

Assessing the influence of landscape services on socio-economic benefits: Evidences from an Analytic Network Process approach in Austria, Italy and Spain

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The context:

- 40% of the EU land area is currently under agricultural management (EUStat, 2008).
- Around 13% of employment in rural areas is still generated by the primary sector with only an average 6% of rural gross value added produced by agriculture (SEGIRA, 2010)

- The context:

Objective of the work:

**to present a novel and integrated approach
to the analysis of the provision of services
from agricultural landscapes.**

- The context:



Landscape is a complex system in which bio-physical, social and economic elements interact.



The method:

- A stakeholder panel (30 questionnaires) in three CSAs of CLAIM
- Adapting the CLAIM cross-case activity (ANP)
- Disentangle effects of actors on services from agricultural landscapes



Austria



Italy



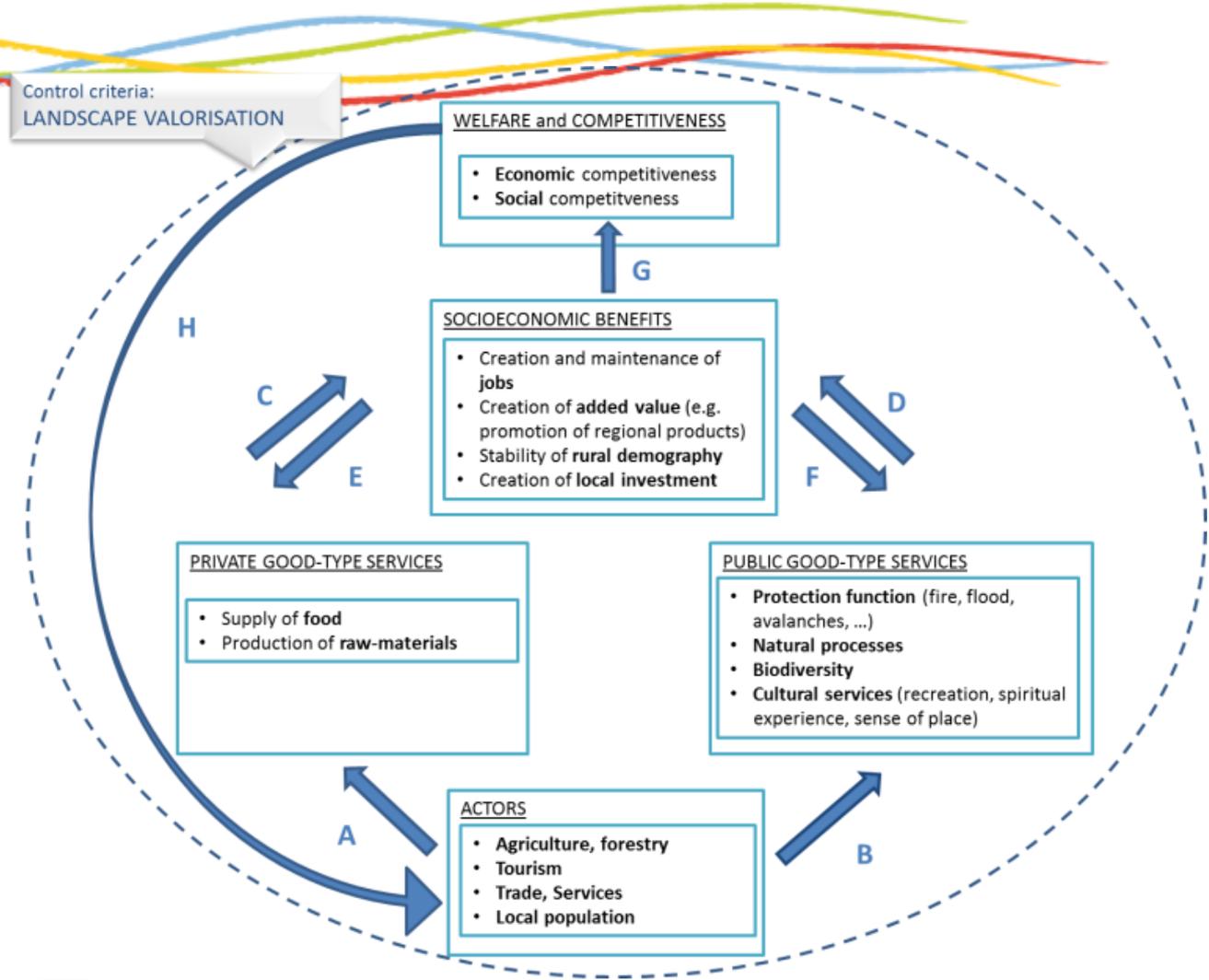
Spain

The case studies

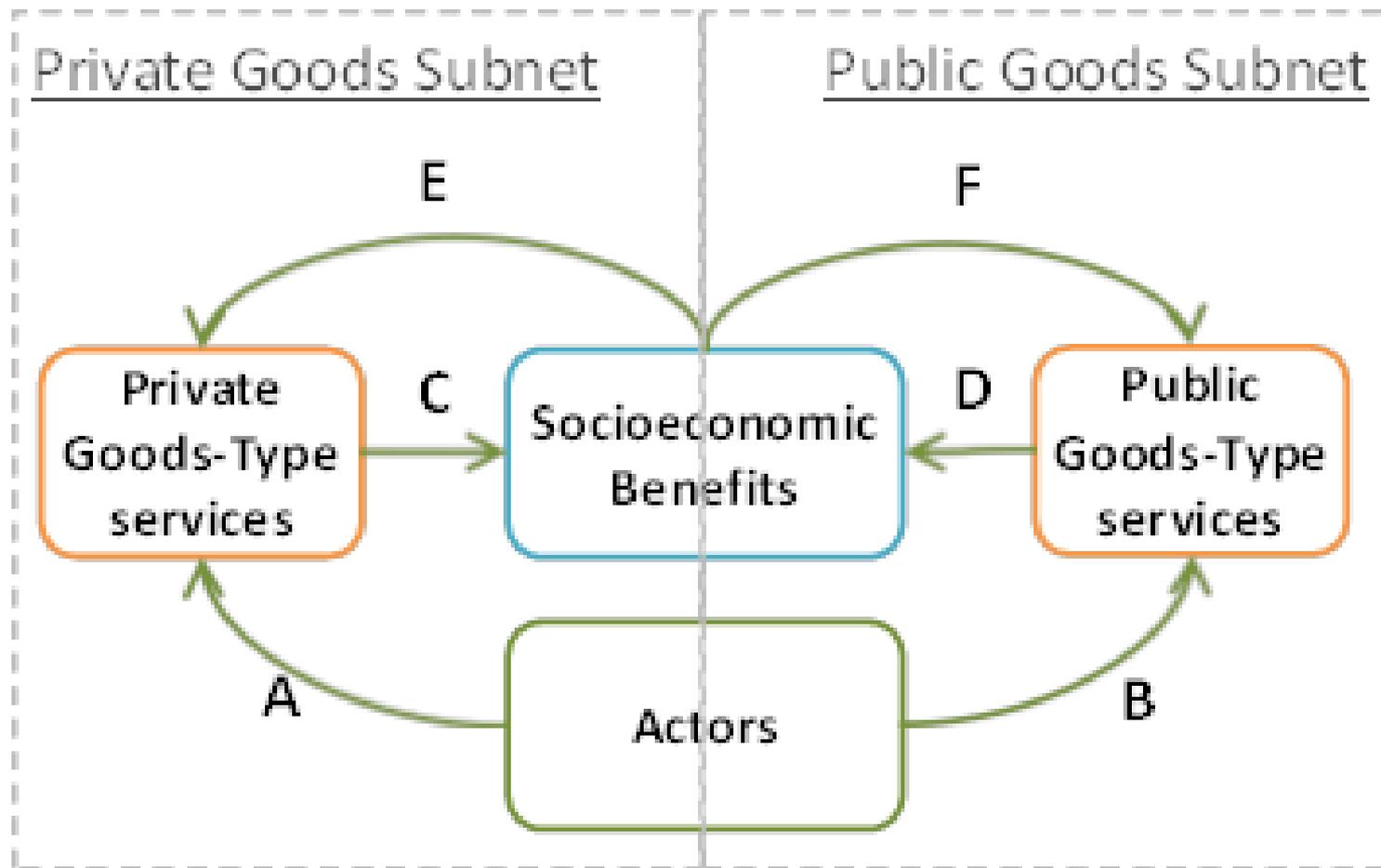
Claim

Supporting the role of the **C**ommon agricultural policy in **L**andscape valorisation: Improving the knowledge base of the contribution of landscape Management to the rural economy

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- the network

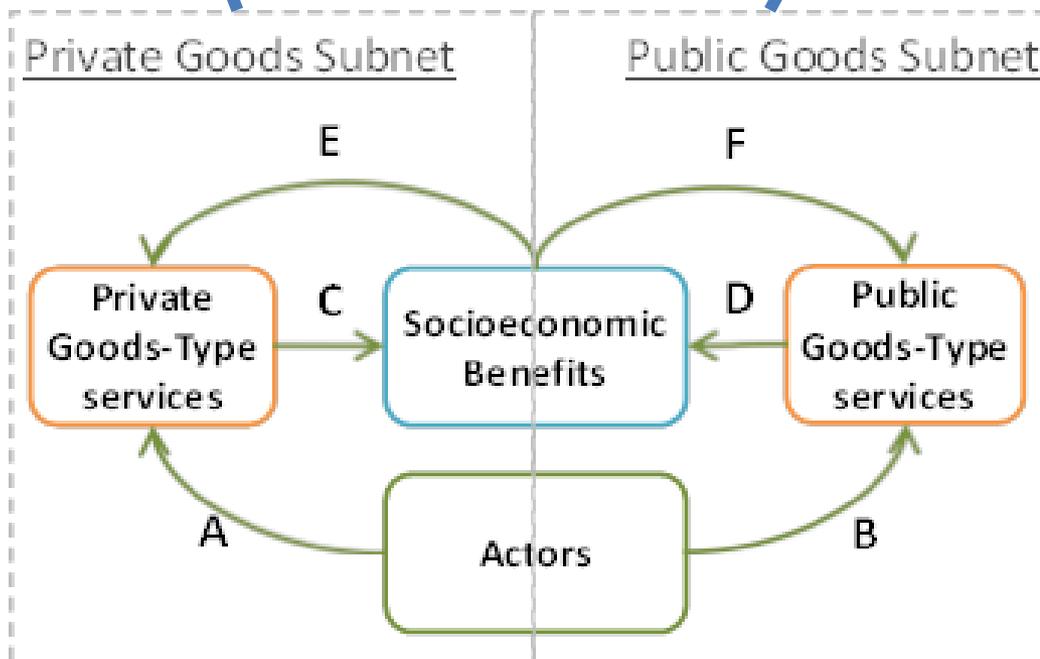


Super-Matrices

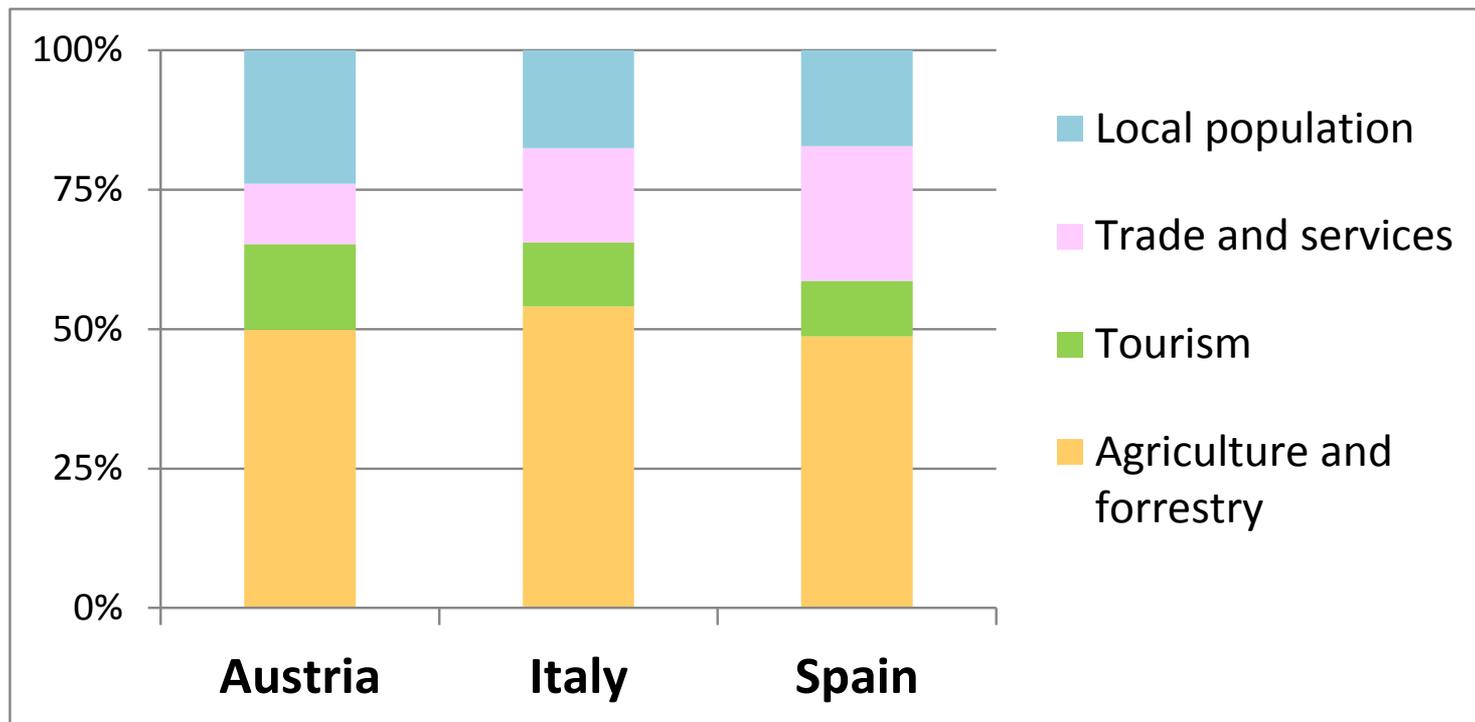
$$M_{pr} = \begin{matrix} \text{Actors (A)} \\ \text{Private goods-type services (PR)} \\ \text{Socio-economic benefits (S)} \end{matrix} \begin{pmatrix} \text{A} & \text{PR} & \text{S} \\ 0 & W_{A,PR} & 0 \\ 0 & 0 & W_{PR,S} \\ 0 & W_{S,PR} & 0 \end{pmatrix}$$

$$M_{pu} = \begin{matrix} \text{Actors (A)} \\ \text{Public goods-type services (PU)} \\ \text{Socio-economic benefits (S)} \end{matrix} \begin{pmatrix} \text{A} & \text{PU} & \text{S} \\ 0 & W_{A,PU} & 0 \\ 0 & 0 & W_{PU,S} \\ 0 & W_{S,PU} & 0 \end{pmatrix}$$

Normalized eigenvector



Total contribution of the Actors to the production of private and public goods in the agricultural landscapes case study.



Austria CSA

<i>Actors</i>	<i>Relative contribution</i>						<i>Total contribution</i>
	<i>Private-type services</i>			<i>Public-type services</i>			
	<i>Supply of food</i>	<i>Prod. of raw-materials</i>	<i>Protection function</i>	<i>Natural processes</i>	<i>Biodiversity</i>	<i>Cultural services</i>	
Agriculture & forestry	32.3	18.3	15.9	9.8	9.9	13.7	49.9
Tourism	26.7	14.2	17.1	10.3	13.9	17.7	15.3
Trade & services	35.1	20.9	13.1	8.2	9.5	13.1	10.9
Local population	27.7	14.9	17.3	11.4	12.1	16.6	23.9

Italy CSA

<i>Actors</i>	<i>Relative contribution</i>						<i>Total contribution</i>
	<i>Private-type services</i>			<i>Public-type services</i>			
	<i>Supply of food</i>	<i>Prod. of raw-materials</i>	<i>Protection function</i>	<i>Natural processes</i>	<i>Biodiversity</i>	<i>Cultural services</i>	
Agriculture & forestry	52.9	12.6	13.5	6.5	5.0	9.5	54.1
Tourism	43.1	8.7	18.5	9.2	6.9	13.6	11.4
Trade & services	53.4	12.4	14.1	6.3	4.6	9.3	16.9
Local population	42.0	11.7	20.4	8.3	5.9	11.8	17.6

Spain CSA

Actors	<i>Relative contribution</i>						<i>Total contribution</i>
	<i>Private-type services</i>		<i>Public-type services</i>				
	<i>Supply of food</i>	<i>Prod. of raw-materials</i>	<i>Protection function</i>	<i>Natural processes</i>	<i>Biodiversity</i>	<i>Cultural services</i>	
Agriculture & forestry	46.0	26.1	6.0	3.6	6.0	12.3	48.7
Tourism	30.9	18.6	11.1	5.7	9.7	24.0	9.9
Trade & services	55.3	30.9	3.4	1.8	2.6	6.0	24.2
Local population	39.8	20.7	8.4	5.0	8.3	17.8	17.2

Austria CSA

<i>Actors</i>	<i>Relative contribution</i>						<i>Total contribution</i>
	<i>Private-type services</i>			<i>Public-type services</i>			
	<i>Supply of food</i>	<i>Prod. of raw-materials</i>	<i>Protection function</i>	<i>Natural processes</i>	<i>Biodiversity</i>	<i>Cultural services</i>	
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Italy CSA

Actors	<i>Relative contribution</i>						<i>Total contribution</i>
	<i>Private-type services</i>			<i>Public-type services</i>			
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Spain CSA

<i>Actors</i>	<i>Relative contribution</i>						<i>Total contribution</i>
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• Main conclusions

- The methodology was a useful tool for eliciting stakeholders' knowledge concerning a mix of tangibles and non-tangibles. Better understanding of process is still required.
- The primary sector (LU) maintains a key role in the valorisation of agricultural landscapes (most notably driving food production).

• Main conclusions

- Food supply is the prominent service in terms of socio-economic benefits, irrespective of the actor and case study considered.
- On the contrary, the services that contribute the least to landscape valorisation are environmental services, and in particular natural processes and biodiversity. Well-known difficulties in translating public-goods in socio-economic benefits.

"Everyone in a complex system has a slightly different interpretation.

The more interpretations we gather, the easier it becomes to gain a sense of the whole." (M.J. Wheatley)

THANKS FOR THE ATTENTION!

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Cluster

Element

Actors

Agriculture & forestry

Tourism

Trade & services

Local population

Private goods-type services

Supply of food

Production of raw materials

Public goods-type services

Protection function

Biodiversity

Natural processes

Cultural services

Socio-economic benefits

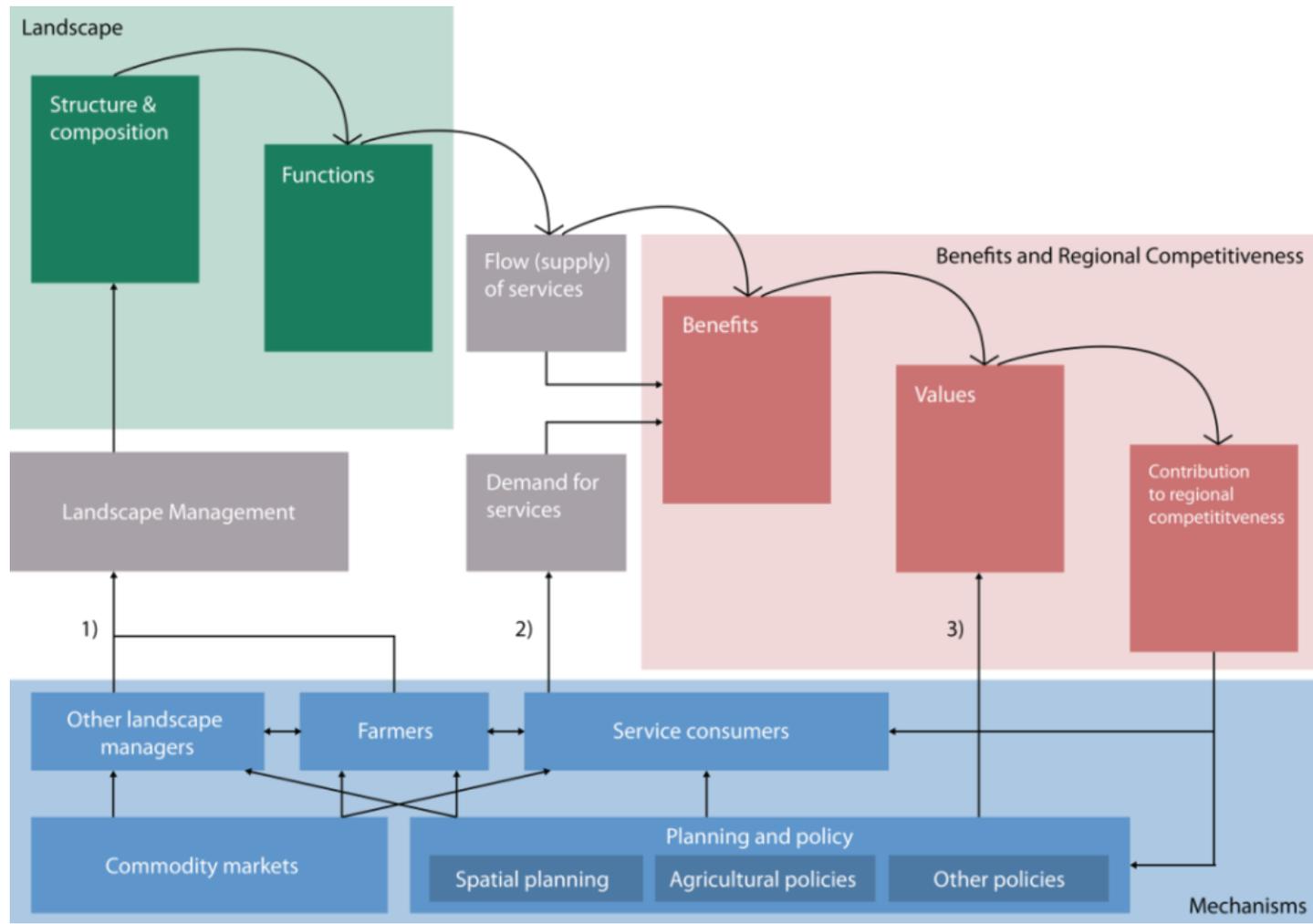
Creation of jobs

Creation of added value

Stability of rural demography

Local investment

<i>Variable</i>	<i>M. Ennstal (AU)</i>	<i>Ferrara (IT)</i>	<i>Montoro (SP)</i>
Area (km ²)	252	957	586
Altitude (m a.s.l.)	(+640;+2000)	(−3, +8)	(+140,+790)
Topography	Mountainous	Plain	Hilly
Protected areas/Total area (%)	58	29	47
UAA/Total area (%)	17	55	49
Main agricultural and forestry systems	Small structured, low intensive grassland management; dairy farming	Cereals intensive, horticulture industrial crops	Rainfed olive groves, dehesa, specialist herbaceous
Population trend (% last ten years)	−7 average	+2 (av.); more in the coast	+3
Population density (hab/km ²)	23	74	17
Type of territory	Predominantly rural	Predominantly rural	Predominantly rural



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Topography	Mountainous	Plain	Hilly
Protected areas/Total area (%)	58	29	47
UAA/Total area (%)	17	55	49
Main agroforestry systems	Small structured, rather low intensive grassland management; dairy farming	Cereals intensive, horticulture industrial crops	Rainfed olive groves, dehesa, specialist cereals, oilseed and vegetables
Population trend (% last ten years)	-7 average	+2 (average); concentration in the coastal strip	+3
Population density (hab/km2)	23	74	17
Employed population/Total population (%)	50	49	41
Jobs in tertiary sector/Total jobs (%)	65	47	35
Jobs in industry/Total jobs (%)	25	35	37
Jobs in agroforestry/Total (%)	10	18	28
Type of territory ¹	Predominantly rural	Predominantly rural	Predominantly rural