Issues and Methods in Livelihoods Analysis

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Livelihoods Concepts

- Objectives
- Resources
  - Labor
  - Land
  - Capital
- Technologies
- Constraints
  - Tenure
  - Credit

Primary research concern

Describing behavior is good

Explaining behavior is better

Understanding why behaviors differ across households is best

We want to understand not only WHAT…
but WHY

Objectives

- What does the household desire?
  - Profit maximization
  - Food security
  - Risk avoidance
  - Wealth accumulation
  - Food sales
  - Food purchases

The answer has implications for models, prescriptions and predictions

What can households allocate?

- Land
- Labor
- Working capital

Why focus on allocation?

This is a zero-sum prospect:

allocating a resource to one activity precludes allocating it to another

Most economic activities have substitutes

Households also choose technologies

- Traditional vs. modern
- Embedded vs. disembodied

- Does it work?
- How well does it work?
- Is it available?
- Is it adaptable?
- Is it divisible?
- Is it biased?

- Technical vs. economic considerations

Heterogeneity is your friend

Differences are good

Variance in the data is good

This variance is what allows one to understand why different situations, motivations, and constraints lead to different outcomes.

Diagnostic/Heuristic Approach
(Ashley 2000; Raintree/NAFRI 2005)

Good place to begin
Identify "Basic Needs" vs. "Supply Systems"

- Direct linkages
  crops + livestock + cash ➔ food

- Indirect linkages
  crops + forests + labor ➔ cash

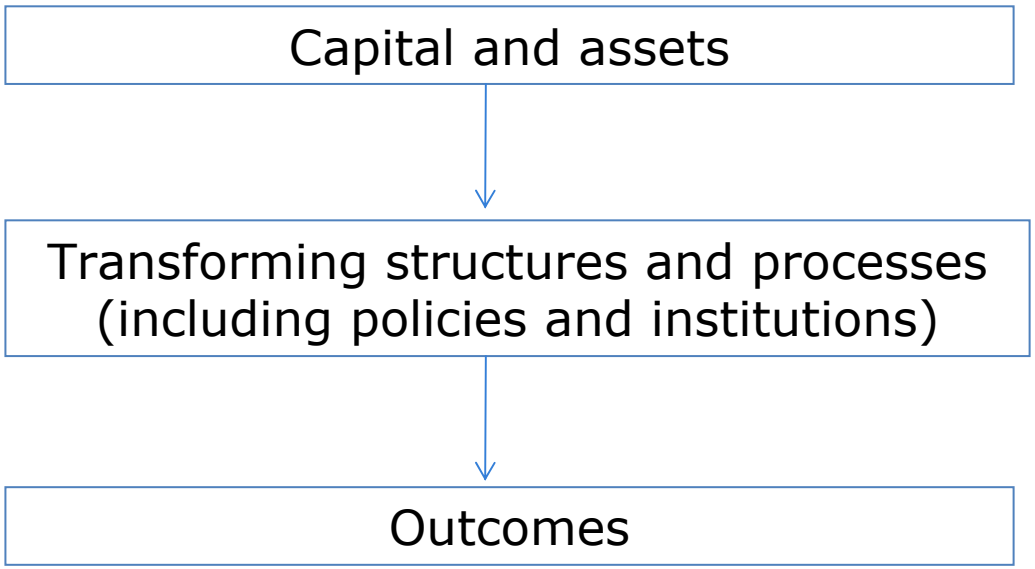
Analytical focus:

objectives; means; performance; problems; solutions

Asset / Vulnerability Approach
(Castro 2002; DIFD 1999)

More formal approach

Identify inputs, processes, and outcomes



Econometric approach

Typically has a guiding structure, but often specified as a reduced form: $y = f(x)$

- Dependent (lhs) variables
  - outcomes (income, expenditures)
  - choices (labor allocation, land use, technology)
- Independent (rhs) variables
  - exogenous variables
  - resources, parameters, constraints

Example: Agricultural Yield

Lets assume that yield depends on labor input and technology

Yield (kg/ha) = b_0
+ b_1*labor input (days/ha)
+ b_2*technology indicator

Let indicator for the new technology be 0/1

In the regression b_2 will measure the avg. impact of the new technology on yield.

Some difficulties

Does b_2 really measure the impact of the new technology on agricultural yield?

Where does labor come from? Do some uses of labor displace other uses (e.g. competition between off-farm & forest)?

- Correlation vs. causation
- Omitted variables
- Hidden causes
- Endogenous regressors

Potential solutions

- Instrumental variable techniques
  - 2 stages, 2nd relies on results from 1st
- Seemingly Unrelated Regressions (SUR)
- Structural systems of equations
  - use obvious constraints to shape regressions
- Natural experiments

Examples

- 2SLS
  - 1st stage: technology choice depends on ???
  - 2nd stage: yield depends on technology choice
- Seemingly Unrelated Regressions (SUR)
  - Technology choice and labor allocation in parallel regressions
- Structural systems of equations
  - Labor shares, each with it's own regression
- Natural experiment
  - Exogenous random assignment of new technology

Measurement of variables and choice of technique

$-\infty \leq y \leq +\infty$	linear regression
$0 \leq y \leq +\infty$	OLS or 1-tail Tobit
$0 \leq y \leq 1$	2-tail Tobit
0 or 1	Probit or logit

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