

Centre for Global Food System Resilience. *Lunchtime Conversation, 13.02.2025*

Socio-economic levers to scale up more sustainable farming

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OUTLINE:

A recent **publication** (1) and ensuing **draft research proposal** (2):

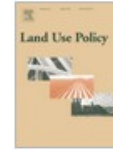
1 — *What influences individuals' decisions to adopt sustainable land-use practices?*

2 — *What will it take to transform a region's productive farming sector into more sustainable agriculture?*





Land Use Policy
Volume 151, April 2025, 107468



Drivers to adopt agroforestry and sustainable land-use innovations: A review and framework for policy

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<https://doi.org/10.1016/j.landusepol.2025.107468> ↗

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Highlights

- Complex factors drive individuals' decisions to adopt sustainable land-use practices.
- A framework of potential drivers of agroforestry adoption can guide policy design.
- Drivers inventoried from qualitative, quantitative and review studies.
- The framework comprehends behavioural, socioeconomic and physical drivers.

What influences individuals' decisions to adopt sustainable land-use practices?

Review of:

- **Empirical studies** analysing adoption:
 - Adoption of what?
↑ **outcome**
 - Driven by what?
↑ **predictors**
- **Review studies** (*of sustainable agricultural innovations, conservation agriculture, agroforestry, soil health practice...*)

The predictors used and their measurement are diverse, e.g.

Supplementary Information	
A. Household decisions over land use	
B. Description of recent reviews	
▼ C. Papers reviewed to develop the inventory of predictors	
Frequency of methods	
List of papers	
D. Categories of predictors and examples of variables	
E. Proportion of studies that consider each driver	
▼ F. Summary of other frameworks considered in the review	
Meijer et al. 2015	
Sulaiman et al 2021	
Rosário et al 2022	
Thompson et al 2023	
Amare & Darr 2020	
Dessart et al 2019	
Foguesatto et al. 2020	
Knowler & Bradshaw, 2007	
Begho et al, 2022	
Priya and Singh (2022)	
Barbosa Junior, et al., 2022	
Anibaldi et al, 2021	
Serebrennikov et al., 2020	

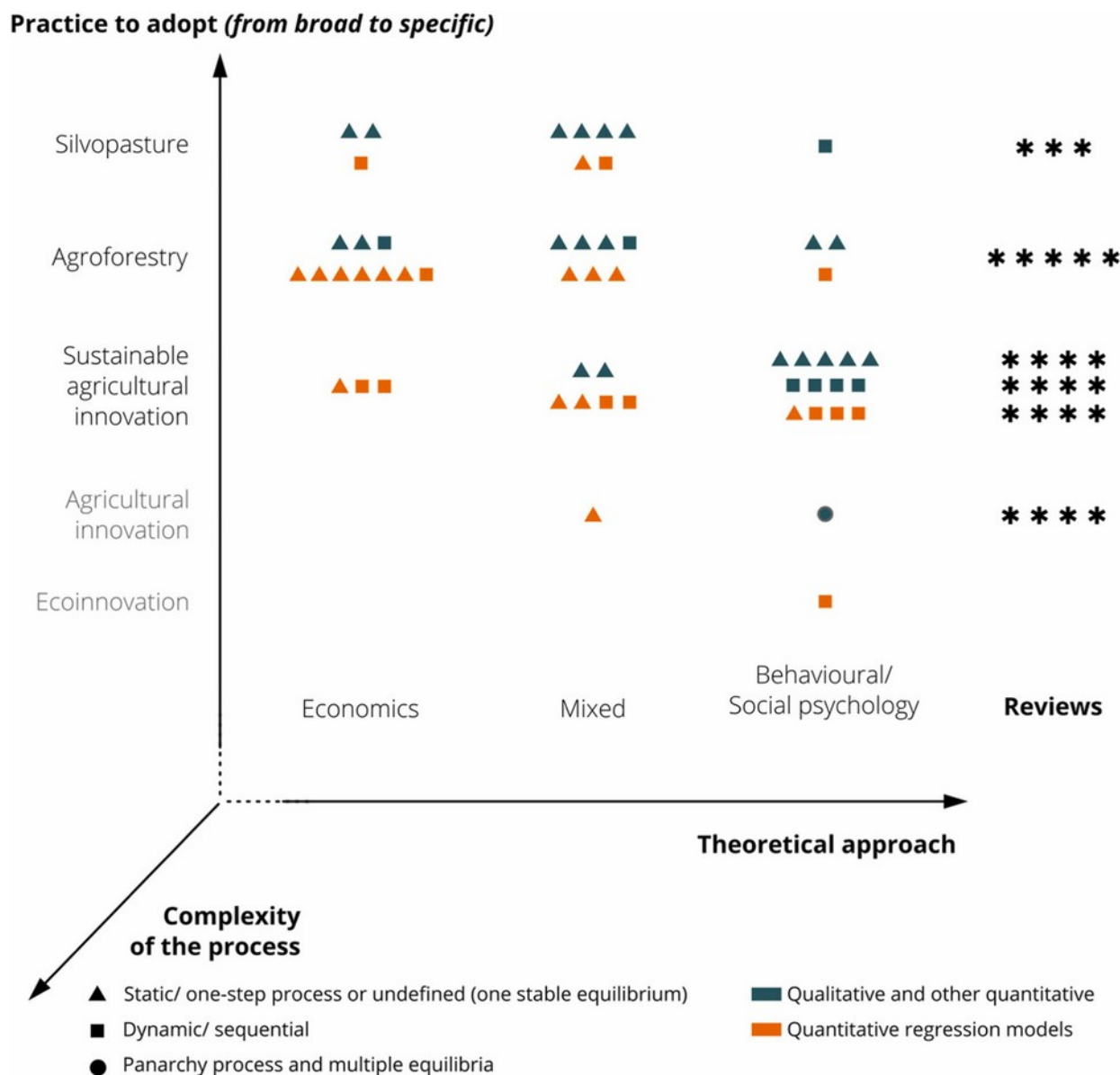
SUPPLEMENTARY INFORMATION for
Agroforestry adoption predictors' framework - SI 14

		<i>structural_social_capital_participating_in_local_decisionmaking</i>
		<i>bridging_social_capital_hous_linked_to_gov_structures</i>
		<i>house_participates_in_protection_of_forest</i>
		<i>knows_other_org_farmer</i>
		<i>friends_or_relatives_own_STS_peer_group_behavior</i>
		<i>social_info</i>
	Subjective norms: social norms and perceived social pressure	<i>subj_norms</i>
		<i>social_satisfying_landscape_users_important</i>
		<i>social_being_perceived_top_one_important</i>
		<i>social_showing_env_commitment_important</i>
		<i>econ_public_support_important</i>
Knowledge and information	Access to information	<i>knowledge_of_practice</i>
		<i>frequency_using_media</i>
		<i>access_to_info</i>
Knowledge and information	Extension and training	<i>contact_w_agrofo_extension_agents</i>
		<i>technical_assistance</i>
		<i>consultation_and_advising_frequency</i>
		<i>community_influenced_by_extension_institution</i>
		<i>been_to_extension_institution_campus</i>
		<i>someone_at_household_works_at_extension_institution</i>
		<i>how_recently_hosted_extension_inst_student</i>
	<i>attended_extension_meeting</i>	
Technical feasibility	Characteristics of the innovation	<i>complex</i>
Economically rational motives	Costs and benefits	<i>farm_gate_price_of_good</i>
		<i>good_market_price</i>
		<i>good_shadow_price_instrumental</i>
		<i>econ_cutting_costs_important</i>
		<i>costs</i>
	<i>returns</i>	

Structured review for conceptual diversity, of 79 studies

(not a systematic review for quantitative evidence)

Scope of adoption studies reviewed, by practice, theoretical approach, and complexity of the process. Each icon represents one study.



External/ contextual

Related to the practice

Intrinsic to the individual

FARM AND HOUSEHOLD CHARACTERISTICS

Land

Endowment - Farm size
Security - Land tenure

Biophysical: ecology and geography

Quantity of farm production

Livelihoods

Pathways

Farming experience
Current farming practice
Successor factor

Household labour and demographics

Household income and socio-economic status

SOCIAL ENVIRONMENT AND INSTITUTIONS

Institutions

POLICY INTERVENTION

Participatory process
Logistics
Incentives

Networks and communication channels

Social norms and social pressure

KNOWLEDGE AND INFORMATION

Access to information (extension and training)

Trust in the source of information

TECHNICAL FEASIBILITY

Characteristics of the innovation

ECONOMICALLY RATIONAL MOTIVES

Costs and benefits
Credit
Markets

INDIVIDUAL

Objective

Age, education, gender, health status

Subjective

Beliefs

Values and interests

Personal norms

Personality

Perceptions

Problem awareness

Perception of technology

Risk

Long time-lag

Behavioural control/ self-efficacy

Attitudes

Environmental attitude

Behavioural intention

Applications: What the framework can be used for?

Ex-ante (before a policy)

- Assess what levers to incentivise and barriers to overcome (a *Worksheet* →)
- Evaluate the pre-conditions for implementation: whether certain drivers are present in the specific case(s) and, if absent, how severe that might be and how it can be mitigate

Ex-post

- Select key variables in empirical analysis, from a comprehensive range
- Identify what predictors to use to explain adoption

What potential barriers can hinder potential participants from trying and continuing this new practice?

Barrier/ enabler	Question	Possible solutions
KNOWLEDGE AND INFORMATION		
<input checked="" type="checkbox"/> Access to information		
<input checked="" type="checkbox"/> Extension and training		
<input checked="" type="checkbox"/> Trust in the source of information		
TECHNICAL FEASIBILITY: innovation characteristics		
ECONOMICALLY RATIONAL MOTIVES		
<input checked="" type="checkbox"/> Costs and benefits		
<input checked="" type="checkbox"/> Credit		
<input checked="" type="checkbox"/> Markets		
FARM AND HOUSEHOLD CHARACTERISTICS		
Land:		
<input checked="" type="checkbox"/> Farm size		
<input checked="" type="checkbox"/> Land tenure		
<input checked="" type="checkbox"/> Biophysical factors		
<input checked="" type="checkbox"/> Livelihoods		
<input checked="" type="checkbox"/> Quantity of farm production		
Pathways:		
<input checked="" type="checkbox"/> Farming experience		
<input checked="" type="checkbox"/> Current farming practice		
<input checked="" type="checkbox"/> Successor factor		
<input checked="" type="checkbox"/> Income and socio-economic status		
<input checked="" type="checkbox"/> Labour		
SOCIAL ENVIRONMENT AND INSTITUTIONS		
<input checked="" type="checkbox"/> Networks and communication channels		
<input checked="" type="checkbox"/> Subjective norms and social pressure		
<input checked="" type="checkbox"/> Policy intervention		
<input checked="" type="checkbox"/> Participatory process		

Scale out:

**“Impacting greater numbers; replication and dissemination,
increasing number of people or communities impacted”**

(Moore et al 2015, ‘Strategies for social innovation and large systems change’)

What next?

New research proposed

Overall problem:

Conventional farming impacts on biodiversity, water pollution & scarcity, soil degradation, smallholder livelihood dependence on the agrochemical industry, geopolitical and local struggles around nitrogen and phosphorus, etc.

Alternatives, e.g. agroecology, organic, regenerative, zero input, climate-smart proposed but rarely implemented beyond individual farms. Financial costs-benefit arguments insufficient to explain the lack of uptake.

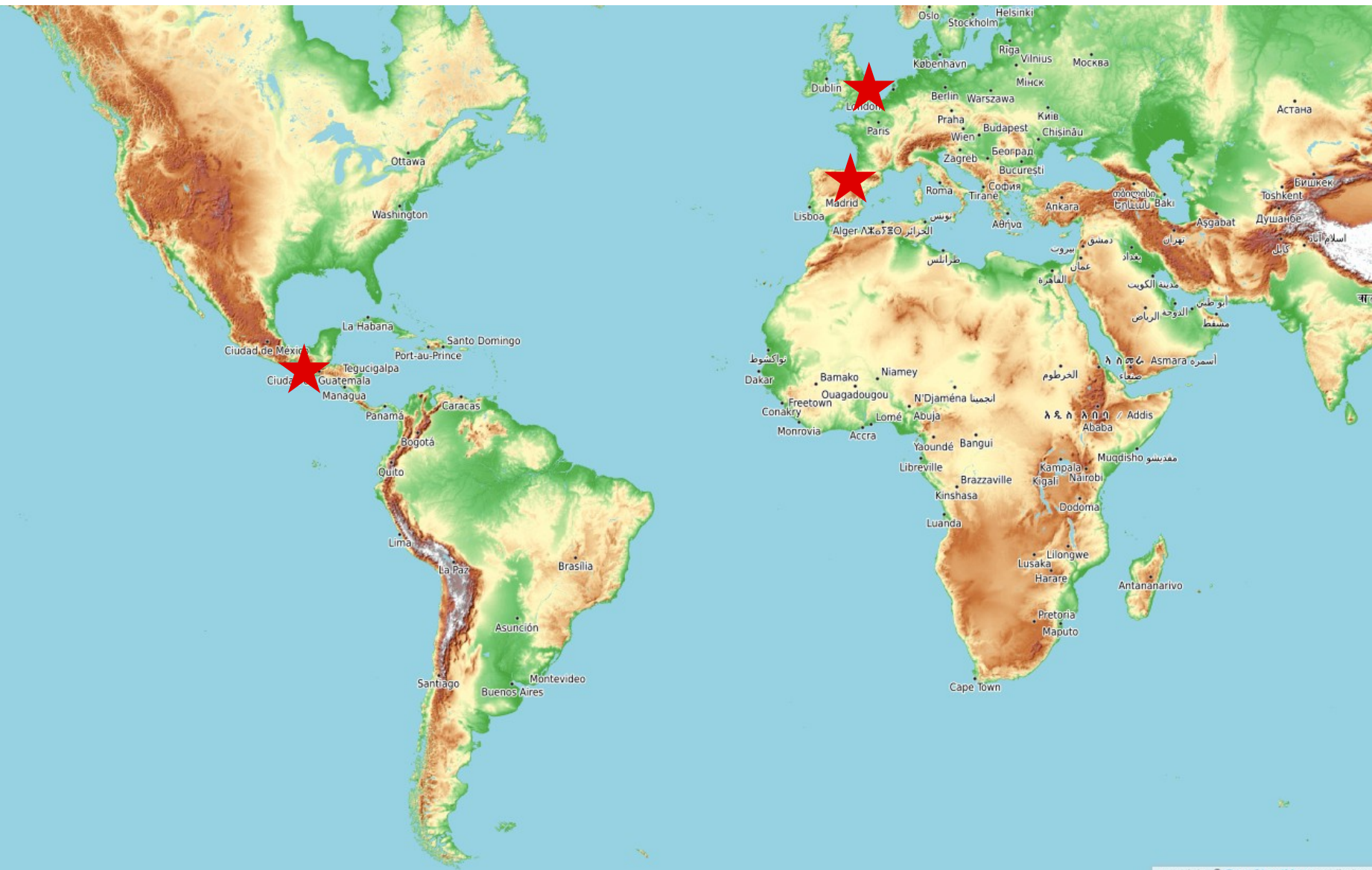
Caveats in the literature (and practice)

- Small scale: empirical analyses mainly (only?) pilot cases, pioneering projects, few organic farmers among non-organic etc.
- (no?) examples of sustainability transformations in food systems (Valencia et al. 2022)
 - e.g. zero-budget natural farming, Andhra Pradesh, away from glyphosate, Mexico.
 - But most transformation examples in the energy sector, e.g. renewables

Research question & approach

- Food systems transformation: **What would it take to scale up sustainable production at regional level?... to transform the productive farming sector of a region into organic, regenerative agriculture?** → Moving from niche innovation to a socio-technical regime and landscape.
- Comparative study of three regions with a landscape dominated by farming and with pioneering sustainable farming initiatives (organic and/ or regenerative), but without extensive adoption at regional level.
- Social (behavioural, economic, institutional) enablers and barriers for transformation at landscape scale, including but going beyond financial ones.

Comparative case



Understanding how to scale up more sustainable production at regional level

Method (for each case):

- Analysis of current systems: recent trends, extension and level of production of organic and/or regenerative agriculture (*desk research*)
- Development of scenarios and transition pathway (*fieldwork; participatory methods*)
- Barriers, enablers and incentives needed for the transition (*fieldwork; interviews, FGD*)

Outcomes:

- A clearer pathway to scale out more sustainable farming
- A approach for planning policy strategies for food systems transformation in the food production sector

My questions

- Other methodologies?
- Secondary data?
- Interesting regions or case studies?
- How to ensure that a comparative case study provide insight beyond the specific cases?

**THANK YOU
QUESTIONS?**