? Where?
	Do you transform your products obtained?
	Do your products have a certificate of origin?
	Have you introduced new crops in the last five years? Which?
	Did you receive EU payments during the period 2007 to 2013?
The landscape…	*Do you think that Pralormo's landscape has changed over time?*
	How will the rural landscape change in the next five years?
	*What score would you assign to your rural landscape (2015)?**
	*What score would you assign to your rural landscape (2020)?**
	What are the landscape elements that could change the agricultural landscape?
	What are the qualifying elements that should be valorised?
	What are the problems that should be solved?
	Do you have any other comments?

*score from 1(low) to 5 (high)

Table 3. The list of archives consulted, the kind of documentation, original name and year and the information acquired.

Archive name and localization	Original name	Year	Type of documentation	Information acquired
Archive of Turin, Sezioni Riunite (TURIN)	Tippo delle Bealere	1731	Map	Fishponds and irrigation system
	PLAN GEOMETRIQue 1/ de la Commune de Pralormo.	1806	Cadastral map	Land use types, and farm buildings
	Plan parcellare de Pralormo	1806	Figured land register	Cultivations practiced and settlements character
	INFORMATIVA dei Signori intendenti del Piemonte sulla materia dei boschi.	1784	Literature	Land use types and woods features
Archive of Turin, Sezione Corte (TURIN)	Figura dimostrativa delle strade che da Torino tendono alla Città di Asti et Alba	1784	Map	Landscape structure and settlements character
	Notizie topografiche e statistiche sugli Stati Sardi.	1847	Literature	Cultivations practiced, production, agricultural features and tecniques
Archive of the Royal Agricultural Academy (TURIN)	CARTA MODERNA/ DEGLI/ STATI SARDI/ DI/ TERRAFERMA	1844	Map	Landscape structure
	Dizionario geografico storico-statistico-commerciale degli Stati S.M. il re di Sardegna	1847	Literature	Land uses, techniques, productions and traditional cultivations
Archive of Pralormo (Pralormo)		1899-1920	Photo Postcards	Landscape structure

Table 4. Driving forces identified by experts (E), policy-makers (PM) and civil society stakeholders (CS)

Driving Forces (E)	Driving Forces (PM)	Driving Forces (CS)
Diffusion of new technologies connected with intensive production	Diffusion of new technologies connected with intensive production	Diffusion of new technologies connected with intensive production
Maintenance of technologies and crops connected with extensive production	Maintaining of technologies and crops connected with extensive production	
EU policies directed towards supporting farmers' income and activity diversification in rural areas		EU policies directed towards supporting farmers' income and activity diversification in rural areas
		Local landscape planning policies (urban buildings and rural farms)
Soil consumption		
	Upgraded building stock (historical buildings)	
Landscape planning tools	Landscape planning tools	Landscape planning tools
	Lack of generational turnover in agriculture/demographic problems	
	Reduction of farmers' income	
	Support qualifying landscape elements (fishponds)	

Table 5. Importance of driving forces and landscape effects according to the policy-makers (PM)

Driving Forces (PM)	Landscape Effect (+)	Landscape Effect (-)	Score (1-5)
Diffusion of new technologies connected with intensive production		Increased intensive cultivation (maize) Few productive cultivations Few farms	3
Maintenance of technologies and crops connected with extensive production	Valorisation of hill areas Landscape mosaic heterogeneity Consolidation and spread of crops and agricultural methods connected with quality food production		1
Upgraded building stock (historical buildings)		Conflict between agricultural and urban interests	4
Landscape planning tools	Visual landscape improvement		3
Lack of generational turnover in agriculture/demographic problems		Increase of marginal areas	4
Reduction of farmers' income		Abandon of historical cultivations which are not cost-effective (vineyards) Introduction and significant spread of new crops (hazelnuts, energy crops)	4
Support qualifying landscape elements (fishponds)	Recovery abilities of ancient fishponds Valorisation of wet habitat linked with fishponds Increase of fishing activity		5

Table 6. Importance of driving forces and landscape effects according to the civil society stakeholders (CS)

Driving Forces (CS)	Landscape Effect (+)	Landscape Effect (-)	Score (1-5)
Diffusion of new technologies connected with intensive production	Land preservation from hydro-geological disruption	Devaluation of typical products Abandon of historical cultivations which are not cost-effective Depletion of soil fertility (risk of environmental pollution) Transformation of farm management	4
EU policies directed towards supporting farmers' income and activity diversification in rural areas	Organic and specialised agriculture Typical agricultural products Quality productions Expansion and consolidation of traditional (and/or niche) cultivations in the richest areas Consolidation and spread of cultivation practices linked to specialty farming production Expansion of forest and natural areas Ecotourism demand	Increased marginal areas Loss of agricultural land	3
Local landscape planning policies (urban buildings and rural farms)	Policies for restoration of existing buildings: valorization of historic city centres and rural farms	Deterioration in quality of building stock Abandonment of rural buildings New buildings policies: loss of agricultural land to new housing New buildings policies: loss of visual landscape quality	2
Landscape planning tools	Increased biodiversity		5