LEARNING-ORIENTED REAL-TIME IMPACT ASSESSMENT (LORTA) PROGRAMME

Inception Report 2020

Independent Evaluation Unit, Green Climate Fund

LEARNING-ORIENTED REAL-TIME IMPACT ASSESSMENT (LORTA) PROGRAMME

INCEPTION REPORT

15 DECEMBER 2020

THE CENTER FOR EVALUATION AND DEVELOPMENT

Center for Evaluation
and Development

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FIGURES

ABBREVIATIONS

AE	accredited entity
AFM	adaptive forest management
AFS	agroforestry system
BAGRI	Banque Agricole du Niger
BRCRN	Building a Resilient Churia Region in Nepal
C4ED	Center for Evaluation and Development
CBFS	climate business field schools
CBO	community based organization
CBPP	community based participatory planning
CC	climate change
CCAG	climate change adaptation groups
CFMC	community forest management committees
CRLUP	climate resilient land use practices
CRVC	climate resilient value chains
CRA	climate resilient agriculture
CSA	climate smart agriculture
CS-FOR	Carbon Sequestration through Climate Investment in Forests and Rangelands
DiD	difference in differences
EAP	early action Protocols
EbA	ecosystem-based adaptation
ECCCP	Extended Community Climate Change Project
EO	extension officers
EWS	early warning system
FAO	food and agriculture organization
FbA	forecast-based early actions
FbF	forecast-based financing
FCS	food consumption score
FES	food expenditure share

FFA	food assistance for assets
FGD	focus group discussion
FM	forest management
FO	farmer organizations
FPIC	free, prior and informed consent
FSC	forest stewardship council
GCF	Green Climate Fund
GFW	Global Forest Watch
GHG	greenhouse gas
GIS	geographic information systems
GRN	Government of Republic of Namibia
ICC	intra-cluster correlation
IDB	Inter-American Development Bank
INRMCRP	integrated natural resource management and climate resilience plans
INRM	integrated natural resource management
IEU	Independent evaluation Unit
IFAD	International Fund for Agricultural Development
IGA	income generating activities
KDSS	knowledge and decision support system
KII	key informant interview
LORTA	Learning-oriented Real-time Impact Assessment
LSMS-ISA	living standards measurement study - integrated surveys on agriculture
M&E	monitoring & evaluation
MDES	minimum detectable effect size
MFI	microfinance institution
MH-IBF	multi-hazard impact-based forecasting
MoU	memorandum of understanding
MSME	medium, small, and micro enterprises
MTA	Ministry of Land and Environment

NACSO	Namibia Association for Community Based Natural Resource Management Support Organization
NDA	nationally designated authority
NGO	non-governmental organization
NRM	natural resources management
OFWM	on-farm water management
PO	producers' organizations
PSM	propensity score matching
RBP	results-based payment
RCT	randomized controlled trial
RDD	regression discontinuity design
RKDF	Russian-Kyrgyz-Development-Fund
REDD+	reducing emissions from deforestation and forest degradation
SD	standard deviation
SFM	sustainable forest management
SLM	sustainable land management
SNRM	sustainable natural resources management
SOP	standard operating procedures
SWAT	soil & water assessment tool
ToC	theory of change
UNFCCC	United Nations Framework Convention on Climate Change
VSL	village saving and loans
WFP	World Food Programme

I. INTRODUCTION TO THE LORTA PROGRAMME

Evaluating the impact of development projects and programme has gained importance in recent years. Impact evaluation allows for not only increased transparency by measuring outcomes but also the opportunity to design and implement development projects more effectively. To contribute to this development, the Independent Evaluation Unit (IEU) of the Green Climate Fund (GCF) started the Learning-Oriented Real-Time Impact Assessment (LORTA) programme in 2018.

The LORTA programme has the following aims:

- To embed real-time impact evaluations into funded projects/programmes so GCF programme managers can quickly access accurate data on the programme's quality of implementation and likelihood of impact

- To build capacity within projects to design high-quality data sets for overall impact measurement

The LORTA programme incorporates state-of-the-art approaches for impact evaluations to measure results and inform about the effectiveness and efficiency of GCF projects. The purpose of these impact evaluations is to measure the change in key result areas of the GCF that can be attributed to project activities.

Therefore, LORTA uses theory-based counterfactual impact assessment (experimental or quasi-experimental) designs. Furthermore, LORTA employs mixed-methods approaches that involve both quantitative and qualitative methods. The real-time measurement systems and qualitative data systems established for impact evaluation will help project teams measure progress in implementation and

provide rapid lessons on the early progress of the projects.

LORTA is organised in three phases:

- Phase I – formative engagement and design: Once a year, the LORTA Design Workshop is held to select GCF-funded projects suitable for impact evaluation out of the GCF portfolio of projects to be part of LORTA. IEU supports these projects to build high-quality, theory-based impact evaluation designs at inception. Formative work include engagement with project teams, accredited entities (AEs), and GCF staff and designs for theory-based impact evaluations. So far, twelve projects (seven in 2018 and five in 2019) have gone through Phase I and six new projects are entering Phase I in 2020.

- Phase II – impact assessment: The second phase of LORTA will involve the main impact assessment stage (3–5 years) and include implementing measurement and tracking systems, collecting baseline and endline data (both qualitative and quantitative), and continuous monitoring for real-time learning. The twelve GCF-funded projects have already transitioned from Phase I to Phase II, of which one project has already completed Phase II.

- Phase III – data analysis and feedback: The final stage will involve analysing baseline and endline data (both qualitative and quantitative), discussing results and engaging with diverse stakeholders to share results and incorporate feedback as required. Currently, one project is in Phase III.

II. VIRTUAL LORTA DESIGN WORKSHOP

A. General remarks

The third LORTA Design Workshop was again organised by the IEU and the Center for Evaluation and Development (C4ED). Due to the COVID-19 pandemic, the 2020 LORTA workshop was postponed several times and finally it was decided that it will not be held in person. Instead, a digital form of the workshop, consisting of different parts stretched over a period of eight weeks, was discussed and a format was agreed on. It took place from 21 September to 16 November 2020 over a video-conferencing platform. Participants were representatives from different divisions within the GCF, including the IEU, impact evaluation specialists from C4ED and other entities, as well as representatives of AEs, implementing partners and project staff from 16 GCF-funded projects.

The aims of the workshop were manifold:

1. *Increase of understanding among project representatives of the importance of impact assessment and rigorous measurement systems.*

2. *Opportunity for participants to gain basic knowledge or further increase their knowledge about impact evaluations, learn from case studies and being introduced to different impact evaluation methods (especially randomized and quasi-experimental designs).*

3. *Opportunity for project representatives to critically discuss viable impact evaluation designs for their respective projects, under the guidance of experienced and qualified impact evaluation specialists.*

4. *Application of lessons learned and information received in online sessions about impact assessment by project representatives to their own project.*

5. *Identification of promising GCF-funded projects for which impact evaluation designs shall then be worked out in the remaining inception and engagement phase 2020 of the LORTA programme.*

The workshop consisted of different elements and capacity-building measures using various digital formats, such as a live webinar every week, a learning video for each topic of the webinar, additional reading material as well as online breakout group sessions (for the full workshop agenda, please refer to Appendix I).

During the eight webinars, the following topics were discussed:

1. *Webinar 1: What is LORTA? Why is it important?*

2. *Webinar 2 – Theories of change (ToC)*

3. *Webinar 3 - Evaluation questions and indicators*

4. *Webinar 4 -Experimental impact evaluation*

5. *Webinar 5 - Non-experimental impact evaluation*

6. *Webinar 6 - Sample size and power calculations*

7. *Webinar 7 - Timeline and budget*

8. *Webinar 8 - Rapid-fire presentations and closing remarks*

For all webinars except webinar 8, a learning video as well as the reading material was shared with participants in advance to increase the understanding of the topics of the webinar. All learning videos were recorded by IEU and C4ED jointly and lasted between 20 and 40 minutes. The reading material consisted of

papers, book chapters and guidelines, and were intended to deepen and add to the knowledge conveyed through the videos.

The breakout group sessions were organized in parallel to the webinars, such that each week in the breakout session the topic of the following webinar was discussed. Breakout groups were formed by project team members from two different projects, led by one or two impact evaluation specialists from C4ED, IEU or other entities and in some cases supported by behavioral science specialists. During the group work sessions, the corresponding topic of the week was discussed in general as well as for the particular case of the project (summaries of the groupwork can be found in chapter B as well as in Appendix II).

During the webinars, the learning videos were briefly revisited and summarized. After that, the readings were critically discussed including engagement of the participants by suggesting different discussion points and opening the floor for questions. This was followed by a presentation of the group work each project had to do in the preceding week. For each webinar, two projects were randomly selected to present. Following the project's presentations, questions were encouraged. At the end of all webinars (except webinar 8), a short quiz was conducted to engage participants more actively and to test their knowledge and attention during the breakout sessions and webinar.

In the last webinar, participants were asked to present the outcome of their group work and the discussed plans for impact evaluation in a 3-minute presentations to the whole audience.

B. Outcomes of the group work

The 8 groups worked on their tasks with the support from one or two impact evaluation specialists from C4ED, IEU or other

institutions. The groups were also supported by IEU behavioral science colleagues as well as colleagues from the Busara Center for Behavioral Economics. The outcomes of the group work on the above-mentioned six tasks for all 16 participating projects are summarized below and described in more detail in Appendix II.

Group 1

A) FP048: Climate-Smart Agriculture (CSA) Risk Sharing Facility for MSMEs (Guatemala and Mexico)

This project started in 2018 and will last until 2033. The goal is to deliver tailored financial instruments and services to individual farmers and micro, small, and medium sized enterprises (MSMEs) working in the climate smart agro-forestry (CSA) space in Mexico and Guatemala. A quasi-experimental matching design was developed for the impact evaluation. The goal is to match the characteristics of participants to non-participants. Since financial assistance is offered to some MSMEs in addition to technical assistance, it allows a potential multi-treatment arm design. This design allows for understanding the differential impacts of the different interventions and assistance offered as well as the total effect of loans and technical assistance.

B) FP101: Resilient Rural Belize (Be-Resilient)

The project started in 2019 and will end in 2024. The goal is to develop value chains of smallholder farmers that are resilient and adapted to the effects of climate change. The matching grant and backyard garden interventions were deemed to be suitable for evaluation. The impact evaluation design will be different for the two interventions due to

their differences in implementation. For the matching grant fund, the most appropriate design was determined to be a cluster matching quasi-experimental design. For the backyard garden it was determined that an experimental lottery design is feasible.

Group 2

A) FP108: Transforming the Indus Basin with Climate Resilient Agriculture and Water Management (Pakistan)

This project started in 2019 and continues until 2025. The objective is to transform agriculture in the Basin by increasing resilience among the most vulnerable farmers and strengthening the government's capacity to support their communities to adapt. The interventions considered most appropriate for evaluation are those that strengthen farmers' resilience to climate change through skills, knowledge and technology. As resources are limited, a lottery and cluster design could be applied. Alternatively, matching approaches or a regression discontinuity design (RDD) would be feasible. The early start of the intervention and concerns about the availability of budget constitute a big challenge.

B) FP116: Carbon Sequestration through Climate Investment in Forests and Rangelands in Kyrgyz Republic (CS-FOR)

This project started in January 2020 and lasts until 2027. The aim is to shift from a local economy that is currently negatively impacting on carbon storage potential of ecosystems to a low-carbon emission economy where mitigation investments will trigger and enhance resilience of ecosystems as well as of communities. The intervention most suitable for evaluation is the climate-sensitive value chains development which aims to support the development of the selected value chains' participants towards higher efficiency and

competitiveness of the marketed product. Random selection of treatment village clusters based on a phase-in design was proposed and considered feasible by the project team. However, this needs to be verified in the ongoing process of project set-up and implementation. Alternatively, matching approaches potentially combined with difference in differences design (DiD) or RDD could be applied.

Group 3

A) FP110: Ecuador REDD-plus results-based payments (RBP) for Results Period 2014

The project started in 2019 and will continue until 2026. The aim of the project is to provide Ecuador with an integrated, coherent package of policies and measures to reduce emissions from land-use degradation and land-use change. The project component most suitable for impact evaluation is the transition to sustainable agricultural production systems. Since associations were already selected by a previous project and beneficiaries are already receiving an initial treatment, randomization was not possible. Therefore, a DiD with matching design was suggested for the impact evaluation.

B) FP111: Promoting climate-resilient forest restoration and silviculture for the sustainability of water-related ecosystem services (Honduras)

The programme will start in the beginning of 2021 with a lifespan of five years. Its general objective is to help improve the climate resilience of forests in areas critical to the water supply. Its specific objectives are to: (i) restore forest cover; and (ii) strengthen governance and financial sustainability for adaptive forest management (AFM), of which the former component was considered most suitable for

evaluation. The suggested impact evaluation design is a phased-in design with clusters, which will allow to measure the effect on the beneficiary households. For other evaluation questions (e.g. on CO2 emissions and groundwater availability) it will be necessary to use satellite data on forest coverage and a soil & water assessment tool (SWAT) using field hydrometeorological data from six micro-watersheds. However, for these components no rigorous impact evaluation design could be identified.

Group 4

A) FP113 Towards Ending Drought Emergencies: Ecosystem Based Adaptation in Kenya's Arid and Semi-Arid Rangelands

The project started in 2019 and will continue until 2024. Its goal is to reduce the cost of climate change induced drought on Kenya's national economy by increasing resilience of livestock and other land use sectors in restored and effectively governed rangeland ecosystems and strengthen climate change adaptation in Kenya's arid and semi-arid lands. The intervention most suitable for evaluation is the restoration of rangeland landscapes for ecosystem-based (EbA) adaptation. The use of quasi-experimental methods (DiD with matching) was recommended. Due to spillover effects, a geographic RDD through matching will not be feasible and finding a suitable control group will only be possible with some detailed geographic cluster information.

B) SAP006: Building resilience of communities living in landscapes threatened under climate change through an ecosystems-based adaptation approach (Namibia)

The project started in 2018 and lasts until 2024. It aims to increase climate change resilience of productive landscapes in Namibia through implementation of EbA actions that strengthen

social and ecological systems to sustain livelihoods at local level and facilitate value chains of natural resources. The intervention most suitable for evaluation is EbA through knowledge building within the targeted communities. A DiD Design (with matching) was recommended. The design is dependent on finding a suitable control group based on detailed geographic information from similar landscapes. However, it is unclear if similar priority landscapes that do not receive treatment do exist.

Group 5

A) FP118: Building a Resilient Churia Region in Nepal (BRCRN)

The project started in the beginning of 2020 and will last until 2026. It aims to enhance the resilience of ecosystems and vulnerable communities in Nepal's Churia region through promotion of climate resilient land use practices (CRLUPs) and sustainable forest management (SFM). The most suitable interventions are on-farm interventions and natural forest management (FM) through community based organization (CBOs), as they target the farmers and CBOs directly. As for the impact evaluation design, a two-stage DiD with matching design was suggested. However the evaluation design will only provide impact estimates for two out of seven project subcomponents. The mitigation impacts of the plantations as well as the institution strengthening effort can not be evaluated.

B) SAP007: Integrated Climate Risk Management for Food Security and Livelihoods in Zimbabwe focusing on Masvingo and Rushinga Districts

This project started in 2020 and will last until 2023. It aims to support the long-term adaptation of vulnerable, food insecure households to the effects of climate change and

variability. The interventions most suitable for impact evaluation are community asset creation, training of food assistance for assets (FFA) farmers and a weather index insurance. As impact evaluation design for the full programme a DiD design with matching was suggested and a phased-in random encouragement design for the weather insurance using subsidies. The impact of the weather information component of the project cannot be evaluated as it is likely to spread nationwide.

Group 6

A) FP120: Recognising Chile's REDD+ results for the years 2014, 2015 and 2016 (Chile)

The project started in 2019 and lasts until 2026. From 2014 to 2016, Chile reduced a total volume of 18.4 million tonnes of carbon dioxide in emissions from reducing deforestation, forest degradation, enhancement of forest stocks and conservation (REDD+). The United Nations Framework Convention on Climate Change (UNFCCC) has assessed these results as being fully compliant with its REDD+ stipulations. The goal of this project is to deepen the implementation of the country's National Strategy on Climate Change and Vegetation Resources. The project is still in its design phase and the identification of the interventions most suitable for impact evaluation as well as the elaboration of an impact evaluation design was not possible during the workshop.

B) SAP005: Enhanced climate resilience of rural communities in central and north Benin through the implementation of eco-system based adaptation (EbA) in forest and agricultural landscapes

This project started in 2019 and lasts until 2024. It aims to build resilience of local communities by halting the negative cycle of climate change, agricultural yield depletion and natural resource degradation. Forest restoration activities and farmer field schools on eco-system based agriculture are considered as the most suitable intervention for evaluation. The evaluation strategy most suitable for this project is a DiD design combined with matching. An impact evaluation at the household level could be complemented by an impact evaluation at the forest level using GIS data. Nevertheless the current budget for impact evaluation does not account for a comparison group and additional resources would be required to finance the impact evaluation.

Group 7

A) SAP008: Extended Community Climate Change Project-Flood (ECCCP-Flood) (Bangladesh)

This programme started in 2019 and continues until 2023. The goal is to increase the resilience of the poor, marginalized and climate vulnerable communities to adverse effects of climate change in flood-prone areas of Bangladesh, through capacity building and to build resilient household structures, water and sanitation infrastructure, and the promotion of climate-adaptive livelihoods. The evaluation will focus on the overall impact of the project. For the main evaluation strategy a clustered phase-in design with two phases was suggested. A phase-in fits the budgetary constraints of the project. This might be combined with a factorial design. However it remains unclear whether the project can cover the proposed budget for impact evaluation.

B) SAP010: Multi-Hazard Impact-Based Forecasting and Early Warning System for the Philippines

The project will start in 2021 and last until 2025. It aims to strengthen the country's ability to adapt to climate shocks, through the establishment of multi-hazard impact-based forecasting (MH-IBF) and early warning system (EWS), supported by a knowledge and decision support system (KDSS) and empowering of national and local capacities for early action and forecast-based financing. The interventions most suitable for evaluation are awareness campaigns, trainings on forecast-based early action (FbA) and financing. Since a phased-in randomized controlled trial (RCT) design was not possible due to simultaneous rollout of interventions, the design suggested is DiD combined with matching.

Group 8

A) SAP011: Climate-resilient food security for women and men smallholders in Mozambique through integrated risk management

This project will start 2021 and continue until 2026. It aims to (i) reduce vulnerability to climate risks through promotion of climate-resilient agriculture, as well as watershed restoration and enhancement, for food insecure smallholders; (ii) enhance and sustain adaptive capacity of smallholders through a combination of context-specific, integrated risk management tools and market-based opportunities, as well as village savings groups and microcredit (VSL) including insurance; (iii) inform adaptation planning and decision-making across smallholders, communities and national/local authorities through the use of climate information. The project team has a preference for evaluating the impact of subsidies on micro-insurance products and a randomized cluster factorial design was considered feasible for this component. However, the impact of insurance on resilience is unclear, since insurance only allows a payout after a climate shock, which might take years to happen. Also, the impact

may only be ascertained after 3 years which could conflict with gradual reduction of subsidies.

B) SAP012: Inclusive Green Financing for Climate Resilient and Low Emission Smallholder Agriculture (Niger)

This project started in 2020 and lasts until 2024. Its goal is to increase resilience to climate change of farmers' organizations by removing barriers to access financial and non-financial services for adopting and implementing best climate change adaptation. Since all interventions have the goal to increase uptake of loans, the treatment should be considered as the availability of the whole package to members of farmer's organizations. As impact evaluation design two alternatives were considered: a geographical discontinuity design and a DiD design with matching. However, the take-up level for loans where offered is unclear, which must be considered in the sampling strategy for any impact evaluation.

C. Project selection

The 16 projects were assessed with the help of a scorecard to determine their eligibility for LORTA by taking into account the following strategic criteria and guiding principles:

- **Feasibility of impact evaluation design**: The project, or at least a sub-component of the project has to have the potential to be rigorously evaluated.

- **Buy-in from AE**: Project selection takes the commitment of AE to conducting a theory-based, rigorous impact evaluation into account. Support from the AE and the project team is essential during all phases of LORTA.

- **Budget**: The project needs to be aware of the budget implications of an impact evaluation and be willing to make sufficient budget available to conduct a data collection of a representative scope.

- **Level of innovation for LORTA**: The LORTA Phase I 2020 seeks to add innovative projects to the overall LORTA portfolio, which complement the project selection already part of LORTA.

- **Level of innovation for GCF and the climate change space:** The evidence gained from the impact evaluations of the selected projects should be innovative to enlarge the learning within GCF and the global research on climate change.

Directly after the LORTA design workshop, staff members of the IEU and C4ED held a virtual meeting to discuss the evaluability and emerging impact evaluation designs of the 16 projects. Following the workshop, the IEU consulted with relevant divisions of the GCF Secretariat to build consensus regarding the most appropriate and eligible projects for the LORTA programme against the criteria above. Each division brought invaluable insight into the projects' details and the broader dynamics within the GCF. Staff members of the GCF echoed the keen interest expressed by workshop participants and conveyed their continued support for the LORTA programme moving forward. Discussions from these consultations were synthesized to inform the final deliberation of shortlisted projects.

The following six projects were considered to be eligible for LORTA and to enter the next level – that is to be subject to formative work in preparation of impact evaluations:

1. FP048: Climate-Smart Agriculture (CSA) Risk Sharing Facility for MSMEs (Guatemala and Mexico)

2. FP116: Carbon Sequestration through Climate Investment in Forests and Rangelands in Kyrgyz Republic (CS-FOR)

3. SAP007: Integrated Climate Risk Management for Food Security and Livelihoods in Zimbabwe focusing on Masvingo and Rushinga Districts

4. SAP008: Extended Community Climate Change Project-Flood (ECCCP-Flood) (Bangladesh)

5. SAP010: Multi-Hazard Impact-Based Forecasting and Early Warning System for the Philippines

6. SAP011: Climate-resilient food security for women and men smallholders in Mozambique through integrated risk management

The AEs of these projects have been informed that the projects had been selected to be part of the LORTA programme. They received a memorandum of understanding (MoU), which they were requested to sign. The MoU lays out the intention of the collaboration between the IEU and the AE, and sets forth its objectives, the scope and the terms. While the IEU commits to provide technical, advisory and quality control for the impact evaluation, the AE commits to actively engage, collaborate and work closely with the IEU throughout the evaluation, comply with timelines and quality standards, allocate the necessary budget for data collection and give the right to access and use all data collected during the impact evaluation.

The responses and signed MoUs from the projects are still being received, therefore the final project list for LORTA Phase I 2020 is yet to be confirmed.

III. WAY FORWARD

A. Engagement with stakeholders and formative work

For each of the selected projects, an evaluation team will be formed consisting of two impact evaluation specialists from C4ED and one IEU staff member per project. The task of the evaluation teams will be to engage closely with key stakeholders of the projects – namely, nationally designated authorities (NDAs), AEs, implementing agencies, project staff and potential end beneficiaries – to ensure their interest, understanding and sense of ownership for the planned theory-based impact evaluations.

Each evaluation team will conduct a (virtual) field mission, where it will hold meetings and capacity-building workshops with the key stakeholders. Meetings, in the form of expert interviews, will be used to acquire the maximum possible information about the GCF-funded project. These meetings will also aim at fostering collaboration and trust between the evaluation team and the onsite parties involved. In addition, a capacity-building workshop on the rationale of impact evaluation as well as impact evaluation methods will be held with key stakeholders. A further aim of the field mission is to emphasize the benefit of theory-based counterfactual approaches and real-time learning and measurement.

Under the guidance of the evaluation teams, impact evaluation designs will be developed for each of the selected GCF-funded projects. The evaluation teams will conduct context analyses, examine the existence of appropriate counterfactuals (i.e. comparable treatment and control groups), elaborate a ToC, assess the availability of baseline administrative and secondary data sources, and acquire budget information. Some of this work will be conducted during the engagement phase (i.e. while the evaluation teams are in the field), although most of it will be done remotely. For all activities, close cooperation with the project teams, NDAs, AEs and other stakeholders will be indispensable.

B. Reports

C4ED will produce an impact evaluation design report for each of the selected GCF-funded projects. These reports will include a justified, relevant empirical strategy on the measurement of causal change, including potential challenges and an implementation tracking and measurement framework, agreed upon by the evaluation team and key stakeholders. The impact evaluation design report will consist of a detailed ToC, feasibility considerations, evaluation design, implementation tracking and real-time measurement system, calculated sample size, timeline and budget. The reports will be submitted approx. 3-4 weeks after field missions took place (please refer to Section C below for a preliminary timeline, which will be updated once more information on timing is known).

C4ED will also write a synthesis report, which will inform about the status quo of the field visits and formative work as well as general lessons learned during LORTA Phase I 2020.

C. Timeline

Activity (2020-2021)	Sept	Oct	Nov	Dec	Jan	Feb	March
Matchmaking Clinic, Inception Report	▓	▓					
Identification of Research Teams			▓	▓			
Engagement with Project Team & Stakeholders				▓	▓	▓	▓
Formative Work, IE Design Report				▓	▓	▓	▓
Synthesis Report							▓

Figure 1:   Timeline for inception phase 2020-2021 (Phase I)[1]

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[1] This timeline will likely not include all selected projects. For some, especially if there are still in early stages of project planning, the formative work and impact evaluation design report will only be finalized over the course of 2021.

APPENDIX I: LORTA DESIGN WORKSHOP AGENDA

Learning-Oriented Real-Time Impact Assessment (LORTA)

Virtual Design Workshop

Independent Evaluation Unit (IEU) of the Green Climate Fund (GCF)

21 September – 16 November 2020 | Virtual space

Agenda for the Design Workshop Series

Date of weekly webinars	Led by	Contents of webinar	Breakout session	Led by	Contents of breakout session
Monday 21 September 9:00-10:30 pm KST	n/a	There is no webinar this week. Project participants receive a video explaining LORTA, 2 readings and the link for Webinar 1.	n/a	n/a	n/a
Monday 28 September 9:00-10:30 pm KST	1. *Martin Prowse/ Solomon Asfaw* 2. *Giulia Montresor* 3. *Martin Prowse/ Solomon Asfaw* 4. *Giulia Montresor* 5. *Martin Prowse/ Solomon Asfaw*	*Webinar 1 - What is LORTA? Why is it important?* 1. Short slide sequence summarizing LORTA (10 minutes) 2. Discussion of 2 readings (20 minutes) 3. Quiz (10 minutes) 5 minute break 4. Question and answer session (15 minutes) 5. Introduction of technical assistance team (30 minutes) Immediately after the seminar participants receive a video for Webinar 2, readings and relevant material.	Any time before Webinar 2 Time and duration agreed between project team, technical assistance teams (IEU / C4ED)	IEU and C4ED specialists	Technical assistance teams work with project teams to develop and refine the project's Theory of Change

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Agenda for the Design Workshop Series

Date of weekly webinars	Led by	Contents of webinar	Breakout session	Led by	Contents of breakout session
Monday 5 October 9:00-10:30 pm KST	1. *Aemal Khan* 2. *Katharina Richert* 3. *Aemal Khan* 4. *Katharina Richert*	*Webinar 2 – Theories of Change* 1. Short slide deck summarizing Theories of Change (10 mins) 10. Discussion of two readings (30 minutes) 5 minute break 11. Two projects randomly selected to present their Theory of Change (10-minute presentations, 5 minutes of questions) 12. Questions and answer session (15 minutes) Immediately after the seminar participants receive a video for Webinar 3, readings and relevant material.	Any time before Webinar 3 Time and duration agreed between project team, technical assistance teams (IEU / C4ED)	IEU and C4ED specialists	Technical assistance teams work with project teams to develop and refine the project's evaluation questions and definitions of indicators
Monday 12 October 9:00-10:30 pm KST	1. *Martin Prowse/ Solomon Asfaw* 2. *Clementine Sadania* 3. *Martin Prowse/ Solomon Asfaw* 4. *Clementine Sadania*	*Webinar 3 - Evaluation questions and indicators* 1. Short slide deck on evaluation questions and indicators (10 mins) 2. Discussion of two readings (30 minutes) 5 minute break 3. Two projects randomly selected to present evaluation questions and indicators (10-min presentations, 5 mins of questions) 4. Questions and answer session (15 minutes) Immediately after the seminar participants receive a video for Webinar 4, readings and relevant material.	Any time before Webinar 4 Time and duration agreed between project team, technical assistance teams (IEU / C4ED)	IEU and C4ED specialists	Technical assistance teams work with project teams to discuss evaluation designs based on experimental impact evaluation methods

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Agenda for the Design Workshop Series

Date of weekly webinars	Led by	Contents of webinar	Breakout session	Led by	Contents of breakout session
Monday 19 October 9:00-10:30 pm KST	1. *Victoria Khan* 2. *Esther Heesemann* 3. *Victoria Khan* 4. *Esther Heesemann*	***Webinar 4 - Experimental impact evaluation*** 1. Short slide deck on experimental impact evaluation methods (10 mins) 2. Discussion of two readings (30 minutes) 5 minute break 3. Two projects randomly selected to present experimental research designs (10-min presentations, 5 mins of questions) 4. Questions and answer session (15 minutes) Immediately after the seminar participants receive a video for Webinar 5, readings and relevant material.	Any time before Webinar 5 Time and duration agreed between project team, technical assistance teams (IEU / C4ED)	IEU and C4ED specialists	Technical assistance teams work with project teams to discuss evaluation designs based on non-experimental impact evaluation methods
Monday 26 October 9:00-10:30 pm KST	1. *Martin Prowse/ Solomon Asfaw* 2. *Nicholas Barton* 3. *Martin Prowse/ Solomon Asfaw* 4. *Nicholas Barton*	***Webinar 5 - Non-experimental impact evaluation*** 1. Short slide deck on non-experimental impact evaluation methods (10 mins) 2. Discussion of two readings (30 minutes) 5 minute break 3. Two projects randomly selected to present non-experimental research designs (10-min presentations, 5 mins of questions) 4. Questions and answer session (15 minutes) Immediately after the seminar participants receive a video for Webinar 6, readings and relevant material.	Any time before Webinar 6 Time and duration agreed between project team, technical assistance teams (IEU / C4ED)	IEU and C4ED specialists	Technical assistance teams work with project teams to discuss sample sizes and power calculations

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Agenda for the Design Workshop Series

Date of weekly webinars	Led by	Contents of webinar	Breakout session	Led by	Contents of breakout session
Monday 2 November 9:00-10:30 pm KST	1. *Martin Prowse/ Solomon Asfaw* 2. *Marc Gillaizeau* 3. *Martin Prowse/ Solomon Asfaw* 4. *Marc Gillaizeau*	***Webinar 6 - Sample size and power calculations*** 1. Short slide deck on sample size and power calculations (10 mins) 2. Discussion of two readings (30 minutes) 5 minute break 3. Two projects randomly selected to present sample size and power calculations (10-min presentations, 5 mins of questions) 4. Questions and answer session (15 minutes) Immediately after the seminar participants receive a video for Webinar 7, readings and relevant material.	Any time before Webinar 7 Time and duration agreed between project team, technical assistance teams (IEU / C4ED)	IEU and C4ED specialists	Technical assistance teams work with project teams on timeline and budget
Monday 9 November 9:00-10:30 pm KST	1. *Seasol Kang* 2. *Elisabeth Dorfmeister* 3. *Seasol Kang* 4. *Elisabeth Dorfmeister*	***Webinar 7 - Timeline and budget*** 1. Short slide deck on timeline and budget of an impact evaluation (10 mins) 2. Discussion of two readings (30 minutes) 5 minute break 3. Two projects randomly selected to present timeline and budget of an impact evaluation (10-min presentations, 5 mins of questions) 4. Questions and answer session (15 minutes) Immediately after the seminar participants receive a video for Webinar 7, readings and relevant material.	Any time before Webinar 8 Time and duration agreed between project team, technical assistance teams (IEU / C4ED)	IEU and C4ED specialists	Technical assistance teams work with project teams on rapid-fire presentation

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Agenda for the Design Workshop Series

Date of weekly webinars	Led by	Contents of webinar	Breakout session	Led by	Contents of breakout session
Monday 16 November 9:00-10:30 pm KST	*Martin Prowse/ Solomon Asfaw*	***Webinar 8 - Rapid-fire presentations and closing remarks*** 1. Opening remarks from IEU (3 minutes) 2. Opening remarks from C4ED (2 minutes) 3. 3-minute rapid-fire presentations all project deliverables with 2-minutes of questions 4. Closing remarks from IEU (15 minutes) Participants who complete the entire course will receive a completion certificate.	n/a	n/a	n/a

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APPENDIX II: OUTCOMES FROM GROUP WORK

Group 1.A) "Climate-Smart Agriculture (CSA) Risk Sharing Facility for MSMEs (Guatemala and Mexico)" (FP048)

GCF grant: USD 20 million

AE: Inter-American Development Bank (IDB)

Goal: The goal of this project is to deliver tailored financial instruments and services to individual farmers and MSMEs working in the CSA in Mexico and Guatemala. CSA projects in Mexico and Guatemala are currently constrained by limited access to finance for innovation and growth because traditional lenders do not offer loan products under terms that allow for capital constrained agricultural producers to experiment with progressive technologies and approaches. This lack of access to adequate financial services reduces the ability of agricultural producers in these countries to adapt to pressing climate change related risks.

This project aims to address this financial services gap by providing support to financial intermediaries in who will deliver financial instruments to promising agro-forestry enterprises that demonstrate environmentally sustainable practices. By supporting these organizations, the project aims to enhance the resilience of agricultural communities and reduce emissions by facilitating reforestation, better land use, and energy efficient agricultural practices.

Overall timeline: 15 years, 06/2018 – 06/2033

Breakout session 1: Theory of change
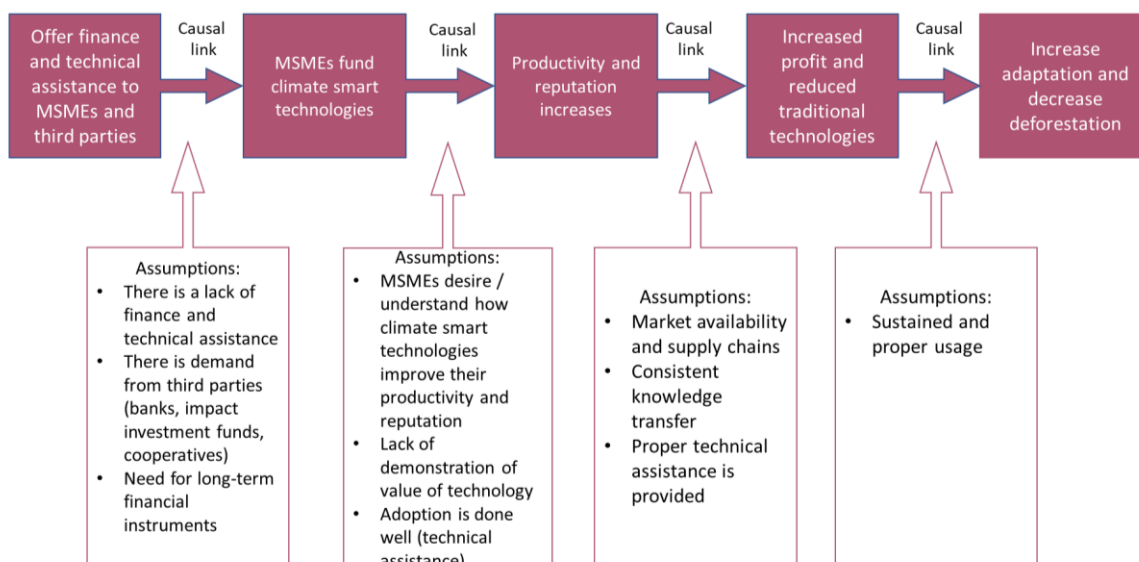
The developed ToC focuses on financial and technical assistance to MSMEs and third parties.

Breakout session 2: Evaluation questions

▪ **Main intervention and intervention most suitable for evaluation:**

The project seeks to unlock private sector lending and investment consistent with individual country national climate strategies (REDD+ strategies, Nationally Appropriate Mitigation Actions (NAMA) facilities, Country Intended Nationally Determined Contribution (INDC) commitments under the Paris agreement). The project will address CSA by targeting the following constraints: lack of suitable financial products, poor access to information on CSA techniques, and low agricultural productivity, reduced market value for agricultural products and poor value chain links, inadequate access to CSA technologies and genetic material.

▪ **Targeted beneficiaries of intervention most suitable for evaluation**:

In addition to targeting MSMEs directly, sub-projects that seek financial services from the programme will be considered for financing if they directly benefit MSMEs, demonstrate contributions to addressing climate change adaptation, mitigate the drivers of climate change (through better land use, reforestation, improved technologies, or management practices), prove a need for concessional support to make the project viable, are replicable or scalable, and meet a series of other IDB technical requirements.

▪ **Evaluation questions and indicators:**

The evaluation seeks to answer the following questions:

1. Question: Is the programme distributing loans and technical assistance?

    a. Indicator: Number of MSMEs receiving funding and technical assistance

2. Question: Does finance increase climate smart technology adoption?

    a. Indicator: Number of MSMEs that purchase climate smart technology

3. Question: Does adoption lead to increases in productivity?

    a. Indicator: Land usage, change in production

4. Question: Does adoption increase profit and reduce traditional technologies?

    a. Indicator: Change in profits / income, change in usage of traditional technologies

5. Question: Does finance increase adaptation and decrease deforestation?

    a. Indicator: Change in forest coverage

    b. Indicator: Change in capabilities to deal with climate change (knowledge, access to appropriate technology, access to finance)

    c. Indicator: Losses from shocks; long-term production, health and earnings

Breakout session 3 & 4: Impact evaluation design

Due to low sample size and a lack of a sampling framework, an experimental evaluation design is likely not feasible. Instead, a quasi-experimental matching design was developed. The goal is to match the characteristics of participant to non-participants (comparison). Matching will likely be done on age, sex, assets, income, access to finance. Obviously, it will not be possible to match on motivation for the programme, motivation for life, life goals, etc.

The programme hopes to reach up to 60,000 beneficiaries, but this will be based on the capability of the intermediaries. If the intermediaries can report on who they are working with, it will then be possible to create a sample from total participants. This will be based on the interest and ability of the intermediary.

In addition to finance, there is also technical assistance offered to MSMEs. The programme is targeting 25,000 farmers for this assistance. Thus, some farmers will get finance while some won't. This allows for a potential multi-arm design that includes the following groups:

1. MSMEs that get a loan and technical assistance (1,000 MSMEs)

2. MSMEs that get technical assistance (1,000 MSMEs)

3. MSMEs in comparison group that has loans (1,500 – 2,000 MSMEs)

4. MSMEs in comparison group without loans (1,500 – 2,000 MSMEs)

This design allows for understanding the differential impacts of the different interventions and assistance offered. For instance, it will be possible to compare group #3 to group #1 to measure the marginal effect of technical assistance on top of a loan. Group #4 can be compared to #2 to measure the total effect of technical assistance. Group #4 can also be compared to group #1 to determine the total effect of loans and technical assistance.

Breakout session 5: Sample Size and power calculations

The expected effects of a loan plus technical assistance is expected to be high for adoption of new technologies (50%-60% effect sizes), productivity (10%), profits, less usage of traditional technology (less than 50%), deforestation and adaptive capacity. The effect of technical assistance alone is expected to be much smaller, with adoption (less than 50%), productivity (less than 10%), profits, traditional technology (much less than 50%), deforestation and adaptive capacity.

The final power and sample size will be based on the need to identify impacts on productivity and identifying effects for deforestation and adaptive capacity. A first estimate gives up to 5,000 to 6,000 MSMEs in total, if the programme seeks to answer all of the above questions by developing multiple comparison groups. If instead the programme decides to answer just one, this is likely up to 2,500 people.

Breakout session 6: Timeline and budget

The programme will need to create an evaluation sample as soon as possible, ideally as intermediaries are onboarded. It will then be important to wait for participants to start working with the intermediaries, and then find the comparison groups. The baseline survey with up to 6,000 people will need to be conducted to get good quality matching variables, balance tests and tracking logistics. It is expected this could cost over 150,000 USD if using a survey firm.

Once the baseline is completed, matching can be done while the programme is being implemented. A follow-up survey, only with matched MSMEs (maybe up to 4,000 people), will then be conducted. Depending on the tracking difficulty, this could cost up to 200,000 USD. The project proposal states that 200,000 USD has been set aside for impact evaluation.

GCF grant: USD 8 million

AE: International Fund Agricultural Development (IFAD)

Goal: The overall goal of the project is to develop value chains of smallholder farmers that are resilient and adapted to the effects of climate change.

Overall timeline: 6 years, 08/2019 – 11/2024

Breakout session 1: Theory of change

The developed ToC focused on two main activities: developing and implementing business plans and matching grants with Producer's Organizations and assisting households to develop backyard gardens.
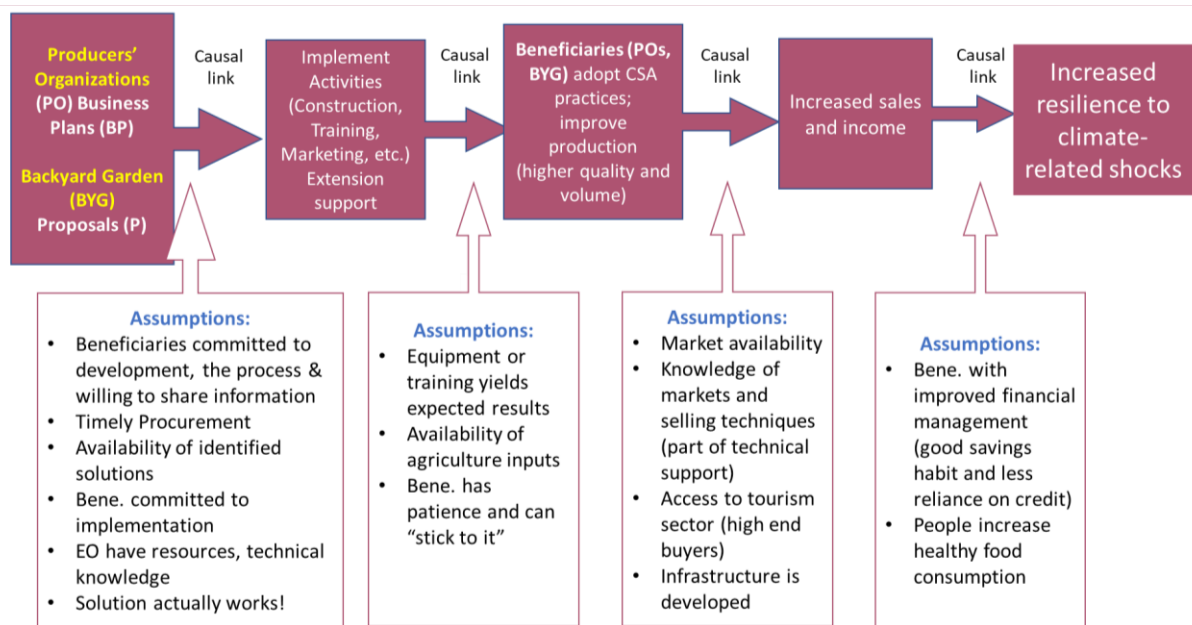
Breakout session 2: Evaluation questions

▪ **Main interventions**:

    o Project Components:

        ▪ 1. Activities related to improving climate resiliency and marketability of the value chain as well as strengthening producers organizations

        ▪ 2. Upgrading of the public infrastructure necessary for a resilient production, such as roads, drainage and information systems

    o In addition, there are crosscutting activities of institutional strengthening and research necessary for the development of both components.

▪ **Intervention most suitable for evaluation:**

    o Matching grant and backyard garden interventions were deemed to be suitable for evaluation.

- o Both interventions fall under component 1 of the programme, titled Climate Resilient Value Chains Development (CRVC). Component 1 will introduce/strengthen smallholder participation in select value chains (tomatoes, sweet peppers, hot peppers, cabbages, carrots, and onions, pineapple and beekeeping products (principally honey)), through the promotion of climate resilient and environmentally sustainable production methods; product diversification; and related innovations. It will rely on technical support and the physical presence in the project districts of climate resilient agriculture specialists. A matching grant fund will be structured to support climate resilient production and value chain development investments, with funding available to producer organizations (POs), as well as individual members receiving support from technical areas of the project. Additionally, this component will support food security, self-consumption and healthy food choices through implementation of backyard gardens.

- **Targeted beneficiaries of intervention most suitable for evaluation**:

  - o The target beneficiaries are rural, low income households for the backyard gardens and existing producers' organizations located around the country.

- **Evaluation question(s):**

For the Matching Grant Fund:

1. Question: Are the POs interested?
   a. Indicator: # business plans developed

2. Question: Have the business plans been implemented?
   a. Indicator: # business plans approved and investments made

3. Question: Are POs adopting CSA practices?
   a. Indicator: Practices/technologies adopted

4. Question: Do sales and income increase?
   a. Indicator: Sales value and household income

For the Backyard Garden:

1. Question: Are the households interested?
   a. Indicator: # of Proposals developed

2. Question: Have the backyard gardens been implemented?
   a. Indicator: # of households that received assistance and training

3. Question: Are there changes in healthy eating habits? Increased income?
   a. Indicator: Changes in eating habits/income

Overall: Is there increased resilience?
   b. Indicator: Increased savings, assets, healthy food consumption, reduced reliance on credit

Breakout session 3 & 4: Impact evaluation design

The impact evaluation design will be different between the two interventions due to their differences in implementation.

For the matching grant fund, the most appropriate design was determined to be a cluster matching quasi-experimental design. Farmers who belong to the producer's organizations and are treated under the programme will be matched to individuals nearby on a range of criteria, including age, sex, crop types, income and assets. These variables will ideally be collected at a baseline time period, which will ideally be immediately after the producer's organizations and participating farmers have been identified.

For the backyard garden, we determined that an experimental lottery design is feasible. CSA extension officers (EO) will promote the programme creating oversubscription and then identify the eligible population. Individuals will then be randomly selected into treatment and control groups.

Breakout session 5: Sample size and power calculations

For the matching grant, the main outcomes of interest are adoption of new technologies by farmers (expected to be large, with about 75% adopting), production, sales (expected to be 30% above control), income (probably less than 30%) and adaptation. The current plan is to utilize data from the programme baseline to conduct a full power test, but the programme expects to have 450 treated farmers with up to 900 comparison farmers for potential matching, with the expectation that some comparison farmers do not match well into the sample.

For the backyard gardens, the goals and expectations are more modest. The hope is to affect home consumption, food security, income, attitudes toward food. Modest effects are expected, with between 5 to 15% increases in these outcomes. Again, data from the programme baseline will be used to conduct a full power test, but it is expected that about 3000 households in total will be need, with 1000 in treatment and 2000 in control, to accommodate the small expected effect sizes.

Breakout session 6: Timeline and budget

Both projects are ongoing, so the evaluation samples need to be created as soon as possible. For backyard gardens, approximately 500 people have already been treated. CSAs will need to identify and recruitment 3000 households into the sample soon.

For the matching grant, there have been some delays in identifying enough producer's organizations. It will be necessary to wait for participants to be identified, then a comparison group can be found. Ideally the identification of the comparison sample and baseline survey will be done immediately after the participating POs and farmers are identified.

The budget is still being developed. The hope is that the CSAs can assist in all baseline data collection activities to save on costs. Follow-up data collection could include up to 4350 farmers and households across both evaluations.

Group 2.A) "Transforming the Indus Basin with Climate Resilient Agriculture and Water Management (Pakistan)" (FP108)

GCF grant: USD 34,99 million total costs

AE: Food and Agriculture Organization (FAO)

Goal: The project objective is to transform agriculture in the Basin by increasing resilience among the most vulnerable farmers and strengthening Government's capacity to support their communities to adapt.

Overall timeline: 6 years, 10/2019 – 09/2025

Breakout session 1: Theory of change
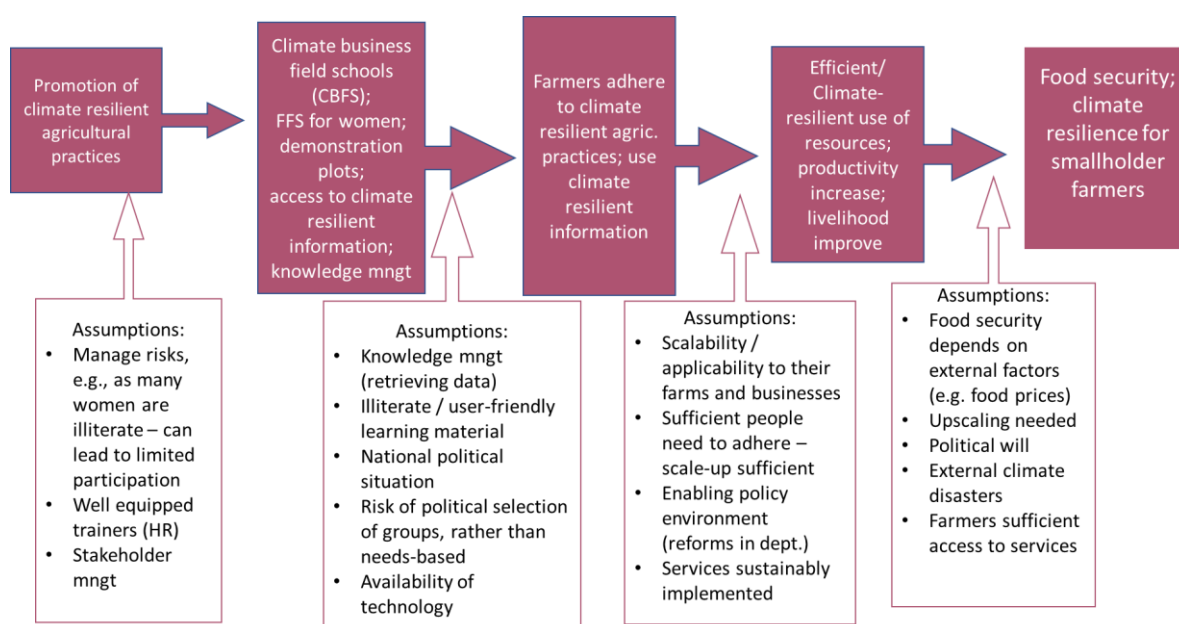
Breakout session 2: Evaluation questions

▪ **Main interventions**:

   o Project Components:

      ▪ 1. The project will develop the country's capacity to get and use the information it needs to cope with the impacts of climate change on agriculture and water management by putting in place state-of-the art technology

      ▪ 2. The project will build farmers resilience to climate change through skills, knowledge and technology.

      ▪ 3. Under the third component, the project will create a wider enabling environment for continuous adaptation and expanded sustainable uptake of climate-resilient approaches.

▪ **Intervention most suitable for evaluation:**

   o Interventions under component 2 are most suitable for the impact evaluation:

      ▪ The purpose of this component is to build on-farm resilience to climate change by supporting farmers to acquire skills on climate resilient agriculture (CRA) and on-farm

water management (OFWM), adopt technologies and engage with stakeholders that provide services relevant to climate change adaptation in agriculture. The component is aligned with GCF outcome A7.0 'Strengthened adaptive capacity and reduced exposure to climate threats.' It will deliver to vulnerable farmers tested pathways to climate-resilient agriculture and OFWM practices that draw on experiences and lessons learned from on-going activities and previous FAO and government initiatives in Pakistan and elsewhere in the region.

▪ **Targeted beneficiaries of intervention most suitable for evaluation**:

   o 32,000 households

▪ **Evaluation question(s):**

   o Did project achieve climate-resilient livelihood options?

   o Did project increase the food security situation?

   o Did the project lead to increased awareness for climate threads and responses (gender disaggregated)?

   o Did the project increase the perceived level of security against climate change?

Breakout session 3 & 4: Impact evaluation design

Evaluation strategy: The project conducted a feasibility study identifying poverty and vulnerability scores for the project area as well as taking different crop production areas into account. As resources are limited, not all villages with the same characteristics can be treated. This circumstance gives scope to a lottery and cluster design, in which one village builds a cluster and treatment villages are randomly selected among those villages in one union council having similar characteristics.

Potential treatment arms:

   • Treatment: individuals receiving training

   • Control: individuals not receiving training

Caveats:

Project implementation will start in early December 2019. Also, funding of the impact evaluation is not yet planned within the budget and would need government approval, which is challenging to obtain, given that the government would like to see as many resources as possible invested into the project activities. Also, whether randomization is indeed politically feasible would need to be verified. However, even if the lottery approach would not be feasible, matching approaches or a RDD would still be feasible. The bigger challenge is the early start of the intervention and concerns about availability of budget.

Breakout session 5: Sample size and power calculations

We calculate preliminary power calculations based on initial assumptions that need to be verified and calculations updated based on available data. We base the preliminary calculations in Table 1 on the main outcome of yields, for instance rice. The assumed mean production of rice would of the target population amounts to 9,81 kg of rice with the same assumed standard deviation (SD). The expected effect lies between 15-30% increase in yield.

Table 1: Preliminary power calculations

Mean	Baseline sd	Clusters per group	Total sample	R2	Size of group	Minimum detectable effect size	MDES standardized	% change
9.81	9.81	42	1,500	0.30	18.00	1.2	0.1	12

Power calculations show that a sample of 1,500 individuals in 84 villages with 18 households interviewed per village would yield a minimum detectable effect of 12% increase in yield. At the current preliminary stage, we hence assume that a sample of 1,500 households would be sufficient to conduct the impact evaluation.

Breakout session 6: Timeline and budget

For the sample of 1,500 households, we assume that every enumerator could conduct three interviews per day. The approximate costs per enumerator per day are 50 USD. One survey wave would hence amount to 25,000 USD. Calculating with baseline and endline surveys and a financial buffer would lead to estimated costs for base- and endline of 50,000 USD – 70,000 USD. The baseline would be requested by the project team to be conducted in January 2021 and the endline in January 2024. Sufficient funding of the impact evaluation is not yet guaranteed, would need to be approved by the Pakistani government and is a major concern.

Group 2.B) "Carbon Sequestration through Climate Investment in Forests and Rangelands in Kyrgyz Republic (CS-FOR) (Kyrgyzstan)" (FP 116)

GCF grant: USD 29.99 million

AE: FAO

Goal: Shift from a local economy that is currently negatively impacting on carbon storage potential of ecosystems (forest and rangelands) to a low-carbon emission economy where mitigation investments will trigger and enhance resilience of ecosystems as well as of communities

Overall timeline: 8 years, 01/2020 – 01/2027

Breakout session 1: Theory of change

The ToC for the project leading to the overarching goal of developing a low carbon emission economy was developed as follows:
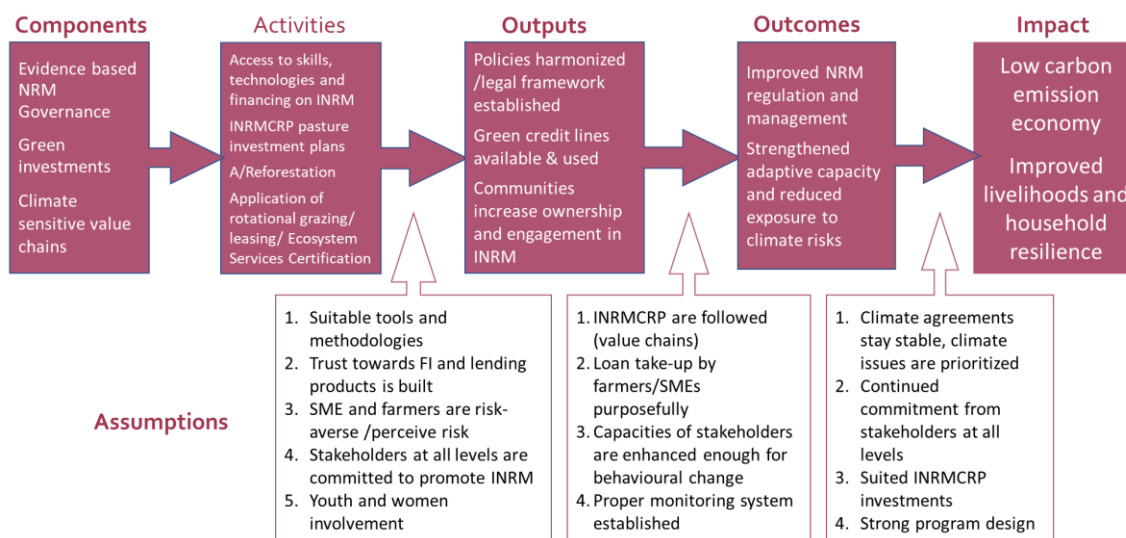
Breakout session 2: Evaluation questions

▪ **Main interventions**:

    o   Project Components:

        ▪ 1. Evidence-based Strengthening of Natural Resources Management (NRM) Governance: The leading element of this Component is to provide Kyrgyzstan with an enabling environment that supports investment for carbon sequestration through forest and rangeland management while providing economic and social incentives to the users of natural resources, to avoid the depletion of carbon sink potential.

        ▪ 2. Green Investments for Forest and Rangeland Rehabilitation: Forest ecosystems hold the largest shares of terrestrial carbon, and trees and perennial-grass pastures are dynamically sequestering CO_2 from the atmosphere into long-term biomass in trees and shrubs. The climate rationale of green investments in forests and pasture rehabilitation is anchored in

the imperative of maintaining the health of these ecosystems to perform their carbon cycle functions.

- 3. Climate-sensitive Value Chains Development: Strengthen the sustainability of the investment in carbon sequestration carried out in Component 2 by creating economic opportunities with limited risk, in order to decrease pressure on and degradation of natural resources in the project intervention areas, thus contributing also to the enhanced resilience.

- **Intervention most suitable for evaluation:**
  - Component 3 on Climate-sensitive Value Chains Development:
    - The investment under Component 3 is referring to the provision of concessional investment through activation of special credit lines and provision of loans by the Russian-Kyrgyz-Development-Fund (RKDF) and technical assistance that demonstrate success in rangeland management. Through provision of capacity development and the increased access to credit (via RKDF co-financing), Component 3 will support the development of the selected value chains' participants towards higher efficiency and competitiveness of the marketed product. Project activities in Component 3 will facilitate access to the external credit line provided by the RKDF (senior loan as co-financing). This would eventually contribute to decreasing pressure on and degradation of natural resources in the project intervention areas. The component will promote Forest Stewardship Council (FSC) Ecosystem Services Certification that will enable local producers market their products and services with the specific FSC label, e.g. water from responsibly managed forests" or support running green tourism businesses.
    - The intervention include trainings of the beneficiary population, such as on business proposal writing, technical capacity or financial literacy.

- **Targeted beneficiaries of intervention most suitable for evaluation**:
  - 432,450 individual direct beneficiaries

- **Evaluation question(s):**
  - Did the project improve the lives of the target population in terms of income, assets or health?

Breakout session 3 & 4: Impact evaluation design

Evaluation strategy: In the ideal case, we propose random selection of treatment village clusters stratified by the three regions in which the programme is operating based on a phase-in design. It will not be possible to treat all villages at the same time due to resource constraints and project set-ups. Hence, the approach of randomly selecting a first cohort to be treated, seems natural. Cohorts which receive the treatment at a later stage may then function as control group.

Potential treatment arms:

- Treatment: Villages receiving the treatment in form of trainings
- Control: Villages receiving no intervention during the evaluation period

Caveats:

The project team seemed confident that a random selection of the first treatment cohort would be politically feasible. However, the actual feasibility of pure randomization needs to be verified in the ongoing political

process of project set-up and implementation. If pure randomization will proof infeasible, matching approaches potentially combined with DiD or RDD designs based on vulnerability scores of the conducted feasibility study are still very favourable second-best options.

Breakout session 5: Sample size and power calculations

We calculate preliminary power calculations based on initial assumptions that need to be verified and calculations updated based on available data. We base the preliminary calculations in Table 1 on the main outcome of income. The assumed mean yearly income of the target population amounts to 993 USD per year. We calculate with an assumed SD of 500 USD for the sample. The expected effect lies at 20% increase in income.

Table 1: Preliminary power calculations

Mean	Baseline sd	Clusters per group	Total sample	R2	Size of group	Minimum detectable effect size	MDES standardized	% change
993.00	500.00	55.56	2000.00	0.30	18.00	52.46	0.10	0.05
993.00	500.00	55.56	2000.00	0.00	18.00	62.71	0.13	0.06
993.00	500.00	27.78	1000.00	0.30	18.00	74.20	0.15	0.07
993.00	500.00	27.78	1000.00	0.00	18.00	88.68	0.18	0.09
993.00	500.00	11.11	400.00	0.30	18.00	117.31	0.23	0.12
993.00	500.00	13.89	500.00	0.00	18.00	125.41	0.25	0.13

Power calculations show that a sample of 1,000 individuals in 56 villages with 18 households interviewed per village would yield a minimum detectable effect of 7,5% increase in income. At the current preliminary stage, we hence assume that a sample of 1,000 households would be sufficient to conduct the impact evaluation.

Breakout session 6: Timeline and budget

For the sample of 1,000 households, we assume that every enumerator could conduct three interviews per day. The approximate costs per enumerator per day are 60 USD. One survey wave would hence amount to 20,000 USD. Calculating with baseline and endline surveys and a financial buffer would lead to estimated costs for base- and endline of 40,000 USD – 60,000 USD. The baseline is envisioned to be conducted in summer 2021 and the endline in summer 2023. Sufficient funding of the impact evaluation is not yet guaranteed but needs to be further discussed.

GCF grant: USD 18.6 million

AE: United Nations Development Programme (UNDP)

Goal: Ecuador has an integrated, coherent package of policies and measures to reduce emissions from land-use degradation and land-use change.

Overall timeline: 7 years, 08/2019 – 02/2026

Breakout session 1: Theory of change

| Input 2.1.1 Develop management models for cocoa, coffee, palm oil and livestock to increase investments from public and private sectors. | Input 2.1.2 Support the transformation of businesses from producing raw materials to have finished goods | Output 2.1 Private, public partnership established for marketing deforestation-free commodities and/or finished goods. | Input 1.2.4 Commercialize raw and/or finished deforestation free products in national and international markets. | Outcome 2: Financial and economic incentives are implemented to promote the transition to sustainable production systems in non- forest areas. | GOALS 2026: Ecuador has an integrated coherent package of policies and measures to reduce emissions from land use and land use change. |

Input 1.2.3 Develop legal instruments to institutionalize sustainable production and deforestation free policies.

Assumptions:

A strong business plan developed by the organizations is attractive to the public and private investors.

Assumptions:

Finished goods trading gets better prices in the markets and the incomes of the organizations increase.

To transform raw products into finished goods requires more labor force creating new jobs strengthening local economy.

Assumptions:

Private and public sector are interested to establish strategic alliances to trade deforestation free products (raw and processed) for specialized markets.

Assumptions:

There is national and international market demand for deforestation free products (raw and processed).

Assumptions:

Agricultural areas are highly productive and there is no need to expand the agricultural frontier to forested areas.

Free deforestation production and its commercialization have a legal frame institutionalized by the government.

Farmers are committed to sustainable production practices and no deforestation.

The ToC shown above is well articulated with the goal that by the end of the project cycle, Ecuador will have integrated, coherent packages and measures to reduce emissions from land use and land-use change.

At every stage of the activities, different assumptions will be considered to achieve the desired outcome and goal.

Breakout session 2: Evaluation questions

- **Main interventions**: The Ecuador REDD+ project has four essential components.

  o Project Components:

    - 1. Policies and institutional management for REDD+

    - 2. Transition to sustainable agricultural production systems

    - 3. SFM; conservation and restorations

    - 4. Operational management of the National REDD+ Action Plan

- **Intervention most suitable for evaluation:**

  o Transition to sustainable agricultural production systems (Component 2)

    - Implementation of financial and economic incentives towards the transition to sustainable production systems in non-forest areas

    - Establishing a private-public mechanism for marketing deforestation-free commodities from the Amazon

- **Targeted beneficiaries of intervention most suitable for evaluation**:

  o The project aims to engage with the private sector to create a private-public partnership that produces and sells deforestation-free commodities produced in the Amazon region. Different values will be developed to guarantee an increase in investments from both sectors, and have greater return rates, benefiting local producers directly while eliminating intermediaries in the chain.

- **Evaluation question(s):**

  o To what extent do the producers' associations maintain the forest on their farms?

Breakout session 3 & 4: Impact evaluation design

During the breakout session, the project team and the impact evaluation specialists discussed different impact evaluation designs, encompassing experimental and quasi-experimental methods. Randomization is not possible, as associations were already selected by a previous project (PROAmazonia), and the beneficiaries are currently receiving the 'initial treatment' in terms of the development of the business plans and training. As a result, and in consultation with the project team, the impact evaluation specialists suggested that experimental design is impossible.

For this project, the impact evaluation specialist suggests the DiD with a matching design. The interventions will be provided in the form of three groups:

Group A – Control Group – 6 Associations without treatment (Matching with B and C)

Group B – Initial Treatment – 6 Associations with initial treatment (PROAmazonia Programme)

Group C – Additional Treatment – 6 Associations with additional Treatment (FP110 – RBP REDD+)

For the baseline data collection, the project team will use the forest cover data from the official maps. Additionally, the farms have been in limits and are already geo-referenced. In selecting the control group, the farms will be mapped that share the same commodities and geographical areas; similar income levels, sales, and productivity.

Breakout session 5: Sample size and power calculations

The project activities would begin by the end of this year. The impact evaluation specialists were not able to calculate the sample size due to the limited information. As a result, no sample size and power calculations were conducted.

Breakout session 6: Timeline and budget

The beginning of the interventions and the baseline data collection exercise has not yet been decided but is planned during the last quarter of 2021. The project is envisioning three waves of data collection, which is baseline, midline, and endline. The project team is also planning to collect quarterly monitoring data. For the detailed timeline, refer to the table below.

Timeline - Impact Evaluation Outcome 2

	ACTIVITY	2020 Q4	2021 Q1	2021 Q2	2021 Q3	2021 Q4	2022 Q1	2022 Q2	2022 Q3	2022 Q4	2023 Q1	2023 Q2	2023 Q3	2023 Q4	2024 Q1	2024 Q2	2024 Q3	2024 Q4	2025 Q1	2025 Q2	2025 Q3	2025 Q4	2026 Q1
Baseline	Preparation of Scoping Mission	X																					
	Scoping mission	X																					
	Desk review	X																					
	Writing of IE design report	X																					
	Preparation of survey tools		X																				
	Preparation data collection (Field work planning)		X																				
	Pre-test and training (Mapping teams training)		X																				
	Data collection (Field work - GPS data collection of farms limits)		X	X																			
	Farms GPS data processing (Desk work)			X																			
	Data analysis - Calculation of forest cover in farms (Using forest cover maps 2019 produced by Ministry of Environment)		X																				
	Writing of IE Baseline report			X																			
	Outcome 2 activities					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Midline	Data analysis - Calculation of forest loss rate (Using forest cover maps produced by Ministry of Environment and GFW)				X								X								X		
	Writing of IE Midline report				X								X								X		
Endline	Data analysis - Calculation of forest loss rate (Using forest cover maps produced by Ministry of Environment* and GFW)																						X
	Writing of IE Endline Report																						X
	Dissemination of findings																						X

GCF grant: USD 35 million

AE: IDB

Goal: The programme's general objective is to help improve the climate resilience of forests in areas critical to the water supply. Its specific objectives are to: (i) restore forest cover; and (ii) strengthen governance and financial sustainability for AFM. The programme will encourage the participation of women by incorporating a gender perspective into its activities.

Overall timeline: 5 years, 01/2021 –12/2025

Breakout session 1: Theory of change
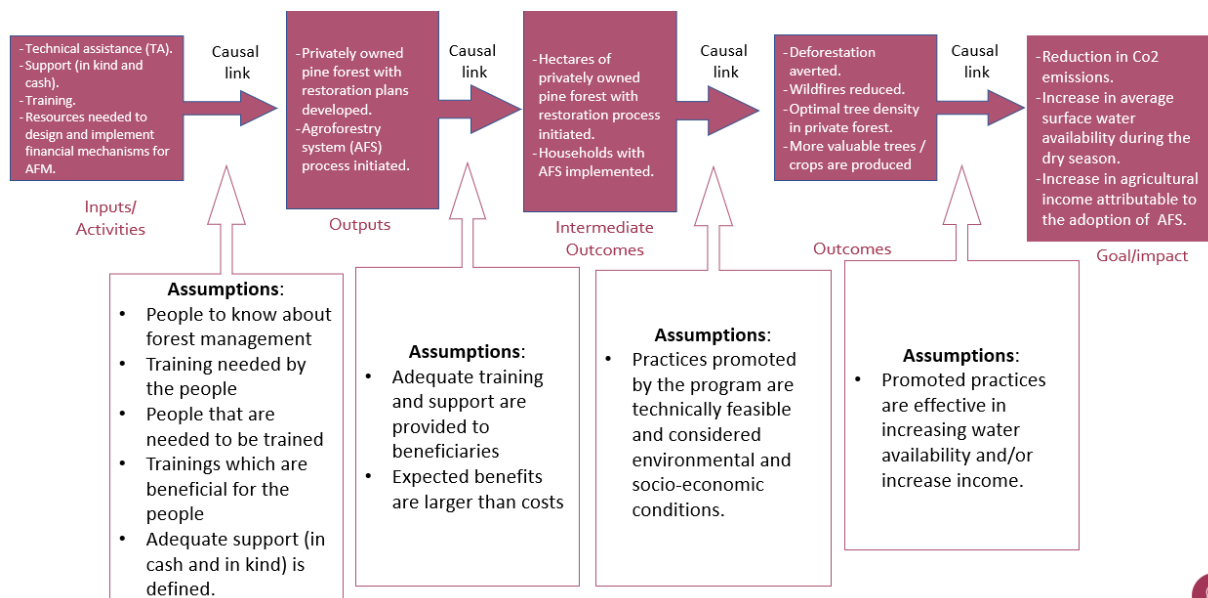
Breakout session 2: Evaluation questions

- **Main interventions**:
  o Project Components:
    - 1. Restoration of forest coverage
    - 2. Strengthening governance and financial sustainability

- **Intervention most suitable for evaluation:**
  - The project component most suitable for evaluation is on the restoration of forest coverage.
    - In particular, the provision of ecosystem services for forests as a proxy for resilience, specifically through the increased availability of surface water in the dry season and reduced greenhouse gas emissions directed to rural families.

- **Targeted beneficiaries of intervention most suitable for evaluation**:
  - 27,000 families that will participate in restoration, AFS, or AFM activities

- **Evaluation question(s):**
  - Does the project contribute to increase average availability of groundwater during the dry season?
  - Does the project contribute to decrease CO2 emissions?
  - Does the project contribute to increase annual agricultural income?

Breakout session 3 & 4: Impact evaluation design

Evaluation strategy: Experimental method: Phased-in design with clusters

Potential treatment arms:

- It is possible to implement a clean phased-in design where the beneficiaries of year 4 treatment are the control group for beneficiaries of year 2.

- This means any impact on household income could be observed within a two-year period

Caveats:

While a well-designed phased-in RCT is possible for the effect on the 27,000 families that receive treatment, for the other evaluation questions it will be necessary to use satellite data on forest coverage and a SWAT model using field hydrometeorological data from six micro-watersheds. For these components no rigorous impact evaluation design could be found.

Breakout session 5: Sample size and power calculations

- For agricultural income

$$MDE = (t(1-k) + t(\alpha) * \sqrt{\frac{1}{P(1-P)}} \sqrt{\frac{\sigma^2}{N}}$$

- MDE = 0.2 SD
- Sample size = 620 agricultural units (310 treatment group and 310 control)
- Power = 80%
- Significance level = 5%
- Clusters to be defined (based on proximity, location in the same watershed, etc.)
- Secondary data is being identified (to be considered in the analysis)

Breakout Session 6: Timeline and Budget

Total budget: 200,000 USD

	2021				2025			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Baseline survey								
Sample definition	X							
Pilot survey		X						
Pollster training	X	X						
Field work		X	X					
Digitalization of survey data			X	X				
Database and report			X	X				
Endline survey								
Pollster training					X			
Field work						X	X	
Digitalization						X	X	
Dabase and report							X	X
Analysis								
Senior consultant							X	X
Junior consultant							X	X
Other expenses							X	X

GCF grant: USD 34,542,982 million

AE: International Union for Conservation of Nature (IUCN)

Goal: Reduce the cost of climate change induced drought on Kenya's national economy by increasing resilience of the livestock and other land use sectors in restored and effectively governed rangeland ecosystems. Strengthen climate change adaptation in Kenya's arid and semi-arid lands.

Overall timeline: 5 years, 11/2019 – 10/2024

Breakout session 1: Theory of change
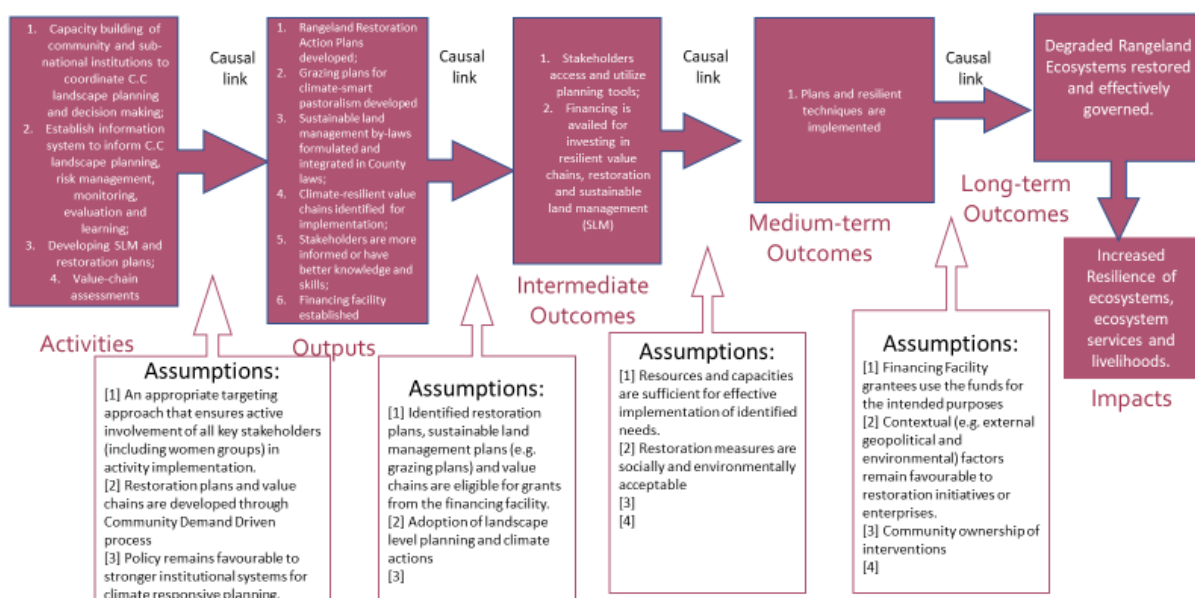
Breakout session 2: Evaluation questions

▪ **Main interventions**:

    o Project Components:

        ▪ 1. Climate change adapted planning for drought resilience

        ▪ 2. Restoration of rangeland landscapes for EbA

        ▪ 3. Climate change resilient ecosystem management for investments

▪ **Intervention most suitable for evaluation:**

    o Intervention rangeland restoration:

    o Part of this intervention will be an implementation of priority community-based rangeland restoration activities and integrated land/water management systems in catchments areas.

▪ **Targeted beneficiaries of intervention most suitable for evaluation**:

    o Communities and rural households in the catchment areas.

- o Did the project increase resilience of ecosystems and ecosystem services?
- o Did the funded activity increase resilience of targeted pastoral communities?
- o Did the funded activity training activities increase awareness, knowledge and skills in climate change adaptation?

Breakout session 3 & 4: Impact evaluation design

Evaluation strategy: Quasi-Experimental Methods (DiD Design with Matching)

Potential treatment arms:

- The project will be implemented on a landscape scale where all people are affected by climate disasters.

- There are two possible control group scenarios:

  - Within the priority landscapes if large clusters are possible, we can have a control group design within the three landscapes.

  - However, if spill-over effects cannot be restricted within the three priority landscapes, the communities from the neighboring landscapes could be matched to the communities within the treatment area.

  - It is recommended to have some before / after design that is collecting baseline and endline data.

Caveats:

The Project will be implemented in three landscapes covering 11 "counties". Treatment (restoration) can be in clustered in large enough clusters, but spillover effects cannot be avoided. The reason is that grazing grounds could be very mobile and control communities would be able to use common restored ground. For this reason, a geographic RDD through matching will not be possible and finding a suitable control group will only be possible with some detailed geographic cluster information.

Breakout session 5: Sample size and power calculations

The following assumptions will lead to a sample size of about 400-2,500 households:

- $t1=1.645$ (5% significance)

- $t2= 0.842$ (80% power)

- $\sigma_y= 1$ (Assumed SD of livestock in rural Kenya)

- $\delta= 0.1-0.25$ (Minimum detectable effect)

- P Proportion of the study that is randomly assigned to the treatment group

- $n = (\frac{1}{P\delta^2} \sigma_y^2 \frac{(t_1+t_2)^2}{-P+1})$; $n_{\delta=0,25} = 400$ - $n_{\delta=0,1} = 2500$

Breakout Session 6: Timeline and budget

BASELINE EVALUTION ACTIVITIES	Jan				Feb				Mar				Apr				May				Jun				Jul				Aug				Sep				Oct				Nov				Dec			
	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
Formation of Core Evaluation Team (1 day)	█																																															
Documentation Review (1 Week)		▒																																														
Preparation of Scoping (2 Weeks)			▒	▒																																												
Scoping Mission (30 days to cover 11 counties)					▒	▒	▒	▒																																								
Finalizing Evaluation Design and Theory of Change - TOC (5 days)									▒	▒																																						
Sampling (2 Weeks)											▒	▒																																				
Writing Evaluation Design Report (1 Week)													▒																																			
Development of Data Collection/ Survey Tools/Instruments ▪ Questionnaires, KIIs, FGDs etc. (1 Week)														▒																																		
Training on Use of Survey Tools (10 Days)															▒	▒																																
Pretesting survey Tools (10 Days)																	▒	▒																														
Data Collection																			▒	▒	▒	▒																										
Data Entry, Cleaning and Analysis																							▒	▒	▒	▒																						
Reporting of Findings																											▒	▒	▒	▒																		
Dissemination of Findings																															▒	▒	▒	▒														

- Midterm & End line timelines will be similar to baseline except that there will be no development of evaluation design, no further sampling and no writing of evaluation design report.
- Midterm Review planned to start 1st Quarter Year 4; End line to start in 4th Quarter Year 5.
- In case of unforeseen delays, the start of the Baseline could be pushed to March and end in December.

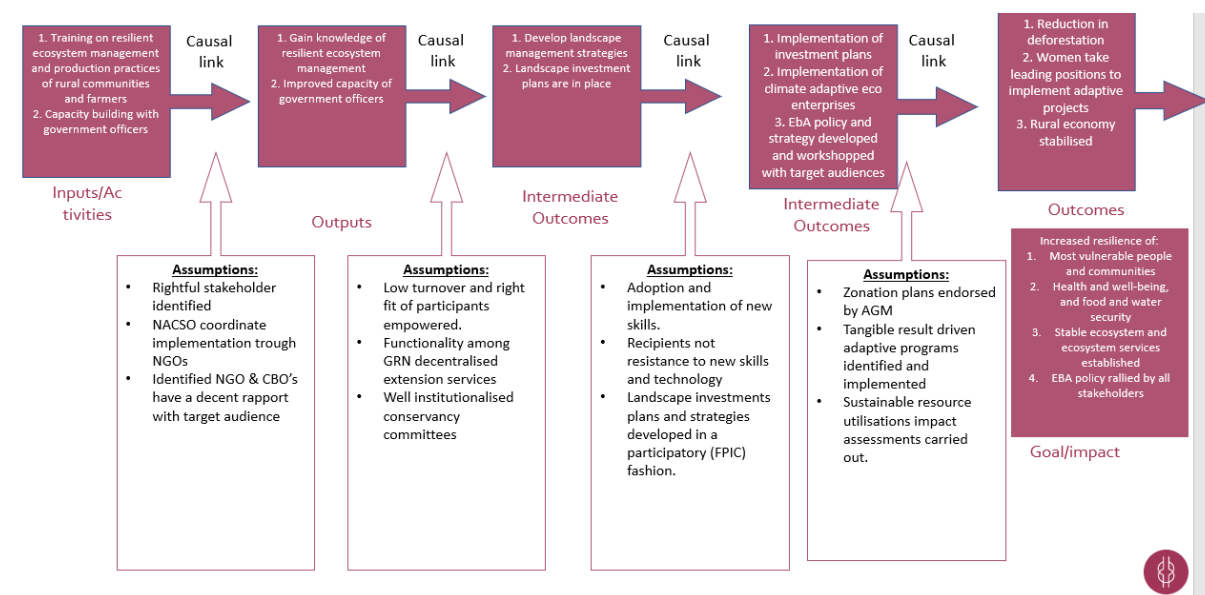| Activities	Description	USD
Scoping Mission (30 days to cover 11 counties)	Travel cost (trips to & from counties)	1,100.00
	Staff cost	5,500.00
	Community facilitation	2,200.00
	Consultant	6,000.00
Finalizing Evalution Design and Theory of Change - TOC (5 days)	Consultant	1,000.00
Sampling (2 Weeks)	Consultant	2,000.00
Writing Evaluation Design Report (1 Week)	Consultant	1,000.00
Development of Data Collection/ Survey Tools/Instruments (1 Week)	Consultant	1,000.00
Training (on) and pre-testing of Survey Tools (4 Days)	Travel	700.00
	Staff cost	2,000.00
	Workshop/venue	2,100.00
	Enumebrators (30 per landscape)	18,000.00
	Consultant	800.00
Data Collection (in 7 out of the 11 counties, we need at least 30 villages)	Consultant	9,000.00
	Enumerators	13,500.00
	Supervisors	7,000.00
Data Entry, Cleaning and Analysis (20 days)	Consultant	4,000.00
Reporting of Findings (20days)	Consultant	4,000.00
Dissemination of Findings (5 days)	Consultant	1,000.00
	Workshop/venue (could be virtual)	1,000.00
TOTAL		**82,900.00**

GCF grant: USD 8,904,000 million

AE: European Investment Fund (EIF)

Goal: To increase climate change resilience of productive landscapes in Namibia through implementation of EbA actions that strengthen social and ecological systems to sustain livelihoods at local level and facilitate value chains of natural resources.

Overall timeline: 5 years, 08/2019 – 08/2024

Breakout session 1: Theory of change

Breakout session 2: Evaluation questions

▪ **Main interventions**:

    o   Project Components:

        ▪   1. Development and implementation of climate change resilient ecosystem management and production practices that reduce the vulnerability of communities

        ▪   2. Increase the resilience of productive landscapes to support ecosystem goods and services that improves livelihoods for local communities

        ▪   3. Documentation, dissemination and uptake of lessons learned

▪ **Intervention most suitable for evaluation:**

    o   EbA through knowledge building within the targeted communities. This activity is based on:

        ▪   Design of guidelines and proposal templates for the Small Grants Facility

        ▪   Undertake training in each landscape to build capacities of all stakeholders on project development and management

- Implement a Small Grants Facility to support EbA interventions in the eight landscapes

- **Targeted beneficiaries of intervention most suitable for evaluation**:
  o Rural communities and households

- **Evaluation question(s):**
  o Did the project increase resilience of ecosystems and ecosystem services?
  o Did the funded activity increase resilience of targeted vulnerable communities?
  o Did the project reduce the cost of climate change-induced drought on targeted landscape economy?

Breakout session 3 & 4: Impact evaluation design

Evaluation strategy: DiD Design (with Matching Design)

Potential treatment arms:

- There will be eight priority landscapes that have communities that will receive some grants and knowledge building

Caveats:

The Project will be implemented in eight priority landscapes. Given that no experimental design is possible, an impact evaluation design would be dependent on finding a good control group. This will be most likely not be possible within in the priority landscapes due to spill-over problems. Finding a suitable control group will only be possible with some detailed geographic information from similar landscapes within Namibia. Hence, either some extensive geo-data analysis or listing of communities outside the priority landscapes would be needed. It is not clear if similar priority landscapes that do not receive treatment do exist.

Breakout session 5: Sample size and power calculations

No information was available.

Breakout session 6: Timeline and budget

- The project has internal monitoring systems in place which will measure the impact as it is rolled out

- The project impact auditing will be carried out annually

- Budgetary commitments are done to carry out the exercise

- Namibia Statistics Agency Census results (2011) and Labor Force Survey results of (2018) will be used to benchmark the impact of the project in target landscape
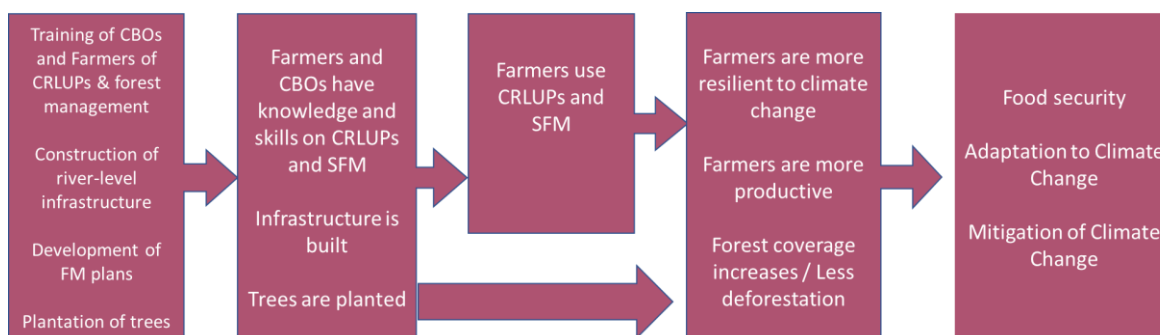
GCF grant: USD 39.3 million

AE: FAO

Goal: To enhance the resilience of ecosystems and vulnerable communities in Nepal's Churia region through promotion of CRLUPs and SFM.

Overall timeline: 7 years, 01/2020 – 12/2026

Breakout session 1: Theory of change


Breakout session 2: Evaluation questions

▪ **Main interventions**: On-farm interventions, construction of water related infrastructure natural FM through CBOs, forest plantations & establishment of nurseries, institutional strengthening, public awareness and knowledge generation

  o Project Components:

    ▪ 1. **Scaling up** climate-resilient sustainable natural resources management (SNRM)

    ▪ 2. **Strengthening institutions and planning** for climate resilient SNRM

    ▪ 3. **Improving knowledge, awareness and local capacity** for climate resilient SNRM

  ▪ The main channel from the project to the final beneficiary (the farming households) are the CBOs, who organize the trainings and manage the community forests.

▪ **Intervention most suitable for evaluation:**

  o The most suitable interventions are the first two subcomponents of component 1, as they target the farmers and CBOs directly.

    C1.1 On-farm interventions
      ▪ Establishment of farmer field schools,
      ▪ Training of farmers to apply CRLUPs, agroforestry and livestock management practices
      ▪ Construction of water related infrastructure (dams, gully stabilization etc.)
    C1.2 Natural FM through CBOs
      ▪ Support CBOs in the development of FM plans
      ▪ Train CBOs to apply SFM practices

Component 2 and 3 target region-wide institutions and might potentially affect all households in the Churia region and beyond.

- **Targeted beneficiaries of intervention most suitable for evaluation**:

The target areas are 26 river systems (see map). The target population are the members of 570 forest community groups, which is a subgroup of the 750 CBOs, which are covered by the project.

We suggest to exclude the remaining 180 CBOs to increase the homogeneity of the study population, which will facilitate the identification of a suitable control group. We believe that because the forest community groups make up for the majority of treatment CBOs, a focus on those does not affect the external validity of our findings severely.
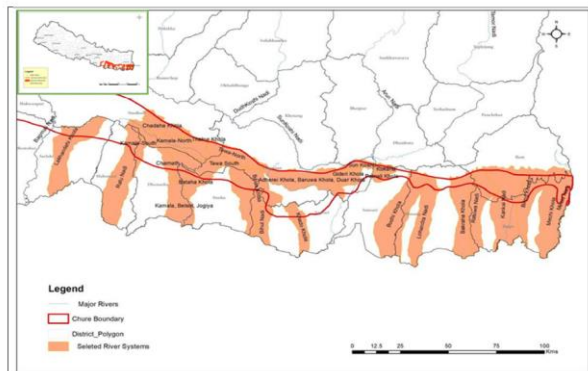
- **Evaluation question(s):**

The identified evaluation questions address adaptation to climate change and mitigation.

- o Has the project improved the livelihoods of the CBO members?
    - Are CBO members more resilient?
    - Are CBO members more food secure?
    - Do CBO members have higher adaptive capacity?
- o Have the GHG emissions in the project area been reduced?
- o Has community forest cover in the project area increased?

Breakout session 3 & 4: Impact evaluation design

Evaluation strategy: We suggest a two-stage DiD with matching design. Randomization is not possible because the river systems have been chosen by vulnerability criteria. In the first stage, we will match the 570 forest CBOs of the 26 project river systems with CBOs in the 24 out-of-project river systems in the project districts. Identifying a comparison group outside of the project districts is not possible as similar development projects target the river systems in the bordering district. Within the 26 river systems, it will not be possible to find a comparison group because of river system level interventions. At the second stage, we match CBO member households across the treatment and comparison CBOs. Nearest-neighbor propensity score matching (PSM) with baseline data should be used to identify suitable matches.

Potential treatment arms:

- • CBOs enrolled in the Churia project

- • CBOs not enrolled in the Churia project

Caveats:

The evaluation design will only provide impact estimates for two out of seven project subcomponents. The mitigation impacts of the plantations (financed with 19 million by GCF), as well as the institution strengthening effort cannot be evaluated.

Breakout session 5: Sample size and power calculations

The impact evaluation aims on measuring impacts on CBO level and on household level. In absence of reference statistics for the mean and SD, we assume a standard-normally distributed outcome indicator. Due to the long implementation period (5 years), we assume 20% attrition.

	# CBOs (treatment + control	# per CBO	ICC	Total # of interviews	Total # incl attrition	MDE (in SD)
Community forest coverage	250 + 250	1	-	250+250	600	0.25
Household adaptive capacity	158 + 105	5	0.15	790 + 525	1,875	0.2

Breakout session 6: Timeline and budget

The first two years of the project will be used for planning such that the involvement of the treatment CBOs will mostly fall into 2023 and occur simultaneously. The baseline data collection is planned for Q3 of year 2, hence the mid/end 2022. Two years later, the project teams plans a midline. The endline data collection will take place in late 2027.

The costs of the household and CBO level surveys are estimated at USD 124,000 per wave. Household data collections and CBO level data collections had not been planned before hand and will require additional funds. There is a possibility to use the mandatory reserved funds of FAO projects (approx. 400,000 USD) for the purpose of the evaluation. In addition, there is a project specific budget for evaluation and planning, even though without a impact evaluation specific budget line.

The project has enough funds to measure region level forest coverage and forest degradation. Yet the additional costs to collect data on community forest level are not covered.

Group 5.B) "Integrated Climate Risk Management for Food Security and Livelihoods in Zimbabwe focusing on Masvingo and Rushinga Districts (Zimbabwe)" (SAP 007)
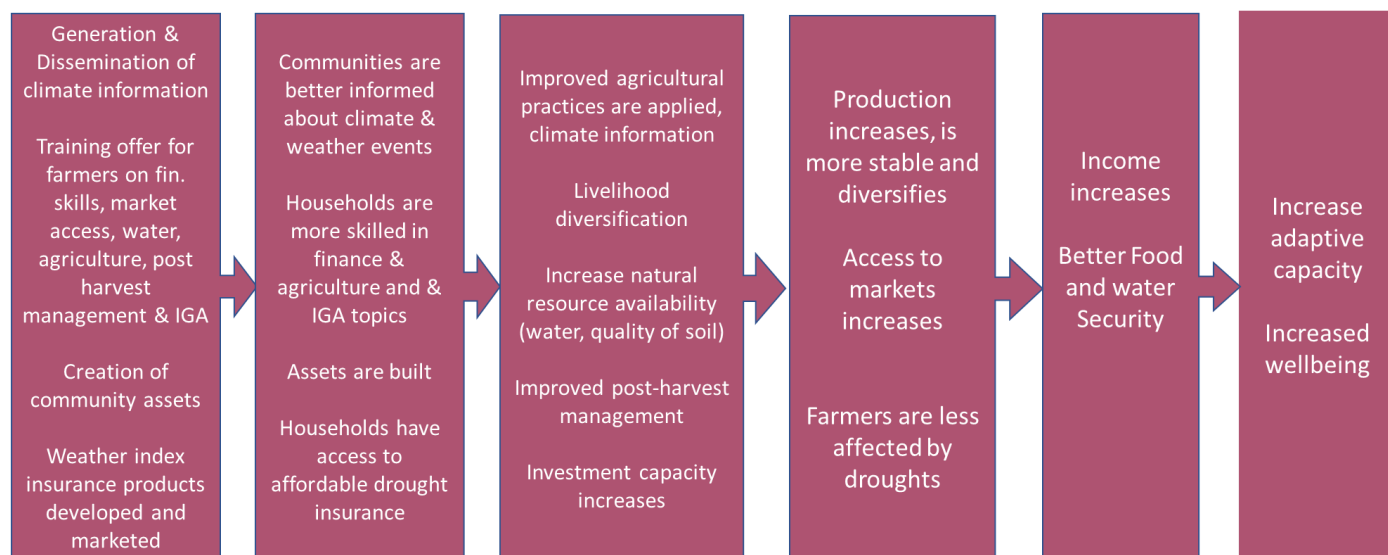
GCF grant: USD 8.8 million

AE: World Food Programme (WFP)

Goal: To support the long-term adaptation of vulnerable, food insecure households to the effects of climate change and variability

Overall timeline: 10 years, 01/2020 – 12/2023

Breakout session 1: Theory of change

Generation & Dissemination of climate information Training offer for farmers on fin. skills, market access, water, agriculture, post harvest management & IGA Creation of community assets Weather index insurance products developed and marketed	Communities are better informed about climate & weather events Households are more skilled in finance & agriculture and & IGA topics Assets are built Households have access to affordable drought insurance	Improved agricultural practices are applied, climate information Livelihood diversification Increase natural resource availability (water, quality of soil) Improved post-harvest management Investment capacity increases	Production increases, is more stable and diversifies Access to markets increases Farmers are less affected by droughts	Income increases Better Food and water Security	Increase adaptive capacity Increased wellbeing

Breakout session 2: Evaluation questions

- **Main interventions**: Community asset creation, training of farmers, distribution of weather information, weather index insurance

  o Project Components:

    - 1. Strengthening capacity and systems to support **national and community adaptation and management of climate risks** based on climate forecasts and information;

    - 2. Increasing the **adaptive capacity of food insecure households** through community-based asset creation and risk transfer;

    - 3. Enhancing the **investment capacity of smallholder farmers** to sustain climate-resilient development gains.

- **Intervention most suitable for evaluation:**

  o <u>Community asset creation:</u> Build and/or rehabilitate assets e.g. Soil and water conservation interventions, nutrition gardens, conservation agriculture practices, livestock related assets, support to storage and commodity aggregation points; FFA

  o <u>Training of FFA farmers:</u> Trainings on financial literacy, numeracy, income generating activities (IGA), on post-harvest handling and commodity quality; group marketing

  o Weather index insurance: Developing of insurance product, enrollment of FFA farmers in the first year without fees.

- **Targeted beneficiaries of intervention most suitable for evaluation:**

  - FFA households in the 50 km proximity to the created assets in the 20 participating wards in both study districts

- **Evaluation question(s):**

  o Do households experience higher food security?

  o Have households increased their resilience to climate change?

  o Have farmers increased their adaptive capacity?

  o Has the support provided to targeted farmers led to increased income sources?

  o Has the support provided to farmers improved their investment capacity?

Breakout session 3 & 4: Impact evaluation design

Evaluation strategy: DiD design with matching (panel) for the full programme. Asset location is determined such that it is accessible to the largest possible number of households, hence randomization of location not possible. Community members self-select into the participation in the project and no excess demand is expected. Control group will be formed of non-treatment wards in the same district or neighboring districts using the annual food security assessment data. Due to spillovers, no control population can be identified within the treatment wards.

Phased-in random encouragement design for the weather insurance using price subsidies, randomization on community level.

Potential treatment arms:

  o Households participating in the asset creation and trainings

  o Households participating in the asset creation and trainings and the insurance product

  o Control households (no intervention)

Caveats:

The impact of the weather information component cannot be evaluated as it is likely to spread nationwide. The non-random placing of community assets needs to be taken into account when

identifying a control group. For some wards, parts of the treatment have already started, as this programme is a top-on on an existing programme in one of the districts.

Breakout session 5: Sample size and power calculations

	Baseline mean (SD)	Effect size	# villages (treatment + control	Total # of obs needed	Total N incl attrition (0.2)
DID matching	16 (16)	10%	unclustered	**1,571+ 1,571= 3,142**	**3,770**
RCT	0 (1)	0.2SD	**93+93**	**930+930=1860**	**2232**

Effect size has been recommended by the project team based on experience. Due to the large variance in the resilience index (main outcome variable for the DiD), a large sample size is necessary.

Breakout session 6: Timeline and budget

- o Implementation start: May/June 2020 for the first third of wards

- o Baseline and follow-up surveys planned every year to track progress, endline after 3 years of implementation.

- o Estimated costs: 11-40 USD per 45min interview

- o Project funds are available for household surveys in treatment and control areas, but unclear for how many households. The analysis and design of the data collection can be done in-house. There is also a WFP funding window for experimental studies, from which the data collections for the insurance evaluation could be covered.

GCF grant: 63.6 million

AE: FAO

Goal: From 2014 to 2016 Chile reduced a total volume of 18.4 million tonnes of carbon dioxide equivalent (MtCO₂eq) in emissions from reducing deforestation, forest degradation, enhancement of forest stocks and conservation (REDD+) of which 14.53 MtCO₂eq were offered to GCF for RBP. The UNFCCC has assessed these results as being fully compliant with its REDD+ stipulations. The goal of this project is to deepen the implementation of the country's National Strategy on Climate Change and Vegetation Resources.

Overall timeline: 6 years, 08/2020 – 08/2026

Breakout session 1: Theory of change

Due to the fact that the programme is still in it's design phase, a detailed ToC could not be developed. The following general ToC was developed to help the programme create a more detailed ToC in the future.
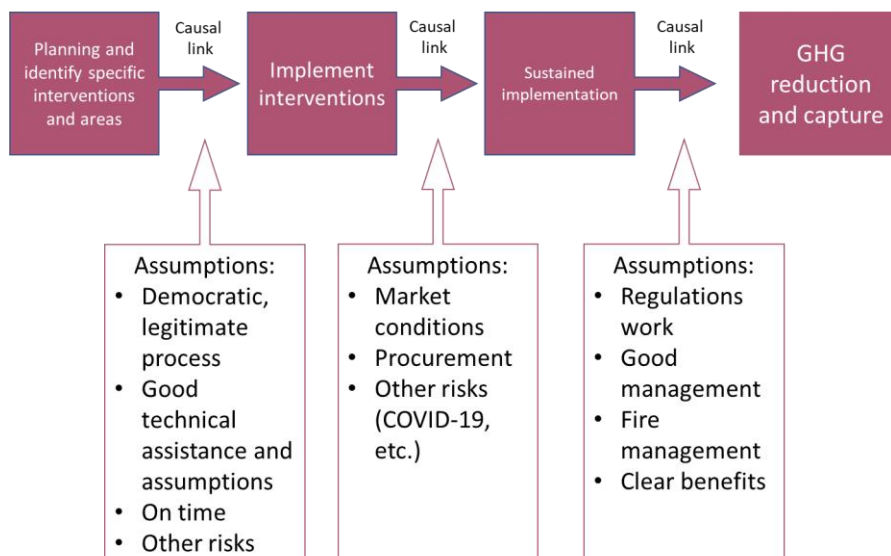
Breakout session 2: Evaluation questions

▪ **Evaluation Question(s):**

The following general evaluation questions and indicators were discussed with the programme to help motivate a more detailed development in the future.

- o Was the programme able to implement interventions?
  - a. M&E framework, # and type of interventions that exist
- o Was there sustained implementation?

         a. Track the implementation over time
         b. Measure implementation (# trees on land, etc.)
- o Was there GHG reduction and capture?
         a. Comparison of # trees on land with counterfactual

Breakout session 3 & 4: Impact evaluation design

N/A

Breakout session 5: Sample size and power calculations

N/A

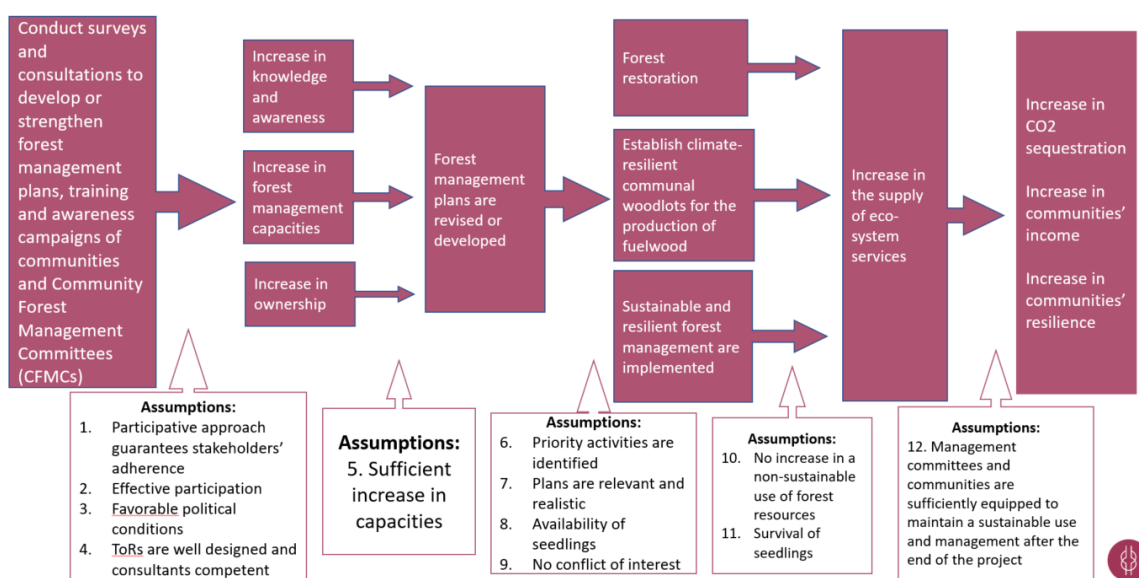**Breakout session 6: Timeline and budget**

N/A

GCF grant: USD 9 million

AE: UN Environment Programme (UNEP)

Goal: Build resilience of local communities by halting the negative cycle of climate change, agricultural yield depletion and natural resource degradation.

Overall timeline: 5 years, 02/2019 – 11/2024

Breakout session 1: Theory of change

The ToC of core activities of Component 1 and 3 was reconstructed in a participative manner by the impact evaluation specialist, the behavioural scientist and the project team. Due to time constraints, the ToC of Component 2 activities was not discussed during this session.

Breakout session 2: Evaluation questions

▪ **Main interventions**:

o Project Components:
  ▪ 1. Restoration of degraded forest ecosystems
  ▪ 2. Enhancing agricultural productivity, through judicious management of soils and planting climate-resilient crops
  ▪ 3. Improving technical and institutional capacity of governments and communities

▪ **Intervention most suitable for evaluation:**

o Forest restoration activities:

- Tree planting
- Establishment of firebreaks
- Establishment of transhumance corridors
- Training of Community Forest Management Committees (CFMC) on SFM and participative identification of priority needs

  o Farmer field schools on eco-system based agriculture:
  - Training of lead farmers on eco-system based agriculture and demonstration plots
  - Reception of weather information and training on how to use this information

- **Targeted beneficiaries of intervention most suitable for evaluation**:

  o Seven forest areas have been identified in central and north Benin based on priority criteria, including the vulnerability of local communities to climate change, the number of potential beneficiaries, the potential to build on past or on-going projects, the potential for support from local stakeholders, the potential to catalyze transformative change, and the presence and state of degradation of valuable forest areas.

  o The seven forest areas are located in seven municipalities. Within each municipality, beneficiaries of Component 2 will be selected based on their vulnerability. The eligible households will be identified in consultation with local associations working with vulnerable households.

- **Evaluation question(s):**

  The impact evaluation will seek to answer the following overarching question: *Do the project activities lead to an increase in the resilience of communities?* To answer this, the following sub-questions will be explored:
  o To what extent do training and awareness campaigns affect households' perceived risks of climate change and knowledge on adaptation practices?
  o Do the project activities lead to a large adoption of EbA practices?
  o Do the adoption of EbA practices lead to increase eco-system services and higher agricultural yields?
  o Do the project activities affect women's social and economic participation?
  o Do the project activities reduce reliance on forest resources?
  o Do the project activities contribute to improve the forestry and agricultural political/legal framework?

Breakout session 3 & 4: Impact evaluation design

The evaluation strategy most suitable to its project is a DiD combined with matching design. An RCT trial cannot be implemented without compromising the targeting strategy of the project, oriented towards the most vulnerable areas and households. To foster the adoption of EbA practices by intended beneficiaries, activities will be implemented as fast as possible in all targeted areas, preventing the implementation of a phase-in design. Furthermore, all vulnerable households will be eligible to Component 2 activities. However, a protocol could be developed to guide the identification of the eligible households, which could be reproduced in comparison areas. The comparison areas could be identified within the pool of forest areas (seven in total) which were originally shortlisted for the project, but were not selected because of a

limited budget. Within these areas, villages could be matched to beneficiary village based on secondary geographic and administrative data.

An impact evaluation at the household level could be complemented by an impact evaluation at the forest level using GIS data. For this complementary study, remote sensing could be used to identify grids within comparison forest areas that are comparable to grids within treated forest areas.

Potential treatment arms:

All three components will be implemented altogether in targeted areas, preventing us from disentangling the impact of each components or activities.

Caveats:

The main caveat of the proposed strategy is the high level of clustering of the project activities and the few number of available clusters (seven in total). While a very low intra-cluster correlation (ICC) can be expected with respect to agricultural yields, there are uncertainties regarding cultural differences that may affect the adoption of new pratices.

Breakout session 5: Sample size and power calculations

Due to constraints regarding time and data availability, power calculations were not performed. Two key indicators which could be considered are crop yields, expected to increase by 10% by the end of the project, and the adaptation of EbA practices, expected to reach a rate of 50% at the end of the project. A cluster design with a low ICC should be considered, accounting for 15% attrition.

Breakout session 6: Timeline and budget

The project activities are expected to start in April 2021. Three waves of data collection are envisioned: (i) a baseline survey in November/December 2020; (ii) a midline survey in 2022; (iii) an endline survey in 2024. The current budget does not account for a comparison group and additional resources would be required to finance the impact evaluation. The average cost of a household interview is of 25-30 USD.

GCF grant: USD 9.68 million

AE: Palli Karma Sahayak Foundation (PKSF)

Goal: The goal of the project is to increase the resilience of the poor, marginalized and climate vulnerable communities to the adverse effects of climate change in flood-prone areas of Bangladesh, through capacity building, the building of resilient household structures, water and sanitation infrastructure, and the promotion of climate-adaptive livelihoods.

Overall timeline: 4 years, 12/2019 – 11/2023 (original timeline from proposal)

Breakout session 1: Theory of change

Component 1: Creation of Climate Change Adaptation Groups (CCAGs) and Community Vulnerability Assessment
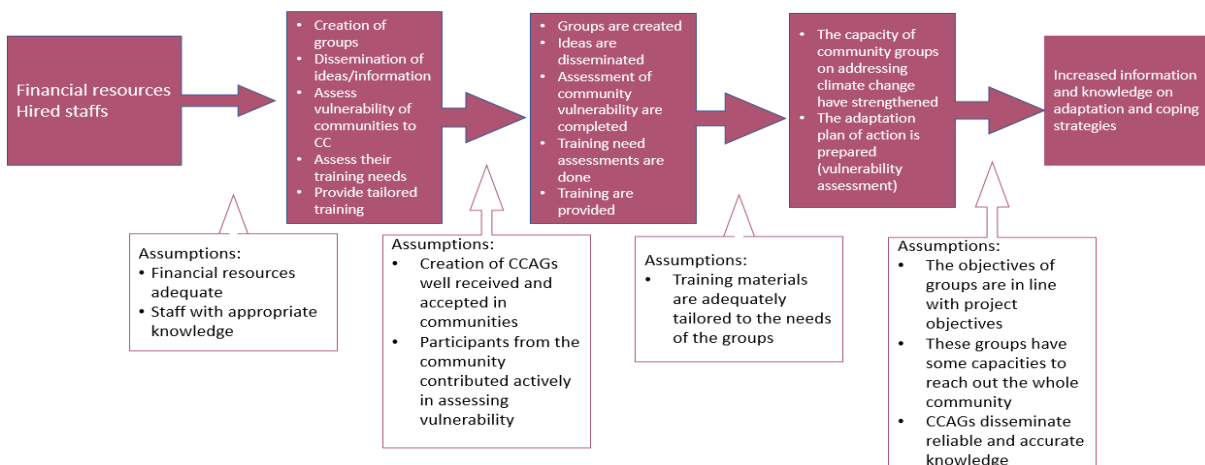
Component 2: Building Resilient Household Structure

Component 3: Installation of Resilient Utilities
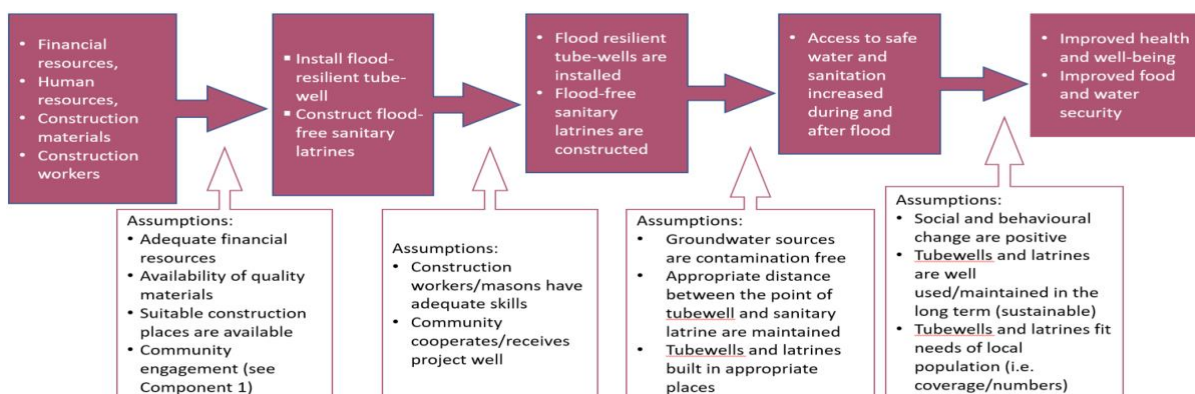
Component 4: Resilient Livelihood Support
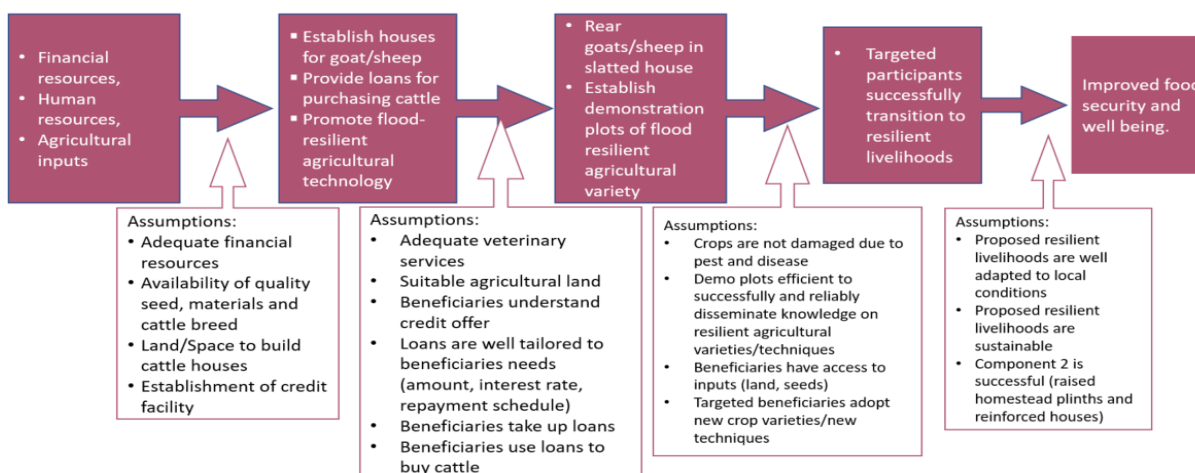
Breakout session 2: Evaluation questions

▪ **Main interventions**: All components are integrated as one package in a single intervention:

    o   Project Components:

        ▪   1. Creation of CCAGs and community vulnerability assessment

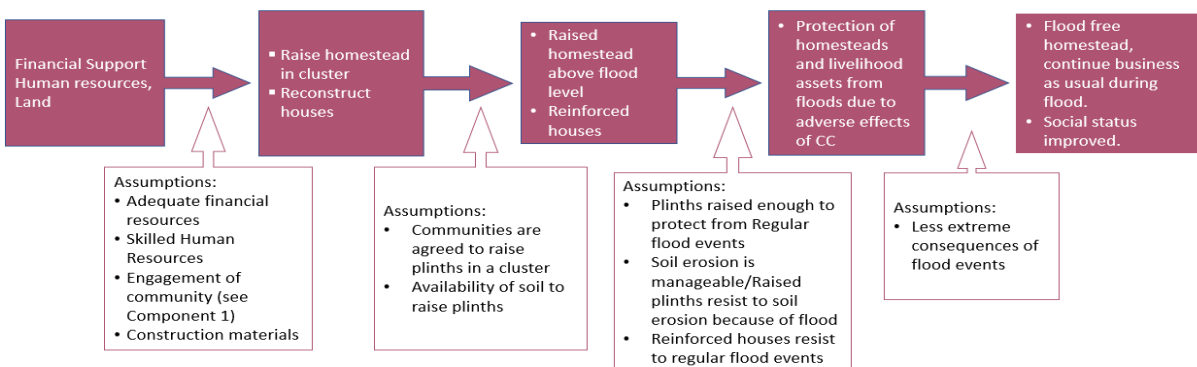   ▪   2. Building resilient household structures

        ▪   3. Installation of resilient utilities

        ▪   4. Resilient livelihood support

▪ **Intervention most suitable for evaluation:**

    o   The evaluation will focus on the overall impact of the project. For some outcome indicators, the observed impacts might be linked to specific project components.

        ▪   *Target areas*: 5 flood-vulnerable districts in Northwest Bangladesh; 11 most vulnerable sub-districts in these districts; 2 to 3 Union Parishads in each sub-district

        ▪   *Target population*: Flood-vulnerable households (eligibility criteria include: being poor or ultra-poor; having lost assets due to floods; whether homestead was flooded)

- **Project Coverage**: 20,000 households (approximately 90,000 beneficiaries) in 450 clusters (clusters are areas with low-lying topography vulnerable to floods, each cluster gathers several households and can span a whole village or part of a village)

- **Evaluation question(s):**

Component	Main EQ	Subsidiary EQ
1: Creation of CCAG and Community Vulnerability Assessment	1. Do **CCAGs** contribute to **increase knowledge on climate change adaptation**?	1. Are CCAGs functioning continually? 2. Are they participating actively in assessing vulnerability of the community? 3. Are these training effective for the targeted beneficiaries?
2: Building Resilient Household Structure	1. Does **raising homestead plinths** and reinforcing houses allow beneficiaries to **continue business as usual during floods**? 2. Does **raising homestead plinths** and reinforcing houses allow beneficiaries to **improve their social status**?	1. Do raised plinths and reinforced houses allow beneficiaries to protect their livelihood assets?
3: Installation of Resilient Utilities	1. Does the **incidence of water-borne diseases** among targeted households **decline**? 2. Does the installation of **tube-wells and latrines improve the health, well-being and food security** of beneficiaries?	1. Do the communities accept positively new technology? 2. Can targeted households use safe water and sanitation facilities during and after flood ?
4: Resilient Livelihood Support	1. Does the **promotion of resilient agricultural technology and crops**, and the facilitation of livestock-rearing in slatted houses, **improve the food security and well-being** of beneficiaries?	1. Do beneficiaries practice flood- resilient agriculture technologies?

Breakout session 3 & 4: Impact evaluation design

The main evaluation strategy is a clustered phase-in design with two phases, using the Phase-2 clusters as the control group. A phase-in fits the budgetary constraints of the project that prevent simultaneous coverage of all target areas. As implementation is planned at the cluster level, so is randomization.

In addition, the phase-in might be combined with a factorial design where the intensity of treatment would vary randomly within the treatment group. One possibility is to vary the modalities of input support and/or training frequency in Component 4 of the project ("resilient livelihood support").

Caveats:

It is unclear for how long the project can hold off on starting implementation in the control group. This will determine the horizon of the evaluation. A short-term horizon will hamper the measurement of impacts on slow-moving indicators. Outcome indicators will have to be adapted to the evaluation horizon, in particular those indicators relating to resilience.

Breakout session 5: Sample size and power calculations

Assumptions:

- Phase-In Design = Implementation starts in Phase-2 group 18 - 24 months after project start in Phase-1 group → 18 - 21 months between Baseline and Endline
- Outcome = Risk Awareness: 35% of households at baseline → indicator reacts in the short run
- Effect Size = +35 p.p. over 4 years → assume large gains early in project, so MDE = +15 p.p.
- Number Of Clusters = 50 in each phase-in group → practical aspect: logistics of data collection (limit number of locations)
- Other Parameters: Attrition = 10%; ICC = 0.2; Significance = 0.05; Power = 0.8

The above assumptions result in a total sample size of 1,000 observations at baseline, with 50 clusters in each group. More precise calculations will be performed during the inception phase of the evaluation.

Breakout session 6: Timeline and budget

Evaluation timeline

Q4 2020 – Q1 2021	Vulnerability Assessment
Q1 2021	Baseline Data Collection
Q1-Q2 2021	Randomization and Implementation Starts – Phase-1 Group
Q4 2022	Endline Data Collection
Q4 2022 – Q1 2023	Implementation Starts – Phase-2 Group

Budget

The project team provided an estimated unitary cost of surveys of 40 USD. Based on sample size calculations, we estimate that data collection will include around 2,000 interviews in total (accounting for both baseline and endline). The estimated total cost of data collection is 80,000 USD, so the project team proposed a provisional budget of 120,000 USD in order to have some buffer.

Note that it remains unclear whether the project can cover the proposed budget for the impact evaluation.

Group 7.B) "Multi-hazard Impact-Based Forecasting and Early Warning System for the Philippines (Philippines)" (SAP010)

GCF grant: USD 10 million

AE: Landbank of the Philippines

Goal: Strengthening the country's ability to adapt to climate shocks, through the establishment of MH-IBF and EWS, supported by a KDSS and empowering national and local capacities for early action and forecast based financing (FbF).

Overall timeline: 5 years, 2021/2025

Breakout session 1: Theory of change

The ToC is depicted for component 3.
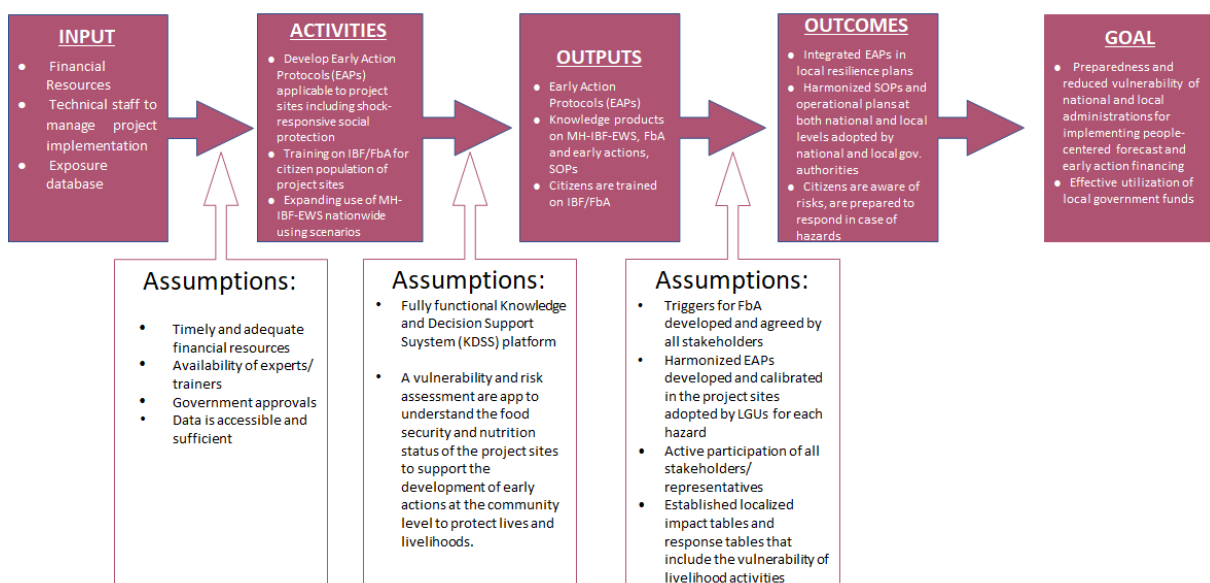
Breakout session 2: Evaluation questions

- ▪ Main interventions:
- o Project Components:
  - ▪ 1. Generation of science-based multi-hazard weather and climate risk information
  - ▪ 2. Establishment of MH-IBF-EWS supported by a KDSS
  - ▪ 3. Improved national and local capacities in implementing a people-centered MH-IBH-EWS and FbA
  - ▪ 4. Mainstreamed climate risk information and MH-IBF-EWS in development policy and planning, investment programming and resilience planning at national and local levels and institutionalized people-centered MH-IBF-EWS

- **Intervention most suitable for evaluation:**

  - Component 3. This involves the following interventions: awareness campaign, trainings on forecast-based early action and financing.

- **Targeted beneficiaries of intervention most suitable for evaluation**:

  o Four LGUs, all villages (about 168)

- **Evaluation question(s):**

  o Are the early action protocols (EAPs), FbA and standard operation procedures (SOPs) the needed activities/ outputs that will result to preparedness of national and local administrations for implementing people-centered forecast and early action financing?

  Sub- evaluation questions:
  - How do we ensure that EAPs and SOPs will be integrated, adapted and prioritized by the national and local administrations?
  - Are these integrated protocols and harmonized SOPs sufficient to prepare local stakeholders citizens in implementing in-situ EWS and FbF?
  - How to measure effective use of local govt funds?

Main outcomes of interest are:
  - Vulnerability index
  - Risk awareness
  - Access to finance

Breakout session 3 & 4: Impact evaluation design

Evaluation strategy: RCT design was ruled out because the interventions will be rolled out to all villages in the treated area at once.

The design suggested is DiD combined with matching. Baseline data can be retrieved from vulnerability assessments and via primary data collection with households.

Potential treatment arms:

  - As of now, it seems that only one joint treatment arm is possible.

Breakout session 5: Sample size and power calculations

Outcome	Mean	MDE	DID + matching		
			N. CL (T)	N. CL. (C)	Total N. Obs.
Vulnerability (Std Index)	0	-16 p.p.	173	208	**4953**
Risk Awareness (0/1)	40%	+16 p.p.	43	52	1235

Power calculations consider: 80% power, 95% confidence level, 80% take-up rate, Cluster-size: 13, 20% attrition rate, 20% ICC (conservative), sample size adjustment for PSM with increased number of Control clusters by 20% as compared to the treatment group.

Breakout session 6: Timeline and budget

Overall Timeline																								
	2021				2022				2023				2024				2025				2026			
Output 3 Activities	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
• Gap Assessment/Project baseline		▓	▓	▓																				
• Baseline for IE				▓	▓																			
• Development of Early Action Protocol						▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓							
• Roll out trainings/awareness campaign														▓	▓	▓								
• Endline for IE																				▓	▓			

More information needs to be collected to confirm the timeline and the modalities of the development of the EAP activity, that the project team mentioned to be involving directly the citizens and - therefore - part of the treatment.

Budget estimates:

USD 25.00 4953 respondents	Estimated cost per respondent Sample size (including treatment & control)
USD 123,825 **USD 247,650**	Estimated cost for one survey Estimated cost for Baseline + Endline

Group 8.A) "Climate-resilient food security for women and men smallholders in Mozambique through integrated system-based risk management (Mozambique)" (SAP 011)

GCF grant: USD 9.25million

AE: WFP

Goal: The goals of climate-resilient food security for women and men smallholders in Mozambique through integrated system-based risk management are as follows:

Component 1) Reduce vulnerability to climate risks through promotion of climate-resilient agriculture, as well as watershed restoration and enhancement, for food insecure smallholder women and men. A training programme on CRA will be established for 550 farming clubs (2/3 leaders, 30-40 followers).

Component 2) Enhance and sustain adaptive capacity of smallholder women and men through a combination of context-specific, integrated risk management tools and market-based opportunities. A selection of asset rehabilitation and creation activities in six district based will be based on local priorities and needs. In addition, alternative sector activities for 16,000 households at community and watershed levels will be established. Moreover, 550 VSL groups via rural centers of excellence will be established.

Component 3) Inform adaptation planning and decision-making across smallholders, communities and national/local authorities through the generation and use of climate information. Ten workshops will be conducted, 80,000 people will be trained and three local adaptation plans will be completed.

Overall timeline: 5 years, 3/2021 – 2/2026

Breakout session 1: Theory of change

Component 1: Has the use of CRA practices by men and women having participated in the training programme contributed to stabilize and increase agricultural yields over 3-5 years? Indicators : 1) Use of CRA practices by trained farmers, 2) Yields of three main crops of CRA trained farmers

Component 2: How does community based participatory planning (CBPP) contribute to improved watershed management? Indicators: 1) Environmental benefit indicator, 2) Asset benefit indicator

| MTA and WFP conduct 6 Community Based Participatory Planning exercises on watershed rehabilitation | Causal link | Selection of asset rehabilitation and creation activities in each district based on local priorities and needs | Causal link | Watershed assessment results available with informative CBPP results for all inhabitants | Causal link | That watershed assessment results are implemented and key community assets perform their function | Causal link | Improved watershed management as shown by better hydrological flows |

Overarching:
To what extent will the CBPP contribute to the improved watershed management?

To what extent have the asset creation activities improved access to water?

To what extent have the watershed assessment and CBPP results satisfied the community's needs?

To what extent have CBPP recommended assets been adopted?

Indicators

The number of asset creation activities identified/agreed on

Average level of satisfaction towards proposed assets and activities

The number and the type of assets/activities completed

Component 2: What is the impact of FFA activities on farm production, and household income and food secuirty? Indicators: 1) Food consumption score (FCS), 2) Food expenditure share (FES), 3) Income sources & income-generating activities

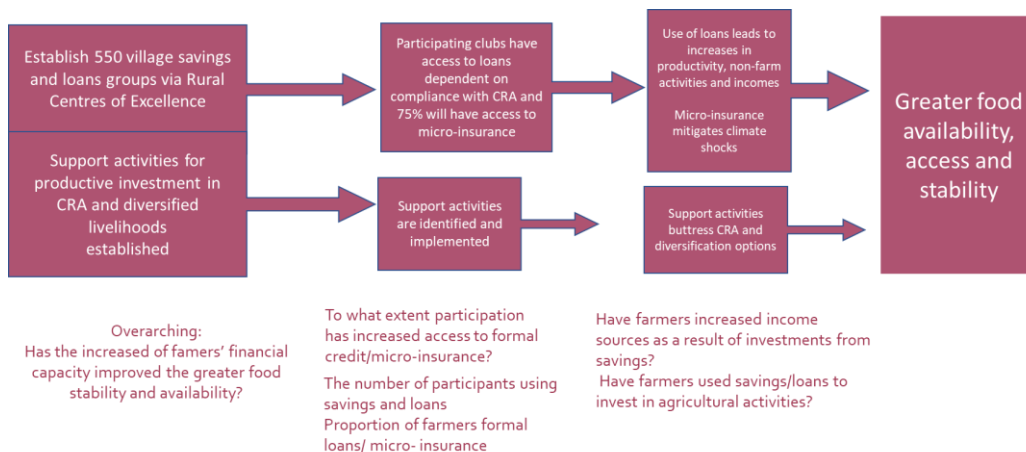| Alternative sector activities for 16,000 HHs at community and watershed levels established | Causal link | Diversification activities in forestry, livestock, agriculture and horticulture implemented | Causal link | Diversification activities in forestry, livestock, agriculture and horticulture adopted by households and communities | Causal link | Increased farm production, higher/more stable incomes | Causal link | Greater food availability, access and stability |

Overarching:
What is the impact of FFA activities on farm production, and household income and food security?

To what extent activities(forestry, livestock, agriculture) promoted by the program contribute to diversify income sources?

To what extent are farmers experiencing higher yield and increased income sources?

Indicators

- Number of trainings on forestry, livestock and agriculture management
- Number of livelihood options
- Number of farmers participating in trainings

- The average quantity produced per crops
- The number and type(resilient/non-resilient) of income sources

Component 2: What is the impact of micro-insurance on the uptake of loans and the ability to mitigate climate shocks? Indicators: Household investment capacity, FCS, FES


| Establish 550 village savings and loans groups via Rural Centres of Excellence | | Participating clubs have access to loans dependent on compliance with CRA and 75% will have access to micro-insurance | Use of loans leads to increases in productivity, non-farm activities and incomes / Micro-insurance mitigates climate shocks | Greater food availability, access and stability |
| Support activities for productive investment in CRA and diversified livelihoods established | | Support activities are identified and implemented | Support activities buttress CRA and diversification options | |

Overarching:
Has the increased of famers' financial capacity improved the greater food stability and availability?

To what extent participation has increased access to formal credit/micro-insurance?

The number of participants using savings and loans
Proportion of farmers formal loans/ micro- insurance

Have farmers increased income sources as a result of investments from savings?
Have farmers used savings/loans to invest in agricultural activities?

Breakout session 2: Evaluation questions

- **Main interventions**:
  - Project Components:
    - 1. Climate resilient agriculture (CRA)

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- - 2. Risk management tools and opportunities

    - Asset creation via CBPP

    - VSL groups and microcredit including insurance

  - 3. Climate information service

- **Intervention most suitable for evaluation:**

  - The project team wishes to evaluate the impact of subsidies on micro-insurance products

- **Targeted beneficiaries of intervention most suitable for evaluation**:

  - Three districts selected in Tete region: Changara, Marara and Cahora Bassa. Semi-arid and arid areas that are vulnerable to drought and food security are identified through integrated context analysis

  - Intervention villages are identified together with government and community leaders based on vulnerability

- **Evaluation question(s):**

  - What is the overall impact of the programme on resilience and food security?

  - What is the impact of different level of subsidies on insurance uptake, retention and use?

Breakout session 3 & 4: Impact evaluation design

Evaluation strategy: The project team wishes to conduct a randomized cluster factorial design
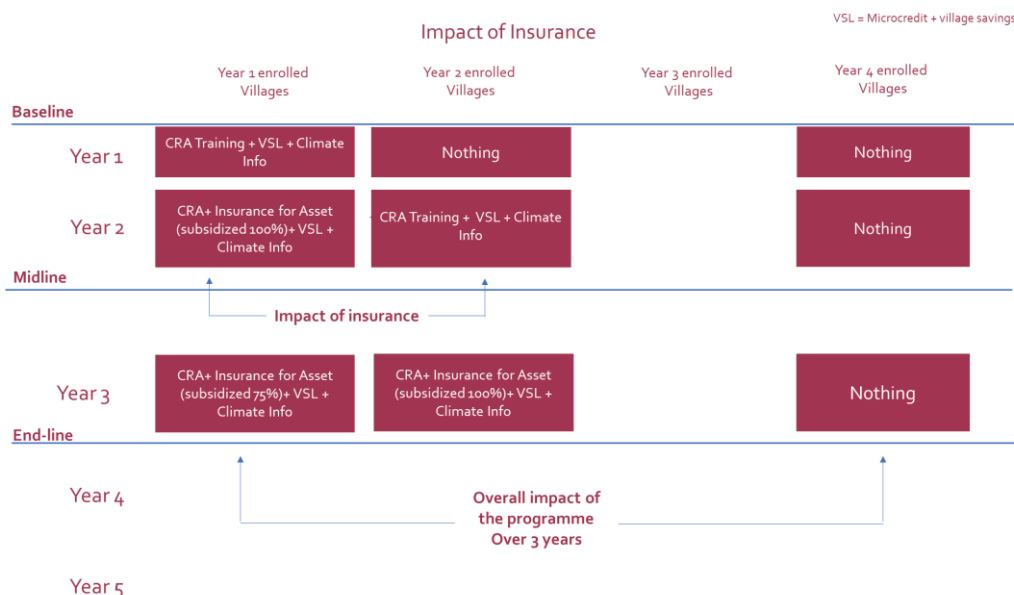
Potential treatment arms:

- Impact of overall programme
- Impact of different level of subsidies on insurance uptake, retention and use?

Caveats:

Insurance is a cost until a climate shock threshold allows a payout. Ths may take a number of years to happen, so the impact of insurance on resilience is unclear.
Impact of overall programme may only be ascertained after three years but this could conflict with the gradual reduction of subsidies

Breakout session 5: Sample size and power calculations

- Initial estimates for power calculations (clustered experimental design) (to be refined):

  - 100 villages in total, with **60 households** per village participating, impact indicator = maize yield

  - Scenario A - α = 0.10 (**10%**), cluster size = 60, effect size (10% change), **δ = 0.2**, ICC (rho) ρ = 0.08 / 0.16

  - Scenario B - α = 0.10 (**10%**), cluster size = 60, effect size (10% change), **δ = 0.13**, ICC (rho) ρ = 0.08 / 0.16

  - **Power scenario A = 0.75 to 0.95**, Power scenario B = 0.45 to 0.65

Breakout session 6: Timeline and budget

Initial estimates at between **USD 90,000 to USD 130,000** for two waves of data collection (to be revisited once more information is known).

Group 8.B) "Inclusive Green Financing for Climate Resilient and Low Emission Smallholder Agriculture (Niger)" (SAP012)

GCF grant: USD 13.5 million

AE: IFAD

Goal: This project's goal is to increase resilience to climate change of farmers' organizations, including youth and women's organizations, cooperatives and MSMEs in Niger by removing barriers to access financial and non-financial services for adopting and implementing best climate change adaptation to address water stress, availability and balance per cropping season in the selected locations (see feasibility studies) and evapo-transpiration loss for a the key crops and mitigation measures (promotion of solar energy for agriculture).

Overall timeline: 5 years, 02/2020 – 12/2024 (though implementation and disbursement will likely start mid-2021)

Breakout session 1: Theory of change

Three components should play a role in enhancing access to financial services for the use of climate change adaptation.
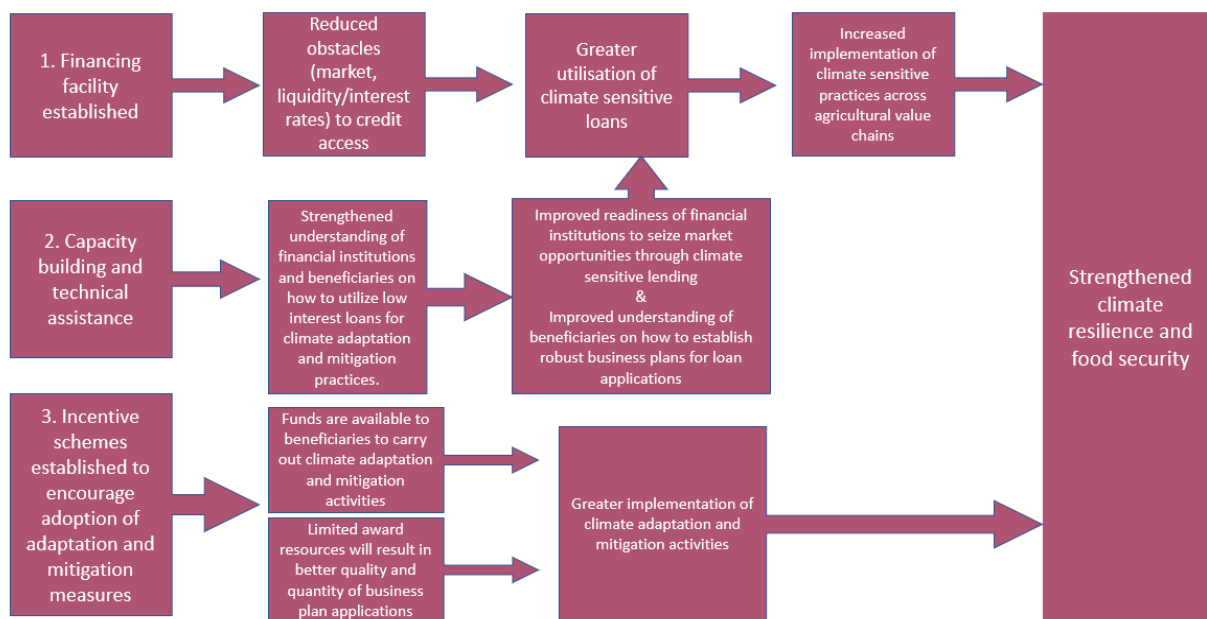
All three components work together with the eventual aim of helping farmers and MSMEs to invest in climate sensitive practices thereby improving their livelihoods and strengthening their resilience.

Breakout session 2: Evaluation questions

▪ **Main interventions**:

   o Project components:

- - 1. Innovative financing facility to foster the best adaptation practices and use of renewable energy along agricultural value chains (loans disbursed via branches of the Banque Agricole du Niger - BAGRI).
  - 2. Capacity-building and technical assistance for BAGRI, FOs, cooperatives and MSMEs
  - 3. Incentive scheme to encourage microfinance institutions (MFIs), FOS, cooperatives and MSMEs to adopt adaptation and mitigation measures.

- **Intervention most suitable for evaluation:**
  - The overall package of interventions have one goal, to increase uptake of loans to spend on climate resilient agriculture. With this in mind, it is not possible to separate the components, where treatment is the availability of a loan and information and training to improve its efficacy. Therefore the treatment should be considered as the availability of the whole package to members of farmer organizations (FO) living in the four regions targeted.

- **Targeted beneficiaries of intervention most suitable for evaluation**:
  - The target population is derived from an ongoing IFAD project taking place across the country in which FOs are established. These lists should provide a suitable sample frame for the evaluation. MSMEs applying for loans are likely to be a smaller population and so should not be main focus.

- **Evaluation question(s)**:
  - Following the numbering of the project components as above:
    - 1. **Overarching question:** Has the establishment of the financing facility strengthened resilience and food security of direct beneficiaries?

      Subsidiary questions:

      To what extent have direct beneficiaries invested the loans in climate-sensitive practices across the value chain? (outcome level)

      To what extent has the disbursement rate of loans from MFIs increased? (outcome level)

      To what extent have interest rates dropped? (output level)

    - 2. **Overarching question:** Have capacity building efforts contributed to increased utilization of loans for adaptation and mitigation?

      Subsidiary questions:

      Do beneficiaries submit more robust business plans in loan applications?

      To what extent are more financial products offered targeting climate sensitive practices?

      To what extent has beneficiary understanding of utilising loans increased?

      To what extend has MFI capacity increased to provide loans?

    - 3. **Overarching question:** Has the establishment of the grant award strengthened resilience and food security of direct beneficiaries?

      Subsidiary questions:

      To what extent have grant awards resources resulted in implementation of climate-sensitive practices across the value chain?

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> To what extent have grant funds been made available?
>
> To what extent have business plans quality improved?

Breakout session 3 & 4: Impact evaluation design

Two alternative impact evaluation designs were considered by the project:

1. Given that the overall IFAD project with FOs has been established across the country, while this GCF funded component will only take place in some regions, we could consider a **geographical discontinuity design**. While FO members in two different regions of the country may not be similar enough to act as a reliable counterfactual, those living close to the boundary are likely to be similar while experiencing different eligibility to access the loans offered by the programme.
2. **DiD with matching**: we could sample from treated provinces and untreated matching farmers according to observed characteristics. Outcomes would be measured at baseline and endline to allow for a DiD analysis.

Caveats:

Geographical RDD: It is unclear what the density of population is near to the border. If few FOs exist close to the border then it will not be possible to include enough clusters or households to have power to answer the research questions.

Matching: Needed to ensure good baseline data is available for matching. It may help to match some regional or FO level characteristics first to reduce the differences between treated and control farmers at baseline.

General: It is unclear what the take up level will be for loans where offered. This must be considered in the sampling strategy for any impact evaluation, either selecting only those who took a loan from treated areas and oversampling in control areas to allow for matching on the farmer level, to allow for problems in common support.

Breakout session 5: Sample size and power calculations

Power calculations could be made using the LSMS-ISA data for Niger from 2014 to assess agricultural productivity (crop yields) and food security.

A data collection from 50 to 80 farmer organizations was envisaged by the IFAD team.

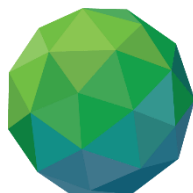**Breakout session 6: Timeline and budget**

60,000 USD have been allocated by the project for an impact evaluation to cover data collection and surrounding costs.

The project has not yet established a primary management unit, which is planned to be in place to begin loan disbursement from around June 2021. This allows sufficient time for baseline data collection plans to be set up for an impact evaluation as shown in the following indicative timeline.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Baseline (2021)												
Establishment and Desk Review	█											
Scoping		█										
Design finalisation		█	█									
Data collection tool				█	█							
Data collection					█	█						
Cleaning and analysis							█	█				
End line 2nd year after implementation												
Data collection	█	█										
Cleaning, analysis and results reporting			█	█								
Dissemination					█							

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