

Factors associated with household income in rural Cambodia

Lakzadeh P^{1,5}; Green TJ^{2,5}; McLean J^{2,5}; Talukder Z⁶; Li K^{3,4}; Lynd LD^{3,4,5}

1.School of Population and Public Health 2.Faculty of Food, Nutrition and Health 3.Faculty of Pharmaceutical Sciences 4.Collaboration for Outcomes Research and Evaluation 5.University of British Columbia, Canada, 6.Helen Keller International, Cambodia

Background

- Despite some economical growth over the past decade health outcomes have improved little in Cambodia^{1,2}.
- The Fish on Farms project aims to improve household food security, nutritional outcomes and livelihoods through an integrated Homestead Food production (HFP) model that integrates vegetable, fruits and fish production³.
- Aside from improving diet quality³, the HFP model improves the household economy through sale of surplus foods.
- To assess the impact of the HFP model on household economy, factors that are associated with household income in this region must be identified.



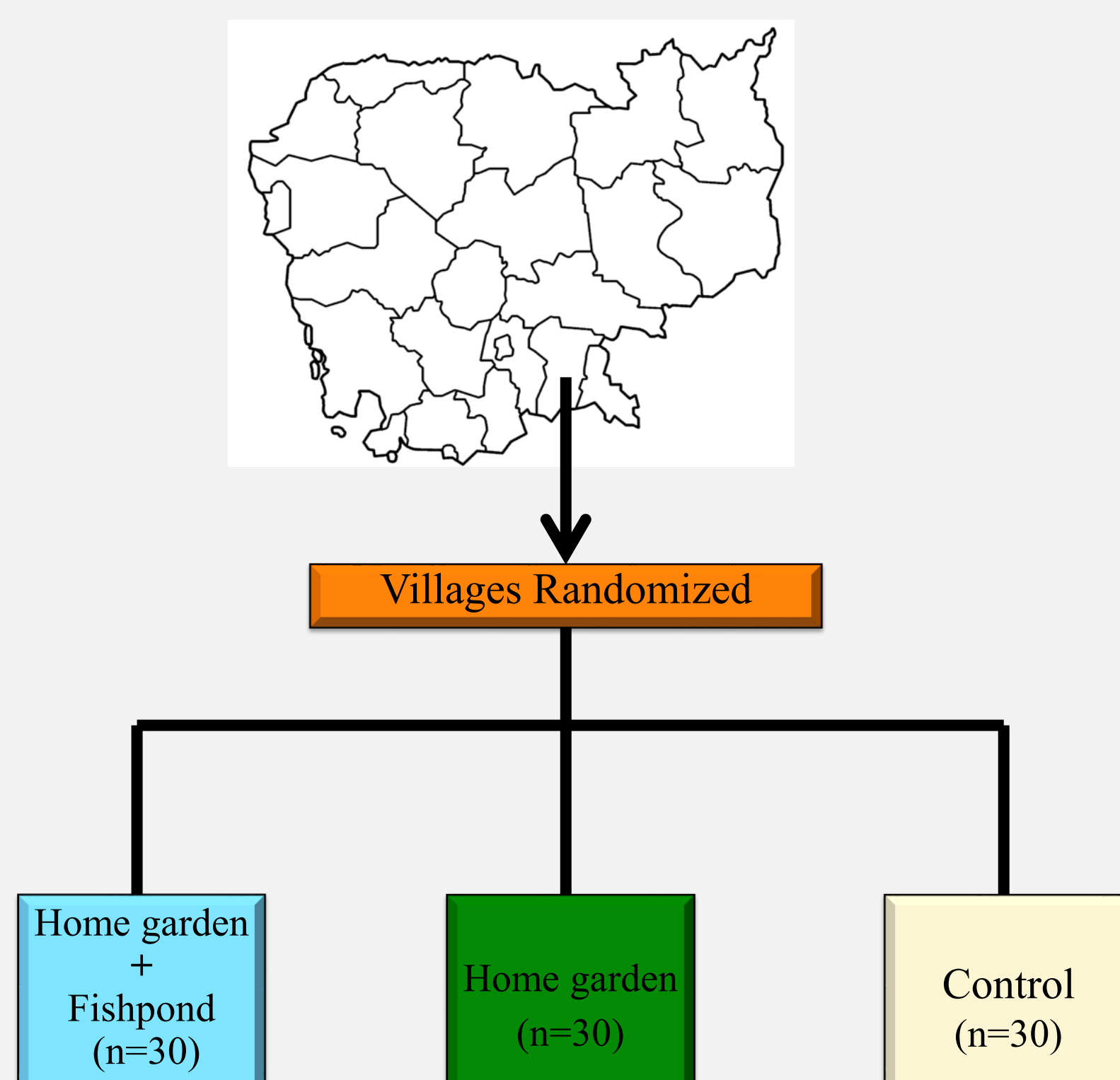
Objective

The objective of this study is to identify factors associated with household income in rural Cambodia.

Methods

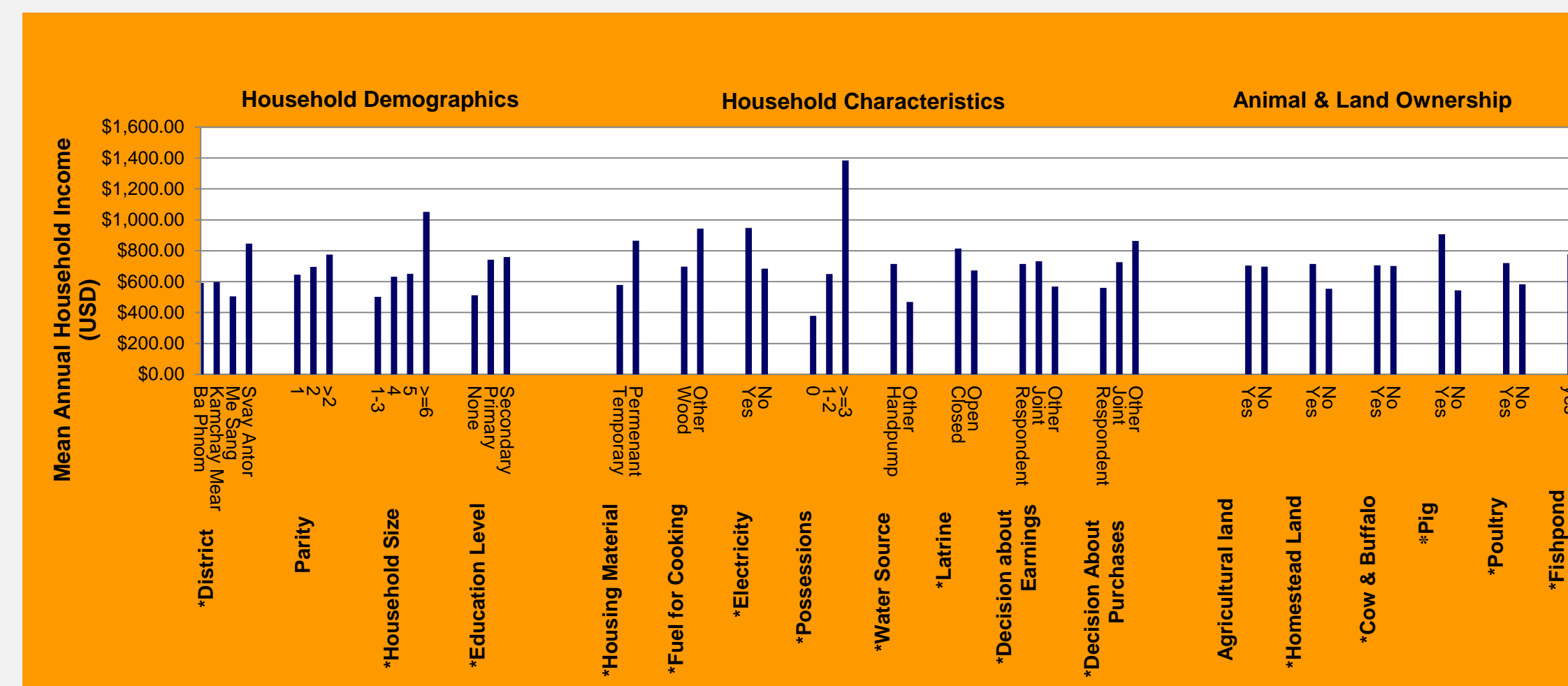
- Fish on Farms has a longitudinal parallel cluster design with three arms: plant based HFP, plant based HFP plus a small pond aquaculture, and a comparison group.
- Each Village represents a cluster of 10 households

Figure 1. Study Methodology



- Using the baseline data the mean annual income and household characteristics were identified

Figure 1- Distribution of mean annual income for potential associates of Household income



*Variable that presented a significant association with household income in a univariate analysis

- The univariate relationship between each potential characteristic and household income was assessed; all characteristics with a $p < 0.05$ were included in the multivariate model.
- Household and neighborhood factors associated with household income were identified using a generalized linear regression model with Gamma distribution, adjusting for potential confounders.

Results

- The mean (SD) annual household income was **US \$703 (1,031)**.
- 1/5 of the respondents had completed lower/upper secondary school
- Over 88% of households were rice crop farmers
- Approximately 50% of households owned cows/buffalos and fish pond; 88% of households owned ducks or chickens

Table 1. Characteristics of the study population

Characteristics	Mean(SD)
Respondent's Age (years)	29.6 (6.5)
Household size	4.6 (1.5)
Parity	2.3 (1.6)
Annual Household Income (US dollars)	703 (1,031)

Table 2. Factors associated with household income

	N	Change in Mean Annual Household Income (%)	P-value
District code			
Ba Phnom	150	↓ 30 %	<.0001
Kamchay Mear	280	↓ 30 %	<.0001
Me Sang	60	↓ 44 %	<.0001
Svay Anor	410	Reference	Reference
Household size			
1-3	209	↓ 35%	<.0001
4	267	↓ 25%	0.0004
5	214	↓ 34%	<.0001
>=6	210	Reference	Reference
Household Possession			
0	155	↓ 60%	<.0001
1-2	622	↓ 41%	<.0001
>=3	123	Reference	Reference
Housing Material			
Permanent	394	↑ 35%	<.0001
Temporary	506	Reference	Reference
Fish Pond			
Yes	468	↑ 27%	<.0001
No	432	Reference	Reference
Pig Ownership			
Yes	397	↑ 32%	<.0001
No	503	Reference	Reference

- The presence of a **fishpond** and ownership of **pigs** are associated with ~30% higher annual household income.
- Ownership of agricultural land and raising poultry is not significantly associated with household income.
- There was no significant association between the presence of electricity or closed latrines and household income
- Other significant factors associated with income are household size, housing material and possessions

Conclusion

In these rural districts of Prey Veng province, among all other activities considered, the presence of a fishpond and pig ownership are associated with a higher annual income.

References

- National Institute of Statistics. Cambodia Demographic and Health Survey 2010. Phnom Penh, Cambodia and Calverton, Maryland, USA: National Institute of Statistics, Directorate General for Health and ORC, Macro; 2011.
- Ministry of Health. Cambodia Anthropometric Survey; 2008.
- Lannotti, Lora, Cuningham K, and Ruel M. *Improving Diet Quality and Micronutrient Nutrition: Homestead Food Production in Bangladesh*. International Food Policy Research Institute (IFPRI), 2009.