Claim

Supporting the role of the Common agricultural policy in LAndscape valorisation: Improving the knowledge base of the contribution of landscape Management to the rural economy

PROJECT FINAL REPORT

Grant Agreement number: ***289578***

Project acronym: ***CLAIM***

Project title: ***Supporting the role of the Common agricultural policy in LAndscape valorisation: Improving the knowledge base of the contribution of landscape Management to the rural economy***

Funding Scheme: ***Collaborative project***

Period covered: **from 01/01/2012 to 31/12/2014**

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Bologna, 28/02/2015

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Final publishable summary report

This section must be of suitable quality to enable direct publication by the Commission and should preferably not exceed 40 pages. This report should address a wide audience, including the general public.

The publishable summary has to include **5 distinct parts** described below:

- **AN EXECUTIVE SUMMARY (NOT EXCEEDING 1 PAGE).**

In a context characterised by climate change, resource scarcity and increased international competition, the role of landscapes in rural economies, as well as strategies to improve this role, is gaining attention. In this respect, the Common Agricultural Policy (CAP) is the principal policy area. In particular, the new objectives of the CAP 2014-2020 are oriented toward viable food production, sustainable management of natural resources and climate action, where the issue of landscape management is playing a major role in both the first pillar (e.g. through "Greening") and the second pillar (e.g. through the sustainable management of agricultural ecosystems).

The main objective of the CLAIM project was to provide the knowledge base to support an effective CAP policy design for improved landscape management, and in particular to provide insights into the ability of landscapes to contribute to the production of added value for rural areas.

The project workflow involved the development of a conceptual framework highlighting the connections between agricultural landscape and local competitiveness, its empirical validation, and the implementation of knowledge gained in an evidence-based knowledge platform (KP). The KP, for its part, sought to provide policy support with respect to the contribution of agriculture and the CAP to landscape management.

The CLAIM framework was the first key result of the project. It was co-developed in collaboration with local stakeholders at the case study level, scholars and experts as well as policy-makers at the EU and programming level, including the European Commission.

The implementation of this framework at the case study level confirmed the extent of data gaps and the number of methodological challenges behind the issue addressed by the project. The case study results show the diversity of agricultural landscapes in Europe and highlight the myriad opportunities and pathways for landscape valorisation. In all regions, the management of agricultural landscapes and local demand for landscape services are tightly connected. However, the specific demand for landscape service benefits differ significantly throughout the regions (e.g. prevention of fire in Corsica, recreation in the Netherlands, agricultural production in Turkey, tourism in Austria, etc.). The role of landscape management in rural areas is multi-faceted; in most areas landscape management is mainly targeted towards primary production (provisioning services), while in some areas it can have a strong economic role with regard to tourism. Despite the fact that support and regulatory services are the basis of landscape service delivery, in many cases these are not perceived and understood as such by users.

Local actors have different degrees of awareness of the ability of agricultural landscapes to supply landscape services, as well as different levels of engagement in the valorisation of such services. Yet, they commonly perceive landscapes as an insufficiently valorised asset. In the light of this, the evaluation of indirect benefits and landscape contributions to competitiveness appears as the biggest knowledge gap.

The main conclusion drawn from the Analytical Network Process exercise is that landscape valorisation is largely driven by food supply. Agriculture is regarded as the most important landscape management actor, while the important role of the following indirect impacts of landscape management are also recognised: improved regional competitiveness, job creation, added value, local investment, demographic stabilization, and the provision of cultural services.

The CLAIM results have been made available online through an accessible knowledge platform for multi-level policy makers and academia (http://project2.zalf.de/claimknowledgeplatform/). The main objective of the knowledge platform is to offer a structured way to access policy-relevant empirical information. The knowledge platform follows the logic of the analytical framework and its multi-level structure offers a detailed description of processes and interactions (highlighted in the 9 case study areas) relevant to policy decisions.

- **A SUMMARY DESCRIPTION OF PROJECT CONTEXT AND OBJECTIVES (NOT EXCEEDING 4 PAGES).**

The provision of public goods (including landscape services) in rural areas is recognized as one of the key topics for the future of agriculture and rural policy. Agriculture plays a major role in landscape management through its complex interlinkages with landscape features. In turn, the Common Agricultural Policy (CAP) remains an important driver of landscape management due to its importance as a determinant of farming activities in the EU. In view of the post-2013 CAP reforms, the issue of landscape management and its effects in rural economies is taking a major role in both the first pillar (changes of incentives to land management due to regionalization, greening) and second pillar (new priorities for rural development and agri-environmental measures). This includes direct research questions concerning the design as well as the evaluation of the CAP, but also indirect research questions concerning the actual economic effects of landscape management.

The main objective of the CLAIM project is to provide the knowledge base to support an effective CAP policy design in the direction of improved landscape management, particularly providing insights into the ability of landscape to contribute to the production of added value for society in rural areas.

This can be articulated by way of the following intermediate objectives:

1. To understand the relation between agriculture, landscape features and the socio-economic development of rural areas (agrarian landscape and development)
2. To explain the extent to which landscape can be considered a driver for the competitiveness of the agricultural sector in rural areas and for the creation of jobs and income in rural areas (landscape and competitiveness)
3. To identify the mechanisms that explain the second-order economic impacts of landscape in rural areas (Mechanisms)
4. To understand the role of the CAP in points 1, 2, and 3 above (role of the CAP)
5. To test appropriate methodologies that can be used to measure the socio-economic second order effects arising from the provision of landscape by agriculture (methodologies)
6. To provide empirical evidence on the above issues in order to achieve a validated and practically relevant conceptual framework
7. To develop a framework on the contribution of agriculture to landscape management based on the achievements of the previous objectives and able to better support policy design, aimed at valorising landscapes as public goods and maintaining landscapes for their ecological and socio-economic functions. The conceptual framework will be synthesized into guidelines for policy support.
8. To provide a closer integration between different EU and Candidate countries, as well as between different stakeholders and scientists in order to build a common ground for cross-country collaboration on landscape management while taking into account the variation of landscape and its appreciation across the EU territory

CLAIM is focused in particular on understanding and enhancing the contribution of landscapes management to socio-economic development and agricultural competitiveness in rural areas. This is based on a pragmatic consideration of landscape services and their analysis through a mixed-method approach, taking into

account the wider EU policy strategies (in particular related to innovation and the bioeconomy). The main expected result of the CLAIM project is an evidence-based policy support framework on the different and possible contributions of agriculture and the CAP to landscape management.

- **A DESCRIPTION OF THE MAIN S&T RESULTS/FOREGROUNDS (NOT EXCEEDING 25 PAGES),**

1. Project workflow and methodologies

The project workflow involved the development of a conceptual framework highlighting the connections between agricultural landscape and local competitiveness, its empirical validation, and the implementation of knowledge gained in an evidence-based knowledge platform (KP). The KP, for its part, sought to provide policy support with respect to the contribution of agriculture and the CAP to landscape management.

During the empirical validation the methodologies summarised in table 1 were used.

2. The CLAIM Framework

The CLAIM framework was the first key result of the project (Figure 1). It was co-developed in collaboration with local stakeholders at the case study level, scholars and experts as well as policy-makers at the EU and programming level, including the European Commission.
The CLAIM analytical framework addresses the cause-effect-relationships between agricultural landscape structure and composition, the supply of, and demand for, landscape services and the contribution of these services to regional competitiveness. The overall structure of the framework is based on the widely applied and accepted cascade analytical framework presented by TEEB that describes relations between landscapes or ecosystems and human well-being. Based on this landscape services framework the relations are described between landscape characteristics and the functions of the landscape that lead to the flow of services. The (monetary and social) value of these services depends on the demand from society for these services. There is a need for improving the knowledge base on and the potential valorization of landscape services in EU agricultural landscapes and the way in which these services contribute to regional competitiveness. Quantification and valuation of landscape services will improve stakeholders' ability to make landscape management trade-offs and enables a comprehensive evaluation of existing policies. The analytic framework connects the ecological, economic and policy dimensions of agricultural management to support effective policy design for improved landscape management, particularly providing insights into the ability of landscape to contribute to the production of added value for society in rural areas. In the bottom part, the mechanisms box describes the actors and policies that impact on agricultural landscapes and the landscape services they provide. Three important processes influencing the value of agricultural landscapes are distinguished: (i) Farmers and other land managers affecting landscape structure and composition through landscape management, in response to policy, planning, markets and consumer demands; (ii) Consumers of different landscape services who generate demand for services, influenced by markets, public opinion and policies; and (iii) Direct attributions of values to landscape services, influenced by policy and planning through, e.g., payments for ecosystem services.

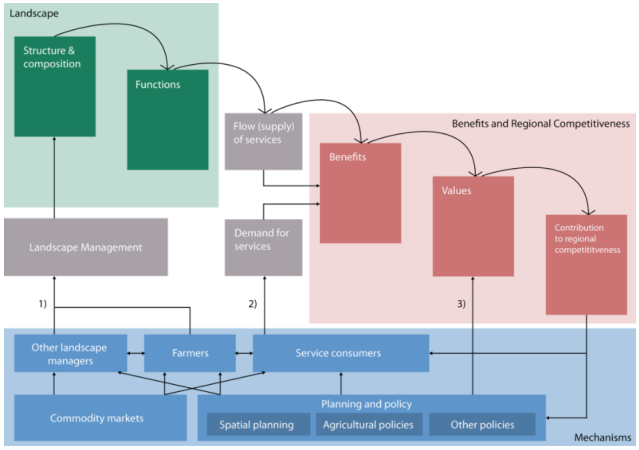


Figure 1. Analytical Framework of Landscape Services in Agricultural Areas.

An analytical presentation of the framework is now published in Van Zanten et al. (2014).

Table 1 - Summary of methods and applications in the CLAIM project

CSA	Method	Method definition	Specification/originality	Main areas of second order effects addressed	Size of area covered	Main data sources	Type of results expected	Main expected contribution to policy support
CSA1 (1)	Statistics Explaining preference and behaviour	Latent class factor models	- Analyze data in presence of unobservable variables - Studying theoretical constructs that cannot be directly observed	Relationship between societal evaluation of landscape and actual behaviour	893 km^2	Survey - 300 residents - 380 tourists	Presence of a association between landscape awareness and ecosystem service uses	Better understanding of values associated by society to landscape features
CSA1 (2)	Simulation of system/agents behaviour	Bayesian Belief Network	Effect of the attractiveness of the landscape on agritourism density	Cascade effect of landscape elements on local economy	893 km^2	- Survey data - Regional statistics - Expert judgment	Estimating the likelihood of contribution to local economy of seminatural elements	More precise assessment of farm diversification activities
CSA1 (3)	Mathematical programming model Simulation of system/agents behaviour	Agent based model	Effects of the interactions of rural policy farmers' choices and rural tourism on the incentives for voluntary landscape protection efforts	voluntary landscape protection efforts	893 km^2	- Secondary data - Regional statistics - Survey	Conditions that lead to voluntary protection efforts	Adjustment of policy measure toward dynamic approach
CSA2 (4)	Land-use and land-cover change Spatial representation of landscape structure, composition and potential	Corine Land Cover classes	Integration of landscape elements in the assessment matrix of landscape service provision	Assessment of the potential supply of landscape services	576.4 km	Secondary data Corine land cover	More realistic picture of the case study area	
CSA2 (5)	Land-use and land-cover change Spatial representation of landscape structure, composition and potential	- Variogram models - geostatistical simulations	- Probabilistic approach to mapping and assessment of services provided by landscapes, - holistic picture of effects of landscape management	More holistic picture of effects of landscape management	576.4 km	- Secondary data - spatial data, - governmental databases on management strategies	Relevance of spatial abundance of landscape elements or management practices related services for the composition and interrelation of multiple services	Better policy effectiveness
CSA2 (6)	Land-use and land-cover change	- Probabilistic approach to	Quantification of spatial heterogeneity associated with		576.4 km	Secondary data	Quantitative assessment of the decrease in	Potential environmental landscape effect of

	Spatial representation of landscape structure, composition and potential	landscape services - Geostatistical simulations	the different rates of landscape elements removal				habitat service supply	policy affecting farm scale
CSA2 (7)	Statistics Explaining preference and behaviour	Multinomial-logit model	Visual value of landscape		576.4 km	Survey (200 visitors)	Societal preferences for landscape attributes	improve the efficiency of the policy delivery and to identify priority areas
CSA3 (8)	Statistics Experts/stakeholders based analyses	Social Network Analysis	Functioning networks of regional actors are of utter importance for successful landscape valorisation.			Survey (34 institutions)	Identifying the network of actors having a stake in local landscape management and landscape valorisation	Highlighting gaps and synergies in institutional activities
CSA3 (9)	Statistics Measuring efficiency	Data Envelopment Analysis single-input, multiple-output	Measuring the influence of landscape on the competitiveness of rural areas by using DEA	Relationship between landscape and competitiveness			The more remote an area, the less competitive it is,	Identification of areas to be prioritized
CSA3 (10)	statistics Structuring of local relationships	Choice experiments	Estimating, how much agricultural landscape is perceived to impact on different factors of competitiveness and which actors within a rural society mainly benefit from landscape-valorisation.		252 km²	Survey (22 institutions)	Landscape is perceived to have t an influence on "soft" competitiveness factors	Impact of different agro-environmental measures on regional competitiveness
CSA4 (11)	statistics Valuation: monetary values	monetary and a non-monetary visual choice experiment upscaling of landscape preferences and comparison of landscape preferences				Survey - 191 visitors non-monetary experiment - 235 visitors for the monetary experiment	Linear landscape elements are perceived as most valuable	Prioritizing the protection of agricultural landscape attributes across multiple decision-making scales
CSA5 (12)	Statistics Valuation:	Choice Experiment (CE) method	- Use of real pictures - Gathering information about	Economic value of landscape	586 km^2	Survey (331 individuals)	Estimate the economic impact that the recreation demand	Landscape policies provide extra benefits to users and to local

	monetary values		the probability of visiting the agricultural landscapes as a function of the visual elements investigated				associated to landscape attractiveness has on local economy and rural development	dwellers who should contribute more to the cost of the policy implementation.
CSA6 (13)	Statistics Explaining preference and behaviour	Pair-wise ranking approach - Thurstone's model of statistical judgment				Survey (198 respondents)		
CSA6 (14)	Mathematical programming model Simulation of system/agents behaviour	Farm optimization model	Analysis of different scenarios	Impact of policy on shelterbelts and thus on productivity		Survey (22 farmers)		Potential impacts of the recent reform of the CAP on both, the landscape and agricultural production.
CSA7 (15)	Statistics Explaining preference and behaviour					Survey (79 rose producers)		
CSA8 (16)	Statistics Valuation: non-monetary values		vine-growing holding to the creation of final product (wine tourism)			48 entities (wine growers)		
CSA8 (17)	Statistics Explaining preference and behaviour							
CSA8 (18)	Statistics Valuation: non-monetary values	Choice experiments	consumer preferences to the landscape composition in wine tourism product	Effect of landscape on consumers preferences		48 consumers	Artificial elements are more important to the consumer than natural ones	
CSA9 (19)	Land-use and land-cover change Spatial representation of landscape structure, composition and potential	imagery SPOT	Land cover classes, Farming systems typology Econometric assessment of the drivers of farming systems change	Effect of farming systems dynamics on vegetation trend	450 km²	Spot image Spatial data Direct survey Previous studies	Enlargement of farms and low density of farms impede the control of biomass growth	Redirection of measures toward small farming systems

3 Results from the empirical analysis

3.1 Results per case study

CSA1: The Eastern Ferrara lowlands, Italy

The CSA1, the eastern lowland plains of Ferrara Province, addressed a case characterised at the same time by the importance of (neglected) regulatory services, intensive agriculture, proximity with protected areas and tourism flows, which, however, have still little interaction with agricultural landscape. On this background, the approach used in the case study was to better investigate the mechanisms connecting landscape to the production of economic value through three different methodological approaches, a survey analysis with latent class factor models, a cause-effect chain with Bayesian Belief Networks and Agent-based modelling.

The main element of attention in the context of study was the general disconnection between the residents' feeling and the actual landscape features. That is in part related to the presence of an artificial landscape (lowlands reclamation) and the absence of agricultural landscape traditions.Keys to the valorisation of this kind of landscape are higher efforts in terms of information of beneficiaries, but also provision of practical services linked to landscape use and action to better connect landscape features and markets products through the food chain. As one of the key stakeholders stated during the 2nd LSL: „much needs to be done on awareness of local population about quality and opportunities of their territory". Mainly because landscape is not perceived as an economic asset. Several progresses in the understanding of these issues can be envisaged through the further development of the methods used in the CSA (see ad-hoc studies). In addition, the cross feed among methods and advances in information collection should be considered.

Altogether, the study points at entrepreneurship, micro-mechanism in the connection between supply and demand (and decentralized coordination mechanisms), cross-sector policy coordination and cross-service connection (e.g. regulatory and provisioning) as key areas for further investigation.

This also brings the attention to the study of an emerging new generation of policy instruments (or coordination mechanisms at large), which design is far from being satisfactory in the literature.

CSA2: Märkische Schweiz, Germany

The results from local analysis and LSL workshop have suggested a number of important issues and knowledge gaps in the course of the valorisation of the landscape, including (i) a common regional development vision and identity, (ii) land competition and (iii) governance and land use planning.

In the LSL workshop several elements have been discussed, which are important for the regional identity, such as small scale patchiness of the land use (agricultural land and forest), historical background and the geomorphology. Also a particular uniqueness and landscape history was highlighted. It became clear, that this regional image is important as local driver and selling point for the valorisation and regional profitability. But also risks of (intensive) agrarian use to destroy landscape visual amenity (risk for sports tourism) and uncertainties about how intensive agriculture can be developed towards high value and regional production which makes fully use of the regional identity. This should be addressed by a development of a common regional vision, which is developed and communicated through the local actors and stakeholders. Further, there are missing innovations in a multifunctional manner, which combines the different purposes on landscape valorisation (e.g. timber, care, energy).

As second topic, the competition for land was debated as main bottleneck for regional landscape valorisation. Here conflicts occur first of all between intensive agriculture (i.e. large scale pig fattening, large field sizes, biomass production for energy production) on the one side and the development of an environmental-focused regional identity and small-scale, diversified and integrated/organic production on the other side.As third topic, governance, instruments and land use

planning has been identified as an important gap for landscape valorisation, including the missing information basis and criteria (e.g. policy impacts, thresholds for legal conditions, such as peatland protection, biodiversity etc.). Mismatch of instruments has been mentioned several times. Further, weak networking and participation of local community and stakeholders, weak role and influence of municipalities in the landscape development and valorisation process and weak participation of land users in measures (e.g. rewetting) was found. On the other hand broad willingness was stated to piloting new community based approaches of local land use management along ecosystem services provision patterns. Steering options are seen in the municipal green space planning, but in conflict with the mechanism of the agricultural sector (ownership, land grabbing). Also planning instruments, such as land purchase to protect the cultural landscape, identity, etc. is missing a legal basis. At last, uncertainty exists on the landscape management measures and their suitability in a spatial context.

CSA3: Mittleres Ennstal, Styria, Austria

The CSA3 "Mittleres Ennstal" in Styria addresses the situation of a typical remote, alpine Austrian area, which is characterized by rather low-intensive dairy farming carried out by mainly family farms. The agricultural management in the region is strongly dependent on CAP payments, in particular from Pillar 1 direct payments, and pillar 2, axis 2 measures "less favoured area" and "agro-environmental measures". Due to the predetermined natural basis conditions and the agricultural management in the area, the regional landscape provides a broad variety of landscape functions that potentially deliver services to the local society. However, the study region is characterised by a comparatively low competitiveness especially as regards migration rates, the development of the age distribution of the society and the income of the local population.

In the region, agricultural landscape –and the services it supplies– at the moment mainly contributes to "social" competitiveness factors like the "wellbeing of the local society" (due to the use of cultural services) or the "maintenance of the cultural heritage". The contribution of the landscape to more economic competitiveness factors, such as the local labour market or the demographic development is insufficiently understood and estimated to be rather low. However, regional stakeholders are seeking for strategies of landscape valorisation that are suitable to translate the landscape services provided into a factor that can contribute to the development and competitiveness of the region.

The ad-hoc studies carried out in CSA 3 focus on the question if and how the regional landscape contributes to regional competitiveness. With a Data Envelopment Analysis (DEA) approach, 1 ad-hoc study aims at identifying the competitiveness of the study region in comparison to other regions characterised by similar basic situation. With statistical analysis this ad-hoc study also investigates the impact of landscape- and non-landscape related factors to regional competitiveness. As regards mechanisms fostering competitiveness, the 2nd ad-hoc study applies a Social Network Analysis (SNA), which analyses the regional networking between institutions that pursue landscape valorisation by the use of different strategies, such as agricultural production, tourism, marketing of regional products, etc. An additional expert survey aims at quantifying the strengths of the impacts, which regional landscape has on competitiveness.

The results of the different analyses show, that landscape, even if it proves to be of high importance for the wellbeing of the local society, has only a low influence on the measurable competitiveness in the study region. Regional competitiveness is rather influenced by non-landscape factors such as the closeness to urban centres or semi-urban areas. Actually, it turns out that the more remote an area, the less competitive it is, even if the landscape is beautiful and rich of potential landscape services – except if landscape is completely valorised by intensive tourism – on cost of cultural identity and authenticity.

The results of the studies also show, that the CAP in the study region has a strong "maintaining" character, which means that CAP payments are essential to maintain agricultural management in the region. In this sense, CAP measures clearly contribute to the competitiveness of the agriculture in the region, which could not compete with agricultural production in other Austrian areas less

unfavourable. The influence of the CAP is highly appreciated by the local population and the locally active stakeholders. The influence of the CAP on overall competitiveness in the region, appears to be comparatively small however.

CSA4: Winterswijk Municipality, Netherlands

In Winterswijk, past landscape management practices have largely shaped the typical *Coulisse* landscape in Winterswijk, with farmers constrained to small and dispersed agricultural plots. As a result, the region has remained forested by Dutch standards, with hedgerows enclosing agricultural fields. Nowadays, the area is characterized by a multifunctional landscape with agriculture, recreation and rural living as prominent landscape services. Given the importance of immaterial cultural services in the area, the case study focused on knowledge and methodology gaps concerning the quantification and valuation of this type of services.

Data collection was done through a questionnaire among visitors of the area (n=425) to measure visual preferences for the agricultural landscape using a choice experiment. The choice experiment was set-up to serve three purposes: **1)** Identifying the effects of including a price-attribute in a choice experiment, **2)** developing a method to map cultural services on a landscape scale using choice experiments, **3)** and to develop a method to compare local landscape preferences across case studies. Below summaries of these three exercises:

1) We apply a split-sample approach to compare relative preferences for landscape attributes between a choice experiment with (n=235) and a choice experiment without a price attribute (n=191). A comparison of the marginal rates of substitution of landscape attributes between the two experiments reveals a clear difference of preference patterns. In addition, 35% of the respondents in the monetary experiment ignored the price attribute. This group expressed similar preferences for landscape attribute as respondents in the non-monetary experiment. We also show that ignoring this type of non-attendance (i.e. ignoring the price) leads to a substantial upward bias in monetary value estimates. We conclude that adding a payment vehicle (i.e., price attribute) to choice experiments substantially affects trade-offs and choices made by respondents. Including a payment vehicle ensures that trade-offs between attributes are more pronounced, and that money has to be put where the mouth is. However, value estimates from experiments including a payment vehicle may be substantially biased by payment vehicle non-attendance. Controlling for this type of non-attendance therefore appears crucial for obtaining accurate monetary value estimates.
2) We develop a method a spatially extrapolate landscape preferences from a visual landscape observations to landscape level through generic feature mapping. This method enables the identification of hot and cold spots of cultural services (i.e. the immaterial value that respondents assign to landscapes). Hotspots are found in areas where there is a combination of landscape attributes that respondents prefer most, such as hedgerows and grazing livestock. The patterns revealed by this stated landscape preference mapping exercise are similar but more refined when compared to existing approaches. In contrast to existing approaches, the method combines aspects of both landscape structure and landscape composition obtained through 'real' landscape photos.
3) We conduct a comparative study between the non-monetary experiment of this case study area (n=191) and the Märkische Schweiz, Germany (CSA 2) (n=113) to examine differences in the visitors' relative preferences for specific landscape attributes in the local landscape context. We apply a parallel research design by setting up a choice experiment using regionally specific, photorealistic visualizations of four generic landscape attributes based on the spatial variation in the diversity of agricultural land use, the occurrence of landscape elements and the presence of livestock. We compare the ranking and normalized coefficients (i.e. relative preferences) of the landscape attributes between the case studies. We find that respondents have strong preferences for linear elements (e.g. hedgerows) and livestock within the Dutch case study, whereas point elements (e.g. solitary trees, forest patches) and agricultural land-use diversity obtain high relative

preferences in the German landscape. Furthermore, we find that differences in relative preference for landscape attributes are, to some extent, explained by socio-cultural background variables such as education level and affinity with agriculture of the visitors. The results indicate that preferences for landscape attributes are both dependent on the local landscape context as well as on the visitor background.

CSA5: Montoro, Spain

The municipality of Montoro is located in the Province of Cordoba (southern Spain) and has a variety of agricultural ecosystems and forest/shrub natural vegetation (Natural Park of Sierra Cardeña and Montoro) near the agricultural areas. Olive groves is the main land use in the municipality (58,103 ha, 34.2%), followed by scrubland (28.7%), forest (17.5%), dehesa and other pastures (8.7%), arable crops (8.1%), water reservoirs (1.1%), urban area and infrastructure (0.8%) and other land uses (0.9%). The central and northern parts of Montoro are mostly highlands with steep slopes that make agriculture difficult and expensive. For this reason, most agricultural production in this region is based on extensive olive groves and pasture. The study area adjoins the lynx core population located in the Natural Park.

The production of olive oil is the main agricultural activity and a driver of the local economy. However, there has been a competitiveness reduction of in the olive plantations in the last five years due to low olive oil prices and the increase of production costs (mainly labour and energy costs). The small farm size (less than 5 ha) and the higher production costs of the conventional tree density (90-110 trees/ha) are making that most olive groves are not profitable. The cultural issue in the production of olive oil is keeping farmers in production via not incorporating their own labour cost in their accountability. The modernization of the plantations in part of the Montoro municipality appear as a necessity in the next years, leaving most of the olive groves depending on the Common Agricultural Policy to keep farming to provide non-market services (preservation of the biodiversity and prevention of wildfires and soil erosion).

The stakeholders involved in the study agreed on the importance of keeping olive oil producers in business, both for their direct and indirect economic impact in the region and for the environmental benefits from it (preventing the soil erosion). However, the potential of the tourism seemed to be relevant in a municipality with a Natural Park and Dehesa. It was stressed the knowledge gap existing on the relationship between a landscape with high visual quality and the economic development of a region. This knowledge gap and the ongoing project of restauration of a pathway connecting agricultural and non-agricultural land uses led to the definition of the ad-hoc study, focusing of the agricultural measures to be implemented along this path to promote rural tourism in the municipality. Thus, the ad hoc study analysed the population visual preferences for changes in olive groves for recreational use through choice experiments. A survey on the potential visitors of the restored pathway in the olive groves was carried out asking their visual preferences, willingness to pay and probability of visiting. The results allowed to evaluates first (FOEs) and second order effects (SOEs) on the rural economy.

With respect to the landscape change, three landscape elements were surveyed, being green cover the most valued element, followed by stone walls and the presence of woodland islets (it was not deemed important). We found that the presence of these landscape features provides the rural areas where they are located with a set of benefits. First, they generate revenues related to the use of the landscape (FOEs). Second, they provide environmental services such as soil erosion protection, carbon sequestration and biodiversity enhancement. Third, they improve the rural economies by triggering a set of SOEs from visitors' expenditure and the economic activities arising to satisfy this demand. Despite all these benefits, there are no specific landscape policies aimed at incentivizing farmers to provide the desired landscape features. Such policies should be designed taking into account the fact that there are different beneficiaries of the landscape features who should bear the cost of the measures implemented to guarantee the provision and avoid market failure. In this

regard, the core question is how much each beneficiary should pay and in what way. The information generated in this study can help disentangle these values from the general economic value of landscape aesthetics in order to tailor the instruments employed to incentivize farmers for the supply of public goods and services.

CSA6: Chlapowski Landscape Park, Poland

The main objective of the study performed in the CSA 6 in Chlapowski Lanscape Park was to contribute to a development of knowledge base on the relations between landscape structure and composition, functions and benefits, and the contribution to the regional competitiveness and creation of socio economic effects of typical agricultural landscape in the CSA region. The focus of the CSA 6 is presented on the figure 7. The main knowledge gaps observed in the CSA after activity a) and b) were expressed by the research questions addressed in the study, and are as follows:

1. What is the character of two different landscapes (components, structure) in the Park and outside in the adjacent region? (Ad-hoc Study 1)
2. What are the preferences of stakeholders towards landscape components? (Ad-hoc Study 1)
3. How good is awareness of landscape services among different groups of stakeholders? (Ad-hoc Study 1)
4. Are mechanisms and governance compatible with expectations of stakeholders towards landscape? (Ad-hoc Study 1)
5. What might be the potential impact of Landscape composition and structure on regional competitivenes? (Ad-hoc Study 1)
6. what might be the potential impact of CAP instruments on landscape management and components? (Ad-hoc Study 2).

Answers to these questions were partly presented in this first part of the final report. The more detailed elaboration can be found in the Ad-hoc study 1 and 2 reports.

CSA7: Guneykent, Isparta, Turkey

The CSA7, Guneykent, addressed a case characterised at the same time by agricultural production and tourism flows, which, have interaction with agricultural landscape. On this background, the approach used in the case study was to better investigate the mechanism of landscape composition on rose tourism.

Summary of knowledge gaps in Guneykent:

- Limited number of publication at regional level;
- Some of the data is available only at national level;
- Not available knowledge at farm level about landscape management.

Known issues:

- Structure of local economy and features of spatial factors.
- Landscape composition classes are recognized in the region.
- Landscape functions and services are defined clearly.
- Competitiveness of local economy and agriculture.
- Main beneficiaries of landscape function and services.
- Benefits for main groups of beneficiaries.

Unknown issues:

- Weight of different landscape practices to measure their influence.
- Relationships between groups of beneficiaries as a factor of competitiveness.

CSA8: Pazardzhik Region, Bulgaria

When outlining the reason/target/importance of your ad-hoc study, please refer to the results you derived from WP4 Activity a) and Activity b) [knowledge gaps addressed, stakeholder validation]
Summary of knowledge gaps in Pazardjik region:

- *Limited number of publication at regional level;*
- *Some of the data is available at national level;*
- *The land management is under government of two ministries: Ministry of agriculture and food and Ministry of environmental protection;*
- *Not available knowledge at farm level about landscape management.*

Known issues:

- Structure of local economy and features of spatial factors.
- Landscape composition classes are recognized in the region.
- Landscape functions and services are defined clearly.
- Competitiveness of local economy and agriculture.
- Main beneficiaries of landscape function and services.
- Benefits for main groups of beneficiaries.

Unknown issues:

- Weight of different landscape practices to measure their influence.
- Green linear elements and Grey linear element are not popular.
- Some statistical data is not public available at national and local level.
- Relationships between groups of beneficiaries as a factor of competitiveness.

Main Problems in assessment:

- There is information about farms' specialization represented only by area and value.
- Land fragmentation and dualistic farms structure impose low competitive ability of farms.
- Semi-subsistence holdings preserve landscape but they cannot be assessment.

CSA9: Corse, France

The Corsican case study is typical of these mountainous Mediterranean landscapes based on heavy man made transformations in terraces and orchards (mainly chestnut trees in that case) that were abandoned in recent times. The present landscape is still of high value because of the agricultural and cultural heritage (walls, trees, houses, churches etc..) and because of the typical agricultural products (chestnut flour, pork dry meat, cheeses,). But this landscape is endangered by the abandonment which main effects are the sensibility of the vegetation to fire risks and the death of chestnuts trees.

The farm types dynamics is the key issue to understand the relationship between farming and the control the inflammable vegetation mass. The real impact of the farming systems appeared to be unknown before we begun the study because of the lack of information on the actual behavior of farmers, and the pour precise information on the land cover structure.

Based on the first approach of the CSA characteristics and the literature review, we proposed an ad hoc study on the evaluation of the PAC impact on farm types and the potential effect of the farm types (classified up on their main technical characteristics) on forest growth. The results of the remote sensing data analysis show a rapid process of vegetation growth, from pastures (generally rangelands) to scrublands and scrublands to forest in the Castagniccia region over the last 20 years. We show not only that abandonment induces a trend in this Mediterranean landscape toward reforestation, as largely demonstrated in the literature but also that the present farming systems do not interrupt the dynamics of reforestation even at the sites they are currently using.

Concerning the effects of CAP measures applied to livestock activity, we should be cautious. An important objective of the CAP premiums is to maintain farms and agricultural landscapes in mountainous areas, in order to maintain agricultural open spaces in disfavoured areas. However, in

these Mediterranean areas with low farm density, livestock pressure is too low, and the size of the farms is too large to control biomass growth. Our results clearly show that the key problem is the density of small farming systems and the enlargement of the farms. Thus, it might be worthwhile assessing whether CAP applications can be designed in such a way as to maintain these small systems and even to make them more attractive for young farmers.

3.2 Results from the horizontal ANP exercise

To contribute to the disentanglement of the complex causal relations, which exist between agricultural landscapes and the development and competitiveness of rural regions, in addition to the individual case studies in CLAIM a horizontal study across all CSAs is carried out. This study uses a standardized, common and binding methodology in all CSAs and takes the form of an Analytical Network process (ANP).

The results of the ANP exercise show that landscape valorisation is only in part driven by single, "outstanding" clusters of influencing factors and elements; it becomes obvious, that all considered clusters play important roles in the system of landscape valorisation (see Table).

Basically we found that in all countries all clusters were perceived to play a role in the system of generating value for society from agricultural landscapes. It became obvious that the socioeconomic benefits from the use of private and public good-type landscape service, such as the creation and maintenance of jobs, the creation of added value, the stability of the rural demography and the creation of local investment are considered the strongest drivers within the system

It also became obvious that "agriculture and forestry" is evaluated as the outstanding actor impacting on the generation of value from agricultural landscapes. Also is the traditional role of agricultural landscapes, namely the "supply of food" evaluated as the most important service provided in agricultural landscapes. In contrast, public good-type services in most case study areas are still perceived to play a remarkably weaker role in the generation of value from agricultural landscapes. This evaluation brings to light, that the awareness concerning the multifaceted character of public goods from landscapes (e.g. protection from natural hazards, nutrient cycling, carbon sequestration, pollination, biodiversity, etc.) is still limited. Of public good type landscape services, mainly cultural services, which are connected to the appearance and attractiveness of a landscape, are perceived as contributing to value generation. Within the cluster "welfare and competitiveness", economic competitiveness is evaluated to be a more important driver in the system of landscape valorisation.

Table 2: Priority vectors (Elements Priority [EP] and Cluster priority [CP] of the landscape valorisation analytical network (9 CSAs, n = 84 questionnaires)

		Study regions*																Average all study regions	
		IT		DE		AT		NE		ES		PL		TK		BG		FR			
Cluster	Factor	EP %	CP %	EP %	CP %	EP %	CP %	EP %	CP %	EP %	CP %	EP %	CP %	EP %	CP %	EP %	CP %	EP %	CP %	EP %	CP %
Actors	Agriculture	9	17	9	19	8	16	9	19	10	21	9	16	7	14	6	16	10	19	**8**	**17**
	Tourism	2		3		2		2		2		2		2		3		1		**2**	
	Trade & Services	3		4		2		3		5		2		2		4		2		**3**	
	Population	3		3		3		4		4		2		3		3		6		**3**	
Private good-type services	Food	17	21	7	14	10	16	15	19	13	21	13	19	11	17	9	19	19	22	**12**	**18**
	Raw materials	4		7		6		4		8		6		6		10		3		**6**	
Public good-type services	Protection funct.	5	12	3	17	6	18	2	13	2	8	3	16	3	19	3	16	3	8	**3**	**14**
	Natural Processes	2		3		3		2		1		2		3		3		1		**2**	
	Biodiversity	2		4		4		3		2		3		4		4		1		**3**	
	Cultural Services	4		7		6		6		4		8		9		6		3		**6**	
Socio-econom. benefits	Jobs	11	33	8	31	9	34	9	31	9	29	11	34	6	36	8	34	8	31	**9**	**33**
	Added value	9		8		8		8		7		7		12		7		7		**8**	
	Demography	4		6		8		4		5		5		5		7		10		**6**	
	Investment	9		9		8		10		7		11		13		11		6		**10**	
Welfare and compe-tetiven.	Economic competitiveness	10	17	11	19	7	16	11	19	12	21	10	16	9	14	10	16	12	19	**10**	**17**
	Social competitiveness	6		8		8		8		9		6		5		6		7		**7**	

*IT: Italy; DE: Germany; AT: Austria; NE: Netherlands; ES: Spain; PL: Poland; TK: Turkey; BG: Bulgaria; FR: France

On case study level, the different priority rankings of elements can be attributed to the inherent specialities of the single CSAs. For instance, the "*protection function*" within public good-type services (wild fires, floods, avalanches) is relevant in the Italian or Austrian CSA, whereas for instance "raw material production" is of high importance in Bulgaria.

Looking at the distribution of clusters, on average level, a third of the influence on landscape is attributed to the "socioeconomic benefits". As regards the "Actors", "Private good-type services" as well as the "welfare and competitiveness" clusters, importance is with about 17% quite evenly distributed. As regards "public good-type landscape services", such as natural processes, biodiversity, the protection function and the cultural services provided by landscapes, the results show that they have been considered to be the least influential.
Within the single clusters, pivotal elements driving the landscape valorisation system can be detected:

- In the "Actors" cluster, agriculture is evaluated as the outstanding actor impacting on landscape valorisation in comparison to tourism, local population and the trade and services sector. Of all sectors, tourism is the one rated to have the lowest importance on landscape valorisation.
- As regards the provision of "private-good type landscape services", the supply of food is still perceived as significantly more important than the production of raw materials.
- Within the "public good-type services" cluster, the results reveal that mainly cultural services, which are connected to the appearance and attractiveness of a landscape, are perceived as contributing to landscape valorisation. With a view to the overall "low" evaluation of the public goods cluster, it

becomes particularly clear, that the awareness concerning the multifaceted role and the importance of public good-type landscape services provided in agricultural landscapes is still limited.

- Looking at the different socio-economic benefits impacting on the system of landscape valorisation, the influence of the single elements is rather evenly distributed. However, the creation of jobs and the creation of local investments appear to have a slightly higher impact than the generation of added value and the stability of the demography of rural areas.
- Within the cluster "welfare and competitiveness", economic competitiveness in general is evaluated to be more important in the system of landscape valorisation.

If we compare the results on the level of the single study regions, it becomes obvious, that differing regional basis conditions can induce shifts of the importance of single elements playing a role in the system:

- Within the actors clusters, normally agriculture is evaluated as the main influence on the landscape valorisation system. However, looking for example on the Bulgarian case it can be seen that although agriculture still plays the major role, yet the difference between the role of agriculture and the other actors is not so profound like in the other CSAs. Also remarkable when looking at regional differences within the actors cluster is the high importance which is put on local population in the Corsican ANP. Here, agriculture and local population play similar roles – consequently the importance of tourism and the trade&services sector is remarkably lower.
- As regards the private good type services cluster, supply of food has a particularly outstanding role first and foremost in the Italian, the Corsican and also in the Dutch ANP. Also to mention is Bulgaria, which is the only CSA where the production of raw materials is evaluated to be more important than the supply of food.
- As already mentioned, the public good-type services cluster appears to have the lowest importance in the overall system. Looking at the single countries however it is evident that this result holds only true first and foremost in the Spanish, the Corsican, the Italian and the Dutch CSA. In contrast, in the German, the Austrian and the Turkish CSA, public good-type services are even more important than private good-type services.
- Within the public good-type services cluster itself it becomes apparent that in the Austrian, the Italian and the Corsican CSA besides of cultural services some role is seen in the landscape's protection function.
- As regards the socioeconomic benefits cluster, the single elements are normally quite evenly distributed. Noticeable is that first and foremost the importance of the stability of the rural demography is rated comparatively low in some of the CSAs. In the Turkish and in parts in the Dutch CSA a focus on added value creation and local investments arises.
- Whereas economic competitiveness is normally felt as the more important element in the welfare and competitiveness cluster, in the Austrian CSA a shift into the direction of social competitiveness is evident.

3.3 Main conclusions/summary of the empirical part

The main outcomes/conclusions from the empirical part of the project can be summarised as follows:

- The results of literature review and secondary data analysis at the case study level made clear, that data quality and availability throughout the single CSAs is very heterogeneous and data on level of the municipality is hardly available for public or scientific use. Consequently the CLAIM approach of qualitative data gathering within LSLs is of high relevance.
- Existing studies furthermore show that the question of "second order effects" and their contribution to regional competitiveness is a very important knowledge gap with regard to the valorisation of agricultural landscapes. However, it becomes also clear that knowledge gaps do not

exist only with regard to second order effects, but also with regard to various aspects of the preliminary framework developed in WP 3.

- The results of LSL consultation clearly emphasise the regional importance of landscape valorisation. The LSLs made clear that many regional stakeholders are already working on this topic and are very interested in the future results of the general project and of the respective regional ad-hoc studies.
- LSL consultation furthermore shows, that the ideas and strategies of stakeholders on how to valorise agricultural landscape differ strongly throughout the nine CSA regions. In this context it is to emphasise that activity b) met its target in refining the focus of the single ad-hoc studies.
- The results of both secondary data analysis and LSL consultation underline the importance of landscape services within the case study regions in general. It becomes clear that agricultural landscapes play in each region a very specific role and that local demands for landscape services differ significantly throughout the regions (eg. prevention of fire in Corse, recreation in the Netherlands, …)
- Particularly the results of ad hoc studies and ANP exercise allow us to draw following conclusions:
  - Agricultural landscapes and the private and public good type services they provide are a (perceived) factor for regional competitiveness.
  - Economic actors, due to their activities (both demand and supply) influence the delivery of private and public good type services. The provision of landscape services is directly affected by landscape "managers" such as the agriculture and forestry sector but also by "consumers/demanders" of landscape services.
  - The ANP in Activity d) of WP4 task 4.2 provides an expert based evaluation of relevant causal connections between agricultural landscapes and the development and competitiveness of rural regions in Europe.
  - On case study level, the ANP enables the assessment of local perspectives on the priorities of single elements and clusters driving the landscape valorisation network. The priority ranking of elements evidences differences between the case studies that have been proven by the downstream stakeholder validation process to be attributed to the inherent specialities of the single CSAs.
  - Particularly the results of Activity d) imply that -on average- the „classical“ private-good type agricultural system seems to play the more important role in the system (agriculture → food → jobs and investment → economic competitiveness). There is a higher consciousness towards consumptive and marketable goods provided by a certain environment, than towards essential, but hardly discernible, benefits from the use of public good-type services. However, it also becomes obvious that the average picture does not necessarily reflect the situation in every single region and that regional specificity significantly influences the perceived importance of single factors in the system.
  - The results of different ad-hoc studies in Activity c) reveal that public-good type services of agricultural landscapes foster in particular soft socio-economic benefits
  - Cause-effect chains between landscape services, socioeconomic benefits and regional competitiveness are often complex and region specific.

Altogether, the case study results show the diversity of agricultural landscapes in Europe and highlight the myriad opportunities and pathways for landscape valorisation. In all regions, the management of agricultural landscapes and local demand for landscape services are tightly connected. However, the specific demand for landscape service benefits differ significantly throughout the regions (e.g. prevention of fire in Corsica, recreation in the Netherlands, agricultural production in Turkey, tourism in Austria, etc.). The role of landscape management in rural areas is multi-faceted; in most areas landscape management is mainly targeted towards primary production (provisioning services), while in some areas it can have a strong economic role with regard to tourism. Despite the fact that support and regulatory services are the basis of landscape service delivery, in many cases these are not perceived and understood as such by users.

Local actors have different degrees of awareness of the ability of agricultural landscapes to supply landscape services, as well as different levels of engagement in the valorisation of such services. Yet, they commonly perceive landscapes as an insufficiently valorised asset. In the light of this, the evaluation of indirect benefits and landscape contributions to competitiveness appears as the biggest knowledge gap.

The main conclusion drawn from the ANP exercise is that landscape valorisation is largely driven by food supply. Agriculture is regarded as the most important landscape management actor, while the important role of the following indirect impacts of landscape management are also recognised: improved regional competitiveness, job creation, added value, local investment, demographic stabilization, and the provision of cultural services.

4. Results by guiding questions

4.1 Agricultural landscapes and socio-economic development

The wide variety of approaches in the ad-hoc studies in the 9 different case study areas has provided a substantial knowledge base on the relations between agricultural management practices, landscape structure and composition and ecosystem services provision. From all types of ecosystem services defined by TEEB and the CLAIM analytical framework (TEEB, 2010; van Zanten et al., 2014), within the thematic area of this sub-task most ad-hoc studies in the CLAIM project put an emphasis on cultural ecosystem services. To a lesser extent, also provisioning and regulating services were addressed in the ad-hoc studies. The ad-hoc studies conducted for the CLAIM-project in this thematic area, contribute the existing knowledge base on ecosystem service assessments in at a landscape scale through a wide variety of novel methods that have been developed and tested to gain insight in how landscapes contribute to regional economies through the delivery of ecosystem services.

In each case study area, ad-hoc studies have addressed knowledge gaps that were relevant to local stakeholders. For example: in the Dutch case study, main knowledge gap addressed is which landscape characteristics contribute most to the landscape preferences of tourists in the area, whereas in the Spanish case study area the ad-hoc study was focused on relations between landscape preference and visiting probability of urban residents. As a result, the findings of the individual ad-hoc studies form a patchy collection of evidences and methods, which are often not directly comparable across case study areas.

Scale issues

The comparability of results obtained in the different ad-hoc studies also depends on the scale at which a particular ecosystem service is provided. In the case of cultural ecosystem services, relations between landscape structure and composition and services are very much related to the local landscape context. These services, such as recreation and tourism, inspiration and aesthetic appreciation, arise from the perception of the landscape by its users and communities. Hence, the capacity of landscapes to deliver cultural ecosystem services is – apart from its aesthetic values – also affected by local cultural, social economic values and attitudes related to agricultural landscapes. The differences of visitor's landscape preferences for agricultural landscape characteristics are described in a comparative analysis between the Dutch and German case studies (van Zanten, Zasada, et al., subm.). This parallel designed choice experiment showed that in the Netherlands livestock and hedgerows were the most appreciated landscape characteristics, whereas in the German case the prevalence of point elements (e.g. riparian vegetation around ponds and solitary trees) were most appreciated. Despite the differences in preferences for specific characteristics of agricultural landscapes across case study areas, there are also pronounced commonalities. In accordance to findings in landscape preference literature (Kaplan & Kaplan, 1989; van Zanten et al., subm.) as most ad-hoc studies find positive preferences for wooden elements, historic elements and water bodies in agricultural landscapes. More generally, most preference studies in the CLAIM project find preferences for half open, mosaic-type landscapes and the presence of natural areas.

Methodological constraints

As cultural ecosystem services are inherently dependent on the perception and preferences of landscape users, revealed and stated preference methods are a necessity to investigate those services. In contrast, most regulating services, such as water regulation and protection against wind erosion, can be examined through ecological-economic or ecosystem services modelling (see for instance Nedkov & Burkhard, 2012) and are compared to cultural services simpler to upscale to coarser units of measurement. Moreover, services delivered on a larger scales, such as carbon sequestration and perhaps biodiversity, are also less complicated to extrapolate to other landscapes (Schulp, Nabuurs, & Verburg, 2008). However, since the focus of most ad-hoc studies was on cultural ecosystem services few novel modelling approaches focusing on regulating or habitat services were developed in the project. Most studies that assessed the provision of regulating services, such as the case in the Polish and the German case study area, relied on expert evaluations and desk research to define assumptions and proxy variables.

The results of the ad-hoc studies performed in the CLAIM-project form a valuable addition to the rapidly evolving field of ecosystem service science and provide further insights in the complexity of ecosystem- or landscape-based management of agricultural areas in Europe.

4.2 Landscape as a driver of competitiveness

Empirical evidence for causal relations between landscape and regional competitiveness

The results of the horizontal ANP exercise across the 9 rural region case study areas of the CLAIM project confirm the causal relations between landscape and regional competitiveness as suggested in the CLAIM framework: The exercise demonstrates the influence of different actors of a rural economy on private as well as public good type services in an agricultural landscape and the contribution of direct and indirect benefits and values for humans from the use of use these services to social and economic competitiveness. The exercise clearly shows that the „classical", agricultural system is perceived to play the most important role in the system (agriculture → food →jobs and investment → economic competitiveness). However, the results also show that public goods play a role and that the perception of public goods is clearly driven by regional specificities.

The cause-effect chains from landscape to the local economy, through the relationship among specific landscape elements to service suppliers and consumers are also confirmed by two Bayesian Belief Network studies in Italy and Poland in line with CLAIM. The studies show that the interactions between landscape elements, landscape service supply and the potential contribution of second-order services to the local economy, through different socio-economic benefits are complex. Often the way from landscape services supply to benefits and competitiveness is not straightforward but multi-tracked. So does in the Italian case the wetlands cover support number of jobs and value added via the cause effect chain [landscape attractiveness→agritourism→seats for eating→ increase of jobs and the added value of farms]. This cause effect chain is additionally affected by e.g. residents' perception of landscape attractiveness which influences seats for eating because of residents' frequency of visiting agritourisms. In the Polish case competitiveness is influenced by three cause effect chains, namely [landscape elements→protection→ agricultural yield], [landscape elements→ landscape aesthetics → tourism → employment] and [landscape elements→ habitats→ tourism → employment]. Both studies reveal that landscape and landscape services have a positive influence on economic regional competitiveness via through the creation of employment and value added. Especially the Italian case study shows the importance of the values different beneficiaries assign to the services provided in a landscape for generating socio-economic benefits.

Actors and beneficiaries of agricultural landscapes:

The beneficiaries of agricultural landscapes have been analysed in a variety of CLAIM studies. Many of them indicate, that mainly such sectors of the local economy, which are directly managing landscape or which are closely connected to the production of marketable goods in agricultural

landscapes (agriculture and forestry, wood-processing industry and food industry), or which directly enjoy cultural services from landscapes (inhabitants and tourists) derive benefits from agricultural landscapes (ANP, IT1, IT2, AT3,). Other economic sectors, which receive rather indirect and second order effects from landscape and landscape services, such as the trade & commerce or the services sector, are perceived to benefit remarkably less.

The results of a Social Network Analysis in Austria show, that manifold agents/institutions pursue in parts common, in parts overlapping and in parts different strategies of generating value from the regional agricultural landscapes. The most important strategies of influencing regional competitiveness via landscape valorisation strategies are agricultural production, tourism and the marketing of regional products. However, here the analysis gives hint at important interruptions in potential valorisation chains.

Empirical evidence for socio-economic benefits from public good type landscape services:

A variety of ad-hoc studies in the CLAIM project give evidence to socioeconomic benefits generated by the use of landscape services. As it is one of the main objectives in the CLAIM project to explain the extent to which public good-type landscape services contribute to the development and competitiveness of rural regions, a special focus in the CLAIM project lies on the assessment of socio-economic benefits downstream the use of public good-type services:

The results of a case study in Italy show, that cultural public good-type services, namely landscape attractiveness, are inputs for economic activities such as agritourism offering landscape-related services (e.g. food service, typical products, recreation activities). The study shows that in this way landscape supports the number of jobs and value added of farms.

A case study in Poland shows that the presence of the most typical landscape element in the region (fields, forests, shelterbelts, and water reservoirs) and the related landscape services (food provisioning, protection and regulation services, aesthetic-cultural values and habitat supporting) strongly influence agricultural productivity, the maintenance and creation of employment, the opportunities for tourism and recreation and the biodiversity of the region. It was found, that all landscape elements in consideration have a positive influence on regional competiveness and the potential of agricultural production.

A monetary choice experiment of the Spanish ad-hoc study, gives strong evidence that the presence of specific landscape elements increases touristic demand and hold the potential for creating second order socio-economic effects (visitor's expenditures).

Also an experts' survey in Austria made obvious that local landscape is perceived to have an influence on a variety of social and economic factors of competitiveness. Here, the strongest impacts of landscape are assigned to "soft" competitiveness factors, such as the wellbeing of inhabitants and the maintenance of the cultural heritage, rather than on "hard" economic factors such as "job-creation", "demography", "infrastructural development" or "local investments". The only high "economic" impact of landscape is awarded to its potential to enhance the marketing opportunities of regional products.

Again a case study from Poland, modelling the influence of landscape elements on farm performance, gives strong evidence for the economic importance of specific landscape elements on agricultural performance (Win-Win scenario). CAP scenarios in the study, which assume a removal of the landscape elements "shelterbelts", show the strong negative influence on the level of Net Farm Incomes. Even relatively small decreases of the share of high profit cash crops in the cropping structure, which are dependent on the existence of landscape element (shelterbelts), have a strong negative influence on the economic performance of farms in the case study area.

Despite the obvious role and influence of public good-type landscape services in the system between landscape and regional competitiveness, the results of two CLAIM case studies in Austria show, that the influence of landscape is not high. A data envelopment analysis in the Austrian case study region shows, that regional competitiveness is rather influenced by non-landscape factors such as the closeness to urban centres or semi-urban areas. It shows that the more remote an area, the less

competitive it is, even if the landscape is beautiful and rich of potential landscape services – except if landscape is profoundly valorised by intensive tourism – on cost of cultural identity and authenticity. The Austrian expert survey shows, that landscape is valued mainly for its cultural, "soft" factors and highly appreciated. Nevertheless "economic" impacts of landscape are evaluated to be low (labour market, demography, investments).

Valuation of landscape services

In the course of the empirical work in CLAIM, various ad hoc studies aimed ad assessing particularly the values of public good-type landscape services for different economic actors in different regional contexts.

An Italian ad-hoc study investigates the possible relationship between the relevance attributed to some components of agricultural landscape and the behaviour in ecosystem service use for both residents and tourists. The study shows that the majority of local landscape elements are evaluated to be an advantage for agriculture, residents as well as for tourists. The study makes particularly clear, that for different actors, different elements are more advantageous. The models applied give support to the hypothesis that awareness/importance attributed to landscape is positively associated to the attitude to use recreational opportunities in the landscape. Also it can be shown that promotional activities, such as local festivals or wine-flavour routes, positively influence the awareness towards landscape. However, the study also reveals that there is no "direct link" between the importance attributed to landscape and the attitude to consume local agricultural products. The study therefore shows that the values attributed to landscape services are only in parts "translated" into landscape valorisation by all consumer groups.

Other preference studies in Poland, the Netherlands and Germany confirm that preferences towards landscapes are particularly different for different sectors of a rural economy. Moreover it was found that preferences are dependent on individual's socio-cultural background, e.g. level of education, gender or attitude and value setting (DE 4).

In general, tourism and residents clearly prefer landscapes rich in landscape elements (NL, DE, PL). A study in Bulgaria however shows that touristic interest is in part very specific and follows clear objectives. It was found that the wine tourism in the Bulgarian case study is only interested in attributes directly connected to the touristic objective, namely wineries, wine-restaurants, etc., rather than being interested in the overall features of the local landscape.

For agriculture, the Polish preference study shows, that the awareness and values agriculture assigns to landscape and its elements clearly focuses on the economic usability of landscape elements such as agricultural fields and pastures. As regards public good-type landscape services, agriculture attributes values to landscape elements as soon as they provide an economic advantage, for example the regulating services of shelterbelts which enhance the yield of cash crops.

A direct comparison between the results of the Dutch and the German studies, which followed the same research approach, clearly shows, that preferences towards the same landscape elements are highly regional and context specific. For example express visitors in German case study area strong preferences for a high level of point elements whereas in the Dutch study area point elements was one of the less preferred attributes in the landscape.

The Polish study also brings to light a very important aspect which must be taken into account when relying on preference studies for the valuation of landscape services and its benefits: The study shows that tourist and visitors clearly tend to overvalue the environmental and economic functions of landscape elements, by attributing high values to nearly all possible economic and ecologic functions of a landscape element.

The valuation of private and public good-type services has also been investigated in a horizontal study, across all case study regions of the CLAIM project. In contrast to the studies before, the assessment in this study was not consumer, but expert-based. In this study, both private and public goods have not been analysed in the context of preference for single consumers, but in the context of the contribution of such services to the generation of socio-economic benefits and regional

competitiveness. The results of this exercise shows, that as regards generating value from agricultural landscapes people have a higher consciousness towards consumptive and marketable goods provided by a certain environment, than towards essential, but hardly discernible, benefits from the use of public good-type services.

Conclusion/Recommendation

- → *Agricultural landscapes and the landscape services provided are drivers of regional competitiveness.*
- → *Private as well as public good-type landscape services provide socio-economic benefits that foster regional competitiveness.*
- → *There is a higher consciousness towards consumptive and marketable goods provided by a certain environment, than towards essential, but hardly discernible, benefits from the use of public good-type services.*
- → *Especially public good-type landscape services are still perceived to provide mainly soft competitiveness factors, while it becomes obvious that also public good type services have economic socio-economic benefits such as job creation and the enhancement of value added for agriculture.*
- → *High landscape attractiveness can give an impulse for the enhanced use of public good-type landscape services such as recreational activities (e.g. agritourism) and opportunities for adding value on provisional services (e.g. local products).*
- → *Raising awareness about landscape as an economic asset may drive landscape valorisation mechanisms and further develop consumers' appreciation.*
- → *Intensive food production, scale enlargement and the reduction of landscape elements might diminish the potential of landscape to offer other especially public good-type landscape services, negatively influencing private activities such as agritourism.*
- → *On the contrary, the attractiveness of landscape and high value of public goods could affect food production.*

- → *The cause-effect chains between landscape and competitiveness are often complex and region specific.*
- → *European governance strategies with regard to public good provision have to be context- specific and have to consider regional conditions.*
- → *More efficient and continuous communication strategy between scientists, decision makers, local administrations and civil society might reduce a knowledge distance and make population aware of the public heritage provided by the landscapes they are surrounded by.*
- → *The ANP exercise indicates that the weight of different valorisation pathways can hint at priority areas for local policy design, particularly in connecting landscape-related and chain-related measures of the Rural Development Programmes.*

4.3 Mechanisms: the influence of regional framework conditions, actors and stakeholders on landscape policy implementation and landscape valorisation …

The variety of ad-hoc studies in the 9 different regions have provided substantial empirical evidences, which underlie the mechanism forces, influencing either the efficiency of landscape policy delivery or the effectiveness of valorisation into socio-economic second order effects beyond the actual environmental objective. It has been shown that on the one hand the different actors, agents and stakeholders in the region with their different roles, knowledge, perceptions, preferences and interests and on the other hand the socio-economic, nature and landscape as well as institutional framework conditions of the region have a decisive influence on the policy-delivery-benefit-valorisation-process.

Role of regional framework conditions in landscape management and valorisation

Implementation of landscape management policies

Main research findings dealing with the efficiency of landscape policy implementation are related to regional framework conditions. First of all the limitation of agri-environmental scheme (AES) application in disadvantaged agricultural landscapes (mountainous or other less-favoured (LFA) areas) were addressed (AT, BG, FR). For example, it was found in the Bulgarian case study region *Pazardzhik* that the pattern implementation of AES occurs differently in different regions. It was also found, that among other (farm economic structural) reasons, although institutional reasons, such as bureaucracy or delayed payment hinder efficient policy implementation. Furthermore, it is stated that AES measures are particularly implemented in areas of low productivity and with land degradation. Although there it contributes to environmental goals (e.g. nature preservation, biodiversity), the measures also support the stabilisation and continuation of agricultural activity. Also in the Austrian region of *Mittleres Ennstal* it has been argued that the specific CAP pillar II support schemes help to conserve traditional mountain farms.

In the *Corsican* case (FR), the examination of the effects of CAP landscape policies showed rather negative effects of spatially untargeted measures (AES rather for grasslands, not for mountain ranges). In areas of agricultural decline, the CAP landscape measures lead to the formation of hyper-extensive systems with negative landscape effects, as the intensity of landscape management decreases. Strong landscape heterogeneity (sub-landscapes) was identified in the *Märkische Schweiz* region, which is neglected in the regional design for landscape policies. Those in-depth studies call for a more targeted approach to landscape management, which takes the specific regional framework conditions into consideration or which understands and incorporates scale-dependency of landscape measures (farm, sub-landscapes, and landscape).

Generally, it can be concluded that the implementation success of CAP axis 2 measures is depending on the regional framework conditions, mainly the bio-physical conditions of the given nature and landscape, but also the institutional situation, such as in the case of *Pazardzhik*. Especially inner-regional differences are responsible for variations in the policy implementation – partly targeted, partly because the measures cannot take the regional heterogeneity fully into account.

Valorisation of landscape for socio-economic second-order effects

Summarising, the empirical research concerning the relevance of framework conditions focussed on the effects of natural and urban conditions as well as the insufficient process of landscape valorisation for regional competitiveness and welfare. For instance in the Austrian case, it was found, that especially the given natural factors, and only to a lesser extent the landscape management related ones, are decisive for the rural socio-economic development. The Bulgarian and Polish case studies even found that the landscape attributes are outvalued by “grey” landscape elements, such as buildings. Similarly, is was observed in the *Corsican* (FR) and *Lowland Ferrara* (IT) case that the provision of cultural ecosystem services by agricultural landscape management cannot be effectively exploited due to the absence of tourists, which are rather concentrated at natural amenity-rich sea-side locations. In the Turkish *Eğirdir* region a strong seasonality of visitors was reported. Here, concepts are necessary, which link the local demand with the local supply or which enhances awareness, connectivity and accessibility of the agricultural landscape with neighbouring high natural capital regions and to ensure an enhancement and continuity of visits.

But along with the natural conditions, also urban proximity has been explored as important determinant for landscape valorisation. A cross-municipal study in Austria highlighted the significance of the closeness to urban (and semi-urban) areas. The German landscape preference study showed that 75% of the landscape visitor travelled from the nearby Berlin contributing to the local hospitality, gastronomy and other tourist service businesses.

Concluding, first of all the presence of natural amenities, such as mountains (relief energy) or water courses (coastline) are important pre-conditions to define the potential of landscape management to

be further valorised for regional competitiveness and welfare. Otherwise, socio-economic framework conditions (population density, proximity to urban and metropolitan areas) are important as consumer demand centres for rural goods and services related to agricultural landscape management.

Role of actors and stakeholders in landscape management and valorisation

Implementation of landscape management policies

In the CLAIM case study regions, empirical evidence has been collected, which confirms frequent lines of argumentation that farm differences in terms of size, business model, assets and perception represent relevant factors for the implementation of agricultural policy, especially voluntary support schemes. Here observations include farm business-related implementation constraints, such as management, co-financing and available farm assets (BG) or differences in farm capabilities to either carry out the measure or to reach the desired objective (e.g. hyper-extensification instead of landscape management) (FR).

Frequently differences between small and large-scale farms have been addressed in the case study regions. On the one hand, the importance to address small farmers as carrier of traditional, landscape-adapted management practices is highlighted in several (mountainous, marginal) regions, such as the Austrian Alps, Corsican or the Balkan mountains. In the French and Bulgarian case, researchers demand a stronger policy targeting towards small farmers, as they are either disadvantaged compared to large-scale farmers or otherwise negative policy impacts are observed. The German CSA observations add to the complex of problems, by pointing out the increasing marginalisation of small farmers due to massive land acquisition ("land grabbing"). On the other hand, it is said, that the support of small-scale farmers improves the environmental and landscape objective, as the conservation of small-scale and divers agricultural (BG) and landscape structure (AT).

In the case studies attention is called to the role of knowledge and awareness rising. For instance, in the Polish case little knowledge was found among local population about landscape management measures, while farmers are well aware of their influence on the landscape and the necessity of protection, concluding a strong demand for awareness rising among the local community. These aspects can be seen related to the problem of conflicting interests of stakeholder in the region about landscape management, either between agriculture and nature conservation (BG, DE) or between agriculture and the local community (FR). Others (BG, TR) stress particularly the role of agricultural extension and consultancy services to improve implementation of landscape management measures.

Generally, the empirical ad-hoc studies substantiate that the implementation pattern of landscape policies is related to the existence of often heterogeneous communities of farmers and land managers as well as of other stakeholders, characterised by individual perceptions, behaviours, motivations and capabilities (e.g. to be able or eligible to implement specific measures). Especially farm size and knowledge play an important role in this perspective.

Valorisation of landscape for socio-economic second-order effects

The assessment of mechanism determining the influence of regional actors and stakeholder on the valorisation of landscape has been addressed from the perspectives of actor differences including consumer types and their preferences as well as the asymmetry of demand and supply of landscape services. Firstly, farm type differences, especially in terms of area sizes and assets, have been found a relevant aspect for the contribution to regional competitiveness (AT, BG, DE). In the Austrian case the support of traditional small-scale agriculture was seen as a key to regional competitiveness, whereas stakeholders in the German case complained about the outflow of financial support for landscape management from the region due to the effect of large-scale agri-businesses. Further the role of intermediary agents and broad-positioned bottom-up initiatives has been highlighted in the Austrian

and the Spanish case study, either to key agents for knowledge transfer for regional strategy-making or to enhance the integration of different agents with their individual roles and strategies.
Secondly, there is a strong emphasis of the empirical evidence on landscape preferences (BG, DE, ES, NL, IT, PL) where particular strong inter-group differences and commonalities have been identified. In the German CSA no preference differences for landscape attributes were found between local residents and visitors, whereas analyses in the Polish and Italian case studies showed major differences. However, major methodological differences need to be taken into consideration when reflecting on the results. Also inter-regional preference differences occurred, e.g. between *Winterswijk* (NL) and the *Märkische Schweiz* (DE) when applying a comparative research design. Commonalities were found for (i) the low appreciation of natural landscape elements by local residents and tourists (BG, IT), (ii) the simultaneous high evaluation of "grey", non-landscape elements, such as buildings and infrastructure (BG, PL), and (iii) the decisive role of socio-economic characteristics of individuals for landscape preferences (DE, IT, NL). Thirdly, in two case studies (BG, FR), the importance of landscape for the provision of added value of a specific commodity (wine, meat) was confirmed by the producer, as it helps to increase recognition in the regional community and beyond.

Knowledge gaps and Research demand

The manifold ad-hoc studies carried out in the nine different case study regions provided empirical evidence on the mechanisms of landscape policy implementation and landscape valorisation influenced by the regional context (geography and landscape; population and economic conditions) and regional actors and stakeholders, being either provider, consumers or beneficiaries of landscape management with their different values, perceptions and behaviours. Research results are particularly interesting in those cases, either where in different regional contexts similar research objectives where followed with comparable research methodologies (e.g. visual landscape preferences studies in *Winterswijk* (NL) and *Märkische Schweiz* (DE)) or where individual case studies specifically focussed on framework condition differences (e.g. group-specific differences of landscape preferences in *Lowland Ferrara* (IT) or *General Chlapowski Landscape Park* (PL)). Others elaborated the case-specific framework conditions on landscape policy implementation (e.g. CAP in mountainous region of *Mittleres Ennstal* (AT) or in Corsica (FR)).
However, as the cause-effect-relationships between landscape policy design, landscape management and ecosystem functioning to the socio-economic second-order effects are rather complex, a full coverage of all theoretical links under consideration, of the multitude of regional settings, is hardly possible with the given resource and time. Also due to demand for a high diversity of disciplinary empirical research methods (see CLAIM deliverable report D5.25), resulting knowledge and information gained from the empirical work remain patchy. Aiming at a robust knowledge base for policy support, a homogenisation of research designs and methodologies applied would be very helpful to be able to deal with comparable situations. Using the given scientific knowledge with strong theoretical foundations, complexity reduction through generalisations, representativity, etc. would allow enhanced integration of individual research search in a larger context (valid also outside the specific regional context). Still, therefore more knowledge is required on the actual role of the spatial situation and the behaviour of individual actors.

Policy Recommendations

Obviously the CAP is not the only factor to influence farming practices and therefore affecting EU agricultural landscapes. Other drivers also play a fundamental role, by limiting the potential impact of the CAP, but also providing opportunities for the CAP public support to have a multiplier effect. In the design and ex-ante evaluation of Regional Development (RD) programs, we recommend to take into account the regional framework conditions, such as land pressure, the socio-economic situation of the rural communities, urban neighbourhood and landscape diversity in the area (including non-

agricultural landscapes). These regional framework conditions are influenced by non-CAP regional/local policies (i.e. environmental, urban planning), as well, and should also be considered.
The CAP can provide incentives and financial support for landscape management and valorisation. However, it is ultimately the decision of the land managers and/or rural communities to take action. To ensure that efforts in landscape management deliver the maximum benefits, we recommend the co-design of RD programs with farming communities, local stakeholders and the existing networks, to make sure factors such as the existing traditions with regard to agricultural landscape management, the heterogeneity in preferences between land managers and other stakeholders, as well as the expected impacts at landscape scale are taken into account. Moreover, CAP support should avoid the crowding out of private initiatives.
While there are several instruments addressing the need for actions at landscape-scale in CAP post 2014 regulation (e.g. by increasing the amount of policy support when the environmental commitments are undertaken by a group of farmers due to the increase in transaction costs), national governments and managing authorities should make sure they are promoted and implemented.

4.4 The role of the CAP in fostering landscape change and its contribution to socio-economic development and competitiveness: Strengths, Weaknesses, Opportunities and Threats

Main results

On the basis of the analysis of nine case studies of cultural landscapes in Europe, we have analysed the role of the CAP in fostering landscape change and contribution to socio-economic development and competitiveness, using the SWOT methodology. We find that the CAP has both strengths and weaknesses in order to achieve this goal. They are explored distinguishing direct payments and the rural development policy. We also observed in all the cases studies the presence of external drivers affecting the CAP role in landscape management, both positively (opportunities) and negatively (threats).
Concerning direct payments, which represent the more important support of the CAP to EU farming, they have contributed to maintain farming in several of the regions under study by supporting farm income, and therefore have allowed the conservation of the associated farmed landscapes. But there is also evidence that, in some areas, they have encouraged landscape homogenization, either through the intensification of production (Italy, Poland) or through the closure of landscapes due to the extensification of livestock farming with too low stocking rate to control vegetation growth (Corsica).
Concerning rural development policy, the co-existence of measures supporting landscape provision and supporting the valorisation of landscapes are strengths of the CAP with regard to landscape management. We have observed that the rural development plans of all the case studies regions include measures directly targeting landscape provision and have for example encouraged farmers to maintain or restore landscape traditional features. But we found evidence that the Common Agricultural Policy has until now mainly focused on the management of landscape at the farm scale. Apart from the Dutch case study, there is a very limited use of instruments to encourage the collaboration and coordinated actions of different land owners and managers at landscape scale. Moreover, there is a lack of integration with the measures supporting the modernization and the diversification of the farms, which are the ones likely to support landscape valorisation and create socio-economic benefits beyond the only provision of landscapes.
We also observed in all the cases studies the presence of external drivers affecting the CAP role in landscape management, both positively (opportunities) and negatively (threats).
CAP payments can be insufficient to counterbalance other drivers of farming practices and landscape management, such as favourable or unfavourable agro-climatic conditions and structural change in farming. Where farming not profitable or land highly productive, subsidies are a weak instrument to counteract land abandonment or pressures on land. Moreover, in the absence of traditional

agricultural landscapes and positive attitudes towards their conservation, financial support will not be sufficient to encourage conservation and valorisation. In the areas where there are stakeholders with heterogeneous preferences regarding landscapes, it is difficult to implement CAP measures addressing all priorities. Beyond these treats to the efficiency of CAP support, natural and cultural factors are also sources of opportunities to increase landscape contribution to socio-economic development and competitiveness. For example, where other landscapes of interest (eg. seaside, mountains) are close to agricultural landscapes, there is an opportunity for the CAP to support the valorisation of landscapes diversity and generate socio-economic benefits associated with this diversity. In this context, the pre-existence of private initiatives for the valorisation of agricultural landscapes is clue. In the areas where farmers have positive attitudes towards landscape conservation and perceive their actions can have non-negligible impacts on landscapes, there is an opportunity for the CAP to support private initiatives for the valorisation of agricultural landscapes, which would otherwise be hampered by financial constraints. Where these positive attitudes and private initiatives are not already in place, the potential role for the CAP is much more limited.

In order to evaluate the role of the CAP, it is important to have in mind that policies can have effects over different timeframes, depending on their interaction with others and past policies and how agricultural practices and natural elements respond to policies (Chassany and Miclet 2005). If the political, economic and social environment are important drivers of landscapes' transformation, the chronology embodied in landscapes should not be underestimated (Widgren 2012). All the changes in land use are incorporated into subsequent landscapes, and they tend to survive in different social and political contexts. Each landscape is a result of the superposition of different layers of changes that have occurred at very different points in time. We should therefore not expect to be able to evaluate in the short term the impact of the CAP on the provision of landscape public good. Any attempt to focus on measures with effects visible in the short run will be an error.

Last but not least, our research highlights that landscape objectives tend to be defined in the CAP in terms of conservation, in a somehow "defensive manner". A management action is considered as contributing towards landscape if "it maintains or protects individual landscape elements or the characteristic structure of a more traditional agricultural landscape as a whole" (Institute for European Environmental Policy 2011). However, one difficulty with landscape policies intended to conserve historically dated landscape relates to the impossibility to restore the economic and social conditions prevalent at the time of reference (Von Haaren 2007). In the absence of these conditions, there is a risk that these "conservation" policies will not achieve their objectives. It is useful to remember the experiences of important periods of history, during which the issue of landscape was central to society's thinking on the "agricultural project" (Ambroise 2004).[1] The agricultural landscapes we want to protect today are the result of the projects implemented at that time. The same logic should apply now: the EU project towards a more sustainable agriculture cannot avoid taking into account space/landscape dimensions, and therefore should include a landscape project.

Recommendations

1. Agricultural landscapes are supporting competitiveness of rural areas. CAP payments should therefore also be evaluated according to their impacts on agricultural landscapes and to their contribution to landscape valorisation. We recommend the managing authorities of the rural development programs (either local, regional or national) to evaluate the impacts on landscapes, and national governments to evaluate the impact of direct payments.

[1] In 14th century Italy, artists and agronomists worked together on the concept of "beautiful landscape", which became part of the agricultural project of the Italian society (see for example the influence of the series of frescoes painted by Ambrogio Lorenzetti in 1339 "The Allegory of Good and Bad Government"). In 17th century France, Olivier de Serres claimed that agriculture is the first art and work on how to promote a sustainable agriculture(de Serres 1600). Thanks to this project, France is nowadays often considered the "garden of Europe" whereas rural landscapes were in a deplorable state upon the eve of the Revolution in 1789(Young 1792).

2. The European Union priorities for rural development should go beyond "restoring and preserving the state of European landscapes". The EU objectives for landscape management should:
   a. Reflect current and future society demands, beyond the preservation and restoration paradigm, because the preferences and socio-economic conditions prevailing in the past when those traditional landscapes were shaped may be obsolete.
   b. Go beyond the management of landscape elements at farm-scale, including landscape structure and composition objectives at the landscape-scale, and the maintenance of the diversity of agricultural landscapes at the EU-scale.
   c. Differentiate the landscape characteristics with potential for local valorisation, from those with global public good characteristics, as the policy incentives necessary may differ depending on whether the local or global characteristics are predominant.
3. In order to capture the maximum environmental and socio-economic benefits, Rural Development Policy should support the provision, but also the valorisation of agricultural landscapes. While both types of measures exist in the current CAP, the better coordination and integration of these measures should become a priority. For example, actions supporting the embedding of landscape value in food products ('eat your view') can fulfil both provision and valorisation objectives: farmers are encouraged to maintain the landscapes associated to their production and visitors are encouraged to purchase local products.
4. Obviously the CAP is not the only factor to influence farming practices and therefore affecting EU agricultural landscapes. Other drivers also play a fundamental role, by limiting the potential impact of the CAP, but also providing opportunities for the CAP public support to have a multiplier effect. In the design and ex-ante evaluation of RD programs, we recommend to take into account the regional framework conditions, such as land pressure, the socio-economic situation of the rural communities and urban neighbourhood and landscape diversity in the area (including non-agricultural landscapes). This regional framework conditions are influenced as well by non-CAP regional/local policies (i.e. environmental, urban planning,..) that should also be considered.
5. The CAP can provide incentives and financial support for landscape management and valorisation. However, it is ultimately the decision of the land managers and/or rural communities to take action. To ensure that efforts in landscape management deliver the maximum benefits, we recommend the co-design of RD programs with farming communities, local stakeholders and the existing networks, to make sure factors such as the existing traditions with regard to agricultural landscape management, the heterogeneity in preferences between land managers and other stakeholders, as well as the expected impacts at landscape scale are taken into account. Moreover, CAP support should avoid the crowding out of private initiatives. While there are several instruments addressing the need for actions at landscape-scale in CAP post 2014 regulation (e.g. by increasing the amount of policy support when the environmental commitments are undertaken by a group of farmers due to the increase in transaction costs), national governments and managing authorities should make sure they are promoted and implemented.
6. There is a clear value-added of case study evidence based on interactions with local stakeholders, as collected in the CLAIM project. But the evaluation of the impact of the CAP on landscapes should also rely on long time series, given the time necessary for land use and agricultural practices to respond to policies and landscape structure and composition to respond to changes in land use and agricultural practices. In order to allow the collection of quantitative data on a longer time frame, we recommend the setting-up of EU landscape observatories, building on already existing national initiatives, and covering a large range of agricultural landscapes with a common scale, from highly performing areas with regard to landscape management.

4.5 Methodologies

In carrying out the empirical part of the CLAIM project several different methods were selected, reflecting, in the one hand, the existence of methodological gaps, and, on the other hand, the diversity of issues of relevance in different areas and the potential different priority related to knowledge gaps of economic values perceived by stakeholders.

Most of the methods used here were refinements of previous methods, but also adaptation of methods largely used elsewhere to the problem of second order economic effects of landscape management.

Only in a few cases the same method was used in different areas (e.g. choice experiments). Even in these cases, actual comparability is poor due to need of local adaptation and adjustments.

As a result, comparability across areas is not the main value added of this exercise; instead, the interest lies in the exploitation of diversity of methods in connection with an articulated stakeholder involvement exercise to draw lessons on applicability and further needs by policy making in the field of landscape economic effects and landscape valorisation.

The variety of methods used also brings attention to the trade-offs implied by the choice of alternative methods and, at the same time, to potential for identifying complementarities and suitable combinations of methods, and potentially, even guidance to identify tailored combinations related to specific contexts and issues to be addressed.

Many initial methodological gaps remain unsolved, but the result can contribute to:

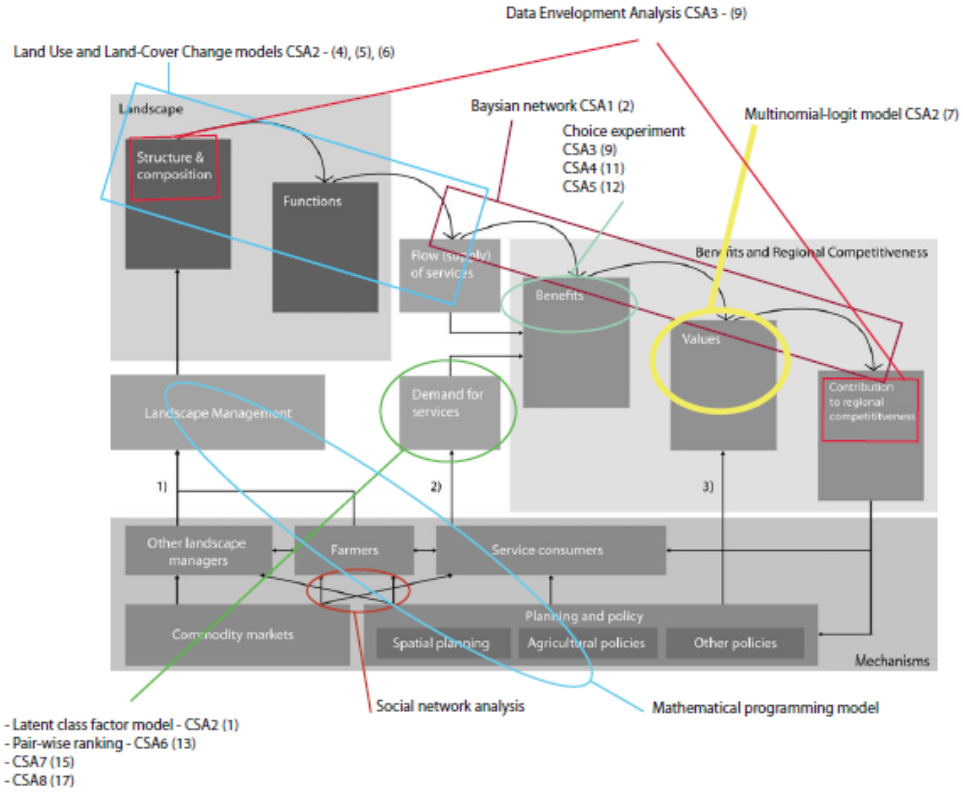
- better interfacing physical/bio and social/economic models
- considering consistently different components of society/economy
- evaluating the role of policy (in context) and policy design (widen)
- matching methods and data requirement, both for policy evaluation and monitoring

The exercise also helped understanding limitations and pre-conditions for the use of different methods. The problem of data availability was raised by several case studies and is particularly evident for methods relying solely on secondary data. This cannot be generalised as different methods have also different data requirements, so solving it through generalised stronger data collection would probably be unrealistic and useless. Methods can also be adapted to data availability, by using more or less data-hungry methods; participatory methods are usually the least requiring, but this can bring in trade-offs with the quality of the results. An important insight brought by several cases is that data availability can affect the choice of variables in models, hence also potentially biasing the results.

Original data collection is needed for several methods (typically preference/valuation and behaviour-related methods) and is often useful to bring new insights into the evaluation processes, particular about preferences. This entails a cost. While any interview-based data collection may be useful, the experience also shows the value added of professionally designed interviews aimed at rigorous elaboration methods, in order to ensure the quality and reliability of the results.

For research as well as for practical evaluation purposes and policy support, different quantitative methods do not substitute each other but are rather complementary. The choice of the bundle of methods as a function of the actual information gaps remain however a non-trivial issue, that should be considered in the light of the wide range of approaches available. Integration among methods also shows to be one of the ways forward. Integration between soft participatory methods and hard quantitative methods may be particularly recommended for the analysis of second order effects of landscape and was attempted in some case studies.

Methods allowing to build an overall picture of the landscape system and its effects, such as BBN, are among the most needed by the decision-making process. However, existing applications still show strong trade-offs between comprehensiveness and accuracy, and, needless to say, suffer more from data limitation the more comprehensive they have the ambition to be. Reducing these trade offs is an important challenge for further research.



5. The knowledge platform

The CLAIM results have been made available online through an accessible knowledge platform for multi-level policy makers and academia (http://project2.zalf.de/claimknowledgeplatform/). The main objective of the knowledge platform is to offer a structured way to access policy-relevant empirical information. The knowledge platform follows the logic of the analytical framework and its multi-level structure offers a detailed description of processes and interactions (highlighted in the 9 case study areas) relevant to policy decisions. The main addressee of the CLAIM-KP are European policy maker in the fields of agri-environmental and landscape management policy and rural development, national and regional decision-makers at programming level as well as regional and local stakeholder and interest groups, who are involved in any kind of governance processes within landscape and rural development.

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- **THE POTENTIAL IMPACT (INCLUDING THE SOCIO-ECONOMIC IMPACT AND THE WIDER SOCIETAL IMPLICATIONS OF THE PROJECT SO FAR) AND THE MAIN DISSEMINATION ACTIVITIES AND EXPLOITATION OF RESULTS (NOT EXCEEDING 10 PAGES).**

Project implications for policy and research

The project brought to the following sets of implications for policy and research. The main policy messages arising from the project (with a special focus on the CAP) are the following:

- Improving the management of agricultural landscapes requires consistent policy action on three scales: (1) the management of landscape features at farm level; (2) the management of landscape structures and the integration of farming into rural landscape management entities at landscape level; and (3) the conservation of the diversity of agricultural landscapes in the EU as a global public good.
- Policies need to take into account that pathways for landscape valorisation are extremely heterogeneous and linked to landscape characteristics and the local context, including attitudes toward entrepreneurship, networks of local people, global market potential (e.g. tourism, food exports) and residents' needs.
- Awareness raising and information are important, but need to be connected to policy actions and the provision of services to land managers to support a better understanding of landscape values.
- The local population may not be particularly aware of landscape functions as compared to other actors (e.g. tourists). Yet citizens play an important role in landscape valorisation. Consequently, building identity, sense of place and making explicit the connection between landscapes and residential services are important.
- Within Rural Development Programmes, the connection between incentives to landscape improvement, innovation and agriculture product chain measures needs to be improved, in order to enhance the valorisation of the multiple services provided by agricultural landscapes.
- In addition, successful landscape management and valorisation requires better coordination between agriculture and the other sectors of the economy.
- Successful implementation of landscape management policies and their valorisation requires acknowledgement of the regional framework context, including agro-climatic and socio-economics conditions, the structure of agricultural holdings, local governance, intra-linkages (i.e. strong farmers' cooperatives) and inter-linkages (i.e. interaction among multi-stake-holder platforms).
- Landscape management policies need to go beyond conservation and consider landscape changes more openly. Efforts should also be made to use innovative indicators to evaluate the effects of landscape policies, in terms of competitiveness and development.
- New ways of characterising the interactions between rural and urban territories may also be necessary for planning, policy design and monitoring (in particular beyond rurality and beyond the contrast between protected and non-protected areas).

From a research perspective, the issue of the economic effects of agricultural landscape management deserves more attention. In this respect:

- The understanding of the relevant factors in landscape management and valorisation has improved in recent decades; however, related mechanisms and institutional arrangements are much less understood.
- The evaluation of the monetary value of landscape appearance, through stated or revealed preference methods, is relevant but not sufficient. The analysis should also focus on the economic mechanisms and institutional arrangements that transform perceived values into monetary flows and provide incentives to maintain such values in rural areas. One good example is how landscape amenities can be translated in added value through local products and therefore stimulate landscape valorisation by food producers and landowners.
- This requires a clearer vision of the connections between public and private goods and an analysis of intermediate forms between public and private goods. The second order socio-economic impact of policies requires a better understanding, while novel instruments to better account for these in rural development evaluations should be developed.
- In spite of the local specificities and context-dependent features of landscape composition and structure, the development of indicators related to landscape-related industries, services and jobs requires novel approaches making it possible to exploit comparisons and mutual learning across regions.
- An EU wide landscape-related public good data base and model showing the consequences of changing agri-policy conditions on public good provision and second order effects would be a needed but ambitious follow up to this project.
- Scientific support to the development and implementation of public-good related governance strategies is essential. In this context, it is necessary to study mechanisms for social innovation that enhance collective landscape management and to find novel approaches for preserving, enhancing and maintaining the provision of the landscape as a public good.

Impacts

The development of the framework and the pathway to achieve it through the various objectives listed as well as the feeding of the above indications into practical decision-making leads to two main areas of impact of the project:

a) A better integration of research actors, activities and stakeholders from across the enlarged European Union, and the candidate countries. The Project will met this expected impact in particular by providing:

- Improved information sharing across EU 27 representatives in charge of actions towards landscape management through dedicated activities in WP2 and connected tasks in WP3, 4 and 5.
- Improved multi-level exchange of information to allow better policy coordination and upscaling and downscaling of information, particularly through the integration of the case study level perspective, the country perspective and the EU perspective in WP2.
- Improved research-stakeholder knowledge and information exchange to enable better collaboration in terms of innovation and policy support, particularly through participatory research activities in WP3, WP4 and WP5.
- Strengthening longer term linkages across the above-mentioned categories, also activating dedicated professional networks, that can become a platform for future exchange and reciprocal knowledge among stakeholders beyond the Project life.

b) Allow a better valorisation of landscapes as public good and maintaining landscapes for their ecological and socio-economic functions, including a better contribution to livelines of rural economies. This expected impact will is achieved by providing:

- an improved conceptualization of the effects of landscape on society and the economy, through the elaboration of a consistent framework in WP 3 through WP5;
- an improved understanding of the mechanisms leading to landscape change and to the effects of landscape on society and the economy, particularly through dedicated thematic tasks in WP3 and WP5;
- an improved understanding of the policy instruments and institutional solutions to support landscape valorisation, in particular through the CAP that will benefit of a dedicated thematic task in WP3 and WP5;
- an improved identification of indicators, information sources and control points to allow for an improved diagnostic, design and evaluation of landscape-related policies, in particular concerning measures included in the CAP, in the context of the wider evidence-based policy framework developed in the Project.

These impacts, planned during the design phase, were already largely achieved during the project, in particular for the impacts of type a) concerning stakeholders integration. The effect of networking is continuing over time by maintaining and networks established and bringing them to new challenges, including new intensively stakeholder-based research activities in H2020.

Impact of type b) have already been achieved through the use of project's results in the decision-making process. This will require a longer time horizon to be completely achieved and will develop in particular as the new RDP implementation will advance.

Main dissemination activities and exploitation of the results

The project benefited of a built-in dissemination stategy based on a two-way interaction with stakeholders carried out in WP2 (Stakeholders dialogue).

WP2 supported and ensured communication within the Project through project meetings (also by teleconference), website, e-mails, and included three types of activities, i.e.

a) standard dissemination means (website, newsletter, policy brief, LnkedIn network);
b) interactive laboratories in which stakeholders were involved in activities providing input to the research project and benefiting from presentation of the results;
c) conferences and intermediate workshops;
d) scientific papers.

More details are given below

Project website

The website of the CLAIM project is available at the following address: http://claimproject.eu/. The website is divided into a public and a private area: the public one is used as a dissemination channel while the restricted one is structured at three different levels: 1)Project partners and European

Commission; 2) Plenary Stakeholder Laboratory members; 3) Local Stakeholders Laboratory members. A dedicated project logo and visual identity has been developed and consistently used throughout the project duration.

Newsletter and policy brief

The four newsletters have been sent through an ad-hoc IT tool to all the project members and the contacts included in the CLAIM mailing list and are currently available on the project web-site.

Please look at http://www.claimproject.eu/download.aspx

A policy brief has also been developed, disseminated though stakeholders and EC services during the project dissemination events in at least three draft versions and finalised and made public by the end of the project.

Project-related professional social network

The LinkedIn group "CLAIM - The Common Agricultural Policy and Landscape Management" was created in August 2012 (http://www.linkedin.com/groups?home=&gid=4442379&trk=anet_ug_hm). After a period for internal test, the discussion group was activated.

At the time of writing this report, the CLAIM social network counts 270 members, mainly academics, professionals, but also decision/policy makers. The CLAIM LinkedIn group is a platform for dissemination of project related issues: news about the project and publicize publications; launch call for expertise and exchanges; information on positions, open discussions.

Organisation of plenary stakeholder laboratories (PSL)

A network of stakeholders from EU 27 countries has been established with the aim of supporting the Project activities through a participatory process, this network is called Plenary Stakeholder Laboratory – PSL

The PSL is composed of 31 members representing EU-wide institutions related to Agriculture, the Common Agricultural Policy and landscape provision and national representatives, mainly from public institutions in charge of the interface between CAP and landscape.

The PSL supplies advice on the development of the Project framework and gives support for information collection at the EU level, moreover it provides expertise for the discussion and validation of the proposed conceptual framework both at the preliminary stage and at the stage of implementation into the final manual.

The first PSL meeting and Stakeholder validation has been held in combination with the second project meeting in Amsterdam (NL), 12-14 September 2012. The Project and the preliminary conceptual framework were presented to the stakeholders, the feedbacks from the PSL members were collected and implemented in the prosecution of the project in particular for the accomplishment of WP3 activities. This meeting has also launched WP4 activities through the discussion of the case study design, already taking into account the outcomes of WP3 and feedback from the PSL.

The second PSL meeting was organized in Brussels, 23 July 2014 at the DG-JRC Building. The objectives of the meeting were the discussion and co-development of the Knowledge Platform drafted by the CLAIM partners. The target of the discussion was to translate the empirical information collected in the WP4 activities in an effective and useful policy tool able to support the Common Agricultural Policy and landscape valorisation. The PSL members commented the contents of the draft deliverables 5.21, 5-22, 5-23, and 5.24. In general, the PSL were very positive about the deliverables; suggestions for improvement were delivered and were incorporated in the latest version of each deliverable, finalised after the meeting. Much of the discussion concerned the policy recommendations arising from the project and presented as part of the D5.24 deliverable.

The PSL was also invited to the CLAIM final Conference held in Brussels on 13 November 2014.

Organisation of local stakeholders laboratory (LSL)

A local stakeholder laboratory was organised in each CSA. The first round of meetings of the LSL was completed in March 2013. The second round was finished in February 2014.

The LSL meetings aimed to collect comments and remarks on the CLAIM analytical framework developed in WP3 and to validate and implement the activities a, b, c and d of task 4.2 in each case study area (CSA).

The following meetings were held:

CSA 1 Ferrara Lowlands, (Italy)

1st LSL meeting was held in Comacchio at the base of the “Delta del Po” Regional Park on November 22nd 2012.

The 2nd LSL meeting was held in Comacchio at the base of the “Delta del Po” Regional Park on October 30th 2013.

CSA 2 Maerkische Schweiz, Brandenburg (Germany)

1st LSL meeting: January 24, 2013 in ZALF, Kaminzimmer, Eberswalder Str. 84, 15374 Muencheberg

2nd LSL meeting: August 29, 2013 in Headquarters Nature Park Märkische Schweiz, Lindenstrasse, 15375 Buckow, Germany

CSA 3 Mittleres Ennstal, Styria, (Austria).

1st LSL meeting: November 23 2012, Höhere Bundeslehr- und Forschungsanstalt für Landwirtschaft Raumberg-Gumpenstein, Raumberg 38, Austria - 8952 Irdning

2nd LSL meeting: January 30, 2014 in Höhere Bundeslehr- und Forschungsanstalt für Landwirtschaft Raumberg-Gumpenstein, Raumberg 38, Austria - 8952 Irdning

CSA 4 Winterswijk municipality (the Netherlands)

1st LSL meeting : was held in town hall of Winterswijk on the 7th of January 2013.

2nd LSL meeting: was held in Winterswijk town hall on February 13th 2014

CSA 5 Montoro (Andalusia, Spain)

1st LSL meeting : was held in IFAPA Research Centre (Alameda del Obispo) on the 23/11/2012

2nd LSL meeting: was held in IFAPA Research Centre (Alameda del Obispo) on 23 January 2014

3er LSL final meeting held in IFAPA Research Centre (Alameda del Obispo) on 21 November 2014

CSA 6 Chłapowski Landscape Park (Poland)

1st LSL meeting: was held in Place Turew, Chlapowski Lanscape Park on 11 March, 2013

2nd LSL meeting: was held in Place Turew, Chlapowski Lanscape Park on 25 February, 2014

CSA 7 Eğirdir (Isparta, Turkey)

1st LSL meeting: was held in Isparta on 08/01/2013

2nd LSL meeting: was held in Isparta on 03/02/2014

CSA 8 Pazardjik Region (Bulgaria)

1st LSL meeting: was held in Place Pazardjik on 16 November, 2012

2nd LSL meeting: was held in Place Pazardjik on 11/02/2014

CSA 9 Northern Corsica, (France).

1st LSL meeting: was held in Place INRA CORTE, Laboratoire de Recherches pour le Développement de l'Elevage on 19 décember of 2012

2nd LSL meeting: was held in Place INRA CORTE, Laboratoire de Recherches pour le Développement de l'Elevage on 19 December of 2013

Intermediate workshop with European Commission services (12 November 2013)

An intermediate workshop with the European Commission services was organised in Brussels, to allow for an illustration of preliminary findings of the Project, to discuss policy relevant issues with staff in charge of the European Agricultural Fund for Rural Development and Cohesion Policy funds, and to gain feed-back related to Project activities.

The discussion with the commission services was intended to be based on the preliminary framework developed in WP3 and corroboration/empirical evidence from selected case study results (WP4). Feedbacks and comments from the workshop is were considered for the development of the WP5 framework for evidence-based policy support. In connection to this event, an intermediate policy brief was also released, though it was agreed to keep this version restricted to workshop

One final conference in Bruxelles

The final conference was held in Brussels on 13 November, 2014 at the Representation of the Land Brandenburg to the EU. It was the ending event of the CLAIM project.

The goal of the conference was to present the results and achievements of CLAIM to a wide audience including the stakeholders that were involved during the project and to identify needs for further research in the field of agriculture, landscape management and rural economies.

The conference concerned the relevant issues tackled by the project: landscape and socio-economic development of rural regions across Europe, interrelations between competitiveness and provision of ecosystem services, and the role of the Common Agricultural Policy.

Final conference in each CSA

One conference was held in each case study area to present the main results of the project to a wide audience of local stakeholders: policy-makers, land-planning, institutions, members of the LSL, etc.

Date and place of the 9 local conferences:

CSA 1. Ferrara Lowlands, (Italy) 01 December 2014, Bologna

CSA 2 Maerkische Schweiz, Brandenburg (Germany) 20 February 2014, Buckow

CSA 3. Mittleres Ennstal, Styria, (Austria). 28 November 2014, Raumberg-Gumpenstein

CSA 4 Winterswijk municipality (the Netherlands) 12 May 2014, Winterswijk

CSA 5 Montoro (Andalusia, Spain). 21 November 2014, Cordoba

CSA 6 Chłapowski Landscape Park (Poland). 16 December 2014, Pałac Racot

CSA 7 Guneykent (Isparta, Turkey). 09 January 2015, Isparta

CSA 8 Pazardjik Region (Bulgaria). 05 December 2014, Plovdiv

CSA 9. Northern Corsica, (France). 02 December 2014, Castagniccia

Scientific papers

The results of project are published in 6 scientific peer review papers, of which 5 on ISI indexed journals. In addition there are at least 6 papers under review at the time of writing this report.

4 of them (of which 2 published) are being considered for a special issue on the Journal of Environmental Planning and Management (IF=1.455).

The project also prepared four organised sessions at different international conferences and provided 28 oral presentations at international conferences.

5. PLEASE PROVIDE THE PUBLIC WEBSITE ADDRESS (IF APPLICABLE), AS WELL AS RELEVANT CONTACT DETAILS.

The public website is: www.claimproject.eu

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