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Estimating the cost of strengthening ecosystem connectivity in an agricultural landscape in Central Sumatra

Laura Bateman, Dale Yi, Oscar Cacho, Randy Stringer

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Estimating the cost of strengthening ecosystem connectivity in an agricultural landscape in Central Sumatra

By Laura Bateman ^a, Dale Yi ^a, Oscar Cacho^b, Randy Stringer ^a

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Motivation

- ▶ Wildlife connectivity issue in Central Sumatra
- ▶ **GEF proposal:** Eco-construction to join fragmented habitats
 - ▶ Build 6 bridges across 11 km of protected forest area 'Batabo Hill' in Riau @ USD6M



Motivation

- ▶ **Issues:** The land will need to be acquired
- ▶ Significant (illegal) smallholder encroachment
- ▶ PES alternative to GEF proposal ?



Research questions

1. What level of compensation are farm households willing to accept to give up their land for conservation?
2. What is the extent of bias present in WTA estimates?
3. What role does gender play in influencing the willingness to accept compensation?
4. What factors determine household agricultural expansion decisions?

Data collection

Phase 1 - *October 2014- March 2015*

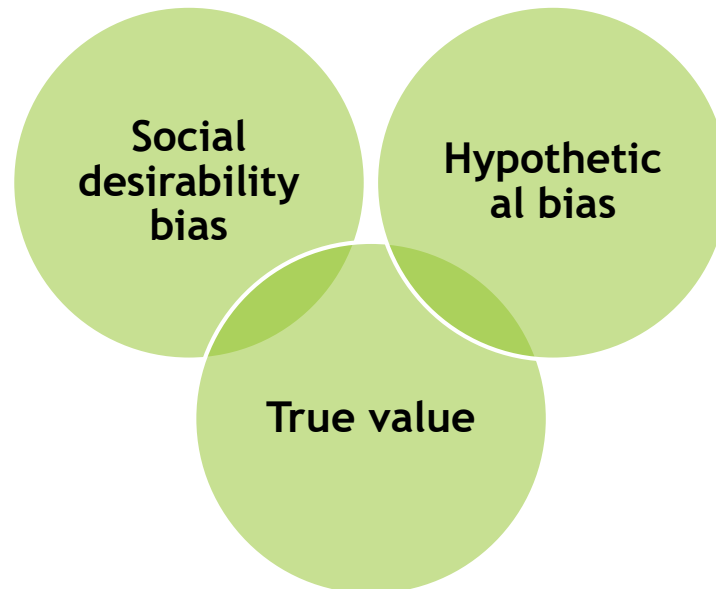
- ▶ Site visits FGD & village leaders interviews
- ▶ Sample selection

Phase 2 - *June/July 2015*

- ▶ Surveyed 300 randomly selected HH in 4 villages surrounding Batabo Hill (75 per village)

Methods

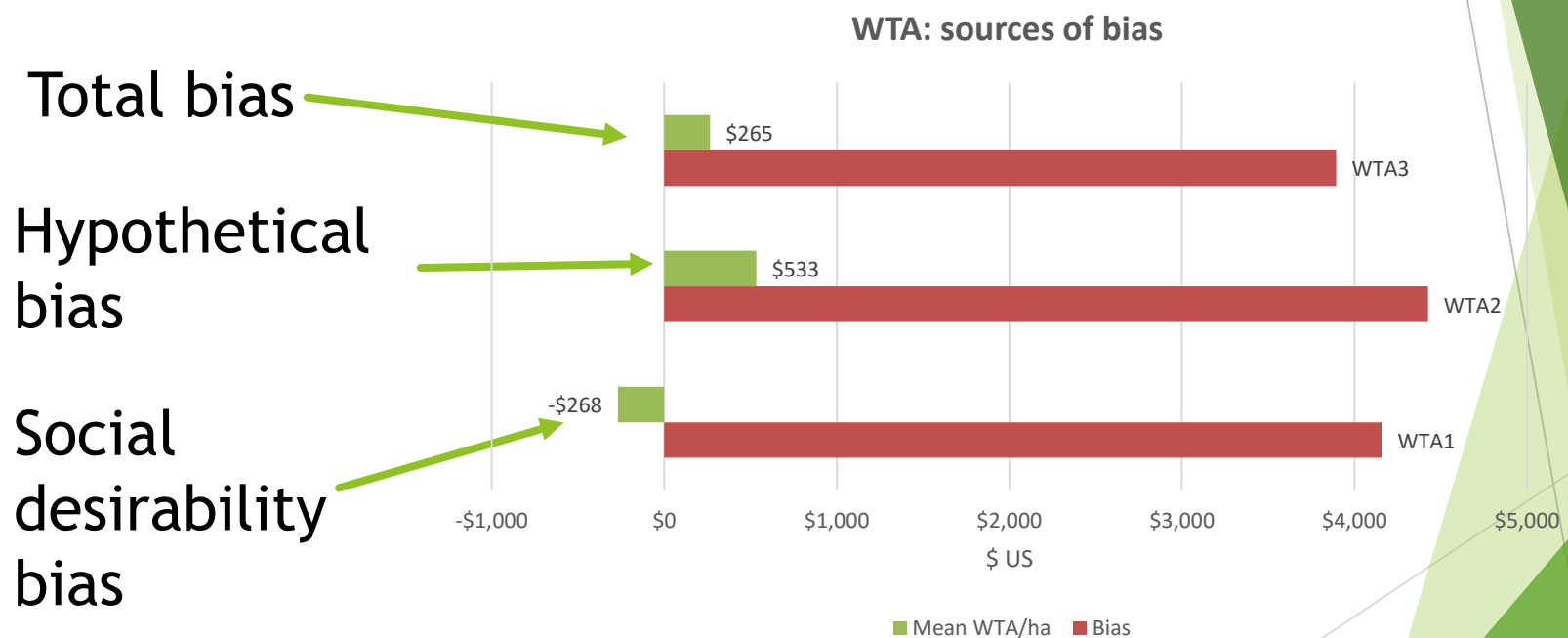
- ▶ Stated preference approach
- ▶ Outlined 5 yr hypothetical 'buy-out' program of land in BH (cheap talk script)
 - ▶ Land would be untouched
 - ▶ Lump sum vs monthly payment
 - ▶ Concerns over bias



Inferred valuation (Lusk & Norwood, 2009)

	WTA 1 USD/ha	WTA 2 USD/ha	WTA 3 USD/ha
Question	What <u>you</u> would accept to give up <u>your</u> land	What they think their neighbours would <u>say</u> they would accept <u>when surveyed</u>	What neighbours would <u>actually</u> accept <u>in real life</u>
Bias	True value + social desirability bias + hypothetical bias	True value + hypothetical bias	True value
N	185	148	148
Mean	US\$4,158	US\$4,426	US\$3,893

	WTA1 (Own)	WTA2 (Neighbour 'say' WTA)	WTA3 (Neighbour 'actually' WTA & 'true value')
Mean	US\$4,158	US\$4,426	US\$3,893



Future research

- ▶ Opportunity for buy-out alternative
- ▶ US \$6M would get you ?
 - ▶ Program design issues- auction vs payments, targeting
 - ▶ How to best support connectivity at least cost?



Thank you!

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