

Payments for pioneers?

Acknowledging farmers' perspective heterogeneity to avoid emissions from land-use change in the tropical forest frontier

adoption

diffusion theory

avoided deforestation

payments for ecosystem services

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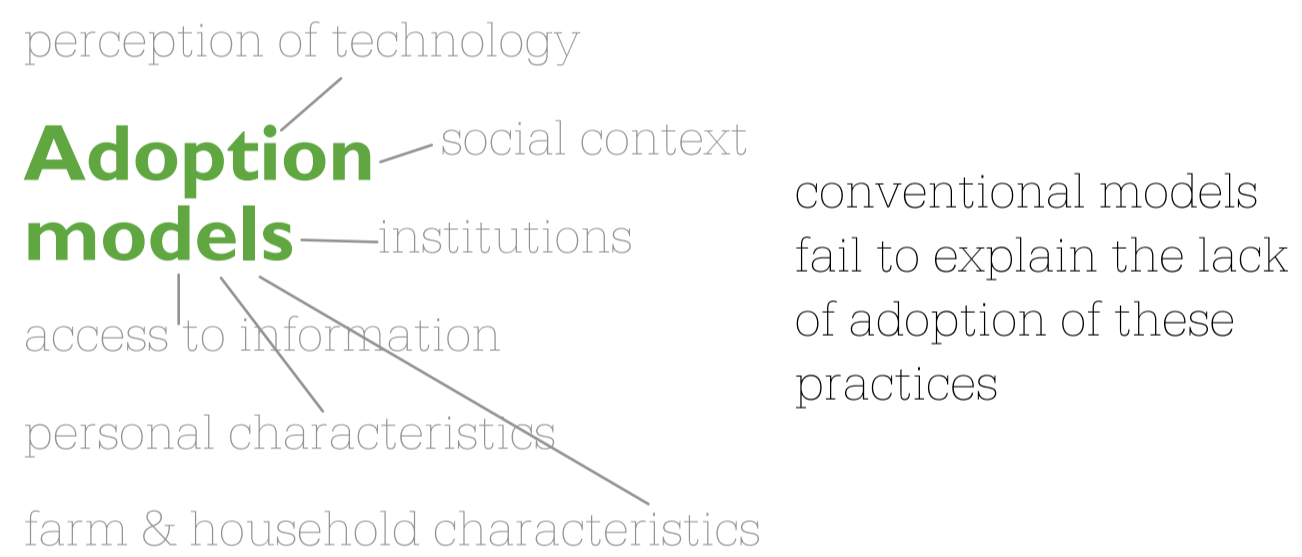
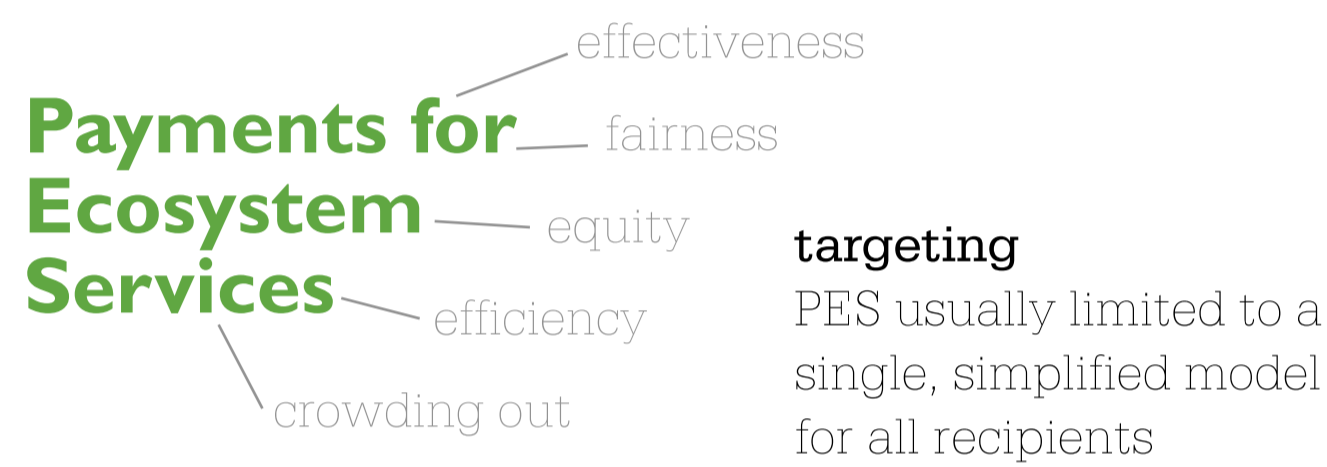


PhD thesis: Rewards for ecosystem services and adoption of sustainable practices in complex social-ecological systems:
What role for policy?
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High risk of landscape degradation in buffer areas of tropical forest due to small-scale intensive cattle-farming!

The problem of adoption of sustainable practices



Decision-making theories and diffusion theory

thoroughly used in agricultural innovation studies, but Applicable also to conservation practices?...



Silvopastoral systems: pasture mixed with fodder trees

Questions

What attitudes condition small-scale cattle-farmers' adoption of silvopastoral systems?

What features may be targeted to design policies which are more effective and capable of boosting a behavioural change?

Q methodology

Why?

- A structured and quantifiable way to investigate existing perspectives and attitudes within a group
- Introduced in 1935, increasingly used in decision-making studies across disciplines
- Reliability and validity have been thoroughly tested

Where?



- Buffer area of La Sepultura Biosphere reserve, Chiapas, Mexico
- Low income rural community based on: maize, beans, coffee and cattle-farming
- A local research institution (ECOSUR) is promoting the implementation of silvopastoral systems¹, providing material and training, with varied success

How?

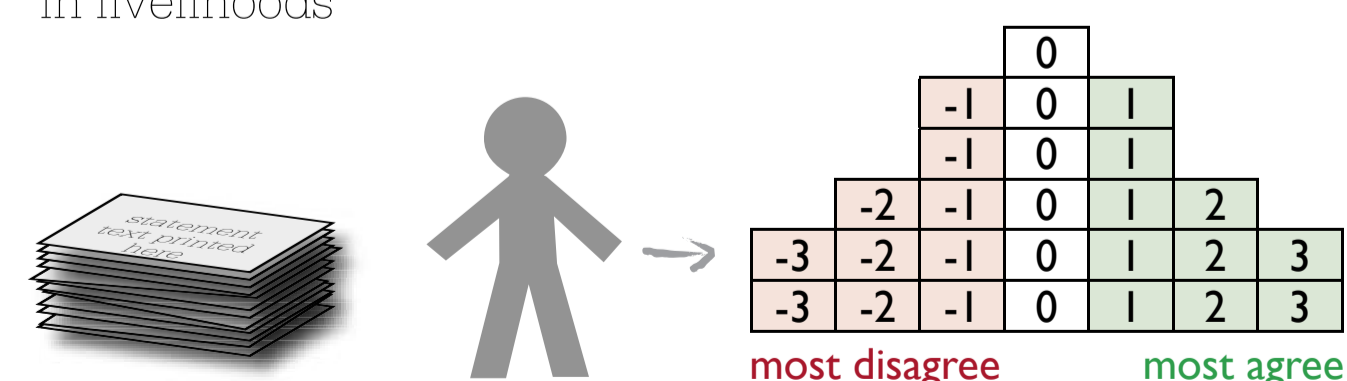
26 statements

- covering these topics:
- cattle-farming activity, including fodder-trees
 - attitude towards utilitarian and non-utilitarian environmental conservation
 - the role of external payment programmes in livelihoods

33 farmers

- sample based on:
- livelihood diversity/ specialisation in cattle-farming
 - level of involvement in planting fodder trees
 - land and cattle herd size owned

administration



Results

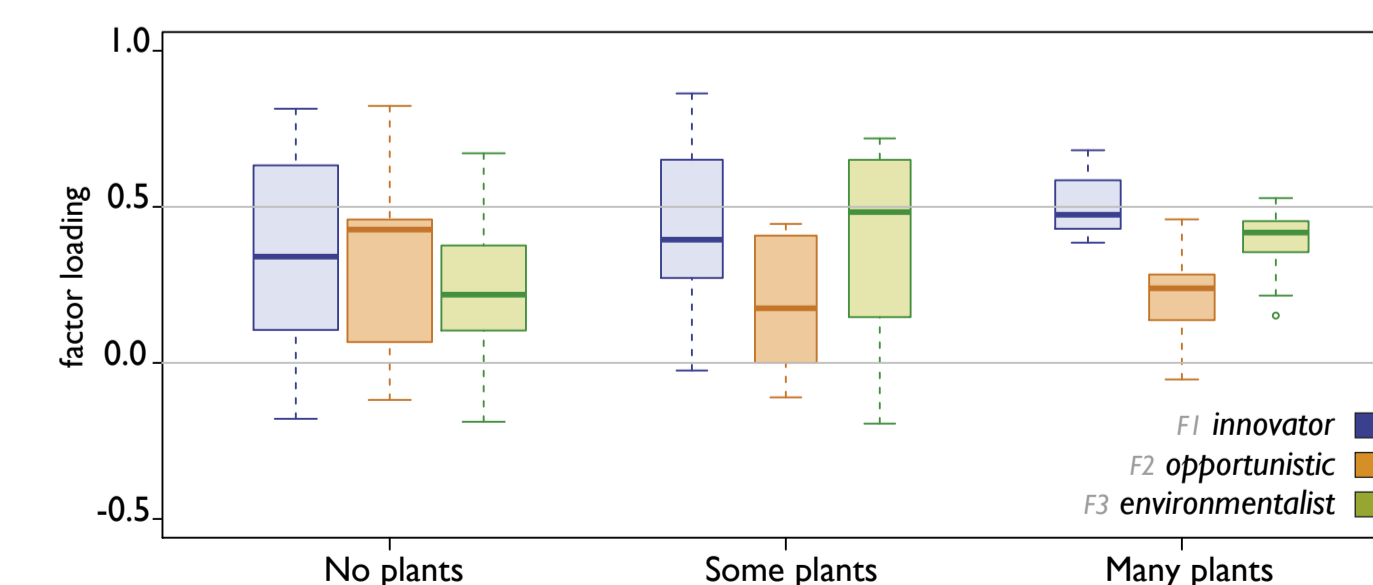
Three distinctive views among farmers

Data is analysed based on factor analysis in order to extract three archetypal factors or types of views. Each type is defined by the weighted average score that farmers representing it gave to each statement, as shown in the table. Stars indicate the most distinguishing statements.

topic	statement	F1	F2	F3
external payments	23. I rather living from external payments than from the work in my lands	-3	-3	-2
	21. If the government does not give me external payments, taking care of the forest does not benefit me	-3	0**	-3
	15. I need more external payments so that my children do not need to go to live elsewhere	-2**	1	2
	8. I participate in all external programmes that bring income	-1*	0*	-3**
	4. I can maintain my family with my own work, external payments are just an aid	1**	-1*	0*
conservation	3. What is of most interest to me from external programmes is what I learn to earn more money	0	1	0
	25. I can earn more as a cattle-farmer if I let other wild animals live	0	1	1
	10. Conserving the forest is responsibility of the landowner	3	2	3
	22. I try new things in my job	1**	-1*	0*
personal behaviour	11. I analyse costs and benefits and after that I work on the most beneficial activity	1	0**	1
	9. It is more convenient for me to cultivate my own food than to buy it	3	2	3
	1. My children and grandchildren will work in the same land that I cultivate now	0	3**	1
	24. I need to improve my pasture, otherwise cattle-feed will run out in a few years	2	3**	1
cattle-farming	19. With more training I could improve very much my work in cattle-farming	2	1	0*
	18. In dry season there is no alternative, other than releasing my cows free into the mountain	-1	1**	-2
	16. It is more convenient for me to invest money in improving my pastures than in buying cows	1	0	1*
	13. What cattle produces is much more than what land loses	-1	0	0
	12. My land is getting tired	0**	-3**	2**
fodder trees	6. I could increase my benefits in cattle-farming without degrading the land	0**	2**	-2**
	26. In order to use one hectare for fodder trees during two years, I would need more land than what I have	-2*	-1	-1
	20. It is convenient for me to clean my fodder tree plot from weeds even if I have other tasks, in order to produce more fodder	1	-2**	0
	17. If I had more money, I would plant fodder trees instead of increasing my cattle	0**	-2**	2**
	14. It takes too long for fodder trees to grow	-2	-1	-1
	7. Cultivating fodder trees involves a lot of effort and little benefit	-1	-2*	-1
5. With tree planting programmes I receive more money in return for my work	-1	-1	-1	
2. I prefer two hectares of pasture than one hectare of fodder trees	2**	0	-1	

Comparison of views with the level of success in fodder tree planting

Each farmer relates to each view by their factor loading coefficient. The boxplot compares average factor loadings of farmers grouped by their level of success in planting fodder trees. Box widths are proportional to the square-roots of the number of observations in each group. Level of success is based on secondary data² about the number, height and health of saplings after the programme.



Policy implications

motivation: each type will adopt if... ↓

the role of payments as an incentive for each type ↓

F1 Innovator, pragmatic, self-sufficient pioneers

If the practice is believed to be novel and with potential significant gains, despite their risks

Incentives in forms other than monetary, such as training or social acknowledgement, may be more effective than short term financial gains

F2 Opportunistic, subsidies-dependent, conservative laggards

Only if there is an external payment involved, or after he has seen that his neighbours are actually getting benefits from the practice

Monetary payments might accelerate their participation, but they may stop the practice as soon as the payment stops, and if pioneers have not yet shown its benefits

F3 Conservationist, environmentally conscious, concerned about the future late adopters

Involvement motivated by normative concerns and by a long term perspective on the land

The distinctive effect of monetary payments over their adoption is unclear

Arguably, a stronger emphasis on engaging potential pioneers, for whom monetary payments may not necessarily be the most appropriate incentive, may have a boosting effect on getting the rest to adopt. This would imply making a more efficient use of existing resources for environmental policy implementation.

Literature

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Further

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