



***The PSA-H in Yucatán, Mexico:
from implementation specificities to impacts assessment***

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This presentation

- An overview of PESMIX and research methodology in Mexico
- Understanding PSA-H implementation in Yucatan
- Impacts assessment: focus on land uses

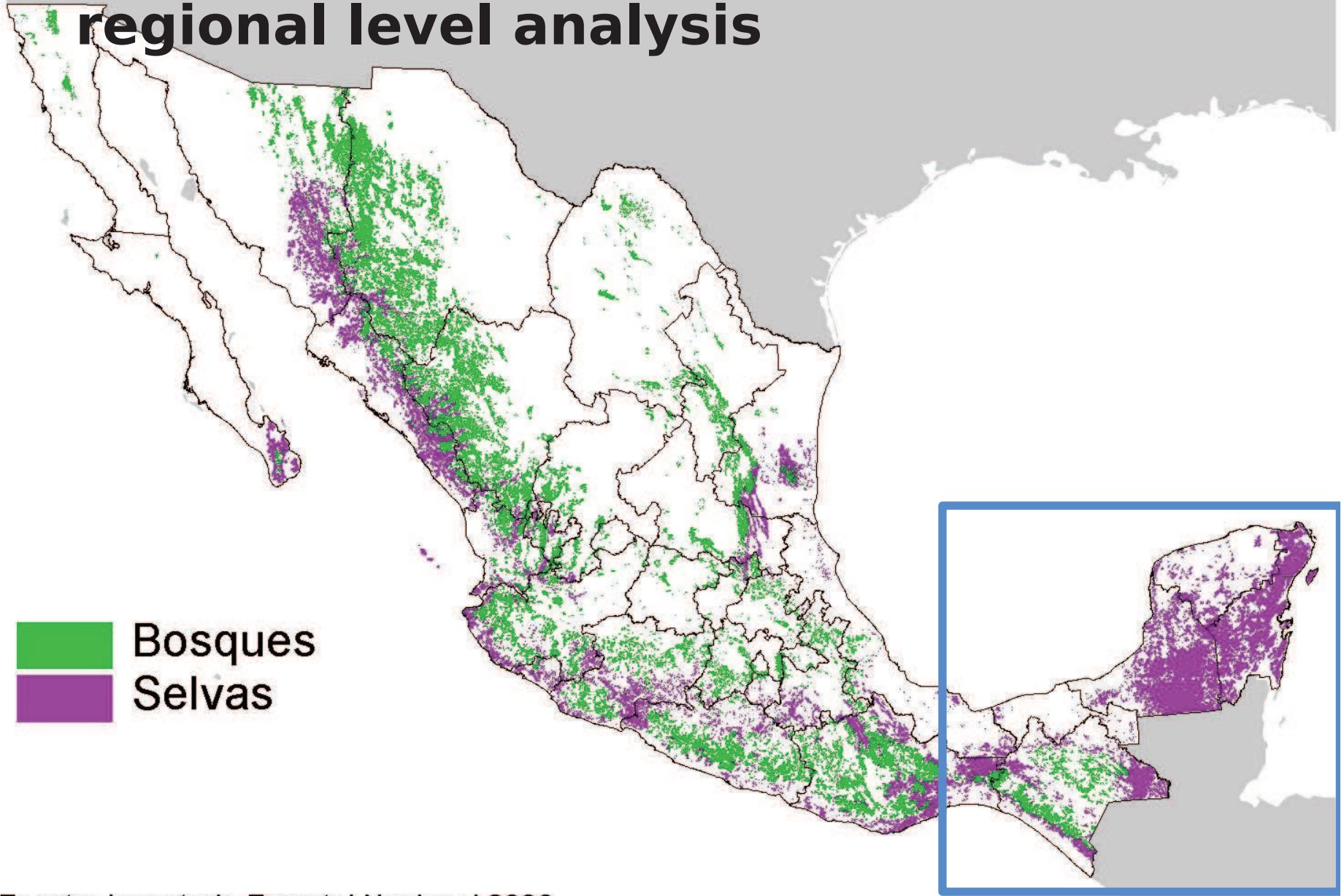
1. An overview of PESMIX in Mexico



Context and objectives of PESMIX

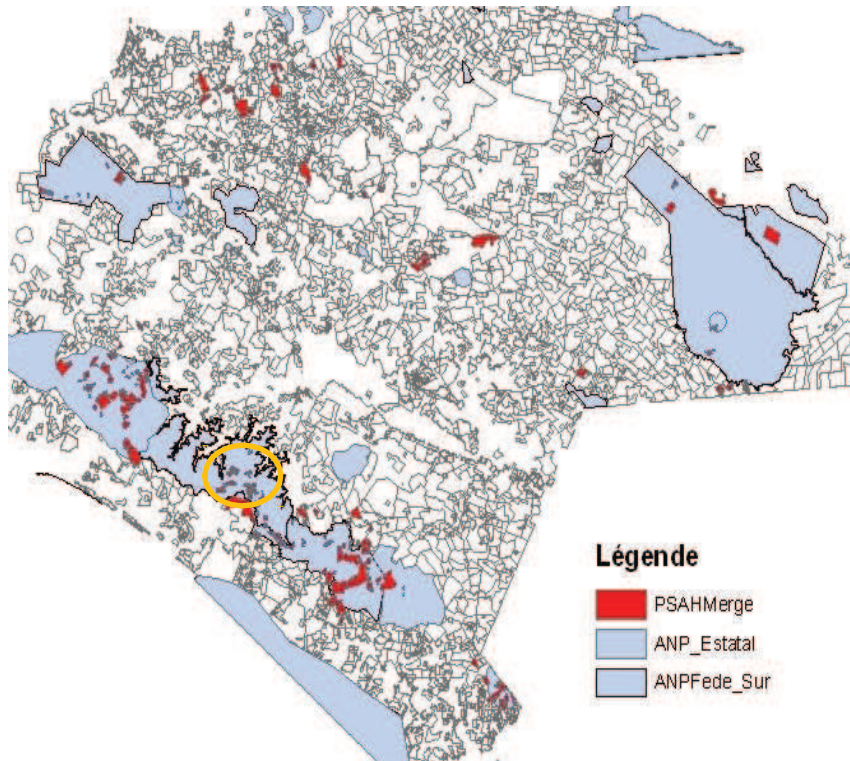
- **Context:** Until recently, PSE were presented as an alternative to other conservation instruments (C&C, fiscal/subsidies, IPCD, certification,...)
 - **Objectives** of PESMIX are twofold:
 - Understand what new brings PES in an existing environmental policy mix to manage environmental issues
 - How PES programs do combine or enter in conflict with these instruments within landscapes that are engaged in different development/conservation trajectories.
 - **2 countries:** Mexico (National PSA-h)
 - Madagascar (private local PESs)
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- **Institutions:** CIRAD / IBERO / ECOSUR / ESSA

PESMIX in Mexico: Chiapas and Yucatan regional level analysis



Fuente: Inventario Forestal Nacional 2000

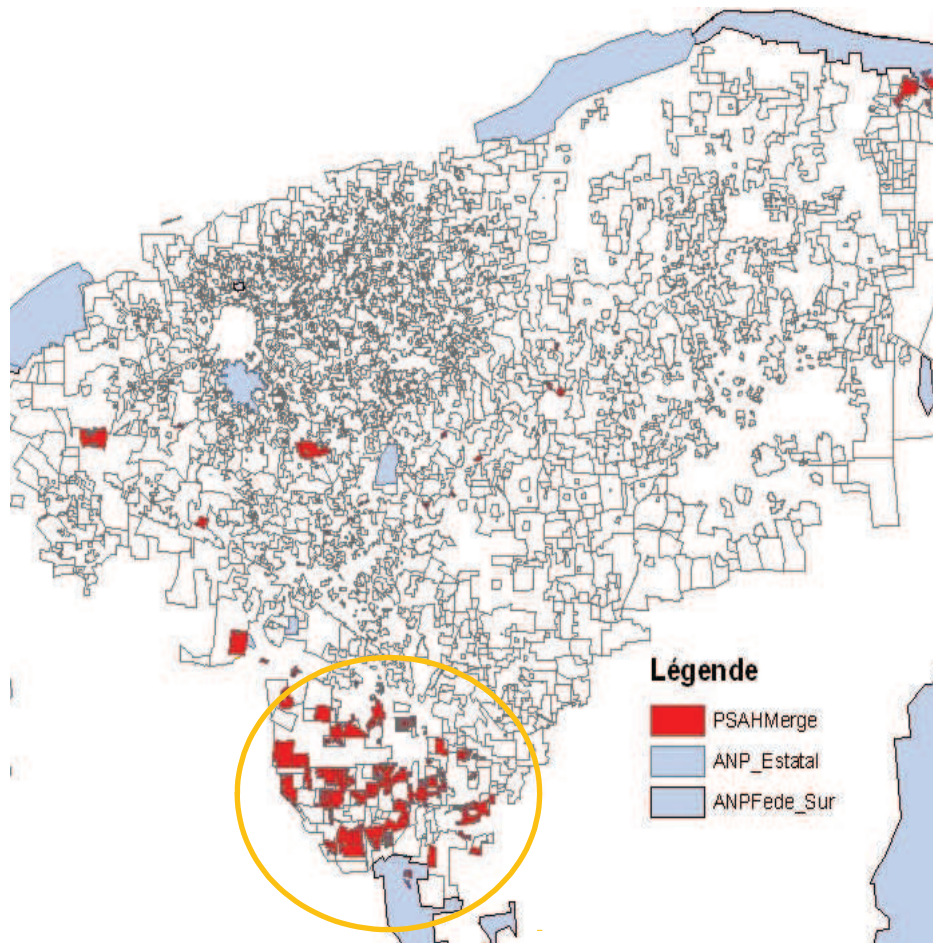
PESMIX in Chiapas - Sierra Madre: interaction of PSA-H with ANP



3 ejidal case studies + exhaustive household survey + comparison of 3 satellite images

- ✓ PES not additional compare to existing « command and control » (NPA), but role in enforcement ?
- ✓ Impact more important if associated to other sources of funding (UMA)

PESMIX in Yucatan - CONOSUR: interaction PSA-H and agricultural subsidies



77 ejidos + 200 households (among 25 ejidos) surveyed + comparisons of 3 satellites images

PSA-H reinforce current (agriculture)/ livestock production support schemes

2. PSA-H: some characteristics

PSA-H in Mexico

- **National program initiated in 2003 with adaptive targeting rules and State particularities**
- **Contract of 5 years renewable**
- **4 types of payment, made to ejidos mainly, according to type of forest : 380 to 1100 pesos/ha/an (25-70 euros)**
- **3.3 millions ha contracted between 2003-2009 with budget of 300 millions USD**
- **First impact studies estimate 8% to 10% of avoided deforestation on forests exposed to high pressure (Muñoz-Pina and al., 2010 / Alix-García and al., 2010)**

Targeting: eligibility areas



2004



2008

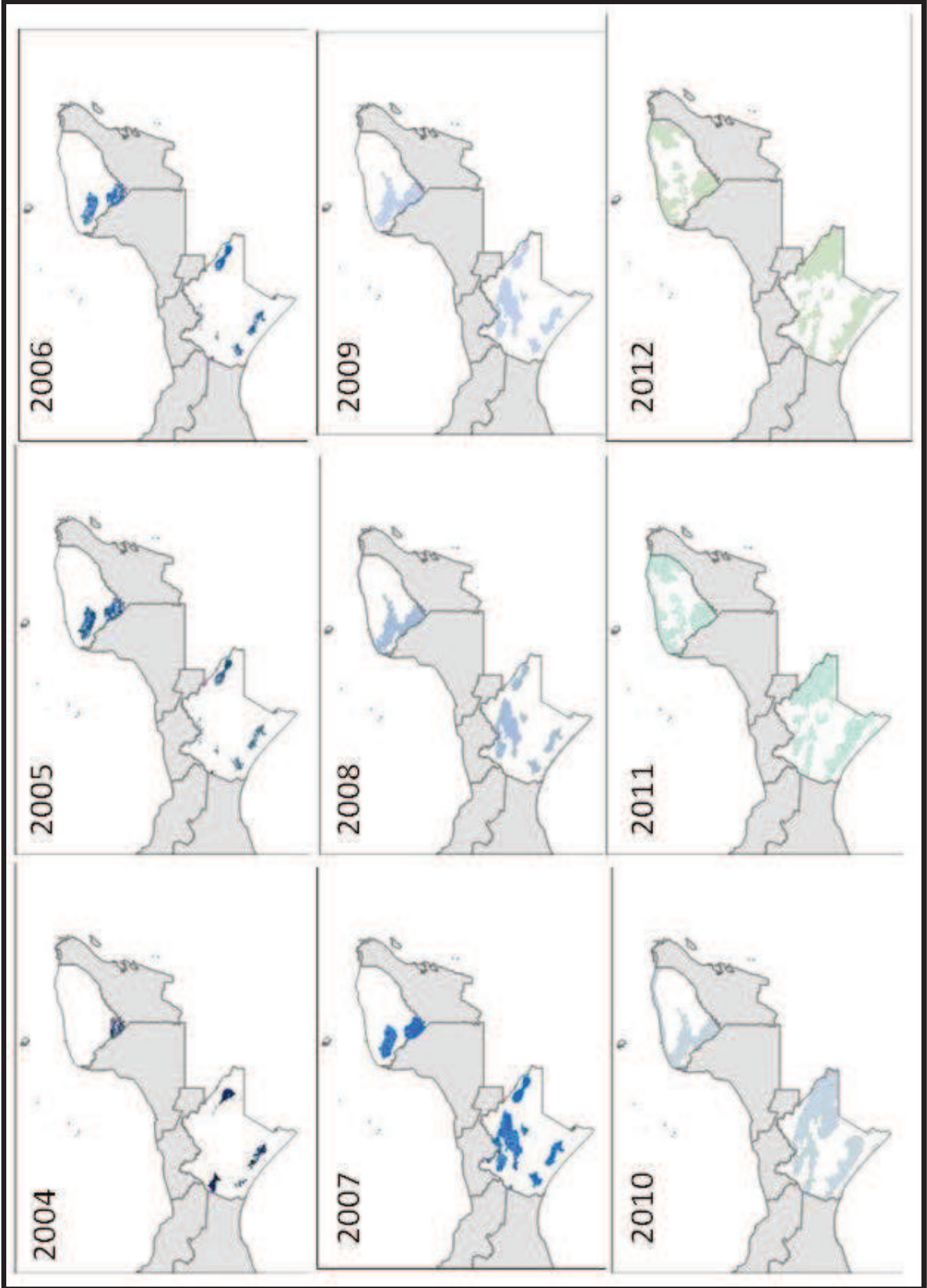


2012

From 2%

to 20%



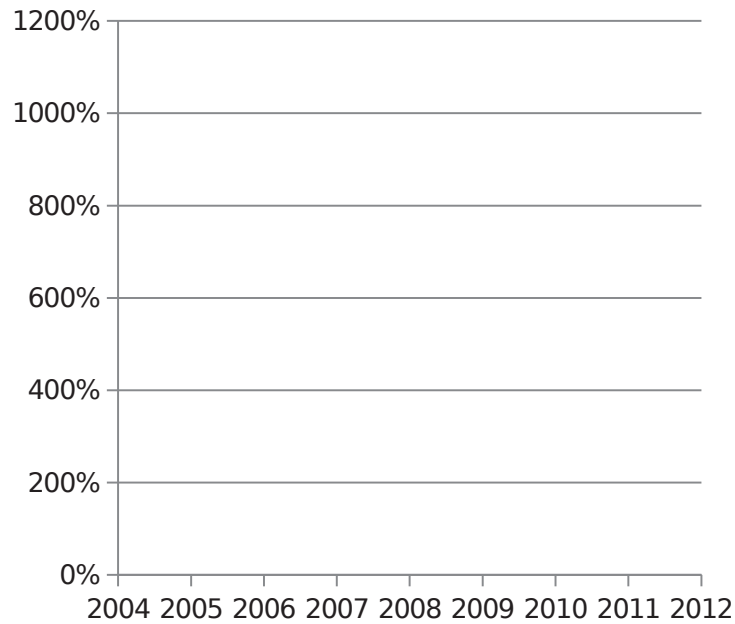


Targeting: criteria for scoring

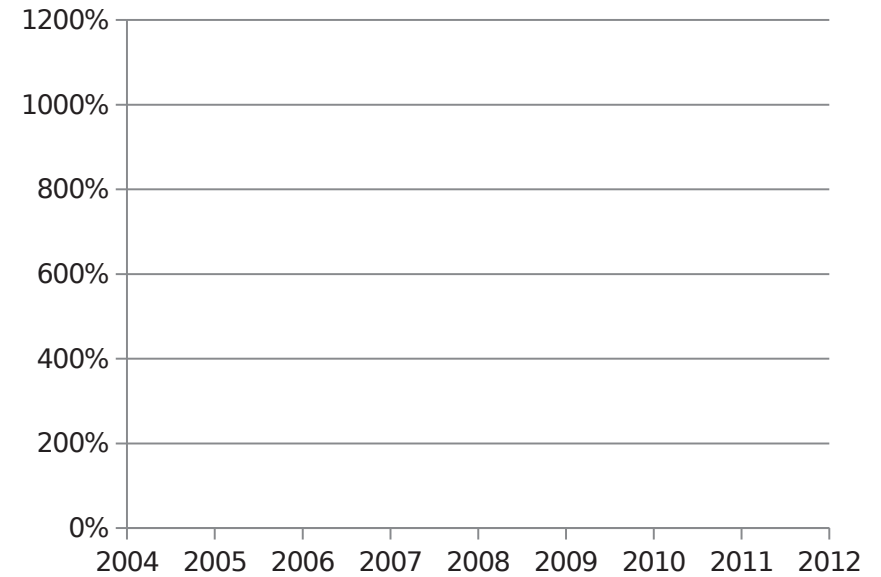
Criteria	2006	2007	2008	2009	2010
Primary criteria					
Hydrological importante and Deforestation Risk	44%	37%	29%	25%	19%
Secondary criteria					
Marginality index	22%	19%	13%	11%	12%
Administrative	0	0	3%	2%	8%
Other forest programs are present	11%	26%	27%	36%	37%
Other environmental programs are present (CONANP)	22%	19%	29%	26%	23%
Total possible score	45	54	70	81	106
Total number of criteria	9	12	17	21	26

Change in characteristics of ejidos within eligible areas

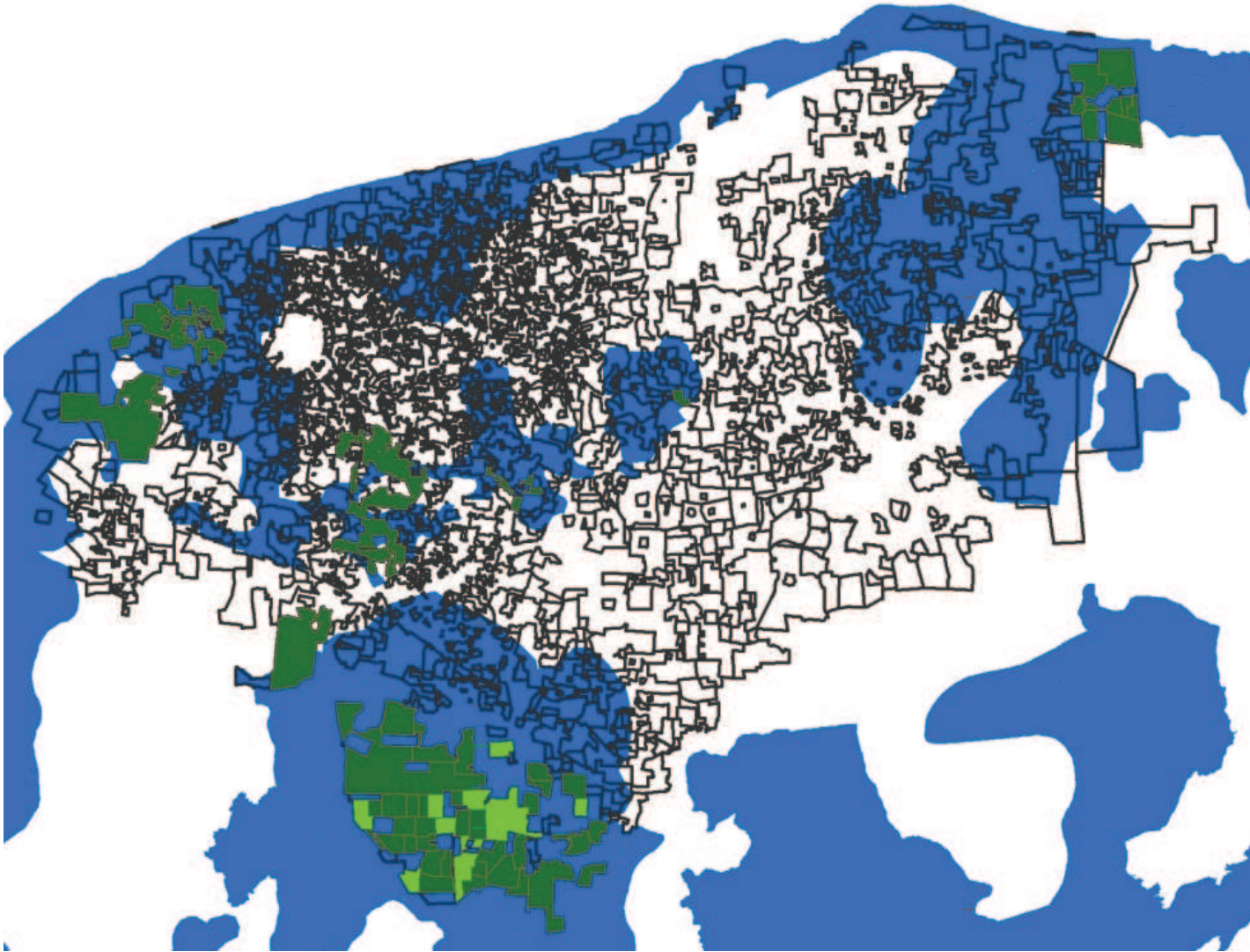
Chiapas



Yucatan

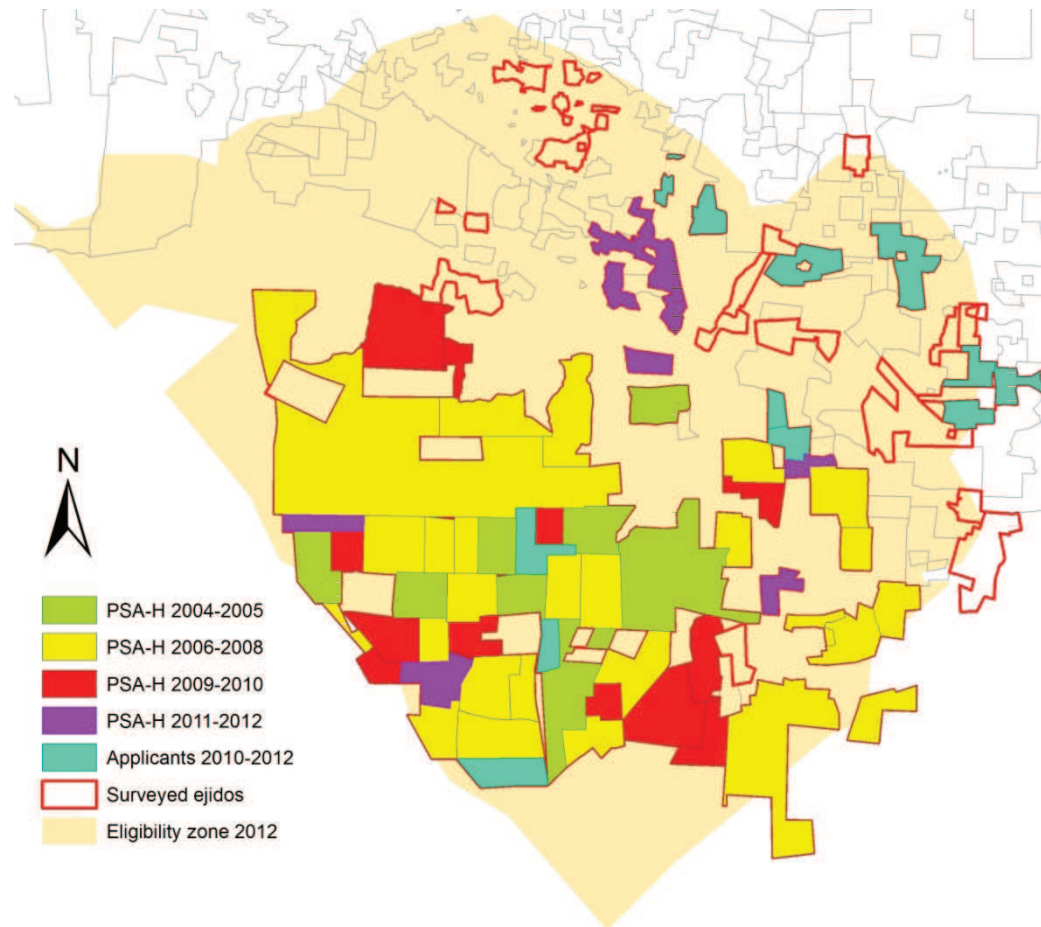


- size (ha)
- forest (%)
- Pop density
- Poverty
- Risk defor
- ANP

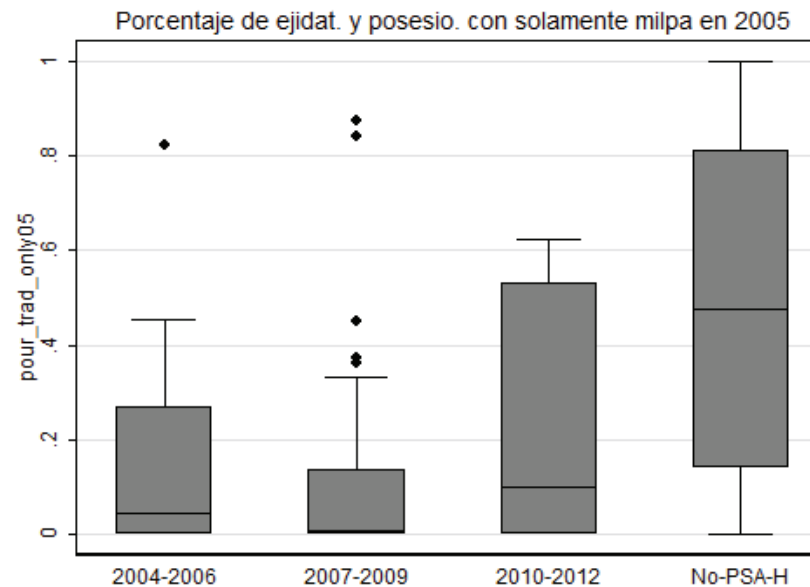
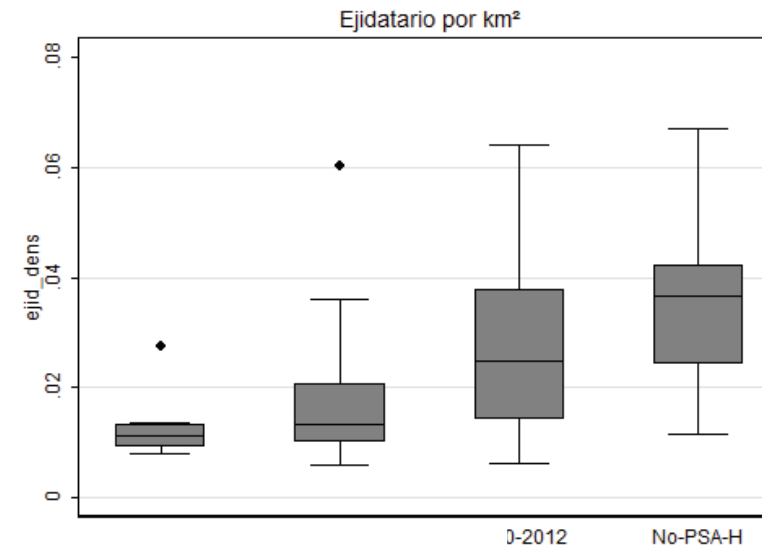
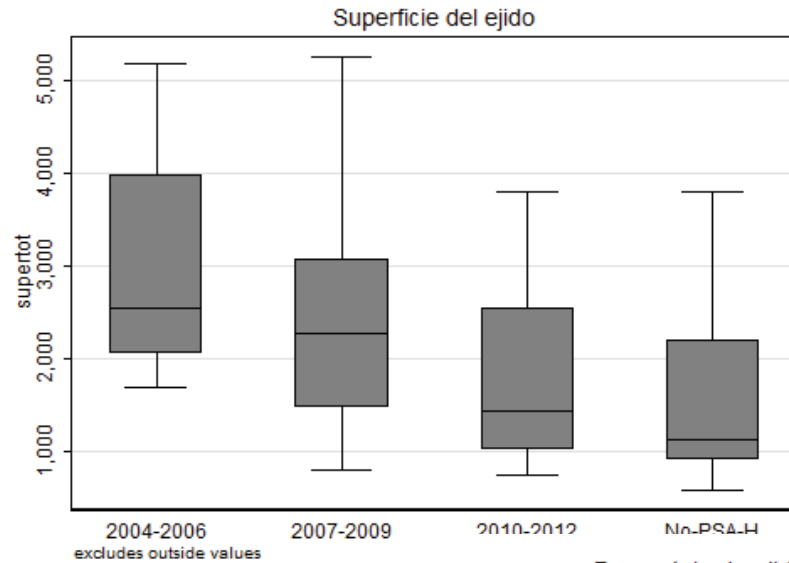


Concentration of PSA-H récipients in Cono Sur: role of the tecnicos

Dos áreas de recepción en el Cono Sur

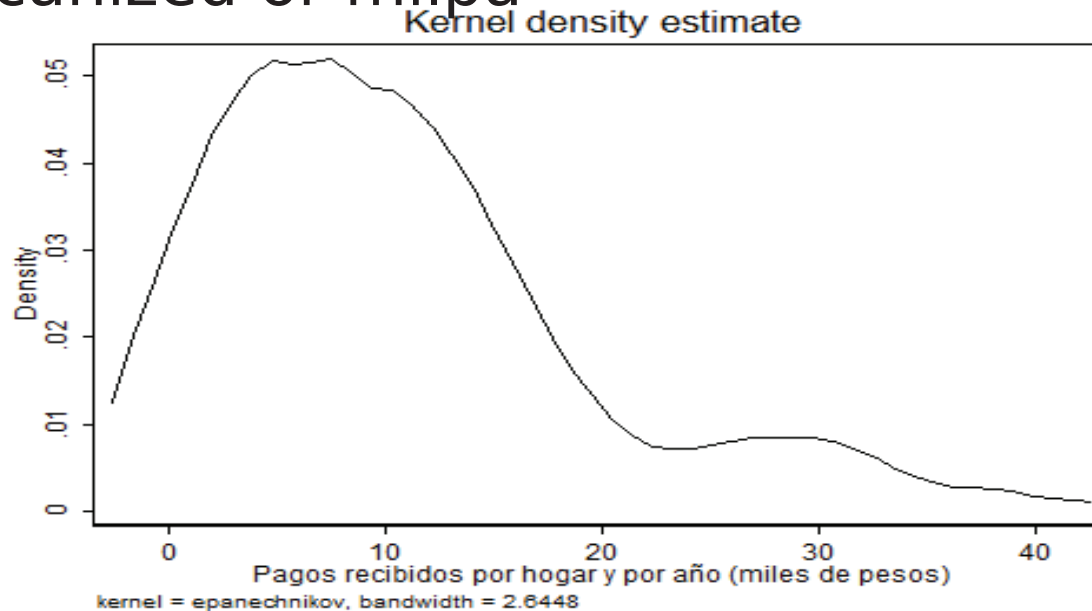


PSA-H allocation through time: role of the *tecnicos*



PSA-H allocation within ejidos

Targets: Livestock producers receive relatively less than croppers involved in mechanized or milpa



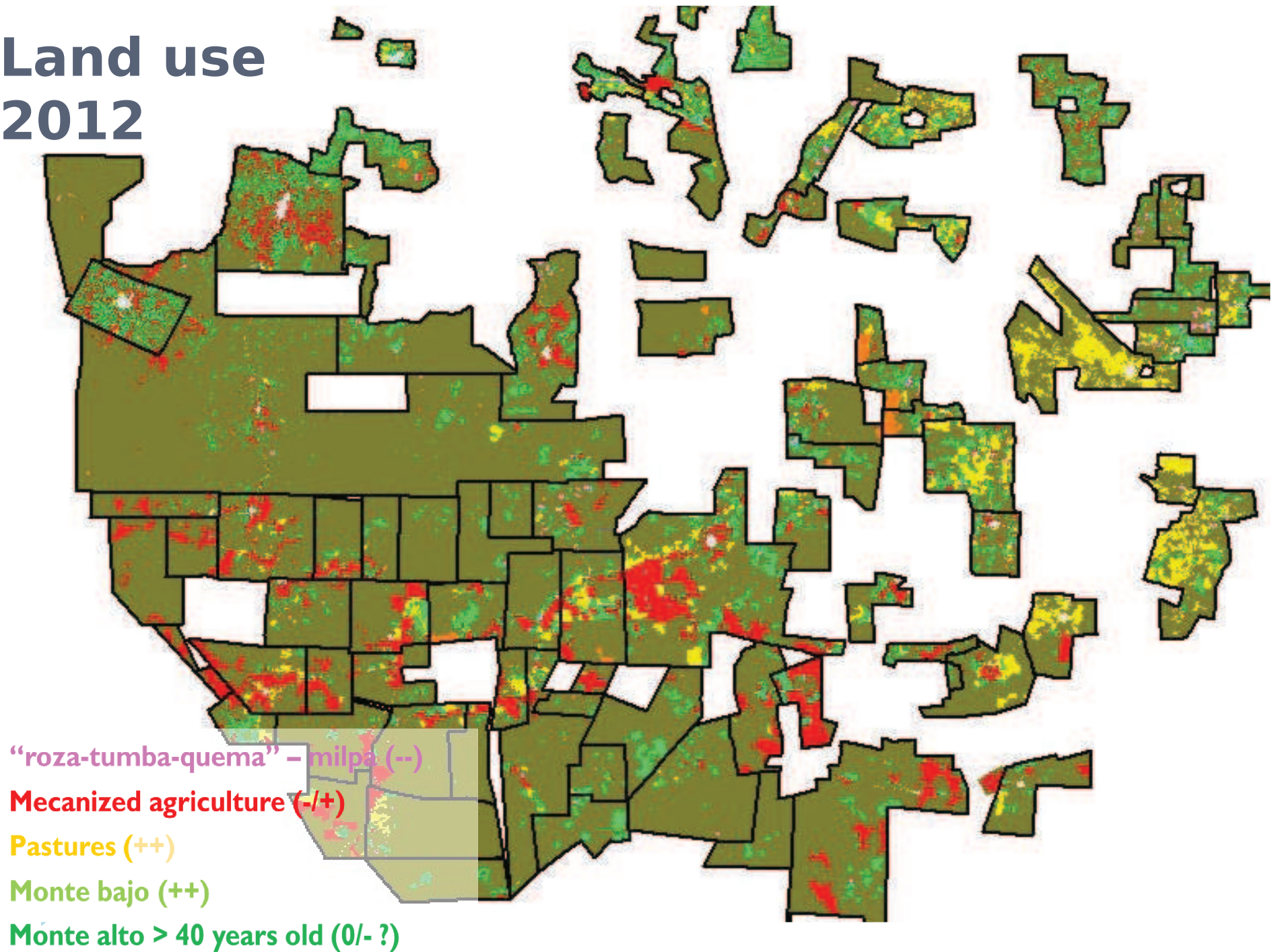
Amounts: Average annual payments received by recipient households is between **600 and 40,000 pesos (2,200 euros)**

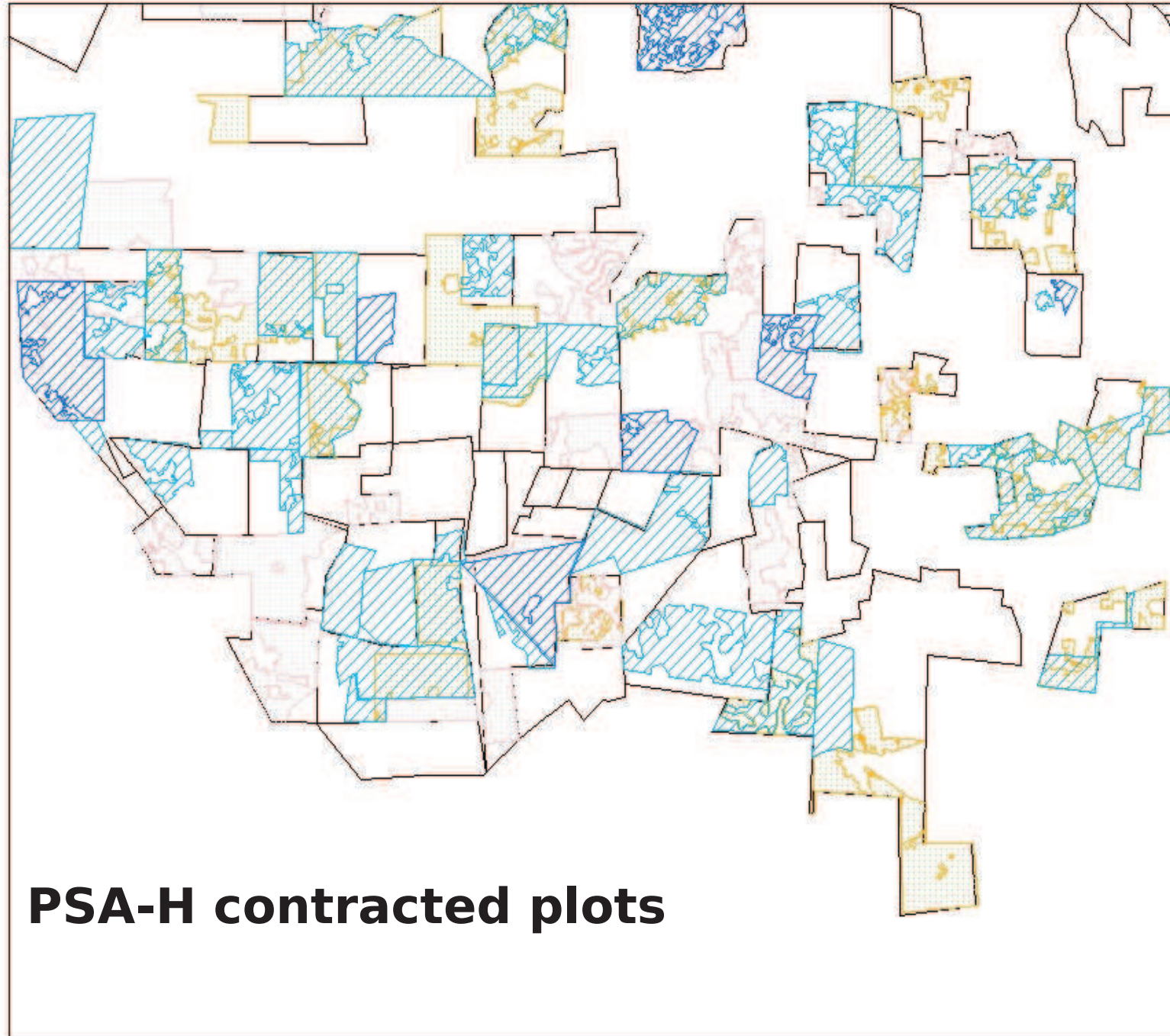
Consequence on impact methodology

- Matching methods limited at the scale of the state
- Focus on recipient ejidos and assess impact:
 - **Household level:** Amount of PSA-H received on productive assets (livestock, pasture, milpa & mecanized) and inputs used (fertilizers) at household level (Le Velly and al. this afternoon)
 - **Ejidal level:** Timing of PSA-H and type of renewal on LU change and spatial organization

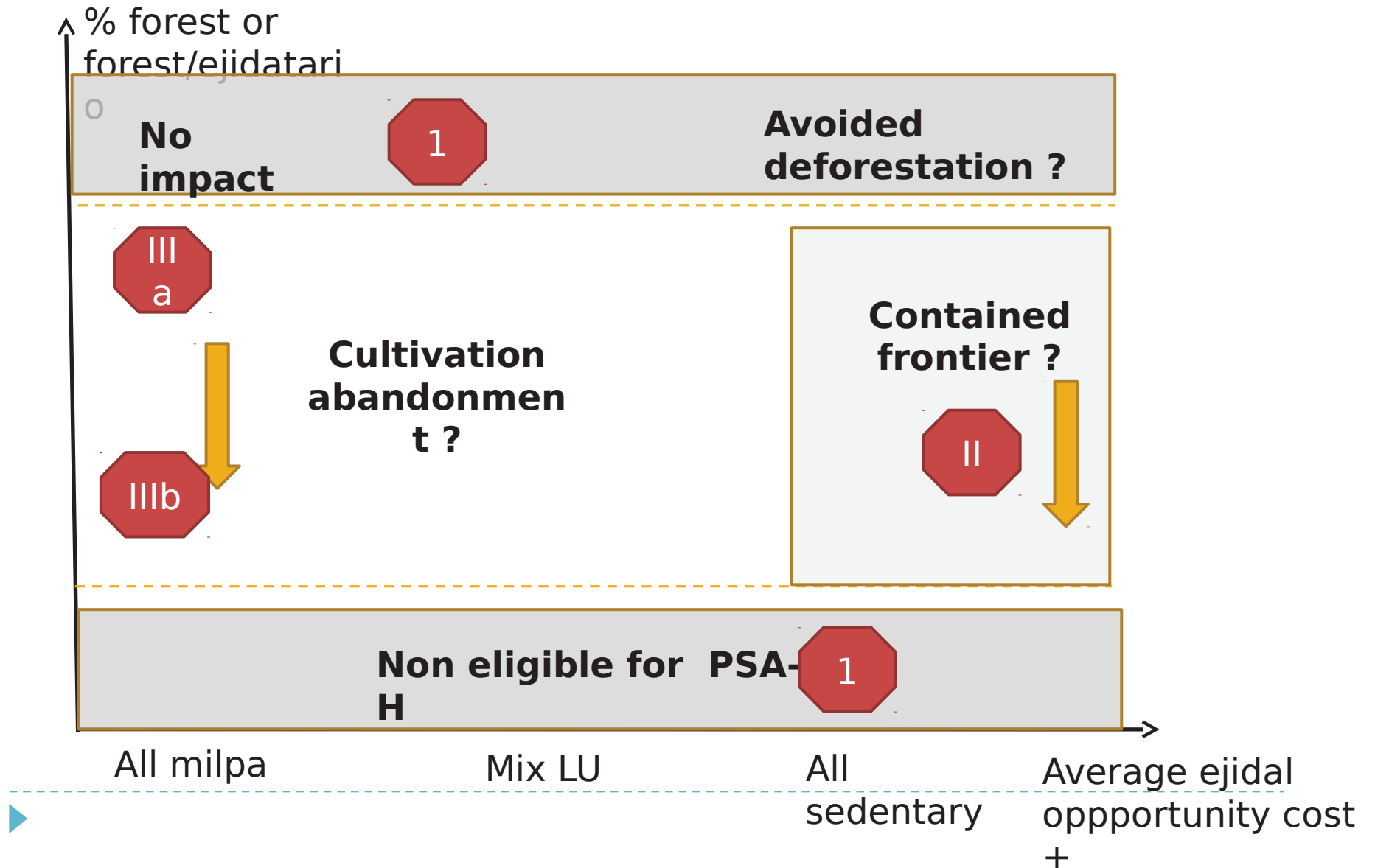
3. PSA-H: impacts on land uses

Land use 2012

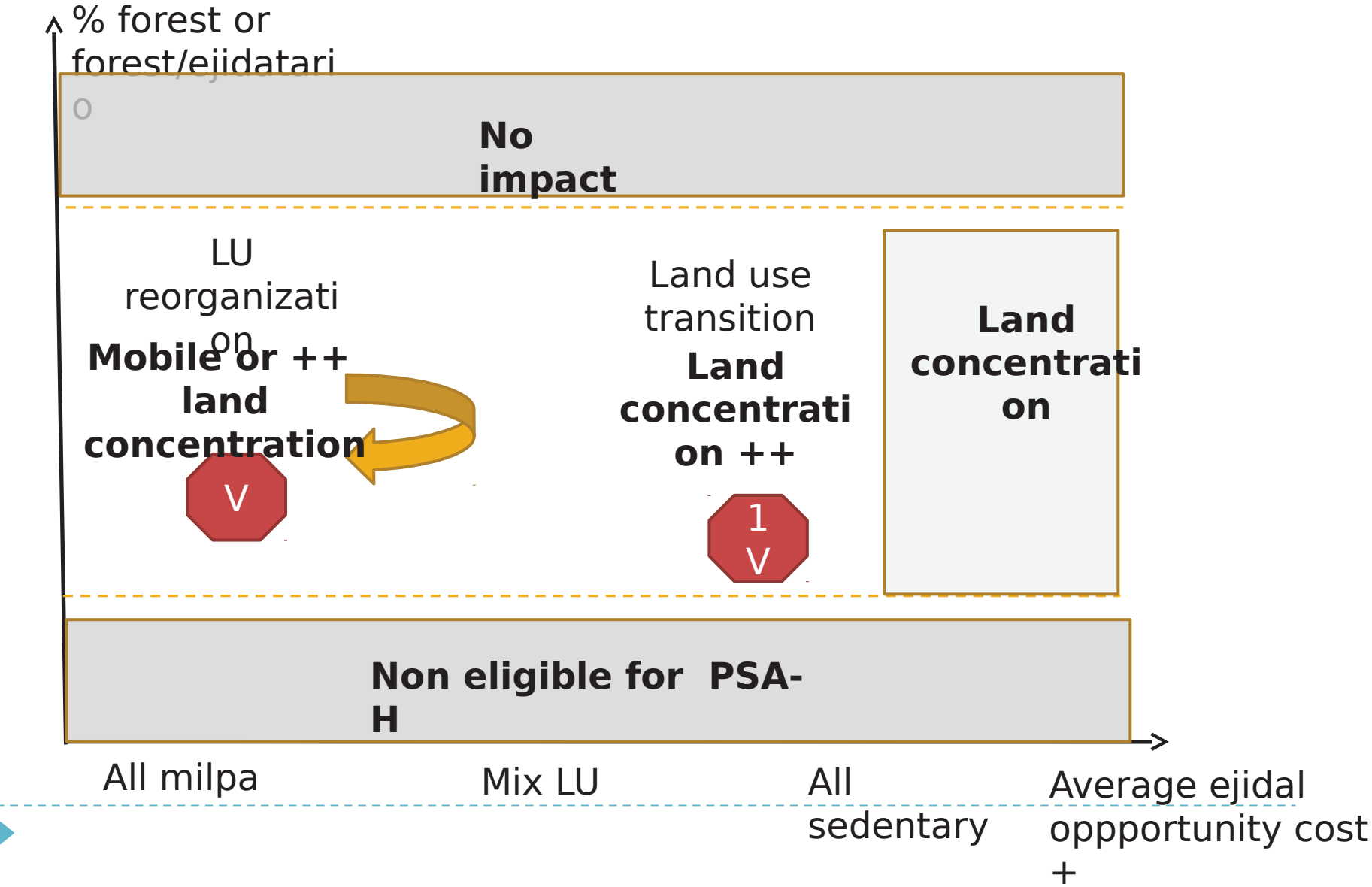




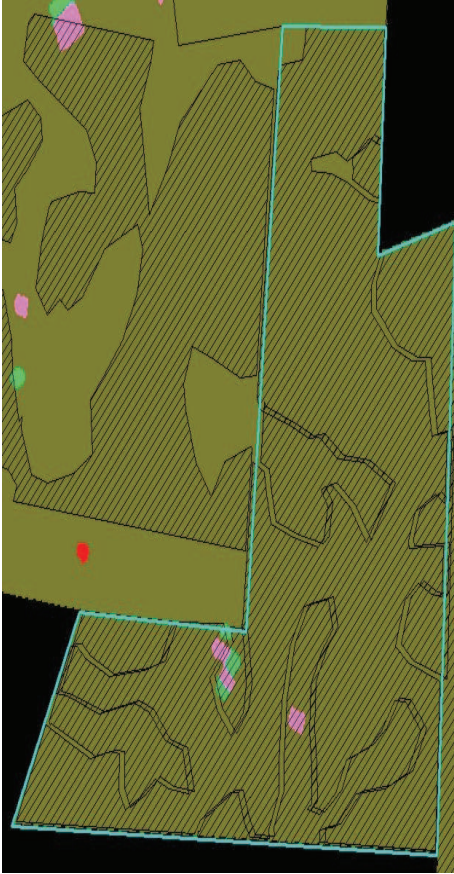
Expected impact of PSA-H on: LU change (forest)



Expected impact of PSA-H on: land organization



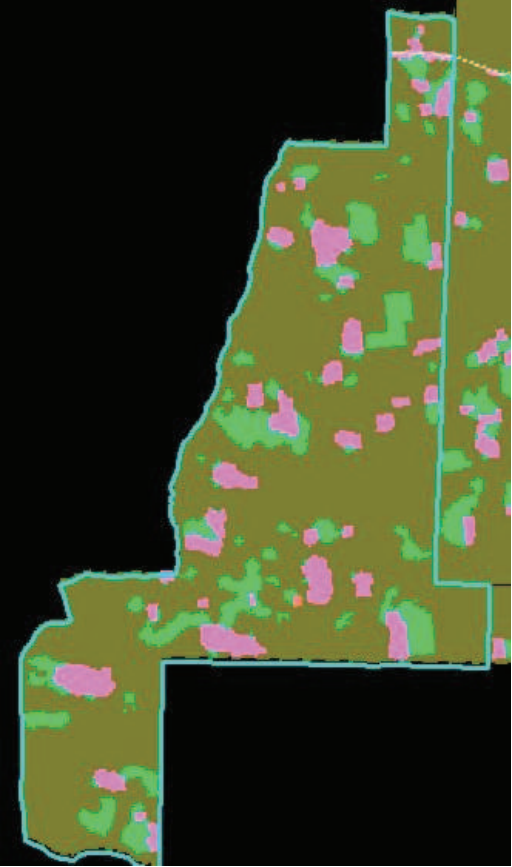
No impact of PSA-H



All forested
ejido



fonso caso II



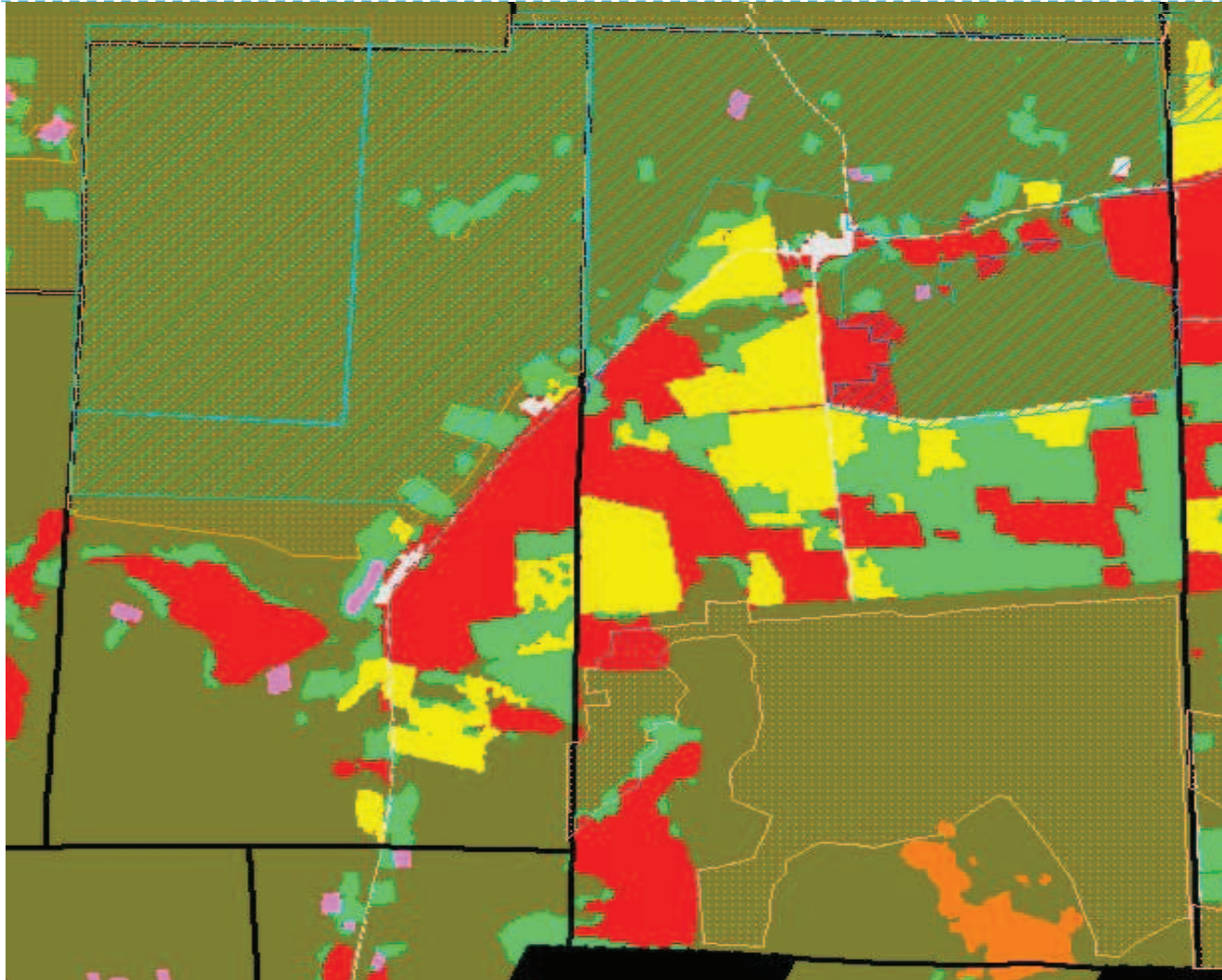
Non eligible (min of 200 ha of monte alto
requested)

Temoson

Ayim



All sedentary agriculture



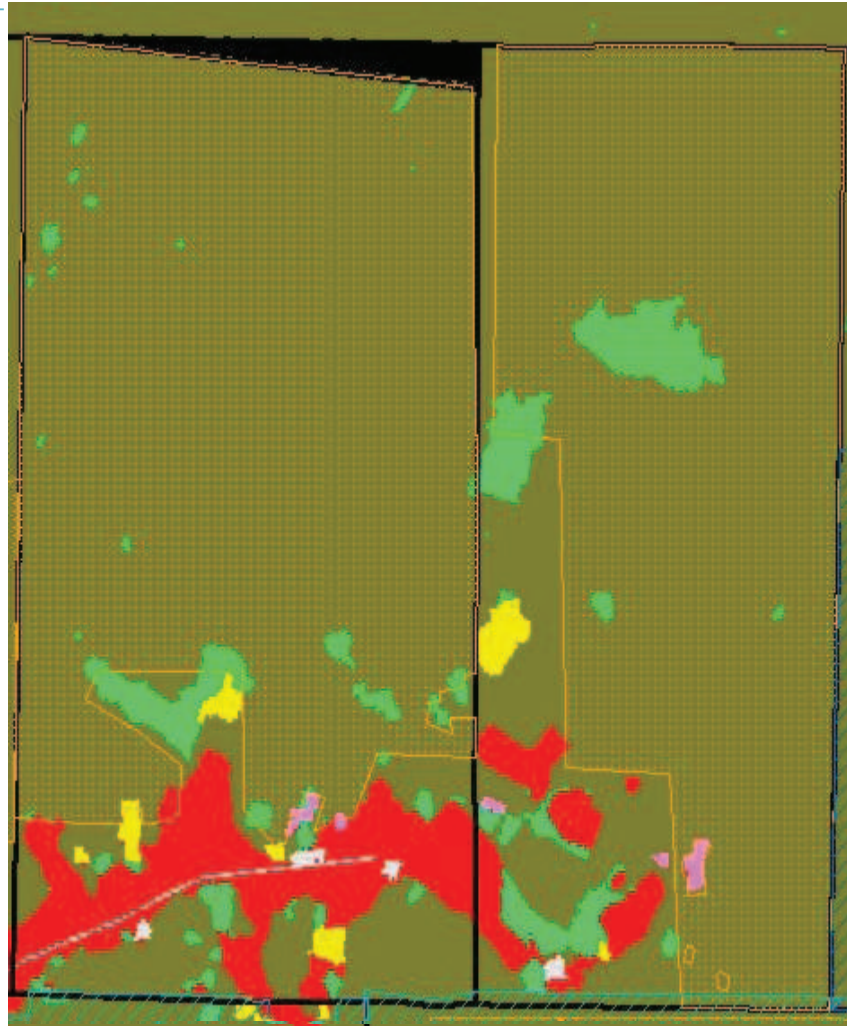
201
2



No change (PSA-H
additional?)
Nuevo Santo Cruz

Leakages
*San Diego Buena
Vieta*

Culture abandonment



201
2

Cult. abandonned
San Isidro y san Salvador



Cultures expansion



Pastures expended
San Isidro y san Salvador



Land transition:



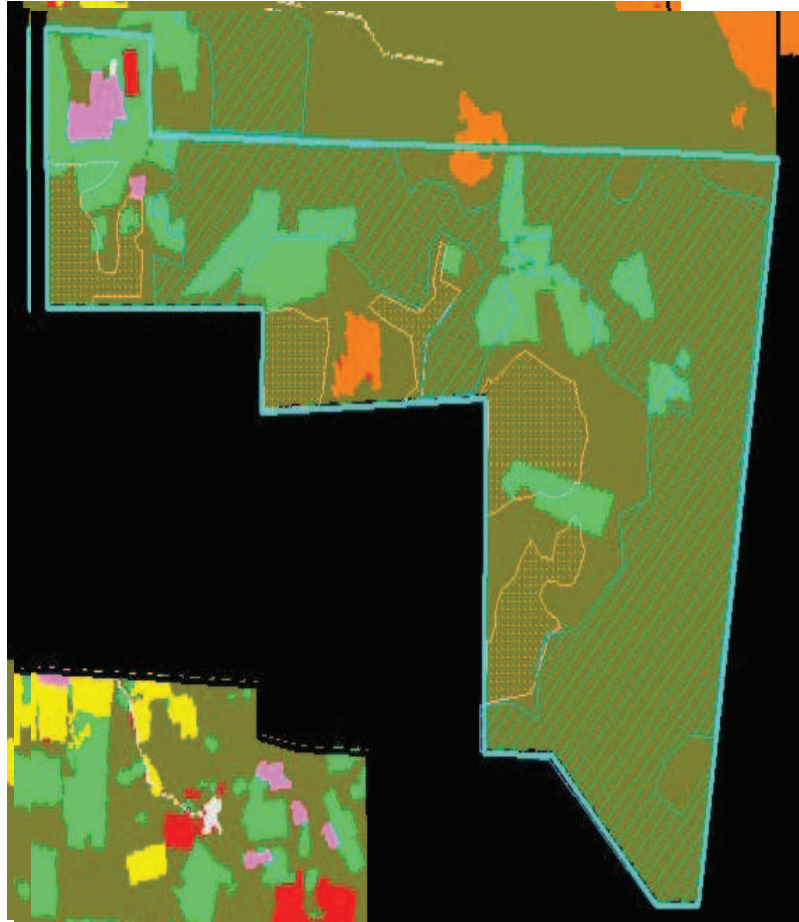
201
2



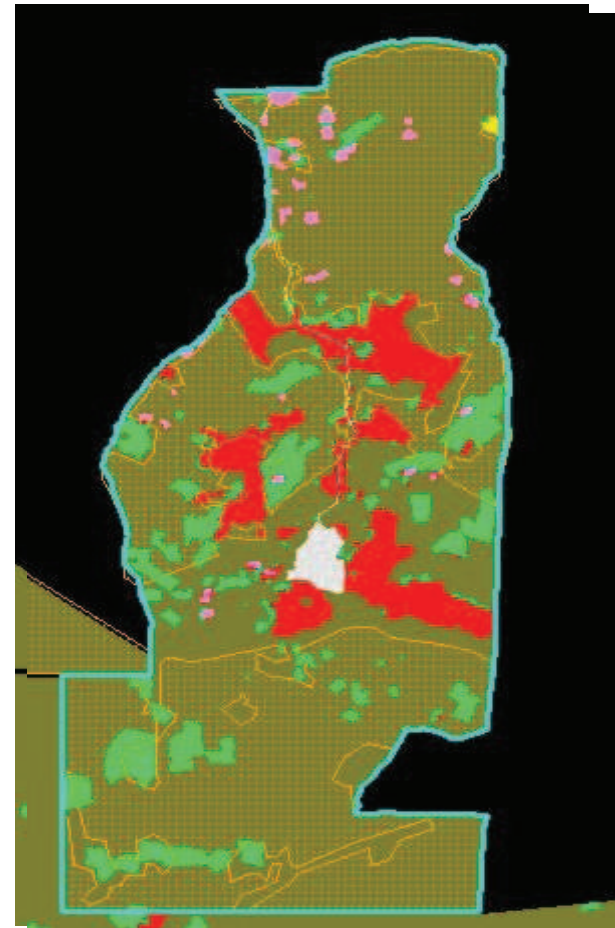
From milpa to
mecanizado
Sacnukhen



LU reorganization



Milpa concentrated
Huacpelchen



Switched milpa
Kentemo

201
2

Conclusions

- ▶ Land use change: ?
 - ▶ No clear overall impact (goes both ways: LU restriction v.s. payment effect)
 - ▶ Very flexible LU changes:
 - ▶ looks like PSA-H adapt to LU change trends (and not the opposite)
 - ▶ Anticipation effects
 - ▶ Importance of ejidal governance (ejidal assembly)
 - ▶ Possible leakages (Le Velly, G, A. Sauquet and S. Cortina, ongoing)
- ▶ Land use re-organization: YES
 - ▶ Land concentration with PSA-H due to land transition and milpa/pastures spatial reorganization
 - ▶ Scale : Regional vs ejidal LU specialization
- ▶ Methodology:
 - ▶ Satellite images every 7 years do not capture very adaptative strategies

These are preliminary hypothesis that need to be validated with quantitative analysis.



Perspectives

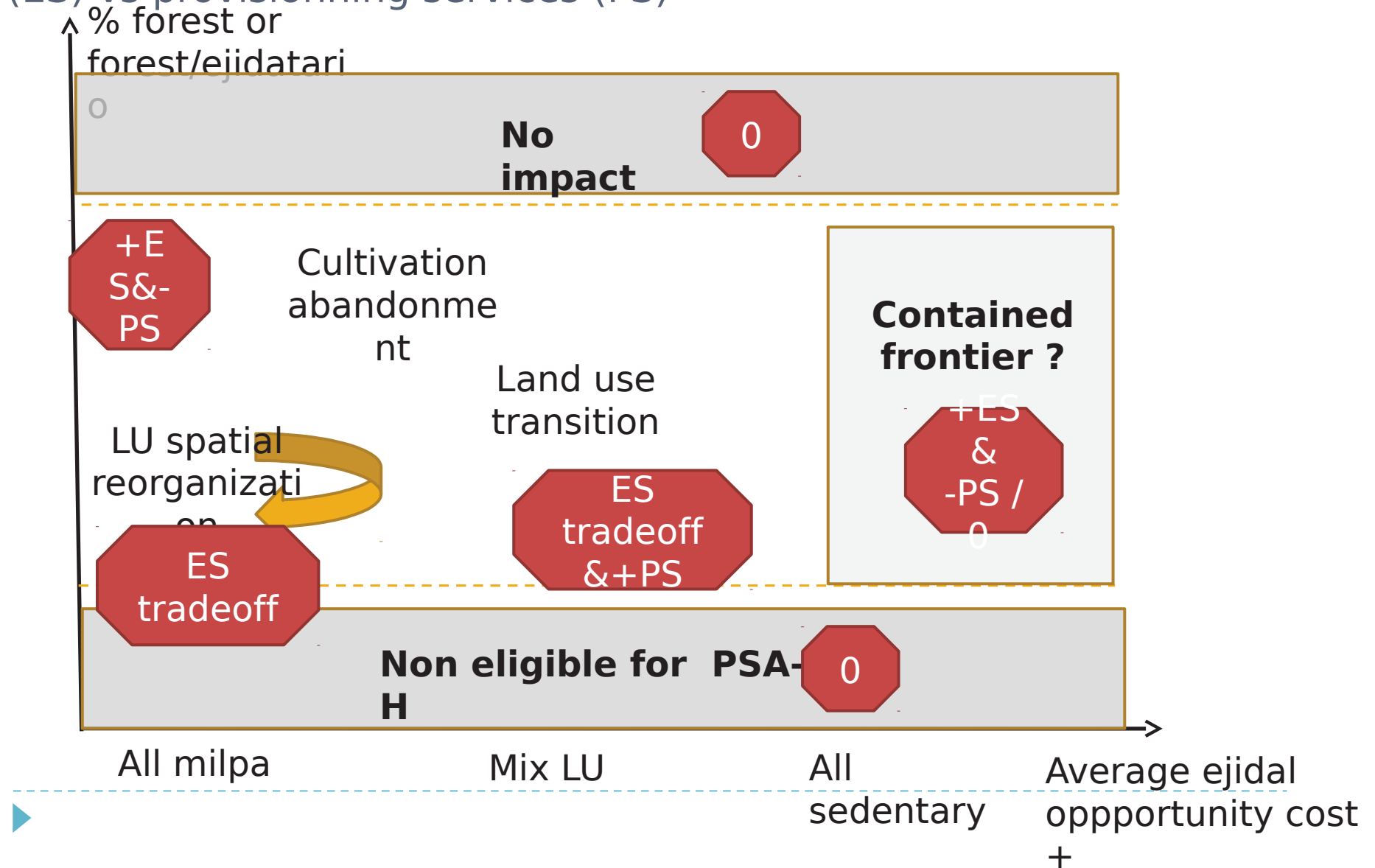
- ▶ Modality of contract renewal is key to the impact on LU changes and spatial organization :
 - ▶ Same polygon or not
 - ▶ Adapted to previous leakages
- ▶ Additional funding to favor sustainable crop/livestock production practices (agro/sylvo-pastoral) or conditionality to add with renewal (and particularly if non additional)?
- ▶ Integrated land use planning at ejidal (OTC) and/or inter-municipal level (pilots REDD+)



THANK YOU



Impact of PSA-H on long term sustainability: environmental services (ES) vs provisioning services (PS)



Methods:

Clasificación spot 1999/2005/2012

Participatory mapping

Visual interpretation

