

# Oil Palm and Regional Economic Development

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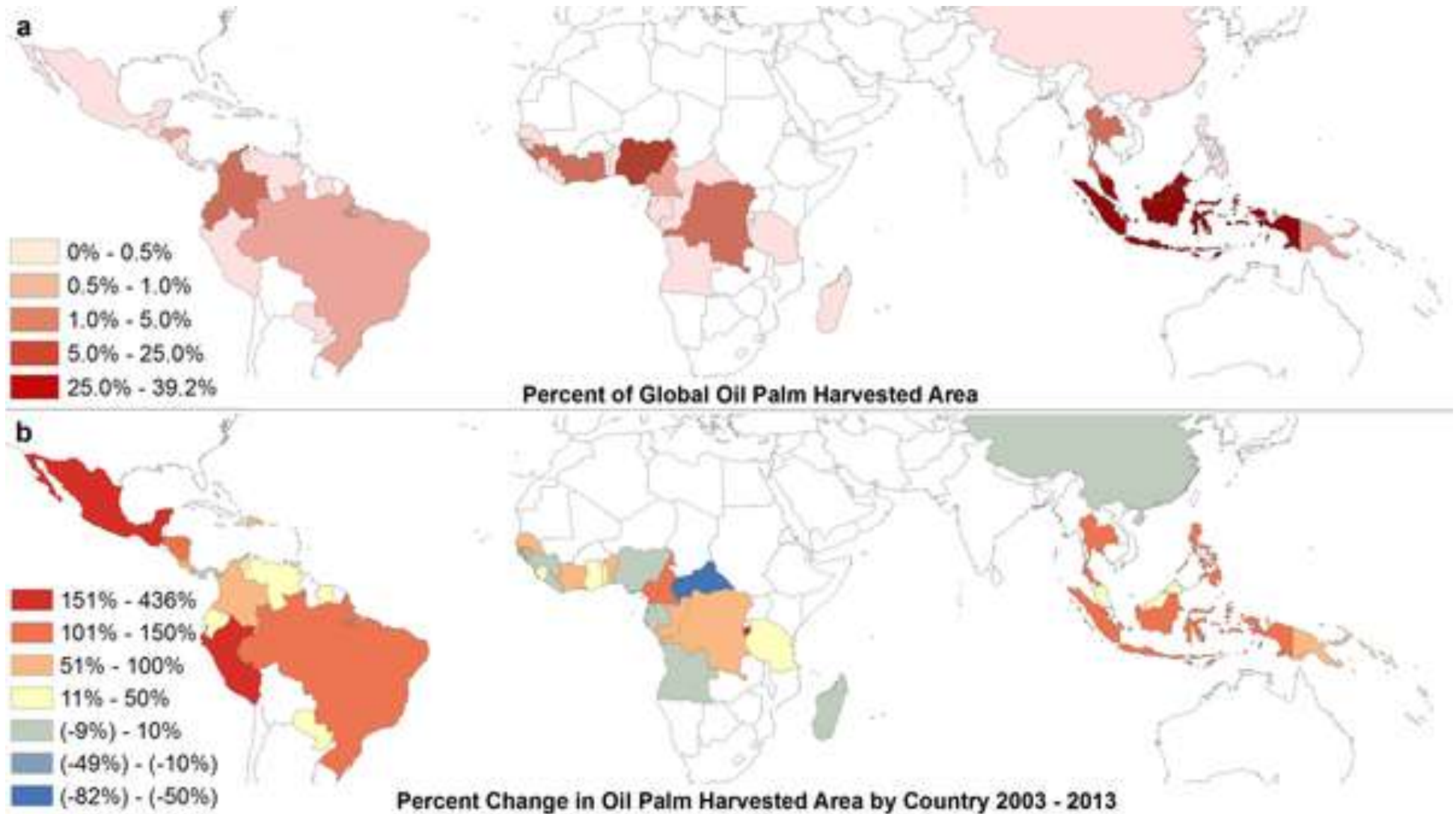
**Thematic Session: OIL PALM**

Grand Sahid Jaya Hotel in Jalan Jenderal Sudirman Kav. 86, Jakarta 10220,  
Indonesia

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# Rapid expansion of oil palm area



(Vijay et al., 2016)

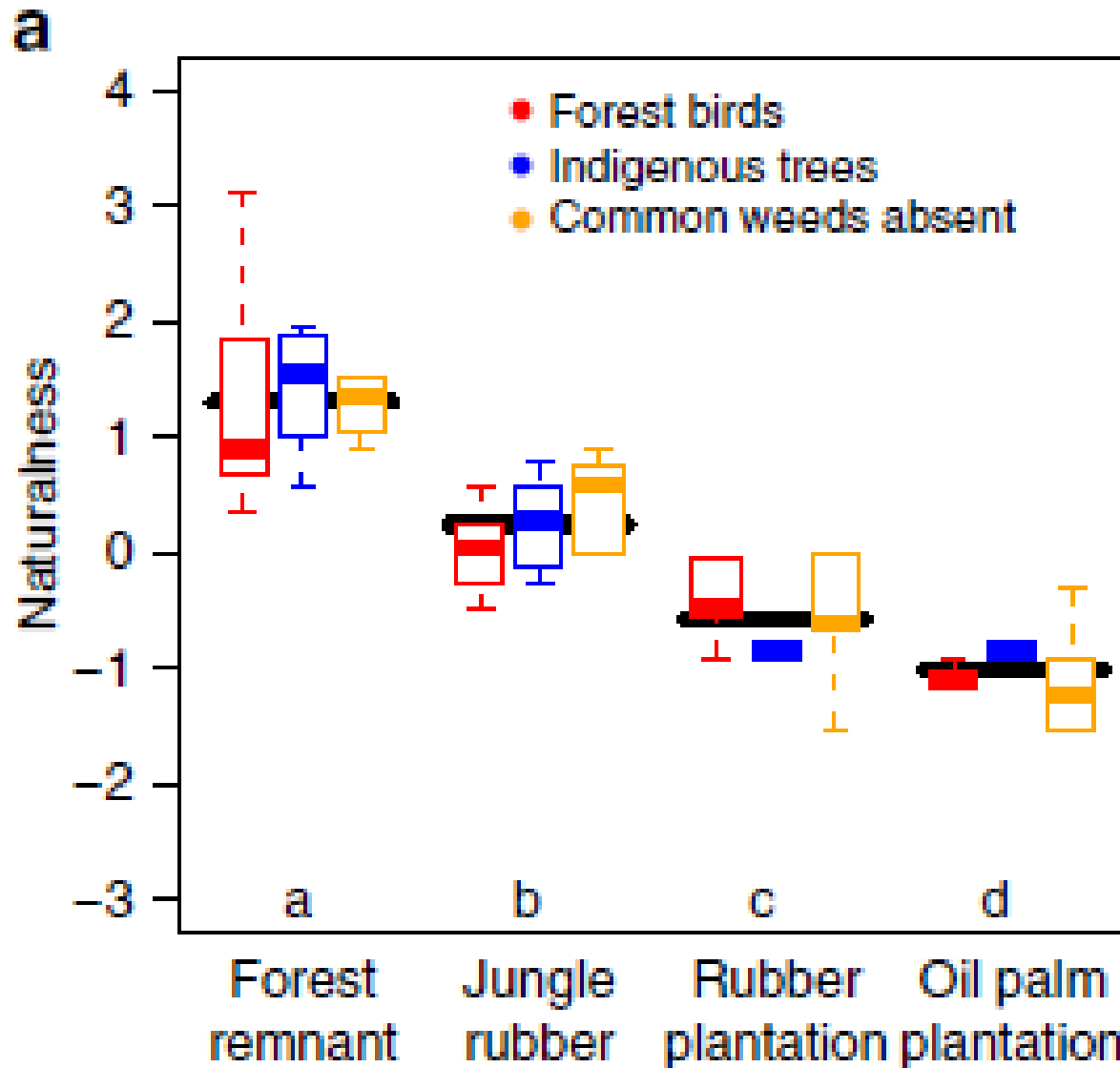


# Oil palm expansion is often criticized as causing deforestation in Indonesia



(Source: International Business Times, 2016)

# Oil palm plantations provide inferior ecosystem services compared to the forest.



# Despite deforestation, Indonesia became the number 1 producer of palm oil.

**39%:** Increase in oil palm area in the world over 2003-2014

**~80%:** Global palm oil production comes from Indonesia and Malaysia

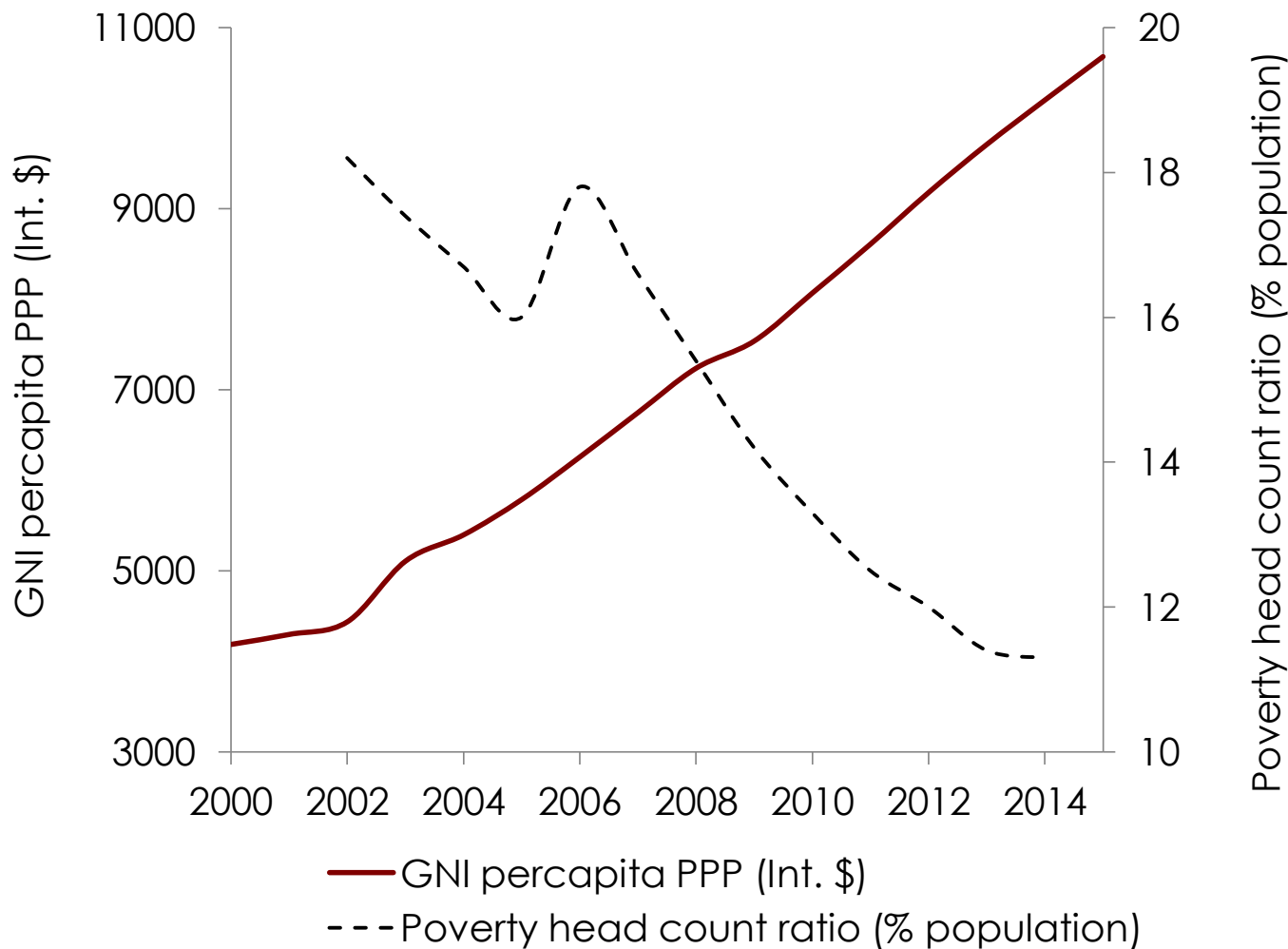
**2 → 7 million ha:** Increase in oil palm area in Indonesia over 2000-2013.

**44%:** Oil palm area managed by smallholders in Indonesia



Source: FAOSTAT

# Rapid expansion of oil palm is often justified on grounds of faster economic development.



**40%**  
Increase in the share of global GDP from Indonesia (2000-2015)

Source: IMF

**110**  
Country rank with respect to HDI in 2014

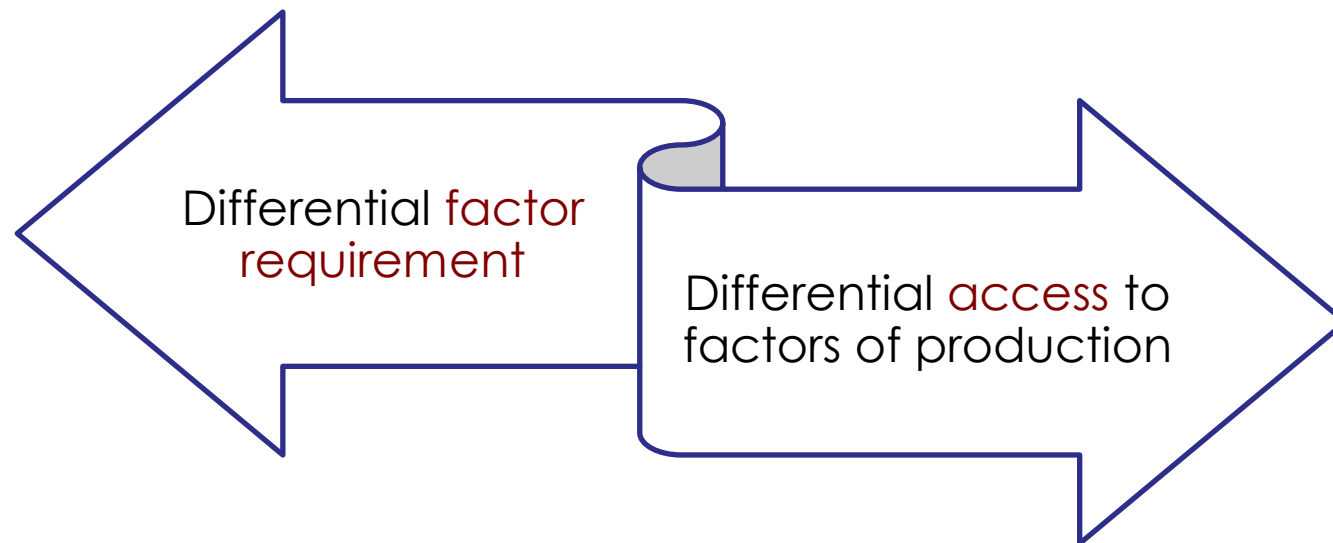
**+0.8%**  
Approximate annual change in HDI (2000-2014)

**GNI and Poverty in Indonesia (estimated from World Bank datasets)**



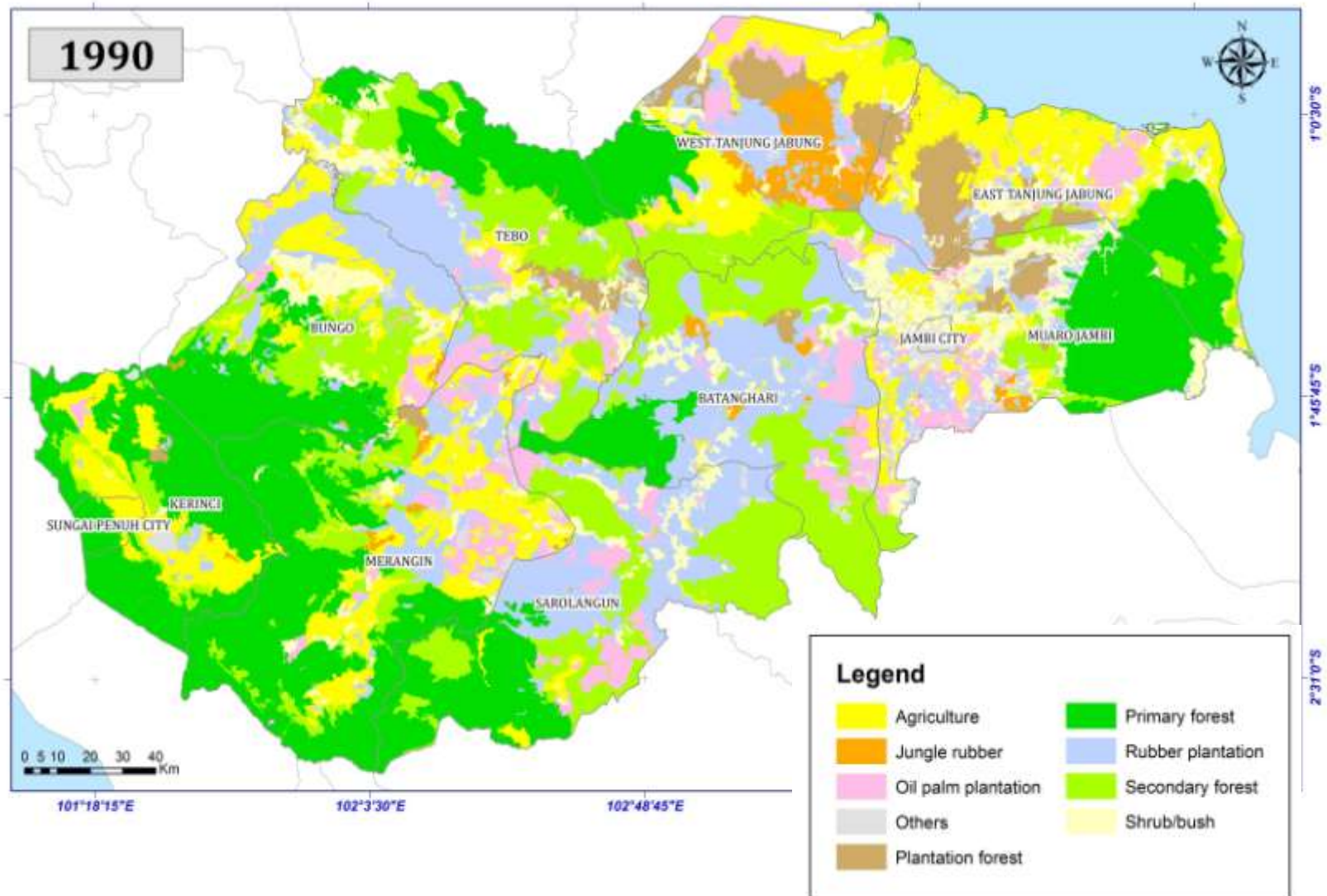
# The socio-economic effects of oil palm expansion is hardly quantified.

- Does oil palm increase livelihood standards of rural households?
- Differential input (factor) requirements could be leading heterogeneous impacts in the rural society.



# Study area: Jambi Province, Sumatra

Land use in Jambi (1990)



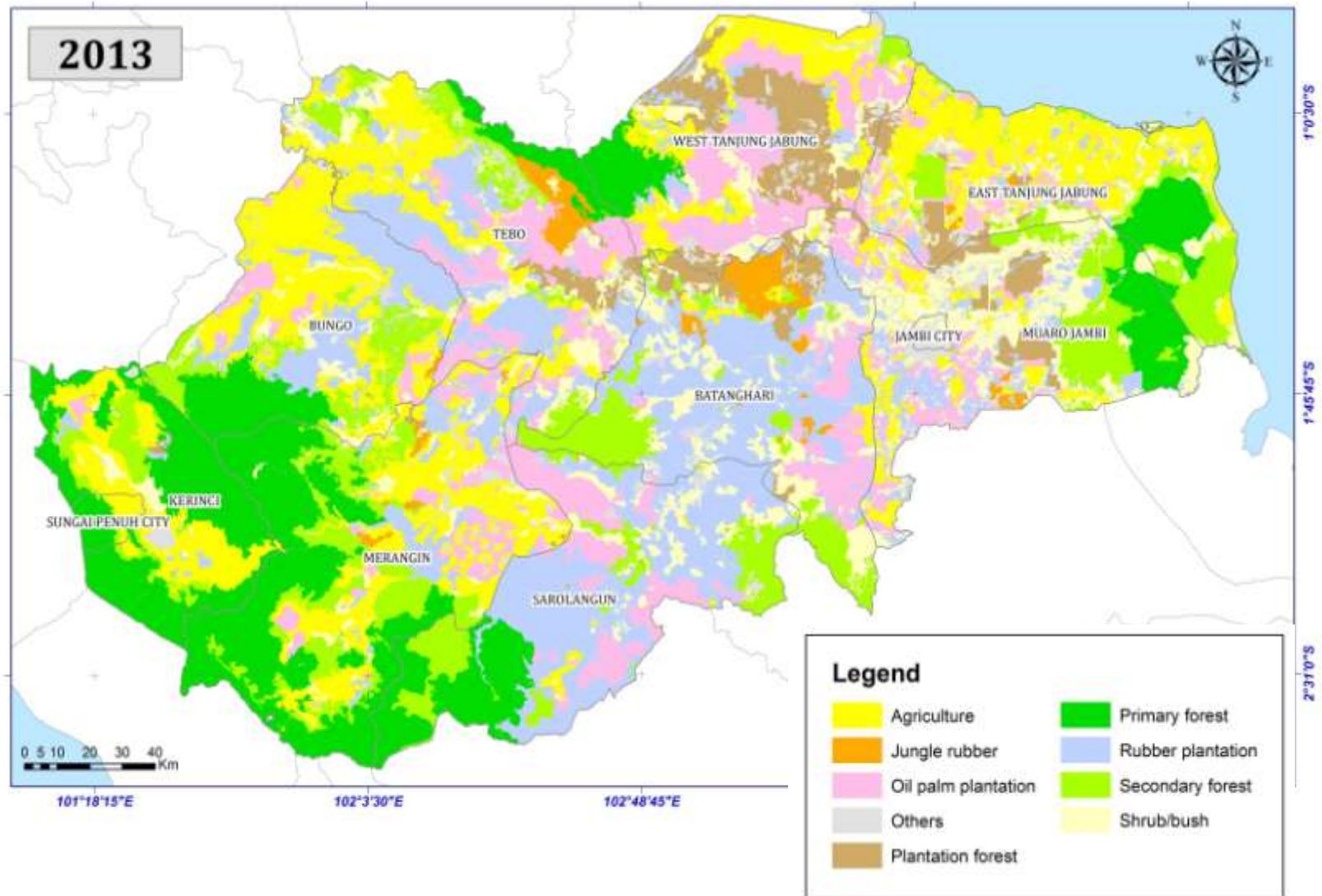
Source: Landsat images from Melani et al. (Unpublished)





# Study area: Jambi Province, Sumatra

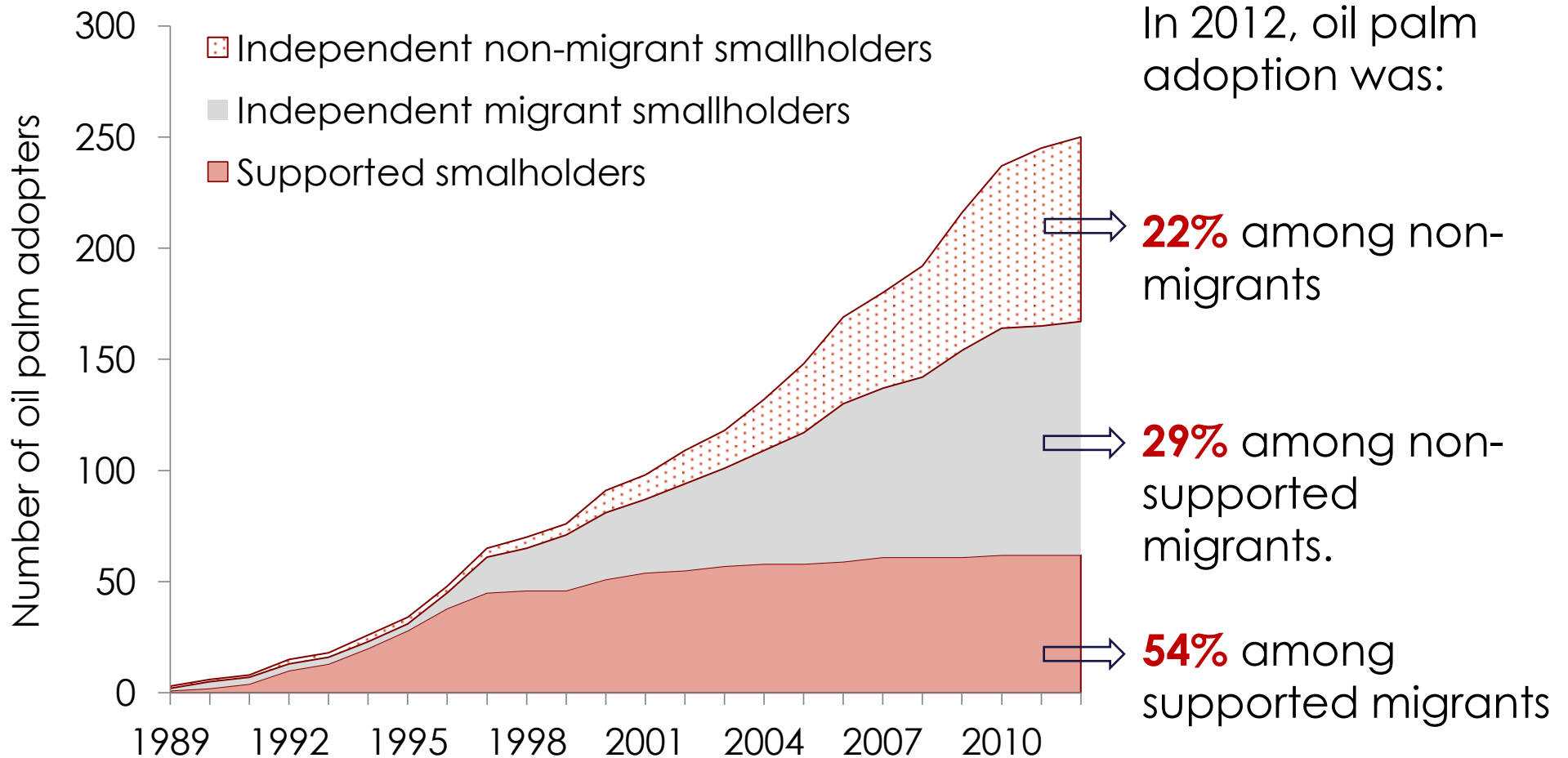
Land use in Jambi (2013)



Source: Landsat images from Melani et al. (Unpublished)



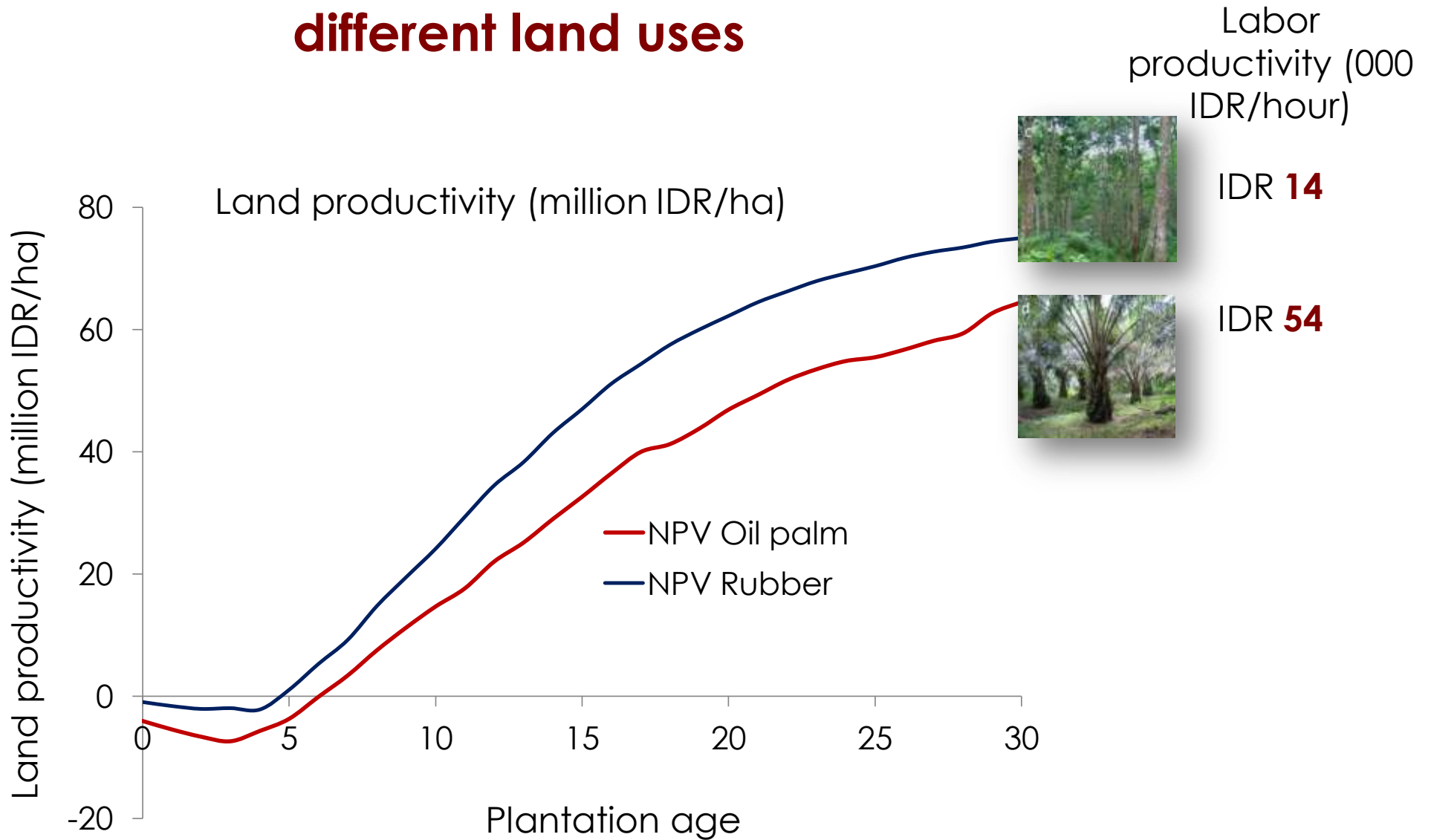
# Adoption of oil palm among smallholders in Jambi



Source: Farm survey data



# Factor input requirement of different land uses



Source: Farm survey data



# Livelihood Effects of Oil Palm Adoption

(Change in the consumption expenditure of farm households due to oil palm adoption)

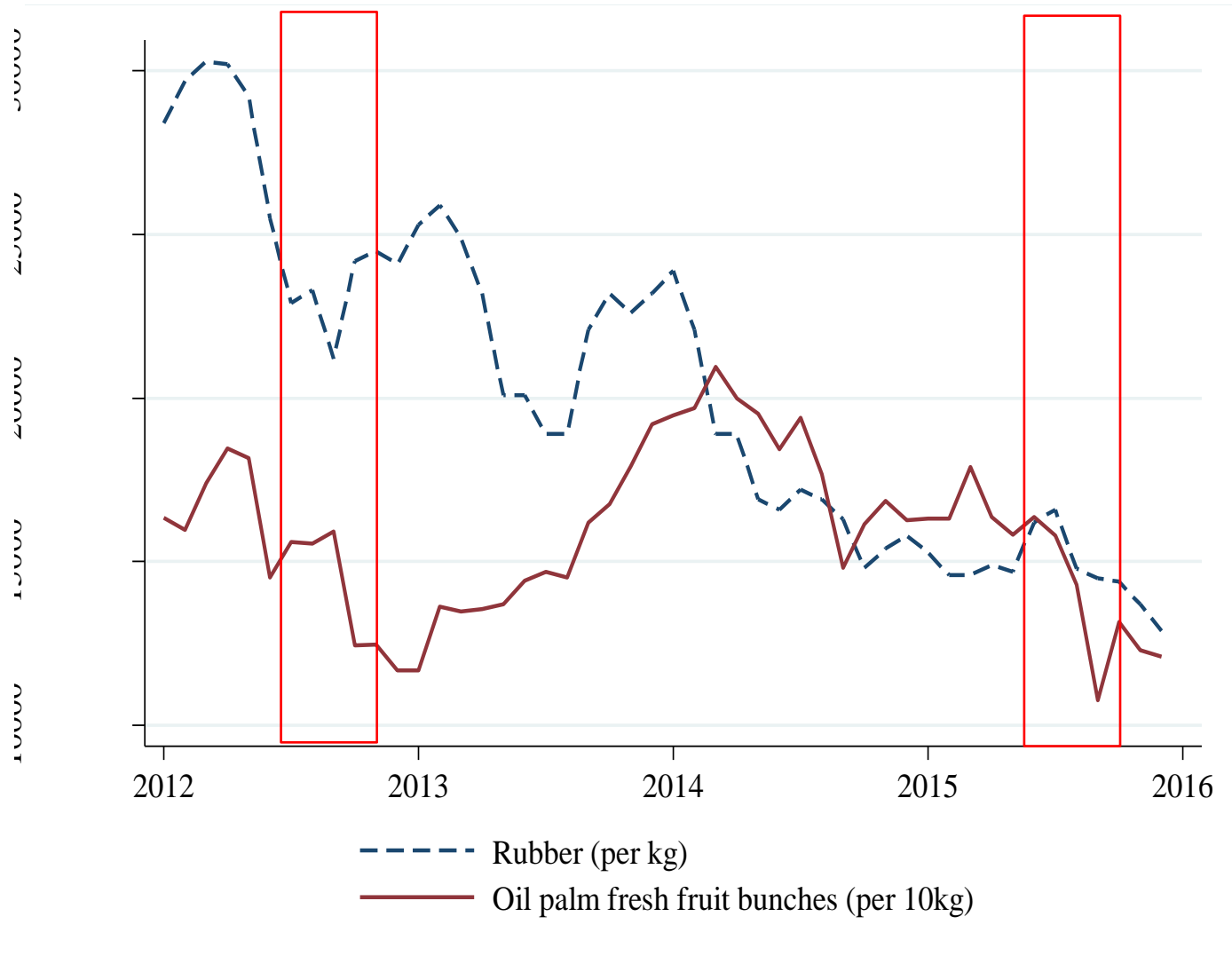
Modelling was conducted in two steps – excluding labor availability variables (step 1) and including them.

	Estimated PACE [million IDR/AE]		Average treatment effect (%)
	Adoption	Non-adoption	
<b>Step 1</b>			
Adopters	<b>15.8</b>	13.4	18%
Non-adopters	14.3	<b>12.2</b>	18%



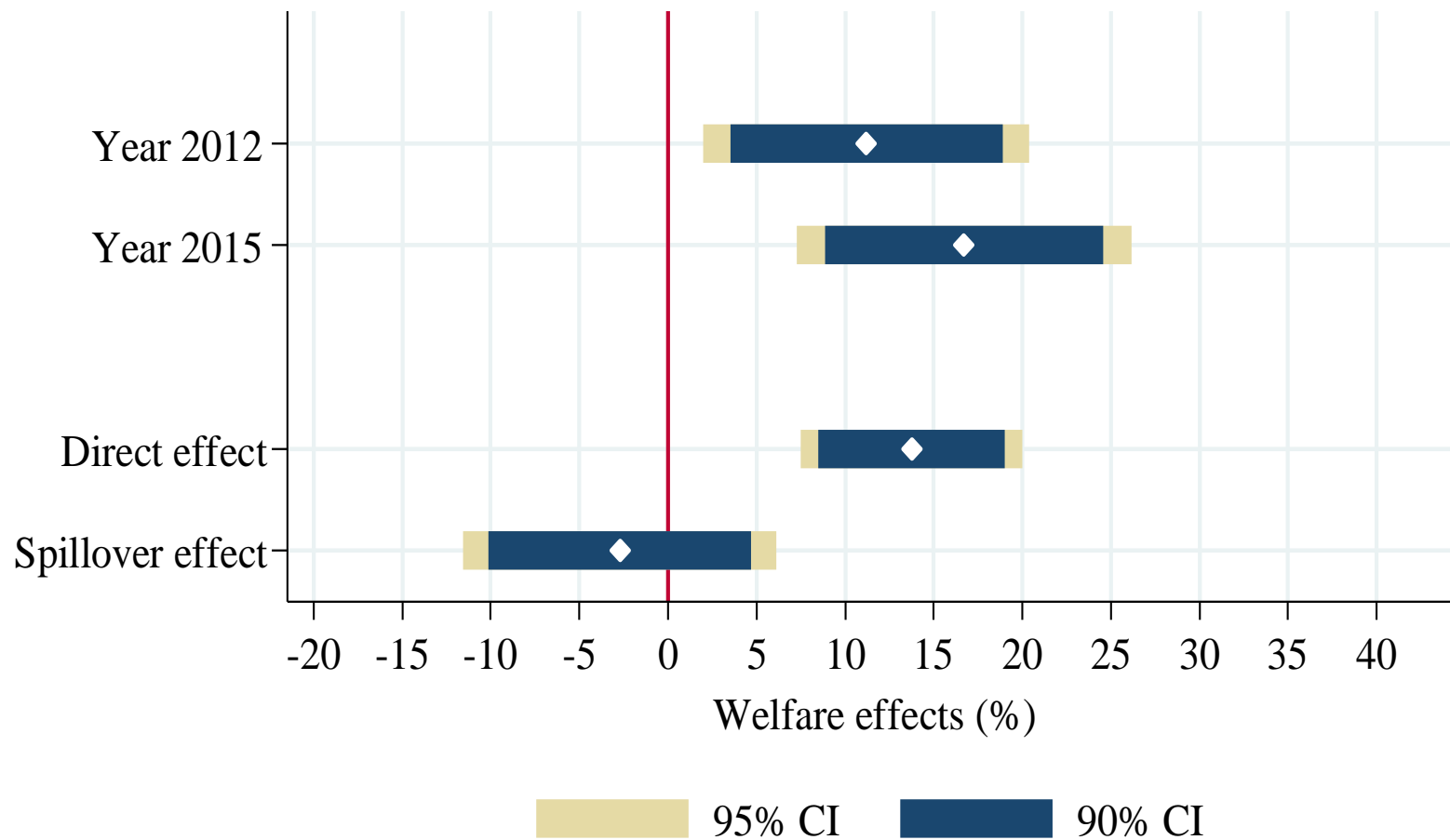
# Robustness of the estimates?

Market price of rubber and oil palm products fluctuate over time.



# Robustness of the estimates

(Changes in the consumption effects of oil palm)



## Oil palm is beneficial for smallholders.

- A major reason for farmers' adoption decision: oil palm is **less labor-intensive**.
- At least half of the total benefits from oil palm adoption: indirect gains from labor-saving.
- Living standard effects of oil palm adoption depend on **individual factor (esp. land and labor) endowments**.
- Results suggest that emerging environment-friendly policies should more explicitly consider social heterogeneity.
- Research on-going: Estimating the **spill-over effects** of land use changes (e.g. impact on labor households).



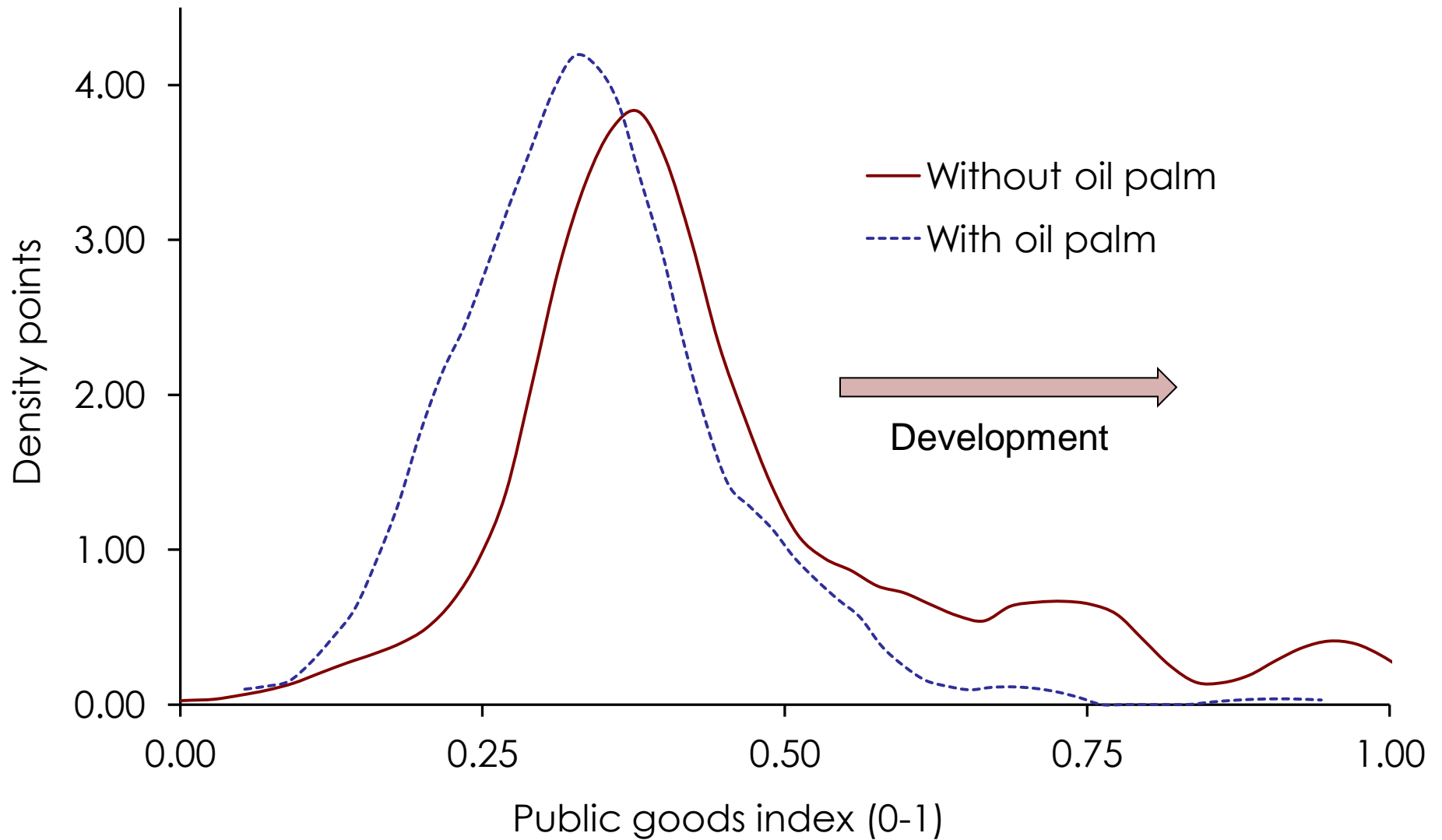
## Effect of oil palm on rural development

- Oil palm has **on average** positive effects in smallholders of **Jambi Province**.
- The economic effects of oil palm could vary between farm and non-farm households.
- The magnitude could vary depending on the competing crop.
- Using *Potensi Desa* (PODES) data and *Tree Crops Statistics* from 2000-2014, we estimated the effect of oil palm expansion on village amenities.
- The estimation was done at the regency level.





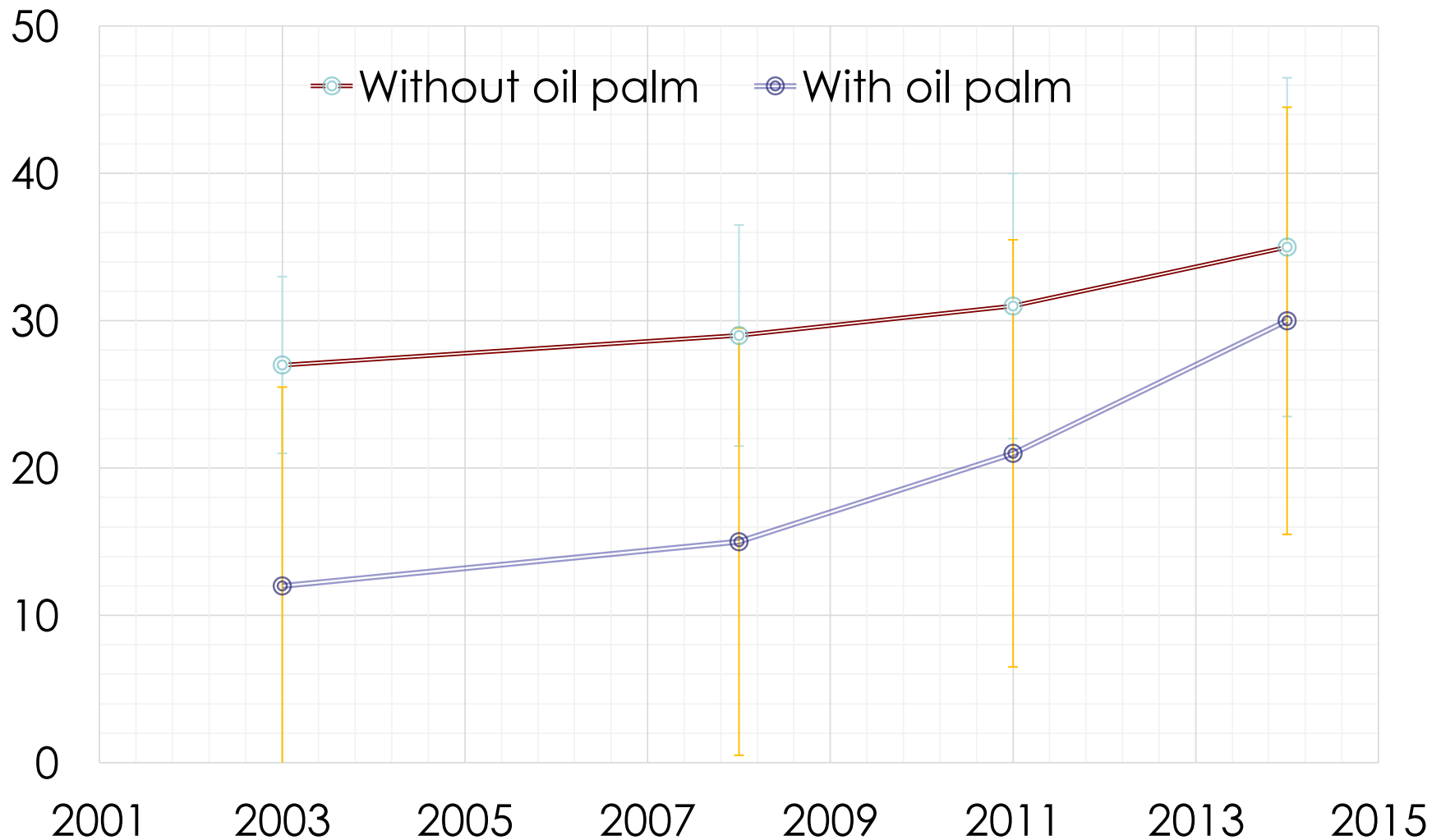
# Villages where oil palm came up btw. 2000-2014 were less-developed in 2000.



Source: Estimated from PODES 2000

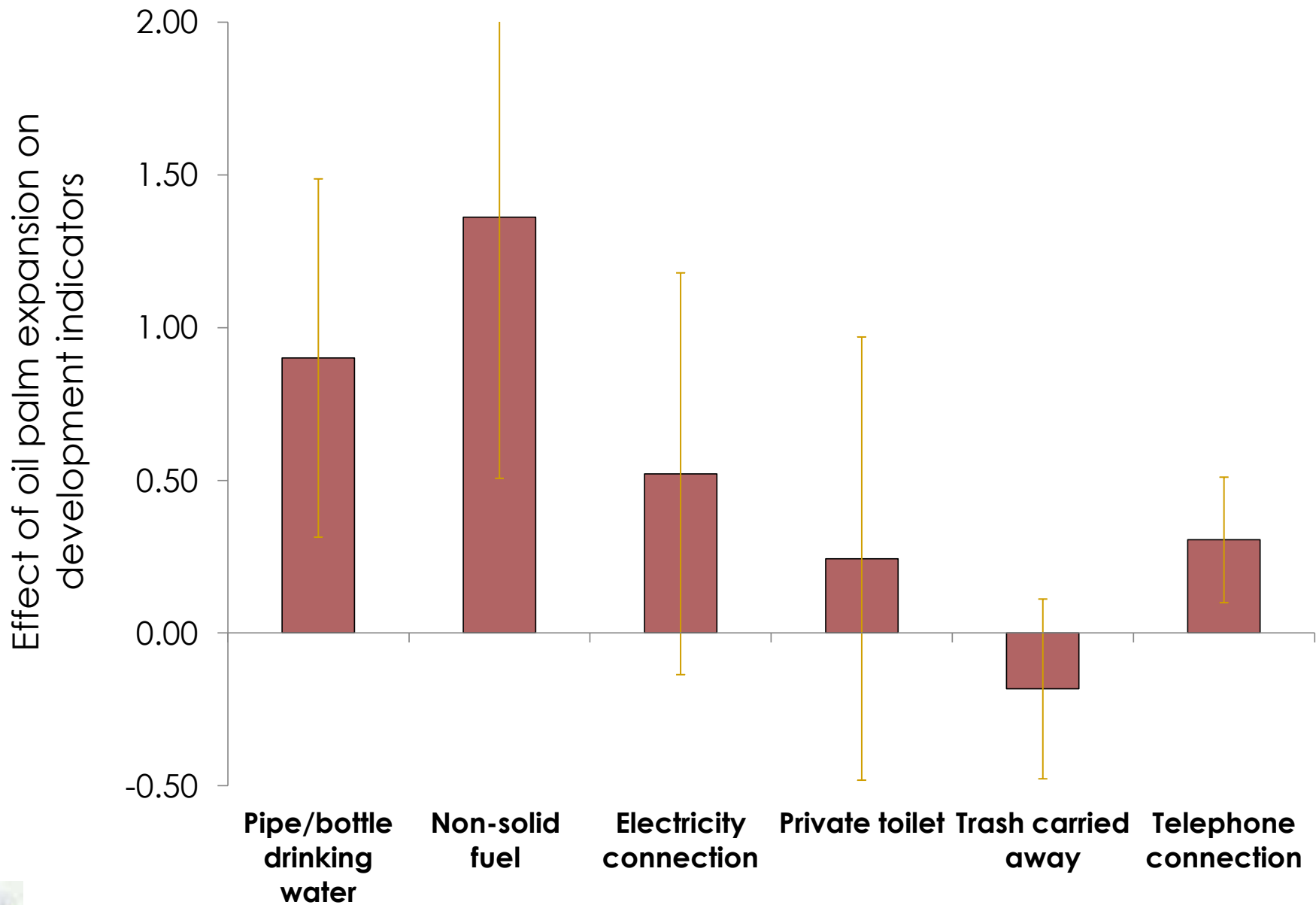


# Percentage of rural households with electricity connection in regencies



Source: Estimated from PODES datasets

# After “fixing” other regency characteristics, the oil palm expansion is found having a positive effect on rural development.





**Ecological and Socioeconomic  
Functions of Tropical Lowland  
Rainforest Transformation  
Systems (Sumatra, Indonesia)**



<http://www.uni-goettingen.de/en/310995.html>



**Thank you!**

# Growth in the plantation sector

