Factors that affect adoption of tree conservation and planting activities in farms in Costa Rica

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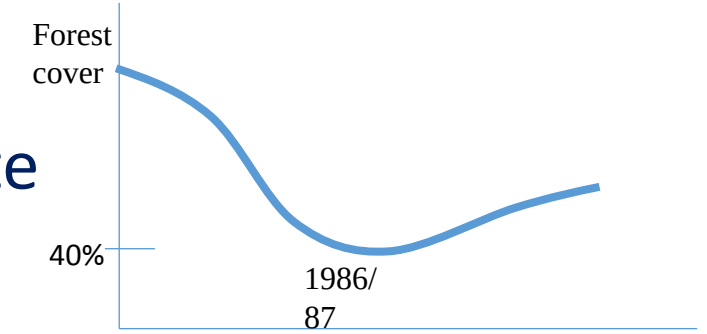
- It is widely recognized that trees provide ecosystem services, not only inside forests

(Díaz *et al*. 2005, Louman *et al*. 2009, 2010, Willemen *et al.* 2013, Ilstedt *et al*. 2016).

- However:
- In spite of many studies on drivers of deforestation and forest degradation, we have not been able to increase global tree cover

(Díaz *et al*. 2005)

Forest cover over time in Costa Rica

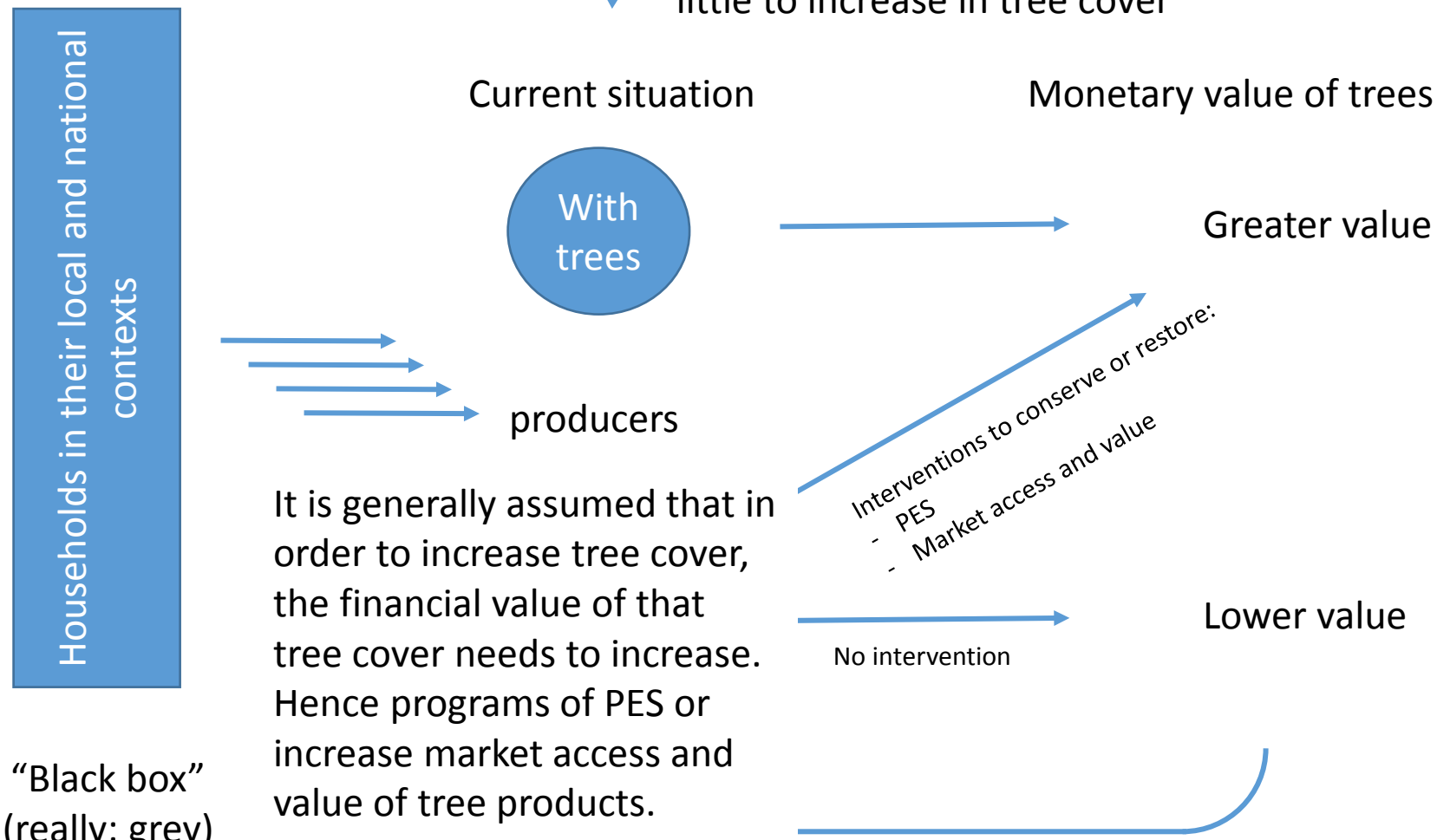


Based on Sánchez Azofeifa 2015

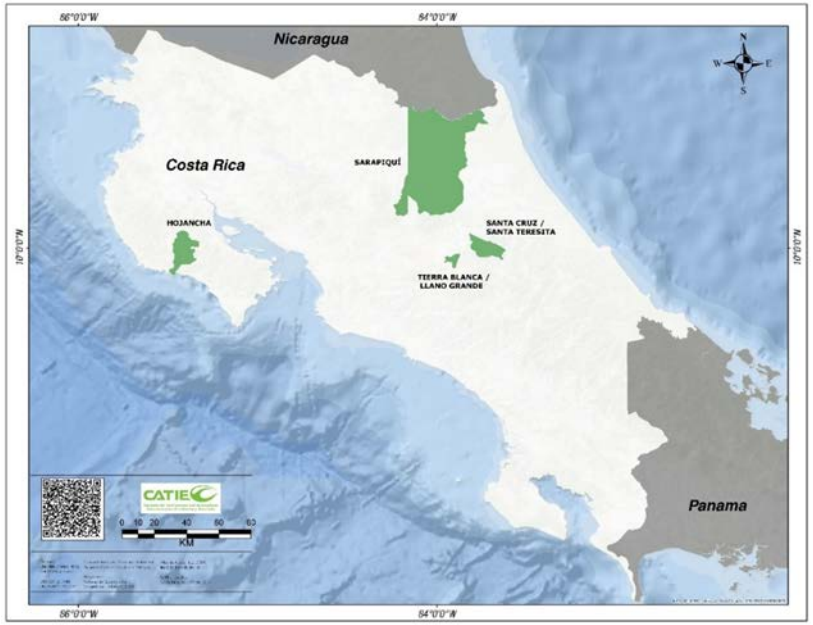
We studied why farmers in Costa Rica did contribute to a general increase in tree cover.

Current practice:

However: Greater income from trees (eg from PES) has contributed little to increase in tree cover



Study area



- Agricultural areas
- Linked to biological corridors
  - Biodiversity considered important
  - Some form of social organziation present
- Differ in land colonization hiostory as well as in land cover change

Costa Rica		Cartago		Guanacaste		Heredia	
% cover at beginning	% anual change	% cover at beginning	% anual change	% cover at beginning	% anual change	% cover at beginning	% anual change
40,7	0,8	66,8	-0,1	23,4	3,5	62,3	-1,0

(Calvo 2008)

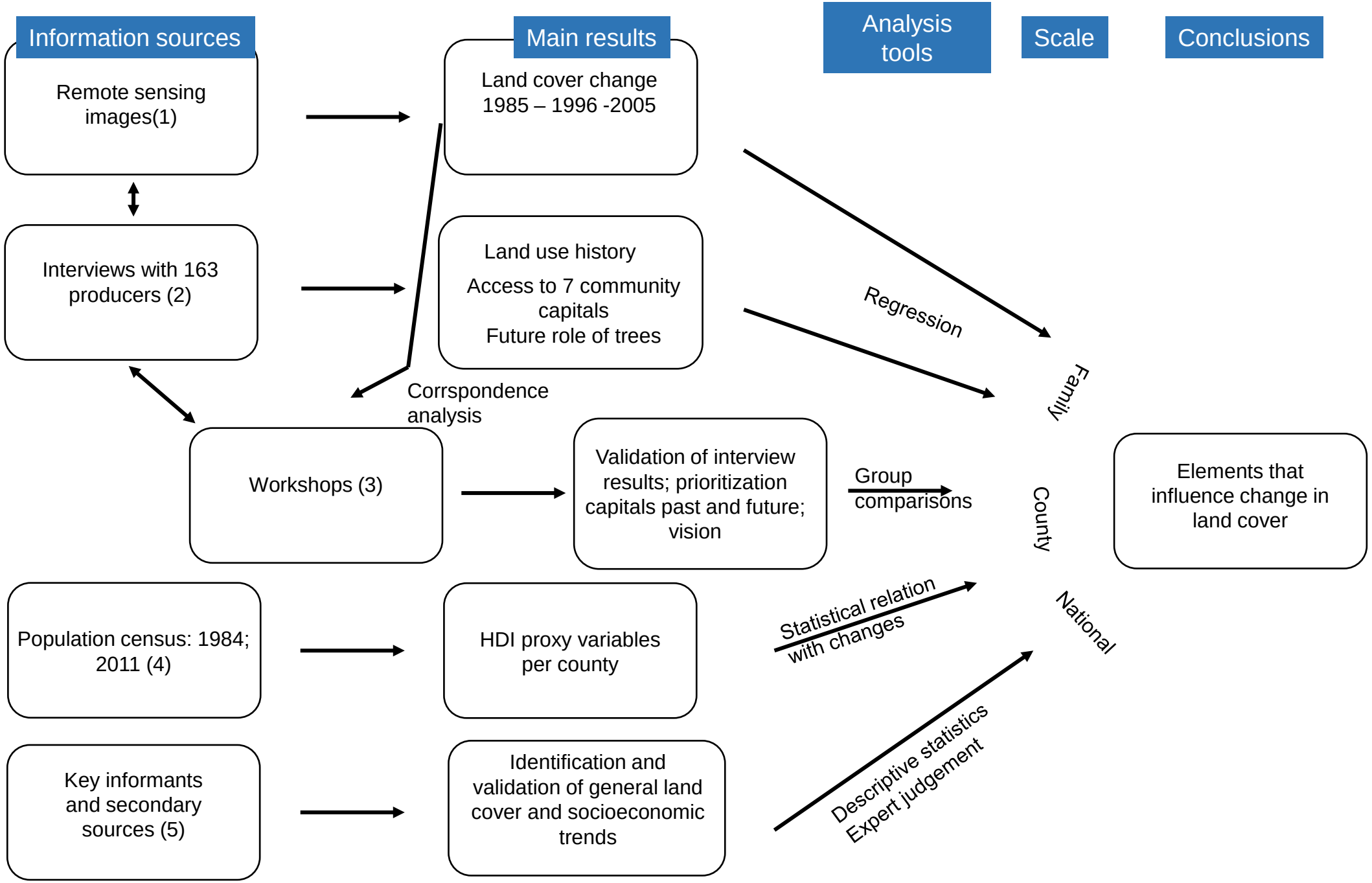
Is there something in the households and their contexts that makes one household be more receptive to conserve or increase tree cover than another?

We used the **Community Capital Framework** to study what influences such behaviour in three sites in Costa Rica. Each community or family develops its livelihoods combining in particular ways the resources available to them.

(Emery y Flora 2006, Gutierrez *et al. 2009)*

We combined interviews with remote sensing images and workshops

As well as population census (1984 and 2011) and other secondary sources of information

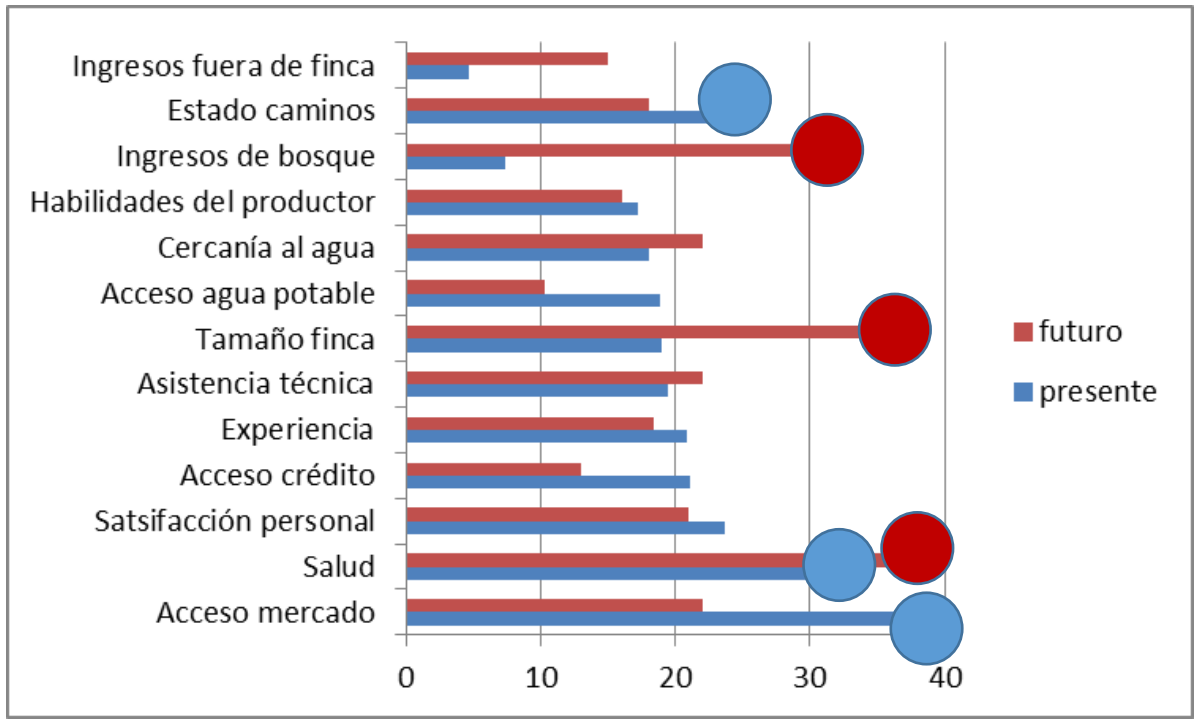

Information sources
Main results
Analysis tools
Scale
Conclusions
Remote sensing images(1)
Interviews with 163 producers (2)
Workshops (3)
Population census: 1984; 2011 (4)
Key informants and secondary sources (5)
Land cover change 1985 – 1996 -2005
Land use history
Access to 7 community capitals
Future role of trees
Corrspondence analysis
Validation of interview results; prioritization capitals past and future; vision
HDI proxy variables per county
Identification and validation of general land cover and socioeconomic trends
Regression
Group comparisons
Statistical relation with changes
Descriptive statistics
Expert judgement
Family
County
National
Elements that influence change in land cover

	1986	Changes		2005
	área inicio	1986-1996	1996-2005	área final
Forests	3223	-510,8	-141,8	2570,4
Plantacions	7	434,5	122,1	563,6
Young sec. forest	487	-107,9	-227,6	151,5
Trees outside	13	17,6	10,9	41,5
Other	1807	166,7	236,4	2210,1

1996 forest law introduces PES

Changes not same in different areas

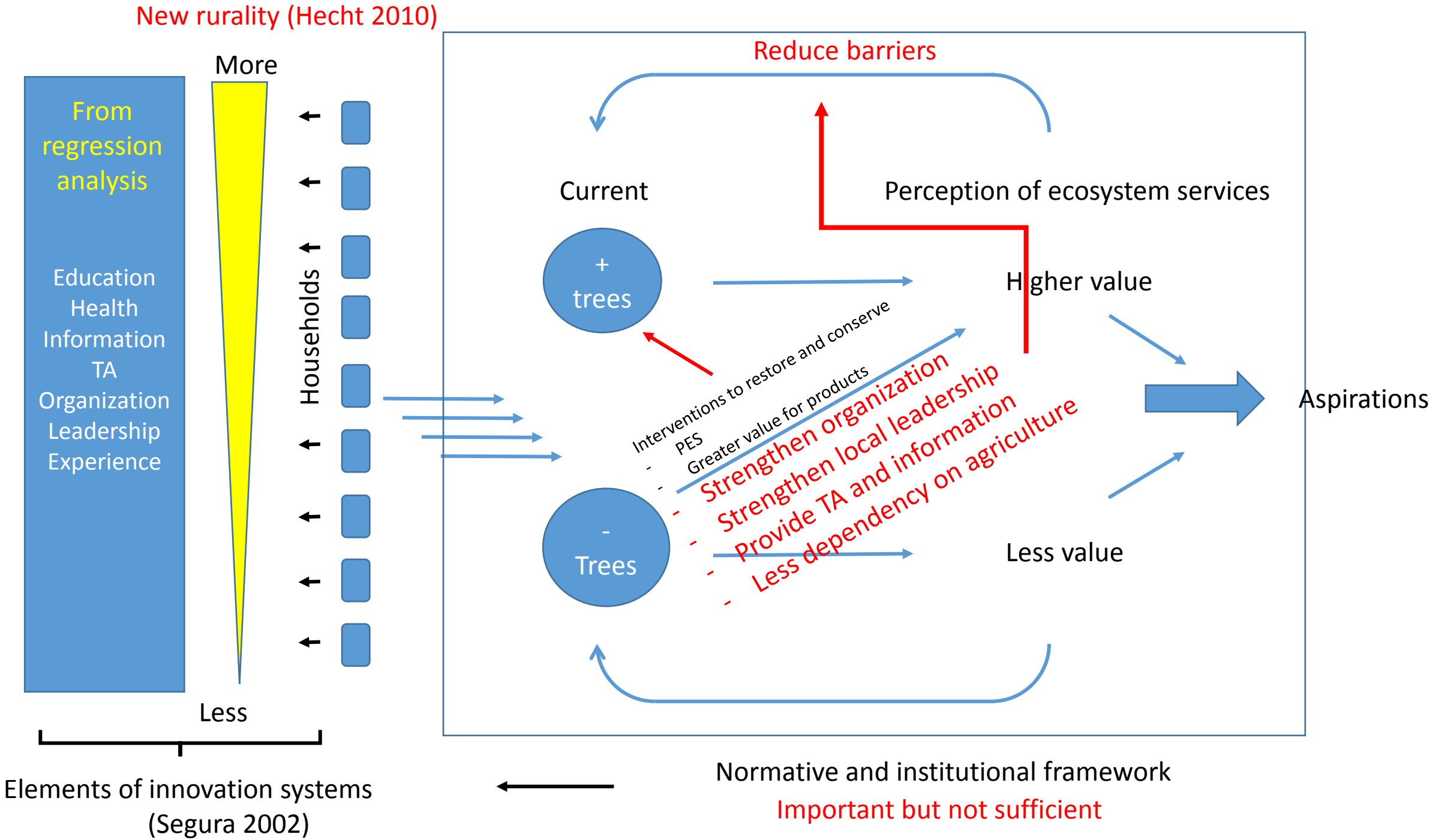
	Togetehr	Irazú	Hojancha	Sarapiquí
% cobertura arbórea de fincas al inicio del período	66,4	34,5	38,5	78,3
% change before law (11 yr)	-0,4	-1,7	2,8	-1,2
% change after Law (9 yr)	-1,0	-3,4	1,4	-1,9



From workshop results: producers value factors differently in future

Interviews indicate that highly valued factors are not necesarrily determining current land cover

New rurality (Hecht 2010)



Main conclusions

- Producer expectations relate more to financial and biophysical aspects of farms (income and size), but results more influenced by social, cultural and human barriers.
- The new rurality of Costa Rica, as reflected in social, human and cultural factors, is strengthening local innovation systems, creating an enabling environment for the restoration of tree cover in agricultural landscapes.
- This new rurality is what has given sustainability to forest restoration efforts in Costa Rica

Main recommendations

- Conservation and restoration strategies need to recognize the role of trees within this changing rurality
- These strategies need to consider different scales:
  - National – both promotion (PES) and stick (land use change prohibition)
  - At county level,
    - the state and process of development processes differ; this affects willingness to adopt.
    - Promote education, reduce health risks.
  - At local (farm) and county level: reduce barriers
    - Increase tree/forest value; technical assistance; local leadership

Check: Louman et al 2016: http://www.redibec.org/IVO/rev26_14.pdf


¡Gracias!
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