Session 1

Impact Evaluation Methodologies

Impact Evaluation Workshop,
Lilongwe, Dec. 14th, 2011

Martin Abel

Workshop Schedule – Day 1

- Session 1: **Introduction to impact evaluations**
- Session 2: **Theory of change and measurement**
- Session 3: **Group work: Theory of Change**
- Session 4: **Randomized Evaluation Design**
- Session 5: **Group work: Evaluation Design**

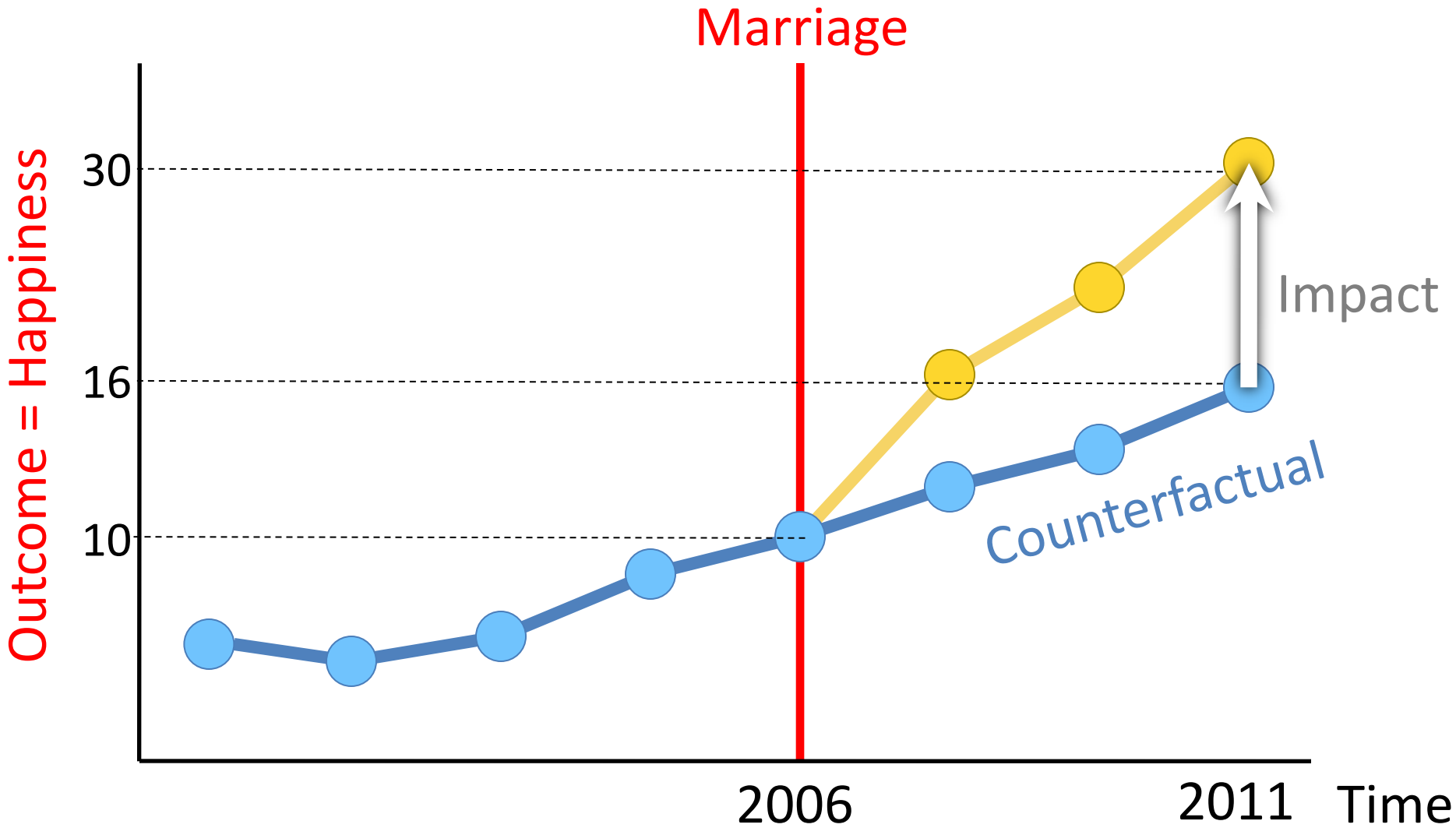
Outline: Introduction to impact evaluations

- What is “impact”?
- Programme evaluation
  - Different aspects of evaluation
  - Case study example: Fertilizer in Malawi
- Impact evaluation methodologies

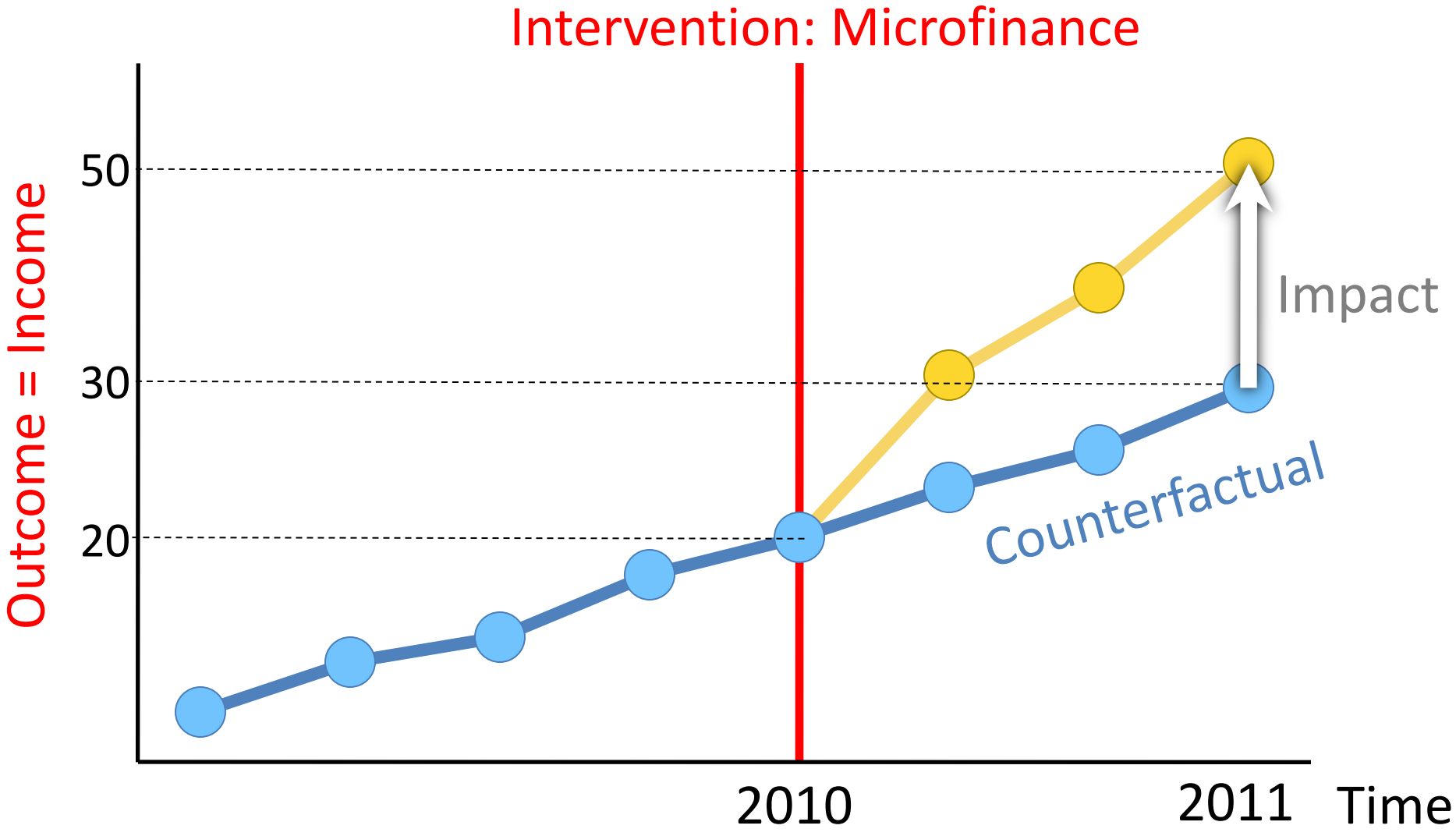
Introduction to Impact evaluation

- **What is “impact”?**
- Programme evaluation
  - Different aspects of evaluation
  - Case study example: Fertilizer in Malawi
- Impact evaluation methodologies

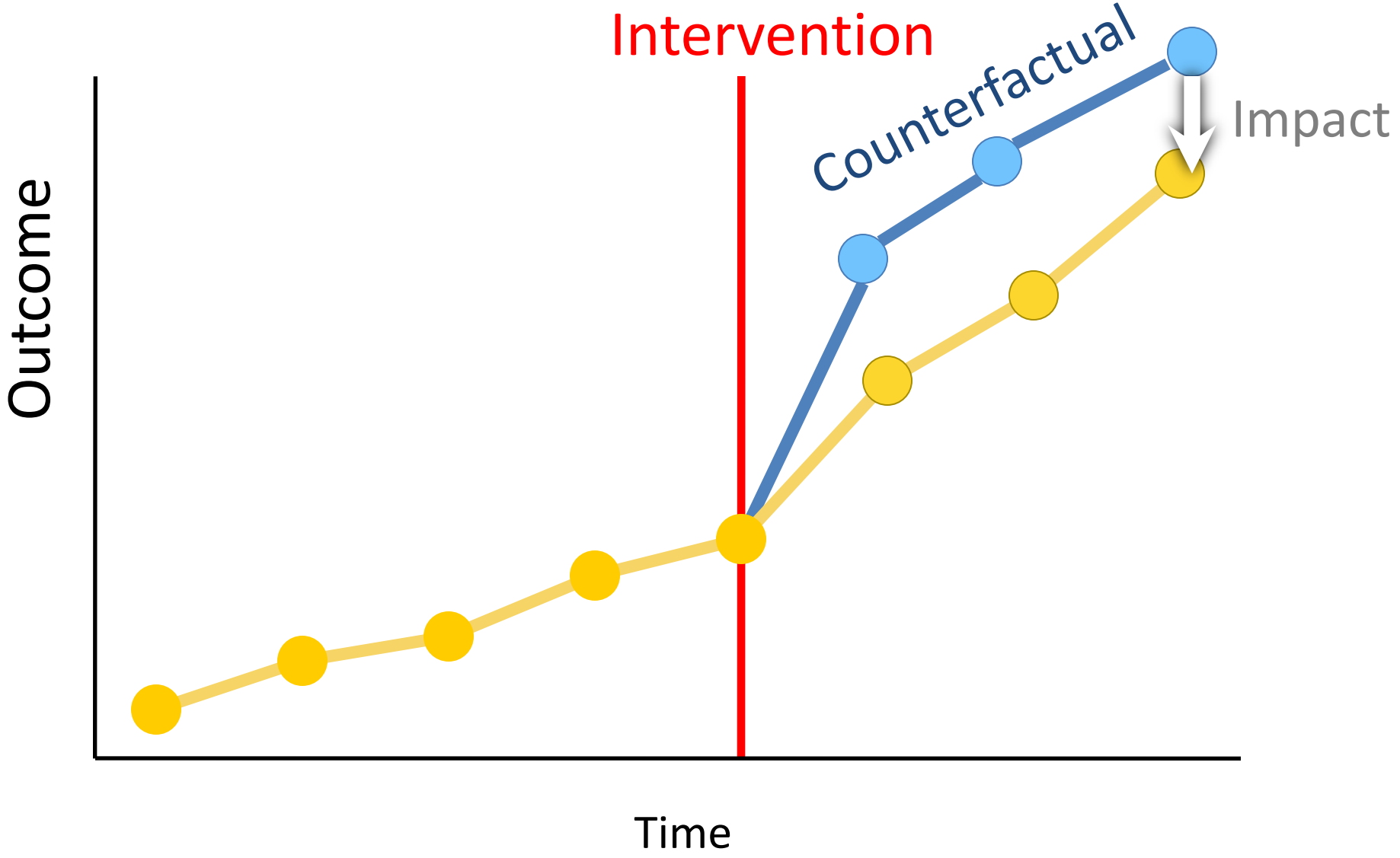
What is the impact of your marriage on your happiness?



Measuring Impact (I)



Measuring Impact (II)



Counterfactual

- The ***counterfactual*** represents how programme participants would have performed in the absence of the program

- ***Problem***: Counterfactual cannot be observed

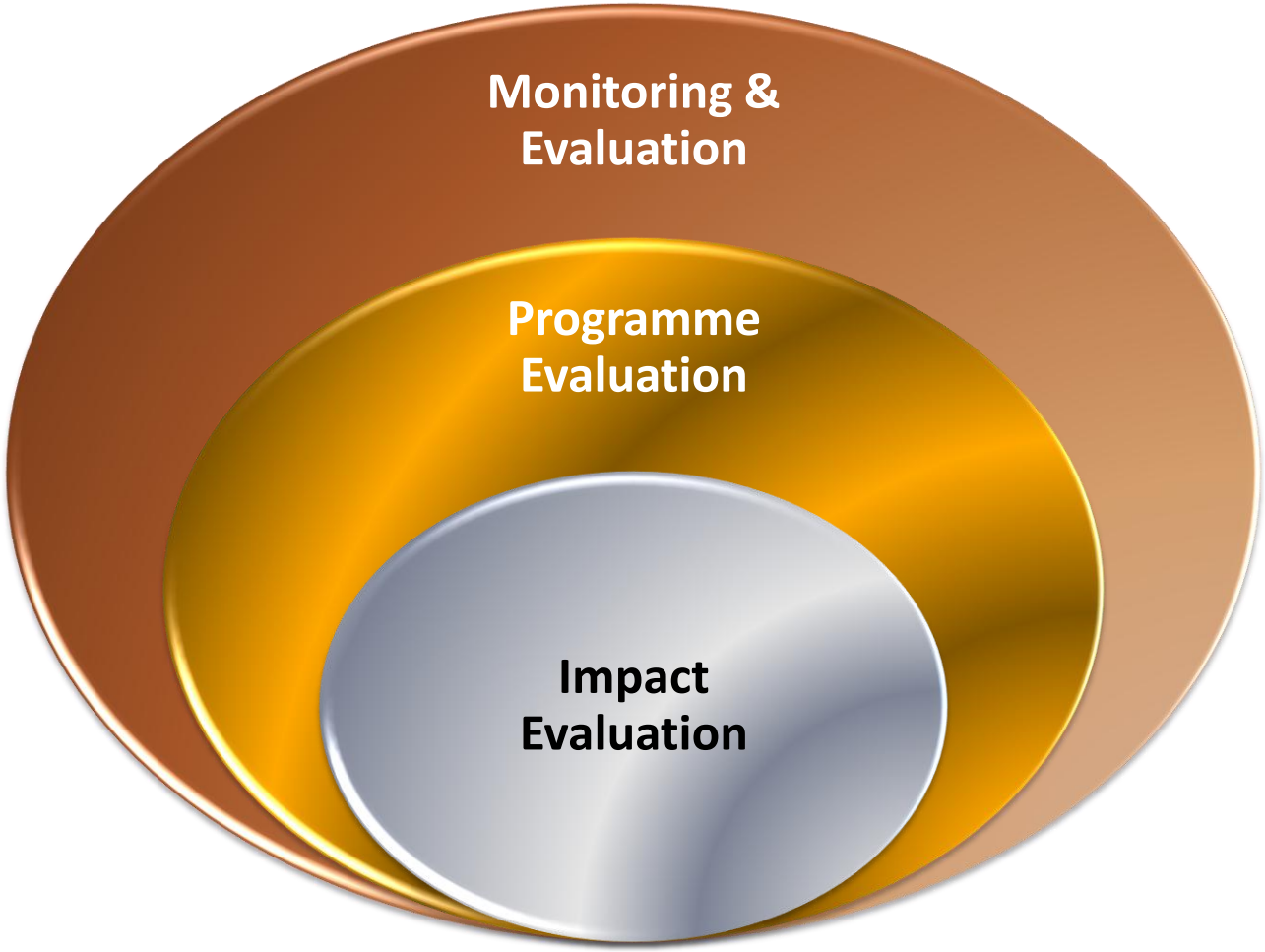
- ***Solution***: We need to "mimic" or construct the counterfactual

→ Different impact evaluation methodologies differ in how they construct the counterfactual

Outline – Intro to Impact evaluation

- What is “impact”?
- **Programme evaluation**
  - **Different aspects of evaluation**
  - **Case study example: Fertilizer in Malawi**
- Impact evaluation methodologies

Different types of evaluation



Programme evaluation

Different aspects of programme evaluation:

- Needs assessment
- Process evaluation
- Impact evaluation

"To address the low literacy levels, the government will deliver free text books to schools to improve passing rates and increase employment prospects of school leavers."

Fertilizer subsidies in Malawi

Fertilizer subsidies in Malawi

Needs Assessment

- In 2004/05, a severe drought led to a very poor corn harvest.
- Almost **5 million people** (38% of the population) needed emergency food aid.

Fertilizer subsidies in Malawi

Theory of Change

- President Mutharika decided to tackle the problem by **reinstating and deepening fertilizer subsidies**.

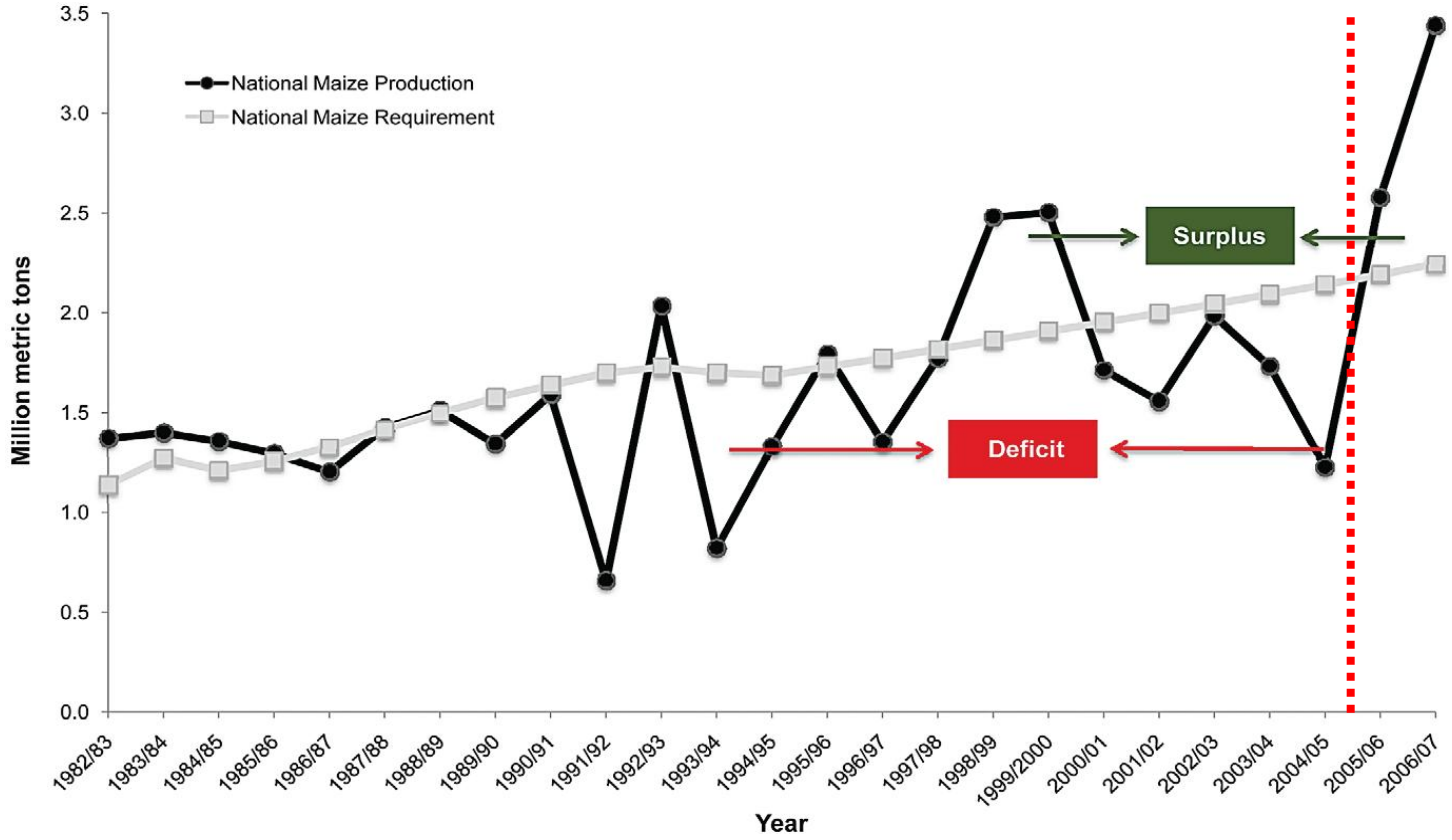
- Theory behind this policy:

  Introduce subsidies
  → fertilizer is more affordable
  → use of fertilizer increases
  → soil able to support bigger harvest
  → famine ends

Fertilizer subsidies in Malawi

Impact

- 2006 and 2007: record-breaking maize harvests in Malawi.



Was this dramatic turnaround the result of the subsidy?

→ How can we tell what the true impact of the subsidies was?

Impact

→ Who can be our control group (counterfactual)?

- **Pre-post:**

  Compare the 2007 Malawi harvest to the 2005 Malawi harvest.

- **Simple comparison:**

  Compare the 2007 Malawi harvest to the 2007 Zambian harvest

- **Difference in difference:**
  - Compare the change in Zambian harvests between 2005 - 2007 to the change in Malawian harvests over the same period

Outline – Intro to Impact evaluation

- What is “impact”?
- Counterfactual
- Programme evaluation
  - Different aspects of evaluation
  - Case study example: Fertilizer in Malawi
- **Impact evaluation Methodologies**

Methodologies in impact evaluation

- **Non-experimental**
  - Pre-post
  - Simple Comparison
  - Difference in difference

- **Experimental**:
  - Randomised Evaluations

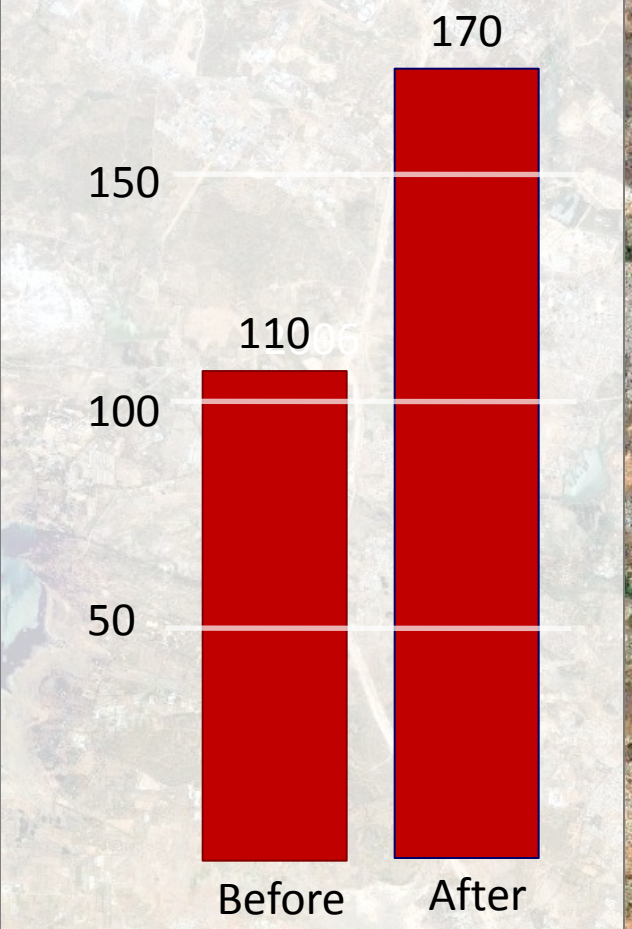
→ **Example: Community Monitoring of Nurses**

Context

- **Needs assessment:**
  - High nurse absenteeism. Result: Many children aged 0-5 years die of preventable causes due to very low rate of immunization.
- **Theory of change:**
  - Inform community about importance of immunizations & mobilize them to demand better services from clinics → immunization rates increase & health outcomes improve.
- **Research question**:
  - What impact does a community-mobilization regarding healthcare services have on immunization rates?

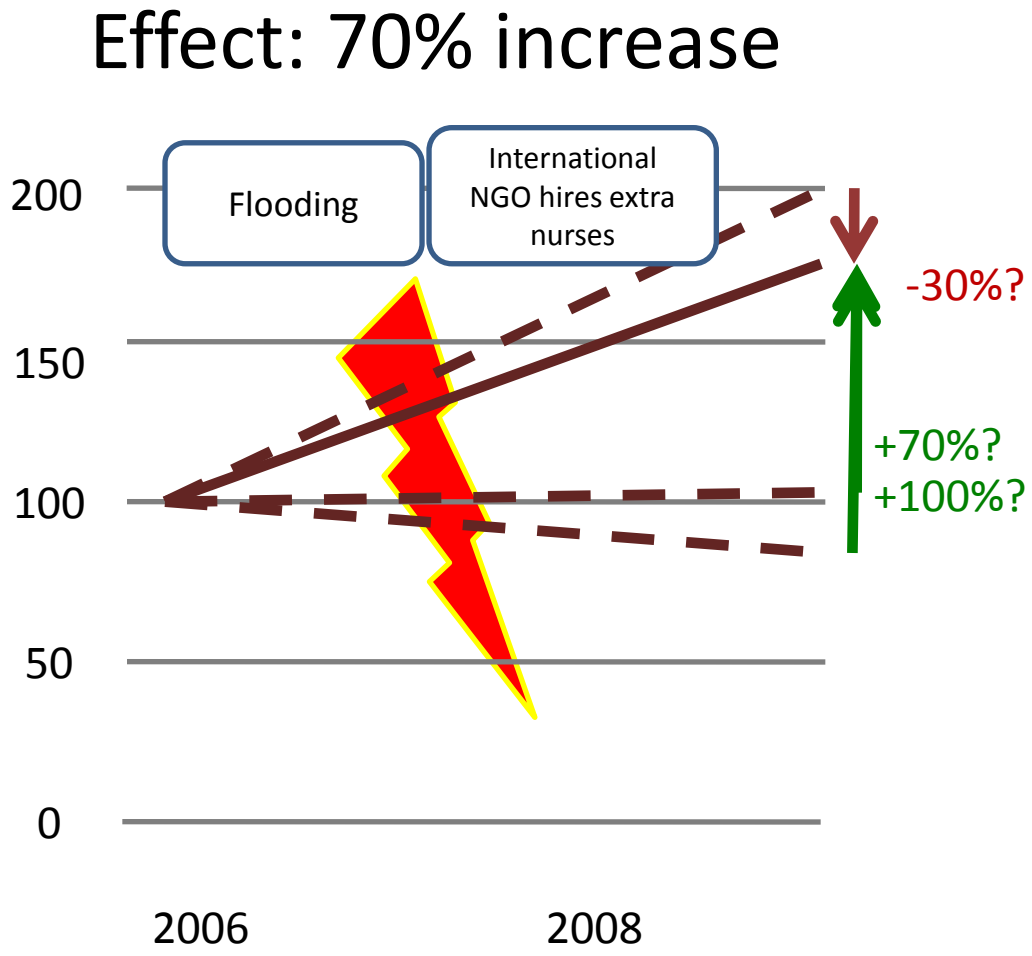
Pre-Post

Number of immunizations administered per month

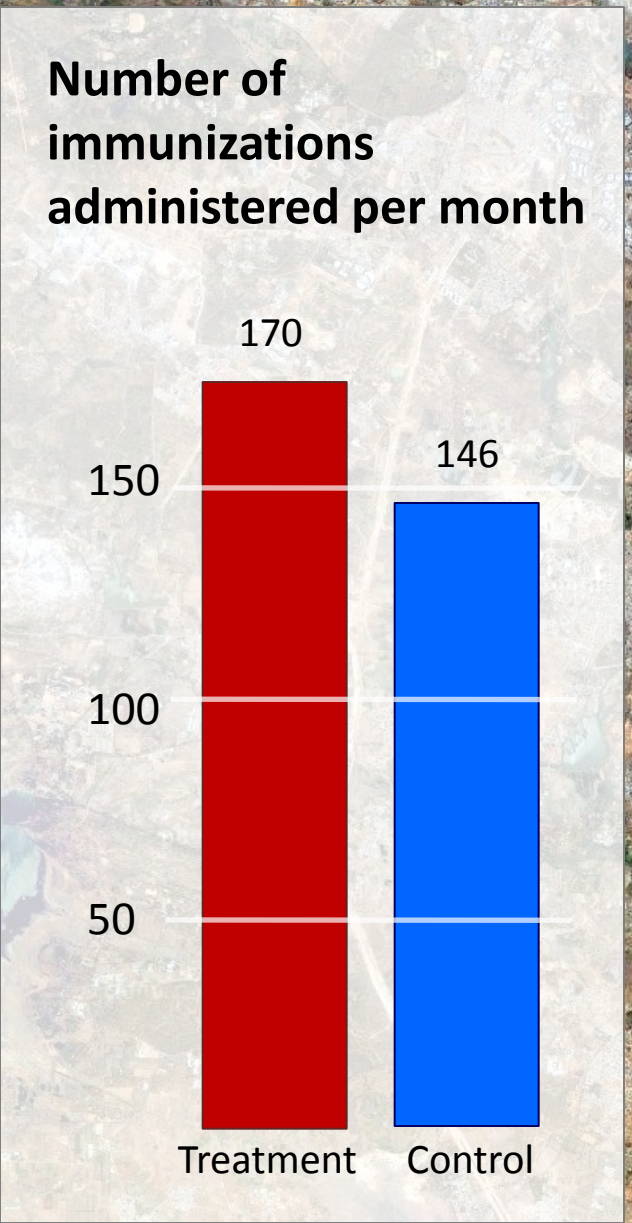


What would have happened without community mobilization?

Method 1: Before and After

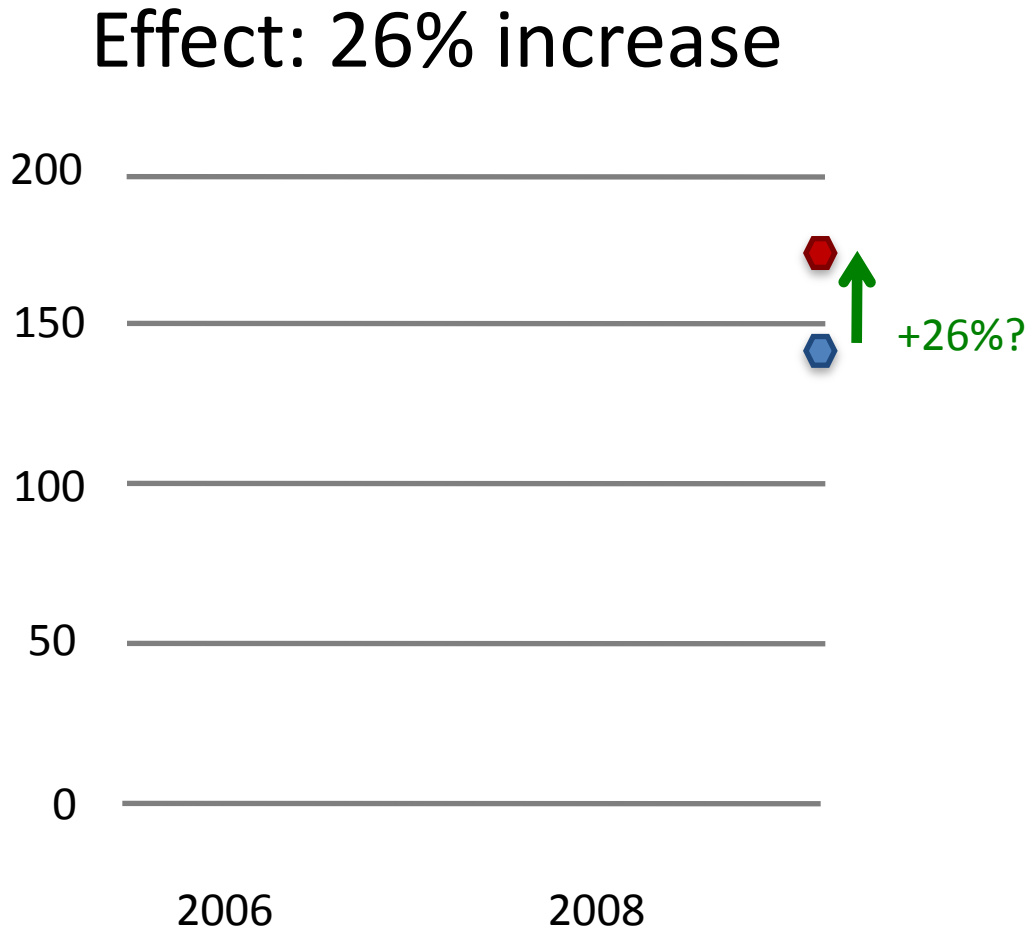


Comparison Areas



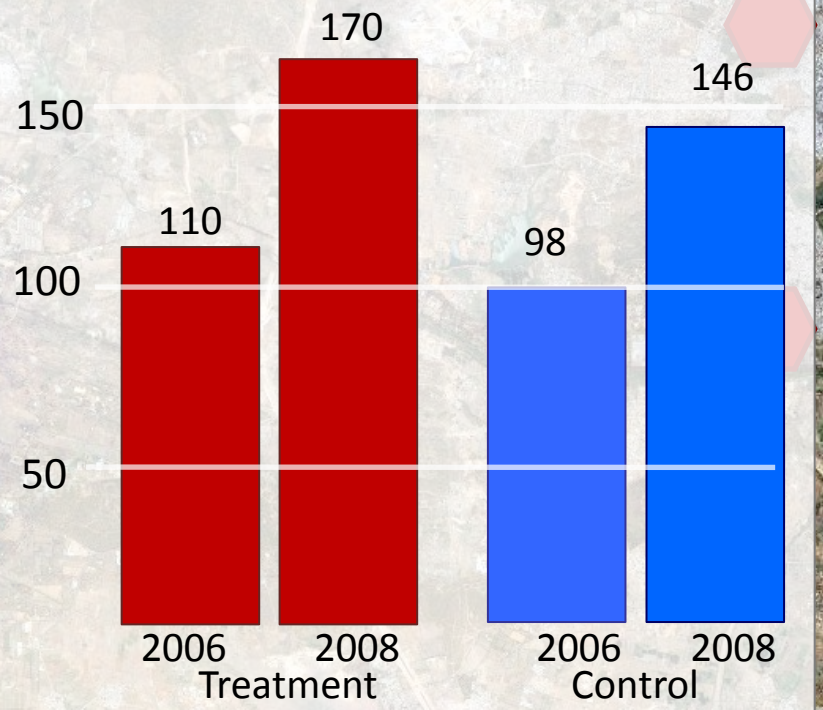
What would have happened without community mobilization?

Method 2: Treated vs. Not Treated



Difference in Difference

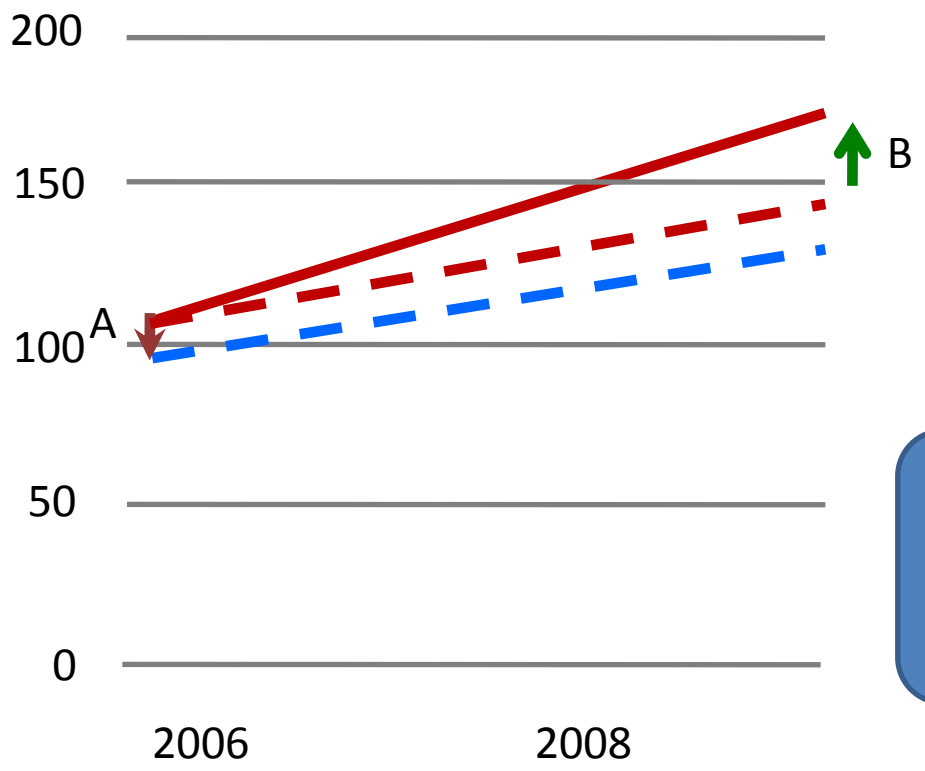
Number of immunizations administered per month



What would have happened without community mobilization?

Method 3: Difference in Difference

Effect: 26% increase

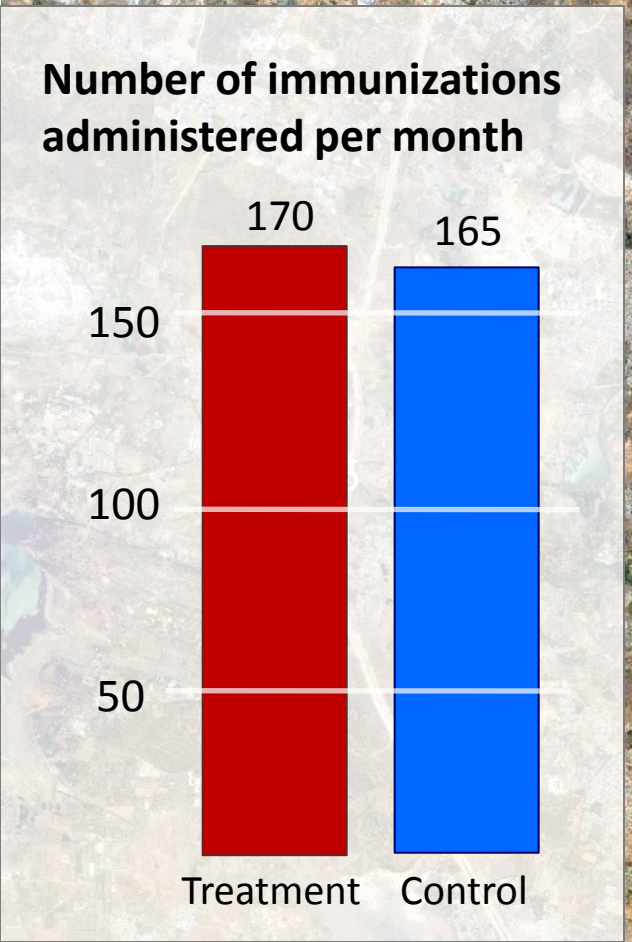


Total impact

B + A = +26%

Assumption: C and T have equal trends without intervention

Randomised


Number of immunizations administered per month
170
165
150
100
50
Treatment
Control

Summary of Impacts

1: **Before and After**: 70% increase

2: **Simple Comparison**: 16% increase

3: **Difference in Difference**: 26% increase

4: **Randomised Evaluation**: 2.6% increase

(not significant)

Fertilizer subsidies in Malawi Revisited

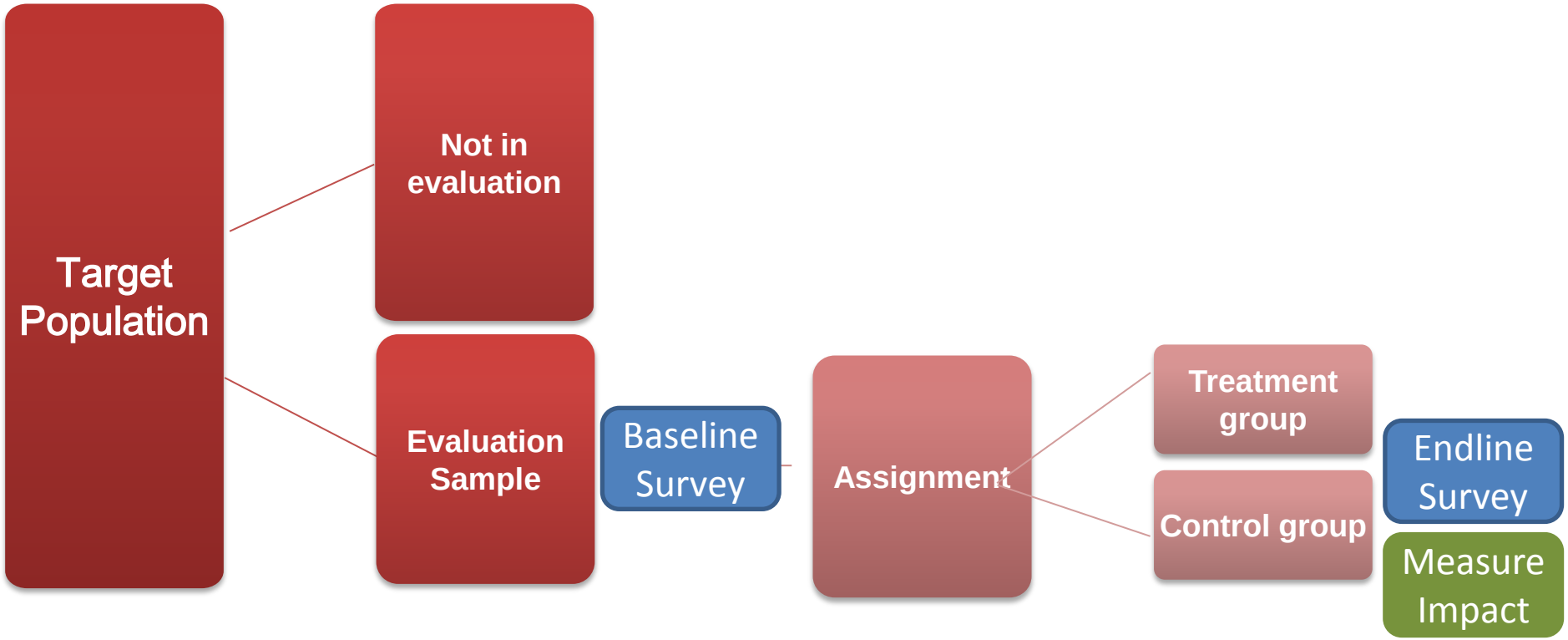
- **How could the impact been evaluated through a randomised evaluation?**

  Fertiliser subsidies could have been randomly allocated to certain farmers in the country, then the harvests of those who received subsidies would be compared to those who didn't receive subsidies.

Identification Strategy

- **Research Question**: What is the impact of giving chocolate to workshop participants before class on learning outcomes?
  - Identification strategy
    - Allocation Mechanism
    - Risk to validity
  - Theory of Change

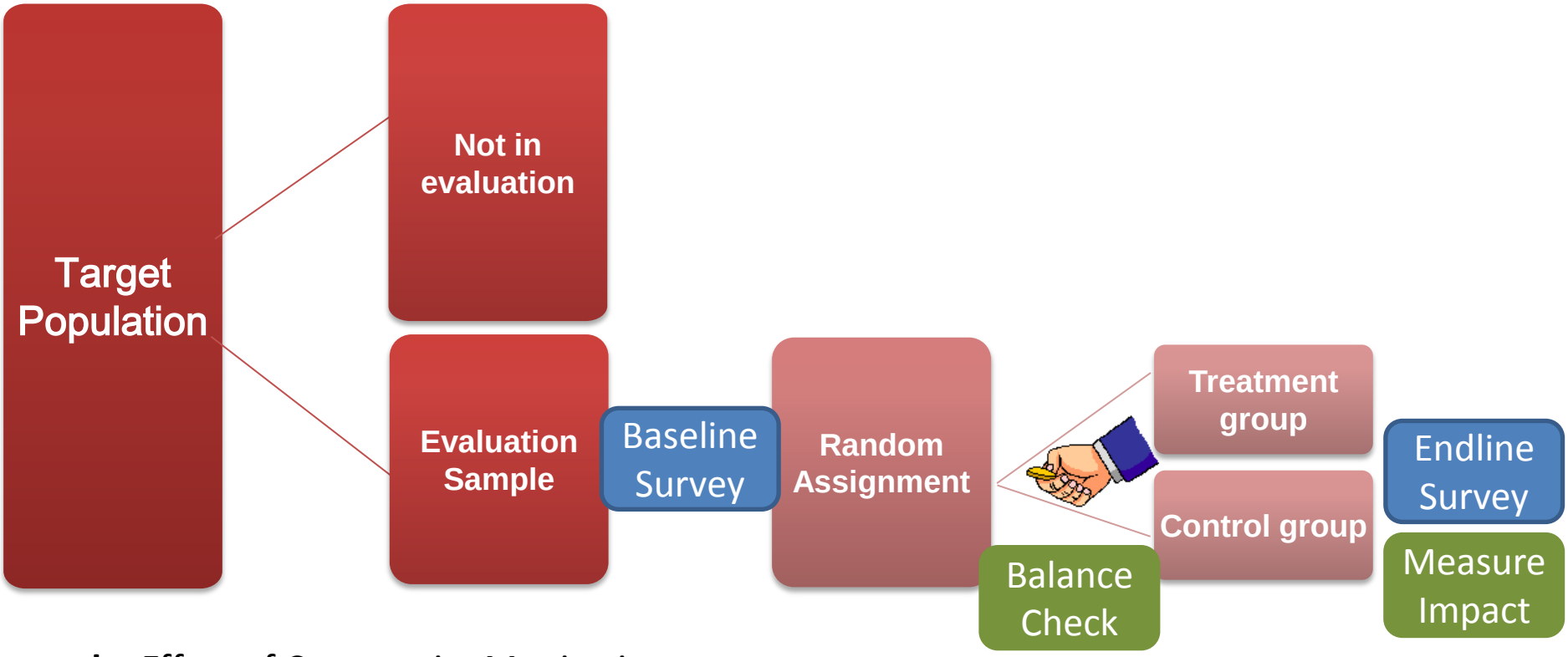
Basic setup of an evaluation



Example: Effect of Community Monitoring

Clinics in Uganda	Sample of clinics	• Medical staff • Randomly assign • Compare nurse staff	Treatment clinics are monitored	Measure immunizat-ion rates

Basic setup of a randomized evaluation



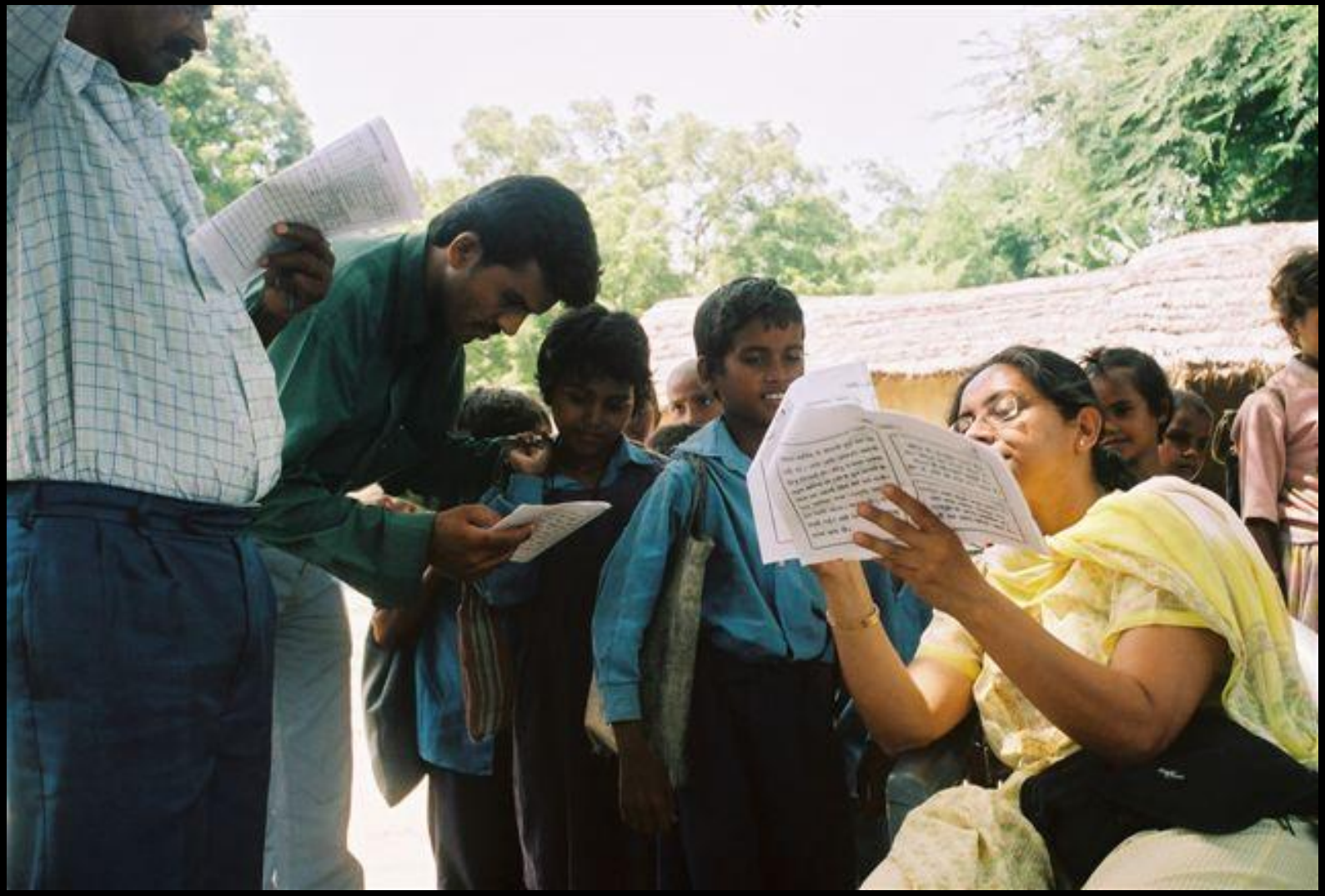
Example: Effect of Community Monitoring

Clinics in Uganda	Random Sample of clinics	• Count medical staff • Randomly assign • Compare nurse staff between C and T groups → are they balanced?	Treatment clinics are monitored	Measure immunizat -ion rates

Annex

Programme evaluation example

Community participation in education



Programme evaluation example

Context

- Enrolment in primary school is relatively high
- BUT nearly 50% of children in rural India are functionally illiterate anyway
- Can getting the community involved in the education system address this issue?

Programme evaluation example

Needs Assessment

Evaluate the <u>needs</u> of the relevant individuals/communities

- Who is the target population?
- What need will the programme fill?
- What are the programme benefits?
- What are the alternatives?

Programme evaluation example

Theory of Change

Evaluate <u>how the programme will address needs</u> outlined in the needs assessment

- What are the requirements to meet the needs?
- Why and how are these requirements currently lacking or failing?
- How will the programme provide these requirements?
- What services will be offered?

In other words, what is the intervention being offered?

Programme evaluation example

Process evaluation

Evaluate <u>how the intervention is being implemented</u> on the ground

- Are basic tasks being completed?
- Are the services being delivered?
- Is the intervention reaching the target population?
- Is the intervention being completed well/efficiently and to the beneficiaries' satisfaction?

Impact evaluation

Evaluate the <u>impact of the programme</u>

- Did it have the expected effect?
- If not, was the effect:
  - Smaller or bigger than expected?
  - Negative instead of positive?
  - Non-existent?

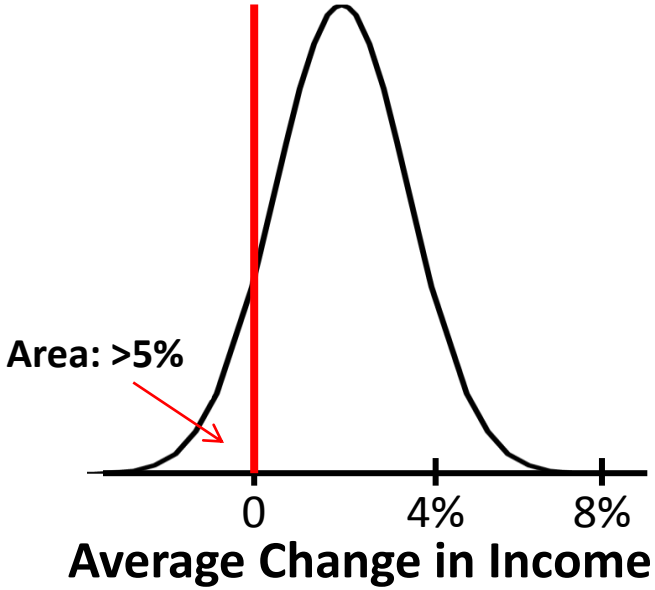
- Did enough people receive the programme to ensure the results are sound?
- Can the results be generalised to other settings?

Impact

Method 4 - Randomised Evaluation:

Effect: 3% increase in vaccinations

→ but the estimate is not statistically significant at the 5% level



→ We cannot tell whether the observed increase is due to chance or an actual increase in income