GREEN CLIMATE FUND | Independent Evaluation Unit

Welcome to the LORTA Virtual Design Workshop 2023!

- We will be beginning the workshop shortly.
- While you are waiting, be sure to follow us online to keep up with the latest news from the IEU!
- Please note that this workshop will be recorded.

FOLLOW US

GREEN CLIMATE FUND | Independent Evaluation Unit

HOUSEKEEPING

MUTE BUTTON

QUESTIONS

RAISE YOUR HAND

GREEN CLIMATE FUND | Independent Evaluation Unit

Day 1 agenda

TIME (KST)	MODERATOR / PRESENTER	SESSION
	DAY 1, 19th June 2023	
20:00 – 20:10	Anastasia Aladysheva	1. Opening and breakout group introductions
20:10 – 20:40	Susumu Yoshida	2. Introduction to LORTA and impact evaluations 2.1. What is LORTA? Introduce the programme i.e., the vision, mission and objectives, current portfolio, process of enrolment to the programme 2.2. The role of LORTA in enhancing project M&E
20:40 – 21:10	Anastasia Aladysheva	3. Introduction to impact evaluations
21:10 – 21:30	Martina de Vries	4. Theory of Change

GREEN CLIMATE FUND | Independent Evaluation Unit

LORTA Overview

LORTA Virtual Design Workshop 2023

DAY 1

Susumu Yoshida
Impact Evaluation Specialist – Implementation Science

19 June 2023

GREEN CLIMATE FUND | Independent Evaluation Unit

2023 LORTA Design Workshop participants

- 10 projects (6 DMA and 4 PSF), 9 AEs, 31 countries

FP No.	Project Name	AE	Country
FP196	Supporting Innovative Mechanisms for Industrial Energy Efficiency Financing in Indonesia with Lessons for Replication in other ASEAN Member States	KDB	Indonesia
FP197	Green Guarantee Company ("GGC")	MUFG	Brazil, Gabon, India, Indonesia, Lao People's Democratic Republic (the), Philippines (the), Rwanda, Trinidad and Tobago
SAP025	Adaptation of agricultural production systems in Coastal Areas of Northwest Guinea-Bissau	OSS	Guinea-Bissau
FP179	Tanzania Agriculture Climate Adaptation Technology Deployment Programme (TACATDP)	CRDB	Tanzania
FP184	Vanuatu community-based climate resilience project (VCCRP)	SCA	Vanuatu
SAP021	Community-based Landscape Management for Enhanced Climate Resilience and Reduction of Deforestation in Critical Watersheds	JICA	Timor-Leste
FP199	Public-Social-Private Partnerships for Ecologically-Sound Agriculture and Resilient Livelihood in Northern Tonle Sap Basin (PEARL)	FAO	Cambodia
FP187	Ouémé Basin Climate-Resilience Initiative (OCRI) Benin	FAO	Benin
FP192	The R's (Reduce, Reuse and Recycle) for Climate Resilience Wastewater Systems in Barbados (3R-CReWS)	CCCCC	Barbados
FP205	Infrastructure Climate Resilient Fund (ICRF)	AFC	Benin, Cameroon, Chad, Cote d'Ivoire, Democratic Republic of the Congo, Djibouti, Gabon, Gambia, Ghana, Guinea, Kenya, Mali, Mauritania, Namibia, Nigeria, Rwanda, Sierra Leone, Togo, Zambia

GREEN CLIMATE FUND | Independent Evaluation Unit

Review of concept and warming-up

Exercise 1: Proof of WLLN by using Chebyshev's inequality theorem!

Proposition 4.2 (Weak Law of Large Numbers (WLLN))

If $\{Y_i\}$ is an i.i.d. sample of random variables from a distribution with finite variance, $var(Y_i) = \sigma_Y^2 < \infty$, then

$$\bar{Y} = \frac{1}{n}\sum_{i=1}^{n} Y_i \xrightarrow{p} \mu_Y = \mathbb{E}[Y_i]$$

We say that $\bar{Y}$ is a consistent estimator of μ_Y. Sometimes we write plim $\bar{Y} = \mu_Y$.

Proof.

Select $\delta > 0$. Note $Pr\{|\bar{Y} - \mu_Y| \geq \delta\} \geq 0$. By Chebyshev's inequality: $Pr\{|\bar{Y} - \mu_Y| \geq \delta\} \leq \frac{var(\bar{Y})}{\delta^2} = \frac{1}{\delta^2}\frac{\sigma^2}{n} \to 0$ as $n \to \infty$.

GREEN CLIMATE FUND | Independent Evaluation Unit

Objectives of this workshop

This workshop (training) is NOT for you to learn

- Theories
- Statistical software (STATA)
- How to conduct power calculations

Workshop Objectives

✓Cover the basics of impact assessment

✓Understand the benefit and requirement of conducting impact assessment

✓Start thinking of your evaluation design

GREEN CLIMATE FUND | Independent Evaluation Unit

What is LORTA?

- Learning-Oriented Real-Time Impact Assessment (LORTA)
- Started in 2018
- LORTA stands on three pillars:

Learning-Oriented	Real-Time	Impact Assessment
Provide lessons for the GCF, stakeholders, and the international community about what works and how in climate change adaptation and mitigation	Learn the project impact in real-time by integrating implementation tracking into impact assessment	Impact assessment/evaluation captures the extent to which changes in outcome indicators can be attributed to a particular intervention

GREEN CLIMATE FUND | Independent Evaluation Unit

Past milestones and achievements

2018

LORTA began

- 1st workshop in Bangkok, Thailand.
- 7 GCF projects onboarded to LORTA

7

13

2019

2nd workshop in Mannheim, Germany

- 6 GCF projects joined LORTA
- Madagascar baseline report

2020

3rd workshop in a virtual format

- 5 GCF projects onboarded to LORTA
- Malawi baseline report
- Rwanda baseline report

18

22

2021

4th workshop in a virtual format

- 4 GCF projects joined LORTA

2022

5th workshop in a virtual format

- Malawi IE report
- Guatemala baseline report
- Bangladesh baseline report
- Zambia baseline report
- 2 GCF projects joined LORTA

24

GREEN CLIMATE FUND | Independent Evaluation Unit

LORTA vision and objectives

Vision

LORTA generates **evidence** to promote the paradigm shift toward low-emission, climate resilient development pathways by enhancing a **culture of evidence-based** decision making through rigorous **impact assessment**

Objectives

01

Increase the capacity of AEs to conduct impact assessment

02

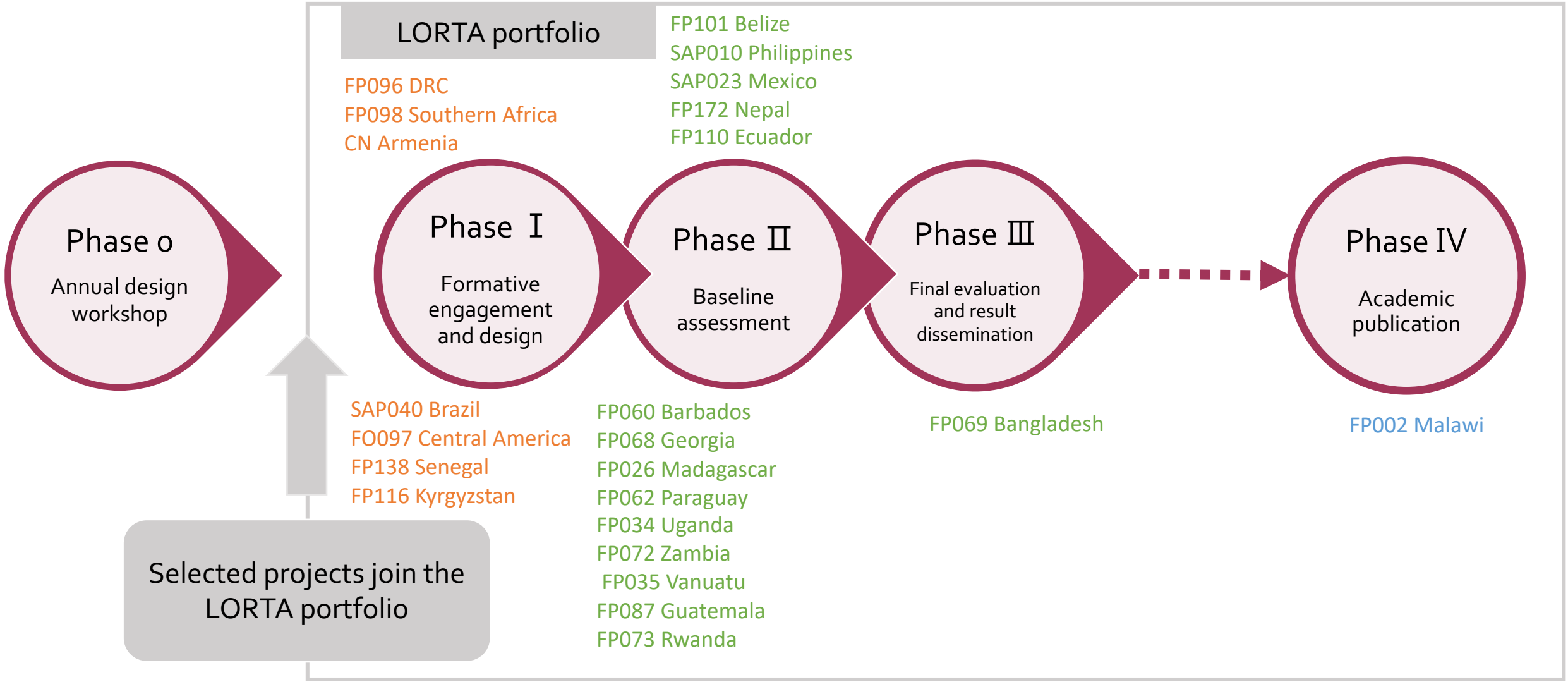
Inform the Secretariat and the Board about the impact of GCF investments

03

Share learnings with partners and other external communities

GREEN CLIMATE FUND | Independent Evaluation Unit

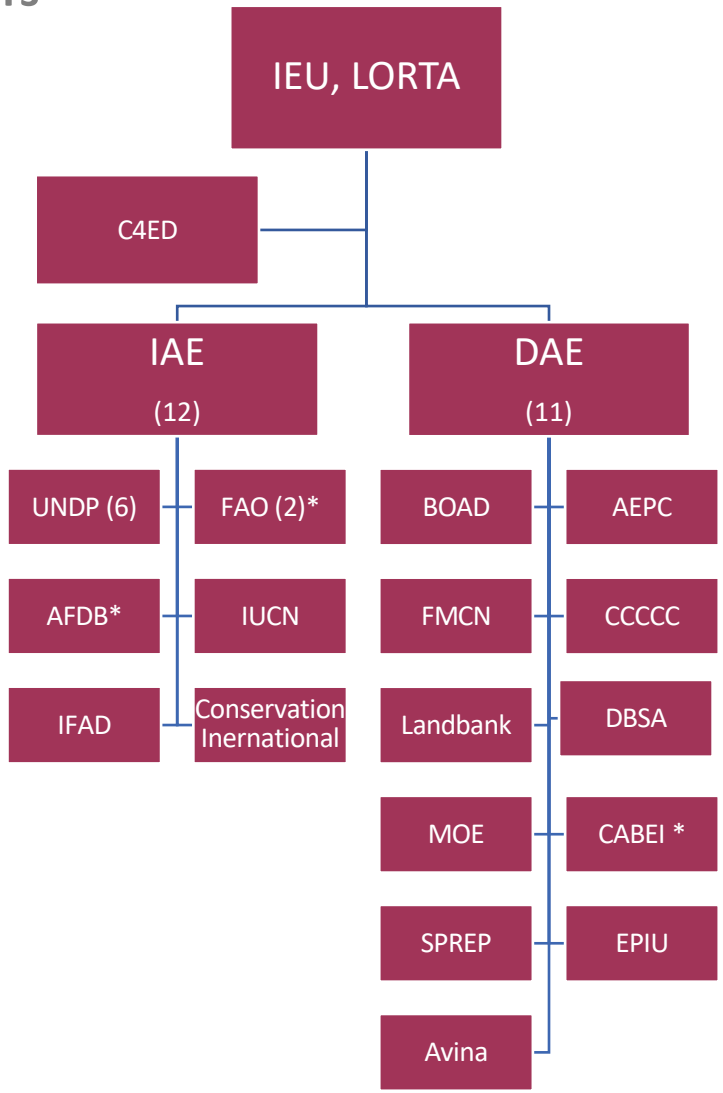
LORTA Portfolio by Phases



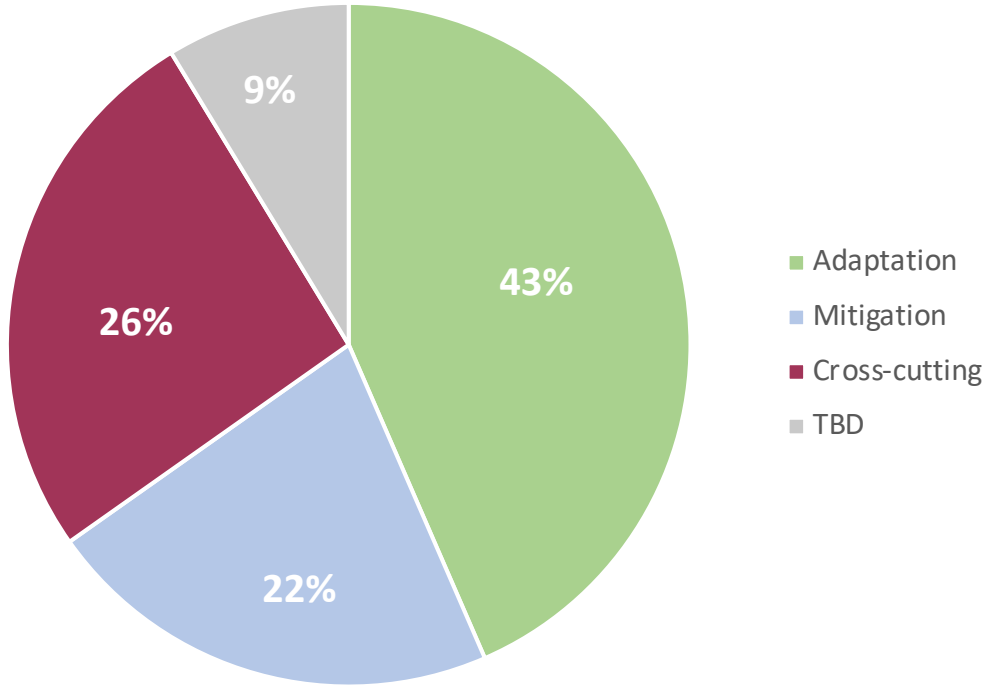
GREEN CLIMATE FUND | Independent Evaluation Unit

LORTA's Partners and Themes

Implementing Partners



Current Project Theme Diversification



GREEN CLIMATE FUND | Independent Evaluation Unit

Current LORTA Portfolio by Sectoral Guides

Climate Information Early Warning System

FP068 Georgia
FP087 Guatemala
FP002 Malawi
FP035 Vanuatu
SAP010 Philippines

Agriculture and Food Security

FP072 Zambia*
FP073 Rwanda*
FP069 Bangladesh*
FP026 Madagascar
FP101 Belize
SAP023 Mexico*

Forest and Land Use

FP062 Paraguay
FP034 Uganda*
FP110 Ecuador
FP073 Rwanda*

Energy Efficiency

FP096 DRC
FP098 Southern Africa*
FP116 Kyrgyzstan
FP138 Senegal*
FP172 Nepal

Water Security

FP072 Zambia*
FP069 Bangladesh*
FP073 Rwanda*
FP060 Barbados

Energy Access and Power Generation

FP098 Southern Africa*
FP138 Senegal*

Ecosystems and Ecosystem Services

FP172 Mexico*
FP034 Uganda*

Health and wellbeing

Low emission transport

Cities, buildings, and urban systems

Since its inception in 2018, LORTA has onboarded a total of 25 projects. Out of 25 projects, **22 projects** are currently on an **"Active"** project status, **1 (Malawi)** is **"Completed"** and **2 (Mongolia, Pakistan) have been removed** from the LORTA portfolio.

GREEN CLIMATE FUND | Independent Evaluation Unit

Impact Assessment at GCF

- Impact assessment is not for ALL the GCF funded projects: 30 % target
- Demand-driven: AEs can decide whether to conduct or not
- How to conduct?

1. With IE specialists from your entity (e.g. Research division, Evaluation office, etc.)
2. With external consultant (e.g. hire a firm or individual)
3. With LORTA

GREEN CLIMATE FUND | Independent Evaluation Unit

What LORTA offers

1. capacity building
2. advisory services
   - Design: evaluation design, stakeholder engagement
   - Data collection support: enumerator training, survey design, quality check
   - Data cleaning and analysis: reports
3. dissemination and share learnings

What we do **not** offer

1. Financing for data collection – we support fund raising from other sources

GREEN CLIMATE FUND | Independent Evaluation Unit

How LORTA enhances project M&E

Common challenges that project team face

- Busy with project implementation and cannot provide enough resources for implementation tracking and monitoring
- Weak M&E system
- Results or Impact? --- > forget about it!
- Data collection is expensive

What LORTA tries to do

- Collect high quality data of project beneficiaries
- Synchronize data collection effort for M&E and impact assessment – e.g. Log framework, interim or final evaluation

GREEN CLIMATE FUND | Independent Evaluation Unit

Important information

- Daily assignment for each team
- Day 4: Practical examples of conducting impact evaluations
- After the workshop: each team submits the final version.

GREEN CLIMATE FUND | Independent Evaluation Unit

Thank you!

Contact IEU:

✉ ieu@gcfund.org

@GCF_Eval

ieu.greenclimate.fund

GREEN CLIMATE FUND | Independent Evaluation Unit

Introduction to Impact Evaluations

LORTA Virtual Design Workshop 2023

DAY 1

Dr Anastasia Aladysheva
Impact Evaluation Specialist, a.i.

19 June 2023

GREEN CLIMATE FUND | Independent Evaluation Unit

Outline

- What questions do Impact evaluations help answer?
- What are Impact and Impact Evaluations?
- What is the difference between Impact Evaluations and other methods (and the biases of those methods)?
- Brief history of Impact Evaluations
- Example from LORTA: Malawi UNDP FP002
- Impact Evaluation methods in brief
- When can I use Impact Evaluations?

GREEN CLIMATE FUND | Independent Evaluation Unit

Questions that Impact Evaluations may help answer

- What is the impact of my project/programme on the beneficiaries?
- Does the impact of my project differ across population?
- Is my project more effective when combined with another project?
- Is my project cost-effective or are there cheaper ways to achieve the same result?
- Are my results sustainable over time?

GREEN CLIMATE FUND | Independent Evaluation Unit

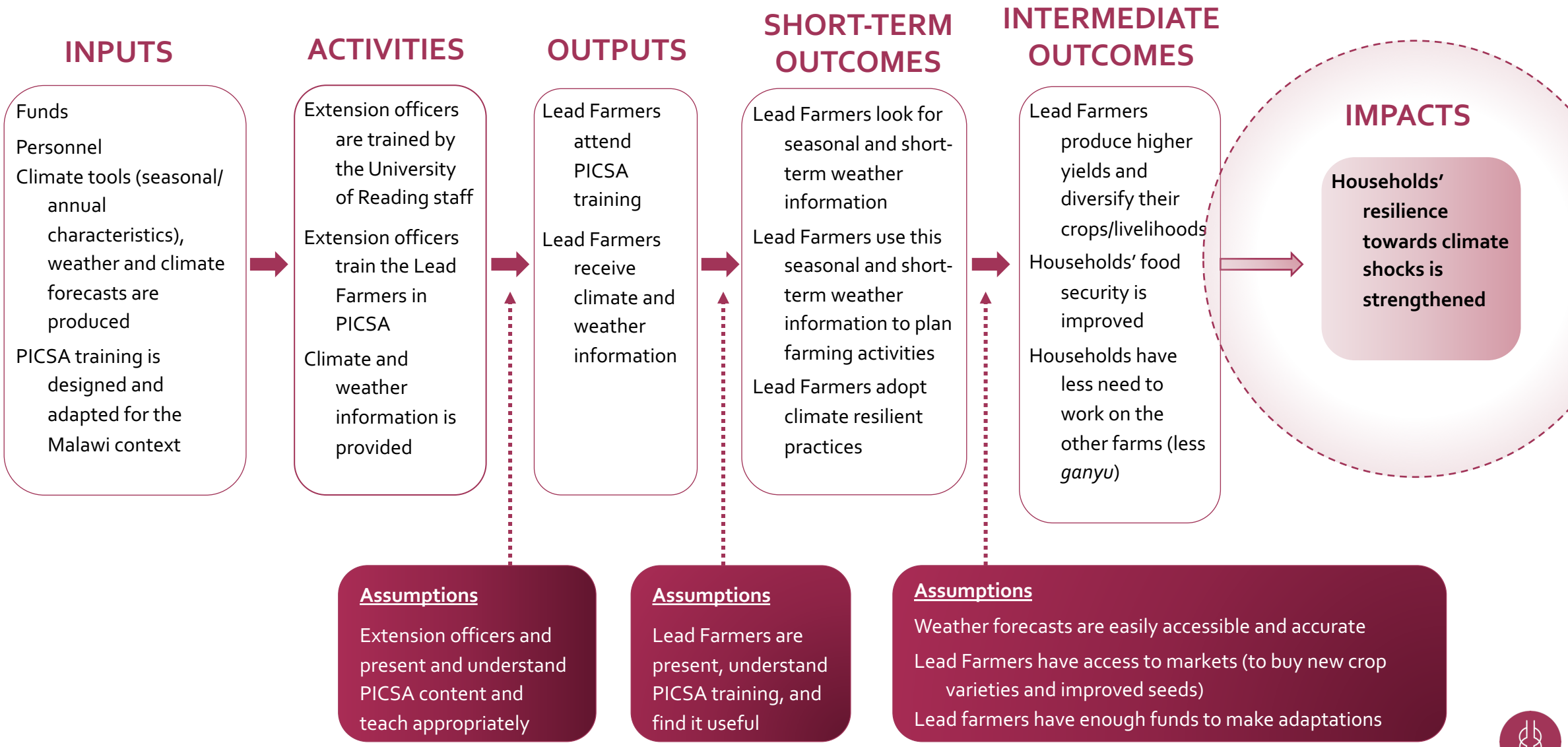
Impact

"The extent to which the intervention has generated or is expected to generate significant positive or negative, intended or unintended, higher-level effects"

The Organisation for Economic Cooperation and Development (OECD) Development Assistance Committee (DAC)

GREEN CLIMATE FUND | Independent Evaluation Unit

Impact in the Theory of Change



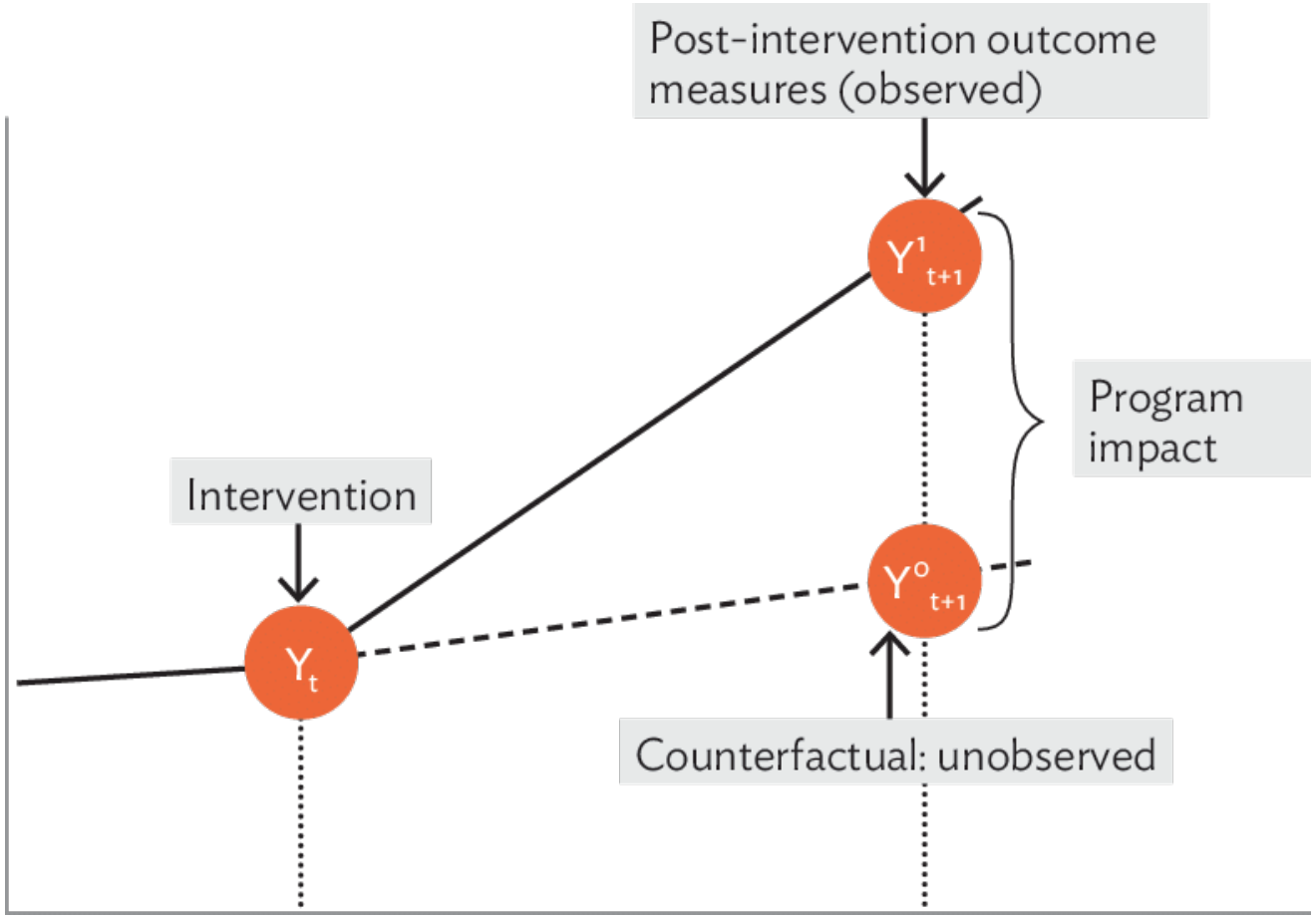
GREEN CLIMATE FUND | Independent Evaluation Unit

What is an impact evaluation? (I)

1. It **empirically** measures the effects caused by an intervention and the **statistical significance** of those effects.
2. It captures the extent to which changes in the outcomes can be **attributed** to a particular intervention.

GREEN CLIMATE FUND | Independent Evaluation Unit

What is an Impact Evaluation? (II)



GREEN CLIMATE FUND | Independent Evaluation Unit

The rise of Impact Evaluations

The "Results Agenda" and MDGs: the indicators cannot realistically serve as measures of the agency's specific efforts

1990s

2000s

Exponential growth of Randomized Control Trials (RCTs)

Growth of systematic reviews

2010s

2020s

How to inform policy & practice

The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2019

Abhijit Banerjee
Esther Duflo
Michael Kremer

The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2019

GREEN CLIMATE FUND | Independent Evaluation Unit

Differences with other widespread methods and their Biases

- **Monitoring tools**:
  - Following a number of indicators in programme/project area
  - *Different goal*: *does not aim to provide information about if an intervention affects indicators measured*

- **Before/after comparison**
  - **Time-varying conditions**: Income levels of households may be impacted by other factors rather than the project/programme

- **"Simple" with/without comparison**
  - **Selection bias**: there are initial differences between control group and intervention (non-random placement) that influence the results

GREEN CLIMATE FUND | Independent Evaluation Unit

Participatory Integrated Climate Services for Agriculture (PICSA) in Malawi (FP002)

PICSA is based on a Training of Trainers (ToT) extension model and makes use of forecasts and participatory decision-making tools

Beneficiary assessments and performance monitoring has indicated encouraging findings in terms of uptake and use in a range of contexts where PICSA has been implemented

- Malawi and Tanzania: Steinmüller and Cramer, 2017
- Ghana: Clarkson et al, 2019
- Rwanda: Clarkson et al, 2017
- Mali and Senegal: Dayamba and others, 2018

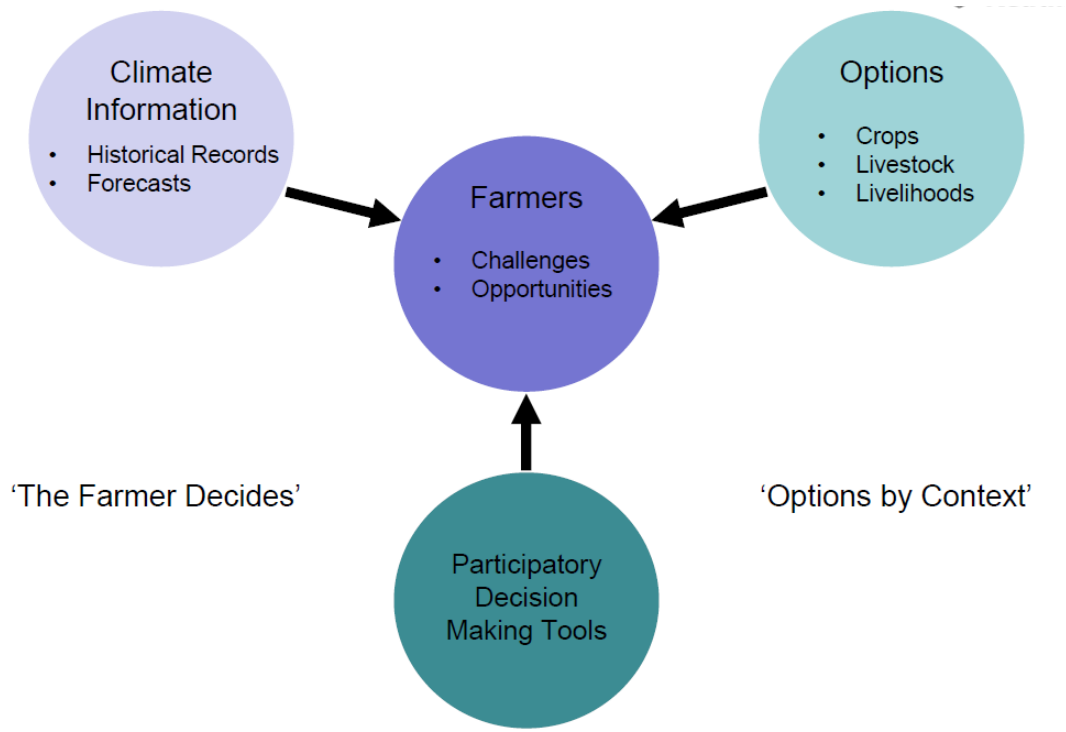
Farmers cropping tomatoes as an alternative. Source: UNDP Malawi.

Qualitative information has also suggested that participants have higher household income, food security and better farmers' yields

However, to the best of our knowledge, the PICSA approach has not been assessed by rigorous impact evaluation techniques yet.

GREEN CLIMATE FUND | Independent Evaluation Unit

PICSA in Malawi (FP002)



GREEN CLIMATE FUND | Independent Evaluation Unit

Implementation

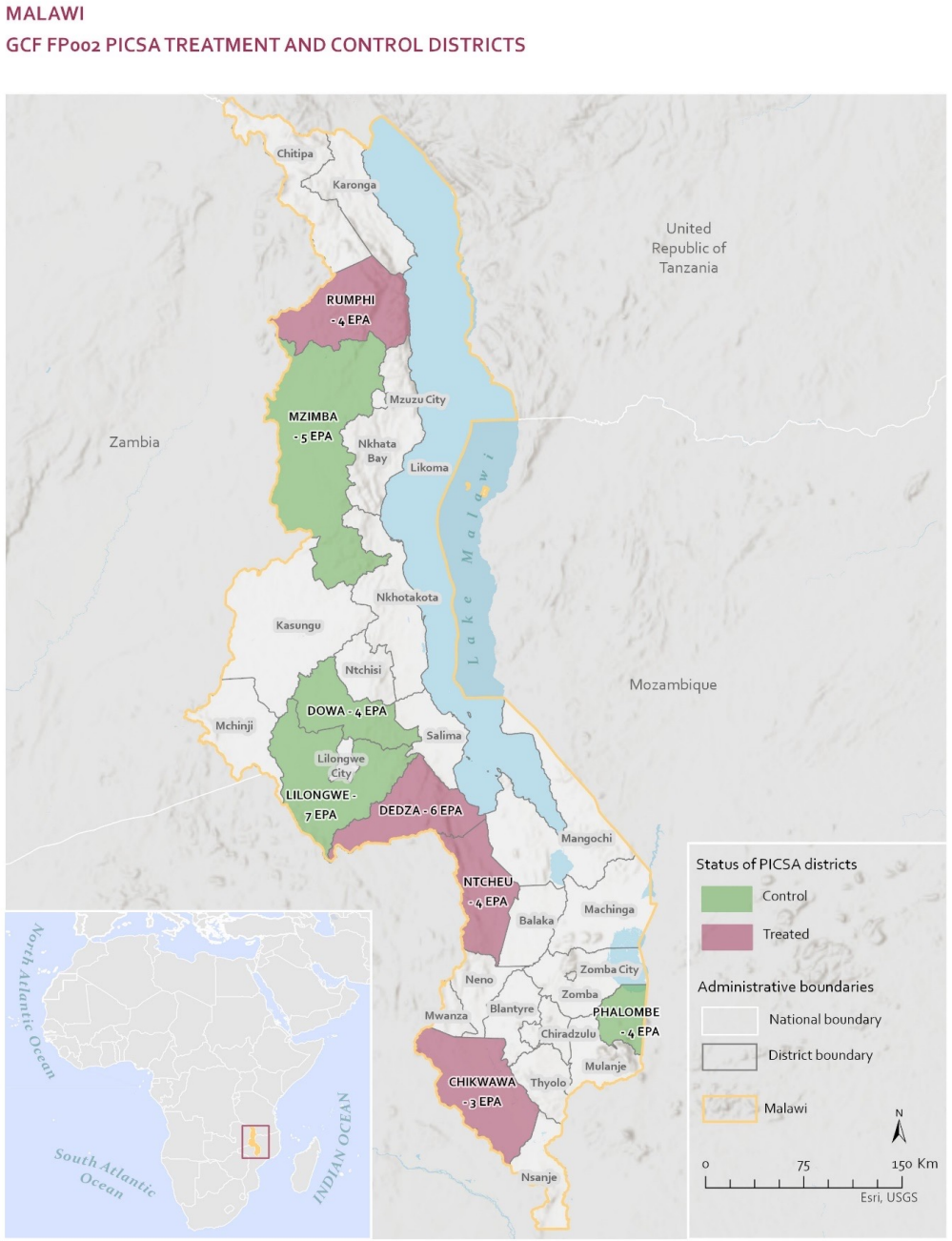
The districts where PICSA was rolled out in 2018 – Dedza, Chikwawa, Ntcheu and Rumphi – were identified as treatment districts

Baseline survey took place in October 2018 (1,802 households)

The control group was defined as districts of Dowa, Lilongwe, Mzimba and Phalombe

In October 2020, the endline data collection took place in all eight districts (shortly before PICSA roll-out in control districts)

We focus the IE on lead farmers (LFs).



GREEN CLIMATE FUND | Independent Evaluation Unit

Results

- Our results show that PICSA increases farmers' use of seasonal forecasts in agricultural decision-making and increases the likelihood to make changes in crop activity
- The findings are aligned with the ToC, designed at the beginning of the intervention
- Maize yields – *Need to be mindful of measurement error.* Effect size of almost 60% diverges from systematic review on farmer field schools which show an effect size of 13% (Waddington et al, 2014). Effect size from PICSA is equivalent to 13 years of maize productivity gains from 2002 – 2015 (Prowse and Hillbom, 2018)
- Ganyu income source – Strongly suggests farmers (especially women) are focusing more on their own farms
- No impact on food security - impacts measured two years after the first PICSA training took place for the LFs.

GREEN CLIMATE FUND | Independent Evaluation Unit

Learnings

Based on the results from the evaluation, the following policy implications can be drawn on to improve the design and implementation of PICSA and similar interventions:

1. There is a need to enhance access to climate and weather information through various communication channels
2. PICSA is a relatively short-term intervention, and its sustainability is unclear. Consider refresher meetings to enhance learning, and mobilize knowledge exchange between LFs and CFs
3. The PICSA approach to empowering farmers can complement existing policies to enhance adaptive capacity and maintain national-level food security.

For the evaluation and data collection teams:

1. Need for more capacity-building plus improving quality of data
2. Supplement the data by use of new technologies (drones)
3. Think creatively and participatory of indicators that correspond to the goal of the project

GREEN CLIMATE FUND | Independent Evaluation Unit

Impact Evaluation Methods

1. *Experimental designs* – Control groups through random assignment
   - Experiments use a counterfactual framework to ensure **observable and unobservable** characteristics of T and C groups are, on average, **balanced** through random assignment of the intervention
2. *Quasi – experimental designs* – Artificial control groups through matching, regression discontinuity or other means
3. *Non – experimental designs* – Pre-post evaluations without a counterfactual

Many impact evaluations contain a mix of methods to strengthen the findings.

GREEN CLIMATE FUND | Independent Evaluation Unit

When to conduct Impact Evaluations

1. Clearly identified use
   - *Relevance & potential usefulness*
   - *Commitment*
2. Availability of
   - *Existing data (If inadequate, the budget to collect data)*
   - *Quantifiable impacts*
   - *Sample size*
   - *Budget*
   - *Other resources*
3. Timing

GREEN CLIMATE FUND | Independent Evaluation Unit

Summary: What is an Impact Evaluation?

A type of evaluation of an intervention, a project, a programme, a policy

The difference between outcomes with and without the intervention between intervention and control group

Its role is to establish causal attribution

Randomized control trials (RCTs) are a type of an impact evaluation method

GREEN CLIMATE FUND | Independent Evaluation Unit

Thank you!

Contact IEU:

✉ ieu@gcfund.org

@GCF_Eval

ieu.greenclimate.fund

GREEN CLIMATE FUND | Independent Evaluation Unit

Theory of Change

LORTA Virtual Design Workshop 2023

DAY 1

Martina de Vries
Impact Evaluation Intern

19 June 2023

GREEN CLIMATE FUND | Independent Evaluation Unit

Learning Objectives

- What is a Theory of Change (TOC)?
- Why do we need a TOC?
- What are the GCF's requirements for a TOC?
- The various components of a TOC
- The difference between a Project Proposal and Impact Evaluation TOC

GREEN CLIMATE FUND | Independent Evaluation Unit

What is a Theory of Change?

It is a causal logic or a results chain of how a given project or programme will transform its inputs into its intended outcomes and impact.

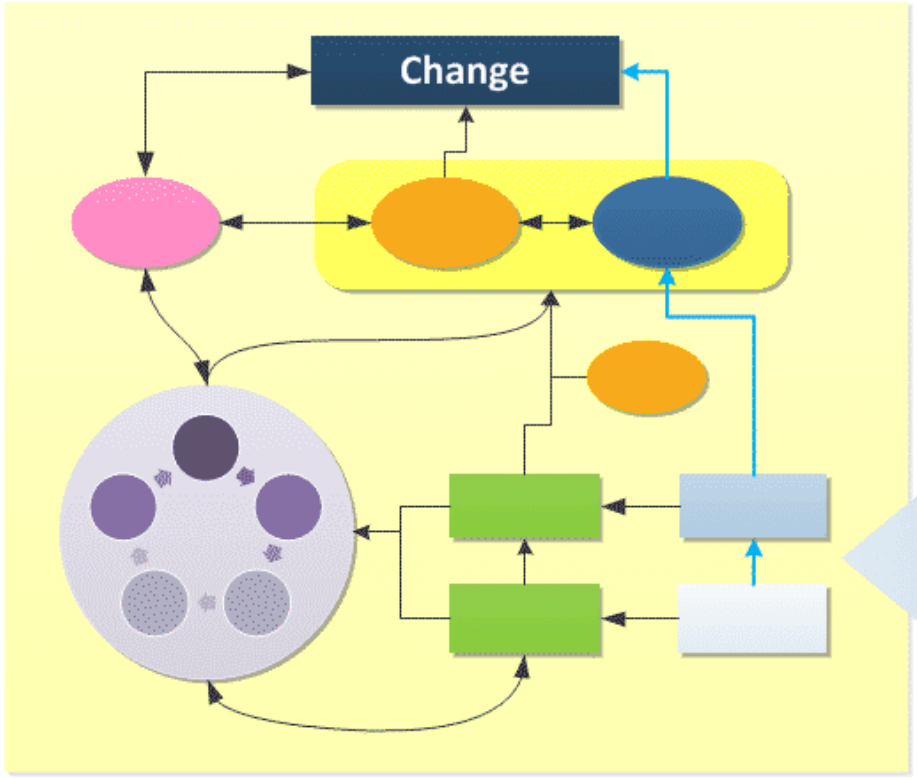
- … tells the *story* of a programme and its vision for a change
- … links the concepts of *monitoring, evaluation and impact* into a single diagram
- … *articulates* the program and its underlying assumptions and risks
- … is a *conceptual map* of a project/programme towards its goals.

GREEN CLIMATE FUND | Independent Evaluation Unit

TOC vs. LOG frame

Theory of Change

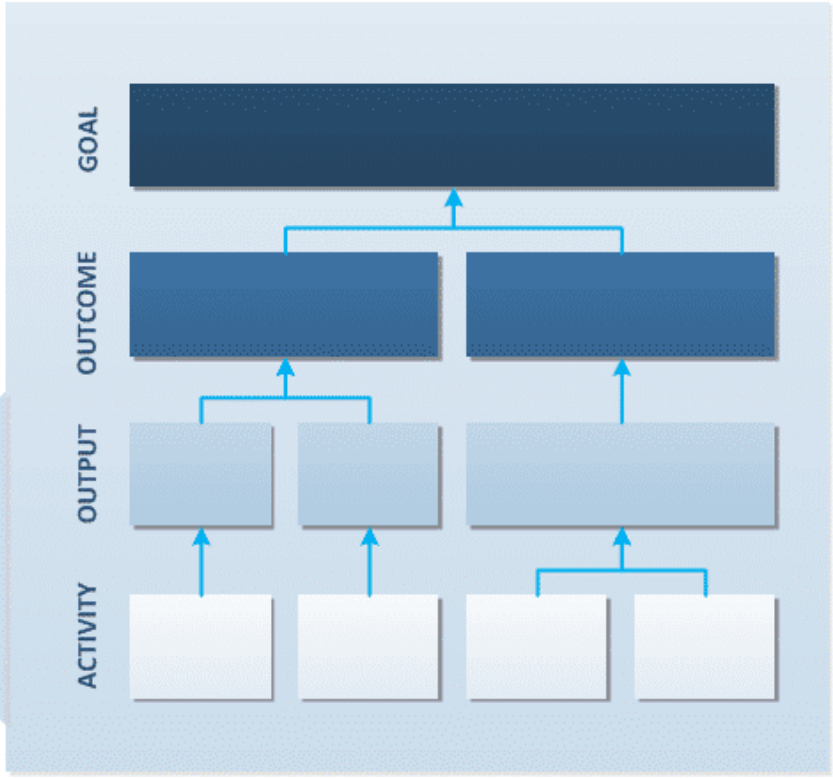
Shows the big picture with all possible pathways – messy and complex



<u>How and Why</u> the overarching goal is expected to happen.

Logical Framework

Shows just the pathway that your program deals with – neat and tidy



What the project plans <u>to do</u>.

GREEN CLIMATE FUND | Independent Evaluation Unit

Why do we need a TOC?

- A basis for evaluations
- A roadmap of the outcomes and impact - how you get where you want to go
- A framework for implementation (required interventions/actions)
- The basis of an agreement (buy-in) of all stakeholders about what needs to happen and who does it
- On-going check-ins to see if you are on track

GREEN CLIMATE FUND | Independent Evaluation Unit

GCF Secretariat Requirements: Concept Notes and Funding Proposals

Concept notes / Funding Proposals (non-SAP)

- TOC Mandatory – Section B.2 (a)
- Should be fully aligned with the IRMF
- Narrative/description of how the proposed project/programme will contribute towards the goal statement by using results chain links:

  Goal statement, Outcomes and Co-benefits (clearly label which is what)**, Outputs, Activities, Barriers, Risks, Assumptions**

SAP

- Optional/desired TOC

ALL to include LOG framework

GREEN CLIMATE FUND | Independent Evaluation Unit

GCF Secretariat Requirements: Readiness

Readiness

TOC required (Consists out of 2 parts: Diagram & Narrative)

Diagram:

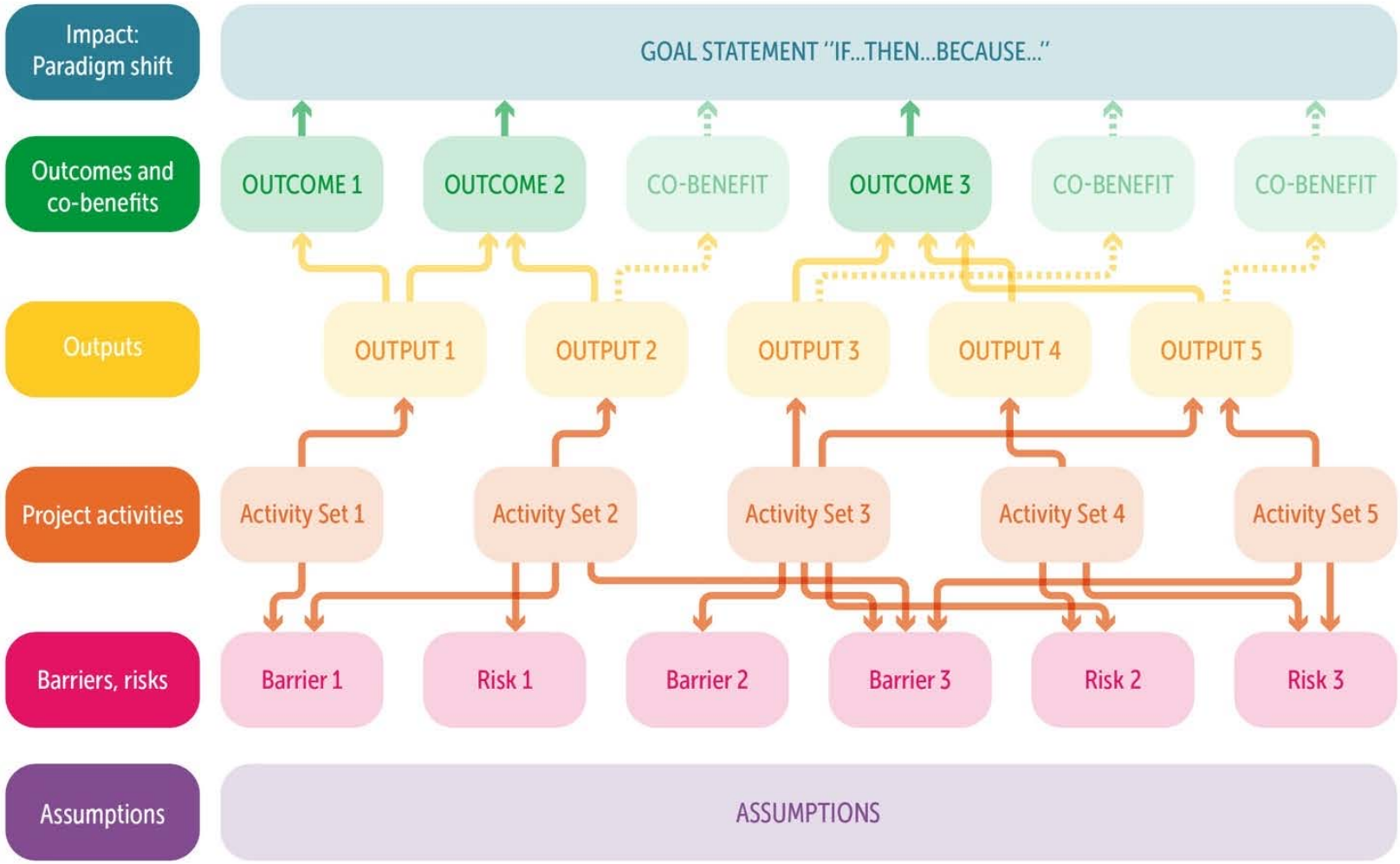
- Shows a vertical and horizontal causal relationship of the proposed interventions and results, and how they interact with the identified barriers, risks, and assumptions.

Narrative:

- Explanation on how the activities will help deliver on the country's readiness needs and build on institutions, processes or existing work already underway in the country
- Explanation on how the proposal will advance national climate priorities
  - Especially those identified nationally determined contributions (NDCs), national adaptation plans (NAPs), and other relevant national climate change strategies
- Description of how the various Outcomes, Outputs, activities and deliverables address the core Readiness challenges to reach the proposal's goal, and how barriers will be addressed.

GREEN CLIMATE FUND | Independent Evaluation Unit

Funding Proposal Theory of Change Template



GREEN CLIMATE FUND | Independent Evaluation Unit

Key definitions (I)

Node

Causal link & Assumptions

INPUTS

Resources at the disposal of the project, including staff and budget

ACTIVITIES

Activities undertaken by the project

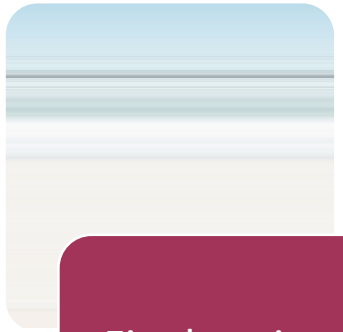
OUTPUTS

Tangible goods and services the project activities produce

OUTCOMES

Results likely achieved once beneficiary population uses outputs

IMPACT



Final project goals (long-term changes)

The essential elements of a TOC:

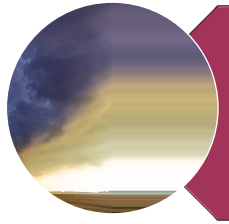
- **Nodes** – actions or consequences.
- **Arrows** – the direction and pathway from Node to Node.
- **Link** – the hypothesized, testable relationship between two Nodes, constituted by Assumptions.

GREEN CLIMATE FUND | Independent Evaluation Unit

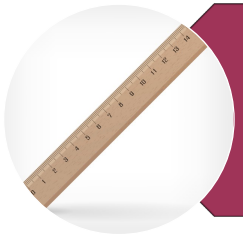
Key definitions (II)

Assumptions: Assumptions are underlying conditions or resources that need to exist for planned change to occur

Risks or Barriers: Possible risks or barriers that need to be addressed. This may include social, political, ecological, financial and other risks or barriers for implementation.



Unexpected impacts (positive or negative): what does the project/programme create which is not its direct purpose?



Indicators: Indicators are measurable information for outcomes and impact.

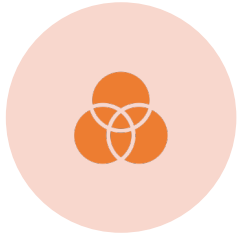
GREEN CLIMATE FUND | Independent Evaluation Unit

SMART Indicators

SPECIFIC: THE INDICATOR NEEDS TO BE NARROW AND ACCURATELY DESCRIBE WHAT NEEDS TO BE MEASURED

MEASURABLE: REGARDLESS OF WHO USES THE INDICATOR IT WOULD BE MEASURED IN THE SAME WAY

ACHIEVABLE: COLLECTING THE DATA SHOULD BE STRAIGHTFORWARD AND COST-EFFECTIVE



RELEVANT: THE INDICATOR BE CLOSELY LINKED TO THE RELEVANT OUTCOME

TIME-BOUND: THERE SHOULD BE A TIMEFRAME LINKED TO THE INDICATOR (SUCH AS THE FREQUENCY WITH WHICH IT IS COLLECTED OR MEASURED).

GREEN CLIMATE FUND | Independent Evaluation Unit

Example

Project X provides clean cooking solutions to households the following indicators are used to measure the expected outcomes:

Outcome	Indicator
Households use improved cooking stoves	% current households in the community using smokeless stoves
Indoor air pollution decreases	% current households in the community with measures above 5 particle micrograms in the air

- Are these good indicators?
- Yes, except that the second indicator is likely to be less achievable.

GREEN CLIMATE FUND | Independent Evaluation Unit

TOC development

Questions to start the development process of a TOC:

1. What is the aim of the project/programme?
2. How can we measure those changes?
3. How will these changes be sustained?
4. How do we compare the existing situation with a changed situation?
5. How will the GCF funding help in achieving these changes?
6. What are the pathways to achieve these changes?
7. What are the pre-conditions of achieving the goals?

1. Place the impact/goal on one end of the TOC.
2. Include the inputs of the intervention in the first node, then fill the gaps between the inputs and goal/impact.
3. Link each component to each other.
4. Arrange your assumptions and risks below each of the nodes.
5. Identify SMART indicators for each of your outcomes.

GREEN CLIMATE FUND | Independent Evaluation Unit

The difference in scope - Project vs. Impact Evaluation

GREEN CLIMATE FUND | Independent Evaluation Unit

Multi-component project and its TOC

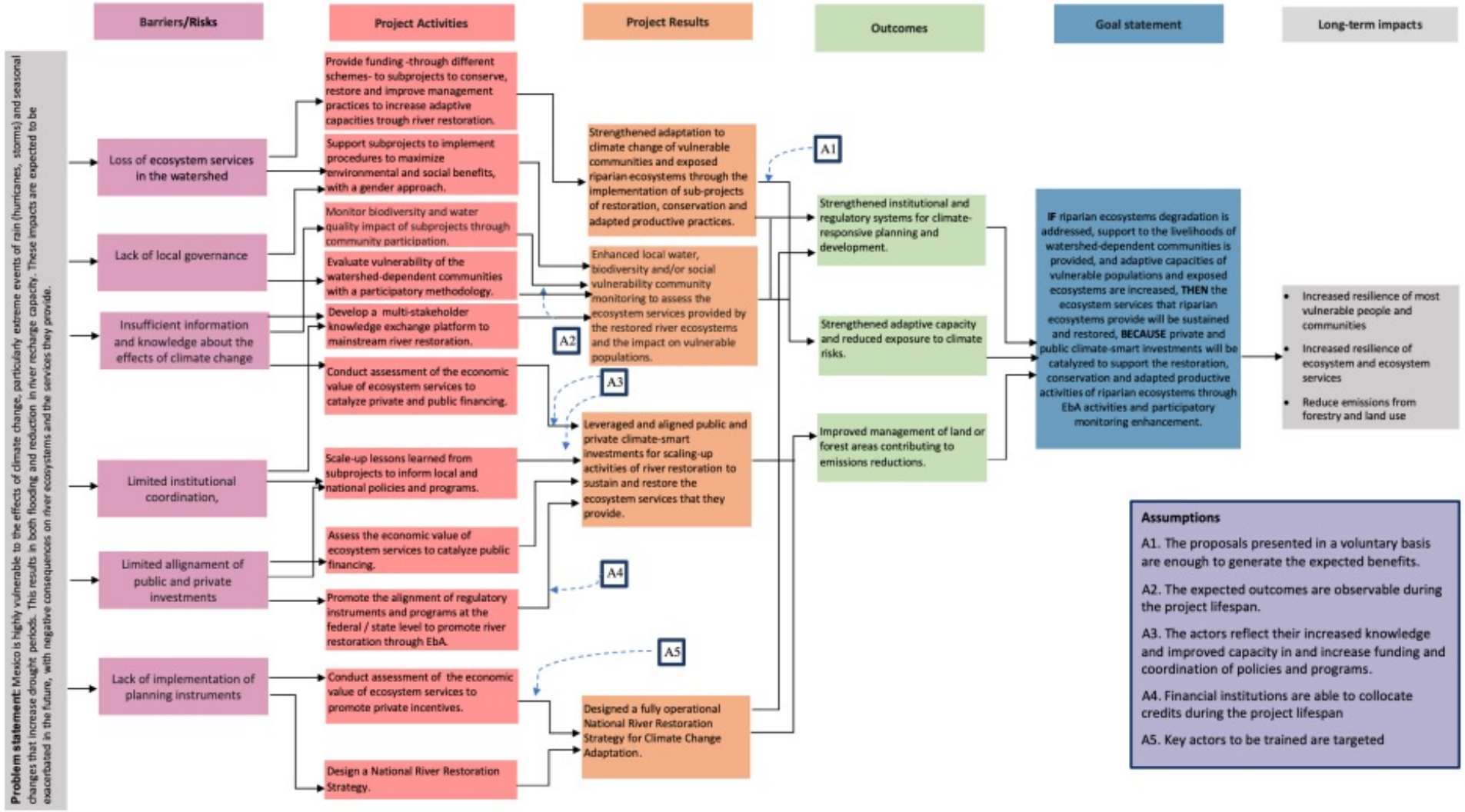
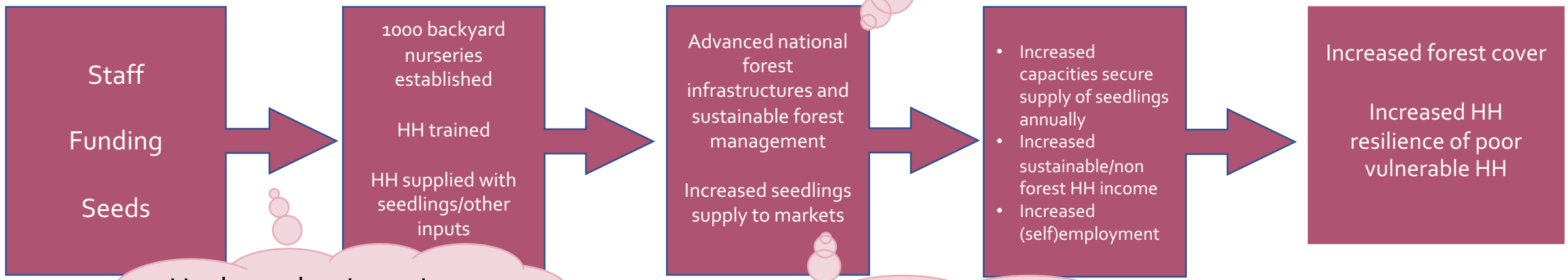


Figure 20. Theory of Change

GREEN CLIMATE FUND | Independent Evaluation Unit

Example of dissatisfactory IE TOC

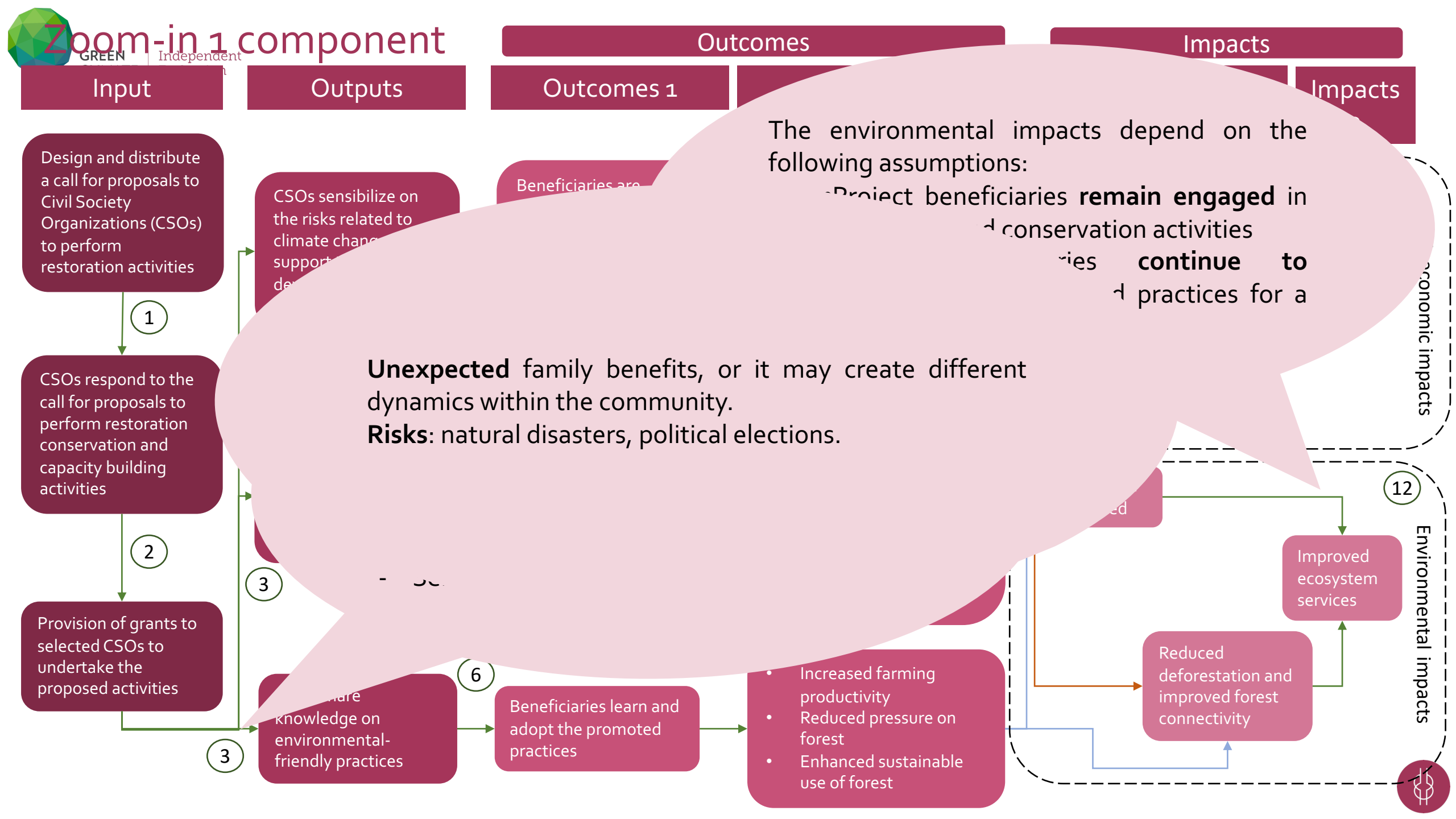
Assumptions are missing, for example:
- There is a market demand for seedlings
- The Households (HH) plant the received seeds.



Unclear what input is **interlinked** with which activity

Risks and Barriers are undefined.
- Wildfires or other natural hazards

Zoom-in 1 component



ToC	Item	Indicator	Data source
Outputs	LHs	Topics covered in training	MIS Survey
	WLGs choose 2 LHs for which they receive input support (for 3 production cycles)	No. of WLGs that receive input support	MIS Survey
		No. of beneficiaries that receive input support	MIS Survey
Assumption 3	Training and inputs are sufficient to equip women with the necessary knowledge and material to start engaging in adaptive LHs	Extent of input support	MIS Survey
LH component Outcomes	Women (members of WLGs) adopt adaptive LHs	No. of beneficiaries who practise adaptive LHs	MIS Survey
		Time allocation of women	Survey
Assumption 4	Adaptive LHs are adequate and adapted to context (e.g. resistant to saline soil and weather conditions)	Type of LH adopted by beneficiaries	MIS Survey
	Adaptive LHs generate profits	Household profits from adaptive LHs	MIS Survey

GREEN CLIMATE FUND | Independent Evaluation Unit

Common challenges and shortcomings

- No link between some activities and its outputs: broken chain(s)
- Time when outcomes and impacts are realized is wrongly captured in TOC
- Indicators are not SMART enough
- Possible unexpected negative or positive impacts not addressed
- Risks/barriers and/or assumptions are missing
- Project is designed along the evaluation.

GREEN CLIMATE FUND | Independent Evaluation Unit

Summary

- Theory of change is a roadmap for the project/programme activities and impacts
- Building a TOC is a participatory process with all stakeholders involved
- Considering challenges and possible shortcomings is essential for building a correct TOC
- TOC helps revealing/rethinking the project's/programme's activities in more detail
- Proper timeline when project's/programme's outcomes and impacts are realized is crucial for capturing those outcomes/impacts in the evaluation

GREEN CLIMATE FUND | Independent Evaluation Unit

Thank you!

Contact IEU:

✉ ieu@gcfund.org

@GCF_Eval

ieu.greenclimate.fund

GREEN CLIMATE FUND | Independent Evaluation Unit

Welcome to the LORTA Virtual Design Workshop 2023!

- We will be beginning the workshop shortly.
- While you are waiting, be sure to follow us online to keep up with the latest news from the IEU!
- Please note that this workshop will be recorded.

FOLLOW US

GREEN CLIMATE FUND | Independent Evaluation Unit

HOUSEKEEPING

MUTE BUTTON

QUESTIONS

RAISE YOUR HAND

GREEN CLIMATE FUND | Independent Evaluation Unit

AGENDA FOR THE DAY

	DAY 2, 20th June 2023	
20:00-20:30	Johanna Gather	1. Experimental designs
20:30-21:00	Seung-Moon Kang & Mutukwa Musole	2. Data sources and data collection methods
21:00-21:15	Carine Valarché	3. Disseminating evaluation findings
21:15-21:30	Moderator	4. Q&A

GREEN CLIMATE FUND | Independent Evaluation Unit

Experimental Evaluation Designs

LORTA Virtual Design Workshop 2023

DAY 2

Dr Johanna Gather
Monitoring & Evaluation Specialist –
Center for Evaluation and Development
Mannheim, Germany

20 June 2023

Recap – What IS Impact Evaluation?

Purpose

- Measure the effect attributable to an intervention (project)
- What is the effect a specific project has on the target population?

What's being done?

- Measure the difference between outcomes with and without the intervention (project) using statistical tools (econometrics)

Problems, problems, problems…

- Impossible to observe the same person with and without intervention ***at the same time*** → Create a control/comparison group
- Self-selection & programme targeting

HOW TO CONSTRUCT A CONTROL GROUPS…

Experimental vs quasi-experimental designs

- ***Experimental evaluations:*** ***R***andomized ***C***ontrolled ***T***rials (RCTs),
  - Considered the gold standard for establishing a connection between an intervention (project) and the outcomes
  - Beneficiaries randomly assigned to control or treatment group
  - Treatment group participates in intervention (project), while the control group does not
  - Any differences between the two groups → caused by the project/intervention

- ***Quasi-experimental evaluations:***
  - When full randomization impractical, unethical, or not feasible
  - Use of existing groups or naturally occurring circumstances

GREEN CLIMATE FUND | Independent Evaluation Unit

WHY RANDOMIZE?

C4ED

- Obtain control group that is as similar as possible to treatment group
- ***Gold standard:*** Randomized assignment of treatment
  - With large enough sample, the treatment and control froup will be very similar – statistically
- ***Law of large numbers***
  - If you draw a large number of individuals from a large population, any two groups will become similar ***on average***
- ***But is it ethical?***
  - Randomization gives everyone the same chance to be treated
  - Fair, transparent and ethical way to assign treatment to equally deserving people

GREEN CLIMATE FUND | Independent Evaluation Unit

TYPES OF RCT's

C4ED

Simple Lottery Design/ Classical RCT

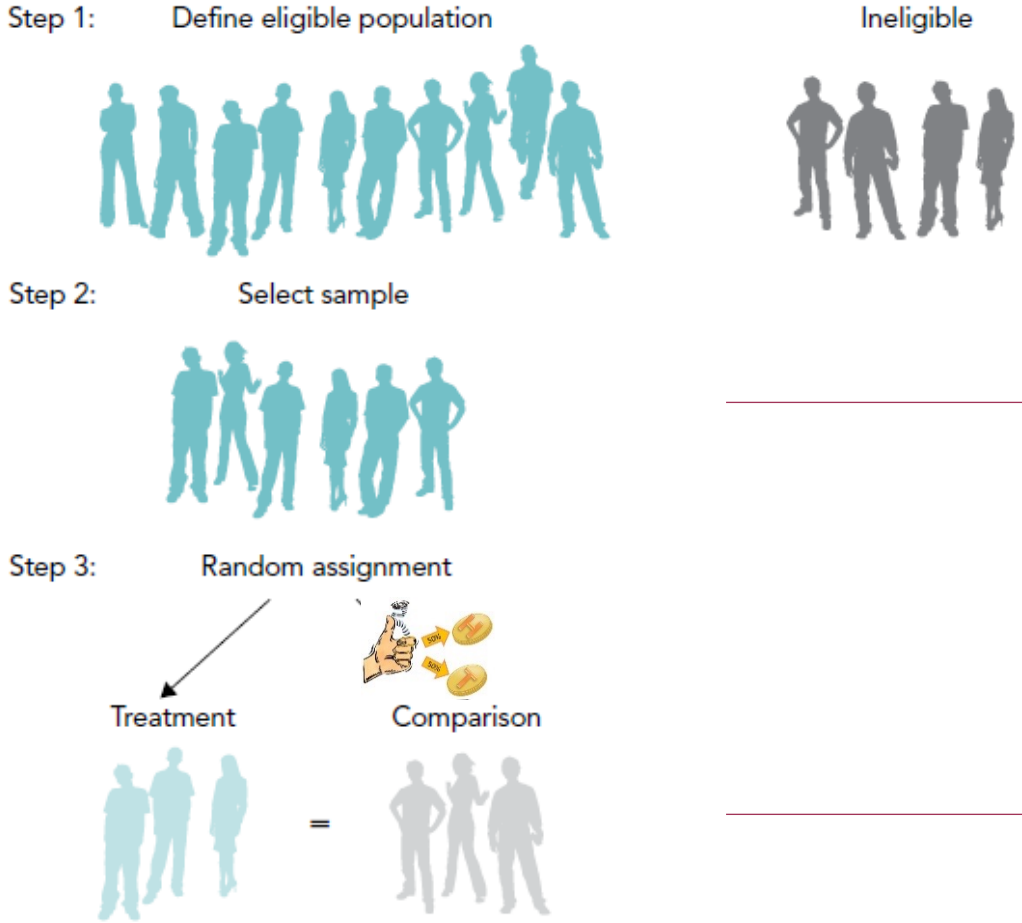
Phased-in RCT

Randomized controlled trials

Random encouragement design

Cluster randomization design

CLASSICAL RANDOMIZED CONTROLLED TRIAL



Source: Hempel & Fiala (2011)

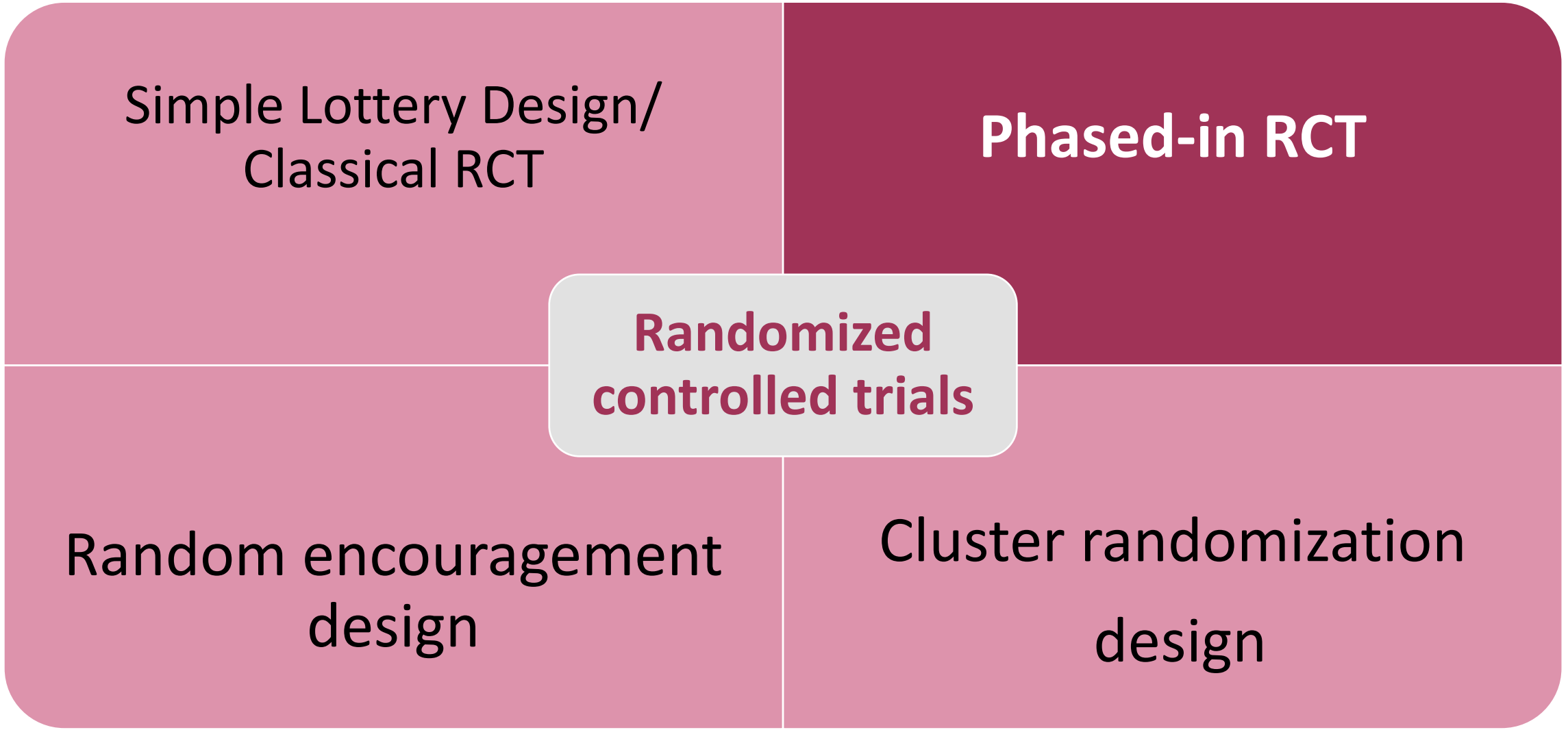
! Not all participants have to be included in the RCT
Select a **random sample** from the eligible population

Randomize the treatment within the random sample
! Data on treatment and control group is needed

GREEN CLIMATE FUND | Independent Evaluation Unit

TYPES OF RCT's

C4ED



PHASED-IN RCT

- If random assignment is unethical/not possible
- Not all beneficiaries will be covered immediately, but eventually over two or more phases

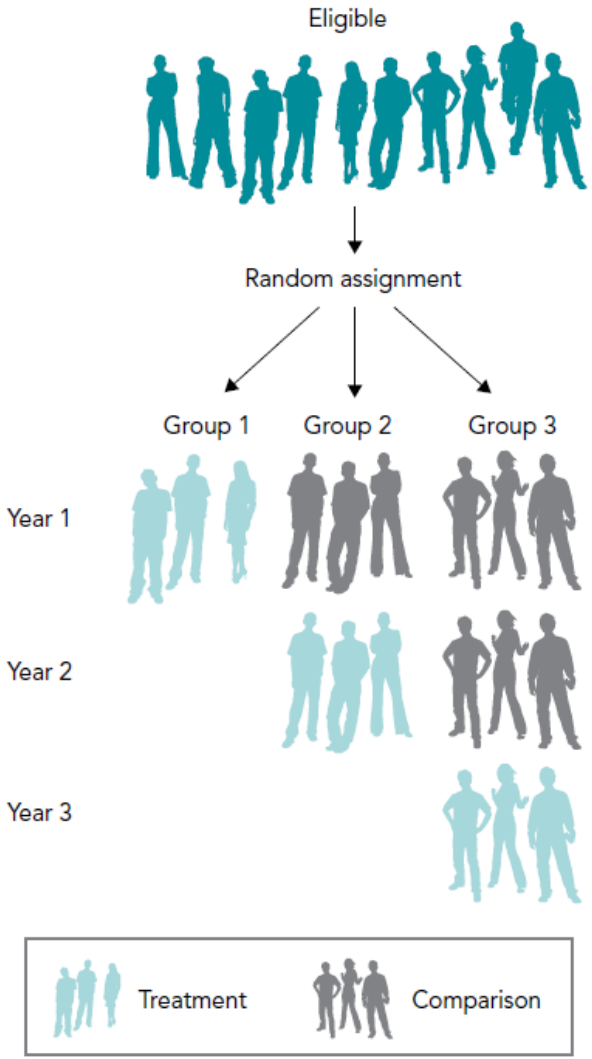
→ **Randomize** the order of program implementation

Advantages:

- Feasibility
- Learning Opportunities & Evaluation of challenges
- Ethical Considerations

Disadvantages

- Delayed Access
- Contamination



Source: Hempel & Fiala (2011)

TYPES OF RCT's

Simple Lottery Design/ Classical RCT

Phased-in RCT

Randomized controlled trials

Random encouragement design

Cluster randomization design

GREEN CLIMATE FUND | Independent Evaluation Unit

RANDOM ENCOURAGEMENT DESIGN

C4ED

- Encouragement design can be used for programs and policies that are universally available but not universally adopted
- Instead of randomizing "treatment", randomize your **mobilization activities!**
- An example of a suitable encouragement is an information campaign for an ongoing program

  →Randomly generate variation in take-up between the two, otherwise equal, groups

- These motivational actions are also called **nudges!**

GREEN CLIMATE FUND | Independent Evaluation Unit

TYPES OF RCT's

C4ED

Simple Lottery Design/ Classical RCT

Phased-in RCT

Randomized controlled trials

Random encouragement design

Cluster randomization design

CLUSTERED RCT

- In case, individual treatment is not possible or large spill-overs are expected
- Randomize at a higher level, even when we collect data on a lower level
- Feasible: Randomly assign with shared community infrastructure, such as cooking stove solution or water supply at a community level, rather than at a household level
- Has implications for **sample size calculations**

Household level randomization

Village/community level randomization

GREEN CLIMATE FUND | Independent Evaluation Unit

Thank you!

ieu.lorta@gcfund.org

GREEN CLIMATE FUND | Independent Evaluation Unit

Data Sources and Data Collection Methods

LORTA Virtual Design Workshop 2023

DAY 2

Mutukwa S. Ben Musole
Junior Researcher
Seung-Moon Kang
Evaluations Assistant Consultant
20 June 2023

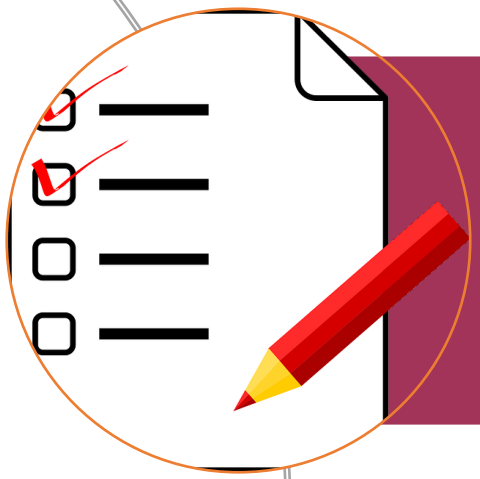
GREEN CLIMATE FUND | Independent Evaluation Unit

AGENDA

- Different types of data
  - Primary & secondary data
  - Quantitative & qualitative data
- Data collection methods
  - Household survey
  - Interview (KII)
  - Focus group
- Satellite data and GIS
  - Introductory concepts
  - Usage in impact evaluation

GREEN CLIMATE FUND | Independent Evaluation Unit

TYPES OF DATA



Primary & Secondary data

Quantitative & Qualitative data

GREEN CLIMATE FUND | Independent Evaluation Unit

PRIMARY AND SECONDARY DATA

- Primary data is a type of data that is collected directly from main sources
- Sources of primary data include interviews, focus group, direct observation and surveys
- It has advantage of being collected to answer specific evaluation questions raised for the evaluation

GREEN CLIMATE FUND | Independent Evaluation Unit

PRIMARY AND SECONDARY DATA CON'D

- Secondary data is data which has been collected by individuals or agencies for purposes other than those of particular research study.

- Secondary data provides important context for any investigation, and in some cases it is the only source which covers full population needed to conduct a research project

- However…
  - May contain irrelevant data
  - Evaluators have no control over data quality and no familiarity with data

GREEN CLIMATE FUND | Independent Evaluation Unit

EXAMPLES OF PRIMARY AND SECONDARY DATA

- Primary data
  - Survey
  - Interview
  - Observation
  - Focus group

- Secondary data
  - Published literature
  - Government document
  - Audio and video recording

GREEN CLIMATE FUND | Independent Evaluation Unit

WHAT ARE QUANTITATIVE AND QUALITATIVE DATA?

Quantitative	Value of data where each data set has a unique numerical value
	It is objective and can be measured using standardized units
	Gathered through survey, observational studies, document reviews
Qualitative	Type of data that is descriptive in nature and cannot be easily quantified or measured
	Qualitative data is subjective, context-dependent and allows for the exploration of complex phenomena such as social and cultural practices
	Collected through interview(key informant interview), focus group, case studies and document review

GREEN CLIMATE FUND | Independent Evaluation Unit

ETHICS ON DATA COLLECTION

- Participants in evaluations must be treated with respect and dignity, which entails robust procedures to protect their privacy and sensitive information

- Evaluations must obtain **free, prior and informed consent** from the participants to use private information

GREEN CLIMATE FUND | Independent Evaluation Unit

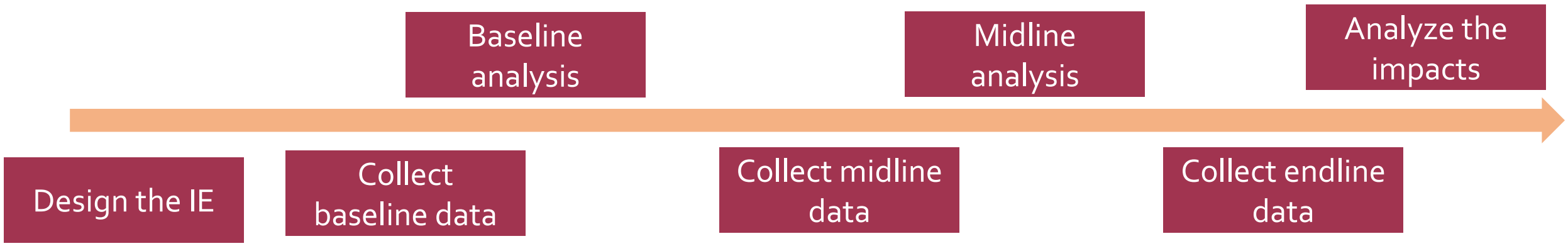
DATA COLLECTION METHODS

SURVEY, KII AND FOCUS GROUP

SURVEYS

- Surveys can collect focused, targeted information about a sample taken from the target population for a project, or programme

- Generally surveys are conducted with a relatively large sample that is randomly selected so that the results reflect the larger target population



SURVEYS

- Before collecting your own data…
  - Can we use existing, secondary data?
  - Who should collect?
  - When do we need to start?

- When developing a questionnaire, a good question:
  - Is understood consistently by all respondents
  - Elicits the kind of answers the evaluator wants
  - Is one where respondents have the necessary knowledge to answer
  - Is adapted to the country/region specific context and local languages

SURVEYS

When did you move to Songdo, Korea?

In what YEAR did you move to Songdo, Korea?

How often do you use radio broadcast and SMS to gather information on climate forecast?

How often do you use radio broadcast to gather information on climate forecast?

INTERVIEWS (KII)

- Key informant interviews are qualitative in-depth interviews with people who know what is going on in the community

- To collect information from a wide range of people who have firsthand knowledge about the community and the objectives of ongoing project
  - Community leaders
  - Professionals from various governmental and non-governmental institutions

- When do we conduct KII?

KEY INFORMANT INTERVIEW

Table 5: List of Key informants interviewed

SN	Institution/informants	Number	Location of head office
1	Vice Mayor of Economic Affairs, Gicumbi District	1	Gicumbi
2	Infrastructure Director, Gicumbi district	1	Gicumbi
3	District forest officer	1	Gicumbi
4	Sector Executive Secretary	5	Gicumbi
5	Forest technician sector level	2	Gicumbi
	TURWANYE UBUTAYU Cooperative representative	1	
6	Social affairs at sector level	1	Gicumbi
7	Cell Executive Secretary	3	Gicumbi
9	Forest cooperative representatives	3	Gicumbi
10	SEDO at cell level	3	Gicumbi
11	Director of agriculture at district level	1	Gicumbi
12	Chairperson of Watershed Committee	1	Gicumbi
13	FONERWA	2	Kigali
14	MINAGRI	1	Kigali
15	MINECOFIN	1	Kigali
16	MININFRA	1	Kigali
17	National Agricultural Export Development Board (NAEB)	1	Kigali
18	REMA	1	Kigali
19	National Industrial Research and Development Agency (NIRDA)	1	Kigali
20	Ministry of Environment	1	Kigali
21	Rwanda Housing Authority (RHA)	1	Kigali
22	RMLUA	1	Kigali
23	Rwanda National Institute of Statistics in Rwanda	1	

- The KIIs were conducted during this study and were mainly targeting the local leaders at sector, cell and village levels and other leaders with a hand on the project which is going to be implemented in Gicumbi district.

GREEN CLIMATE FUND | Independent Evaluation Unit

FOCUS GROUP

- Focus group is a group interview of approximately six to twelve people who share similar characteristics or common interest
- Can provide rich information on perceptions, feelings and reactions through participant interactions.
- The group dynamic can provide useful information that individual data collection does not provide, but can provide misleading, biased information

Source: Naylor Association Solutions

GREEN CLIMATE FUND | Independent Evaluation Unit

SATELLITE DATA AND GIS

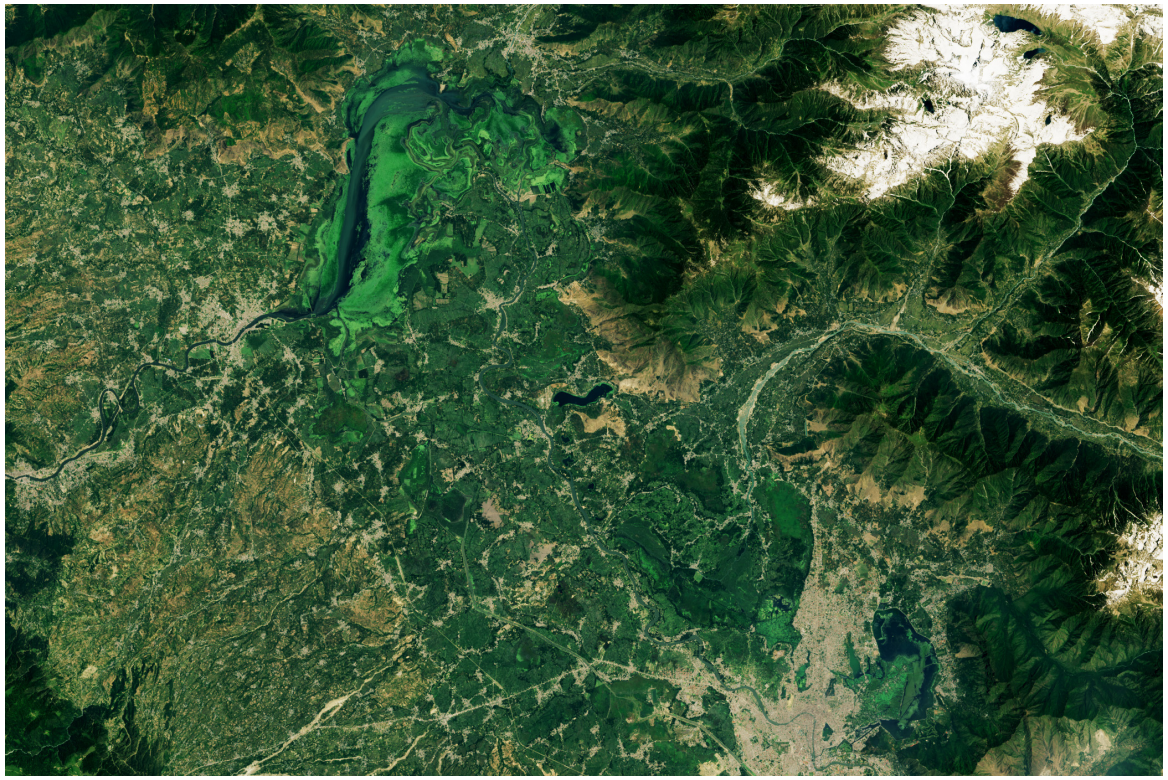
GREEN CLIMATE FUND | Independent Evaluation Unit

COMPLEMENTING SURVEYS WITH SATELLITE DATA

- Survey data can be challenging to collect in conflict or disaster affected areas
- Conditions and lack of transport infrastructure may limit data collection
- Available budget may only allow for collection of part of the required data
- Satellite data can be used to address some of these limitations

KEY DEFINITIONS

- Remote sensing is the analysis of data acquired using a device that is not in contact with the object, area or phenomenon under investigation (Lillesand *et al.*, 2015)
- Earth observation is the study of the earth's surface using remote sensing technologies (mostly satellite or air borne acquired)
- A geographic information system (GIS) is a system that creates, manages, analyzes, and maps all types of data (ESRI, 2023)
- Spatial data is information about the locations and shapes of geographic features and the relationships between them, usually stored as coordinates and topology.

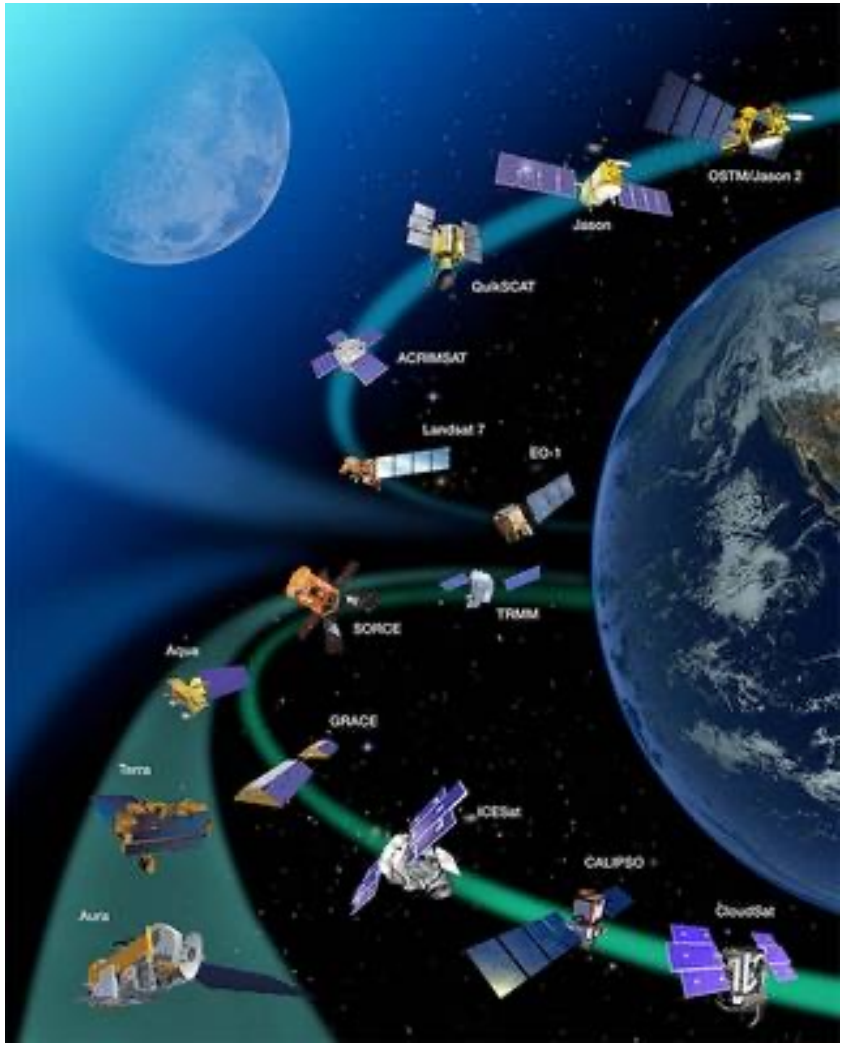


Shrinking lakes of the Kashmir Valley, NASA

GREEN CLIMATE FUND | Independent Evaluation Unit

WHAT IS SATELLITE DATA?

- Satellite data or satellite imagery is collected using space borne instruments mounted on satellites
- It provides detailed and objective information about the earths surface (vegetation, water, agriculture, urbanization, infrastructure etc.)
- Two types of data – passive where data recorded by the instruments is emitted or reflected by the earth's surface or active where the data that recorded is generated by the instruments
- Information collected using satellite mounted instruments can be processed and interpreted to generate information about the surface of the earth or atmospheric conditions



Examples of satellites, NASA

GREEN CLIMATE FUND | Independent Evaluation Unit

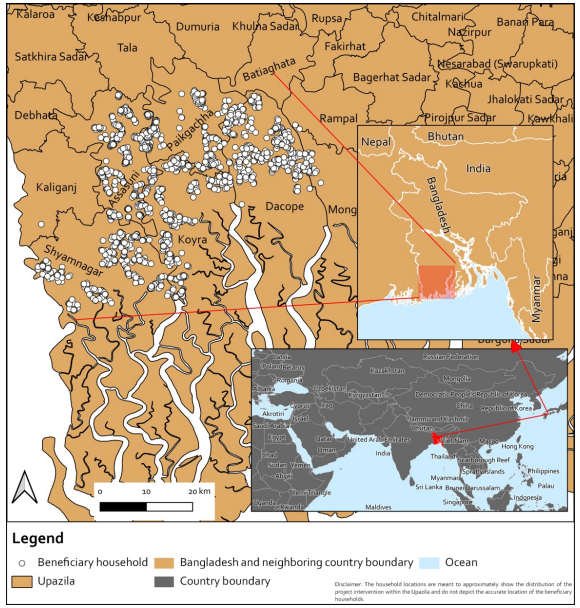
USE OF SATELLITE DATA IN IMPACT EVALUATIONS

- Satellite data is used to directly record the activities being studied or through use proxies for the indicators we are studying
- We can directly study and monitor cropping patterns, intensity of agricultural activities, extent of restored ecosystem, status of infrastructure etc.
- We can assess interventions by modelling variables generated from satellite data to estimate crop yields, urban developments or deforestation
- Assessing the impact of infrastructure projects by measuring changes in road networks, urban development and land cover
- Evaluating ecosystem restoration projects by tracking deforestation, air and water quality, and climate change impacts.
- Analyzing disaster response and recovery efforts by assessing damage and changes in affected areas.

GREEN CLIMATE FUND | Independent Evaluation Unit

INTEGRATING SATELLITE WITH OTHER SPATIAL DATA

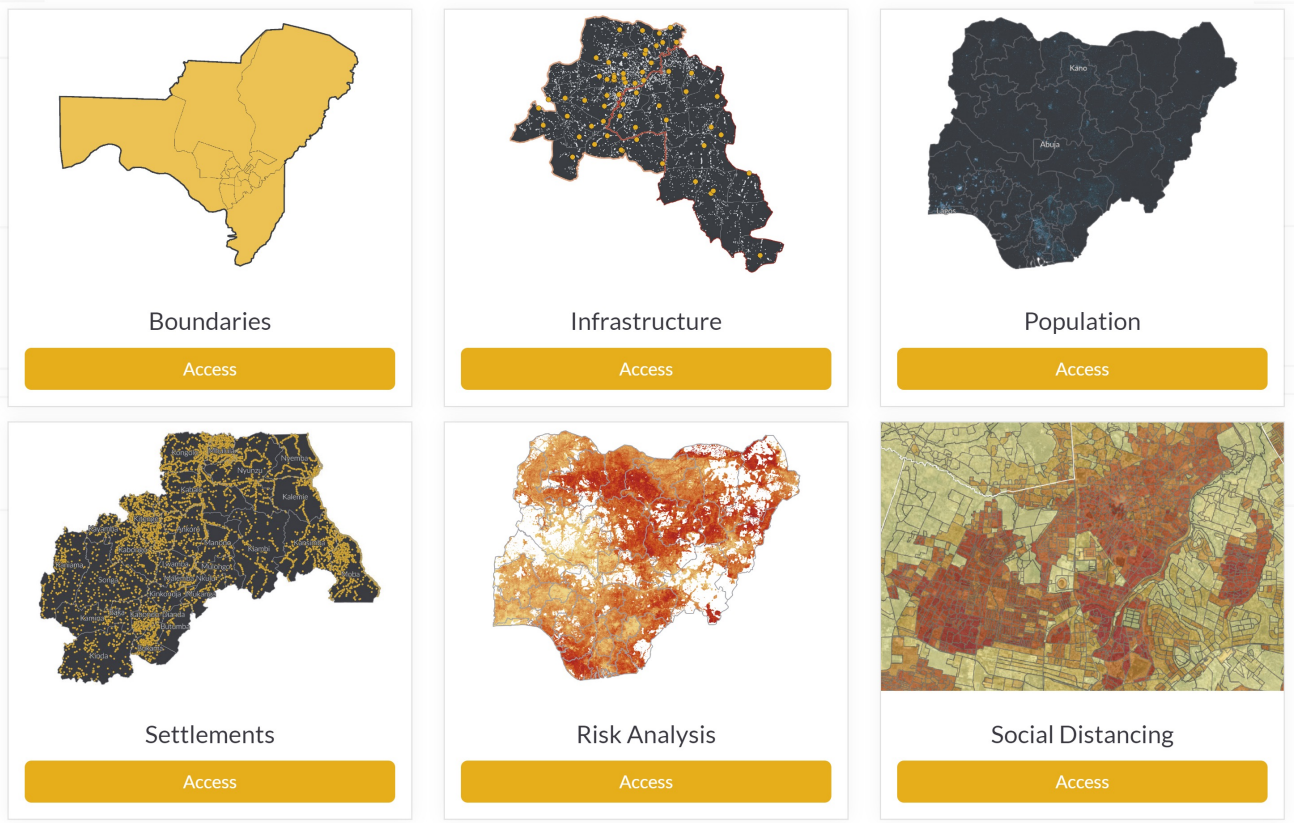
- Using GIS, satellite data can be integrated with spatial data about beneficiaries, households or or interventions
- Helps to understand the geographic context of the beneficiaries and our project area
- By continuously updating our spatial database we can utilise GIS data to track our implementation and monitor impacts
- Visualise impact evaluation results in form of maps to aid the understanding of the project and communicate impacts
- Maps can effectively depict program coverage, reach, and distribution of outcomes, providing clear insights.



GREEN CLIMATE FUND | Independent Evaluation Unit

INTEGRATION OF SATELLITE WITH OTHER SOURCES OF DATA

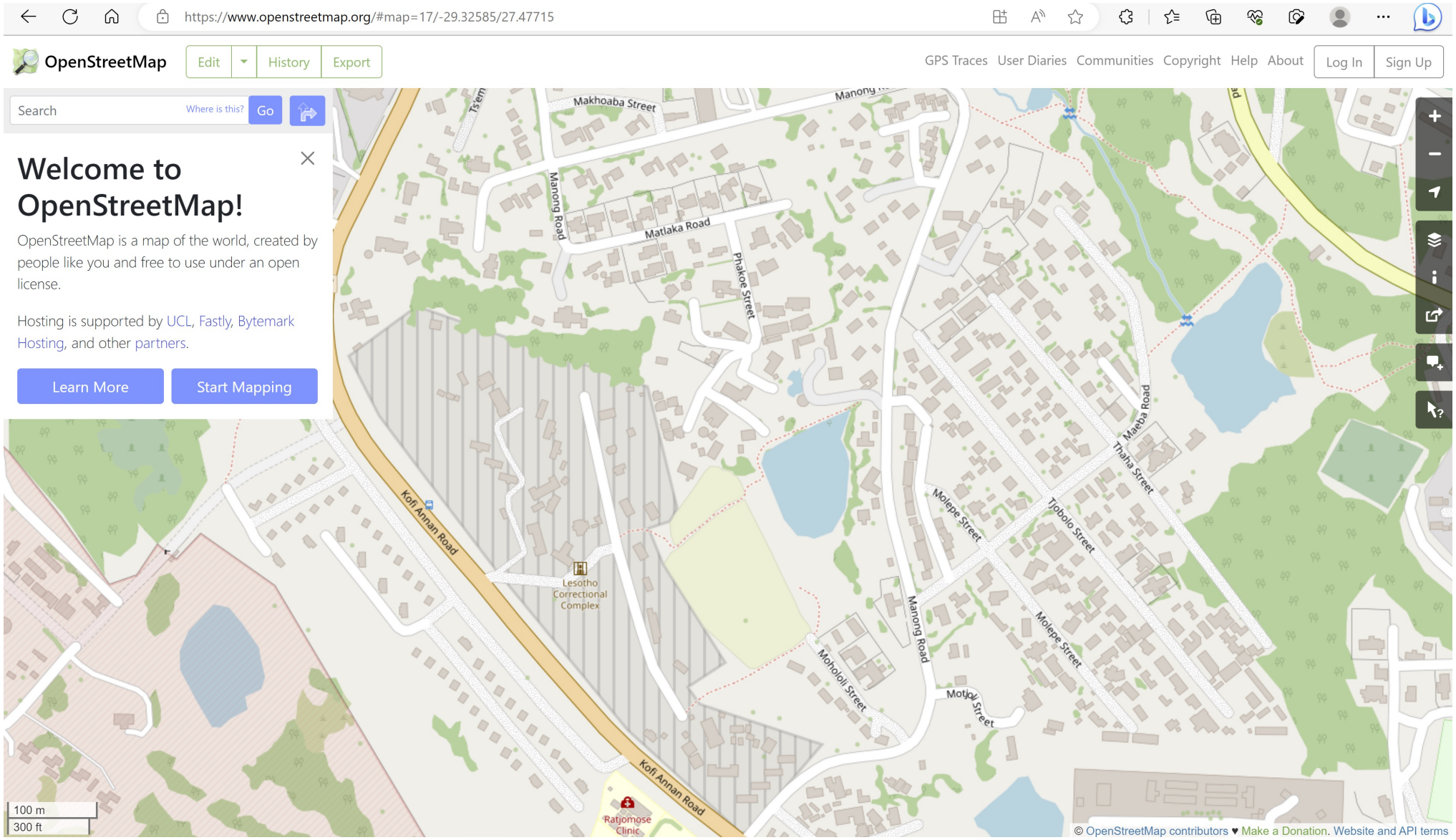
- Satellite data can be integrated with other data sources (administrative, socioeconomic, demographic, population)
- The data can be collected specifically for the project or from other sources such as citizen science, multi-agency partnership and public data



https://data.grid3.org

GREEN CLIMATE FUND | Independent Evaluation Unit

EXAMPLES: CITIZEN SCIENCE, OPENSTREETMAP INITIATIVE



GREEN CLIMATE FUND | Independent Evaluation Unit

EXAMPLES: MULTI AGENCY PARTNERSHIP INITIATIVES

GRID3

ABOUT US SOLUTIONS NEWS DATA RESOURCES

DATA-DRIVEN DECISION MAKING

Enabling more effective humanitarian and development decisions

When maps fail to account for every person, progress can't be achieved. Too many people still remain invisible to the governments and humanitarian and development organisations that can provide the public with vital resources. Communities that are absent from maps often miss out on much needed support. And when other map-based data, such as infrastructure and boundaries, are missing or incorrect, development efforts are also impeded.

LEARN MORE

LATEST FROM GRID3

News

Innovative online course attracts learners from across the globe

News

Sierra Leone tackles HPV in its latest nationwide vaccination campaign

News

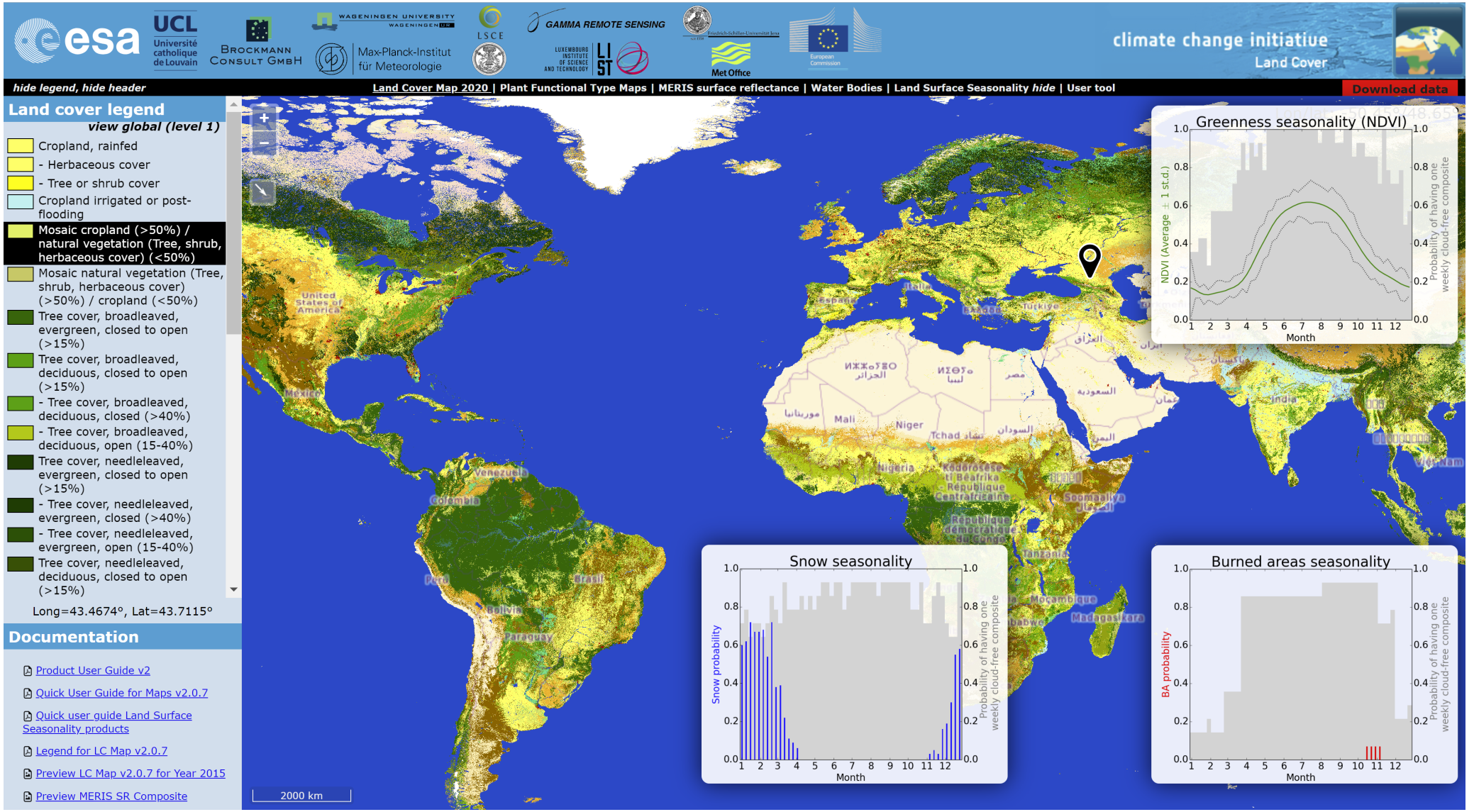
Supporting vaccination microplanning in Mozambique

News

Planners in Zambia continue to draw on geospatial solutions to make sure no one is left behind

VIEW MORE

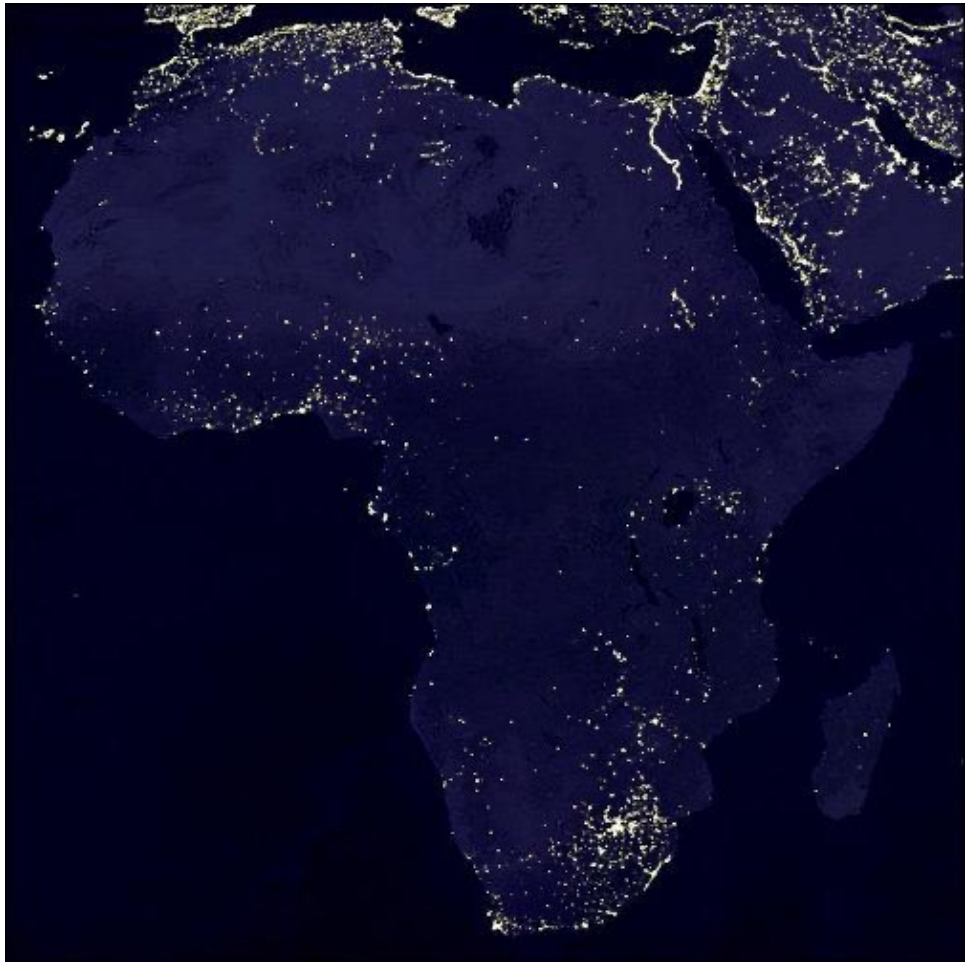
EXAMPLES: ESA CLIMATE CHANGE INITIATIVE



SOME EXAMPLES OF APPLICATIONS IN IMPACT EVALUATIONS

GREEN CLIMATE FUND | Independent Evaluation Unit

WHAT IS THE IMPACT OF THE PROJECT ON HOUSEHOLD WEALTH?

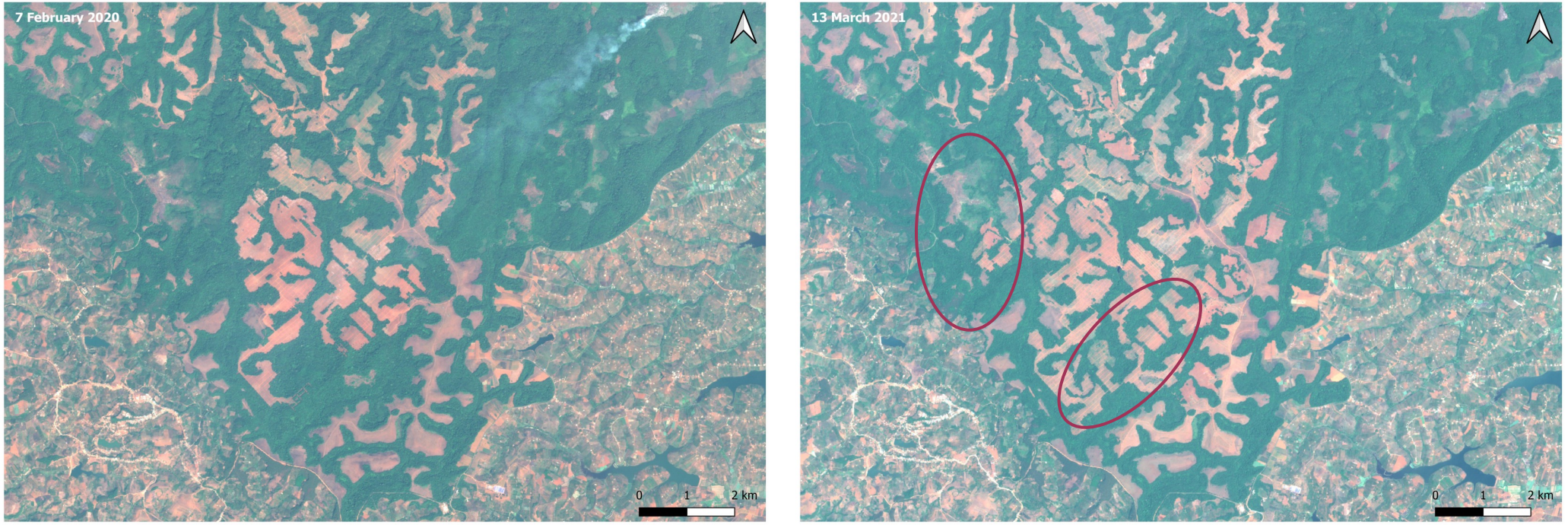


Night lights in Africa - credits: NASA

family in Ghana - credits: Shutterstock/Anton_Ivanov

GREEN CLIMATE FUND | Independent Evaluation Unit

AGRICULTURAL INTENSIFICATION AND DEFORESTATION



Agricultural intensification and loss of forest vegetation in Phumi Lumpek, Cambodia (Source: Sentinel 2 accessed from https://glovis.usgs.gov)

GREEN CLIMATE FUND | Independent Evaluation Unit

PHOTOVOLTAIC CELLS IN VANUATU

Source: UN Development Programme (2020). Satellite data and climate change. https://undp.medium.com/satellite-data-and-climate-change-e5c91ad42877

GREEN CLIMATE FUND | Independent Evaluation Unit

ADVANTAGES OF USING SATELLITE DATA

- Gives a bird's eye view of the earth's surface and covers wide areas
- Provides objective and consistent measurements
- Data collected over an area over time provides historical data and can aid the tracking and monitoring of our interventions
- Is not affected by limitations resulting from accessibility or safety – collects data over conflict, disaster affected areas, no transport or communication infrastructure
- It is cost-effective compared to traditional data collection methods.

GREEN CLIMATE FUND | Independent Evaluation Unit

GENERAL LIMITATIONS OF SATELLITE DATA

- Available data is limited to existing satellite data sources
- It involves complex methods and requires strong technical expertise to process and analyse satellite data
- Limited by the temporal and spatial resolution
- Data gaps due to sensor limitations, cloud cover or malfunctioning of the equipment
- High resolution commercial dataset are costly

GREEN CLIMATE FUND | Independent Evaluation Unit

LIMITATIONS SPECIFIC TO IMPACT EVALUATIONS

- It is not applicable to all types of projects and interventions
- Does not capture some indicators
  - Attitudes
  - Behaviour
  - Nutrition and food security
  - Health
  - Access to clean and safe water
- Adherence ethical practices and considerations

GREEN CLIMATE FUND | Independent Evaluation Unit

Thank you!

Contact IEU:

✉ ieu.lorta@gcfund.org

@GCF_Eval

ieu.greenclimate.fund

GREEN CLIMATE FUND | Independent Evaluation Unit

Disseminating Evaluation Findings

LORTA Virtual Design Workshop 2023

DAY 2

Carine Valarché
Evaluations Assistant Consultant
Independent Evaluation Unit

June 2023

GREEN CLIMATE FUND | Independent Evaluation Unit

Agenda

- Introduction
- Methods
- Further information

GREEN CLIMATE FUND | Independent Evaluation Unit

KEY TAKEAWAYS

- Understand your reporting and disseminating obligations
- Learn how to structure and write a good dissemination plan
- See real-world examples from other AEs

GREEN CLIMATE FUND | Independent Evaluation Unit

Introduction

What is required of you? What evaluations will be prepared?

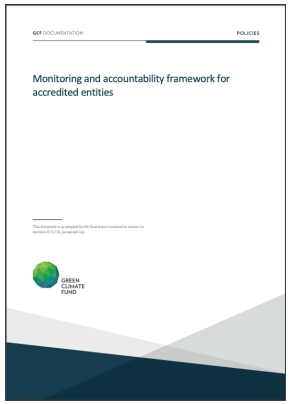
GREEN CLIMATE FUND | Independent Evaluation Unit

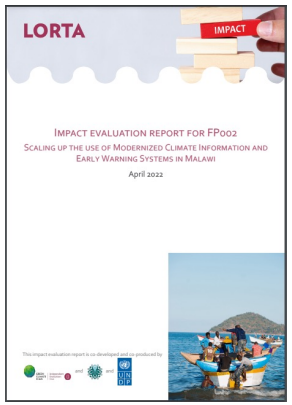
ALL AES WILL SUBMIT EVALUATIONS FOR EACH FUNDED ACTIVITY

'The initial monitoring and accountability framework (MAF) for accredited entities (AEs) requires all AEs to submit **two important independent evaluations** for all projects or programmes.'

Evaluation Policy for the GCF

- Monitoring and accountability framework (mandatory)
  - Project interim evaluation
  - Project final evaluation
- Impact evaluation (optional)
  - Baseline report
  - Midline report
  - Endline report





GREEN CLIMATE FUND | Independent Evaluation Unit

THESE EVALUATIONS SHOULD CONTAIN LEARNINGS

'Evaluations … extract **lessons learned** that can then be applied to inform future GCF investment decisions and help it to understand how successful projects/programmes can be upscaled and replicated.'

GCF Operations Manual for the Project and Programme Lifecycle, p. 250

GREEN CLIMATE FUND | Independent Evaluation Unit

EVALUATIONS SHOULD BE ACCESSIBLE TO INTERESTED PARTIES

‘Degree to which GCF investments contribute to technology deployment, **dissemination**, development or transfer and innovation’

Core indicator 6, Integrated Results Management Framework

GREEN CLIMATE FUND | Independent Evaluation Unit

WHY DO THIS?

- Required by the GCF to share lessons learned
- Drive learning and innovation
- Promote transparency and accountability
- Inform decision-making and the policy-making process
- Important factor for donors

GREEN CLIMATE FUND | Independent Evaluation Unit

Methods of dissemination

How can we plan this? Who are we aiming to reach? How do we reach them?

GREEN CLIMATE FUND | Independent Evaluation Unit

BOTH INCEPTION AND EVALUATION REPORTS CAN INCLUDE **DISSEMINATION PLANS**

Content can include:

- Objectives
- Audience
- Timeline
- Resources
- Strategy

GREEN CLIMATE FUND | Independent Evaluation Unit

Who are we aiming to reach through sharing our findings?

GREEN CLIMATE FUND | Independent Evaluation Unit

WHO DO WE WANT TO REACH?

Internal	External
Program 1. Program staff & managers 2. Program participants	**Government** 1. Policy-makers 2. Specialists 3. Advisors
Funding bodies 1. Public donors 2. Private donors	**Community of practice** 1. Development practitioners 2. Civil society 3. Academics

GREEN CLIMATE FUND | Independent Evaluation Unit

How can we reach them?

Online

Web site

Social media

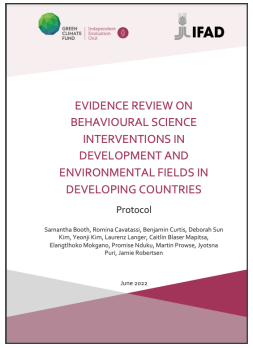
Events

Conferences

Workshop

Webinar

Publish

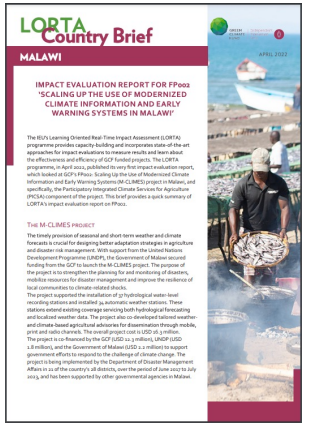


Academic journal

Other publications

Products

Evaluation reports



Briefs

Executive summary

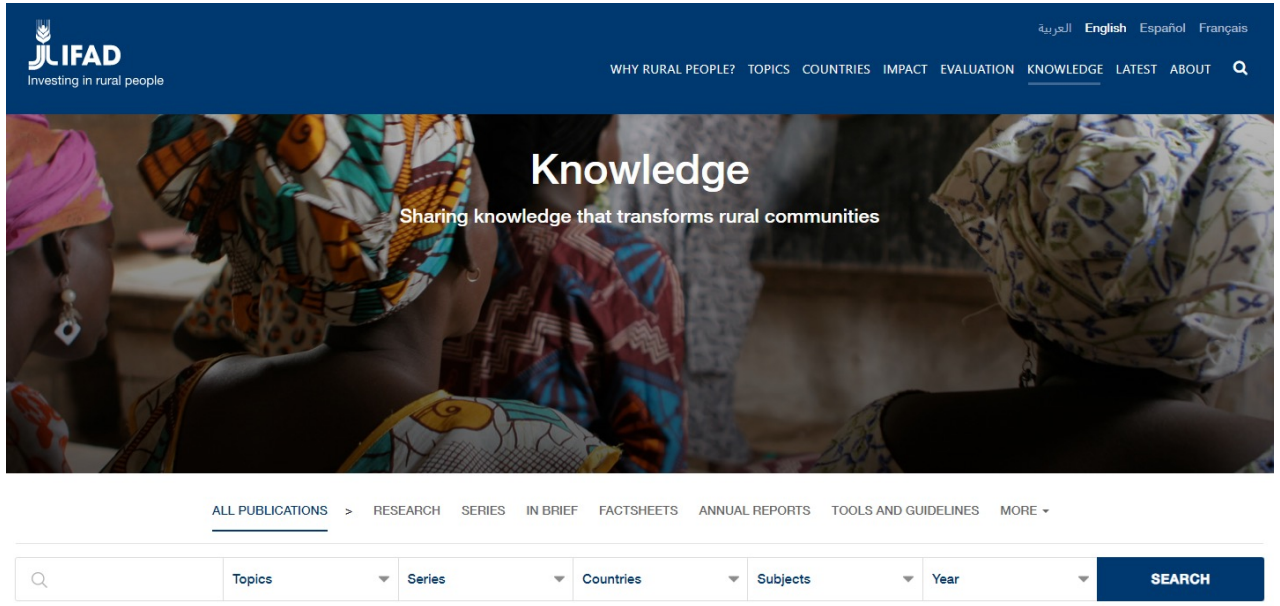
Programmes

Policy proposal

Launch of programme

GREEN CLIMATE FUND | Independent Evaluation Unit

EXAMPLE OF DISSEMINATION - IFAD



Updated web site

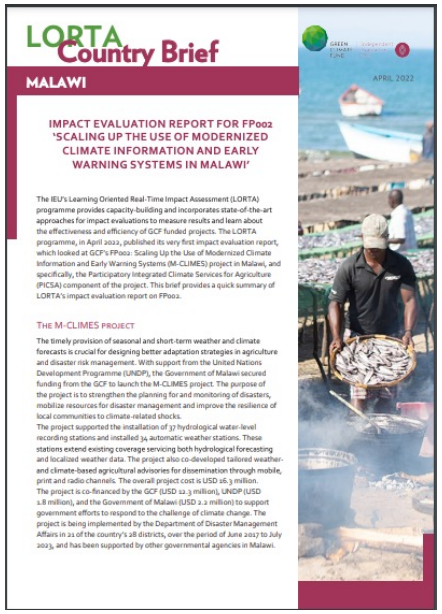
Booklet

Report

GREEN CLIMATE FUND | Independent Evaluation Unit

EXAMPLE OF DISSEMINATION - LORTA

Learning Talk for staff at the GCF



Country brief

Online presence

GREEN CLIMATE FUND | Independent Evaluation Unit

Thank you!

Contact IEU:

✉ ieu@gcfund.org

@GCF_Eval

ieu.greenclimate.fund

GREEN CLIMATE FUND | Independent Evaluation Unit

Welcome to the LORTA Virtual Design Workshop 2023!

- We will be beginning the workshop shortly.
- While you are waiting, be sure to follow us online to keep up with the latest news from the IEU!
- Please note that this workshop will be recorded.

FOLLOW US

GREEN CLIMATE FUND | Independent Evaluation Unit

HOUSEKEEPING

MUTE BUTTON

QUESTIONS

RAISE YOUR HAND

GREEN CLIMATE FUND | Independent Evaluation Unit

AGENDA FOR THE DAY

	DAY 3, 21st June 2023	
20:00-20:25	Nathan Fiala	1. Quasi-experimental designs
20:25-21:00	Anastasia Aladysheva	2. Selecting an impact evaluation method
21:00-21:20	Rishabh Moudgill	3. Evaluation standards and ethics
21:20-21:30	Moderator	4. Q&A

GREEN CLIMATE FUND | Independent Evaluation Unit

Quasi-experimental Evaluation Designs

LORTA Virtual Design Workshop 2023

DAY 3

Nathan Fiala
Associate Professor
University of Connecticut

21 June 2023

GREEN CLIMATE FUND | Independent Evaluation Unit

IMPACT EVALUATION

Experimental impact evaluation

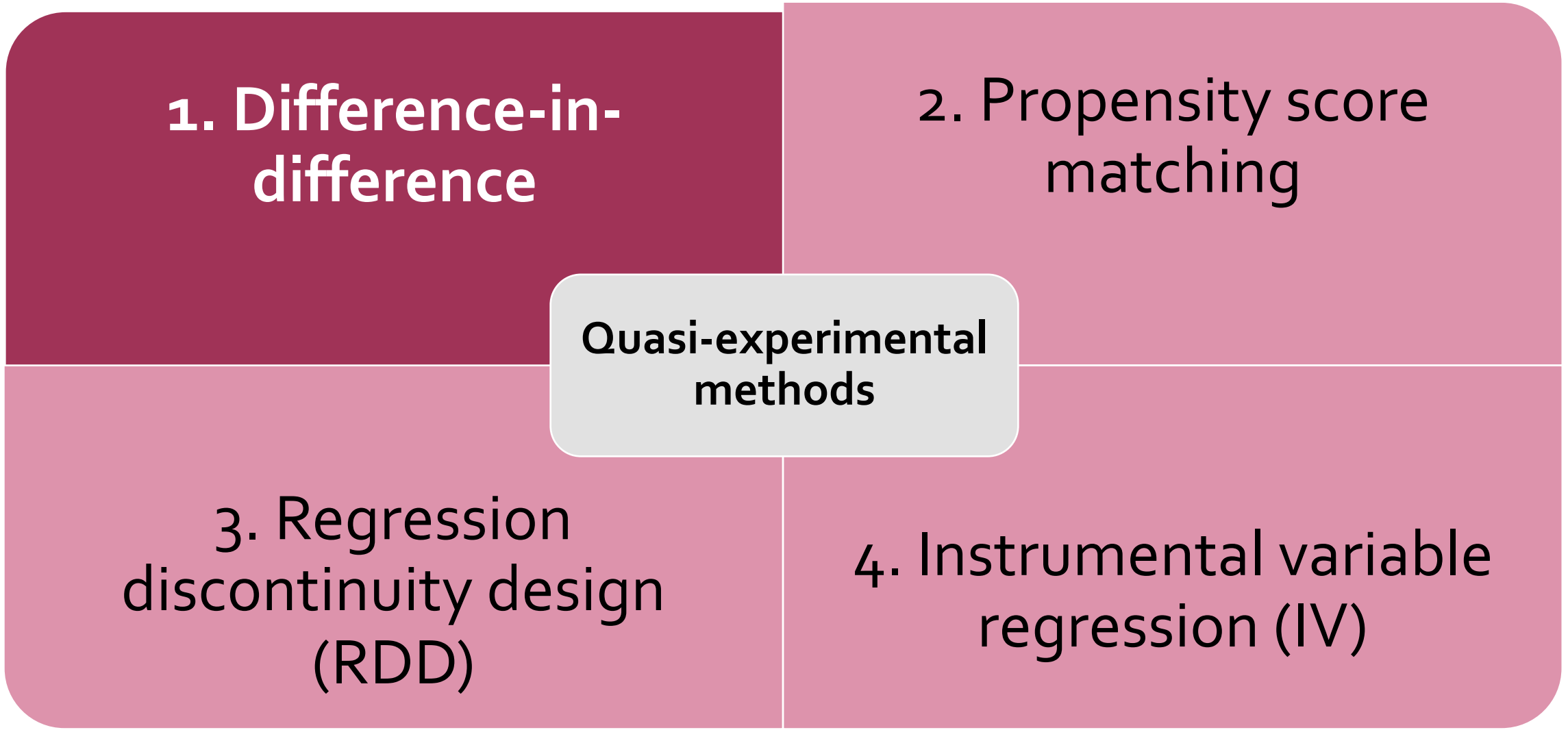
- Experiments use a counterfactual framework to ensure **observable and unobservable** characteristics of T and C groups are, on average, **balanced** through random assignment of the intervention
- But experiments are not always desirable or practical

Quasi-experimental impact evaluation

- These use a counterfactual framework by creating an artificial comparison group

GREEN CLIMATE FUND | Independent Evaluation Unit

Quasi-Experimental Methods

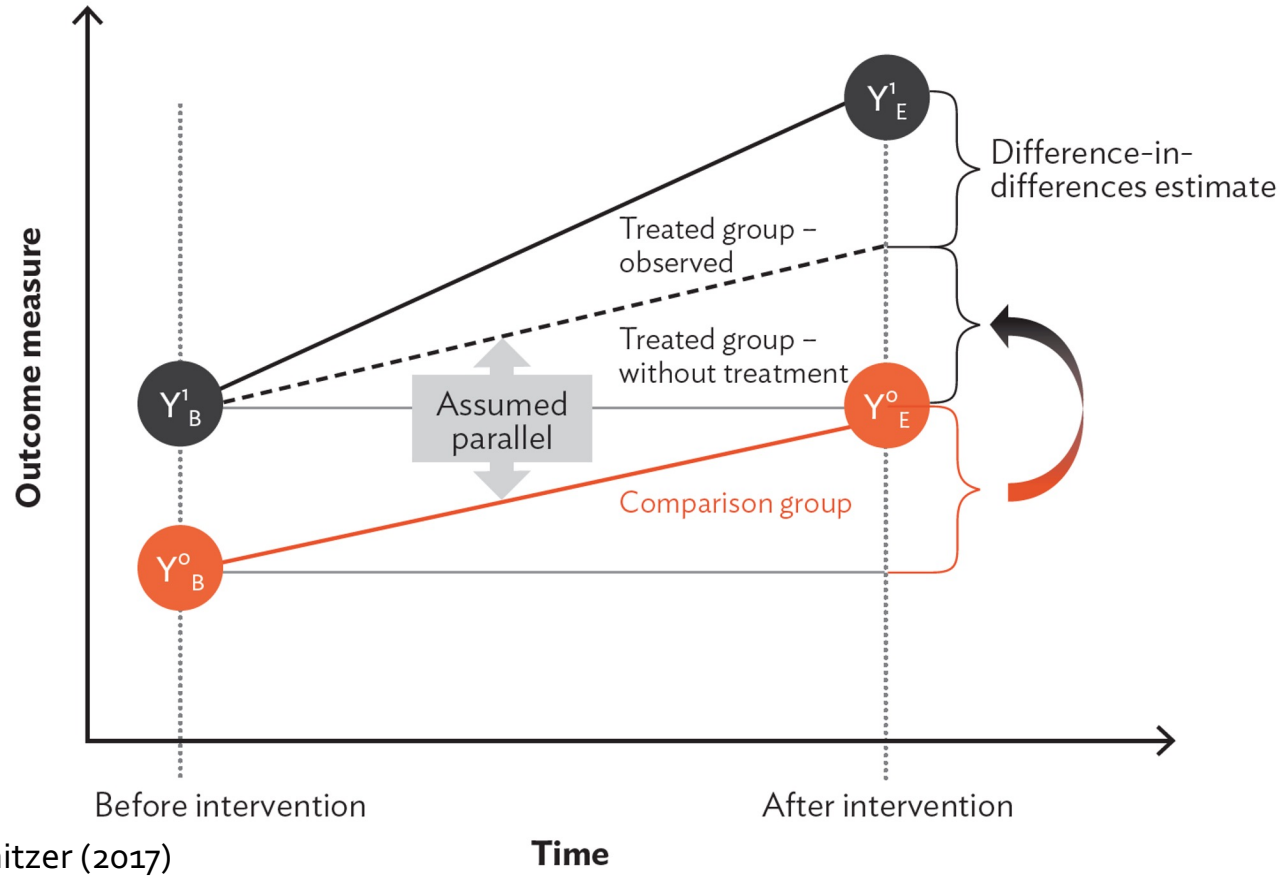


GREEN CLIMATE FUND | Independent Evaluation Unit

Quasi-Experimental Methods

Difference-in-differences

- Uses panel data (tracks the same unit through time)



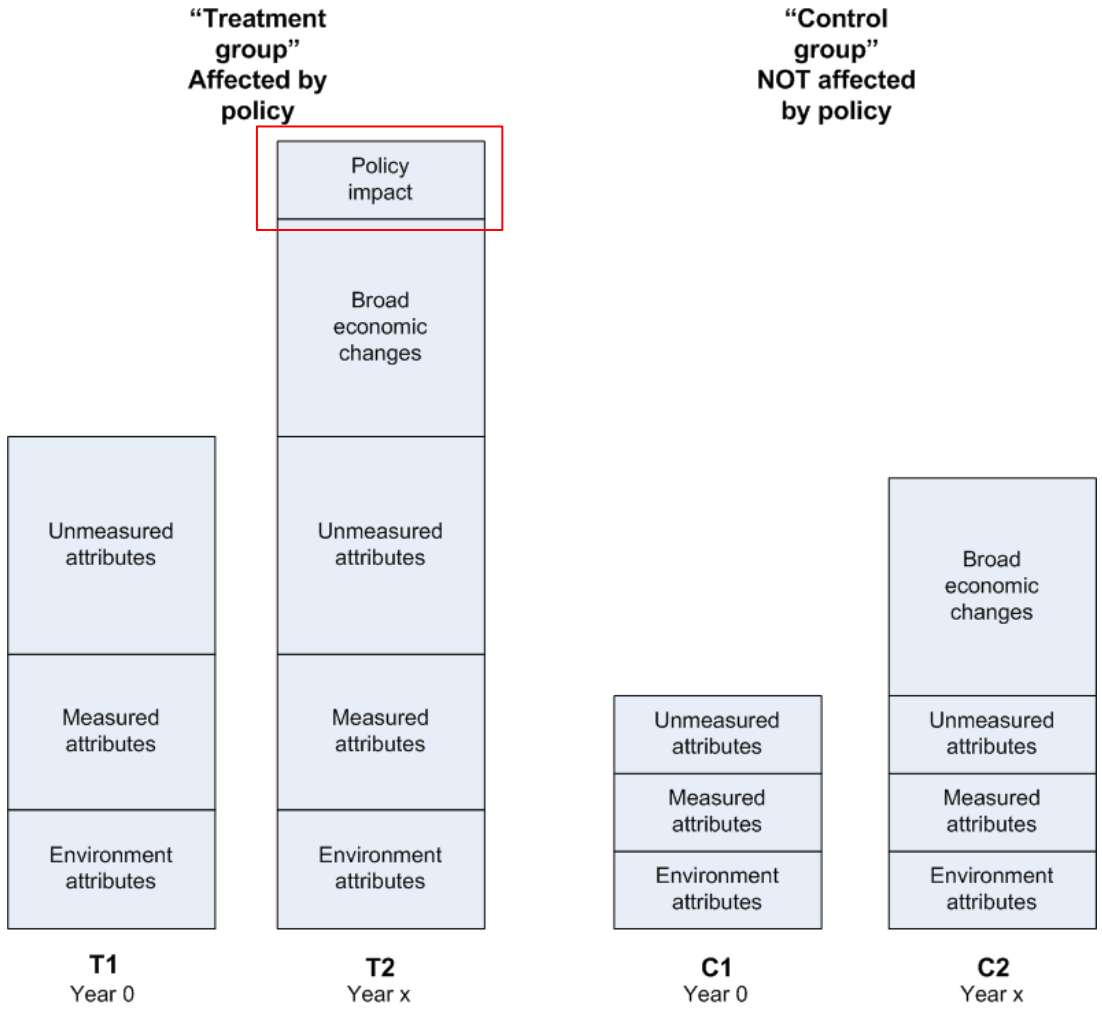
White and Raitzer (2017)

- If we assess the T group before and after the intervention, we do not control for selection bias or programme targeting
- We might also not pick up the effects of wider factors that changed around the time of the intervention
- But if we track both T and C group through time, we can control for these wider factors

GREEN CLIMATE FUND | Independent Evaluation Unit

QUASI-EXPERIMENTAL METHODS

Difference-in-differences



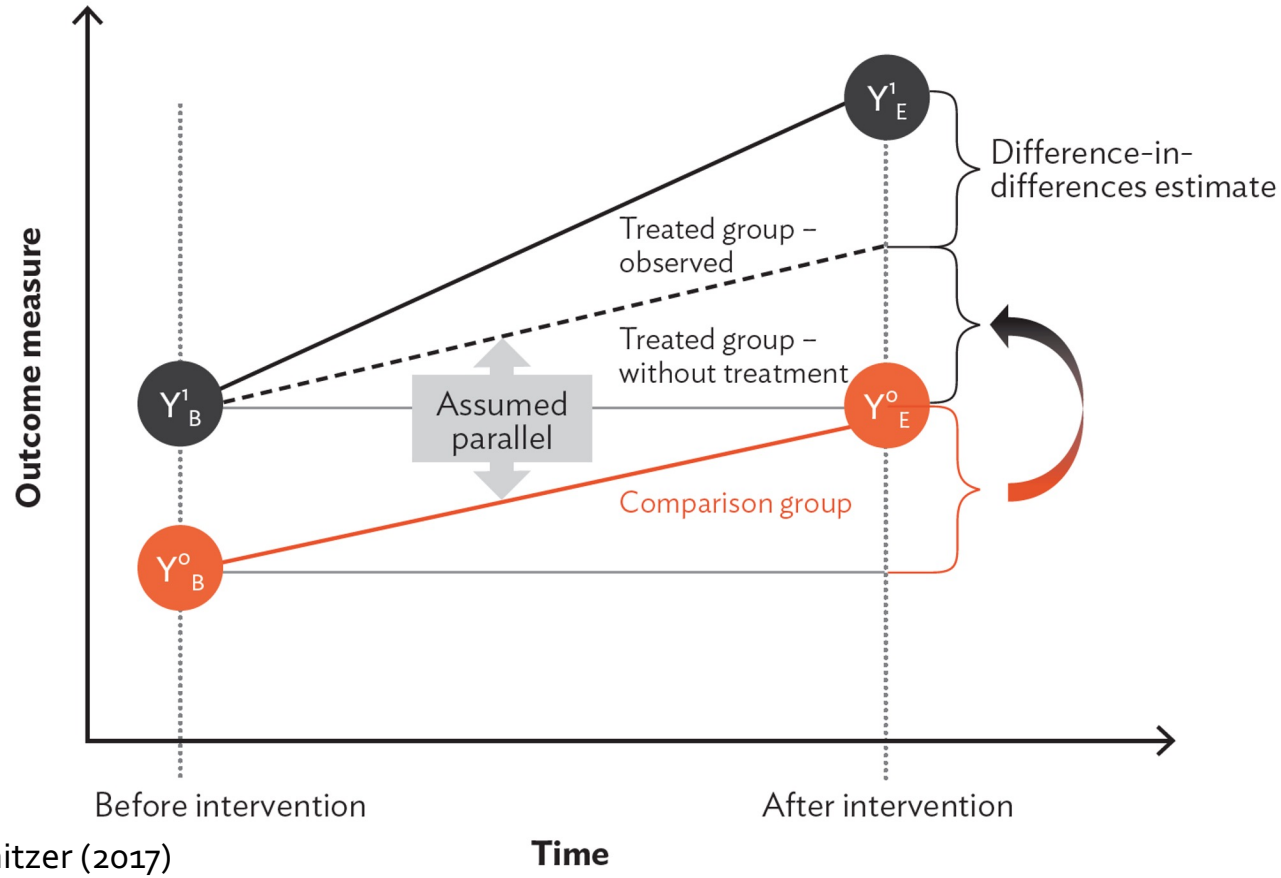
- DiD assumes that differences between T and C groups are constant through time (attributes)
- So, in this graphic here, we can see that T and C groups differ in terms of (un)measured and environment attributes (as there is no randomisation)
- But we can also see that these attributes stay constant through time
- Importantly, both groups are subject to the same broad economic changes through time (this is the parallel trend assumption)

GREEN CLIMATE FUND | Independent Evaluation Unit

QUASI-EXPERIMENTAL METHODS

Difference-in-differences

- Uses panel data (tracks the same unit through time)

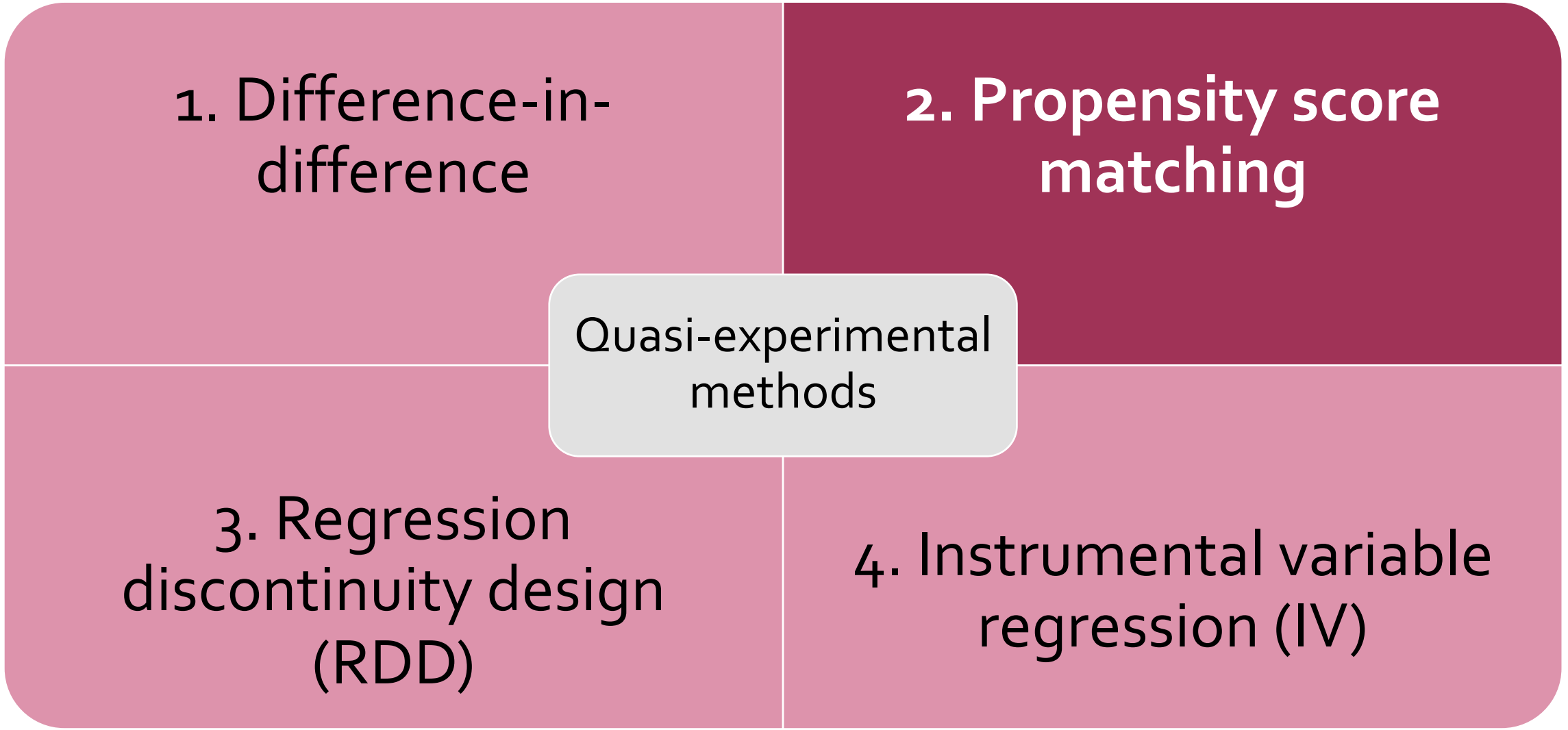


White and Raitzer (2017)

- Program impact is the difference between the T group and the <u>artificial comparison group</u> through time
- The method requires baseline data before the intervention affects beneficiaries
- The parallel trend assumption can be tested if there are multiple data points prior to the intervention
- Parallel trend assumption can be strengthened by using…..

GREEN CLIMATE FUND | Independent Evaluation Unit

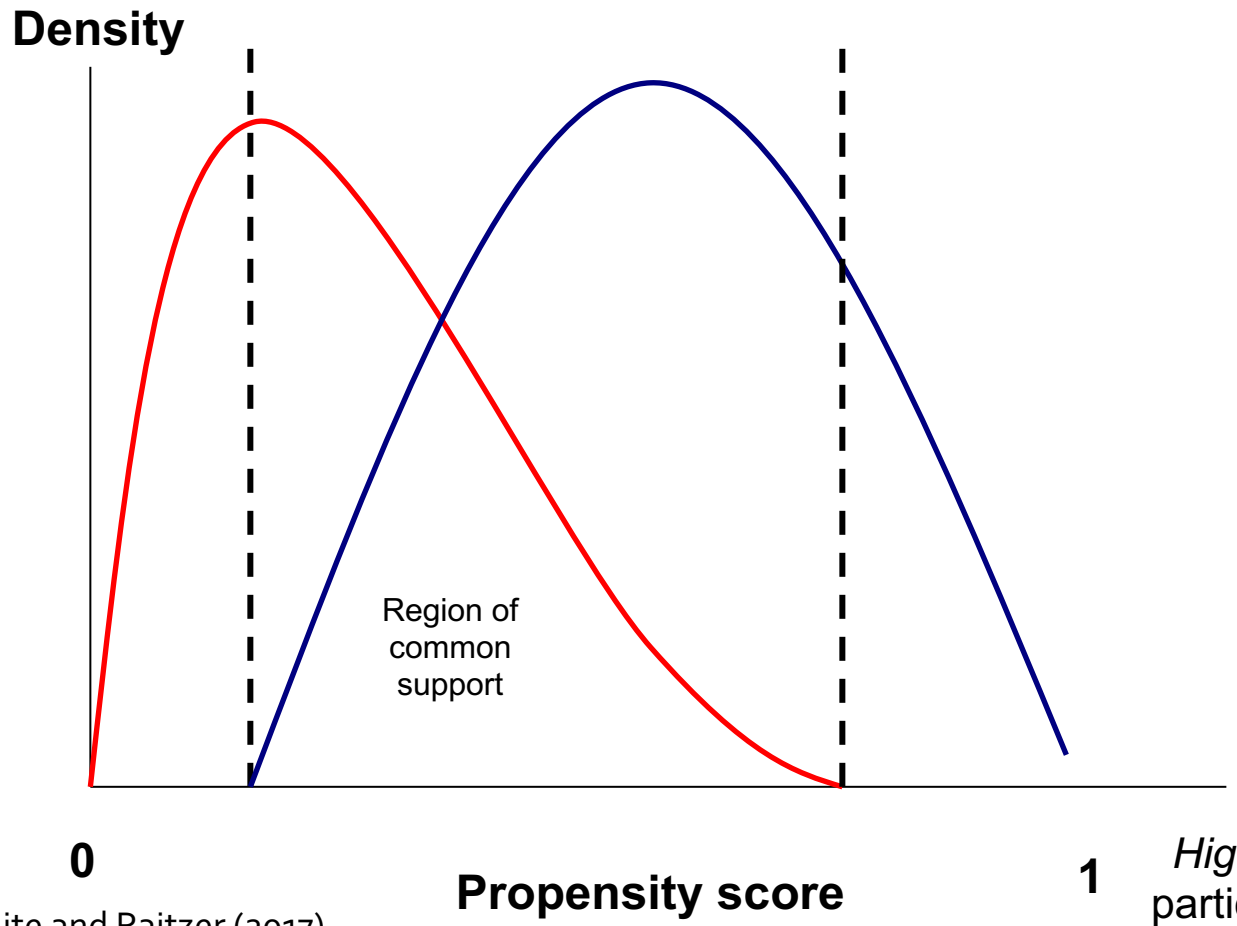
Quasi-Experimental Methods



GREEN CLIMATE FUND | Independent Evaluation Unit

QUASI-EXPERIMENTAL METHODS

Propensity score matching



White and Raitzer (2017)

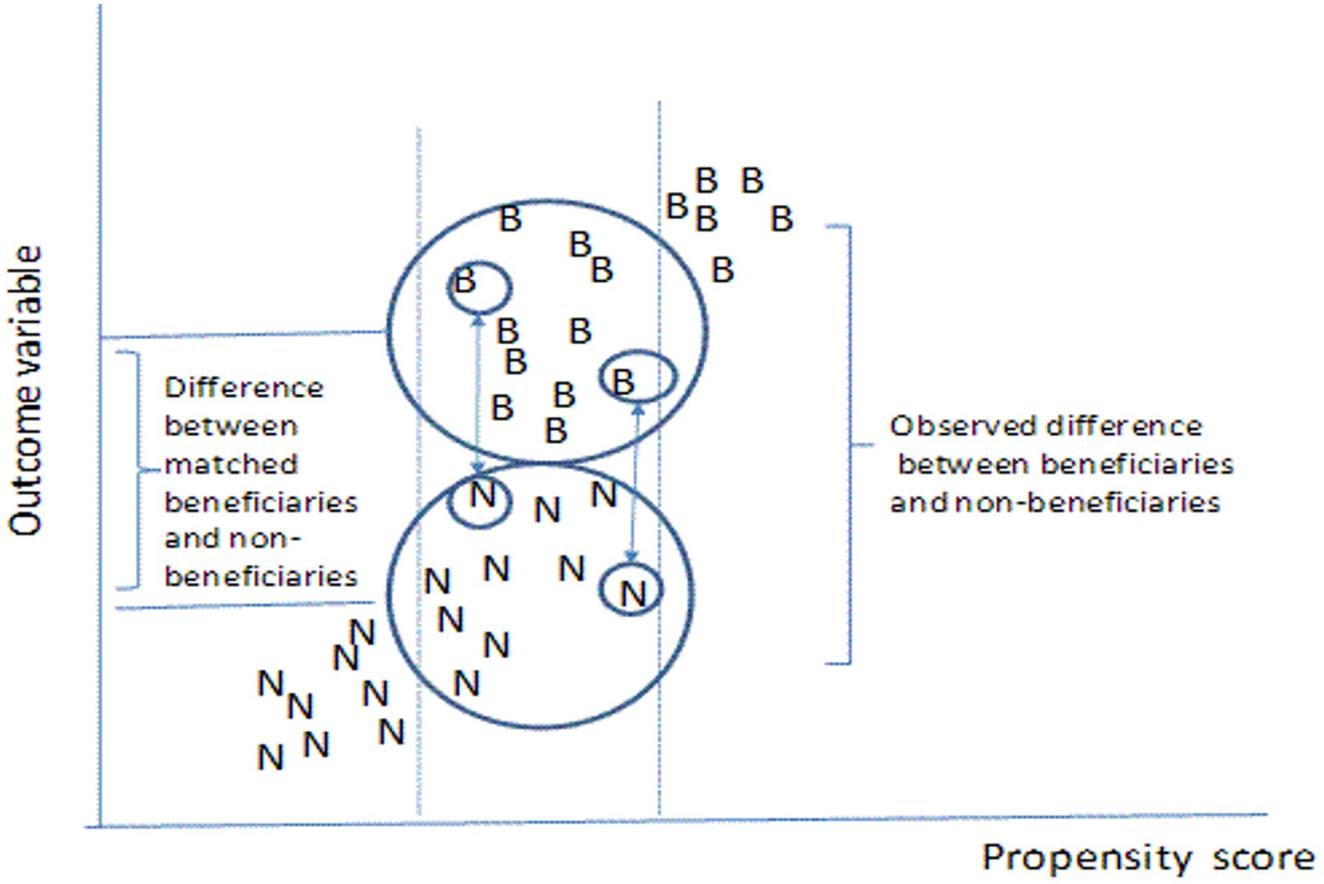
- PSM models the probability of participating in the program on the basis of observed characteristics unaffected by the program
- PSM allows you to construct an artificial comparison group
- In propensity score matching, each T unit is matched with one or more C units based on the probability for that unit to participate in the programme based on observable characteristics
- But only those that fit into the range of common support are matched

High probability of participating given X

GREEN CLIMATE FUND | Independent Evaluation Unit

QUASI-EXPERIMENTAL METHODS

Propensity score matching

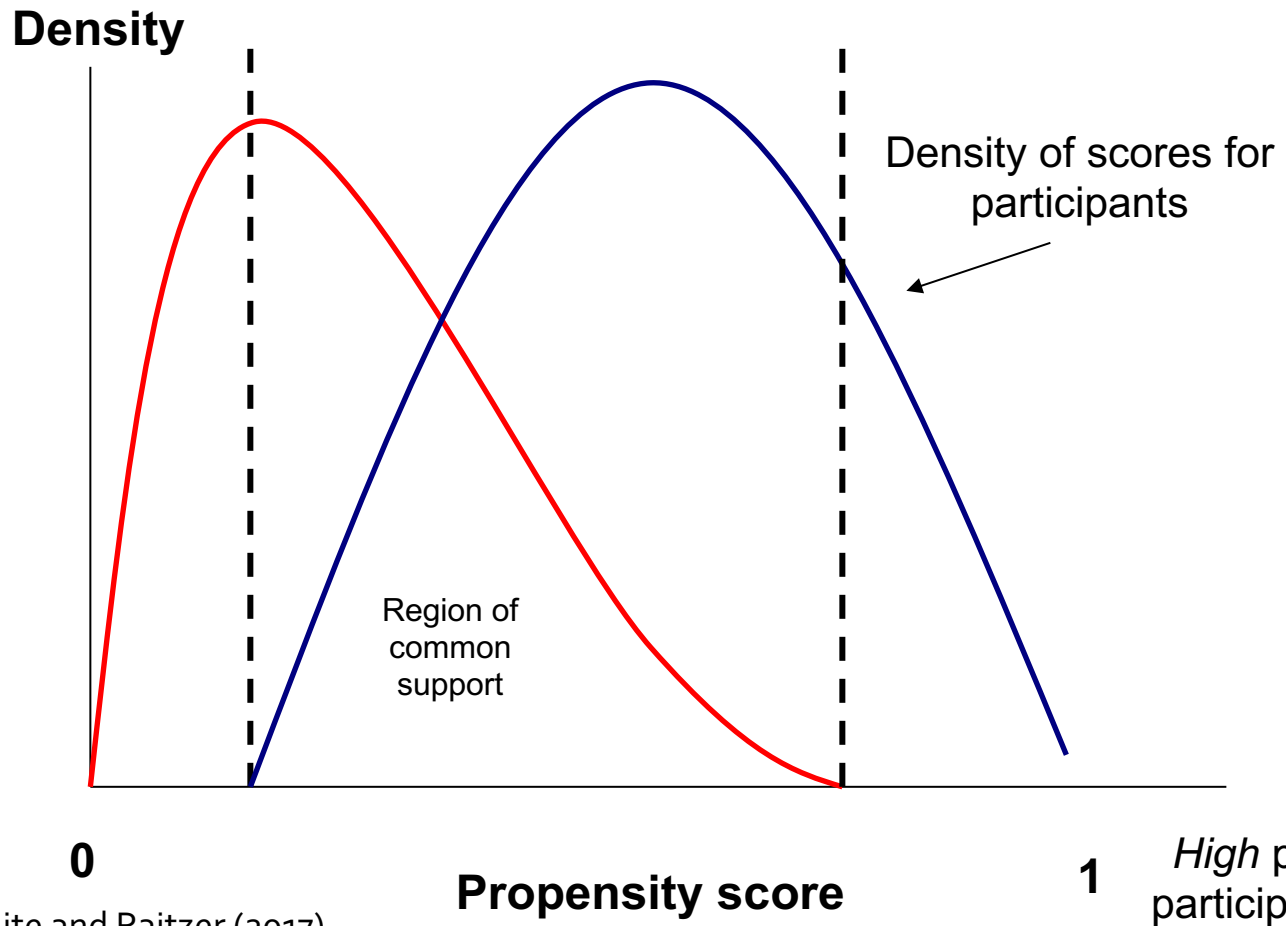


- In this illustration we can see that only the units within the range of common support (dashed vertical lines) are used to generate an estimate of impact
- Units can be matched in a variety of ways with at least 4 methods (1-1, caliper, kernel, direct) applied as a sensitivity check
- Balancing checks are done to ensure that the characteristics of T and C groups (and sub groups) do not differ significantly
- Important – matching must be based on pre-treatment characteristics which are unaffected by project participation, with as many key relevant predictors included as possible (at multiple scales)

GREEN CLIMATE FUND | Independent Evaluation Unit

QUASI-EXPERIMENTAL METHODS

Propensity score matching



White and Raitzer (2017)

- The same data source should be used for both T and C groups
- The larger the sample, the better the matching will be
- Data should include district, community, household and individual variables
- Can be used on end-line data using time invariant characteristics and recall, if baseline is not available
- **Key shortcoming**- only uses observables (so ignoring unobservables such as risk preferences)

GREEN CLIMATE FUND | Independent Evaluation Unit

MATCHING – SAMPLE SIZE

David McKenzie – World Bank blog on sample sizes for propensity score matching

1. Target the comparison sample to make it as comparable to treatment group as possible → need good knowledge of treatment group (e.g. geographic areas, income levels, demographics, etc.)

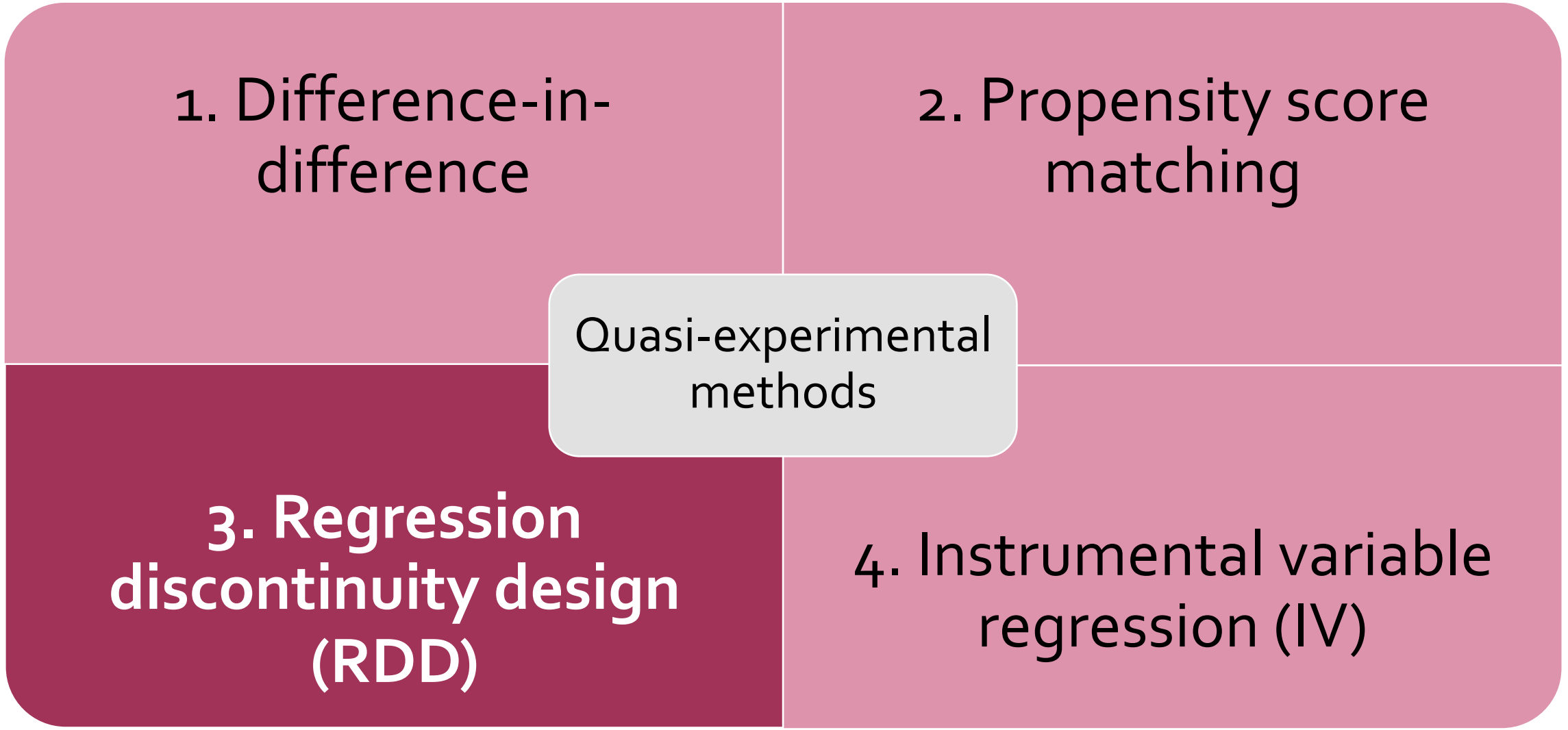
2. Consider possibility of panel data for at least part of the sample → matching on pre-period variables is more convincing

3. Compute sample size for balanced experimental design

4. Divide the computed sample size by the proportion of your sample you expect to survive after trimming the common support → the more targeted your comparison group the better!

GREEN CLIMATE FUND | Independent Evaluation Unit

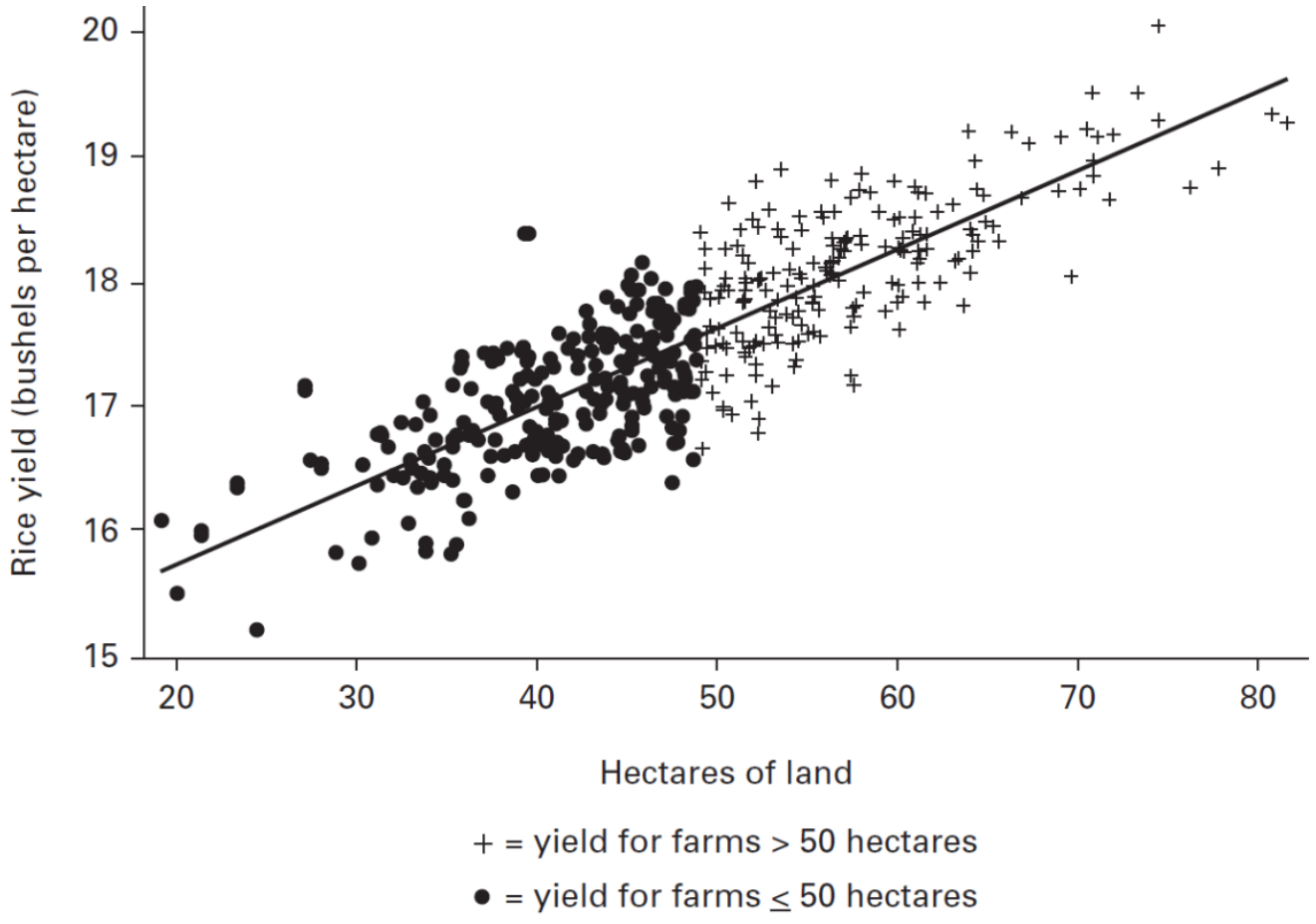
Quasi-Experimental Methods



GREEN CLIMATE FUND | Independent Evaluation Unit

Quasi-Experimental Methods

Regression discontinuity design

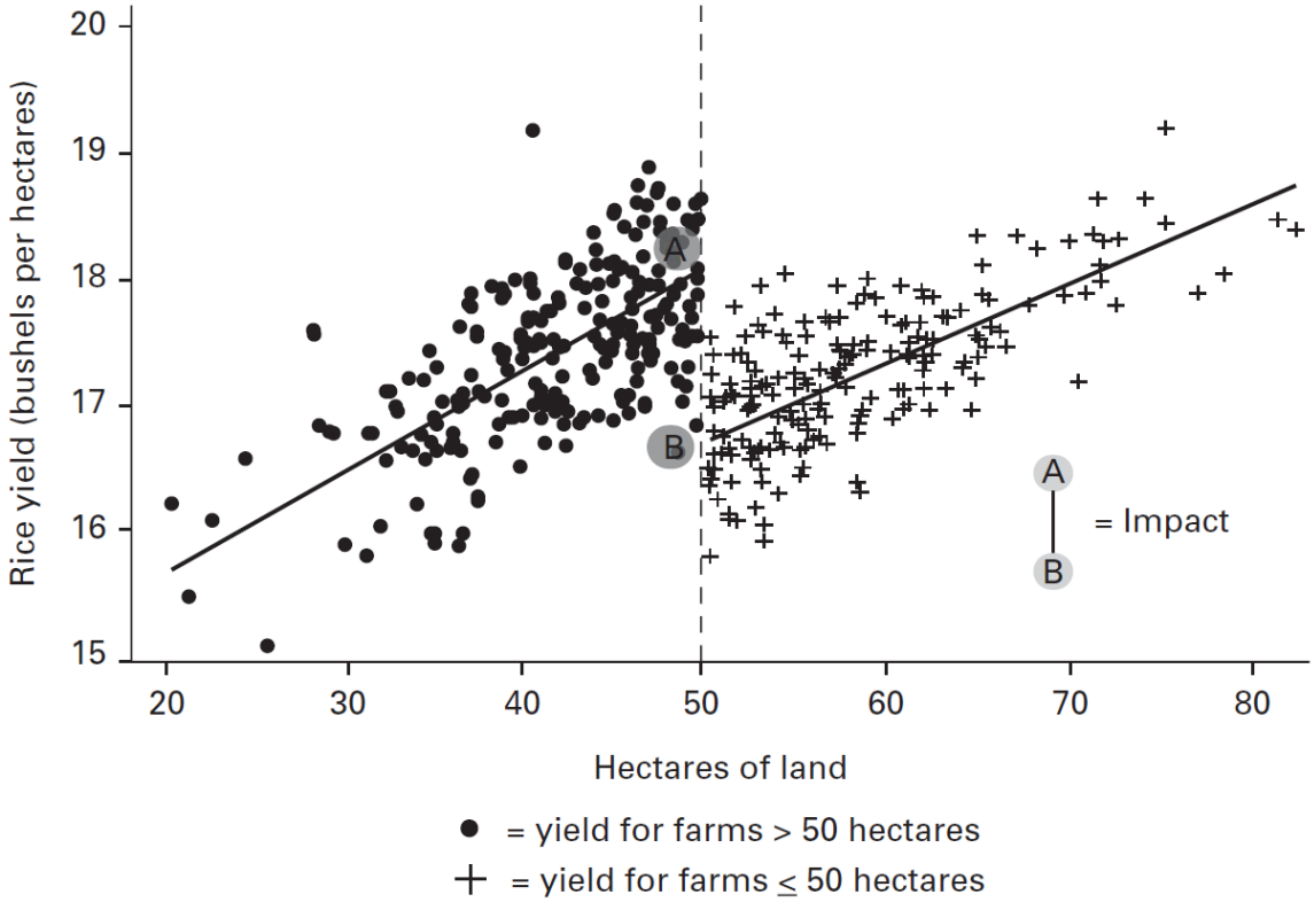


- Many programs use a continuous index (such as a vulnerability score, credit rating score, test score) for eligibility
- RDD uses the **threshold** for eligibility as the way to create an artificial comparison group
- RDD assumes that the units very close to the threshold are similar (in this way it creates a local RCT above and below the threshold)
- Balancing tests (e.g. t-tests) on observables are applied until differences between T and C groups start to widen (and the maximum bandwidth is then set)

GREEN CLIMATE FUND | Independent Evaluation Unit

Quasi-Experimental Methods

Regression discontinuity design

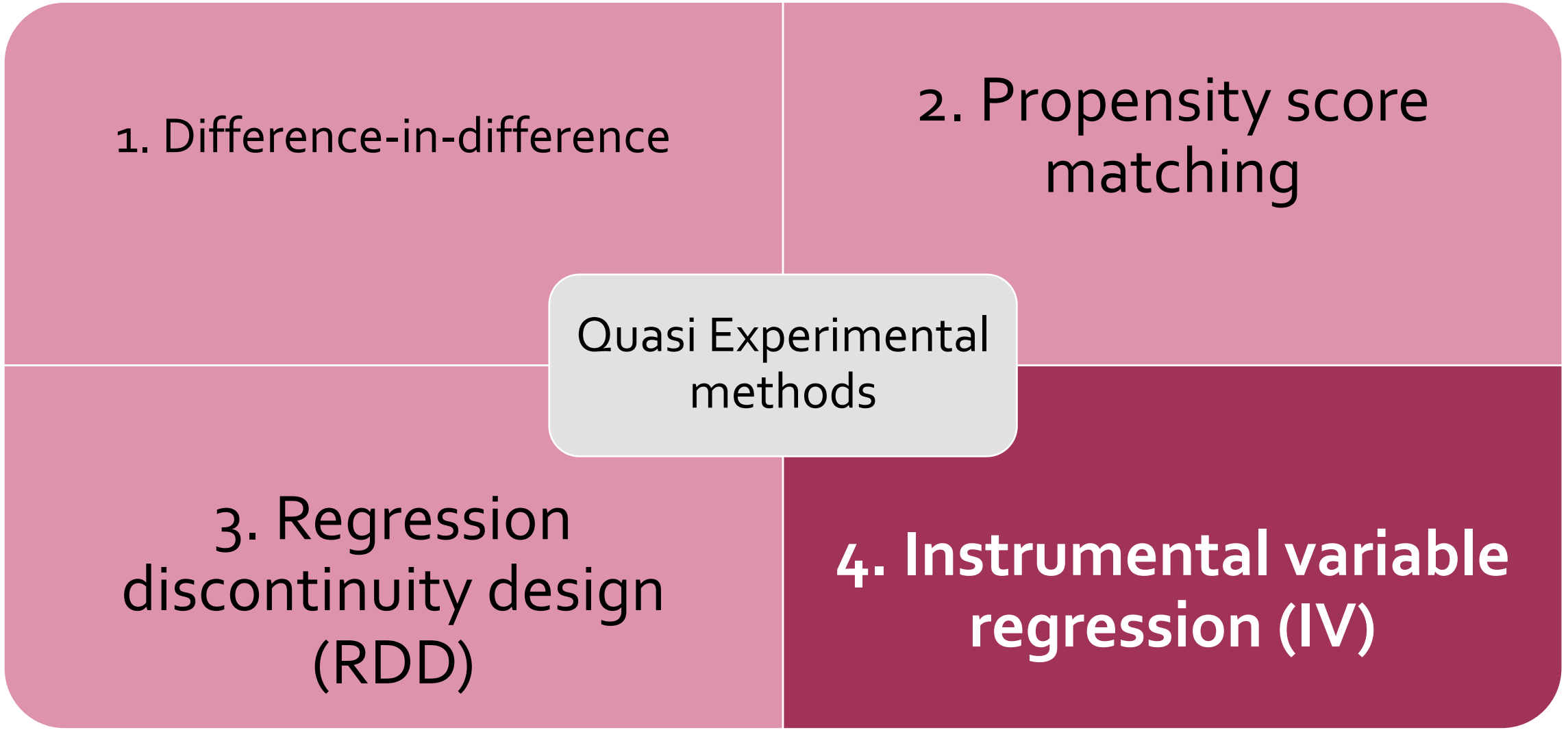


Gertler et al (2016)

- The impact of the intervention is the outcome indicator above and below the threshold
- This example here illustrates how the hypothetical impact of a fertilizer subsidy for farms <50 hectares
- Different bandwidths can be used for sensitivity analysis
- RDD controls for both observables and unobservables
- Different types of thresholds can be used (spatial, time sensitive)

GREEN CLIMATE FUND | Independent Evaluation Unit

Quasi-Experimental Methods



GREEN CLIMATE FUND | Independent Evaluation Unit

Quasi-Experimental Methods

Instrumental variable regression

- IV doesn't create an artificial comparison group but uses a **regression framework** to estimate the impact of an intervention (from either cross-sectional or panel data)
- IV counteracts selection bias, especially how **unobservable characteristics can bias impact estimates**
- If such **unobservable characteristics are correlated with program participation**, normal OLS regression estimates of program impact will be **biased** (as the treatment variable will be correlated with the residual error term, that is the portion of the variance that is not accounted for by the predictor variables)

Gertler et al (2016)

GREEN CLIMATE FUND | Independent Evaluation Unit

Quasi-Experimental Methods

Instrumental variable regression

- This approach uses an **additional variable (the IV)** that is **highly correlated with program participation**, but is **not correlated with unobservable characteristics** affecting outcomes
- It uses this additional IV variable to **'clean'** the treatment variable by separating out and discarding the part of the treatment variable that is correlated with the error term
- The new untainted treatment variable is now **uncorrelated with the error term** and is **independent of unobservable characteristics** that are affecting outcomes, leading to more accurate estimates

GREEN CLIMATE FUND | Independent Evaluation Unit

Quasi-Experimental Methods

Instrumental variable regression

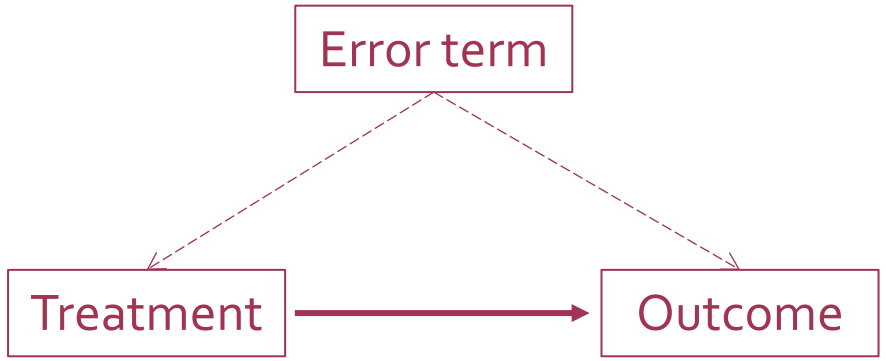
- How can we find a relevant IV for an impact evaluation?
- An IV needs to influence project take-up (such that it predicts the treatment, *relevant instrument*)
- But does not affect the outcomes through any channel except through the project (such that it is a *valid instrument*)
- Examples are project specific – distance to farmer field school site / neighbour participated in FFS
- It can be hard to find a valid instrument! Within an RCT, if we have contagion between T and C groups **an ideal IV is the randomised treatment variable** (to generate LATE)

GREEN CLIMATE FUND | Independent Evaluation Unit

Quasi-Experimental Methods

Instrumental variable regression

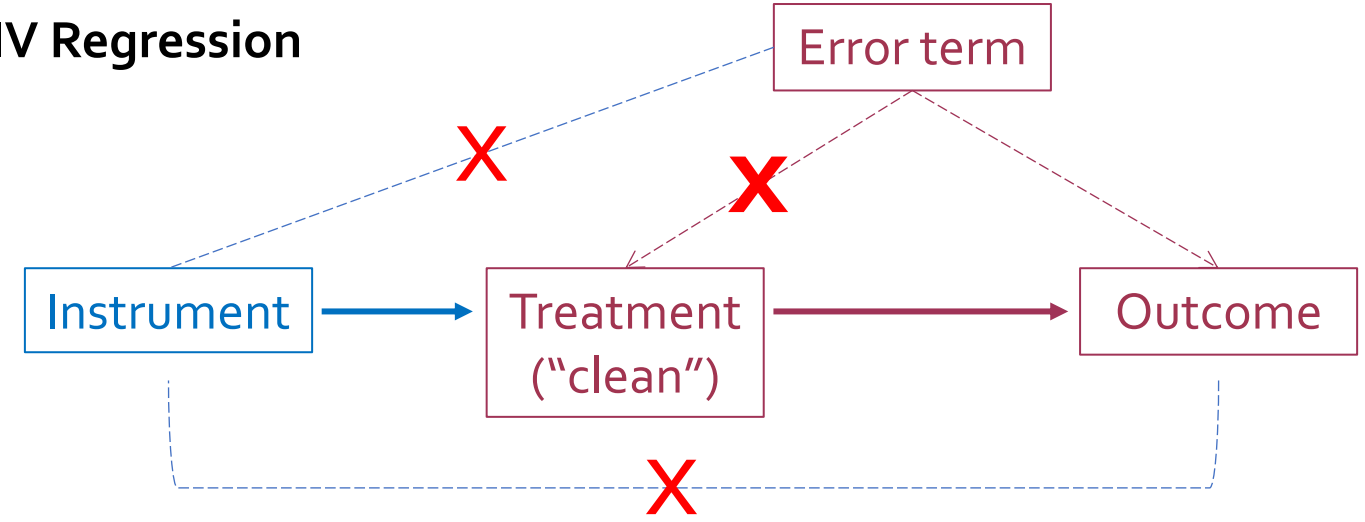
Simple Regression



Intuition: some factors influence both treatment **and** outcome at the same time.

If this is not accounted for – i.e. they are captured in both the treatment variable and the *error term* – they 'pollute' the relationship between the treatment and the outcome.

IV Regression



Intuition: an instrumental variable is correlated with outcomes *solely through* the treatment variable.

This IV is used to 'clean' the treatment variable by removing its correlation with the error term, thus isolating the (unpolluted) relationship between treatment and outcome.

GREEN CLIMATE FUND | Independent Evaluation Unit

Thank you!

ieu.lorta@gcfund.org

@GCF_Eval

#LORTA

GREEN CLIMATE FUND | Independent Evaluation Unit

Choosing an Impact Evaluation Method

LORTA Workshop 2023

DAY 3

Dr Anastasia Aladysheva
Impact Evaluation Specialist, a.i.

21 June 2023

GREEN CLIMATE FUND | Independent Evaluation Unit

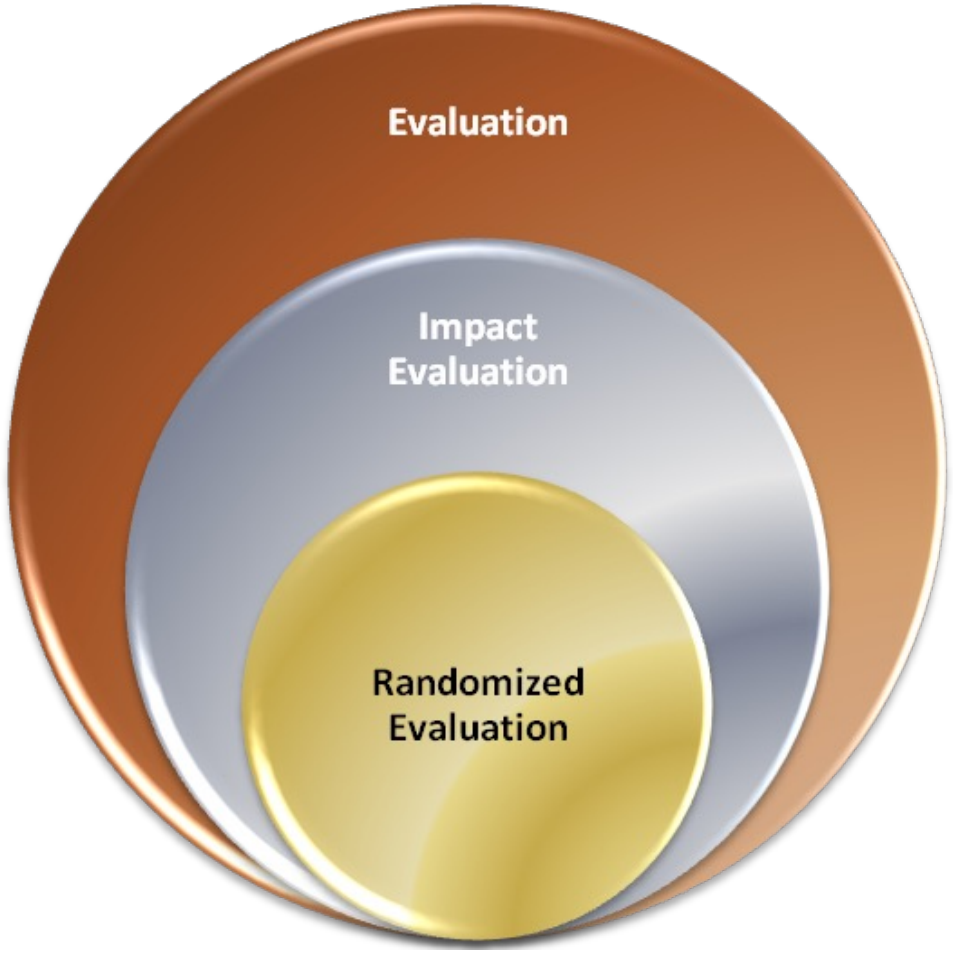
IMPACT EVALUATION METHODS

Experimental Method:

- Randomized Control Trial (RCT)

Non-Experimental Methods:

- Difference in Difference
- Propensity Score Matching
- Regression Discontinuity
- Instrumental Variable



GREEN CLIMATE FUND | Independent Evaluation Unit

CHOOSING AN IMPACT EVALUATION METHOD

- Can you randomly allocate beneficiaries into treatment and control groups **-> RCT**
- Are there data before and after the project for beneficiaries and non-beneficiaries & you cannot randomize? **-> Difference-in-difference**
- Can treatment be assigned based on eligibility criteria? **-> Regression discontinuity**
- Are there endline data of participants and non-participants and baseline data are rather limited? **-> Propensity score matching**
- Does treatment assignment depend on external factors **-> Instrumental Variables**

GREEN CLIMATE FUND | Independent Evaluation Unit

CASE 1: EARLY WARNING SYSTEMS IN GEORGIA

- Installation of EWS and providing training in the communities
- Vulnerability assessment is conducted and not all the communities can be served during the 1st year: 30 communities are served in 2023 and the rest 30 communities are served in 2025
- You have vulnerability assessment as your baseline data and you are able to collect endline data

What IE method would you choose?

GREEN CLIMATE FUND | Independent Evaluation Unit

CASE 2: WATER INTERVENTION IN NORTH-EASTERN NIGERIA (HUMANITARIAN CONTEXT)

- Building water facility, laying pipes and installing water taps in the households' homes
- Laying pipes is a gradual process from one community to another
- You are able to collect baseline and endline data from the communities

What IE method would you choose?

GREEN CLIMATE FUND | Independent Evaluation Unit

CASE 3: LIVELIHOOD SUPPORT IN NEPAL

- Households living above **500 m** above the sea level are provided with livelihood support to increase their wellbeing
- Baseline data are limited
- You are able to collect endline data

What IE method would you choose?

GREEN CLIMATE FUND | Independent Evaluation Unit

Thank you!

Contact IEU:

✉ ieu@gcfund.org

@GCF_Eval

ieu.greenclimate.fund

GREEN CLIMATE FUND | Independent Evaluation Unit

Ethics and Evaluation Standards for Impact Evaluation

LORTA Virtual Design Workshop 2023

DAY 3

Rishabh Moudgill
Policy and Evaluation Officer, a.i.
Independent Evaluation Unit
21 June 2023

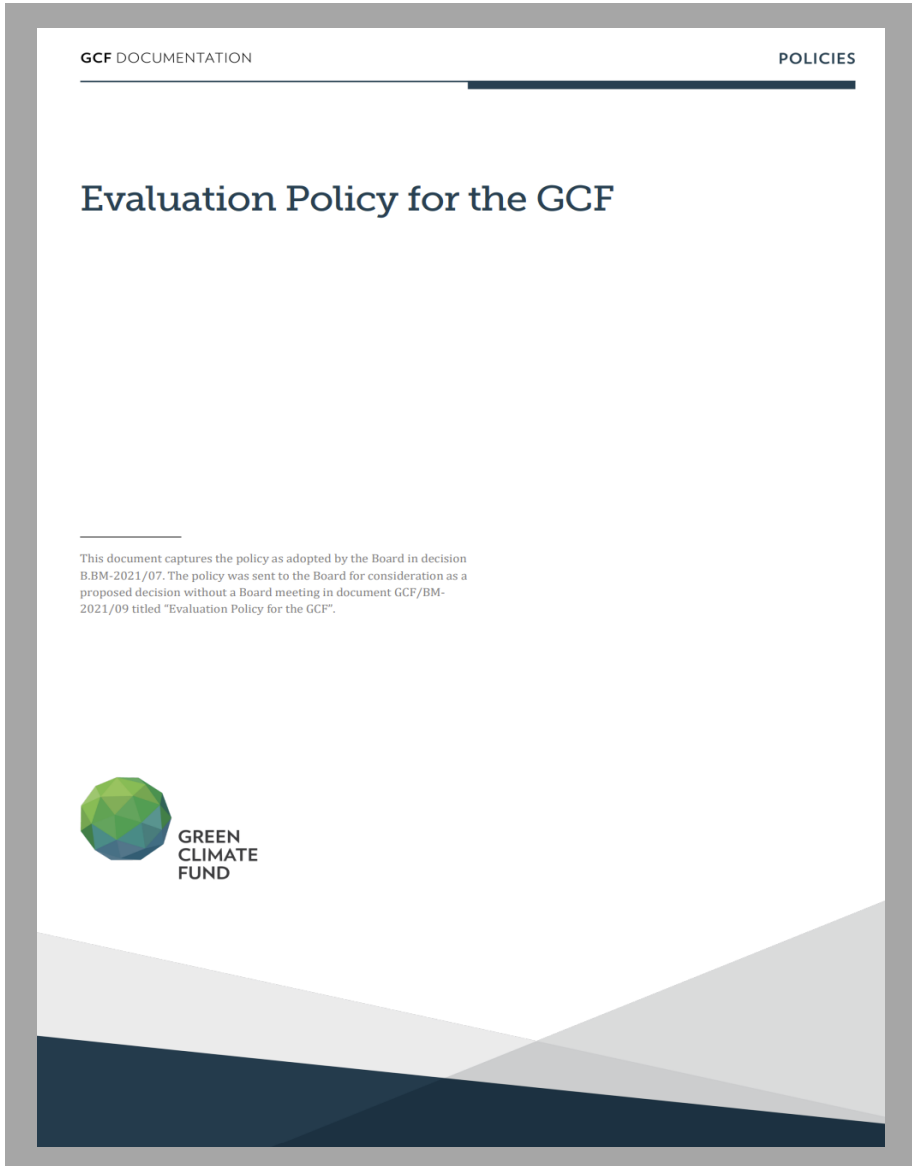
Center for Evaluation and Development

GREEN CLIMATE FUND | Independent Evaluation Unit

Overview

GREEN CLIMATE FUND | Independent Evaluation Unit

GCF EVALUATION POLICY



Para	Context
22	AEs may conduct impact evaluations for GCF funded activities, in collaboration with the GCF.
53	The IEU will be responsible for advising, guiding and assisting real-time impact assessments/evaluations for a selection of the funded activities portfolio, such as LORTA..”
58 (d)	Overall evaluation budget should be up to 5% of the project budget which can include impact assessments and evaluations
58 (e)	The long-term aim is that approximately 30 % of the Fund’s projects and programmes approved annually by the Board will include real-time impact assessments as part of their evaluation plans..”

GREEN CLIMATE FUND | Independent Evaluation Unit

GCF Evaluation Standards

- 15 Evaluation Standards
- 2 Appendices

Standards specifically pertaining to ethics in IEs:

1. Ethics
2. Respect and Beneficence
3. Confidentiality and 'Do No Harm'
4. Gender and Indigenous Peoples

1. Independence
2. Impartiality and Objectivity
3. Utility and Value Added
4. Ownership and Participation
5. Credibility and Rigour
6. Transparency
7. Learning
8. Human Rights, Gender Equality and Environmental Considerations
9. Confidentiality
10. Cost-effectiveness
11. Ethics
12. Integrity
13. Accountability
14. Competence
15. Respect and Beneficence

GREEN CLIMATE FUND | Independent Evaluation Unit

STANDARD ON ETHICS

- UNEG defines ethics as "the right or agreed principles and values that govern the behaviour of an individual within the specific, culturally defined context within which an evaluation is commissioned or undertaken" (UNEG Norm 06, 2016)
- Participants in evaluations must be treated with respect and dignity, which entails robust procedures to protect their privacy and sensitive information
- Evaluations must practice free, prior and informed consent
- Evaluators should apply ethical review processes when planning primary data collection with potentially vulnerable people
- There should be a mechanism for reporting potential ethical problems created by the evaluation or identified by the evaluation, and appropriate actions should be taken in both cases.

GREEN CLIMATE FUND | Independent Evaluation Unit

STANDARD ON **RESPECT AND BENEFICENCE**

- **Respect** involves engaging with all stakeholders of an evaluation in a way that honours their dignity, well-being and personal agency
- All stakeholders should be treated fairly while having access to the evaluation process and product
- Familiarity with the cultural values, social values and characteristics of the recipients and intended beneficiaries
- **Beneficence** requires explicit considerations of risks and benefits alongside warranting to maximize benefits and 'do no harm'

GREEN CLIMATE FUND | Independent Evaluation Unit

STANDARD ON CONFIDENTIALITY

- Evaluations must obtain **free, prior and informed consent** from the participants to use private information
- **Confidentiality** of evaluation participants should be protected throughout the evaluation process
  - Is the identity and confidentiality of evaluation participants protected throughout the evaluation process?
  - Is there a protocol to notify users/participants in case of data breaches?

GREEN CLIMATE FUND | Independent Evaluation Unit

STANDARD ON **ACCOUNTABILITY** AND **'DO NO HARM'**

- For **Accountability**, evaluators should report potential or actual harms observed through the appropriate channels
- Evaluators can also ensure accountability by being transparent regarding the evaluation's purpose, design and conduct, while being responsive when questions or events arise.
- Specific example from LORTA
  - The LORTA team consults on an ongoing basis with local partners to respect the do no harm principle.
  - "As a complement to LORTA's do no harm policy, engaging early ensures respondent's safety and privacy and allows for anonymity…"

GREEN CLIMATE FUND | Independent Evaluation Unit

CONSIDERATION OF DIMENSIONS RELATED TO **GENDER AND INDIGENOUS PEOPLES**

- Using tailored and sensitive methodologies
- Data collection should be sensitive to the intersecting factors
- Evaluation recommendations should be sensitive to how they will impact women, Indigenous Peoples, and other stakeholders.
- The evaluation report should be available and accessible to the community.

GREEN CLIMATE FUND | Independent Evaluation Unit

LIMITATIONS – BELMONT REPORT

Three core pillars of ethical principles:

1. Respect for persons
2. Beneficence
3. Justice

Critique:

1. One size fits all
2. Consideration of other factors (culture, gender, ethnic etc.)
3. Prioritization among the three principles

GREEN CLIMATE FUND | Independent Evaluation Unit

ETHICAL CLEARANCE

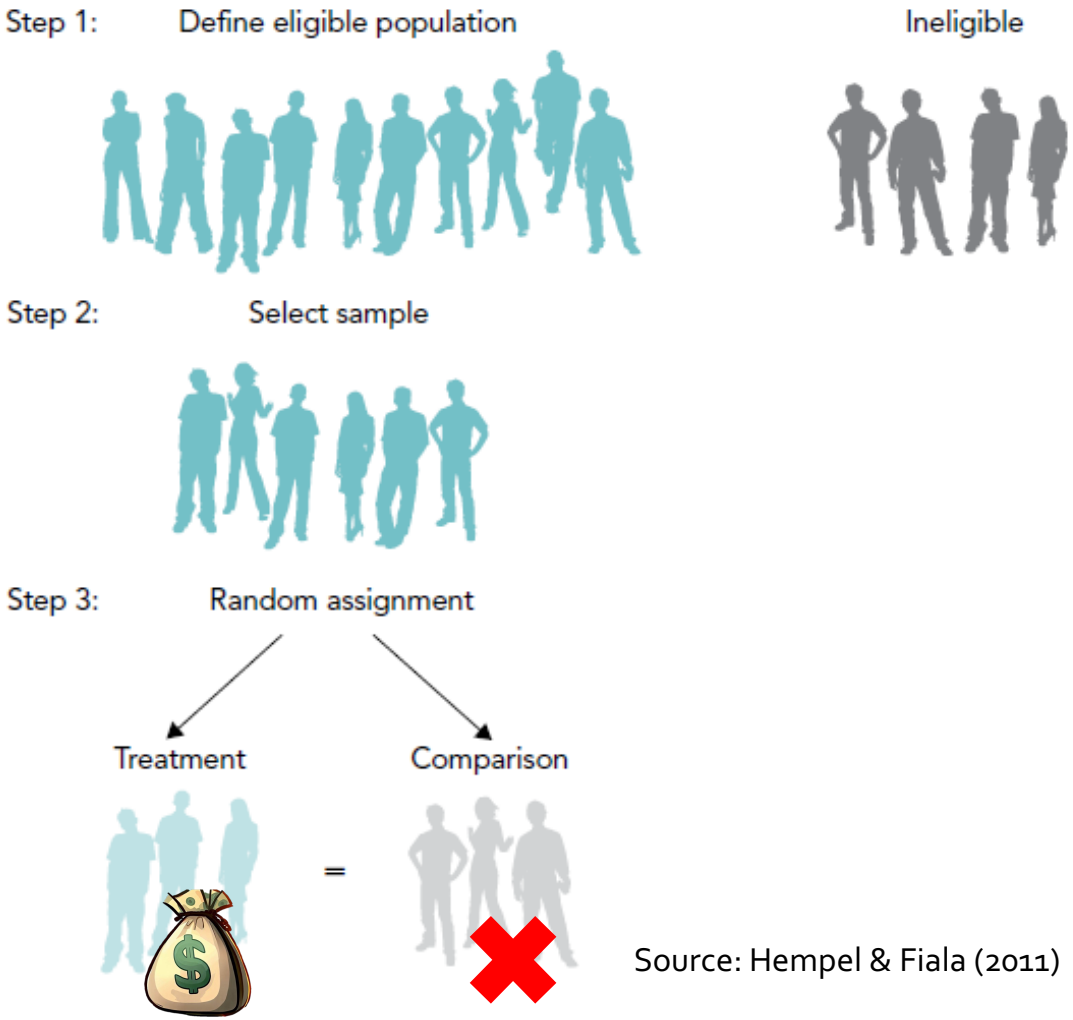
RCT – Discussion on ethics

- Group 1 receives treatment (Treatment)
- Group 2 is excluded (Comparison)

Is it ethical that the Treatment group receives money, but the Comparison group doesn't?

Institutional Review Board (IRB)

- Reviews proposed methods to ensure they are ethical
- LORTA receives ethical clearance through IRB approval



Source: Hempel & Fiala (2011)

GREEN CLIMATE FUND | Independent Evaluation Unit

In Conclusion

Evaluation Policy and Standards enable producing high quality IEs

Consider ethics in commissioning, designing, and execution of IEs

Consideration of ethics can enhance credibility of evaluations

GREEN CLIMATE FUND | Independent Evaluation Unit

Thank you!

Contact IEU:

✉ ieu@gcfund.org

@GCF_Eval

ieu.greenclimate.fund

LORTA Impact Evaluation Workshop Assignment 2023 Day 1

Country:_ Focal Points:_ Organization:_

Project name:_

Please describe the background of your project

- Who will receive the project activities? (farmers, households, etc.)
  - _
  - _

- How much of the project budget is/will be allocated for impact evaluation? What are the funding sources?
  - _
  - _

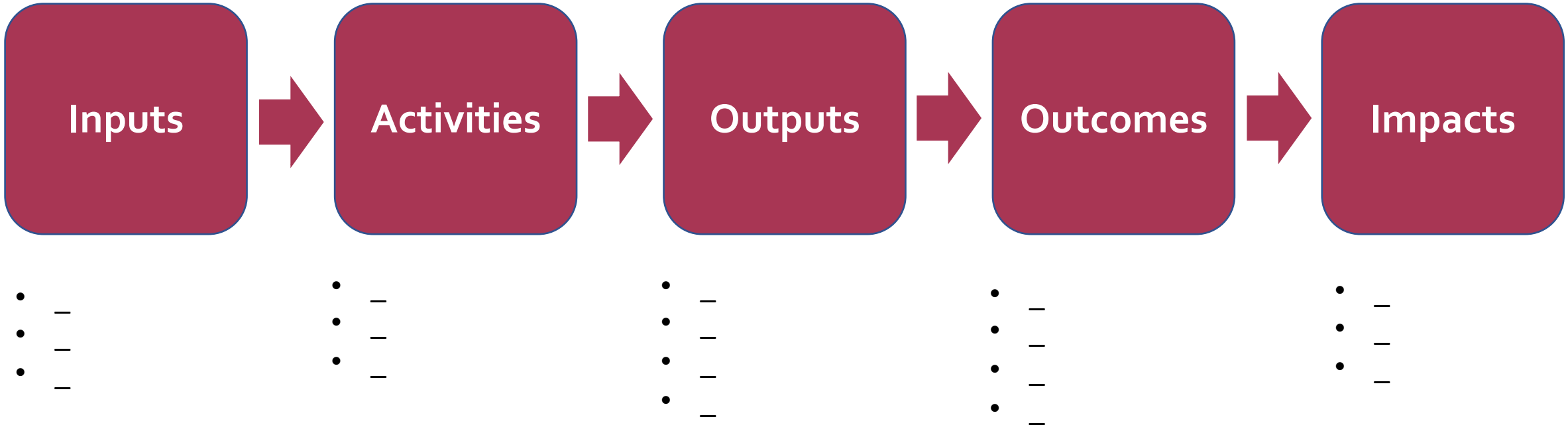
- What do you want to achieve through impact evaluation for your project?
  - _
  - _

Where will be, is the project implemented?

- _

- Regions of intervention / Map of the area of intervention-

Develop TOC for your impact evaluation



*This exercise is to help you review and brainstorm what falls under each component of a TOC for your impact evaluation. (A full-scale TOC for the IE would separate each bullet point under each component and include risks, barriers, and assumptions.) Please provide each input in a brief and simple manner

GREEN CLIMATE FUND | Independent Evaluation Unit

Welcome to the LORTA Virtual Design Workshop 2023!

- We will be beginning the workshop shortly.
- While you are waiting, be sure to follow us online to keep up with the latest news from the IEU!
- Please note that this workshop will be recorded.

FOLLOW US

GREEN CLIMATE FUND | Independent Evaluation Unit

HOUSEKEEPING

MUTE BUTTON

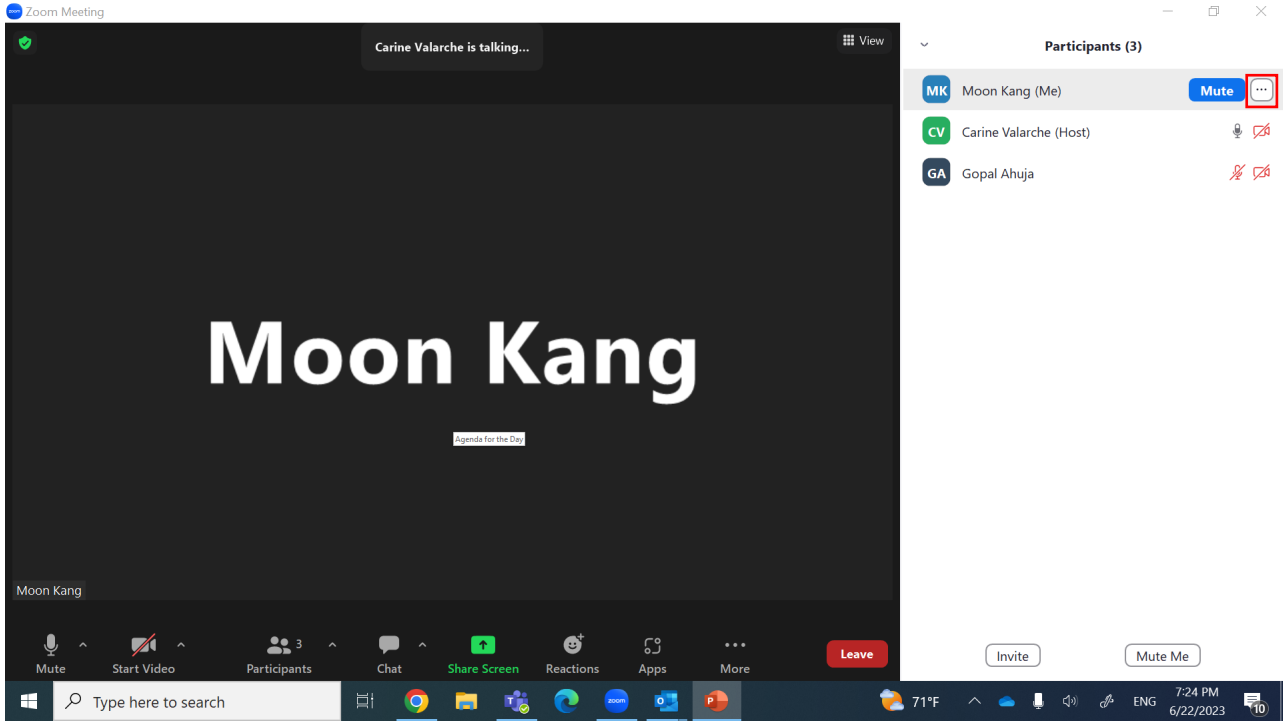
QUESTIONS

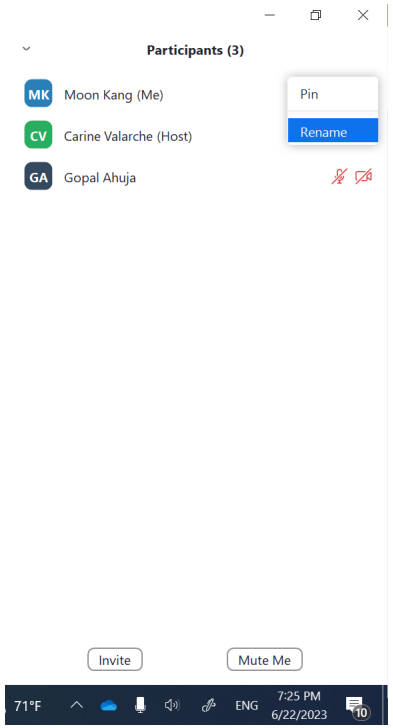
RAISE YOUR HAND

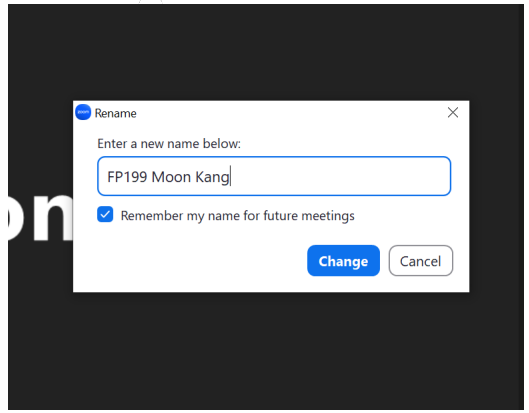
GREEN CLIMATE FUND | Independent Evaluation Unit

Change your name for today's session!

- Change your name to ➡ Project ID Name
  - FP199 Moon Kang
  - SAP025 Carine Valarché







GREEN CLIMATE FUND | Independent Evaluation Unit

AGENDA FOR THE DAY

	Day 4, 22nd June 2023	
20:00-20:20	Susumu Yoshida	1. Impact evaluation terms of reference and procurement of the data collection firm
20:20-21:20	Nathan Fiala and others	2. Practical examples of conducting impact evaluations
21:20-21:25	Moderator	3. Q&A
21:25-21:30	Andreas Reumann	4. Next steps and closing remarks

GREEN CLIMATE FUND | Independent Evaluation Unit

Evaluation Budgeting and Procurement

LORTA Virtual Design Workshop 2023

DAY 4

Susumu Yoshida
Impact Evaluation Specialist – Implementation Science

22 June 2023

GREEN CLIMATE FUND | Independent Evaluation Unit

Objectives

- Understand the importance of proper budgeting for evaluations and data collection
- Know the cost drivers of conducting a household survey
- Be aware of the time required to procure a firm

GREEN CLIMATE FUND | Independent Evaluation Unit

Introduction to evaluation budgeting

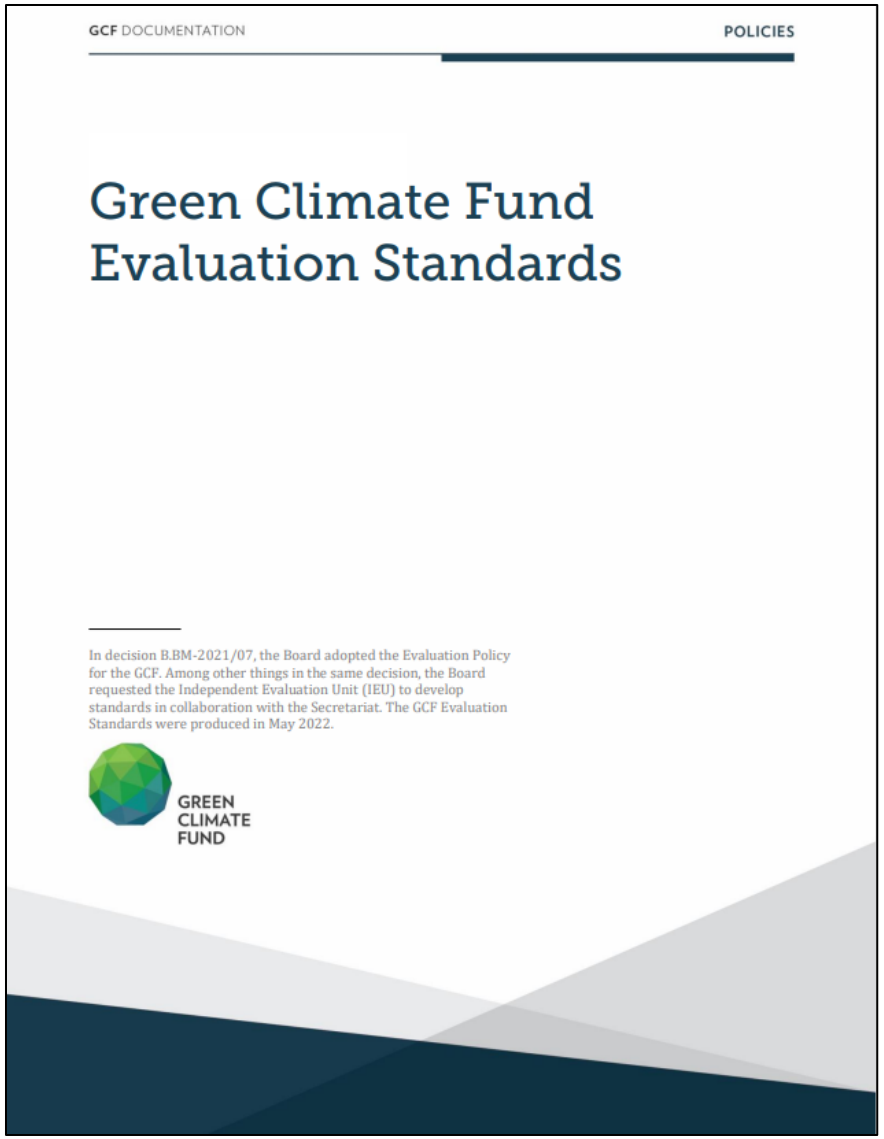
Point #1:

The evaluation plan must include an evaluation budget.

- In the GCF context, the evaluation budget should be included in the **Concept Note** and **Funding Proposal**.
- The GCF Evaluation Standards explain:

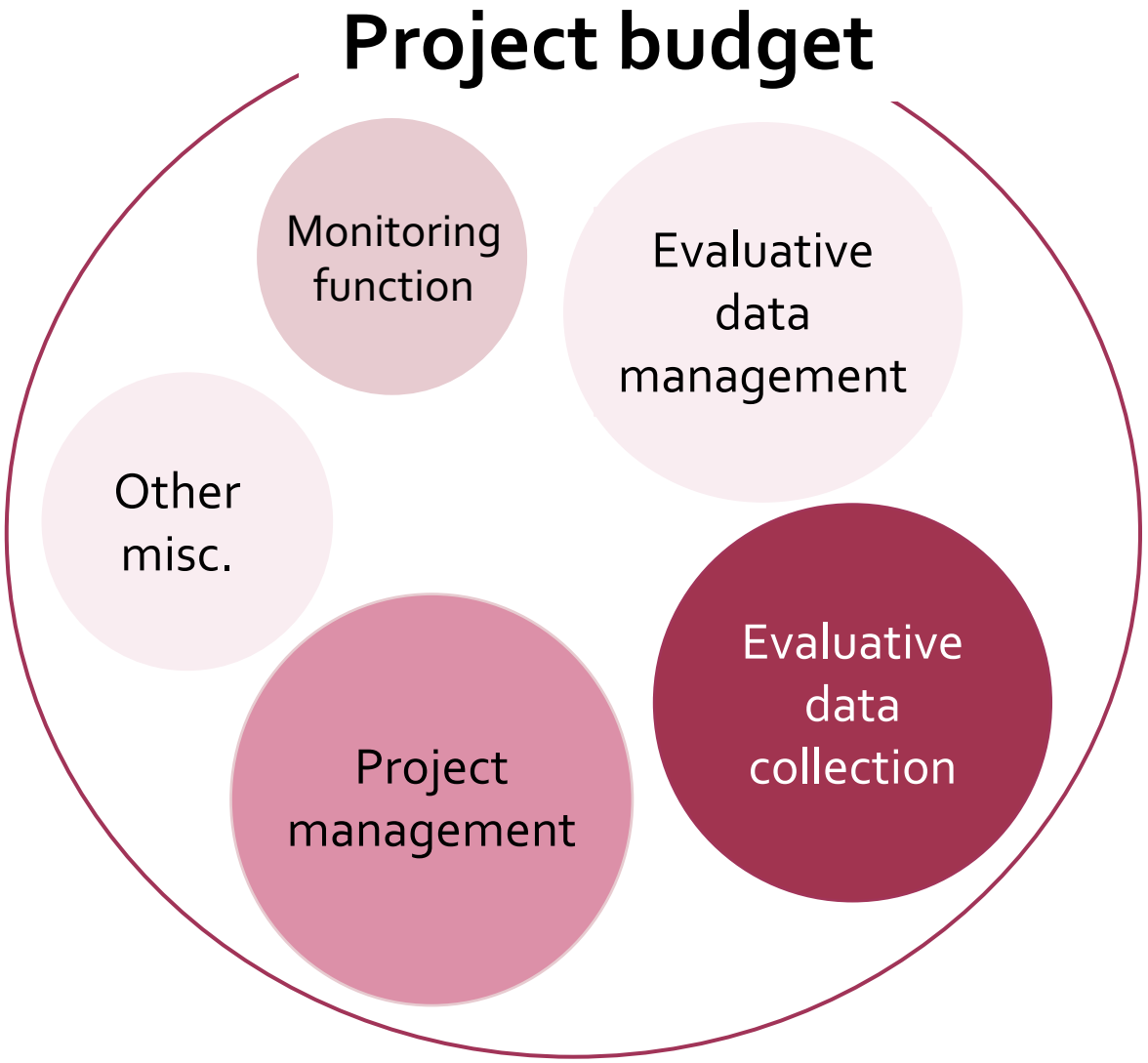
Standard 10: Cost-effectiveness

Whenever an evaluation is commissioned, the costing of the evaluation plan *(including evaluation budget)* is crucial and should be realistic about the requirements and scope of the evaluation. The evaluation process must consider all available options to develop the most cost-effective and robust techniques that will provide the strongest evidence.



GREEN CLIMATE FUND | Independent Evaluation Unit

What is Evaluation Budgeting?



Point #2:

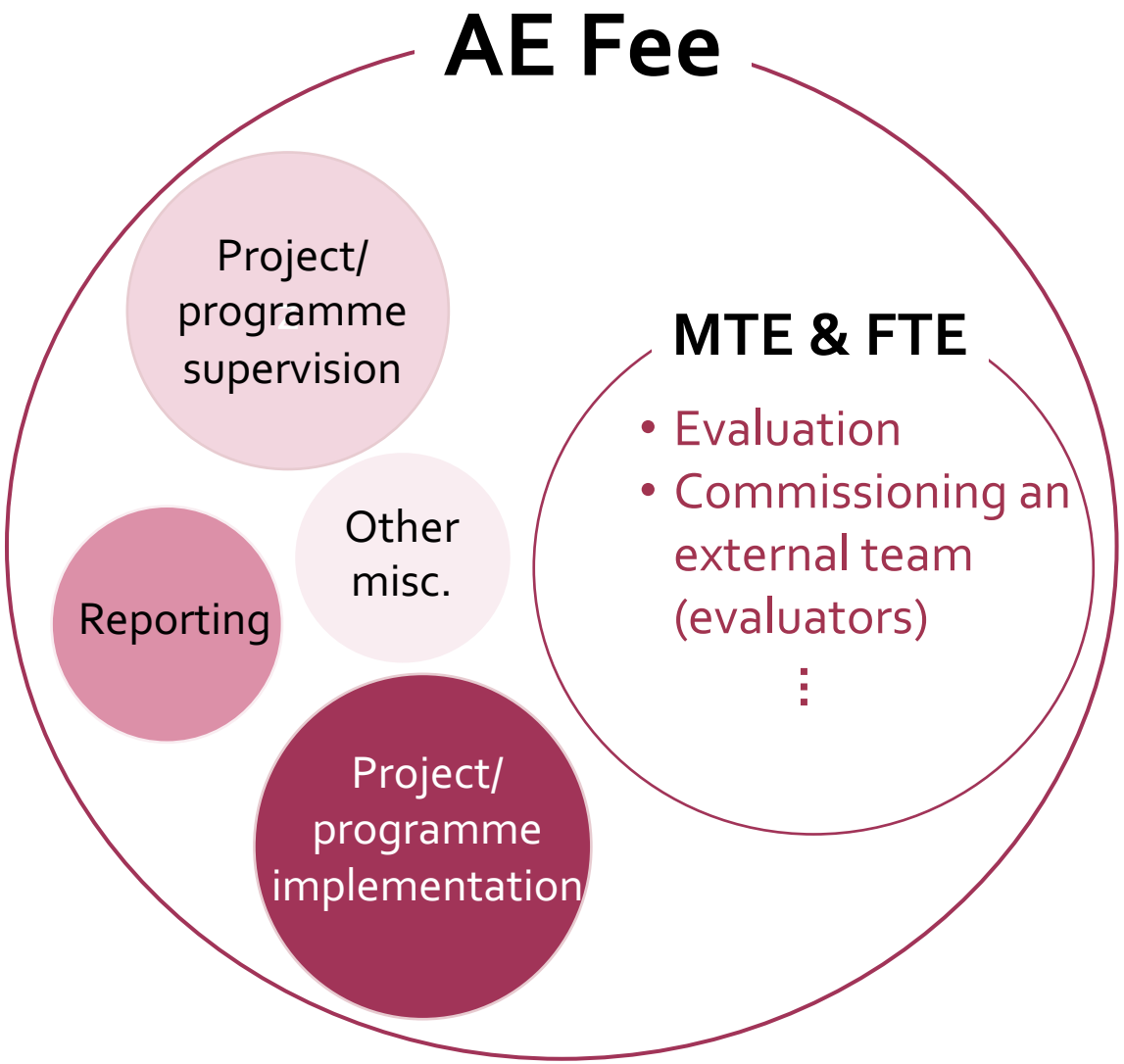
The project budget should include an evaluation budget line.

- Sufficient project budget should be reserved for building the foundations of evaluations.
- If needed, AE-led impact evaluations can be covered by the project budget.

Note: A bubble's size does not represent the percentage each element contributes.

GREEN CLIMATE FUND | Independent Evaluation Unit

What is Evaluation Budgeting?



Point #2:

The project budget should include an evaluation budget line.

- The AE Fee has a budget line for MTE & FTE cost, which is mainly for commissioning an external team of independent evaluators.
- The AE fee covers project/programme implementation, supervision, completion, evaluations, and reporting.

(GCF, Interim policy on fees for AEs, para 4)

Note: A bubble's size does not represent the percentage each element contributes.

GREEN CLIMATE FUND | Independent Evaluation Unit

Proportion of evaluation budget

- Desk research shows that the **suggested proportion of evaluation budget out of the total project/programme budget** differs slightly depending on the international organization.
- The GCF recommends the evaluation budget line to be **2-5%** of the project budget.

Org	Proportion of evaluation budget	Source
GCF	**2-5%** of the project budget	Evaluation Policy for the GCF (2021)
OECD	**3-5%** of the entire project or programme budget	Guidelines for Project and Programme Evaluations (2009)
UNDP	**5-7%** of the total project budget	UNDP Evaluation Guidelines (2021)
ILO	A minimum of **2%** of total project funds	Development Cooperation Manual (2022)

GREEN CLIMATE FUND | Independent Evaluation Unit

Budget items for project-level evaluation

Examples of Budget Items	
Professional Fee	• Staff cost - all evaluators, thematic experts, consultants, field coordinators, etc.
	• Translation cost – for interviews, field visits, validation, dissemination workshops, etc.
	• Management cost for hiring/procuring professional firm(s)
Travel Cost	• To and from the evaluation country – Flights, trains, taxis, etc.
	• Within the country - Car hire, fuel, driver, bus fare during training and data collection
Meeting Cost	• Any focus group discussion or data collection meeting costs – venue hire, snacks, participant transport costs, etc.
Training Cost	• Training stipend for participants
	• Venue, catering, accommodation
Communication Cost	• Communication costs – editing, printing and publication, dissemination
Other Cost	• Tablets, internet cost, any other miscellaneous costs
Contingency Cost	• For any unknown expenses during the evaluation

GREEN CLIMATE FUND | Independent Evaluation Unit

Budgeting for household survey

- Determining factors for household survey
  - Overall ***living cost/price level*** in a country
  - ***Sample size*** and numbers of evaluation points
  - ***Length*** of survey
  - Survey ***Methods*** - phone, in-person
  - ***Geographical coverage***
  - Number of ***languages*** spoken in project region
  - ***Security***
  - Survey team composition - size, ***gender***

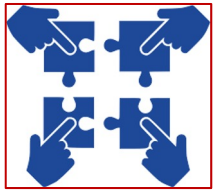
GREEN CLIMATE FUND | Independent Evaluation Unit

TIMELINE

- Impact Evaluation data collection phases:
  I. **Baseline** (if needed): **BEFORE or AT THE START OF** project implementation
  II. **Midline** (optional)
  III. **Endline**

- Decision for baseline and midline depends on the ***selected evaluation design*** as well as project interests and resources
  - RCT → baseline data collection is highly desirable but not strictly necessary
  - DiD → baseline and endline mandatory

- Should be determined ***together*** with an IE specialist



GREEN CLIMATE FUND | Independent Evaluation Unit

Important considerations for procurement

- Procurement takes time! → Do not wait to prepare the TORs
- Procurement takes time! → Normally a delay in implementation is not the main concern of the procurement team
- Procurement takes time! → Plan sufficient time!

For successful procurement:

✓ Start the procurement process early!!
✓ Prepare detailed TORs !!
✓ Have someone knowledgeable to review the quality of technical proposals!!

GREEN CLIMATE FUND | Independent Evaluation Unit

Timeline – Example

Baseline -Year 2023 - Months	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Preparation of Scoping Mission												
Signing of contract	★											
Inception Report												
Writing of IE design report												
Preparation of survey tools												
Preparation data collection												
Pre-test and training												
Data collection						★						
Project Implementation to start (earliest)												
Data cleaning												
Data analysis												
Writing of IE Baseline report												
Dissemination of findings												

Start the data collection in June. When do you need to start the procurement process?
(e.g. share the finalized TORs with the procurement team for 80k USD)

GREEN CLIMATE FUND | Independent Evaluation Unit

Thank you!

ieu.lorta@gcfund.org

@GCF_Eval

#LORTA

Group 1

FP196 KDB	Supporting innovative mechanisms for industrial energy efficiency financing in Indonesia with lessons for repli cation in other ASEAN member states
FP197 MUFG	Green Guarantee Company
FP205 AFC	Infrastructure Climate Resilient Fund (ICRF)

Group 2

FP179 CRDB	Tanzania agriculture climate adaptation technology deployment programme (TACATDP)
FP199 FAO	Public-Social-Private partnerships for ecologically-sound agriculture and resilient livelihood in northern Tonle Sap Basin (PEARL)

Group 3

FP184 Save the Children	Vanuatu community-based climate resilience project
SAP021 JICA	Community-based landscape management for enhanced climate resilience and reduction of deforestation in critical watersheds

Group 4

SAP025 OSS	Adaptation of agricultural production systems in Coast Areas of Northwest Guinea-Bissau
FP192 CCCCC	The R's (Reduce, Reuse and Recycle) for climate resilience wastewater systems in Barbados (3R-CReWS)
FP187 FAO	Ouémé Basin climate-resilience initiative (OCRI)