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Citizen preferences on financing the protection and restoration of biodiversity: results from a survey in Italy

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Italian Learning Sites

1. Appennino-Tosco Emiliano
2. LIFE Brenta
3. BIOCLIMA

Legend

- BIOCLIMA
- LIFE Brenta
- Appennino-Tosco Emiliano

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BIOCLIMA

Standardizing public-private contracts and data sharing to scale-up mainstream finance

www.etifor.com/en/portfolio/bando-bioclima/

Location: Lombardy region, Northern Italy

LS responsible contact person: Anna Biasin (ETI)

Nature-based Solution (NbS) Action: Management and development of multifunctional forests and other ecosystems for ecosystem services

Description: developed as part of the LIFE project "IP GESTIRE 2020". Public-private partnership to unlock new funding methods to support nature and nature's benefits to people

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BIOCLIMA

Riverine areas and forests

 Parco Lombardo della valle del Ticino PONTE VECCHIO (MI)	 Parco Adda Sud LODI (LO)	 Parco Oglio Sud CALVATONE (CR)	 Parco Regionale Oglio Nord ORZINUOVI (BS)	 Isola Maria Luigia MARTIGNANA DI PO (CR)	 Parco del Serio RIPALTA ARPIA (CR)
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Lowland areas and forests

 Riserva Naturale delle Torbierie del Sebino PROVINGLIO D'ISEO (BS)	 Comune di Canneto sull'Oglio CANNETO SULL'OGGIO (MN)
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Mountain areas and forests

 Parco Orsile Valtellinesi ALBOSAGGIA (SO)	 Parco Campo dei Fiori BRINZO (VA)	 Parco Spina Verde COMO	 Riserva Naturale Val di Mello VAL MASINO (SO)
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Comparing different policy mechanisms



Multiple financing mechanisms are possible, but which will work best?

Our research questions:

1. Which financing mechanism do residents prefer?
2. How much are people willing to pay/contribute annually?
3. (What are the factors affecting WTP/WTC?)



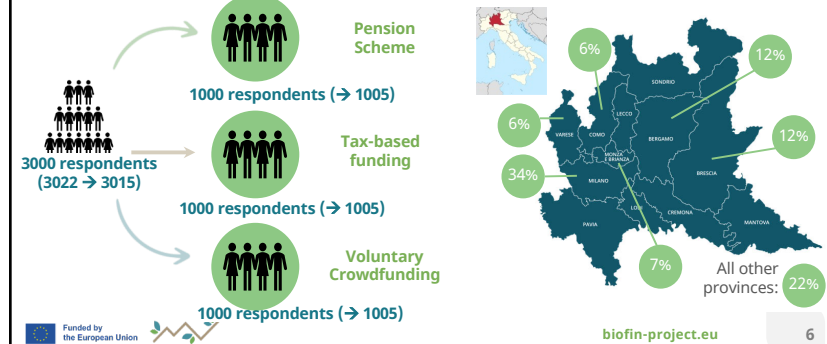
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Targeted population: the panel

Survey on nature-positive investment preferences in Lombardy
Section III: Funding Mechanisms for Nature-based Solutions



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The three mechanisms explained

Pension scheme	Regional Tax	Crowdfunding
Optional redirection of pension funds to nature projects	Dedicated 5-year regional tax for conservation	Voluntary platform for direct contributions
5% lower annual returns than standard pension	Applied to all Lombardy residents (households)	Managed by Region + established platforms
Professional management	Tax collection infrastructure	30% tax deduction available
Long-term commitment	Stable, predictable funding	Choose specific projects
WTC (willingness to contribute)	WTP (willingness to pay)	WTC

All mechanisms: 5-year commitment for nature conservation projects in Lombardy

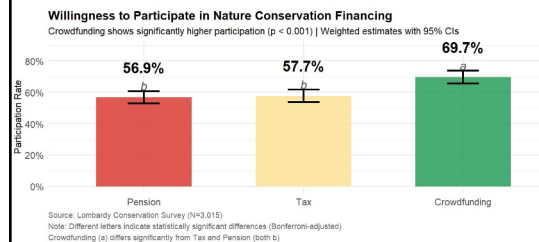


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Participation rates



Crowdfunding:
12% higher than Tax
12.9% higher than Pension

Regional Tax:
0.9% higher than Pension
(not significant)



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WTC/WTP amounts: main results

Willingness to Pay by Financing Mechanism

Annual contribution (€/year) among participants | Weighted estimates

Mechanism	Mean	95% CI	Median	IQR
Pension	€114.34	[€108.66, €120.01]	€100.00	€70.00 - €154.00
Tax	€82.66	[€76.98, €88.35]	€80.00	€40.00 - €102.00
Crowdfunding	€83.15	[€77.12, €89.17]	€70.00	€40.00 - €105.00

Note: Statistics computed only for respondents who said 'Yes' to participating

- **Participation rate (Yes):** Crowdfunding (69.7%) > Pension & Tax (57-58%)
- Among those **willing to participate**, Pension has the highest WTC = contribution intensity



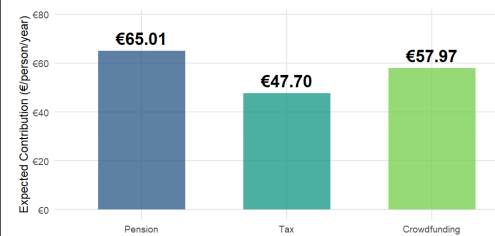
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Expected Contribution

Contribution = Participation rate x mean WTP/WTC



Pension:
 $114.34 \times 56.9\% = 65.01 \text{ €/pers/year}$

Tax:
 $82.66 \times 57.7\% = 47.70 \text{ €/pers/year}$

Crowdfunding:
 $83.15 \times 69.7\% = 57.97 \text{ €/pers/year}$



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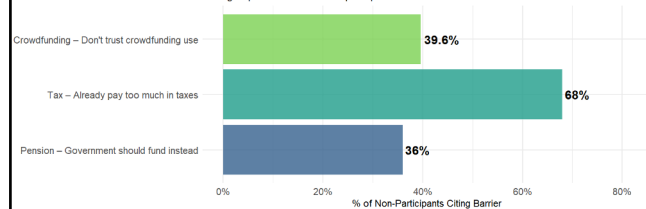


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Main barriers to participation

Top Barrier by Financing Mechanism

Among respondents who declined participation



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Who participates? Age

Logistic Regression: Predictors of Participation

Coefficients (standard errors) | Dependent variable: Willingness to participate (1=Yes, 0=No)

	All	Pension	Tax	Crowdfunding
Intercept	1.530 (1.261)	2.188 (1.426)	1.441 (1.475)	-0.898 (0.903)
Age: 25-34	0.124 (0.291)	-0.717 (0.498)	0.369 (0.468)	1.234* (0.628)
Age: 35-44	-0.340 (0.285)	-0.753 (0.494)	-0.618 (0.458)	0.738 (0.614)
Age: 45-54	-0.534 (0.281)	-0.966* (0.482)	-0.688 (0.455)	0.356 (0.601)
Age: 55-64	-0.289 (0.276)	-0.835 (0.478)	-0.366 (0.437)	0.837 (0.605)
Age: 65+	-0.333 (0.327)	-0.832 (0.545)	-0.307 (0.540)	0.714 (0.705)

Crowdfunding:
 Young adults (25-34) significantly *more* likely to participate

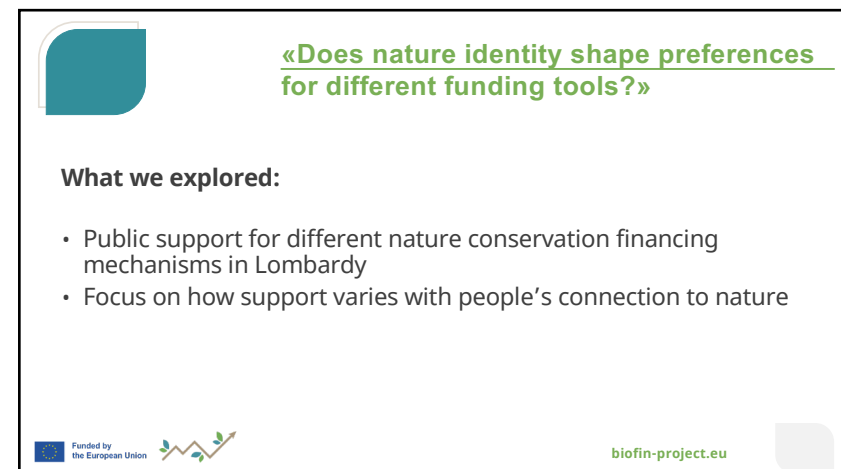
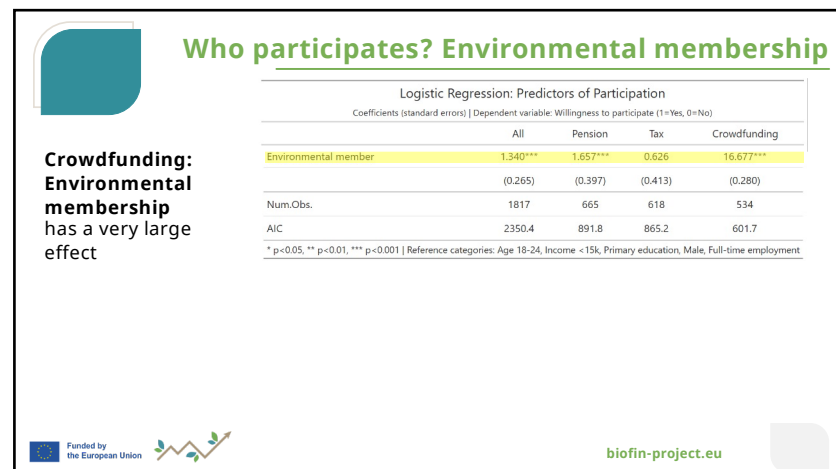
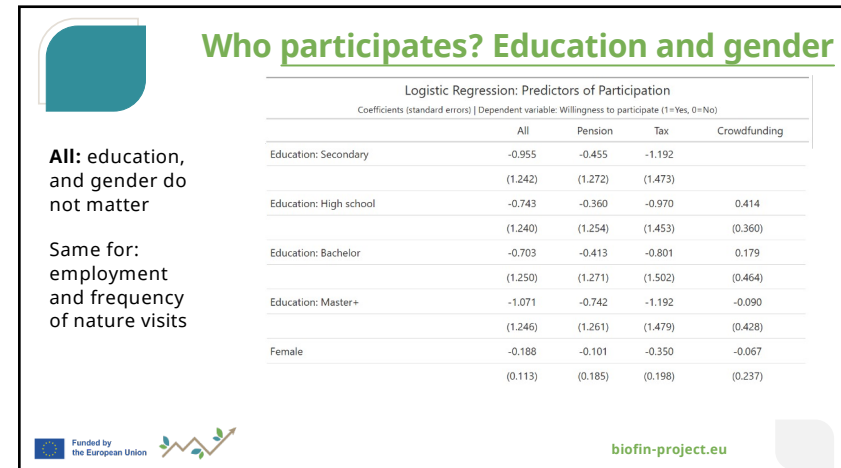
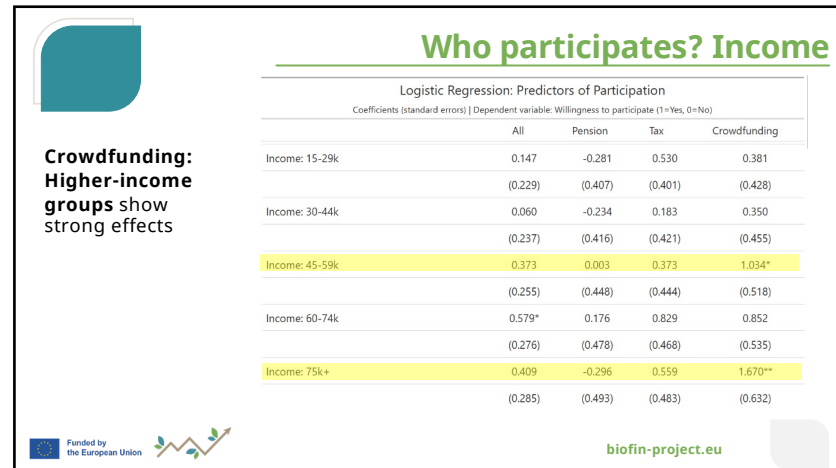
Pension: Middle-aged respondents (45-54) significantly *less* likely to participate



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Nature Identity Index

What it measures:

Respondents' emotional, cognitive, and moral connection to nature

Items included (6 statements):

- Preference for wilderness experiences
- Awareness of environmental impacts of own actions
- Spiritual connection to nature
- Attention to wildlife
- Nature as part of personal identity
- Connection to all living things

Likert scale: 1 (Disagree strongly) ... 5 (Agree strongly)



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Nature Identity groups

Respondents were divided into **three groups** based on the index distribution:

- **Low Nature Identity**
- **Medium Nature Identity**
- **High Nature Identity**

Grouping based on **quantiles of the weighted distribution**

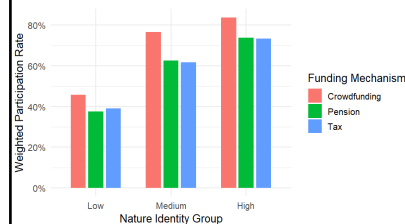


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Group comparison: support for financing mechanisms



Stronger nature identity associated with higher participation across funding mechanisms

Low Nature Identity the lowest participation: ~40–45% Crowdfunding, <40% Pension and tax

Medium Nature Identity: 60–75%

High Nature Identity: highest participation >70–80%

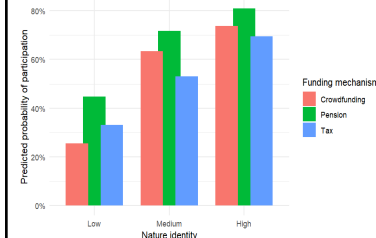


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A regression analysis: how Nature Identity shapes support for different mechanisms



Higher Nature Identity: systematically more likely to support biodiversity financing, independently of income, age, gender, and education

Nature identity matters

- **most** for mechanisms perceived as voluntary or personally meaningful
- **less**, but still clearly, for tax-based solutions

When covariates are fixed, pension looks especially attractive for high-Nature Identity individuals

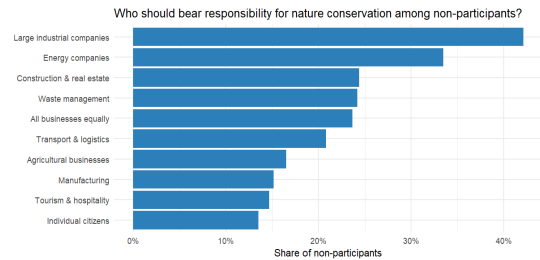


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Opt-outs: who should pay then?



Non-participants attribute responsibility for nature conservation to large economic actor (industrial and energy-related sectors) while assigning comparatively less responsibility to individual citizens

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Main takeaways

Crowdfunding = highest participation rate (69.7%), Pension attracts fewer but higher-value contributors (€114/year). Tax in between (lowest rate)

Nature identity (= emotional, cognitive, and moral connection to nature) as the **strongest predictor of participation** across all financing mechanisms, but with **different profiles**:

- **Crowdfunding** → broadest base (younger, higher-income, environmentally engaged citizens)
- **Pension** → environmental commitment but face resistance from middle-aged groups concerned about financial returns
- **Tax** → minimal demographic differentiation but encounters trust deficits and perceived tax burden

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