



2019 Asian Evaluation Week

Quality Evaluation for Better Results: Local,
National, Regional Perspectives

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Complex settings and impact evaluation: some reflections

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The ADB logo consists of the letters 'ADB' in a white, serif font, centered within a dark blue square.

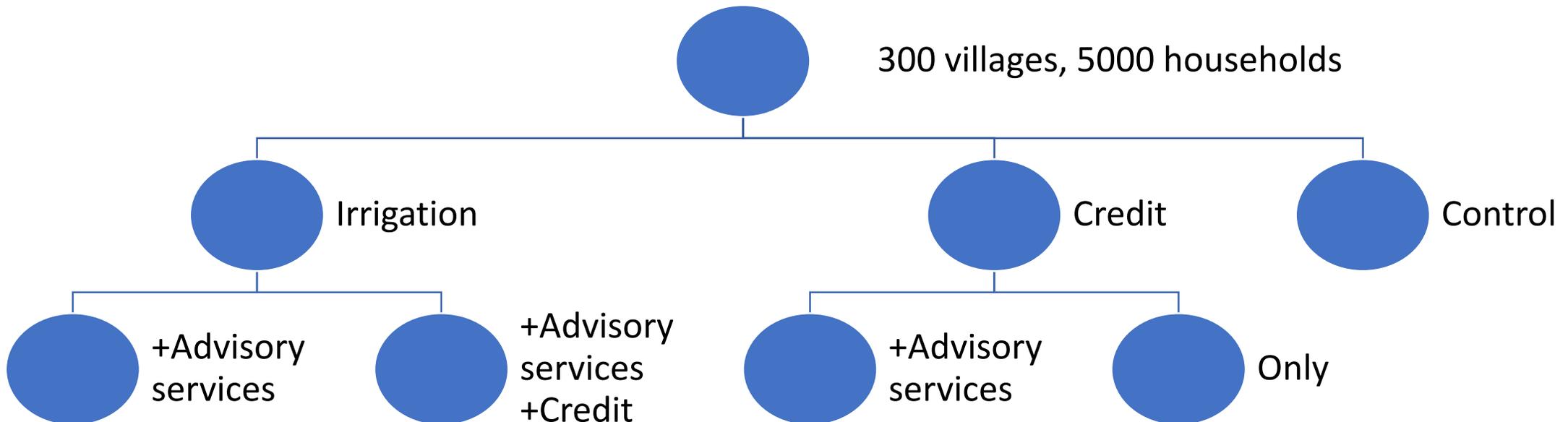
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What is a “complex setting”?

- Complexity is often defined as the presence of multiple components interacting in multiple ways (Johnson 2009, Johnson 2001, etc.)
 - Often with emergent (and often unpredictable) properties
- This presentation will be about impact evaluation in (as) complex settings.
 - Impact evaluation as empirical estimation of the treatment effects of interventions and their statistical significance.
- A complex setting for impact evaluation is not just when interventions are complex!
 1. Complexities of impact pathways
 2. Complexities of without project situation
 3. Complexities of impact evaluation implementation
 4. Complexities for causal inference
 5. Complexities of interpretation

Complexities of interventions

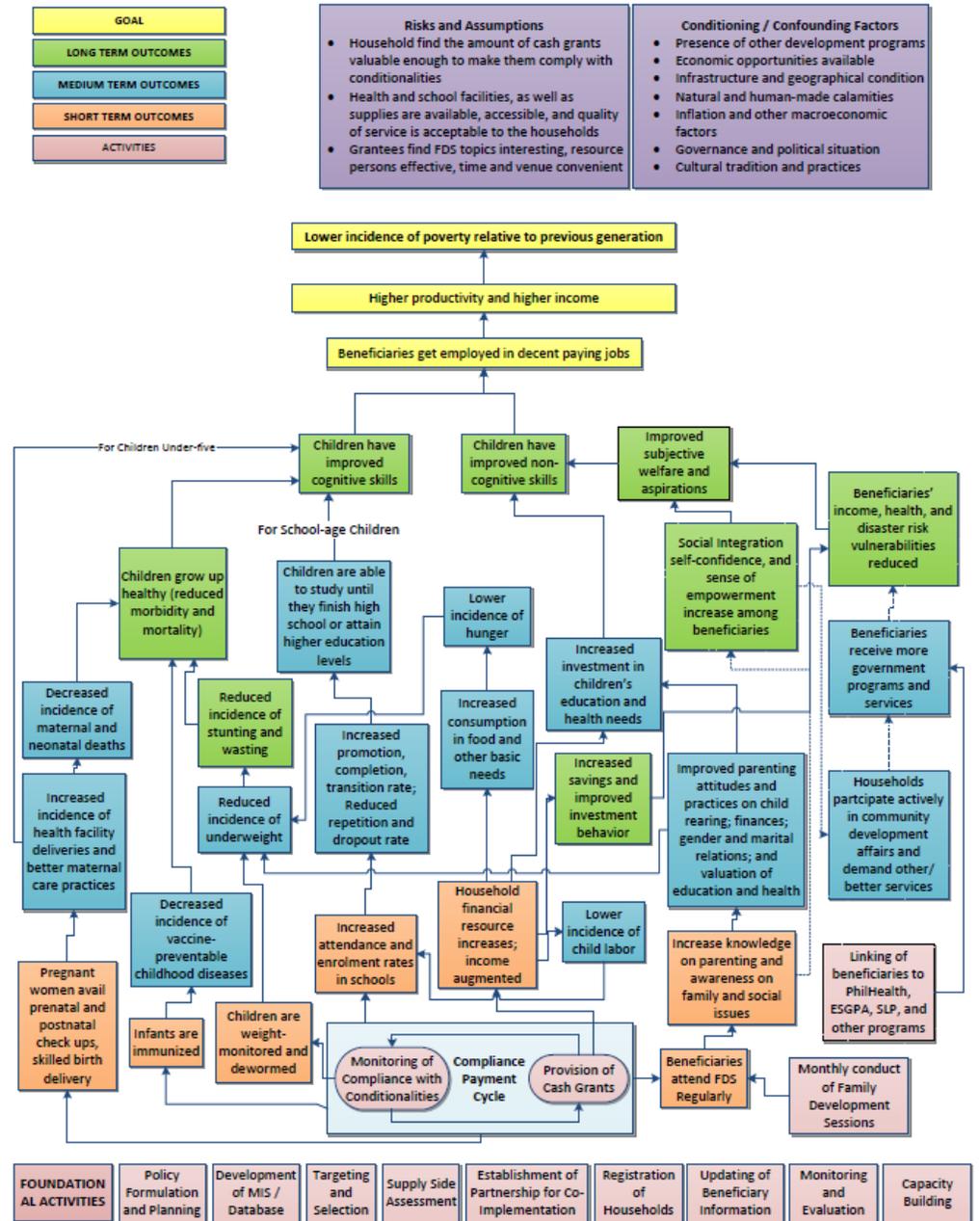
- Compound interventions and projects with many components
 - Problem: Treatment effect of what? Where is emergence expected?
- Solution: Clear permutations
 - Example: ADB Myanmar Climate Friendly Agribusiness Value Chains Sector Project – includes seed farms, rural roads, land use planning, irrigation, digital finance, processing improvements, sustainability certification, extension, climate advice, and more.
 - Approach: Focus on selected component permutations in randomized experiment



Problem: even “easy to evaluate” interventions can have complex impact pathways

Solution: Focus on defining the theory of change, planning for multiple hypothesis testing, subgroup analysis

Caveat: Relax pressure to avoid “data mining”, update questions

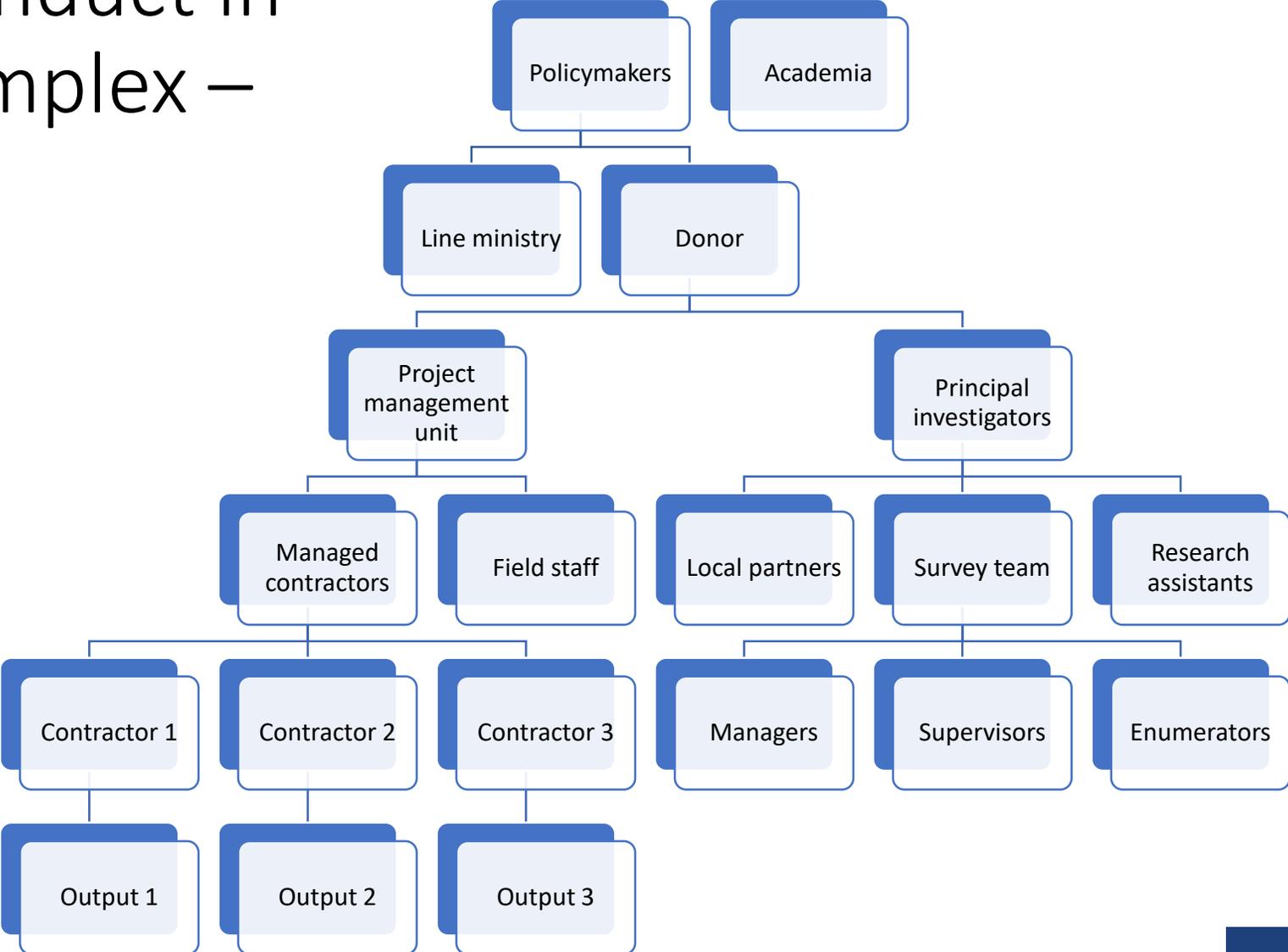


Problem: Tendency to think of impact evaluation as simple

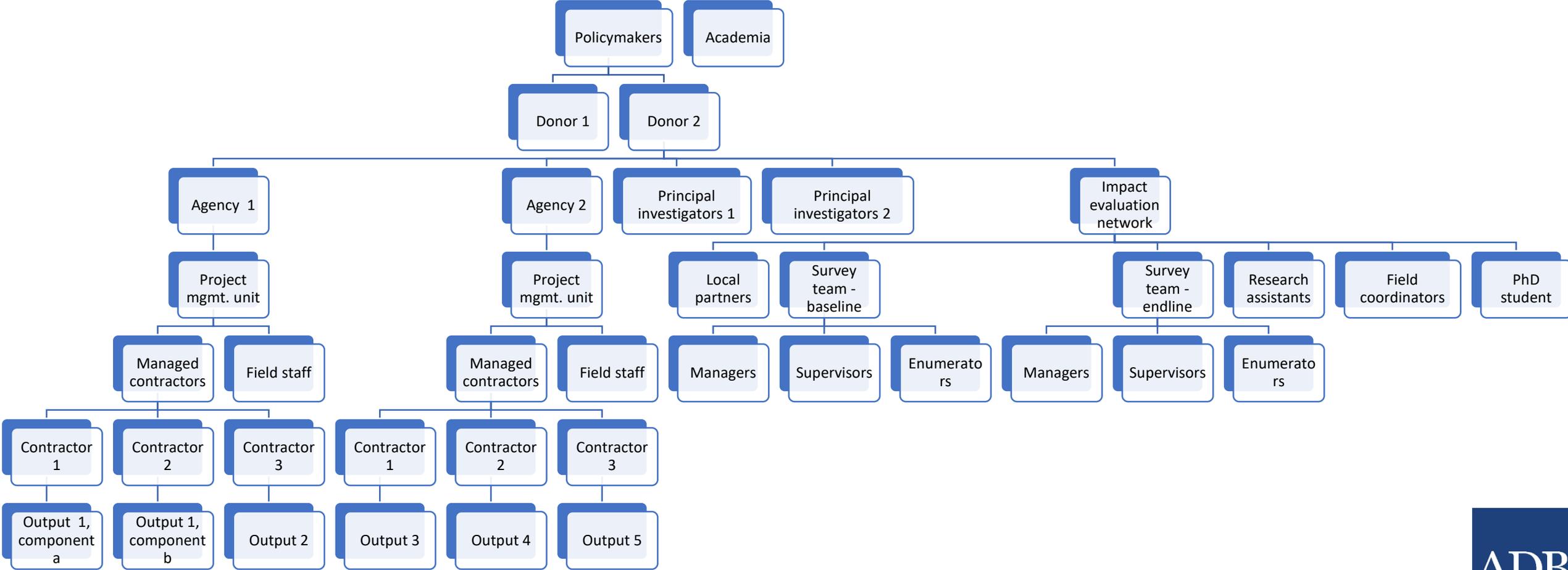
Policymakers



Impact evaluation conduct in a project is often complex – the *simple case*



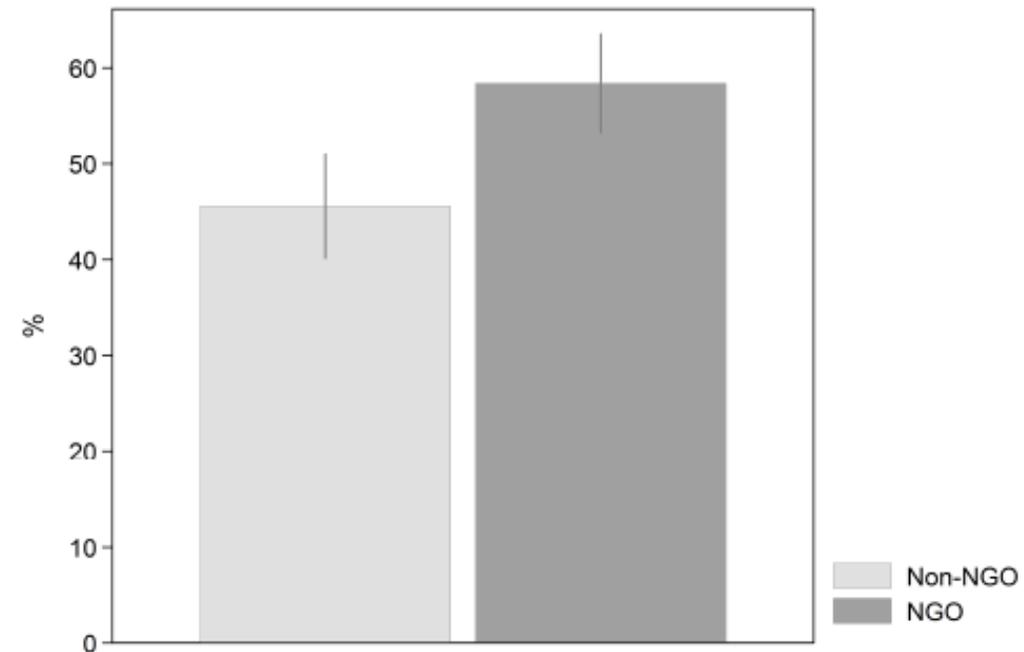
Impact evaluation conduct in a project is often complex – *a more realistic case*



Shortcut of researchers is often to have an NGO do implementation of an experiment

- This reduces execution complexity, but introduces potential bias.
- Programs at scale by governments \neq pilots by NGOs

Figure 2: Mean intervention ICS purchase rates in treated hamlets in NGO and non-NGO villages



Notes: this figure plots the share of households in NGO and non-NGO villages that purchased at least one intervention ICS in response to the ICS-promotion intervention as a percentage of all treated households in the respective stratum. Error bars represent 95 per cent confidence intervals for the means.

Source: Usmani, Jeuland, and Pattanayak 2018

Complexities of without project scenarios

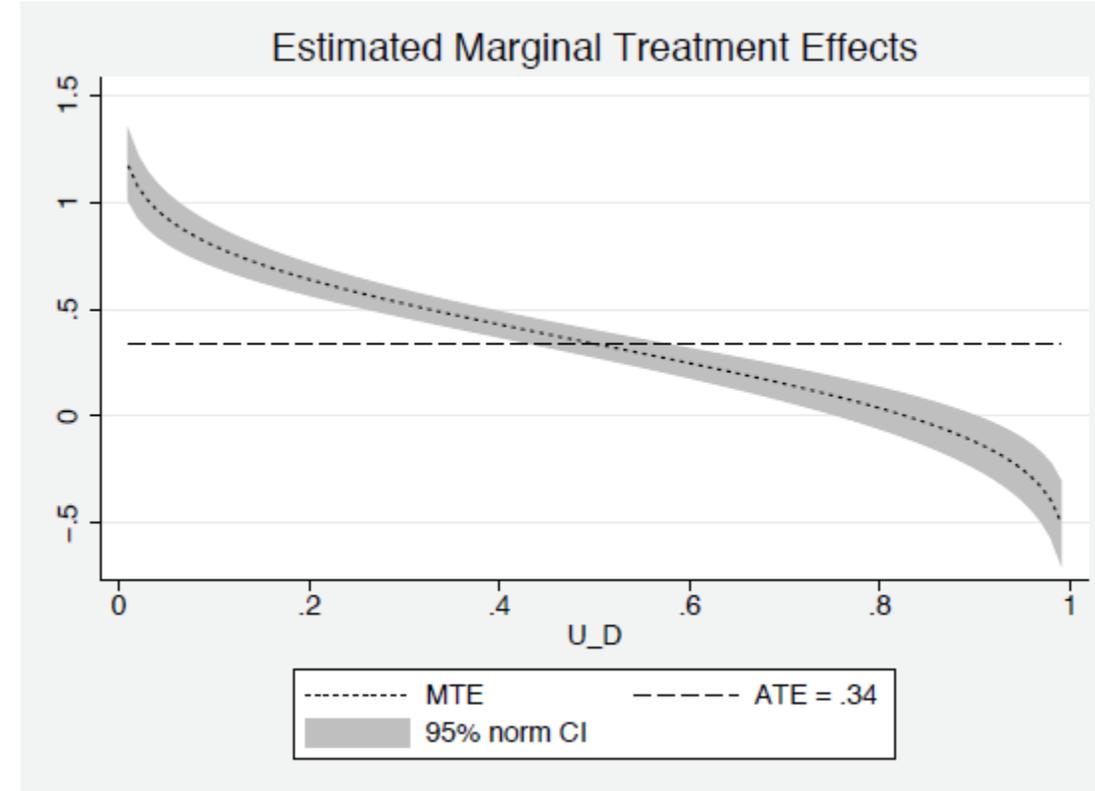
- Tendency to think of projects in a vacuum, so that project is only source of intervention
- But many agencies are often doing the same thing!
- And building on one another!
- A given project is really only partially altering the probability of treatment => an “encouragement” at best
- Solution can be to consider intervention, rather than project
- Allows reduced reliance on single project implementation

Example: Interventions evaluated

1. Membership in agricultural group/cooperative (conditional on no support)
2. Conditional on membership (vs no support)
 - i. Any support
 - ii. Credit
 - iii. Training
 - iv. Inputs
 - v. Fixed assets (+ training)
 - vi. Marketing (+ training)

Complexities of effects

- Problem: treatment effects differ, interact, evolve
 - Spillover effects
 - Placebo, John Henry, Hawthorne effects
 - Treatment effect on the treated vs. (sample) average treatment effects
 - Average vs. local effects
 - Time variant effects
 - Subgroup varying effects
 - Conditional effects
 - Multidimensional variation (e.g. subgroup effects over time)
- Solutions: embrace and explore the complexity
 - Designs appropriate to measure spillovers
 - Placebos
 - Post endline resurveys
 - Subgroup interaction terms
 - Quantile treatment effect procedures (e.g. via recentered influence functions)
 - Marginal treatment effects



Source: Brave and Wallstrum 2014

Takeaways

- Impact evaluation is riddled with complexities – even if the intervention seems “simple”
- Often too little attention to the complexities of impact evaluation conduct
- New tools allow for complexity to be better managed
- Complexity is also opportunity
 - Can allow for more impact evaluation options
 - Allows for revealing a much richer range of effects and insights