



Impact Evaluation of Climate Adaptation Projects

Webinar

05 October 2016

Moderator: Timo Leiter, GIZ Climate Policy Team

On behalf of

BMZ



Federal Ministry
for Economic Cooperation
and Development

of the Federal Republic of Germany



Outline

- Presentation of the new guidebook
- Practical example of an impact evaluation of an adaptation project in Morocco
- Q&A



Impact Evaluation Guidebook for
Climate Change Adaptation Projects



Technical instructions

The screenshot shows a Saba Meeting interface. The main content area displays a slide titled "Webinar „Pioneers in Adaptation M&E“" with the subtitle "Experiences from the Philippines and South Africa". The slide includes logos for "AdaptationCommunity.net", "ci grasp", "giz", and "Federal Ministry for the Environment, Nature Conservation and Nuclear Safety". Three red arrows point to specific features: one to the "Raise your hand for questions" button in the top left, one to the chat window on the left, and one to the "Scale presentation" button in the bottom right.

13.10.2016

Webinar "Pioneers in Adaptation M&E"

Seite 3



Setting the scene

- Adaptation is context-specific → no universal success metric
- Are adaptation actions effective?
 - Important to assess adaptation **outcomes**, not just **outputs**.
- Results frameworks of adaptation projects often use mainly output indicators.
- The question whether adaptation outcomes have been achieved and **how** is left unaddressed.
- **Impact evaluations** are one way of assessing adaptation progress.



13/10/2016

Assessing the effectiveness of adaptation

Seite 4



Dr. Stefan Silvestrini

- CEO at CEval GmbH, private spin-off company of the Center for Evaluation at the Saarland University
- Sociologist, focus on applied/evaluation research
- Working fields: Development Cooperation, Education, Technology Assessment



M&E-Guidebook for Climate Change Adaptation Projects

Webinar-Presentation of the Guidebook
developed on behalf of the GIZ

Stefan Silvestrini

Saarbruecken, October 5th 2016

- ✓ Objectives and tasks of the Guidebook
- ✓ Structure and content
- ✓ Selected evaluation designs
- ✓ Outline of the practical case study and further considerations

- ✓ Discussion

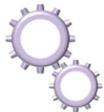
Objectives

- ✓ Provide practitioners in the field of climate change adaptation with a **common understanding** about the importance of **evidence-based information** and therefore required **evaluation designs**
- ✓ Enable them to reflect on the **type of adaptation project** they are responsible for and help them understand what kind of **evaluation approach** and what **methodologies** need to be applied, and how they should build their **M&E-system** in order to gather relevant information

Tasks

- ✓ Assess the **applicability and the strengths and weaknesses of different RIE approaches** in the field of climate change adaptation
- ✓ Provide **methodological guidance** and **practical demonstration** on the integration of these RIE approaches in M&E-Systems
- ✓ Present **econometric methods and mathematics** and discuss their practical implications
- ✓ Demonstrate the **potential of RIE approaches** to providing evidence on climate change vulnerability reduction and testing the underlying adaptation hypotheses

Providing for readability and understandability

- ✓ Technical terms always with brief explanations/definitions
- ✓ Formulas only where inevitable/necessary
- ✓ Graphical illustrations of methodological issues
- ✓ Links to external web resources
- ✓ Text boxes and icons signifying
 - ✓ Definitions 
 - ✓ Practical examples 
 - ✓ Tools and instruments 
 - ✓ Further reading material 
 - ✓ Checklists 
- ✓ Example tools and glossary in the annex

1. Evaluating CCA projects
 - ✓ Types and key features of CCA projects
 - ✓ Key challenges of CCA projects
 - ✓ Review of current methods to evaluate CCA projects
2. Rigorous evaluation designs and their applicability in CCA projects
 - ✓ Overview of evaluation designs – Potentials and limitations
 - ✓ Providing reliable large scale data
 - ✓ Providing the practical prerequisites for evaluation
3. Practical case study: Urban Management of Internal Migration due to Climate Change
 - ✓ Background and project objectives
 - ✓ Selection of an evaluation designs
 - ✓ Practical implementation

Evaluation design	Suitable project type	Required project characteristics	Data requirements	Results validity
Experiment (RCT)/ Quasi experiment	III, IV	<ul style="list-style-type: none"> Discriminable treatment group RCT requires random assignment to treatment and comparison group 	<ul style="list-style-type: none"> Ex-ante (baseline) and ex-post data from treatment and control group 	<ul style="list-style-type: none"> RCT has highest internal validity Internal validity of quasi-experimental design depends on selection bias External validity/transferability depends on comparability of framework conditions
Propensity Score Matching	III, IV	<ul style="list-style-type: none"> Discriminable treatment group Individual characteristics relevant for the treatment effect (covariates) must be observable 	<ul style="list-style-type: none"> Ex-ante and ex-post data from treatment and comparison group Data collection must include covariates 	<ul style="list-style-type: none"> Internal validity depends on completeness of covariates External validity/transferability depends on comparability of framework conditions
Pipeline approach	III, IV	<ul style="list-style-type: none"> Project needs to be implemented in phases Treatment groups of each phase must be comparable 	<ul style="list-style-type: none"> Ex-ante and ex-post data from each group 	<ul style="list-style-type: none"> Internal validity of quasi-experimental design depends on comparability of groups External validity/transferability depends on comparability of framework conditions
Regression Discontinuity Design	II, III, IV	<ul style="list-style-type: none"> Treatment group must be selected according to a specified criterion 	<ul style="list-style-type: none"> Sufficient number of comparable cases Larger sample size than for experimental/quasi-experimental 	<ul style="list-style-type: none"> Internal validity restricted to comparable cases
Time series	Panel: II, III, IV TSCS: III, IV	<ul style="list-style-type: none"> Panel: Focusing on individuals, households, organizations TSCS: Focusing on sectors, countries, regions 	<ul style="list-style-type: none"> Panel: Large sample size, few repeated data collections TSCS: Sample size irrelevant, large number of repeated data collections 	<ul style="list-style-type: none"> Panel: Validity depends on compliance of sample size with statistical requirements (cf. 3.3.1) TSCS: Validity is restricted to sample
Structural Equation Modeling	I, II	<ul style="list-style-type: none"> Focusing on entire sectors, countries, regions 	<ul style="list-style-type: none"> Statistical and/or empirical data for each model relevant construct 	<ul style="list-style-type: none"> Validity depends on model fit (i.e. to which extent the endogenous construct is explained by the model)

Project characteristics

- ✓ Evaluation starts before/at the beginning of project
- ✓ Discriminable target group (environmental migrants)
- ✓ Not all target group members are treated, i.e. comparison group data available in settlements not covered by the project
- ✓ Non-random selection of project participants
- ✓ Individual characteristics are in principle observable
- Quasi-experimental design with Propensity Score Matching
- ✓ Regional focus (settlements/hotspots)
- ✓ Longitudinal data available through project monitoring and potentially statistics
- Structural Equation Modeling

Benefits

- ✓ High internal validity of evaluation results
- ✓ PSM allows for impact attribution
- ✓ SEM allows for assessing systemic impact and the influence of external factors
- ✓ Longitudinal perspective allows for assessing adaptations in the project concept

Challenges

- ✓ Methodological demands are rather high
- ✓ PSM requires large scale data collection at treatment and comparison group
- ✓ Randomized sampling is logistically demanding
- ✓ SEM requires extensive knowledge about framework conditions and long term collection of empirical and statistical data

Preparatory tasks

- ✓ Document analysis, selection of evaluation design, development of a workplan
- ✓ Exploratory pre-mission: Gathering qualitative data for accomplishing the data collection plan, checking the availability/accessibility of data sources and the feasibility of the data collection

Baseline study (ex-ante evaluation) 2015

- ✓ Finalization of the data collection plan, development and pre-test of the data collection instruments
- ✓ Collection of baseline data, data analysis and reporting
- ✓ Preparation of a framework for continuous results based monitoring system: Specification of indicators and data collection plan

Continuous results based monitoring 2015-2018

- ✓ Adaptation of data collection instruments, development of a resource plan and assignment of responsibilities
- ✓ Implementation of monitoring system: regular data collection according to data collection plan, revision of data collection instruments as required (e.g. changing of project measures)
- ✓ Regular data analysis and reporting

Final evaluation 2018

- ✓ Adaptation of data collection plan and instruments, review of monitoring data, further document analysis (official statistics, project documents etc.)
- ✓ Collection of final evaluation data, data analysis and reporting

Ex-post evaluation 2021/22/23

- ✓ Adaptation of data collection plan and instruments, further document analysis
- ✓ Collection of ex-post evaluation data, data analysis and reporting

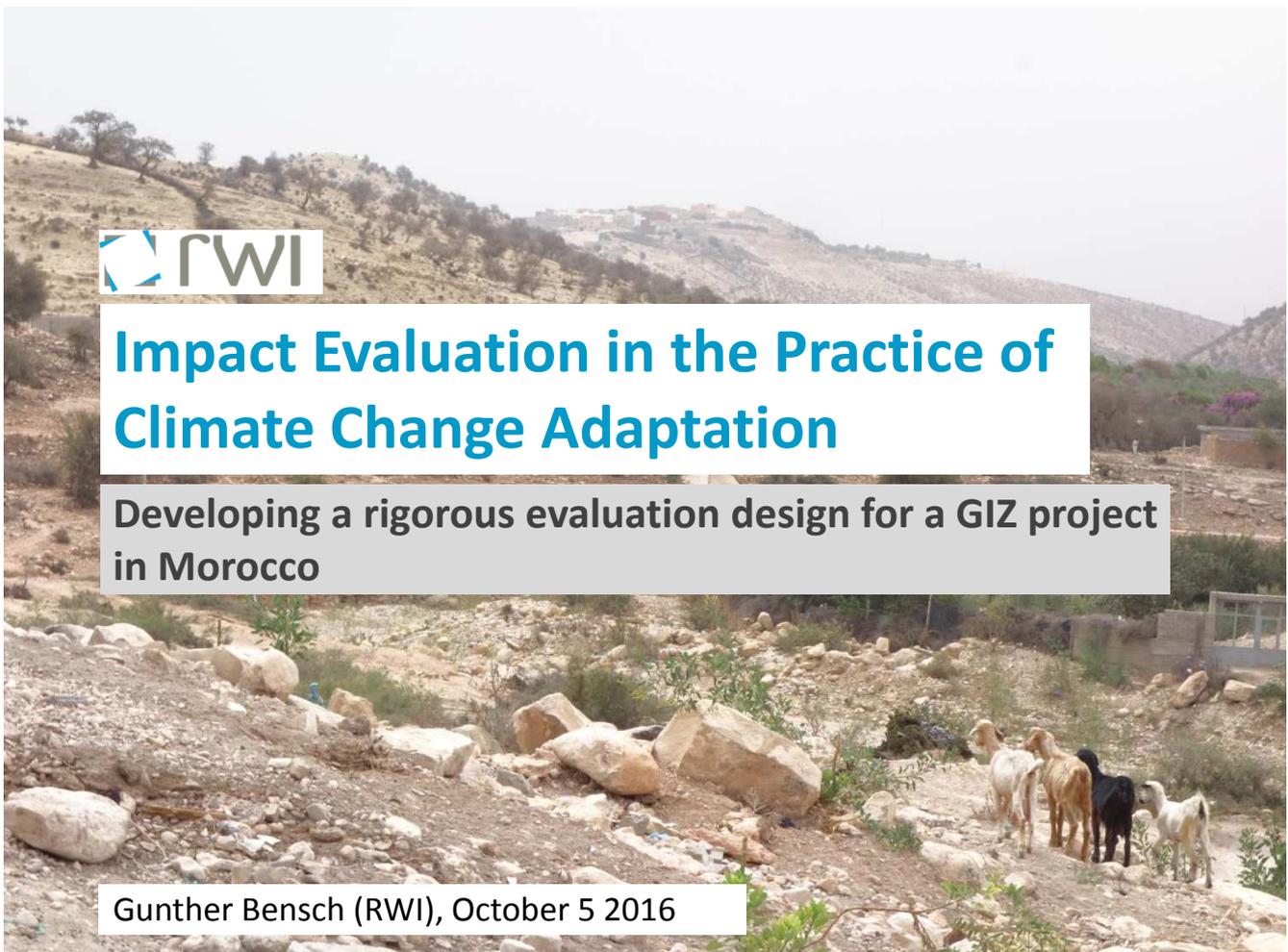
Thank you very much for your attention!



Gunther Bensch

- development and environmental economist at rwi, a German economic research institute
- implemented various studies based on large-scale household and enterprise surveys in Africa and Asia
- lead researcher of a planned impact evaluation on a GIZ climate change adaptation programme in Morocco

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- study genesis
 - brief introduction to the giz project
 - evaluation design proposal
 - feasibility of an experimental approach
- » *no* study implementation yet
 - » *no* results

· How can the impact of adaptation projects be assessed?
· Which impact evaluation methods can be applied to which types of adaptation projects?
· How can a participatory impact evaluation be designed in practice?

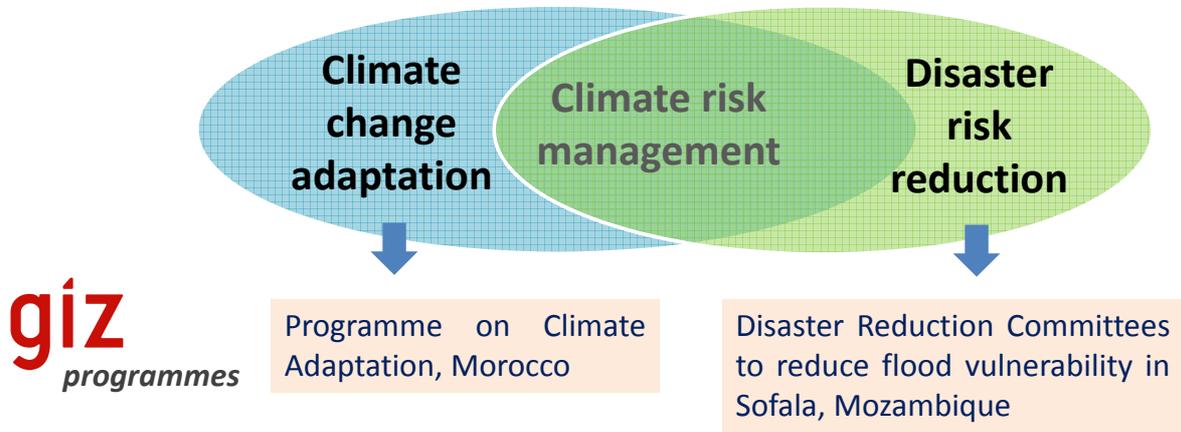
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- *Climate Change and Disaster Risk Reduction Thematic Window* launched by the International Initiative for Impact Evaluation (3ie) in 2014
- 11 projects received *evaluability assessment* preparation grants



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- Climate Change and Disaster Risk Reduction Thematic Window launched by the International Initiative for Impact Evaluation (3ie) in 2014



Lead Principal Investigators



THE GIZ PROJECT IN MOROCCO

- sizable bundle of individual activities (>>100)
 - » mainly on meso or macro level (e.g. institutional capacity building; identification and mapping of vulnerable ecosystems)
 - » micro-level activities are mostly low-scale pilot projects
 - » numerous national institutions as co-implementers

Dernière valeur connue	Valeur cible	Historique des données	Croniques des tendances	Tendances constatées
(2013) 742,23 ha	--	2004-2012		▲
(2013) 38.000 ha	--	1942-2013		▼
(2013) 1.656 ha	--	2005-2013		↔
(2012) 79 289 pieds	--	2007-2012		▲
(2011) 5,2 MDH	--	2003-2011		↔

decentralized CCA information systems



ecosystem service value chain business development



by Maxim Massalitin - own work, CC BY-SA 3.0

climate vulnerability assessment & action plans for highway operator

EVALUATION DESIGN PROPOSAL

1. Grantee inception and client consultation workshop

Evaluation Proposal Form	
<small>*Indicates fields that must be completed</small>	
BASIC DETAILS <small>No score required</small>	
Number of the grant submission (to be filled by 3ie)	
Title of proposed impact evaluation study* <small>(Please include intervention type, country and possible method in the title)</small>	
Proposed duration of grant in number of months*	
Proposed start date (MM/YYYY)	02/2015
Proposed end date (MM/YYYY) <small>(9 months after the end of data collection, for analysis of the final report)</small>	05/2019

- » Evaluation context
- » The intervention its theory of change
- » Evaluation questions
- » Evaluation design: internal validity
- » Evaluation design: external validity
- » Policy process, alignment, and influence
- » Plain language summary
- » Deliverables, workplan and budget

Feasibility standards of the American Evaluation Association (AEA)

- Practical and Responsive Procedures
- Contextual Viability
- Effective and Efficient Resource Use

Impact Evaluation Guidebook, Ch.1

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2. Two-week scoping mission incl. stakeholder consultation workshop

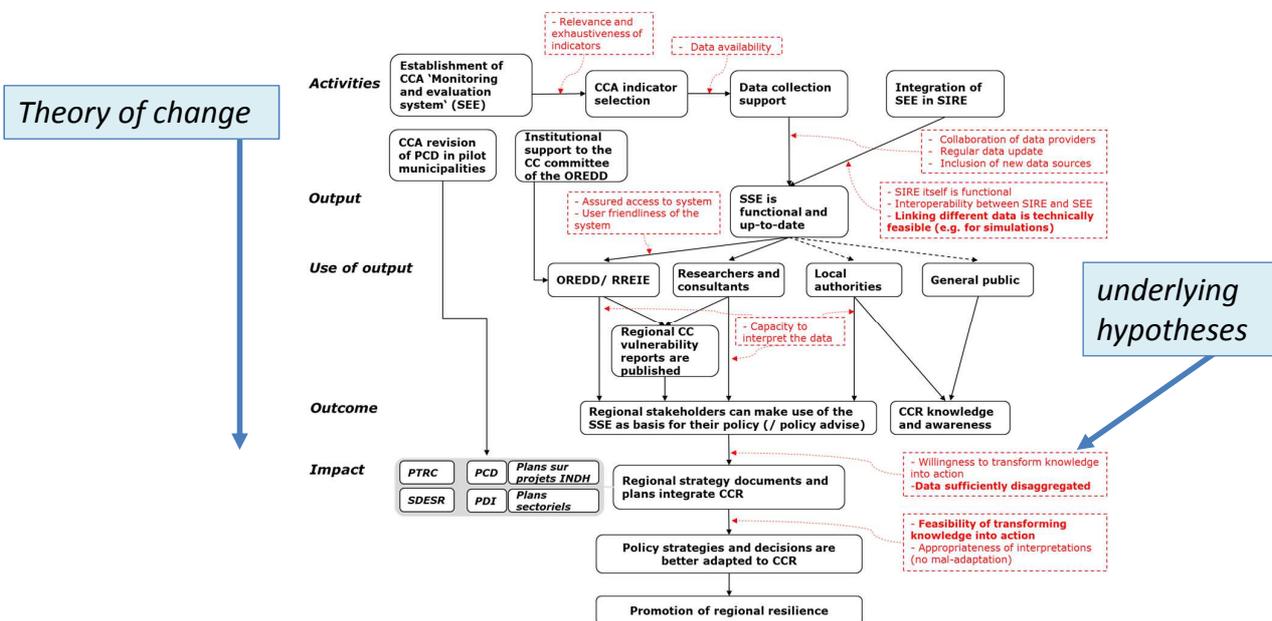
- ➔ common understanding of project theory
- ➔ avoid black box evaluations



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2. Two-week scoping mission incl. stakeholder consultation workshop

→ example: decentralized CCA information systems



Key challenges:

- ambiguity of the concepts
- no universal indicators
- shifting baselines
- long time horizons
- uncertainty

Impact Evaluation Guidebook, Ch.2.2

- intermediary outcomes
- interventions often affect
 - » probability distributions of outcomes
 - » variability of outcomes

- a quantitative approach simply requires a sufficient number of independent observations

Sample size calculation formula

Impact Evaluation Guidebook, Ch.5.6

- » users of CCA information system
- » community development plans
- » highway sections
- » cooperative members
- » GIS and remote-sensing data

Types of CCA projects:

- individual level
- institutional level
- systemic level

Impact Evaluation Guidebook, Ch.2.1

How can a participatory impact evaluation be designed in practice?

1. client consultation in *overall design phase*
2. stakeholder consultation in *exploratory scoping phase*
3. beneficiary participation in *(qualitative) data collection phase*
4. beneficiary consultation in *recommendation development and feeding-back of findings phase*

FEASIBILITY OF AN EXPERIMENTAL APPROACH

Feasibility of an experimental approach

→ example: Argan oil business development

Types of evaluation designs:

- experimental
- quasi-experimental

Impact Evaluation Guidebook, Ch.3

Members of Argan cooperatives that are part of the Cooperative Union
22 cooperatives, 1200 women

Members of Argan cooperatives on waiting list
17 cooperatives on waiting list that meet admission criteria

Non-cooperative Argan fruit collectors



by Neil Taylor - Huille d'Argan Cooperative, Imilil, CC BY-NC-SA 2.0

Random [=fair] selection process

Cooperatives integrated in early phase

Cooperatives integrated in later phase

Feasibility of an experimental approach

→ example: Argan oil business development

Additional (non-experimental) treatment group

Additional (non-experimental) control group

Members of Argan cooperatives that are part of the Cooperative Union
22 cooperatives, 1200 women

Non-cooperative Argan fruit collectors

quasi-experimental design (e.g. matching)

Cooperatives integrated in early phase

Cooperatives integrated in later phase

RCT treatment group

RCT control group

experimental design

Feasibility of an experimental approach

- none of the studies listed is experimental
- *Environment and Climate Change* as one of twelve themes at last weeks' What Works Global Summit 2016, but basically no studies or discussions on CCA
- Types of CCA interventions where one finds RCT applications:
 - » Payment for ecosystem services (e.g. RCT in Uganda by [Jayachandran et al. 2016](#); cifor.org/gcs/)
 - » CCA Education (e.g. RCT classroom training for year 7 students in Bangladesh by [Kabir et al. 2015](#))
 - » Interventions to reduce the health impacts of CC (e.g. bednets; Systematic Review by [Bouzid et al. 2013](#))

current CCA project evaluations
Impact Evaluation Guidebook, Ch.5.1



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Concluding remarks

- CCA projects pose greater challenge to impact evaluations, in consequence little to no rigorous CCA impact evaluations so far
- increasing policy demand for empirical evidence, mainstreaming of evaluation approaches, and availability of evaluation tools
- pragmatism and creativity required for designs that are policy-relevant, appropriate, and rigorous
- Let's go for it!

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Discussion

You can:

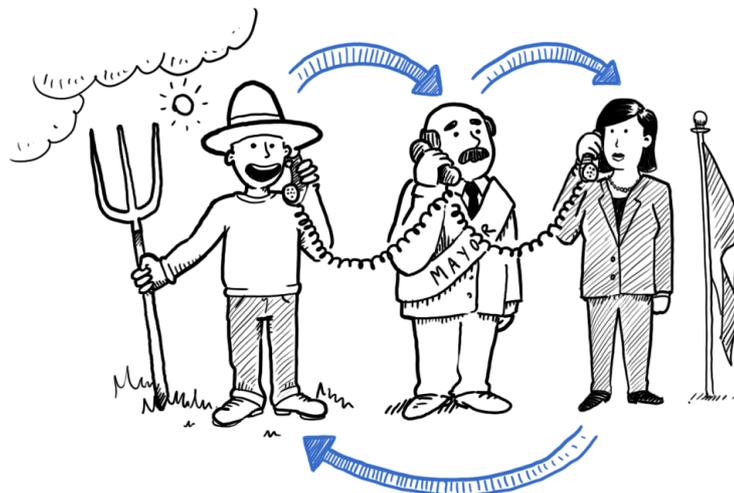
- Type your questions in the chat window, or
- Raise your hand by clicking the indicated button and speak over your microphone. This requires a good internet connection and a quiet place to avoid background noise.

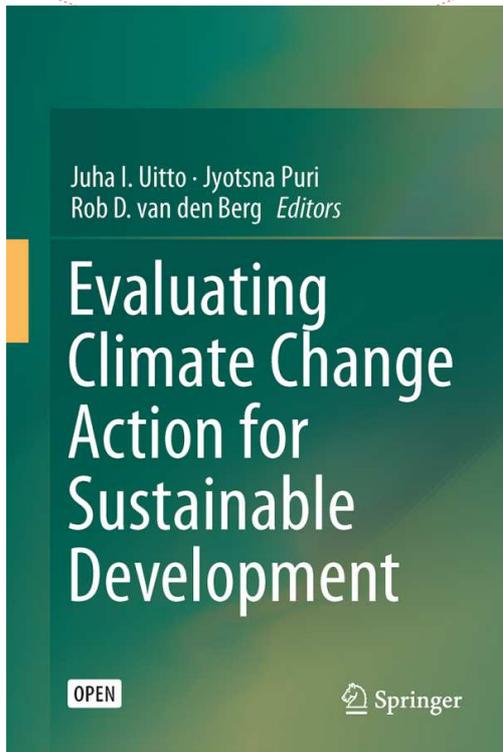
Please state:

- Name
- Country



Questions & Answers





New book on Evaluating Climate Change Action

Publishing date: **5 November 2016**

All chapters are **open access and can be downloaded for free!**

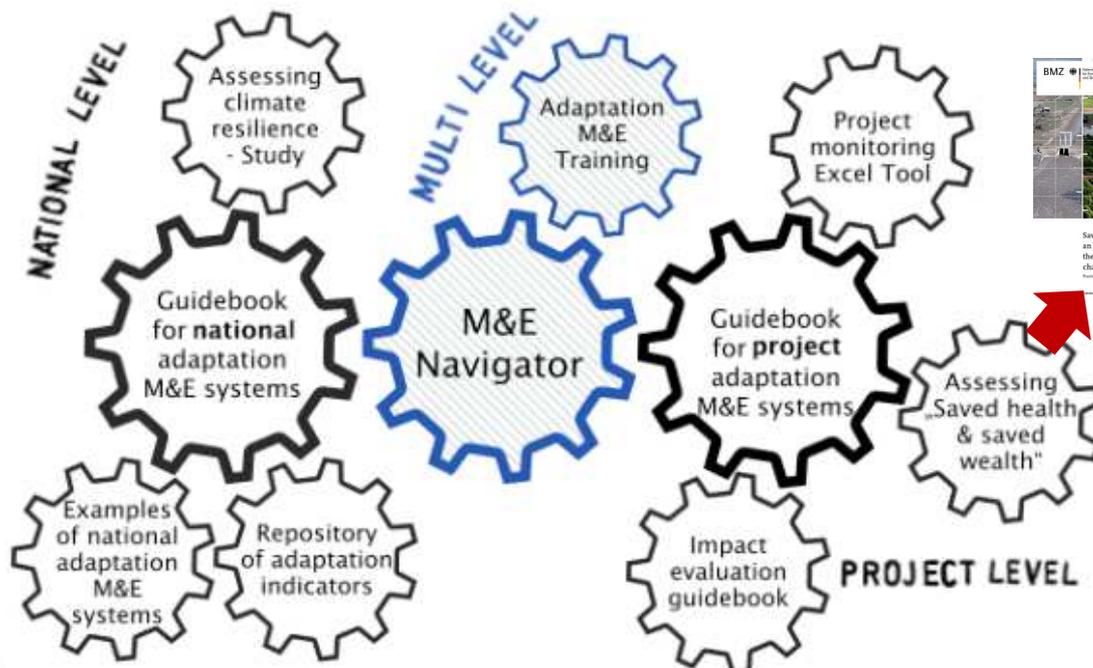
Presents the state of the art in evaluating climate change strategies and action in the rapidly changing landscape of international development cooperation.

Includes **GIZ's Adaptation M&E Navigator**: a decision support tool to select suitable M&E approaches.

→ Please google the title to get access.



GIZ's Adaptation M&E Toolbox





Thank you!

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