



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*



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

Laura Bateman, Dale Yi, Oscar Cacho, Randy Stringer

Contributed presentation at the 60th AARES Annual Conference,
Canberra, ACT, 2-5 February 2016

Copyright 2016 by Author(s). All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.



UNIVERSITY OF
ADELAIDE



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

Global Food Studies, University of Adelaide ^a , University of New England ^b



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*

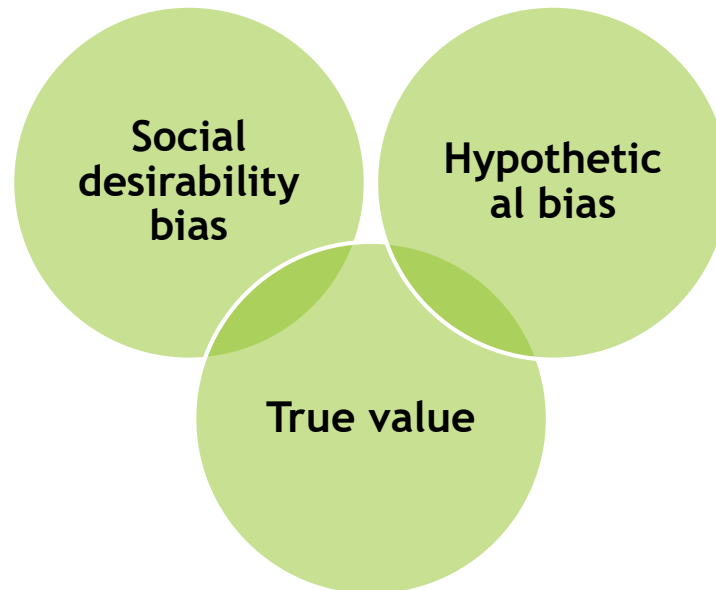
- ▶ Site visits FGD & village leaders interviews
- ▶ Sample selection

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

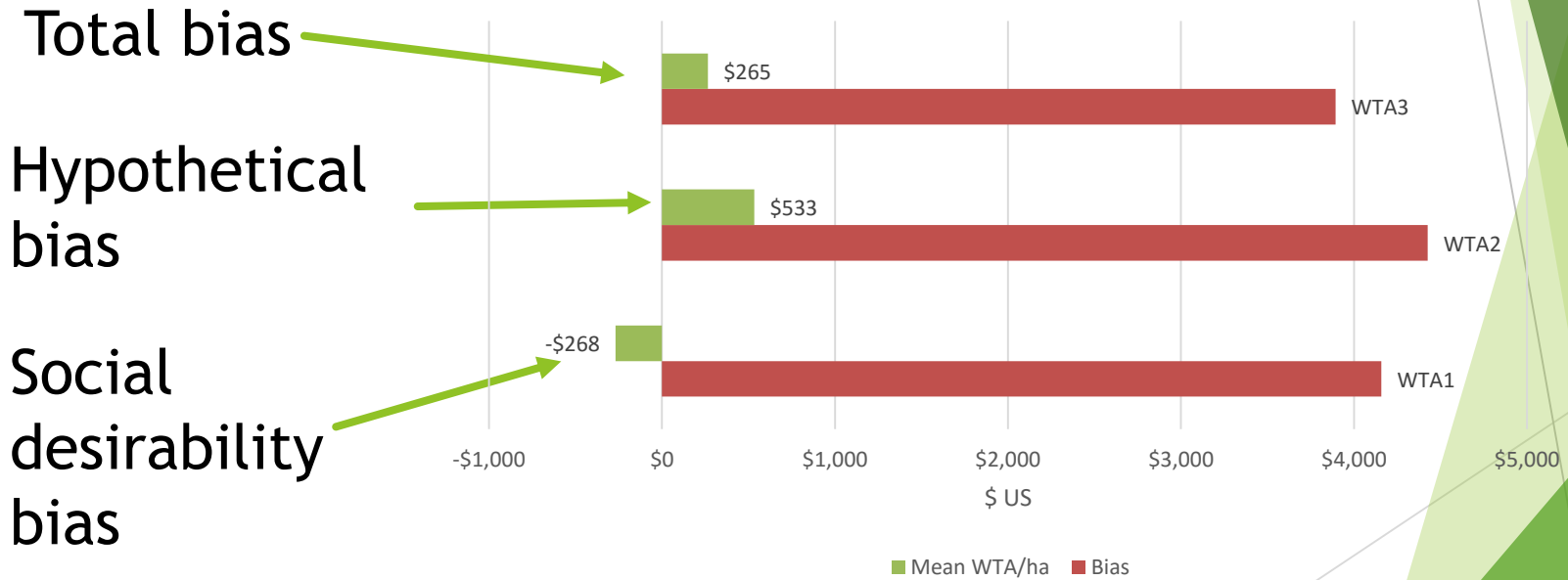


Inferred valuation (Lusk & Norwood, 2009)

	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

WTA: sources of bias



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!

<http://www.adelaide.edu.au/global-food>

<http://www.adelaide.edu.au/global-food/blog/>

laura.bateman@adelaide.edu.au