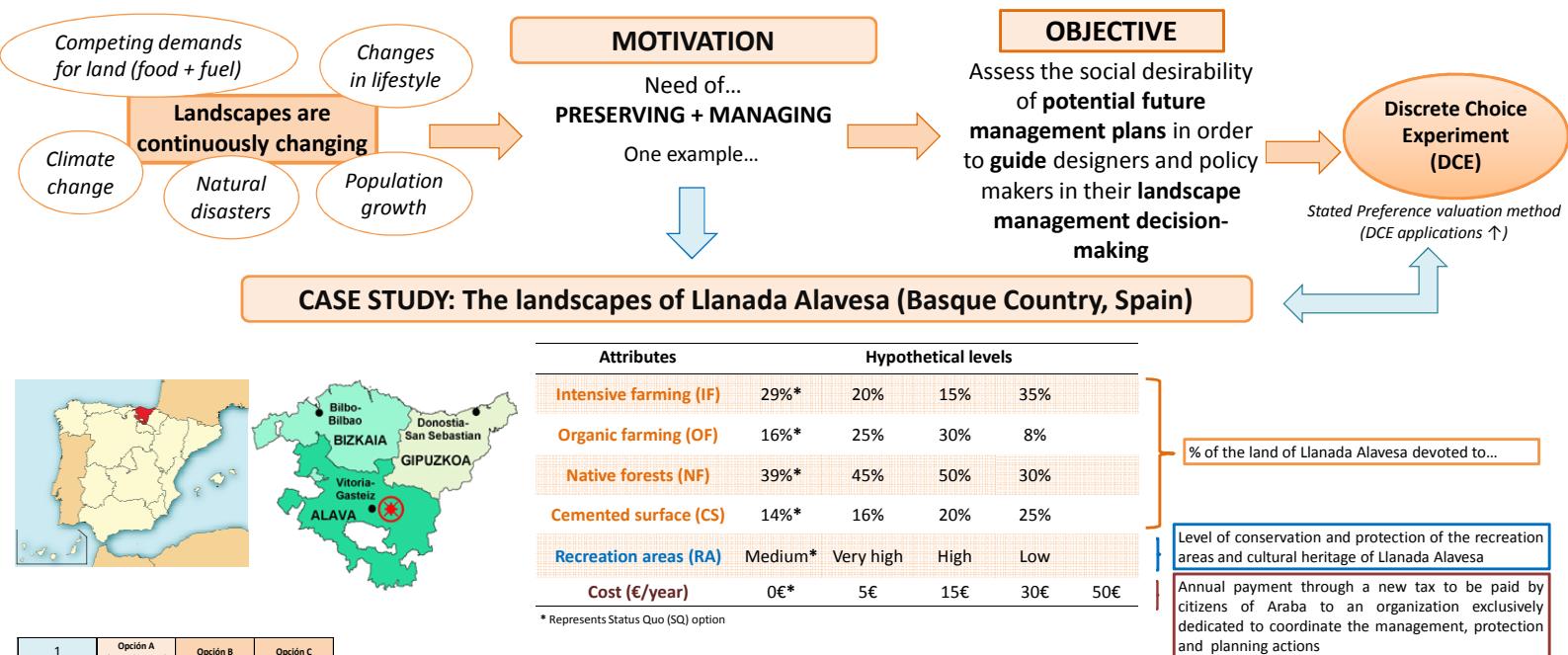


Economic valuation of landscapes: An application of a discrete choice experiment in Llanada Alavesa (Basque Country, Spain)

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1	Opción A (situación actual)	Opción B	Opción C
Act. Agraria intensiva % superficie	29 %	35 %	15 %
Act. Agraria ecológica % superficie	16 %	7 %	17 %
Bosques nativos % superficie	39 %	30 %	50 %
Superficie cementada % superficie	14 %	11 %	25 %
Zonas de recreo Estado de conservación	Medio	Muy alto	Alto
Coste Pago anual €	0 €	5 €	15 €
OPCIÓN ELEGIDA:	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B	<input type="checkbox"/> C

DCE design

Choice card

Respondents were asked to choose their preferred landscape management alternative

- 3 alternatives (unlabelled): Option A, Option B, Option C
- Option A is the **status quo** (% calculated by experts)
- Icons + images for facilitating choice task understanding
- 6 choice task were presented + *Test of rationality*
- Face to face interviews in ARABA
- Total interviews = 521 (Valid= 218)
- High number of **protests** (unfavorable current economic situation)
- Valid choices (**number of observations**) = $218 \times 6 = 1308$

Simulated Willingness To Pay (WTP) for changes in landscape attributes

	Intensive farming	Organic farming	Native forests	Cemented surface	Recreation areas
Mean (€/person/year)	0.37 (0.0501, 0.8339)	1.65 (0.2208, 3.6789)	1.00 (-0.3787, 2.9467)	0 (-4.1818, 4.1054)	6.80 (0.9065, 15.1066)

- Estimations were based on the **Random Parameter Logit (RPL) model** with observed (socio-demographic variables) and unobserved (random parameters) heterogeneity
- The **mean WTP to improve the conservation and protection of recreation areas and cultural heritage is the highest**, estimated at 6.80 € per person and year
- Then...the mean annual WTP for % increases in **organic farming > native forest > intensive farming > cemented surface** (null, its coefficient was not significant but its deviation yes)

Social benefits for Araba under different landscape management scenarios (million €)

Attributes	Promotion of intensive and artificial land use (Scenario 1)	Promotion of organic and native land use (Scenario 2)	Promotion of recreation areas and cultural heritage (Scenario 3)
Intensive farming (IF)	0.72 (0.7185, 0.7299)	-1.69 (-1.7030, -1.6765)	0
Organic farming (OF)	-4.25 (-4.2778, -4.2336)	4.79 (4.7628, 4.8124)	0
Native forests (NF)	-2.94 (-2.9607, -2.9216)	1.96 (1.9477, 1.9738)	0
Cemented surface (CS)	0	0	0
Recreation Areas (RA)	0	0	4.37 (4.3490, 4.3952)
TOTAL (million €)	-6.47 (-6.5245, -6.4284)	5.06 (5.0430, 5.0801)	4.37 (4.3490, 4.3952)

CONCLUSIONS

- While the promotion of an intensive and artificial land use entails **on average a social loss estimated at 6.47 million €** for the citizens of Araba, the promotion of organic and native land use as well as the promotion of cultural heritage and recreation areas bring **on average social benefits estimated at 5.06 and 4.37 million €, respectively**.
- According to the social preferences in Araba, the landscapes of Llanada Alavesa ought to be managed in a way that enhances **organic and native land use (highest social benefit among scenarios proposed)**
- Landscape policy decisions also critically depend on nuanced conflicts that may arise through proposed landscape management options ...
- For instance, it might be necessary to think of proper economic incentive mechanisms so that local farmers can be compensated if the proposed management plans significantly affect their activity