Sustainability Consumer and Farming Practices: A Multi-Country Analysis Using Discrete Choice Experiments

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CHOICE Horizon Program

Mainstream mitigation pathways for a climate-conscious change in the food chain

- CHOICE is a Horizon Europe project using Integrated Assessment Models (IAMs) plus insights from marketing and social sciences to influence food-related behaviors and support climate mitigation policies.
- It focuses on demand-side change, encouraging more sustainable diets and lifestyle choices in agriculture, food, and land use to help limit global warming to 1.5°C.
- Backed by €5M in EU funding, the project runs for 36 months with 16 partners, testing its strategies through pilot campaigns across five global sites.

Pilot campaigns

- Environmental labels in supermarket baskets (Greece)
- Environmental labels in supermarket baskets (Austria)
- Suboptimal produce and food waste (South Africa)
- Sustainable olive farming (Andalusia)
- Sustainable coffee production (Colombia)

Discrete Choice Experiments (DCEs)

Discrete Choice Experiments (DCEs) are a stated-preference method used to elicit individuals' preferences by asking them to choose between hypothetical alternatives described by multiple attributes.

By systematically varying these attributes, DCEs allow researchers to estimate the relative importance of product or policy characteristics and quantify trade-offs, including willingness to pay or accept.

In the context of the CHOICE project, DCEs are employed to examine consumer and producer decision-making across different agri-food systems, with a focus on sustainability, environmental impact, and economic incentives.

DCE 1: Environmental labels in supermarket baskets (Greece & Austria)

Objective: Assess how consumers value environmental labels while keeping macronutrient composition constant.

Labeled as: Plant-based; Mediterranean diet; Animal-based, baskets

Focus: Sustainability of food baskets.

Attributes:

- Nutritional quality (Low; Medium; High)
- Environmental impact (Low; Medium; High)
- Presence of Inoqo labels (No; Environmental; Full: environment, animal welfare, nutrition)
- Price of the basket (20; 25; 30 euros)

DCE 1: Environmental labels in supermarket baskets (Greece & Austria)

Tests have been carried out regarding the CHOICE experiment (DCE)

2 example cards from the relevant DCE are shown

Changes are made to fix certain issues

Final DCE is made in Google Forms format to be distributed to the participants

Card 1

Attributes	*Plant-based basket*	*Mediterranean diet basket*	*Animal-based basket*
Nutritional quality	 LOW	 MEDIUM	 HIGH
Environmental impact	LOW	MEDIUM	HIGH
Inoqo label			
Price	 20€	 25€	 30€
I choose	☐	☐	☐

Card 4

Attributes	*Plant-based basket*	*Mediterranean diet basket*	*Animal-based basket*
Nutritional quality	 LOW	 MEDIUM	 HIGH
Environmental impact	MEDIUM	HIGH	LOW
Inoqo label			
Price	 25€	 30€	 20€
I choose	☐	☐	☐

DCE 2: Suboptimal produce and food waste (South Africa)

Objective: Measure willingness to purchase imperfect produce to reduce retail food waste and CO_2 emissions.

Focus: Consumer-driven waste reduction.

Attributes:

- Freshness (Critical; Suboptimal; Fresh)
- Nutritional content (Reduced; Limited; Best)
- Food waste – unsold quantity (Low; Medium; High)
- Price (R 6/kg, R12/kg, R18/kg)

DCE 2: Suboptimal produce and food waste (South Africa)

Tests are currently carried out regarding the CHOICE experiment (DCE)

2 example cards from the relevant DCE are shown

Changes may be needed to fix probable issues

Card 3

Attributes	*Option A*	*Option B*	*No buy*
Freshness	 FRESH	 CRITICAL	
Nutritional content	 REDUCED	 LIMITED	I opt not to buy any of the two
Food waste	 MEDIUM	 HIGH	
Price	R12/kg	R18/kg	
I choose	☐	☐	☐

Card 6

Attributes	*Option A*	*Option B*	*No buy*
Freshness	 CRITICAL	 SUBOPTIMAL	
Nutritional content	 LIMITED	 BEST	I opt not to buy any of the two
Food waste	 HIGH	 LOW	
Price	R12/kg	R18/kg	
I choose	☐	☐	☐

DCE 3: Sustainable olive farming (Andalusia)

Objective: Evaluate willingness to adopt climate-resilient agricultural practices in water-scarce regions.

Focus: Sustainable olive production.

Attributes:

- Olive yield (3000; 6000; 9000 kg/ha)
- Soil health (No tillage; Cover crops; Organic ammendment)
- Water use (Drip irrigation; Regulated deficit irrigation; Drought-resistant varieties)
- Pesticide use (Synthetic chemical; Natural pesticides)
- Monetary compensation per acre (250; 500; 750 €/ha)

DCE 3: Sustainable olive farming (Andalusia)

Tests have been carried out regarding the CHOICE experiment (DCE)

2 example cards from the relevant DCE are shown

Changes are made to fix certain issues

Final DCE is made in Google Forms format to be distributed to the participants

Card 2

Attributes	*Option A*	*Option B*	*Status quo*
Olive yield (annual)	 3000kg/ha	 6000kg/ha	
Soil health	 Organic amendments	 No tillage	
Water use	 Drought-resistant varieties	 Regulated deficit irrigation	No change
Pesticide use	 Synthetic chemical pesticides	 Natural pesticides	
Compensation (annual)	 €250/ha	 €500/ha	
I choose	☐	☐	☐

Card 5

Attributes	*Option A*	*Option B*	*Status quo*
Olive yield (annual)	 9000kg/ha	 3000kg/ha	
Soil health	 Organic amendments	 No tillage	
Water use	 Drip irrigation	 Drought-resistant varieties	No change
Pesticide use	 Natural pesticides	 Synthetic chemical pesticides	
Compensation (annual)	 €750/ha	 €250/ha	
I choose	☐	☐	☐

DCE 4: Sustainable coffee production (Colombia)

Objective: Examine the adoption of water-saving and environmentally sustainable coffee farming practices.

Focus: Reducing water intensity and improving sustainability.

Attributes:

- Agroforestry (No; Partial; Intensive)
- Fermentation procedure (Traditional; Demucilager; Hybrid)
- Fixed monetary support for transition (2; 4; 6 Millions COP/a)

DCE 4: Sustainable coffee production (Colombia)

Tests have been carried out regarding the CHOICE experiment (DCE)

1 example card from the relevant DCE is shown

Changes were made to fix certain issues

Final DCE has been made and distributed to the participants (1 example card from the relevant DCE is shown below)

Card 1

Attributes	*Option A*	*Option B*	*Status quo*
Agroforestry	 YES	 NO	
Ecomills	 NO	 YES	No change
Initial capital	 20 millones COP/ha	 40 millones COP/ha	
I choose	☐	☐	☐

Tarjeta 3

Atributos	Opción A	Opción B	Status quo
Agroforestería	 Sombra Intensiva	 No Agroforestería	No cambio
Tratamiento	 Demucilaginador	 Híbrido	
Capital Inicial	 2 Millones COP/a	 4 Millones COP/a	
	☐	☐	☐

Conclusion

The four DCEs collectively provide a structured approach to understanding how **consumers** and **producers** make trade-offs between economic, environmental, and nutritional attributes across diverse agri-food contexts.

While the experimental designs are largely established, the project is still in progress, and insights at this stage remain preliminary.

Early findings will help validate the relevance of selected attributes and guide refinement of the survey instruments.

Next Actions

Finalize testing for the South African pilot to ensure clarity, realism, and robustness of the DCE design.

Implement the finalized South African DCE in Google Forms and proceed with data collection.

Complete implementation of all remaining DCE surveys across case studies.

Generate and analyze preliminary results from all DCEs to identify initial preference patterns and trade-offs.

Use early insights to refine models and support subsequent, more detailed analysis.

Thank you!

Questions?