CLIMATE CHANGE
COMPASS
BETTER CLIMATE FINANCE IMPACTS

HM Government

# PE2 Private Finance

Technical Report

Compass Portfolio Evaluation 2

# Mobilising private finance through demonstration effects

## Technical Report
## December 2019

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CLIMATE CHANGE COMPASS
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# 1 Abbreviations

| | |
|---|---|
| **AfDB** | African Development Bank |
| **BEIS** | Department for Business, Energy and Industrial Strategy |
| **BNEF** | Bloomberg New Energy Finance |
| **CPI** | Climate Policy Initiative |
| **CMO** | Context Mechanism Outcome |
| **CPO** | Causal Process Observation |
| **Defra** | Department for Environment, Food and Rural Affairs |
| **DFI** | Development Finance Institution |
| **DFID** | Department for International Development |
| **EQF** | Evaluation Quality Framework |
| **ESG** | Environmental, Social, and Governance |
| **FDI** | Foreign Direct Investment |
| **GCPF** | Global Climate Partnership Fund |
| **HMG** | Her Majesty's Government |
| **ICF** | International Climate Finance |
| **IEA** | International Energy Agency |
| **IFC** | International Finance Corporation |
| **IPP** | Independent Power Provider |
| **KPI** | Key Performance Indicator |
| **LCCR** | Low Carbon Climate Resilient |
| **MDB** | Multilateral Development Bank |
| **MEL** | Monitoring, Evaluation and Learning |
| **MENA** | Middle East and North Africa |
| **MFI** | Microfinance Institution |
| **MTE** | Mid-Term Evaluation |
| **NGO** | Non-governmental Organisation |
| **OECD** | Organisation for Economic Cooperation and Development |
| **PIS** | Programme Investigation Strategy |
| **PPA** | Power Purchase Agreement |
| **PV Solar** | Photovoltaic Solar |
| **QCA** | Qualitative Comparative Analysis |
| **REPP** | Renewable Energy Performance Platform |
| **RoI** | Return on Investment |
| **SDGs** | Sustainable Development Goals |
| **SDS** | Sustainable Development Scenario |
| **SNP** | Solar Nigeria Programme |
| **SPV** | Special Purpose Vehicle |
| **SRO** | Senior Responsible Officer |
| **StARCK+** | Strengthening Adaptation and Resilience to Climate Change in Kenya Plus |
| **UK** | United Kingdom |

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# 2 Glossary

**Boolean logic**
Boolean logic is a form of algebra in which all values are reduced to either true or false.

**Causality**
The relationship between cause and effect. There are different philosophical assumptions about causation: whether it is real, how it works, and how it can be investigated (see section 2.3).

**Context-Mechanism-Outcome (CMO) configuration**
A CMO configuration is a statement, diagram or drawing that spells out the relationship between particular features of context, particular mechanisms and particular outcomes. In a sentence they take the form of "In 'X' context, 'Y' mechanism generates 'Z' outcome."

**Contexts**
Context can be broadly understood as any condition that triggers, prevents and/or modifies the behaviour of a mechanism.

**Data**
Things known or assumed as information, observations, images (e.g. photographs, and videos) or representations of people's or organisation's beliefs, attitudes or perceptions, making the basis of reasoning or calculation.

**Deductive**
Reasoning from general principles to specific instances.

**Evaluative**
Involving evaluation, judgement or appraisal.

**Evidence**
The available body of information (data) supporting or refuting an argument or proposition.

**Explanatory Power**
The ability of a hypothesis or theory to effectively explain the subject matter to which it pertains.

**Inductive reasoning**
Reasoning from detailed facts to draw general principles.

**Intervention**
What is being done that is being investigated by the portfolio evaluation question.
A generic term used to include policies, programmes, projects, or actions intended to achieve, or contribute to, a desired outcome.

**Intuition**
Knowing, feeling, believing or 'having a hunch' about something without reasoning or proof.

**Mechanism**
Mechanisms generate outcomes. Mechanisms are causal processes. Programme mechanisms describe how the resources embedded in a programme influence the reasoning and decision making of programme subjects and/or those making decisions in the implementation of a programme or policy (Pawson and Tilley, 1997; Pawson 2006; Pawson, 2013).

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### Middle-Range Theories
Middle-range theories lie between abstract theories and day-to-day working hypotheses and are/can be verified by evidence.

### Nugget
A piece of evidence that is relevant to the programme theory that is being tested.

### Proess Tracing
Process tracing is a qualitative approach for understanding how outcomes are created, through the analysis of causal processes within individual cases.

### Quality
Good quality evidence is both relevant to the question that it is being used to address and sufficiently rigorous to support the inferences that are drawn from that evidence.

### Quality Assurance
The maintenance of a desired level of quality in a product by means of attention to every stage of the process of production.

### Qualitative Comparative Analysis (QCA)
Qualitative comparative analysis uses Boolean logic across multiple cases to identify the contexts which are associated with particular outcomes.

### Rapid Realist Review
Realist review is a method for analysis of existing evidence in relation to a programme theory. Rapid realist review (Saul et al.) is a rapid method for realist review.

### Refine theories
The process of refining theories involves considering how the theory could be developed to better represent the evidence. This might involve adding, removing or changing the CMOs that make up the theory.

### Relevance
As a criterion for inclusion or exclusion of evidence, relevance refers to 'pertaining to programme theory'. Relevant data provides insight into the contexts, mechanisms or outcomes being considered or to the relationship between them.

### Retroductive Analysis
This analysis involves moving between an inductive approach to build theories and a deductive approach to test theories. Retroductive analysis acknowledges that evidence will always be partial and incomplete, and aims to provide the best possible explanation of that evidence.

### Rigour
A judgement addressing the quality of the methods used to produce data and whether those methods were of sufficient quality to support any inferences based on the data.

### Success Case Method
This method involves identifying the most and least successful cases in a programme and investigating them.

### Theory
An attempt to organise and explain facts, beliefs and commonly held assumptions within a domain of inquiry into a structurally coherent system.

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# 3 Introduction, purpose and objectives

## 3.1 Introduction

The United Kingdom (UK) is firmly committed, alongside other developed countries, to contribute to the mobilisation of US$100 billion of public and private climate finance a year by 2020. International Climate Finance (ICF) is a core component of the UK's contribution to this shared goal. ICF, which is managed jointly by the Department for International Development (DFID), the Department for Business, Energy and Industrial Strategy (BEIS) and the Department for Environment, Food and Rural Affairs (Defra), is committed to investing at least £5.8 billion between 2016 and 2021 in over 50 developing countries, working through diverse channels from private equity funds to small non-governmental organisation (NGO) grants. ICF aims to:

- Change facts on the ground, delivering results that demonstrate that low-carbon, climate-resilient (LCCR) development is feasible and desirable.
- Improve the international climate architecture and finance system to increase the scale, efficiency and value for money of climate spend.
- Test out new approaches to delivering climate finance that have the potential to achieve bigger and better results in the future.

A core strand of the ICF's strategy is to make markets work and create the conditions for private finance to flow. The levels of investment needed to keep temperature increases well below 2 degree Celsius and adapt to the impacts that this temperature increase have already caused and will continue to cause, cannot be met by public finance alone. Significant amounts of private investment will be key to achieving a sustainable, LCCR transition where the private sector is driving a long-term solution to climate change. Whilst climate finance is growing across markets in developing countries, it is not doing so, fast enough, to avoid locking them into a high carbon pathway with insufficient consideration of climate impacts. The rationale for public intervention is therefore to accelerate the growth in the climate finance markets in developing countries.

In order to mobilise private sector investments at scale towards the US$100 billion per annum target, public climate finance must address barriers and create enabling conditions for private investment. The ICF therefore focusses upon demonstration and making visible, distinctive and catalytic investments that can be scaled up and replicated by private finance.

Her Majesty's Government (HMG) believes that there is significant potential to improve the delivery and programming of future UK climate finance by improving understanding of what is successfully achieving mobilisation and what barriers to mobilisation persist across ICF programmes, and wider public climate finance initiatives. In particular, it is keen to understand the evidence base on how and in what circumstances the ICF is mobilising private finance through the successful use of the 'demonstration effect' as a critical means of mobilising private sector climate finance.

## 3.2 Purpose of the evaluation

The purpose of this evaluation is to enable the UK government and other donors and development partners to learn about the effectiveness of mobilising private finance, through demonstration effects, to achieve the UK's international objectives on climate change and thus driving wider transformational change. The evaluation focusses on programmes funded by ICF, but also takes into account the experience of other development finance institutions (DFIs).

This evaluation sets out where and in what circumstances demonstration effects have and have not been found. The critical success factors driving demonstration effects have been identified so that they can be succinctly communicated to programme managers for application in the design of future programmes. Thus, the lessons

learned can help to improve future UK climate finance policies and programmes, and potentially influence the mobilisation strategies of other major international partners. Beyond this, lessons will also help to identify methods by which to measure and assess demonstration effects in the future[1].

## 3.3 Recipient

The evaluation was commissioned by the UK Government's ICF Monitoring, Evaluation and Learning (MEL) team. This team is the immediate recipient of the evaluation and will coordinate its dissemination and use within HMG and externally. A dissemination and utilisation plan has been prepared by the HMG ICF MEL team which has identified the intended users of the evaluation and how they will engage with the evaluation and its findings.

## 3.4 Evaluation questions

***How and in what circumstances is ICF mobilising private finance into LCCR markets through demonstration effects?***

The terms of reference initially set out eight sub-questions. These initial evaluation questions were refined during the inception phase, principally to focus more closely on the demonstration effect. The evaluation focussed on the questions shown in bold below. Evidence was not sought to address the non-priority questions. However, where evidence was identified, it has contributed to the study, particularly in the area of communication.

- **How, at what stage of projects, in what countries, sectors, technologies and from what types of investor are ICF programmes attempting to mobilise private finance through demonstration effects?**
- **In what circumstances, to what extent, for whom and how have demonstration effects contributed or not to private investors' decisions to invest in LCCR markets? Have there been unintended outcomes from demonstration effects, in what circumstances, for whom and why?**
- **How and in what circumstances do demonstration effects support transformational change, or not?**
- How and to whom have key lessons from demonstration projects been actively or passively communicated?
- Which lessons, what evidence and communications methods support the mobilisation of private finance, for whom, delivered in what way, and why? Which lessons, what evidence and communications methods do not do so, and why?
- How, to what extent and in what circumstances do other factors support or obstruct the mobilisation of private finance through demonstration effects?
- **What lessons can be identified, for whom (both through the design of ICF programmes and beyond), to increase the future mobilisation of private finance through demonstration effects?**
- How can these lessons help to develop a framework for ongoing monitoring of demonstration effects across the ICF portfolio?

## 3.5 This report

This report is intended to be read in conjunction with the final report for this evaluation. It contains additional evidence and details that are expected to be of interest to a specialist evaluation audience.

[1] During the inception stage of the work, it was agreed that this aspect of the purpose would not be covered by the evaluation.

# 4 Definitions

## 4.1 Demonstration effect

For the purposes of this evaluation, the demonstration effect is defined as:

*Low-carbon climate-resilient (LCCR) projects are undertaken, or funds established to invest in them, without development finance, with less development finance or with development finance at a lower level of concessionality as a result of evidence from ICF-supported projects.*

The demonstration effect is a process by which successful demonstration projects are undertaken and communicated to potential investors which alters their perceptions of the attractiveness of similar potential investments. It is important to emphasise that potential investors may be unconscious of this process, as the effects are not tangible phenomena. This will affect how data are collected and the resulting approach to inference and interpretation.

The use of the term 'development finance' is preferred to 'concessional finance', reflecting the fact that ICF and other similar finance may be provided on non-concessional terms, for example with the purpose of taking the first risk and thus leveraging other investment. See below for definitions of development finance and concessionality.

## 4.2 Private finance

As outlined in the KPI 12 methodology note, private finance transactions are defined as those from non-public sources such as banks (but not multilateral or regional development banks - MDBs), private companies, private or company pension funds, NGO money, insurance companies, private savings, family money, entrepreneurs' own capital and sovereign wealth funds. It includes all types such as equity, debt and guarantees. Not all of the programmes reporting against KPI 12 will be of strategic interest as they are not focussed upon wider mobilisation beyond the immediate investment. Conversely, some programmes not reporting against KPI 12 will offer valuable sources of evidence, particularly those focussed upon delivering technical assistance which could influence enabling conditions.

## 4.3 Development finance

Development finance is defined as financial flows provided by donors and public institutions to developing countries to support development. It includes all official development assistance as well as grants, concessional and non-concessional lending by multilateral financial institutions.

Development finance will vary in the proportion and the degree of concessionality (see below). We do not expect to be able to precisely evaluate the degree of concessionality in follow-on projects due to confidentiality. However, follow-on projects will be considered to have less development finance if there appears to be a smaller proportion of finance from public sources, and/or the degree of concessionality of that finance appears to be less than in the demonstration project. Any reference in this report to reduced levels of development finance should be understood in this context.

## 4.4 Concessionality

Concessionality refers to the extent to which a financial instrument is priced below the terms that would be available for the same instrument if it was provided by a commercial capital provider in a market transaction. A grant is, by definition, concessional as it would not be provided by a commercial capital provider. DFIs and donors also frequently provide concessional loans whereby the interest rate might be lower, or the grace period before repayments start or the term is longer, than would be available from commercial loan providers. It is also possible to provide concessional guarantees and other risk transfer instruments by pricing these instruments at lower terms than would be available in the market. Concessional equity is not normally described as such,

but there are cases where equity would be provided with lower return expectations, a more subordinated position, and/or a longer 'hold' period than would be required by a private investor. See the inception report for a fuller description.

We did not expect to be able to precisely evaluate the degree of concessionality in follow-on projects/ investments due to confidentiality issues. However, where possible, we considered the level of concessionality by exploring the proportion of development finance and/or the terms on which any development finance was invested. Examples of reduced concessionality were:

- Where the follow-on investment was entirely from private sector investors on commercial terms.
- Where an initial investment in the demonstration project was entirely in the form of a repayable grant, and the subsequent investment consisted of a combination of a concessional loan from a DFI and a loan from a bank on commercial terms.
- Where an initial investment was from a fund sourced entirely from DFIs, and the subsequent investment was from a fund including private sector and concessional investors.

Some follow-on projects had similar levels of concessionality to the original demonstration project and a small number had a higher level of concessionality where the demonstration project involved funding from DFIs and the private sector, and the follow-on project was funded solely by DFIs. Where there were similar or higher levels of concessionality, the funding was not included in the totals for private finance mobilisation.

## 4.5 Enabling conditions

In addition to direct financial support, ICF frequently provides technical assistance, which may alter the enabling conditions for private investment. Where this support has contributed to a demonstration effect, this will be in scope for the review. If, however, the enabling conditions have changed and knowledge of this change has not contributed to a demonstration effect, this would fall outside the scope of this evaluation.

## 4.6 Replicator types

We investigated three ways in which investors could have learned about demonstration effects from ICF programmes:

- **Programme partners** either received investment from ICF programmes or invested alongside ICF in programmes.
- **Potential replicators** were informed about demonstration effects by programme partners, often as part of the process of investing alongside that programme partner in new project subsequent to the original ICF programme.
- **Wider market investors** were not involved in ICF programmes and were not known to have a relationship with programme partners, but could have learned about demonstration effects through formal or informal communication of the results of the demonstration programme.

## 4.7 Investor types

We investigated four types of investor:

- Businesses and developers: mobilise private finance by obtaining investment in a business or project and includes businesses offering LCCR products and services and developers of renewable energy schemes.
- Direct investors: mobilise private finance by investing directly into businesses offering LCCR products and services or LCCR projects (such as renewable energy generation). They include banks, funds, microfinance institutions (MFIs), other businesses and individuals.
- Fund managers: mobilise private finance by obtaining investment into a fund which intends to invest in LCCR projects or businesses offering LCCR products and services.
- Institutional investors: mobilise private finance by investing in funds which invest in LCCR projects or businesses offering LCCR products and services. They include pension funds, insurance companies, foundations and trusts.

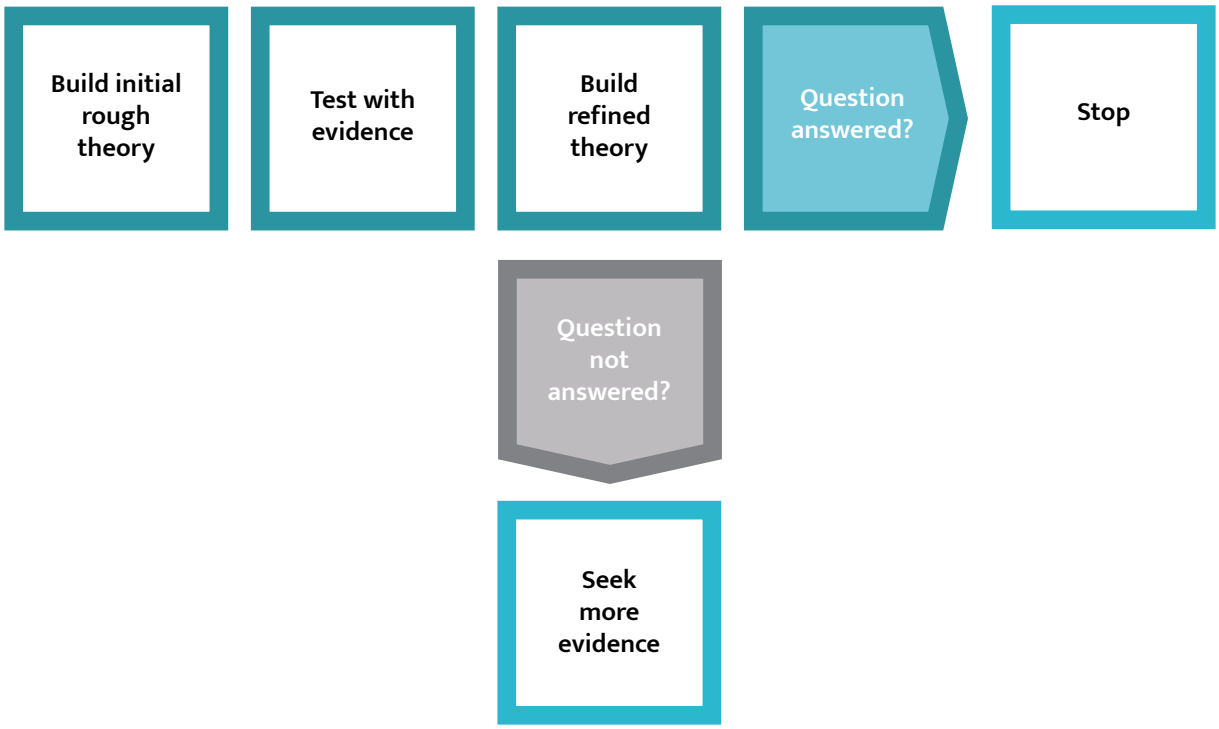
# 5 Method

## 5.1 Approach

The evaluation used realist methods as set out in the Compass Evaluation Quality Framework which is published separately.

Realist evaluation is a theory-based approach and the evaluation questions have been investigated by developing and refining theories. These question theories are expressed as a set of Context- Mechanism-Outcome (CMO) configurations. Theory building and testing is an iterative process that aims to result in a theory that is a satisfactory explanation of the evidence. This process is illustrated in Figure 1 below:

**Figure 1:** Theory refinement approach




Realist evaluation aims to provide understanding in the form of middle-range theories. These are sufficiently detailed and specific to provide a rich understanding, but also sufficiently general to provide actionable learning. Thus, the process of theory building moves between rich, detailed evidence from specific cases and middle-range theories until there is a reasonable level of satisfaction that the theories present a good explanation of all the evidence.

HMG provided a theory of change which was developed during the inception stage to build initial theories which hypothesised a number of CMO configurations. The research tested these theories and gathered evidence to inform their refinement. Section 9 presents refined theories of change which address three of the evaluation questions:

- In what circumstances, to what extent, for whom and how have demonstration effects contributed or not to private investors' decisions to invest in LCCR markets?
- Have there been unintended outcomes from demonstration effects, in what circumstances, for whom and why?
- How and in what circumstances do demonstration effects support transformational change, or not?

The refined theories reflect all the relevant evidence that we have obtained, and we have not found any evidence that contradicts them. The existence of contradictory evidence would require further revision of the theories. The revised theories presented in this report were found to be valid in the specific contexts explored within a sample of programmes which were purposively selected. Therefore, whilst it is intended that the learning from this evaluation would be valuable for other contexts, care should be taken not to assume generalisability of the findings.

Realist evaluation demonstrates causality by identifying and verifying the causal mechanisms that generate outcomes (intended and unintended) and establishing the contexts in which those mechanisms trigger. The reasoning and response construction of programme mechanism enables investigation of the role of actor decision making in determining the outcomes of a policy, initiative or intervention.

The particular strengths of realist evaluation are that:

- Causal theories are developed and tested at a middle level of abstraction and can then be applied across different programmes and contexts. This strong external validity will enable lessons from the evaluation to be applied across the ICF and more widely.
- The contexts that make a difference to whether/which outcomes are generated are identified, this also supports portability and the application of lessons from the evaluation.
- The approach delivers a deep and rich understanding of how context and mechanism combine to cause different outcomes in different circumstances.

However, realist evaluation does not provide formal tools and methods for demonstrating the relationships between causes and outcomes. Therefore, process tracing has been used to supplement the approach.

The particular strength of process tracing is that it provides a formal assessment of whether the intervention has contributed to outcomes in individual cases. Process tracing involves the systematic collection and examination of evidence within a case to test a hypothesis. For the purpose of this evaluation, each incidence where private finance has been mobilised has been considered as a case.

Process tracing has provided a formal assessment of the evidence about whether programmes are mobilising private finance into LCCR markets through demonstration effects (see section 5.7) while the realist evaluation has established how and in what circumstances they have done so, as described above.

## 5.2 Programme sample

A purposive approach was taken to sampling, in that we included programmes that were thought to have mobilised private finance through demonstration effects. There was a three-stage approach:

- An initial 'light touch' review of 46 programmes to inform the inception report.
- A more detailed investigation of 20 programmes to inform the interim report.
- A full, in-depth investigation of 10 programmes to build on the results reported in the interim report and inform this report.

This process is described in more detail on the next page.


An initial 'light touch' review was conducted of documents relating to 46 programmes that were thought to be relevant to this question. This included 32 programmes that report against ICF KPI 12 and another 14 programmes suggested by the Evaluation Steering Group.

The review involved reading key sections of the business case (at a minimum, the summary, strategic case, theory of change and appraisal case), the logframe and the most recent annual review.

The review was also the basis for a reduction process to come to a final sample for the evaluation. This reduction process was based predominantly on including programmes which had either expressed intention to create demonstration effects or had already reported demonstration effects. The 'light touch' review identified 22 such programmes, which made it into the proposed sample. Three further programmes were suggested by the Evaluation Steering Group where demonstration effects were thought to have been created, although the intention to do so was not documented or may not have existed. Five programmes were later removed on the recommendation of Evaluation Steering Group as it was felt there was unlikely to be any evidence relating to demonstration effects. Finally, 20 of these 46 programmes initially reviewed were selected for the sample for Phase 1 of the research.

10 of these 20 programmes were selected for further in-depth investigation based on the following criteria:

- Evidence that there has been a demonstration intended to mobilise private finance.
- The likely availability of evidence to provide coverage across the priority theories and to enable process tracing tests.
- A balance of sectors and countries.

Table 1 below shows the 20 programmes investigated by the evaluation, with the programmes subject to in-depth investigation shaded grey.

**Table 1:** Overview of programmes reviewed, with focal programmes for Phase 2 shaded in grey

| Programme name | Sector | Country |
|---|---|---|
| Carbon Market Finance for Africa (CMF-Africa) | Household solar, biogas, cookstoves, micro-hydro power | Africa |
| Climate Investment Fund (CTF) | Investment in renewable energy/ energy efficiency | Multi-country |
| Climate Public Private Partnership Programme (CP3) | Investment in renewable energy/ energy efficiency | Multi-country |
| Climatescope | Investment tool | Multi-country |
| Comprehensive Programme on Spatial Planning and Low Carbon Development in Papua | Forestry, agriculture | Indonesia |
| East Africa Geothermal Energy (EA-Geo) | Geothermal | East Africa |
| Eco.business Fund | Agriculture, forestry, fishery | Latin America |
| Global Climate Partnership Fund (GCPF) | Investment in renewable energy/ energy efficiency | Multi-country |
| Global Innovation Lab for Climate Finance (The Lab) | Renewable energy/energy efficiency, forestry, agriculture | Multi-country |
| Green Africa Power (GAP): Renewable Energy for Africa | Renewable energy projects | Africa |
| Low Carbon GET FiT Uganda | Small-scale renewable energy, mainly hydro | Uganda |
| NAMA Facility | Renewable energy, energy efficiency, agriculture, transport, forestry | Multi-country |
| Partnership for Forests (P4F) | Forestry | Multi-country |
| Promoting Low Carbon Development with returnable capital in Indonesia | Small-scale renewable energy, forestry | Indonesia |
| Renewable Energy and Adaptation Climate Technologies (REACT) | Solar home systems, small-scale renewable energy, energy efficiency, cooking stoves | East Africa |
| Renewable Energy Performance Platform (REPP) | Small-scale renewable energy | Sub-Saharan Africa |
| Results Based Financing for Low Carbon Energy Access | Mini-grids | Multi-country |
| Solar Nigeria Programme (SNP) | Solar | Nigeria |
| Strengthening Adaptation and Resilience to Climate Change in Kenya Plus (StARCK+) | Adaptation technologies, household solar | Kenya |
| UK Climate Investments (UKCI) | Investment in renewable energy/ energy efficiency | Multi-country |

## 5.3 Document review

The principal focus of the document review related to the programmes included in the sample. As a minimum, it reviewed the business case, logframe and annual reviews and, if they are available, relevant research or analysis conducted by the programme, evaluations, websites and other documentation identified during the document review or interviews, for example the CIF Evaluation and Learning Initiative. Where programmes, such as CP3 and NAMA, include multiple investments, we concentrated on the investments which was considered likely to provide the best evidence to help us investigate theory and were guided by the Evaluation Steering Group and programme senior responsible officers (SROs) on this.

Further documents were identified through the document review and by interviewees. We also explored infrastructure and sector specific journals and databases to identify evidence on investments made and planned (e.g. IJ Global, Camco, Solar Plaza and publications by individual investors).

The research team was alert to the risk of bias arising in three areas:

- The availability of evidence is a key determinant of the conclusions that can be drawn. Where evidence is sought but not found, this will have consequences for the strength of any emerging theory. The main areas where we had hoped to find documentary evidence but were unable to do so were:
  - It had been hoped to obtain evidence from other DFIs on the mobilisation of private finance through the demonstration effects from their programmes. However, none was available from the DFIs that we contacted.
  - We had hoped to be able to find documentary evidence of the rationale for investment decisions and where demonstration effects influenced those decisions. None was available.
- Publication bias in which some studies are more likely to be published than others. We worked with the Evaluation Steering Group to try and obtain unpublished evidence from within the ICF.
- Selection bias whereby stakeholders are likely to have particular views or interests which could affect the independence of their contributions and might lead to them only signposting us to evidence that supports their view. This was addressed through ensuring we consulted with a wide range of stakeholders and supplemented consultation with the use of search engines (the reliability and rigour of all evidence collected through internet searches was assessed).

The evaluation team followed the approach to extracting data from documents set out in the Compass Evaluation Quality Framework which has been published separately.

A list of all documents reviewed is available in Appendices 1 and 2.

## 5.4 Statistical analysis

Data for 1202 infrastructure investments in renewable energy in developing countries between 2003 and 2019 was downloaded from the IJ Global website[2]. The total value of these investments was US$235 billion.

Analysis was conducted for 768 transactions between 2009 and 2018 where there was a date for financial close, and it was possible to identify whether development finance was involved or whether the transaction was entirely financed by private investment. The data was explored to identify trends by region, country and sector for transactions that involved development finance and those which were financed by private finance alone.

IJ Global identifies investments through their own proprietary research and it is not comprehensive; not all transactions are captured, and full information has not been captured for each reported transaction. IJ Global reported value for renewable energy transactions with a total value of US$157 billion for 2017 compared to the IEA[3] reported total of US$298 billion for the same year. This suggests that the IJ Global transactions represent about half the total.

[2] See *https://ijglobal.com/sectors/renewables*

[3] IEA, World Energy Investment, 2018. See *https://www.iea.org/reports/world-energy-investment-2018*

## 5.5 Primary research

The primary research was conducted in two phases. Phase 1 involved interviews with SROs and implementing partners for the 20 programmes in the sample. Phase 2 involved interviews with programme partners and replicators for the 10 programmes subject to in-depth review as well as interviews with key stakeholders and wider market participants in three focus areas: Indonesia, Uganda and institutional investors.

### 5.5.1 Phase 1

Qualitative interviews were conducted in Phase 1 of the primary research with 11 SROs or other relevant member of the programme team and 15 implementing partners to:

- Confirm the intended demonstration effects and the theories to which the programme is relevant.
- Explore how the demonstration effects were intended to operate:
  - Who they were intended to influence?
  - How they would be communicated?
  - What difference they were expected to make?
- Identify whether the programme team knows of any results of the demonstration effect and whether they have been successful in mobilising private finance, or in laying the groundwork for doing so.
- Obtain an introduction to private sector finance partners who may have replicated the project, without or with less development finance.
- Discuss how to contact potential replicators to whom the demonstration has been communicated (if relevant). For example, if the project was presented at a conference it may be possible to follow up with some conference attendees.

Other providers of development finance were contacted to build on the review of documentation and explore their experience of demonstration effects and:

- Investigate how they have communicated any demonstration effects and solicit their views on how effective these communication efforts have been.
- Understand whether they consider that their investments have had a demonstration effect, in what circumstances, to what extent, for whom and how.
- Understand what evidence the DFIs have to support their assessment of the demonstration effects caused by their investments.
- Ask whether and how they systematically monitor demonstration effects and whether and how this informs future programming.

We interviewed a total of 14 representatives at:

AfDB – African Development Bank
ADB – Asian Development Bank
DEG – Deutsche Investitions- und Entwicklungsgesellschaft
EBRD – European Bank for Reconstruction and Development
FMO – Dutch Development Bank
IDB/IADB – Inter-American Development Bank
IFC – International Finance Corporation
Proparco – Groupe Agence Française de Développement

### 5.5.2 Phase 2

Phase 2 investigated three types of demonstration effect through qualitative interviewing:

- Private sector partners in programmes replicating aspects of those programmes, without or with less development finance.
- Private finance mobilised by third parties replicating specific aspects of programmes, without or with less development finance.
- Wider market changes or developments where private finance has been influenced by demonstration effects generated by ICF programmes.

The initial aim was to conduct interviews with three programme partners and five potential replicators for each programme. The replicators were identified through 'snowballing'. However, it proved impossible to identify five potential replicators for each programme because some programmes were not yet at a stage where replication had occurred, and for others there was no way of identifying potential replicators. Consequently, fewer interviews were conducted with potential replicators than anticipated.

We also explored three focus areas to investigate:

- Whether the demonstration effects were relevant to potential investors.
- Whether they were aware of the demonstration projects and, if so, how they heard of them.
- Whether and how the demonstration projects influenced their behaviour.
- If the demonstration projects influenced their behaviour, whether this led to mobilisation of private finance. If so, we have attempted to establish the type and amount.

We sought guidance from the Evaluation Steering Group on the choice of areas of interest to pursue. Following discussion, we agreed to concentrate on three areas:

**1. Indonesia** where key contextual factors have stalled the market for renewable energy project development.

**2. Uganda** where there are early signs of transformation, with the regulatory environment enabling small-scale renewable energy developers to build projects without any top-up tariffs or deemed energy clauses.

**3. Institutional investors** where some sectors and markets appear to have mobilised private finance, and others have not.

The total number of interviews conducted in Phase 2 is shown in the table on the next page:

**Table 2:** Phase 2 interviews conducted

| Programme | Programme partner | Potential replicator | Wider market investor |
|---|---|---|---|
| CMF | 4 | 2 | - |
| CP3 | 5 | 3 | - |
| Eco business | 8 | - | - |
| GCPF | 4 | 1 | - |
| GETFiT | 3 | - | - |
| NAMA | 1 | - | - |
| REACT | 5 | 7 | - |
| REPP | 3 | - | - |
| SNP | 5 | 4 | - |
| StARK+ | 7 | 3 | - |
| The Lab | 7 | - | - |
| Indonesia | - | - | 6 |
| Institutional Investors | - | - | 14 |
| Uganda | - | - | 11 |
| TOTAL | 52 | 20 | 31 |
| Response rate[4] | 81% | 45% | 42% |

Three respondents were not able to take part in interviews but did provide written answers to a limited number of questions by email.

### 5.5.3 Recruitment

In Phase 2, we conducted interviews with private sector programme partners, most of whom were identified and introduced to us as a result of Phase 1 interviews with SROs and implementing partners. In these interviews, programme partners were asked whom they had communicated learnings from the demonstration project with, and who they supposed may have received demonstration effects from them. This could have been through direct and active attempts to engage others in follow-on investment, indirect work on publications, formal attendance to conferences and events, or informal conversations with others in the industry.

Programme partners identified organisations they supposed may have been subject to demonstration effects, and those they believed may have replicated. Where possible, we asked for and obtained introductions to the relevant person in these potential replicator organisations. Where we couldn't, we used a 'cold' approach, of emailing and calling the organisation in question. We also used LinkedIn, to identify potential interviewees within these organisations based on their job role and whether they were in that role at the time of the investment, and directly approached them where we could. We planned to identify individuals who were responsible for decisions to replicate, as well as those in organisations who had not replicated. In practise, it was harder to identify those who were thinking about investing or had decided not to invest. Many programme teams steered us toward their success stories where we would find most evidence of demonstration.

[4] Number of completed interviews as a percentage of the number of respondents identified.

Originally, we had proposed to interview up to five replicators on each programme. However, there were challenges with some programmes:

- Three programmes (GET FiT, REPP and Eco.business) could not provide examples of potential replicators. GET FiT partners advised that there had not been opportunities for replication whilst REPP and Eco.business said that it was too soon to see examples of replication.
- The Lab investments that we spoke to were unwilling to give us permission to contact replicators.

For the focus areas, we interviewed key stakeholders to provide an overall understanding of the market. We were introduced to investors by these stakeholders and we identified further investors through internet searches and IJ Global.

### 5.5.4 Interview approach

All the interviews were conducted by telephone. Interviews followed realist methods[5] in which elements of the theory were explicitly tested with respondents. To ensure the responses are not biased and reflect respondents' experience and opinions, we:

- Asked open questions, exploring what has happened, why and in what circumstances.
- Tested multiple theories with the respondent – giving them alternatives to choose between and opportunities to refine elements of theory.
- Asked for evidence about the theories with which they agree and ask if there were times when it didn't work like that, what happened and why.

The interview was presented to the respondent as a collaborative effort to try and develop understanding rather than the interviewer having a settled view of theories for which they are seeking endorsement.

Tailored interview guides were prepared for each interviewee in order to direct the discussion to the areas of the theory that they are able to discuss. Subject to the respondent's permission, all interviews were recorded and transcribed for analysis.

Example interview guides are included in Appendix 5.

### 5.5.5 Lessons from primary research

We were pleased that most respondents, and respondents of all types, were generally willing to speak openly. We had very few actual refusals: five refused due to time constraints, and three said that they don't participate on principle.

Making contact with and recruiting all respondents, however, was slower and more labour intensive than anticipated. This meant that the data collection timing for Phase 2 fell in August, which is not an ideal period for collecting data. It was challenging to obtain initial interviews with many of the SROs and delivery partners because of their work pressure. Snowballing contacts with programme partners and potential replicators was a little easier, though we encountered some 'dead ends' and were unable to progress as far as we had hoped on some programmes.

## 5.6 Analysis and synthesis

The analysis and synthesis of evidence followed the approach set out in the Compass Quality Framework and the RAMESES quality standards.[6]

[5] Manzano A., The Craft of Interviewing in Realist Evaluation, Evaluation 2016.
[6] Wong *et al*, Realist synthesis, Rameses training materials, 2013.

All evidence (documents, interview transcripts, emails) was imported into analysis software (MaxQDA) and coded according to:

- The theory it was relevant to.
- Whether it was evidence for a context, mechanism or outcome.
- Where it was evidence for a mechanism, which specific mechanism(s).

Using the software, we were then able to align evidence against the hypothesised CMOs and refine theories by addressing the following questions:

- To which element(s) of the theory is the evidence relevant?
- Does the evidence support, refute or refine those elements of the theory?
- What particular refinements does the evidence require (e.g. new contexts requiring new CMOs)?
- To what extent is there evidence to support the refinements?
- Where are the gaps in evidence, and what do those gaps mean for synthesis?
- Does the evidence raise any new questions or prompt any ideas?
- To what extent and for which results is it possible to draw general conclusions from the evidence?

A sample page from MaxQDA is given at Appendix 5.9.

Limitations associated with the choice of a realist approach are:

- Realist approaches can, but are not primarily intended to, provide overall or on-average results. Instead they provide an understanding of how results differ for different people and in different circumstances.
- No evaluation, including realist evaluation, can provide universally applicable results. Realist evaluation provides explanations of the underlying processes by which outcomes are generated, and the contexts in which those mechanisms can work. These explanations may be useful for decision makers and programme managers in other circumstances, but the basis for portability needs to be understood.
- Realist research is an iterative process working towards deeper understanding. A single study does not claim to provide results that are comprehensive in all respects. However, it should provide a better understanding than before the research was conducted.

## 5.7 Process-tracing approach

Process tracing has been used to test whether demonstration effects contributed to the mobilisation of private finance in each of the cases where funding was mobilised following the ICF programme (set out in section 8.1).

Process-tracing tests were based on evidence about the demonstration and mobilisation. These are known as causal process observations (CPOs) and each CPO was assessed for whether the evidence would be likely to be seen if the theory was true or if the theory was false. CPOs fell into four broad categories:

**Table 3:** Process-tracing tests

| Evidence type | Test | Likely to be seen if the theory is true | Likely to be seen if the theory is not true |
|---|---|---|---|
| Disconfirmatory evidence | Hoop | High | N/A |
| Confirmatory evidence | 'Smoking gun' | N/A | Low |
| Neither confirmatory nor disconfirmatory | 'Straw in the wind' | Medium/Low | Medium/High |
| Confirmatory and disconfirmatory for rival theories | Doubly Decisive (DD) | High | Low |

These categories are not rigid, for example, a weak 'smoking gun' test is more like 'a straw in the wind' and a strong hoop test can be more like a 'smoking gun'.

**Hoop tests** can have disconfirmatory power i.e. if the evidence is not present, it casts doubt on the theory. Hoop tests can also be passed under the alternative hypothesis so do not generally have confirmatory power. Hoop tests used included:

- Whether the replicator was aware of the demonstration project.
- Whether the investor or the investee company agreed that the mechanism was important in the investment decision e.g. it was important that a fund manager should be able to show a track record.

**Smoking gun** tests provide strong evidence that the hypothesis is true, for example that the programme contributed to the mobilisation of private finance by establishing standard power purchase agreements (PPAs). However, they do not rule out the presence of other contributing factors, e.g. that reducing costs for solar panels improved the financial viability of the project. Smoking gun tests for whether the demonstration project was a cause for the mobilisation of private finance included:

- The investor citing evidence from the demonstration project as being important in their decision to invest, e.g. they invested at least partly because the fund manager had shown a good track record in the demonstration project.
- The investor having relied on evidence in their decision to invest which came from the demonstration project without knowing where it came from, and the investee confirming that they would not have been able to provide that evidence without the demonstration project.

**'Straw-in-the-wind'** tests provide relatively weak evidence supporting or weakening a theory. Individual straw-in-the-wind tests are not sufficient to reject or validate a theory. However, multiple independent straw-in-the-wind tests pointing to the same conclusion provide stronger evidence. Straw-in-the-wind tests for whether the demonstration project caused the mobilisation of private finance included:

- Investees claiming that the demonstration project influenced investors without confirmation from investors.
- Investors citing evidence from the demonstration project without confirmation from investees that they could not have provided that evidence without the demonstration project.
- Evidence from programme partners/SROs who have a vested interest in the success of the programme.
- Circumstantial evidence, e.g. the same people being involved in demonstration projects and subsequent replication.

Doubly decisive tests for whether the demonstration project caused the mobilisation of private finance. Tests would provide smoking gun evidence for the demonstration effect while providing a hoop test which eliminates an alternative explanation.

Process-tracing tests were used in two ways:

1. Where private finance had been mobilised, process tracing was used to assess the strength of evidence that demonstration effects contributed to the mobilisation. See section 8.1.
2. To assess the strength of evidence for each of the hypothesised CMOs. See section 9.

The evidence from process tracing was categorised as:

- **Strong support** for the contribution of demonstration effects where there was at least one smoking gun test passed and no hoop tests failed (no doubly decisive tests were passed but, if they had been, this would also have constituted strong support).
- **Some support** where multiple straw-in-the-wind tests were passed and no hoop tests were failed.
- **No evidence of support** where no straw-in-the-wind or smoking gun tests were passed and no hoop tests were failed.
- **Failed** where hoop tests were failed and no smoking gun or straw-in-the-wind tests passed.

**Limitations** associated with the use of process tracing are:

- Process tracing investigates the cause of an outcome in a specific case; in this evaluation, cases where private finance was mobilised. The results are not applicable to other cases.
- Judgement is used in determining and applying the criteria for categorising evidence. With different criteria, or a different research team that might have applied the criteria in a different way, the results would have been different.

## 5.8 Qualitative Comparative Analysis (QCA)

The Evaluation Steering Group requested that we consider whether QCA could have been employed to explore causality further. An assessment of the potential for QCA is in Appendix 6. This assessment found that QCA could have been used to further validate the findings in this study triangulating the results of the realist synthesis and process tracing.

## 5.9 Credibility of evidence

The evidence used to support, refine and refute theories and for the process-tracing tests has also been assessed for credibility against four tests:

- **Authority:** where evidence comes from an authoritative source, e.g. where it comes from an organisation with established credibility or has already passed a peer review or similar test.
- **Signature:** where the demonstration project has left a 'signature' on the subsequent mobilisation of private finance. For example, where a particular financial structure was used on the demonstration project and then replicated subsequently or where a resource developed on the demonstration project was used in the subsequent mobilisation. Signatures are stronger when there is direct documentary evidence and weaker when they are from interviews or indirect sources.
- **Chronology:** the demonstration must occur before the mobilisation of private finance to be considered a possible cause.
- **Triangulation:** evidence is considered to be:
  - **Strong:** where convergent evidence drawing on different data types has been obtained from all appropriate stakeholder groups/evidence sources; and
  - **Acceptable:** where evidence converges but data from some groups/sources missing, or all groups/sources represented but some divergence in the evidence.
  - **Weak:** evidence missing from a large number of groups/sources or particular important ones and/or wide divergence in the evidence.

## 5.10 Strength of evidence

The research identified outcome patterns – by whom, in what circumstances, for what purpose and at what stage of a project has private finance been invested in LCCR projects beyond the demonstration projects. These were then investigated to establish the role of demonstration – whether investors were aware of the results of demonstration projects (either directly or indirectly) and whether, to what extent and how this influenced the decision to invest.

The refined CMO propositions in section 9 provide an explanation for causality; what mechanisms generated the outcomes and the contexts that caused those mechanisms to operate.

The strength of evidence for the refined CMO proposition has been rated in three categories (as described in the Evaluation Quality Framework, but since updated):

**Table 4:** Strength of evidence

| Convincing | Plausible | Tentative |
|---|---|---|
| **The proposition is supported by consistent evidence from a substantial number of different sources, has been tested in different contexts and no evidence has been found that contradicts the proposition; AND where the proposition has been tested with different methods including specific and appropriate tests of causality such as process tracing or quantitative methods; AND the proposition is consistent with formal theory.**<br><br>A finding is deemed convincing when evidence to support it meets **all** of the following criteria:<br><br>• Found in five or more ICF programmes.<br>• Found in interviews with both programme partners *and* replicators.<br>• At least one case of *strong support* is found in process tracing.<br><br>**Example**: the *business model* CMO for the 'businesses and developers' investor type is convincing because evidence to support it has been found in interviews from all 10 ICF programmes, with both programme partners and replicators, and process tracing revealed strong support in six cases. | **The proposition is supported by consistent evidence from a substantial number of different sources, has been tested in different contexts and no evidence has been found that contradicts the proposition.**<br><br>A finding is deemed plausible when evidence to support it meets **one or more** of the following criteria:<br><br>• Found in five or more ICF programmes.<br>• Found in interviews with both programme partners *and* replicators.<br>• At least one case of *strong support* is found in process tracing.<br><br>**Example:** the *default risk* CMO for the 'direct investors' investor type is plausible because evidence to support it was found in interviews from five ICF programmes, with replicators and programme partners, but process tracing revealed zero cases of strong support. | **The proposition is supported by evidence from a smaller number of sources, has only been tested in some contexts or where there is some evidence that undermines the proposition.**<br><br>A finding is deemed tentative when evidence to support it meets **all** of the following criteria:<br><br>• Found in less than five ICF programmes.<br>• Found in interviews with only programme partners *or* replicators (not both).<br>• No cases of *strong support* is found in process tracing.<br><br>**Example:** the *compliance* CMO for the 'fund manager' investor type is tentative because evidence to support it was found in interviews from one ICF programme, with only programme partners (not replicators) and process tracing revealed zero cases of strong support. |

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## 5.11 Theory development process

In the interim report at the end of Phase 1, we reported on key changes to our theories since the inception report. The table used in the interim report is now edited and updated, to remove superseded theory numbering, and reflect changes made during Phase 2 and analysis and synthesis stage:

**Table 5:** Theory development process

| Initial theory | Rationale for changes made since inception report | Comments on theory at interim stage | Comments at final report stage |
|---|---|---|---|
| Private programme partners | The distinction between those involved and not involved in the initial project appears less significant than the type of investor and what is being demonstrated. | Incorporated within new theories as appropriate. | No change since interim stage. |
| Private investors not involved in initial project | Renamed **direct investors** to incorporate private programme partners. | What is being demonstrated appears to be more important than merely the availability of evidence.<br><br>Theory has been refined around six aspects of demonstration:<br>• Transaction costs<br>• Demand<br>• Return on Investment (RoI)<br>• Track record<br>• Financial structure<br>• Sector/country | Theory has been developed and refined around six aspects of demonstration, which work differently in combination for each of the four investor types identified at interim stage: Businesses and developers, direct investors, fund managers, institutional investors:<br>• Demand<br>• Business model<br>• Track record<br>• ESG compliance<br>• Risk<br>• Trust |
| Project sponsors and developers not involved in initial project | Renamed **businesses and developers** to incorporate other business types. | | |
| Institutional investors not involved in initial project | Subdivided into **institutional investors** and **fund managers** to incorporate private programme partners and reflect different mechanisms. | | |
| Unintended consequences | New theories include what we have learned so far. We will continue to be alert to potential unintended consequences throughout Phase 2. | Unintended consequences now include:<br>• Restrictive investment mandate resulting in lack of investment opportunities<br>• Crowding out by development finance<br>• Missed opportunities due to slow progress on demonstration project | The two most frequent and significant unintended outcomes emerged during interviews as:<br>• Crowding out<br>• Reduced ESG standards in follow-on projects<br>Other unintended outcomes were mentioned only once or twice by interviewees, so are not reported on in the main report. |
| Transformation | This area of theory will be developed and tested during Phase 2 interviews. | We have refined the theory to better reflect our current understanding of transformation. | We found evidence to help develop our theory, which is now based around ICF's own theory of transformation. |
| Communication of demonstration projects | We have incorporated the communications theory in the four main theories rather than having them as separate items. | Theories have been refined around four ways in which demonstration effects can be experienced:<br>• Hands-on<br>• Word of mouth – from programme partner<br>• Through HMG communications<br>• Market intelligence | Phase 2 interviews helped us refine our theory. We identified four methods of communication:<br>• Direct communication from a programme partner<br>• Programme-led convening and communication<br>• Conferences and industry bodies<br>• Wider market knowledge |

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## 5.12 Changes made since inception report

**Analysis during data collection**

In the initial workplan, we stated that the analysis would be completed after the primary research phase. In order to allow more time for primary research without extending the duration of the project, a junior analyst was brought onto the team to conduct analysis during data collection. This didn't change the planned analysis method but brought forward the process-tracing analysis to during data collection. The realist analysis remained toward the latter end of data collection, but the junior analyst prepared the data in MaxQDA by deleting duplicated or irrelevant nuggets to speed up the process for the team.

**Case studies**

In the interim report, we set out to identify wider market changes or developments that had been influenced by demonstration effects generated by ICF programmes. By the time of the interim report, this had been narrowed down to six potential areas of exploration, potential 'case studies'. These were Mexico, Indonesia, Uganda, home solar, PV solar and institutional investors. We envisaged narrowing this down to a final four, and conducting approximately 15 interviews for each. With guidance from the Evaluation Steering Group, a final three case studies were decided on: Indonesia, Uganda and institutional investors. These have since been renamed as focus areas to more closely reflect the purpose of the work.

**Recruitment process**

As set out in the interim report, we established a recruitment process in which contact with potential interviewees was recorded on a spreadsheet. We ensured that we were persistent, and the process of two emails followed by a phone call was established for contact. LinkedIn became a useful tool in speeding up the process, as interviewees could be contacted directly. When an interviewee was willing but unable to take part, we established the process of sending a brief questionnaire based on the PIS, of which three were returned to us.

**PIS and topic guide changes**

The Programme Investigation Strategy (PIS) was established during Phase 1 of the research, and summarised our understanding of the programme, setting out the theories to be tested in interview. From the PIS, topic guides were produced and tailored to each individual interview. The topic guides were updated multiple times as theories changed.

**Strength of evidence**

We had originally intended to use alignment with formal theory as one of the criteria for assessing the strength of evidence for CMOs. However, the formal theory that we identified was not sufficiently detailed to allow individual CMOs to be assessed against them. Consequently, it was not possible to use this as one of the tests for strength of evidence.

# 6 Renewable energy investment trends

**There is increasing private sector investment in renewable energy; transactions with private finance alone are growing faster than those involving development finance. This increased mobilisation of private finance is at least in part due to the improved economics of renewable energy and to changes in the investment environment in particular countries.**

We reviewed literature relating to renewable energy investment and conducted analysis of data from IJ Global relating to nearly 800 investments in renewable energy in developing countries between 2009 and 2018. The full results of this research and analysis are in Appendix 4 and the key findings are summarised below:

- Investment in renewable energy is affected by the overall ease of doing business and perceptions of corruption. In the two focus areas, Indonesia and Uganda, the ease of doing business has improved since 2015. Perceptions of corruption in Indonesia have improved since 2012 while Uganda is perceived as more corrupt than it was in 2012. These changes in the investment environment will also contribute to the mobilisation of private finance for renewable energy projects.
- The amount of investment in renewable energy has risen by 55% since 2010 when changes in costs are taken into account. The average cost of new power generation capacity has fallen by 20% for onshore wind and 75% for PV solar since 2010.
- In 2018 renewable energy represented the majority of power generation investment in China, Brazil, India and sub-Saharan Africa. However, coal and gas accounted for more than renewables in Southeast Asia and Middle East and North Africa.
- The amount of project finance for renewable power generation increased by nearly 50% between 2015 and 2018. However, the 'poor bankability' of renewables projects in Indonesia is a barrier to investment.
- Analysis of transactions showed that the value of transactions financed by the private sector alone has increased nearly twice as fast as the value of transactions involving development finance since 2010. This has been particularly pronounced in Asia, Latin and for investment in onshore wind power.
- According to EY, the attractiveness of Indonesia for renewable energy investment has not increased since 2014. Uganda, the other focus area, was not covered by their research.

# 7 Cross-cutting issues

The inception report identified three questions relating to cross-cutting issues

**1. How do cross-cutting issues relate to the demonstration effect?**
We identified numerous cases where demonstration effects related to environmental, social and governance (ESG) criteria. Whilst there was not time in the interviews to test whether these extended to poverty and gender issues, there were some anecdotal comments including:

> *"The fund itself is designed explicitly to drive that design and impact measurement system that for the first time will try to measure adaptation climate resilience impact, in particular piloting an approach where that impact is measured against relevant SDGs and gender, which I think is also a novel area of analysis for adaptation resilience."*
> – Fund manager

> *"So, like for us gender equity was really important and continues to be very, very important. A lot of managers did not have it at the top of their agenda. And it's something that we've pushed quite a bit and we've seen tremendous progress made. But I would say, they need that level of sophistication to understand why some of these elements are important and how they translate, to not only kind of like that social impact element but also financial returns."* – Institutional investor

We also found evidence from institutional investors that they respond to concerns from their investors (e.g. pension beneficiaries).

> *"We do yearly make a questionnaire to our investors and year over year, at least the years that I've been here, climate change and gender equity are probably the top two investor interests that we see."* – Institutional investor

**2. What happens when the demonstration effects are replicated?**
We did identify some examples of follow-on projects which did not adhere to the same social or environmental standards as the demonstration project. This is discussed further in section 11.2.

**3. Are demonstration effects communicated so that they are accessible to all relevant potential replicators?**
We did not find any evidence that communications were specifically designed to be accessible to particular groups of potential replicators.

# 8 In what circumstances, to what extent, for whom and how have demonstration effects contributed or not to private investors' decisions to invest in low carbon, climate resilient markets?

## 8.1 How much private finance has been mobilised by demonstration effects?

The research identified 26 examples of the mobilisation of private finance following demonstration projects. The value of these investments totalled around US$430 million (£350 million[7]).

Table 6 below shows the identified investments by programme along with the type of investor, investment, location, purpose and the level of support from the evidence that demonstration effects contributed to the mobilisation of private finance.

**Table 6:** Private finance mobilised following demonstration effects[8]

| Programme | Value (US$ million) | Investor type | Investment type | Location | Purpose | Contribution of demonstration effect (from process tracing) |
|---|---|---|---|---|---|---|
| CP3 | 100 | Conglomerate | Equity | Southeast Asia | Renewable Energy | Some |
| CP3 | 58 | Insurance company | Equity | Sub-Saharan Africa | Renewable Energy | Some |
| CP3 | Unknown | Private equity Fund | Equity | Southeast Asia | Renewable Energy | Strong |
| CP3 | 50 | Bank/Family Office | Equity | Africa | Renewable Energy | Some |
| CP3 | Unknown | Fund Manager | - | Ethiopia | Renewable Energy | No evidence |
| REACT | 55 | Private equity Fund | Equity | Africa | Low-carbon Business | Some |
| REACT | 26 | Conglomerate | Equity | East Africa | Low-carbon Business | Strong |
| REACT | 20 | Business | Debt | East Africa | Low-carbon Business | Strong |
| REACT | 5 | Bank | Equity | East Africa | Low-carbon Business | Some |
| REACT | 9 | Bank | Debt | East Africa | Low-carbon Business | Strong |
| REACT | 9 | Conglomerate | Equity | Uganda | Low-carbon Business | Some |
| REACT | 1.3 | Business | Equity | Uganda | Low-carbon Business | Some |

[7] *https://www.xe.com* accessed 26/9/2019.
[8] Some StARCK+ investments converted from Kenyan Shillings - https://www.xe.com accessed 25/9/2019.

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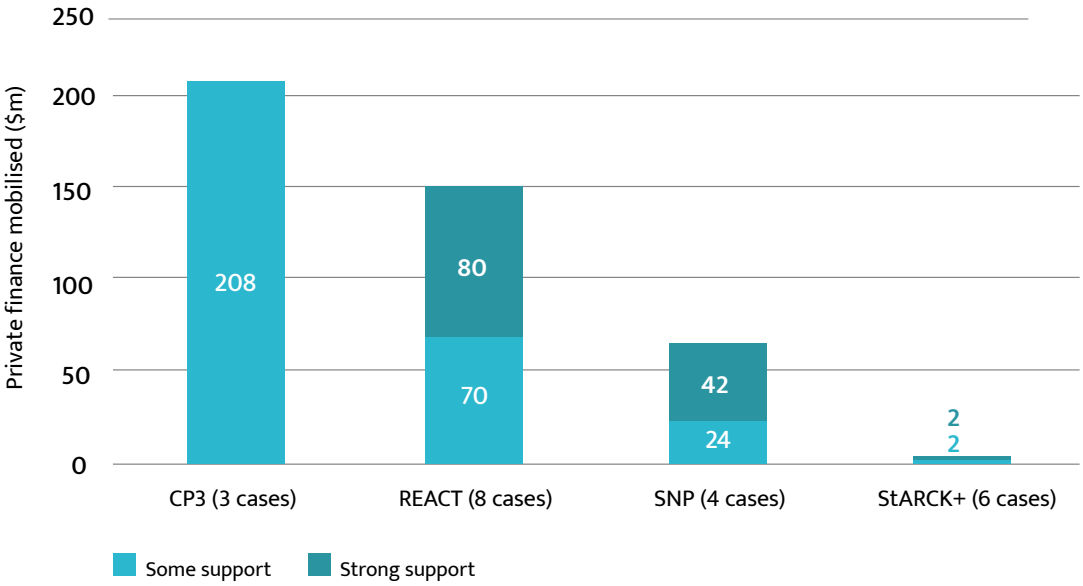
| Programme | Value (US$ million) | Investor type | Investment type | Location | Purpose | Contribution of DE (from process tracing) |
|---|---|---|---|---|---|---|
| REACT | Unknown | Conglomerate | - | East Africa | Low-carbon Business | Some |
| REACT | 25 | Private equity Fund | Equity | West Africa | Low-carbon Business | Strong |
| SNP | 40 | Private equity Fund | Equity | Nigeria | Low-carbon Business | Strong |
| SNP | 14 | Bank | Debt | Nigeria | Low-carbon Business | Some |
| SNP | 10 | Venture capital | Equity | Nigeria | Low-carbon Business | Some |
| SNP | 2.4 | Business | Equity | Nigeria | Low-carbon Business | Strong |
| StARCK+ | 0.7 | NGO | Grant | Kenya | Resilience | Strong |
| StARCK+ | Unknown | Insurance company | - | Kenya | Resilience | Some |
| StARCK+ | 1.93 | Bank | Debt | Kenya | Resilience | Some |
| StARCK+ | 0.1 | Bank | Debt | Kenya | Resilience | Strong |
| StARCK+ | 0.7 | Bank | Debt | Kenya | Resilience | Strong |
| StARCK+ | 0.03 | NGO | Grant | Kenya | Resilience | Some |
| StARCK+ | 0.29 | Bank | Debt | Kenya | Resilience | Some |
| StARCK+ | Unknown | Bank | - | Kenya | Resilience | Some |

It can be seen that:

- Four of the programmes in the sample had generated demonstration effects which mobilised private finance.
- There is a wide range in the amount of funding mobilised through demonstration effects, from US$100,000 to US$100 million. The largest amounts were for renewable energy funds and the smallest amounts were for resilience projects.
- Almost all the demonstration effects were in Africa. This appears to be because that is where the programmes were rather than because the conditions in Africa were particularly conducive to demonstration effects.
- The process-tracing analysis provided some support for the contribution of demonstration effects to the mobilisation of private finance in 15 cases with a value of US$124 million, strong support was provided in 10 cases with a value of US$204 million. The mean value of cases with strong support was US$20 million, 2.5 times greater than the mean value in cases with some support (US$8 million).
- There were four cases where the value of the investment was not divulged.

Figure 2 below shows the amount of private finance mobilised by each of the four programmes:

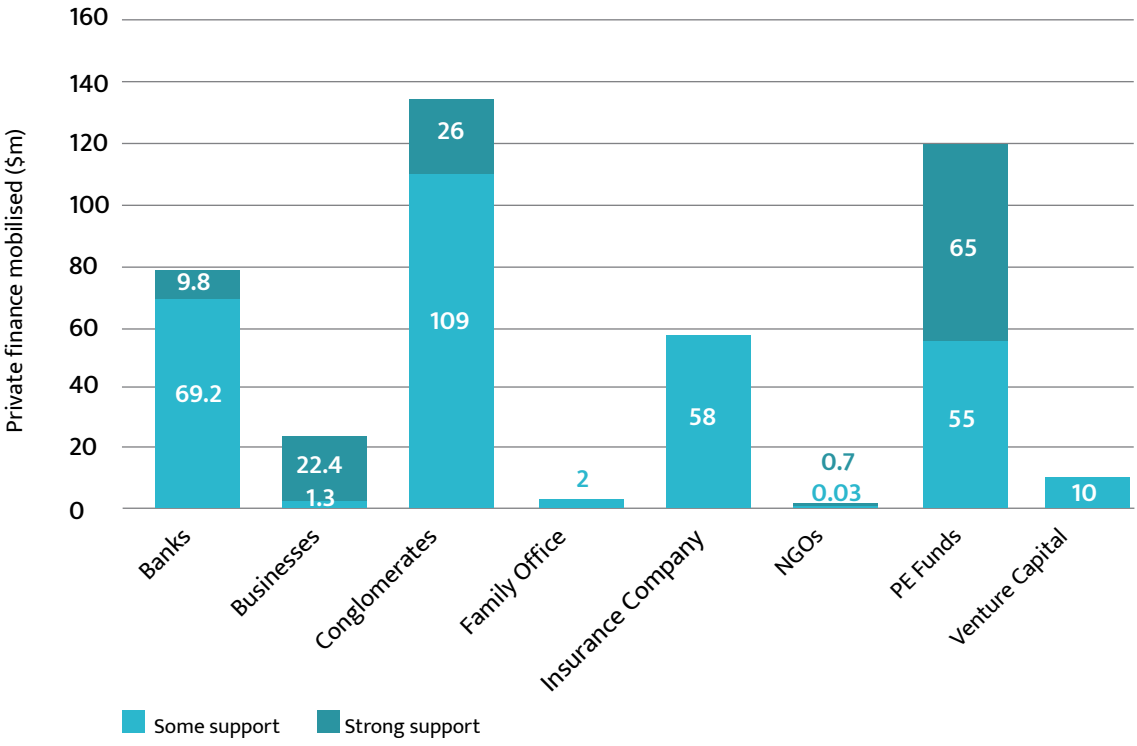
**Figure 2:** Private finance mobilised by programme (US$ million)




There was stronger evidence that demonstration effects from REACT and SNP mobilised private finance than CP3. This could be because the decision to invest in a fund requires more evidence from more sources than the decision to invest in an off-grid solar business. The amount of investment mobilised by StARCK+ was small in comparison to the other programmes; this probably reflects its focus on smaller, resilience projects.

Figure 3 below shows the amount of private finance mobilised by type of investor:

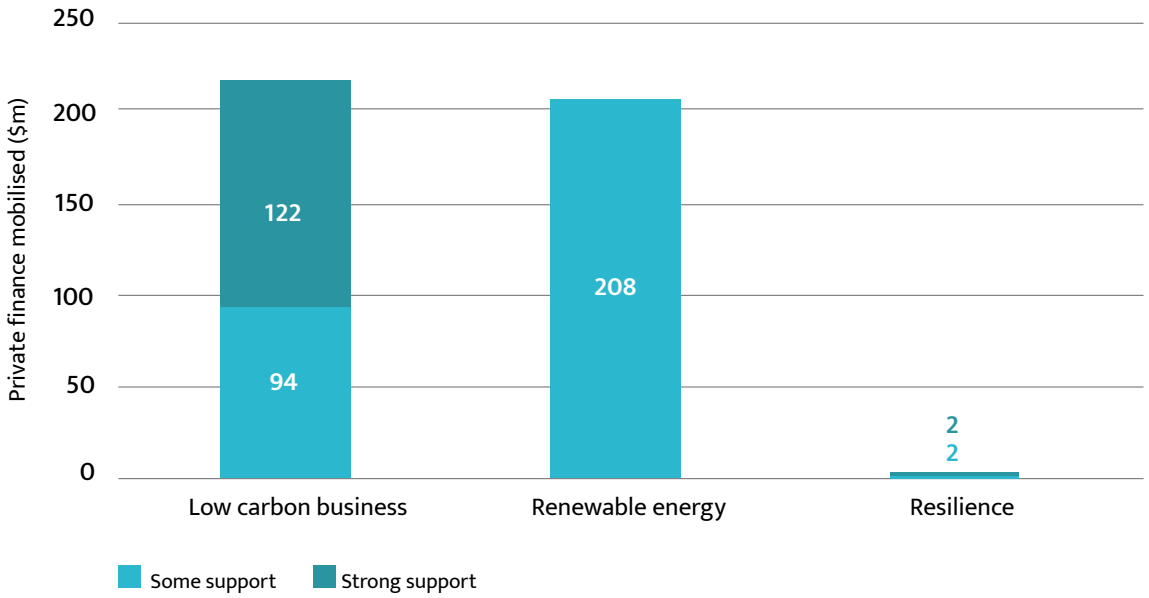
**Figure 3:** Private finance mobilised by type of investor (US$ million)



Much of the investment by conglomerates and businesses was in businesses/developers which had complementary activities to their core businesses and provided opportunities for geographical expansion (e.g. a European energy supplier investing in a provider of off-grid solar in Africa) or expansion into a new sector (e.g. an industrial conglomerate investing in a developer of wind farms). The investment by banks and private equity funds was spread across all sectors and programmes while the insurance company and family office each represent a single investment.

Figure 4 below shows the amount of private finance mobilised by the purpose of the investment:

**Figure 4:** Private finance mobilised by investment type (US$ million)



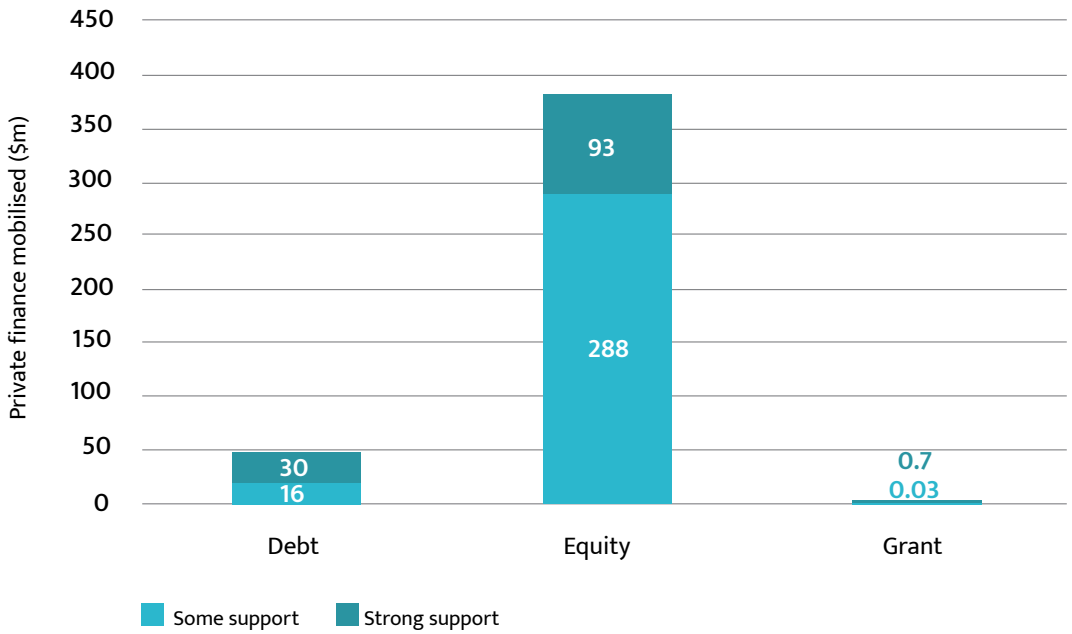

The amounts invested in low-carbon businesses and renewable energy are similar. However, there is stronger evidence for the contribution of demonstration effects for the investment in low-carbon businesses. This could be because the investment decision is more straightforward, and so it is easier to identify the contribution of different influences.

We did not identify any investment in energy efficiency through demonstration effects (Global Climate Partnership Fund (GCPF) projects investing in energy efficiency had been replicated but without private finance). This could be because energy efficiency investment is perceived as higher risk.

The amount of finance mobilised for resilience was small; this is partly because of the smaller project size and partly because only one programme in the sample was intended to mobilise private finance for resilience projects.

Figure 5 below shows the amount of private finance mobilised by type:

**Figure 5:** Private finance mobilised by type (US$ million)




Most of the private finance mobilised by demonstration effects was in the form of equity, but there was stronger support for the contribution of demonstration effects in mobilising debt.

As a comparison, the total amount of private finance mobilised as co-investment in ICF programmes between 2011/12 and 2017/18 was £910 million[9] . Considering the individual programmes:

- CP3 had mobilised US$160 million of private finance according to the 2018 Annual Review; this evaluation has identified £208 million of private finance mobilised through demonstration effects.
- REACT had mobilised US$130 million of private finance according to the 2018 Annual Review; this evaluation has identified US$150 million of private finance mobilised through demonstration effects.
- SNP had mobilised US$15 million of private finance according to the 2018 Annual Review; this evaluation has identified US$66 million of private finance mobilised through demonstration effects.
- StARCK+ has mobilised US$22 million of private finance according to the 2018 Annual Review, some of this was for REACT so we have not been able to isolate the amount of private finance to compare to the US$4 million mobilised through demonstration effects.

Thus, it appears that for the three programmes where comparisons were possible, private finance mobilised through demonstration effects is a similar order of magnitude to that mobilised by programmes directly.

[9] 2018 UK Climate Results. Available at: *https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/721993/2018-UK-Climate-Finance-Results.pdf*

## 8.2 Interim outcomes

Where programmes have not mobilised private finance through demonstration effects, we explored whether interim outcomes had resulted.

The tranche structure of GCPF has been replicated by other DFIs, attracting private finance with a similar level of concessionality to that within GCPF.

There are currently no opportunities for renewable energy investment in Uganda until work on the grid has been completed. However, demonstration effects have resulted in some interim outcomes:

- Two developers have used the GET FiT standardised PPAs to negotiate contracts with the Ugandan government for six future projects. One developer has agreed a US$20 million debt facility with a local bank to fund two projects to be disbursed once the work on the grid has been completed. The other developer is financing an additional four projects with a follow-on investment into their fund, mobilised by demonstration effects from CP3.
- Three developers are engaged in the development of renewable energy projects outside of Uganda. For one developer, the level of concessionality is unknown. For the other two developers, projects are being financed by investments into funds mobilised by demonstration effects from CP3.

It is too soon to tell whether REPP has mobilised private finance through demonstration effects. Many of the special purpose vehicles (SPVs) that REPP has invested in have only closed in 2019. However, there is evidence of some interim outcomes:

- By investing in SPVs at an early stage, REPP equity investments have helped to leverage further investment into their fundraising rounds, including some private finance.
- One programme partner is intending to replicate the REPP SPV financing structure in the other regions where they operate at a larger scale, the level of concessionality for the future SPVs is not known as the investors have not yet been identified.
- The uncertainty over the future of the Clean Development Mechanism post-2020 has limited the potential for demonstration effects from carbon market finance. However, there is some evidence that the upfront financing approach based on leveraging carbon credits has been replicated by one fund manager. Within the programme, there is some evidence that businesses and developers have been able to leverage their Emissions Reduction Purchase Agreements (ERPAs) to mobilise further investment in the form of development finance with less concessionality.

Perhaps because Eco.Business Fund is a relatively young fund and is focussed on an emerging market for investment (biodiversity), evidence of private finance mobilised through demonstration effects from the fund has not been found. However, some important interim outcomes have emerged:

- One of Eco.business Fund's early private sector investors wanted to invest €20 million in the Fund. However, the fund manager could not accept more than €16 million without sacrificing the risk cushion that had been set to provide comfort to other investors. This demonstrates that there is perhaps a higher demand for investment opportunities from institutional investors than anticipated.
- Following their experience with Eco.business, three of the fund's private sector investors claim to now have a heightened risk appetite in this market. This appetite has not materialised into finance mobilisation as the opportunities have not yet arisen: *"What I would say, in a follow-up fund, in the same sector, we would have taken more risk."*
- Two of the fund's investors have gone on to invest in another of the fund manager's (Finance in Motion) funds. Though the level of concessionality is equal to Eco.business Fund and the new fund is not targeting LCCR markets, the investors talk of watching the fund manager closely for future investments. Most of Finance in Motion's fund are targeting LCCR markets.

- One of the fund's investors has received a request for information from an aspiring sustainable bank: *"I'm having a chat next week with a German bank who also wants to make a step from being a standard commercial retail bank to being a sustainable commercial retail bank and that was partly because of our investments in the Finance in Motion funds."*
- Eco.business Fund has inspired institutional shifts in mindset for at least three of the supported financial institutions. One bank has gone on to replicate the environmental and social frameworks used in the project across a number of countries in Latin America. They claim to have gone from seeing environmental and social concerns as an expense to seeing it as an investment. Another bank has *"the full intention of going ahead with the green products in future years even without the presence of the Eco.business Bank."*

ICF supports The Lab's secretariat, which endorses and incubates a large number of 'ideas' (i.e. innovative sustainable finance ideas). The potential for outcomes and interim outcomes is wide ranging. Our investigation of a four Lab programmes found no private finance mobilised through demonstration effects but some interesting interim outcomes:

- A fund manager associated with The Lab describes having seen buy-in from high-level commercial investors, giving an example of one who saw a model which was incubated in The Lab and despite it not fitting with their strategy or internal bureaucratic structures, decided to make it happen regardless.
- One programme partner, whose idea was incubated by The Lab, talks about the importance of building trust around an idea. According to them, The Lab's endorsement of their previously untested idea has helped to build that trust for them.
- According to one programme partner, an insurance company who was involved with one project endorsed by The Lab has since gone on to look for other sectors in which they can promote the model.

## 8.3 Where demonstration effects did not mobilise private finance

There were two examples in our sample of programmes that generated demonstration effects but did not mobilise private finance: GCPF and GET FiT.

- GCPF partners are commercial banks developing new 'green' lending products, as a result of their experience with GCPF; examples include:
  - Supported financial institutions have established dedicated sustainable finance teams within their banks and have incorporated green lending into their overall investment mandate.
  - Supported financial institutions are investing in the creation and marketing of new green products (e.g. green buildings/mortgages) and marketing.
  - Supported financial institutions have adopted strict ESG frameworks to measure impact, which they are using as part of the due diligence process when accessing new credit lines from other DFIs.

However, the finance for the new products was provided by other development finance providers, in some cases with a greater level of concessionality than GCPF (see section 11).

- GET FiT partners were positive about the demonstration effects from the programme and several were interested in future investment in renewable energy investment in Uganda. However, since the GET FiT programme was completed there have not been any more opportunities in the country, partly because of the construction of two large hydroelectric plants which will lead to oversupply of generation until further improvements to the grid are implemented.

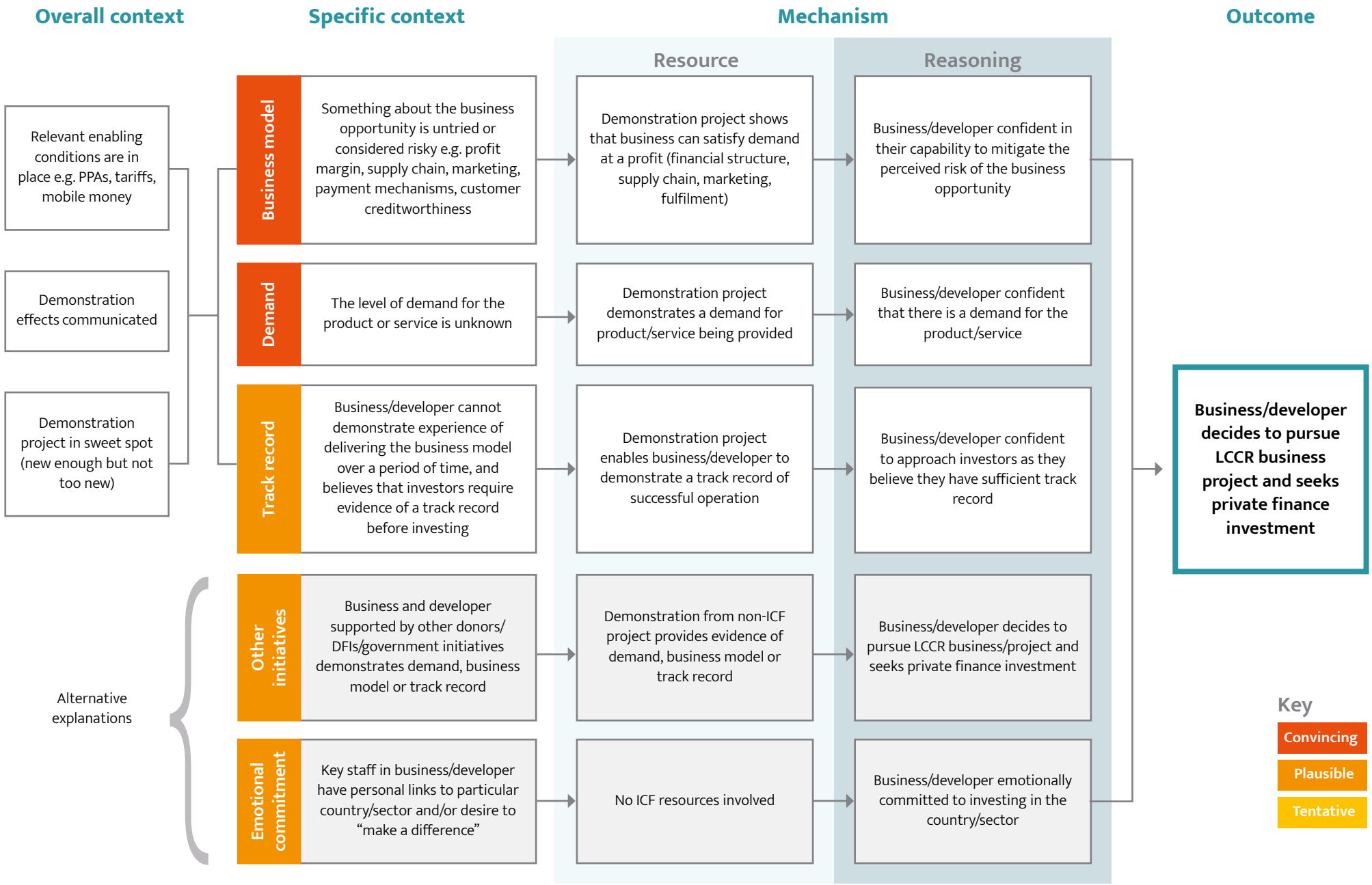
The GET FiT programme supported the development of enough generation to supply all the capacity of the grid. It is possible that the programme could have mobilised private finance through demonstration effects if it had supported fewer projects and allowed the private sector to address some of the opportunities.

# 9 Refined theories

The following sections describe the refined theories of change; these are summarised in section 5 of the Final Report.

Each section presents the high-level theory in tabular and diagrammatic form. It then describes the evidence for that theory along with an assessment of the strength of that evidence (see section 5.10).

## 9.1 Business and developers theory

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# Overall contexts (businesses and developers)

## Relevant enabling conditions are in place e.g. PPAs, tariffs, mobile money

Convincing

**Evidence from:**
- 9 ICF programmes
- 33 interviews:
  - 17 with programme partners
  - 6 with replicators
  - 10 with SROs/implementing partners

**Process-tracing evidence**
- Strong support in 3 cases
- Some support in 3 cases

**Quotes/examples:**

**Programme partner:** *"Private investors will feel comfortable that they are investing in a country where there is a stable demand for these products and then that demand will not decrease, and there will be no instability in terms of politics or in terms of currency."*

**Programme partner:** *"We're looking at the number of people off grid, the population, the density of the population, and mobile penetration as well because all of our payments are done via mobile money. Some countries don't have as much mobile money penetration."*

## Demonstration effects communicated

Convincing

**Evidence from:**
- 9 ICF programmes
- 41 interviews:
  - 25 with programme partners
  - 5 with replicators
  - 11 with SROs/implementing partners

**Process-tracing evidence**
- Strong support in 7 cases
- Some support in 0 cases

**Quotes/examples:**

**Programme partner:** *"There are only a handful of well-structured and professionally organised businesses in this space and we all come to know each other, or at least know enough about each other. And it's a very collaborative environment so people do share insights and they do share knowledge. This can be over drinks, there's a few regular Friday evening or Thursday evening drinks that we have."*

**Programme partner:** *"I mean the whole industry is one big gossip magazine. People like to stay up to speed on what's happening, everybody knows everything about everybody."*

**Programme partner:** *"We are participating in a lot of conferences everywhere. We are also a private company so we can to a certain extent explain what we're doing, but there is also a competitive issue there where we cannot tell everything to our future competitors."*

## Demonstration project in sweet spot (new enough but not too new)

Tentative

**Evidence from:**
- 2 ICF programmes
- 2 interviews:
  - 2 with programme partners

**Process-tracing evidence**
- Strong support in 0 cases
- Some support in 1 cases

**Quotes/examples:**

**Programme partner:** *"You had to be there within a two-year period to take advantage of those projects. And right now there isn't a programme in Uganda and for a period of three or four years it's going to be stagnating just because they're working through those projects and there won't be other ones, so if you're coming into Uganda, that Uganda market is broadly shut for new projects for three years roughly. So, no one's going to go in there now, you had to be in that two-year period."*

**Programme partner:** *"There's plenty of situations where even two years could affect the way policies are, could affect state government opinion."*

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# Specific CMOs (businesses and developers)

## 1. Demand

| Context | Mechanism | | Outcome |
|---|---|---|---|
| | *Resource* | *Reasoning* | |
| The level of demand for the product or service is unknown; this could be because it is a new product/service or because it is being offered in a different market. | Demonstration project demonstrates a demand for product/service being provided. | Businesses/developers confident that there is a demand for the product/ service. | Business/developer decides to pursue LCCR business/project and seeks private finance investment. |

Convincing

**Evidence from:**

- 7 ICF programmes
- 20 interviews:
  - 17 with programme partners
  - 2 with replicators
  - 1 with SROs/implementing partners

**Process-tracing evidence**

- Strong support in 1 cases
- Some support in 10 cases

**Quotes/examples:**

**Programme partner:** *"One of the unknowns we had was the extent of the marketing activity which would be required to drive the demand to prove essentially that the business is relevant and viable in this context. The [ICF] programme helped us to run awareness campaigns that helped us prove to our investor our ability to essentially repay our debt and also the potential of this market."*

**Programme partner:** *"the [X] company understood there was this market and once they realised that the product was attractive for some industry they started selling their [products] to other sectors and industries that were not part of our programme; they are working aggressively in trying to see in which other sectors it really makes sense to promote the [model] as a way to create new business."*

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## 2. Business Model

| Context | Mechanism | | Outcome |
|---|---|---|---|
| | *Resource* | *Reasoning* | |
| Something about the business opportunity is untried or considered risky e.g. profit margin, supply chain, marketing, payment mechanisms, customer credit worthiness. | Demonstration project shows that business can satisfy demand at a profit (financial structure, supply chain, marketing, fulfilment). | Business/developer confident in their capability to mitigate the perceived risk of the business opportunity. | Business/developer decides to pursue LCCR business project and seeks private finance investment. |

Convincing

**Evidence from:**

- 10 ICF programmes
- 36 interviews:
  - 24 with programme partners
  - 4 with replicators
  - 8 with SROs/implementing partners

**Process-tracing evidence:**

- Strong support in 6 cases
- Some support in 12 cases

**Quotes/examples:**

**Programme partner:** *"I think everybody agrees that the market is huge. But it's harder to reach the market to show that you can actually set up a last mile distribution chain where you knock on doors, sell products, install them, and show that everything runs fluidly. I think this loan helped us to show that we execute well."*

**Programme partner:** *"I think the SNP funding was especially useful to demonstrate a new version of our business model."*

**Programme partner:** *"So, there's a lot of data infrastructure that goes behind the inner workings of the business and that could not have been achieved if we didn't have that grant funding. It's the frontline presence, retail distribution and also being able to amass a direct sales force, and the back-end infrastructure that enables us to remotely secure all those devices and really be able to provide a good quality service to customers. The grant enabled us to build out all of that infrastructure which we would not have achieved the sheer volume of customers we have today if it had not been for that."*

**Programme partner:** *"Ideally, before we would need to employ a lot more staff to reach the volumes of clients that we now enjoy under the value chain. But because we are using the value chain model there was no increased number of staff, which really meant that we were actually making a lot more money despite extending them a lot less interest rate. We are making money because of the number."*

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## 3. Track Record

| Context | Mechanism | | Outcome |
|---|---|---|---|
| | *Resource* | *Reasoning* | |
| Business or developer cannot demonstrate experience of delivering the business model over a period of time, and business or developer believes that investors require evidence of a track record before investing. | Demonstration project enables business/developer to demonstrate a track record of successful operation. | Business/developer confident to approach investors as they believe they have sufficient track record. | Business/developer decides to pursue LCCR business/project and seeks private finance investment. |

Plausible

**Evidence from:**

- 8 ICF programmes
- 23 interviews:
  - 18 with programme partners
  - 1 with replicator
  - 4 with SROs/implementing partners

**Process-tracing evidence:**

- Strong support in 0 cases
- Some support in 7 cases

**Quotes/examples:**

**Programme partner:** *"For the last three to four years we've been growing roughly 300% year on year. So, we've shown that track record which has enabled us to get the financing that we have now."*

**Programme partner:** *"We have been growing for the last three years in Nigeria because we had funding support from [ICF programme] and then investors if they look at the historical numbers, they can easily say with confidence that the trend will be similar going forward because we are now an established player in this market."*

**Programme partner:** *"Investors might be excited about it but you need to actually get that thing across the line, they needed to see those results before they would fund. And I think it's exactly that that [ICF programme] funded for us."*

**Programme partner:** *"Because we had this patient money that was actually out there with money which said 'we know that what you're getting into a new space here and there may be some losses and that there's opportunity to discuss about potential write offs', which is where we are right now, it allowed us the opportunity to make those mistakes and learn and refine."*

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# Alternative explanations CMOs (businesses and developers)

## 4. Other initiatives

| Context | Mechanism | | Outcome |
|---|---|---|---|
| | *Resource* | *Reasoning* | |
| Business/developer supported by other donors/DFIs/government initiatives and demonstrates demand, business model or track record. | Demonstration from non-ICF project provides evidence of demand, business model or track record. | Business/developer confident that they can operate successfully and attract investment. | Business/developer decides to pursue LCCR business/project and seeks private finance investment. |

Plausible

**Evidence from:**
- 9 ICF programmes
- 11 interviews:
  - 7 with programme partners
  - 3 with replicators
  - 1 with SRO/Implementing partner

**Process-tracing evidence**
- Strong support in 0 cases
- Some support in 4 cases

**Quotes/examples:**

**Programme partner:** *"When we tell investors that we have the arrangement that we do with [another DFI], in their minds it makes us a much more attractive proposition. If you pass the [other DFI] test then you know you're passing the right tests."*

**Programme partner:** *"We have a particularly effective rural electrification agency in Nigeria in the last few years: they have convinced the World Bank and AfDB to provide large amounts of subsidy to help get the mini-grid sector moving."*

**Programme partner:** *"We have just recently been able to get a collaboration still with another U.S. aid program where they look to reward financial institutions for the loans they issue to the agricultural space. So, there's a lot of people looking to come in and trying to ride on that."*

## 5. Emotional commitment

| Context | Mechanism | Outcome |
|---|---|---|
| Key staff in business/developer have personal links to particular country/sector and/or desire to "make a difference". | *Business/developer emotionally committed to working in the country/sector.* | Business/developer decides to pursue LCCR business/project and seeks private finance investment. |

Plausible

**Evidence from:**
- 3 ICF programmes
- 5 interviews:
  - 2 with programme partners
  - 1 with replicators
  - 2 with SROs/Implementing partners

**Process-tracing evidence**
- Strong support in 0 cases
- Some support in 2 cases

**Quotes/examples:**

**Replicator:** *I started to do a lot of digging and I realised that this energy can really solve the problems which I saw was affecting the businesses and livelihoods of other people. So, that piqued my interest and I was happy about that because it was still within what I wanted to do, which is to give electricity to people. Only this time it's going to be cleaner, it's going to be more affordable and sustainable. So, I ordered my first set of SHS units."*

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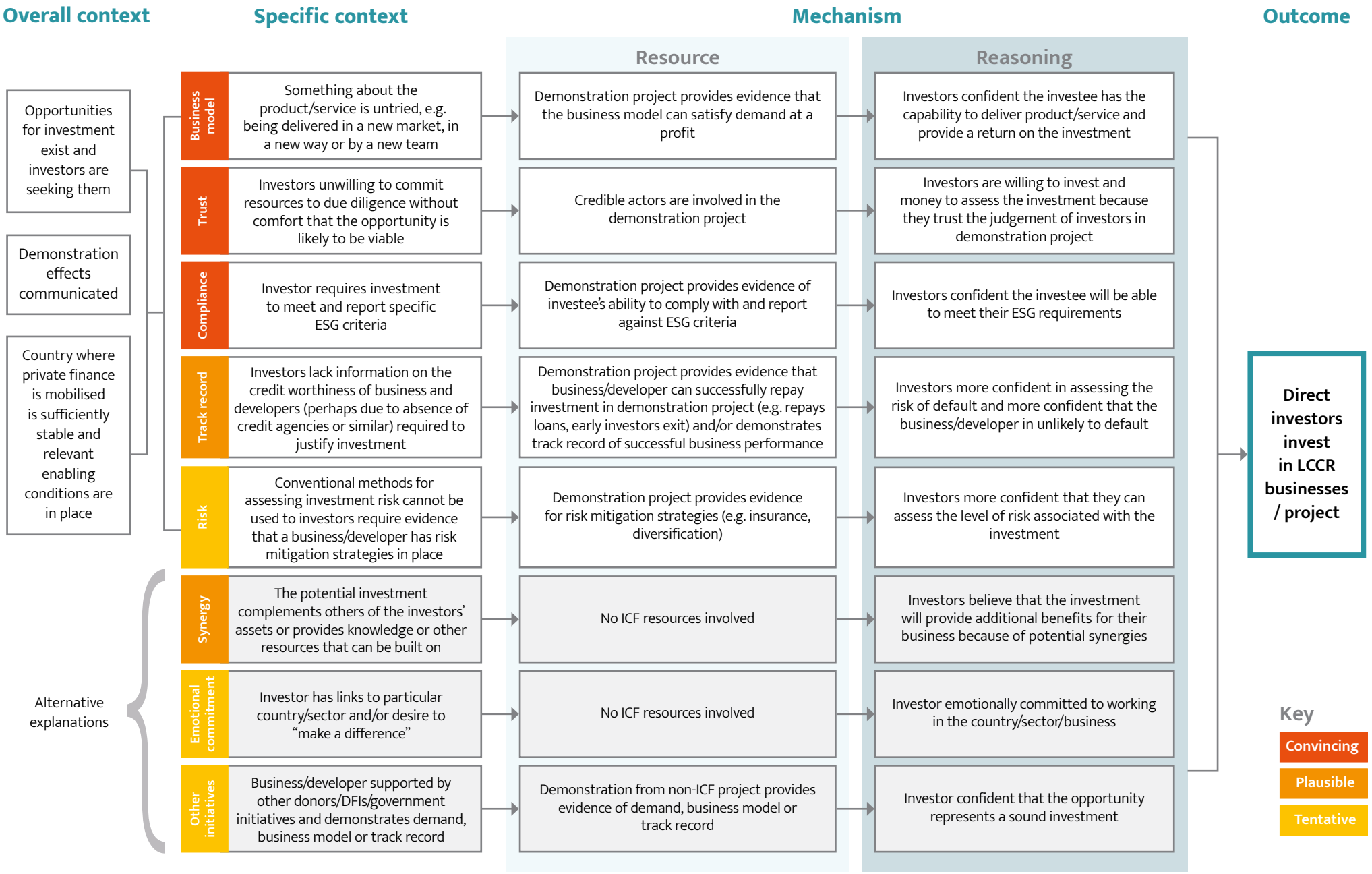
## 9.2 Direct investors theory

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# Overall contexts (Direct investors)

## Opportunities for investment exist and investors are seeking them

Convincing

**Evidence from:**
- 5 ICF programmes
- 10 interviews:
  - 3 with programme partners
  - 7 with replicators

**Process-tracing evidence**
- Strong support in 5 cases
- Some support in 4 cases

**Quotes/examples:**

**Implementing partner:** *"There is more people who are trying to fund sustainable development around SDGs and around climate change [...]. We have different people coming to us almost on a weekly basis asking us to provide them our portfolio, so that they can see if there is anything they can fund."*

**Replicator:** *"People are building power stations left, right and centre, but not building the grid to get to these people that are far flung. And you know it's usually a much poorer, very low-income players that are non-grid connected. So, we believe that providing a clean, reliable source of energy*

## Demonstration effects communicated

Plausible

**Evidence from:**
- 4 ICF programmes
- 7 interviews:
  - 2 with programme partners
  - 5 with replicators

**Process-tracing evidence**
- Strong support in 5 cases
- Some support in 2 cases

**Quotes/examples:**

**Replicator:** *"So I personally met them through my previous job and one of my colleagues moved to [company] in [country], a regional manager for [country] and that's how we started working together because I had a personal connection, and also I met a few of the C-level executives at my previous job and the relationship sort of transferred over, and we started working with them from there."*

**Replicator:** *"And then I would typically talk to DFID about this, and I think my colleague did this at the time, but we would talk to the DFI and get their input and ask for*

## Demonstration project in sweet spot (new enough but not too new)

Plausible

**Evidence from:**
- 3 ICF programmes
- 6 interviews:
  - 1 with programme partner
  - 5 with replicators

**Process-tracing evidence**
- Strong support in 6 cases
- Some support in 1 case

**Quotes/examples:**

**Replicator:** *"Here you've got very good telecommunications and you've got very good understanding and usage of mobile money, so this business will thrive. That is not necessarily the case in other countries."*

**Replicator:** *"It's mainly because of how the market is in [country x]. They're more advanced, progressing on the renewable side with their regulations, with their FiT regime and supporting renewables investment compared with neighbouring other countries, like [country y] and [country z] it's not as advanced as [country x]. So that's one of the things. And also, because of the growth of [country x] it opened up for investment, because a lot of investments are coming in, a lot of businesses are popping up. At the same time, the regulations for renewables, and how the government is very enthusiastic about having more renewables, we viewed it as an opportunity."*

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# Specific CMOs (Direct investors)

## 1. Business model

| Context | Mechanism | | Outcome |
|---|---|---|---|
| | *Resource* | *Reasoning* | |
| Something about the product or service is untried, e.g. being delivered in a new market, in a new way or by a new team. | Demonstration project provides evidence that the business model can satisfy demand at a profit. | Investors confident that the investee has the capability to deliver product/service and provide a return on the investment. | Direct investors invest in LCCR businesses/projects. |

Convincing

**Evidence from:**

- 5 ICF programmes
- 11 interviews:
  - 3 with programme partners
  - 5 with replicators
  - 3 with SROs/implementing partners

**Process-tracing evidence**

- Strong support in 3 cases
- Some support in 3 cases

**Quotes/examples:**

**Replicator:** *"They used [network provider] to facilitate payments and that was a very unique proposition in [country]. The market was extremely difficult to penetrate, even though the market is 90 million plus people. So, they were able to crack it."*

**Replicator:** *"One of the main reasons why the project was attractive to [name of replicator] is its innovative approach to provide financial services that is loans to the [recipient] because most of these [recipients] do not have access to loans and if they do actually from their financial institutions, they are required to provide collateral or maintain a bank account for a number of months or even have a minimum balance in the accounts for them to qualify for a loan. So, what was appealing to [name of replicator] was that in this case they are not required to have a bank account. They are not required collateral. Other than that, the [stock] that they are already keeping and they are not required to maintain a minimum balance. So that is one of the reasons why they were funded."*

**Replicator:** *"The creative nature of the client and how they use the system far exceeded our wildest dreams of whom and what the product is used for."*

## 2. Trust

| Context | Mechanism | | Outcome |
|---|---|---|---|
| | *Resource* | *Reasoning* | |
| Investors unwilling to commit resources to due diligence without comfort that the opportunity is likely to be viable. | Credible actors are involved in the demonstration project. | Investors are willing to invest time and money to assess the investment because they trust the judgement of investors in demonstration | Direct investors invest in LCCR businesses/projects. |

Convincing

**Evidence from:**

- 5 ICF programmes
- 11 interviews:
  - 4 with programme partners
  - 3 with replicators
  - 1 with SRO/implementing partner

**Process-tracing evidence**

- Strong support in 1 case
- Some support in 7 cases

**Quotes/examples:**

**Replicator:** *No donor government just gives money for the sake of giving money, they will also do a bit of their own homework to see if they are reputable people and is there a business case to justify the grant or whatever it may be. And there is a lot of additional little benefits that come from that - it allows you – from a legal perspective – to also get a bit of comfort because there is a lot of UK Bribery Act and all these other things that are attached to these donors."*

**Replicator:** *"Of course, for you to be funded to DFID there are those rigorous due diligence processes that you have to go through. So that also gave us the minimum comfort or assurance that for that company to also invest in."*

**Replicator:** *"When considering funding, understanding [programme partner] have a donor for several years supporting a project that requires significant investment, indicated first that the project was already in place, and second, that it had longer/ steady support so the rate for success and greater impact was higher."*

## 3. Compliance

| Context | Mechanism | | Outcome |
|---|---|---|---|
| | *Resource* | *Reasoning* | |
| Investor requires investment to meet and report on specific ESG criteria. | Demonstration projects provide evidence of the investee's ability to comply with and report against ESG criteria. | Investors are confident that the investee will be able to meet their ESG requirements. | Direct investors invest in LCCR businesses/projects |

Convincing

**Evidence from:**

- 5 ICF programmes
- 6 interviews:
  - 3 with programme partners
  - 2 with replicators
  - 1 with SRO/implementing partner

**Process-tracing evidence**

- Strong support in 2 cases
- Some support in 3 cases

**Quotes/examples:**

**Replicator:** *"The governance aspect was very important to us because we were very aware that the country we went into, [country], has sometimes a reputation of having governance issues and there's a lot of regulators bouncing around."*

**Replicator:** *"We are particular about ESG and you can see that the values are aligned. The goals are aligned, the values are aligned because I understand [the investee] has systems in place to make sure they meet the IFC standards. And it's important to us, more importantly because we are holding the [investor] brand."*

**Replicator:** *"Of course, for you to be funded to DFID there are those rigorous due diligence processes that you have to go through. So, that also gave us the minimum comfort or assurance that for that company to also invest in."*

**Programme partner:** *"ESG is probably the investors' number one criteria, that we really made a difference. Not just that we satisfy the criteria to make a difference, but that we made a difference on the human impact side."*

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## 4. Track record

| Context | Mechanism | | Outcome |
|---|---|---|---|
| | *Resource* | *Reasoning* | |
| Investors lack information on the credit worthiness of businesses and developers (perhaps due to absence of credit agencies or similar) required to justify investment. | Demonstration project provides evidence that business/developer can successfully repay investment in demonstration project (e.g. repays loan, early investors exit) and/ or demonstrates track record of successful business performance. | Investors more confident in assessing the risk of default and more confident that the business/developer is unlikely to default. | Direct investors invest in LCCR businesses/projects. |

**Plausible**

**Evidence from:**

- 5 ICF programmes
- 11 interviews:
  - 6 with programme partners
  - 3 with replicators
  - 2 with SROs/implementing partners

**Process-tracing evidence**

- Strong support in 0 cases
- Some support in 11 cases

**Quotes/examples:**

***Replicator:*** *"A lot of these companies are still very new, most of them are not even profitable at the moment. So, you can't do your conventional view, we had to look at them from a cash collection point of view. So, we had to look at the top line. And that's how how much they collect in terms of their receivables became the key focus for us."*

## 5. Risk

| Context | Mechanism | | Outcome |
|---|---|---|---|
| | *Resource* | *Reasoning* | |
| Conventional methods for assessing investment risk cannot be used so investors require evidence that a business/ developer has risk mitigation strategies in place. | Demonstration project provides evidence for risk mitigation strategies (e.g. insurance, diversification). | Investors confident in that they can assess the level of risk associated with the investment. | Direct investors invest in LCCR businesses/ projects/ |

**Tentative**

**Evidence from:**

- 4 ICF programmes
- 5 interviews:
  - 4 with programme partners
  - 0 with replicators
  - 1 with SRO/implementing partner

**Process-tracing evidence**

- Strong support in 0 cases
- Some support in 1 case

**Quotes/examples:**

**Implementing partner:** *"You can go to [name of programme], you'll have other funders interested in you because [name of grant] and [name of programme], we have been able to de-risk you. And, therefore, even banks for debt purposes they are looking at you and seeing you as a possibility. If that service that [name of grant] is providing was not provided to handhold these businesses, then probably nobody will be interested because you'll be too far away from somebody accepting to fund you. So, I would say that I am de-risking these enterprises."*

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# Alternative Explanation CMOs (Direct investors)

## 6. Synergy

| Context | Mechanism | | Outcome |
|---|---|---|---|
| | *Resource* | *Reasoning* | |
| The potential investment complements others of the investors' assets or provides knowledge or other resources that can be built on. | No ICF resources involved. | Investors believe that the investment will provide additional benefits for their business because of potential synergies. | Direct investors invest in LCCR businesses/projects. |

Plausible

**Evidence from:**
- 5 ICF programmes
- 8 interviews:
  - 1 with programme partner
  - 7 with replicators
  - 0 with SRO/Implementing partner

**Process-tracing evidence**
- Strong support in 0 cases
- Some support in 4 cases

**Quotes/examples:**

***Replicator:*** *"We actually screen our potential partners and try to make sure that they are aligned on what we want. And that's the first and most important thing that we look at. And then, once we start to have a feeling that this partner is aligned with what we want to do, we take a look at the due diligence."*

## 7. Emotional commitment

| Context | Mechanism | Outcome |
|---|---|---|
| Investor has links to particular country/sector and/or desire to 'make a difference'. | Investor emotionally committed to working in the country/sector/ business. | Direct investors invest in LCCR businesses/projects. |

Tentative

**Evidence from:**
- 2 ICF programmes
- 3 interviews:
  - 0 with programme partners
  - 3 with replicators
  - 0 with SRO/Implementing partner

**Process-tracing evidence**
- Strong support in 0 cases
- Some support in 1 case

**Quotes/examples:**

**Replicator:** *"I mean the story just lends itself to people that want to invest in this business. They are changing the lives of so many people, just by giving them access to a few light bulbs, the ability to charge phones, keep their tuck shops, etc., open for longer. So, that in itself was a story that we wanted to be part of."*

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## 8. Other initiatives

| Context | Mechanism | | Outcome |
|---|---|---|---|
| | *Resource* | *Reasoning* | |
| Business/developer supported by other donors/DFIs/government initiatives and demonstrates demand, business | Demonstration from non-ICF project provides evidence of demand, business model or track record. | Investor confident that the opportunity represents a sounds investment. | Direct investors invest in LCCR businesses/projects. |

Tentative

**Evidence from:**

- 1 ICF programme
- 1 interview:
  - 1 with replicator

**Process-tracing evidence**

- Strong support in 0 cases
- Some support in 1 case

**Quotes/examples:**

**Replicator:** *"It's mainly because of how the market is in [country]. They're more advanced, progressing on the renewable side with their regulations, with their FiT regime and supporting renewables investment compared with neighbouring countries, like [other countries] it's not as advanced as [country]. So that's one of the things. And also because of the growth of [country], it opened up for investment because a lot of investments are coming in, a lot of businesses are popping up. At the same time the regulations for renewables, and how the government is very enthusiastic about having more renewables, we viewed it as an opportunity."*

**Replicator:** *"I think the very key thing is they've already built a plant in [country], the [name of project with no UK ICF funding]. That was key because with that they're able to demonstrate that they've built a wind plant in [country]. They've gone through the painful process of doing the permit and dealing with the government agencies. So, with that we thought that they're able to demonstrate that they're familiar with how things work there."*

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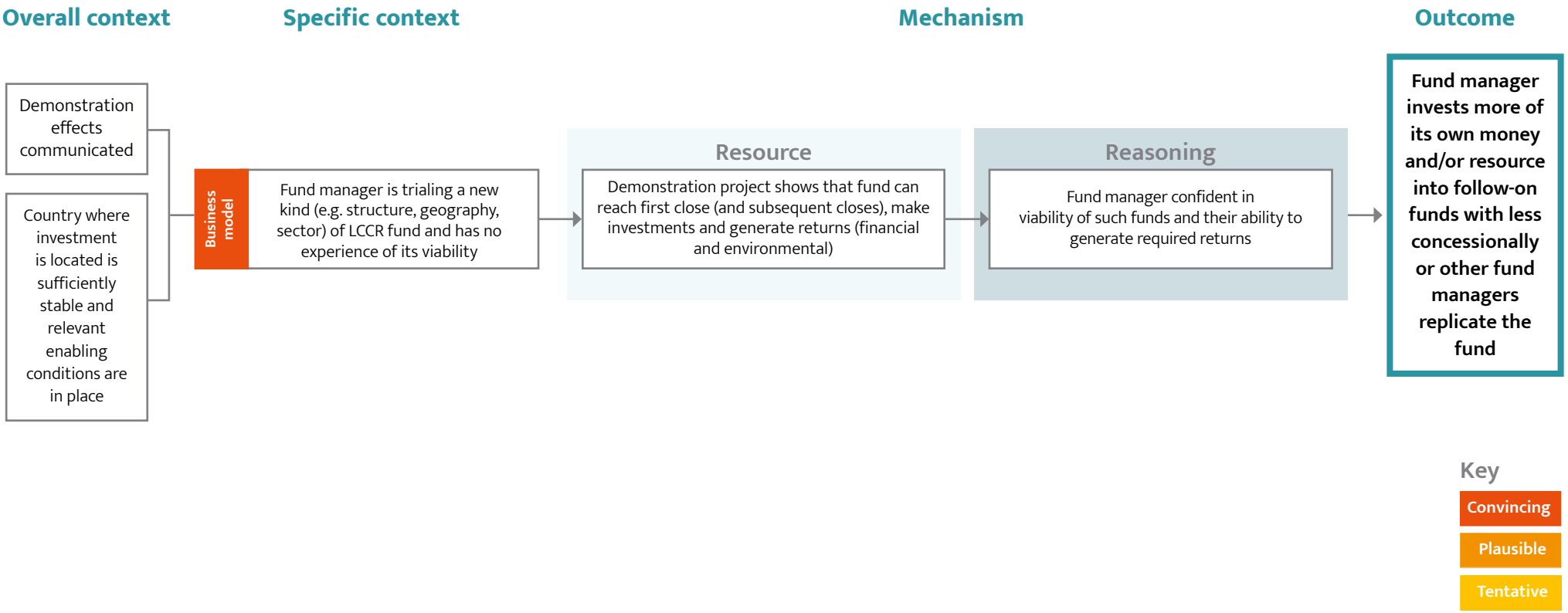
## 9.3 Fund managers theory

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# Overall contexts (Fund managers)

## Demonstration effects communicated

Plausible

**Evidence from:**

- 3 ICF programmes
- 7 interviews:
  - 4 with programme partners
  - 2 with replicators
  - 1 with SRO/Implementing partner

**Process-tracing evidence**

- Strong support in 4 cases
- Some support in 0 cases

**Quotes/examples:**

**Replicator:** *"Of course, [programme partner's] divestment and sale of its assets grabbed the industry headlines, so there's more exposure to that now."*

**Programme partner:** *"We are a part of [the replicator fund's] due diligence process. Specifically, we will go through what we have done and what we have learned with the potential investors for [the replicator fund] to help them evaluate what is being proposed in that fund."*

**Programme partner:** *"There is a robust conference circuit now. From a conference perspective we, and our other key counterparts in the markets, are well represented and we share the work we're doing."*

## Country where investment is located is sufficiently stable and relevant enabling conditions are in place

Plausible

**Evidence from:**

- 1 ICF programme
- 6 interviews:
  - 4 with programme partners
  - 1 with replicator
  - 1 with SRO/Implementing partner

**Process-tracing evidence**

- Strong support in 3 cases
- Some support in 0 cases

**Quotes/examples:**

**Programme partner:** *"I think in [country] it was a uniquely optimal situation where the regulator was very motivated and very sort of inspired by this opportunity. And you have a very strong regulator which you don't have in a lot of countries, a very independent regulator which is very professional. And obviously, that's not the case in many countries right now. So, you need an agency that can implement and that can be a good partner in doing this."*

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# Specific CMOs (Fund managers)

## 1. Business model

| Context | Mechanism | | Outcome |
|---|---|---|---|
| | *Resource* | *Reasoning* | |
| Fund manager is trialing a new kind (e.g. structure, geography, sector) of LCCR fund and has no experience of its viability. | Demonstration project shows that fund can reach first close (and subsequent closes), make investments and generate . | Fund manager confident in viability of such funds and their ability to generate required returns. | Fund manager invests more of its own money and/or resource into follow-on funds with less concessionality or other fund managers replicate the fund. |

Plausible

**Evidence from:**

- 3 ICF programmes
- 9 interviews:
  - 4 with programme partners
  - 3 with replicators

**Process-tracing evidence**

- Strong support in 1 case
- Some support in 4 cases

**Quotes/examples:**

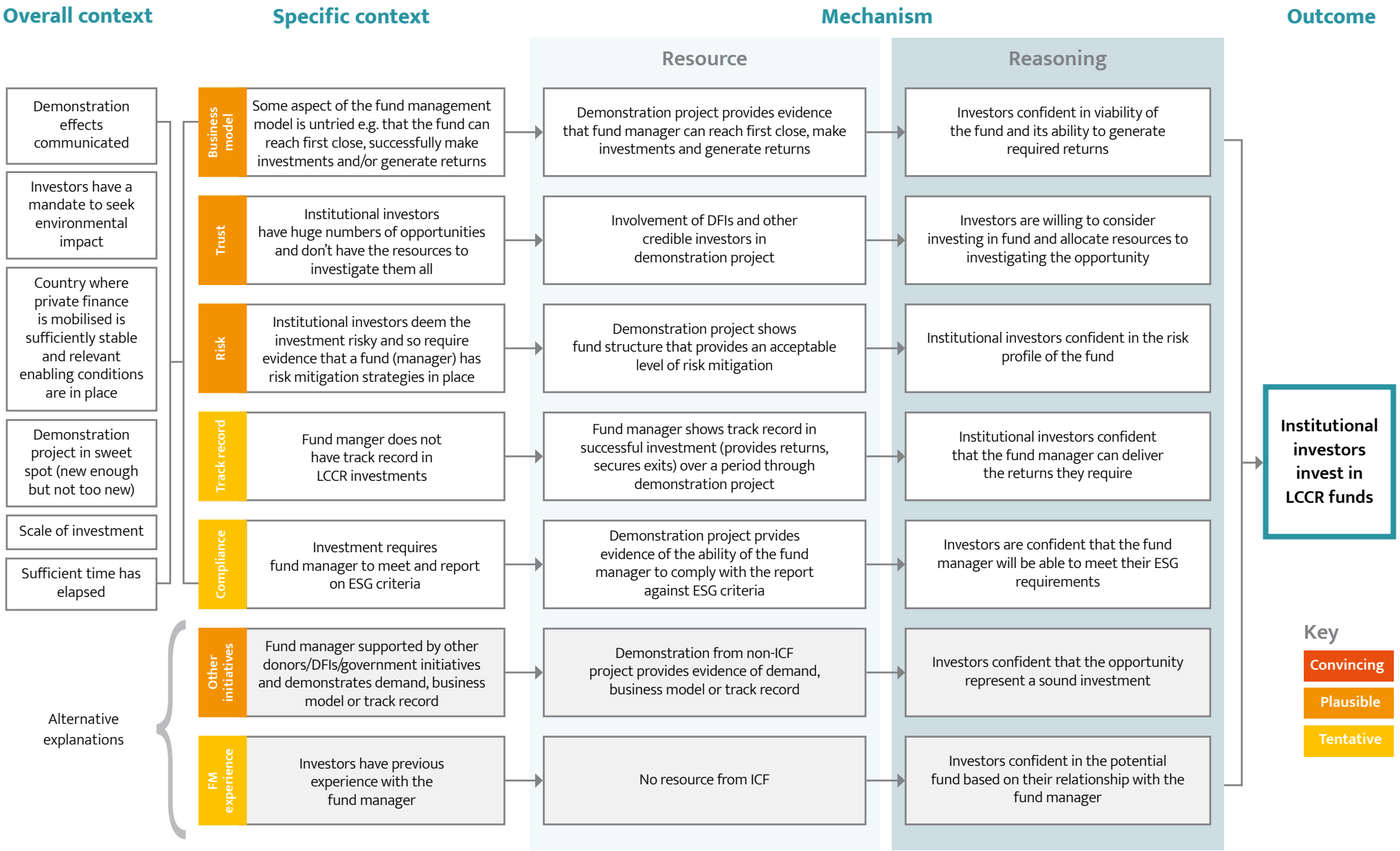
**Replicator:** *"[Programme partner] was a pioneer, you were talking about trying to invest in an industry where there was no precedent model, no precedent contract template, no template of any sort as to how you approach the investment and how you had to do it. [...] And I guess [programme partner] was ahead of their time and spent a lot of that time trying to educate different stakeholders and we've got a working model now."*

**Programme partner:** *"There are a lot of institutions out there who are in a wait-and-see position until a fund has reached first close because then it means okay these guys are serious, they have enough backing to be at least financially eligible, and they have a reasonable budget to actually run the operation. I think that was important for quite a few investors who came after first close."*

**Replicator:** *"The fact there are past transactions, president transactions, that helps. The fact that these transactions don't typically lose their capital, that helps."*

**Programme partner:** *"I think it's important that we've achieved a level of commercial return whilst also achieving a precedent and impact level necessary to make a proper match between public and private - we've been able to achieve the environmental social governance impact as well as a commercial case that this is commercially viable."*

# 9.4 Institutional investors theory

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# Overall contexts (Institutional investors)

## Demonstration effects communicated

Plausible

**Evidence from:**

- 3 ICF programmes
- 15 interviews:
  - 1 with programme partner
  - 7 with SROs/Implementing partners
  - 7 from wider institutional investor research (investors, sector experts, DFIs)

**Process-tracing evidence**

- Strong support in 4 cases
- Some support in 0 cases

**Quotes/examples:**

**DFI:** *"There's a couple of examples we have in our portfolio where it hasn't gone quite according to plan for whatever reason. They didn't break into the market or they didn't extend their reach as far or as fast as we had imagined they might. And I think that's a learning that others in the market will be able to see and not make that same mistake again."*

**Sector expert:** *"Investment managers will not do anything if they don't hear asset owners actually asking for this."*

**Interviewer:** *"And at the moment there is no way that the opportunities are reaching the people who are giving, who are defining the mandate?"*

**Sector expert:** *"The development finance community is not necessarily able to pass on learnings or share knowledge or talk about fiscal transactions that can be replicated to the more mainstream news outlets. It's also fantastic when one has whether the Financial Times or other kind of mainstream media as well that is helping to disseminate information about what has passed and successful transactions."*

**DFI:** *"It's most likely to be effective when there are individual people who are moving from transaction to transaction and are able to exploit their relationships that happen - and that on a very personal previous experience - in working on these deals."*

## Investors have a mandate to seek environmental impact

Plausible

**Evidence from:**

- 2 ICF programmes
- 17 interviews:
  - 1 with programme partner
  - 3 with replicators
  - 2 with SROs/Implementing partners
  - 11 from wider institutional investor research (investors, sector experts, DFIs)

**Process-tracing evidence**

- No support found

**Sector expert:** *"We're seeing pressure from stakeholders, particularly pension funds with quite a strong public element, and that's putting pressure on portfolio managers to have a think about this. And the Principles for Responsible Investment, the sort of shift around the ESG element, is making it much more critical for them to have another look at their mandate."*

**DFI:** *"And when competitors see that in that market, they feel and see that other international investors are investing into these and our clients feel that, you know, the environmental and social standards are not actually beneficiary to their business, and therefore they come either to us or start implementing standards in order to be attractive for other investors."*

**Programme institutional investor:** *"Yeah, the project itself, that's the first thing we look at. So, the project we lend money to needs to support one of our three mission statements. And if it does that, then indeed the experience of the fund manager is of utmost importance both because of the credit worthiness of the fund, because we are a commercial bank so we would like to see our money returned to it to us. Secondly, our USP is sustainability. So, the moment one of the investments we have made does not do what it has promised on the sustainability, it will hurt our image and clients will walk away."*

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## Country where private finance is mobilised is sufficiently stable and relevant enabling conditions are in place

Plausible

**Evidence from:**

- 2 ICF programmes
- 9 interviews:
  - 1 with programme partner
  - 2 with SROs/Implementing partners
  - 6 from wider institutional investor research (investors, sector experts, DFIs)

**Process-tracing evidence**

- Strong support in 3 cases
- Some support in 0 cases

**Quotes/examples:**

**Replicator:** *"The economics are clearly working for wind or solar, giving investors a little bit more comfort. But, obviously, what's holding them back is the overall development of the countries we are operating in; currency rate, regulatory risks are the two big main ones that get investors worried."*

## Demonstration project in sweet spot (new enough but not too new)

Plausible

**Evidence from:**

- 1 ICF programme
- 5 interviews:
  - 2 with SROs/Implementing partners
  - 3 from wider institutional investor research (investors, sector experts, DFIs)

**Process-tracing evidence**

- Strong support in 1 case
- Some support in 0 cases

**Quotes/examples:**

**Sector expert:** *"But it's also a little bit of a risk of always having confessional capital providers wanting to do the new and the most innovative part of the market, without necessarily helping to facilitate that replication and to facilitate that moving the market to scale. Because I think one has to recognise that there is a bit of a journey even if there has been one transaction, it doesn't mean that institutional investors are comfortable to come in and do the next one alone."*

**DFI:***"You often need to be very close to a point where the market is ready to move anyway. And then there's even more of a case [for] saying well this may have happened anyway, the MDB didn't really do a demonstration effect - not additional because the time period is shorter. To show that .... demonstration effect when you're closer to the tipping point is harder."*

**DFI:***"We have a product which is a dedicated credit line to finance climate projects or wind projects, and we saw that it has been more effective in countries where there were no regulations or no such product available on the market, then it was more effective there than in countries where renewable energy were already in place for a few years and where there was real interest or willingness from the government to move forward on that pathway. So, maybe that will be an example when we arrive in a market which is already mature, and probably the demonstration effects are all over."*

## Scale of investment

Plausible

**Evidence from:**

- 3 ICF programmes
- 8 interviews:
  - 3 with programme partners
  - 2 with replicators
  - 3 from wider institutional investor research (investors, sector experts, DFIs)

**Process-tracing evidence**

- Strong support in 0 cases
- Some support in 2 cases

**Quotes/examples:**

**Programme partner:** *"At the moment [the size of our fund] shuts out any big investors because no one wants to write a cheque that is more than roughly 50 million in a fund of 200 million, that's the absolute maximum you'll get. And yet the big guys that are starting to get interested in the sector want to write 200 million cheques. But they can't write those cheques in a fund of our size."*

**Programme partner:** *"The happy moment where [private investors] should want to come in, is when returns are roughly 15% and there's some success. That window tends to be very short because as projects progress and become mature, and the regulatory systems are all working such that private capital wants to come in, it starts to look more like a developed market and therefore [private investors] start to run up against their own prejudices."*

## Sufficient time has elapsed

Tentative

**Evidence from:**

- 0 ICF programme
- 7 interviews:
  - 7 from wider institutional investor research (investors, sector experts, DFIs)

**Process-tracing evidence**

- No support found

**Quotes/examples:**

**Sector expert:** *"Typically, over the lifetime of at least one of the funds of a particular manager, so they probably raised several funds [...]. But I think that at least one of those funds to have closed fully invested and then sat for a bit to get a sense of what the post investment returns look like and enjoy it."*

# Specific CMOs (Institutional investors)

## 1. Business model

| Context | Mechanism | | Outcome |
|---|---|---|---|
| | *Resource* | *Reasoning* | |
| Some aspect of the fund management model is untried e.g. that the fund can reach first close, successfully make investments and/or generate returns. | Demonstration project provides evidence that fund manager can reach first close, make investments and generate returns. | Investors confident in viability of the fund and its ability to generate required returns. | Institutional investors invest in LCCR funds. |

**Plausible**

**Evidence from:**

- 2 ICF programmes
- 15 interviews:
  - 4 with programme partners
  - 1 with replicator
  - 2 with SROs/implementing partners
  - 11 from wider institutional investor research (investors, sector experts, DFIs)

**Process-tracing evidence**

- Strong support in 1 case
- Some support in 4 cases

**Quotes/examples:**

**Institutional investor:** *"We think there is a need to show that you can earn a market return and have a positive impact. And this brings about a lot of good consequences when you start doing that as an institution, you start thinking more about your impact. Particularly in climate, because in climate there's so much that you can do which is absolutely proven market return, pretty mainstream."*

**Sector expert:** *"Fiduciary investors were very cautious to come into the impact market because they felt it was sort of necessarily concessional. And we produced a number of cross asset class financial performance studies, mostly in private markets over the last five or so years, and they've shown that you know it's sort of within the margin of error, and that type of financial performance data has been really useful in sort of arming us to go out to institutional investors and saying you know your fiduciary mandate, you [...] can't hide behind that anymore because we've proven that these products can make above-the-market rate of return."*

## 2. Trust

| Context | Mechanism | | Outcome |
|---|---|---|---|
| | *Resource* | *Reasoning* | |
| Institutional investors have huge numbers of opportunities and don't have the resources to investigate them all. | Involvement of DFIs and other credible investors in demonstration project. | Investors are willing to consider investing in fund and allocate resources to investigating the opportunity. | Institutional investors invest in LCCR funds. |

**Plausible**

**Evidence from:**

- 3 ICF programmes
- 27 interviews:
  - 4 with programme partners
  - 2 with replicators
  - 6 with SROs/implementing partners
- 15 from wider institutional investor research (investors, sector experts, DFIs)

**Process-tracing evidence**

- Strong support in 0 cases
- Some support in 3 cases

**Quotes/examples:**

**Programme partner/institutional investor:** *"Having a number of the DFIs and the government organisations involved in setting kind of good standards, as it relates to both the social and environmental kind of like outcomes that the funds or the borrowers need to adhere to, is really important."*

**Institutional investor:** *"Ultimately investors will make decisions. It's always hard to pinpoint exactly what it is that, you know, tip them over. But I think looking at others and what they did is definitely one of those one of those items."*

**Programme partner:** *"I think that unconsciously [private institutional investors] take a brand view - whether they should, or they shouldn't - if [partner DFI] has invested in it, then they can then present that to their private clients that this is good. There's a sort of comfort."*

## 3. Risk

| Context | Mechanism | | Outcome |
|---|---|---|---|
| | *Resource* | *Reasoning* | |
| Institutional investors deem the investment risky and so require evidence that a fund (manager) has risk mitigation strategies in place. | Demonstration project shows fund structure that provides an acceptable level of risk mitigation. | Institutional investors confident in the risk profile of the fund. | Institutional investors invest in LCCR funds. |

Plausible

**Evidence from:**

- 2 ICF programmes
- 17 interviews:
  - 2 with programme partners
  - 2 with replicators
  - 4 with SROs/implementing partners
  - 9 from wider institutional investor research (investors, sector experts, DFIs)

**Process-tracing evidence**

- Strong support in 0 cases
- Some support in 4 cases

**Quotes/examples:**

**Institutional Investor:** *"I don't think we've ever gone in at the outset with a development agency. It is probably just a bit too high risk for us. So, we've done the follow-on ones. Where they become more slightly more mainstream. We said there's just literally a case that we don't have many mandates that would enable us to do that. Right now, you should absolutely consider [institutional investor name] as a second-wave investor in most of those sorts of projects. But I would foresee in three, five years' time we would be getting more and more happy with getting involved at early stage, but it really depends on the country."*

**Programme partner/institutional investor:** *"So I would say that being in the UK government being the junior tranche, is super important."*

## 4. Track record

| Context | Mechanism | | Outcome |
|---|---|---|---|
| | *Resource* | *Reasoning* | |
| Fund manager does not have track record in LCCR investments. | Fund manager shows track record in successful investment (provides returns, secures exits) over a period through demonstration project. | Institutional investors confident that the fund manager can deliver the returns they require. | Institutional investors invest in LCCR funds. |

Tentative

**Evidence from:**

- 2 ICF programmes
- 20 interviews:
- 6 with programme partners
- 1 with SRO/implementing partner
- 13 from wider institutional investor research (investors, sector experts, DFIs)

**Process-tracing evidence**

- Strong support in 0 cases
- Some support in 4 cases

**Quotes/examples:**

**Programme partner/institutional investor:** *"It has allowed us to understand better the risk and the opportunities of the investments in the sector and in the region by being involved in the fund. Without that initial risk capital and that technical assistance, we wouldn't have invested in the fund. And so, as a result, we would also have not been able to have that exposure to learn and share that learning with other investors that we could crowd in into future deals."*

**Programme partner:** *"We have closed complex financing of projects and we've closed them at a rate that I would say is double what other people do. A lot of other people do one project at a time and it takes them a long time and then they do the next one. So, we've got a lot more traction broadly."*

## 5. Compliance

| Context | Mechanism | | Outcome |
|---|---|---|---|
| | *Resource* | *Reasoning* | |
| Investor requires fund manager to meet and report on ESG criteria. | Demonstration projects provides evidence of the fund manager's ability to comply with and report against ESG criteria. | Investors are confident that the fund manager will be able to meet their ESG requirements. | Institutional investors invest in LCCR funds. |

Tentative

**Evidence from:**

- 2 ICF programmes
- 10 interviews:
  - 4 with programme partners
  - 1 with SRO/implementing partner
- 6 from wider institutional investor research (investors, sector experts, DFIs)

**Process-tracing evidence**

- Strong support in 0 cases
- Some support in 3 cases

**Programme partner:** *"Investors are going to be comfortable that the team and the ESG credentials check out that the ESG framework with which the funds have to comply, the anti-money laundering, the operational controls are all there."*

# Alternative Explanations CMOs (Institutional investors)

## 1. Other initiatives

| Context | Mechanism | | Outcome |
|---|---|---|---|
| | *Resource* | *Reasoning* | |
| Fund manager supported by other donors/DFIs/ government initiatives and demonstrates demand, business model or track record. | Demonstration from non-ICF project provides evidence of business model or track record. | Investor confident that the opportunity represents a sounds investment. | Institutional investors invest in LCCR funds. |

**Plausible**

**Evidence from:**
- 3 ICF programmes
- 5 interviews:
  - 2 with programme partners
  - 3 with replicators

**Process-tracing evidence**
- No support found

**Quotes/examples:**

**Programme partner/institutional investor:** *"In, say, the period 2010, 2011, 2012, there had been a much more active carbon financing play obviously when the compliance market was in a more lively stage. And for example, there was a company - it was part of [name of group] - a company that was invested by [name of other DFI], they had done similar transactions but they already stopped doing that when we entered the market. So, there was a bit of overlap; we could learn a little bit from their lessons and then of course, the main lessons that we had was the activities that we did ourselves at [name of foundation]."*

## 2. Fund manager experience

| Context | Mechanism | Outcome |
|---|---|---|
| Investors have previous experience with the fund manager. | *Investor confident in the potential fund based on their relationship with the fund manager.* | Institutional investors invest in LCCR funds. |

**Tentative**

**Evidence from:**
- 1 ICF programme
- 4 interviews:
  - 3 with programme partners
  - 1 from wider institutional investor research (investors, sector experts, DFIs)

**Process-tracing evidence**
- No support found

**Quotes/examples:**

**Programme partner/institutional investor: Interviewer:** *"I'm wondering what it was here that made you happy and confident to go in first as a private investor?"; Interviewee: "Yeah, it was basically knowing the fund management, knowing our fund management, and actually belief in the people who have started the fund and belief in the mission and from an impact point of view."*

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# 10 Focus areas

## 10.1 Indonesia

**ICF has supported renewable energy developers and fund managers in Indonesia, demonstrating the business model, track record and risk. However, we found no evidence of the mobilisation of private finance as a result of demonstration effects within the country due to the deterioration of enabling conditions, the oversupply of energy on Java and an unreliable grid infrastructure. Despite this setback, a number of ICF-supported developers and fund managers remain in Indonesia, intending to continue with project development if and when the enabling and regulatory conditions improve.**

ICF has supported a number of renewable energy developers and fund managers who have investment interests in Indonesia. The Indonesian government has set in place a target aiming for 23% of all electricity generation coming from new and renewable energy sources by 2025, as part of Indonesia's 2016-2025 Electricity Supply Business Plan.

To understand whether there are wider demonstration effects from ICF programmes and/or alternative explanations for the state of the current renewable energy market in the country, we conducted six interviews with sector experts, practitioners and donor government officials who are actively working in, or monitoring, the market for renewable energy in Indonesia. Several of these experts were identified by ICF implementing partners, and we also spoke to the ICF-supported renewable energy developers and fund managers who are working, or have worked in, the country.

We found no evidence of the mobilisation of private finance as a result of demonstration effects within the country due to the deterioration of enabling conditions, the oversupply of energy on Java and an unreliable grid infrastructure. This has resulted in many developers and investors reverting to a wait-and-see position and/or focussing their resources elsewhere in Southeast Asia. The interviews identified several commercial and regulatory barriers to renewable energy development and investment.

**Political environment and commitment to coal**

Indonesia's commitment to coal is a major barrier to renewable energy development in the country. In 2010 coal accounted for 37% of total generation capacity, in 2018 it was at 50%. As one of the world's top exporters, Indonesia's economy is heavily dependent on coal and domestic use also helps to reduce international dependence on energy. For that reason, attempts to move away from fossil fuels are politically sensitive and coal tariffs remain subsidised by the government. The Ministry of Energy remains highly influential, and their close relationship with the state-owned utility PLN remains a cause for concern for international investors in terms of corruption.

> *"The fossil fuel industry is entrenched and heavily subsidised. So not only from a political perspective it's a social issue, to affect the kind of change needed around subsidies in a country the scale of Indonesia is a political banana skin or hot potato. So, it's a key issue every time elections come around [...]. Unfortunately, renewable energy has been a victim of a largely entrenched positions [...]. Despite public opinion around the impending environmental or the negative impact from continued coal fired power stations etc., the federal challenge and block was just too big to get over."* – Fund manager

> *"I think it relates a lot to the coal market, the whole industry, I don't think they want the coal industry to sell less coal."* – Key sector expert

**Tariffs**

The tariffs for renewable energy in Indonesia remain low, making it difficult for developers to make projects commercially viable. With a 6-7% increase in electricity demand year on year, the state-owned electricity utility PLN is increasingly incentivised to be cost effective and coal is a cheap, and readily available, source of power. Current regulation caps renewable tariffs at 85% of coal tariffs, and they are based on the cost of power

generation in the particular region where the project is being developed. As the government does not subsidise renewable energy PPAs, it makes it very difficult for renewable energy developers to compete.

For the limited examples of renewable projects that have signed PPAs in the last five years, they have been financed by DFIs and as each negotiation with the off-taker is bespoke, there is no standardised PPA that can be replicated.

> *"A PPA is signed and then, for the next project, it can totally change. No one wants to actually use something which was done by his predecessor, so they all want to develop something new and use that, no matter if the last documentation or PPA was good. Each minister has their own regulations and agendas."* – Renewable energy developer

**Regulatory barriers**

The lack of clarity around tenders makes it difficult for external developers to enter the market and compete, as well as the restriction on foreign ownership of companies. Reversing the open tender process, developers are required to submit unsolicited bids, forming a 51:49 joint venture with the state-owned utility PLN. This process, as well as strict regulations on local content, has significantly reduced the confidence of foreign investors within the market.

> *"The government is pushing for the local content, and local content means using locally manufactured or locally assembled solar models which are 50% more expensive than Tier 1 imports. And that is the biggest hurdle. If you do not comply with the local content then you will get 10% penalty on your feed in tariff."* – Renewable energy developer

> *"There are so many implied interests there or embedded interests, so it's very difficult, the situation is very difficult."* – Renewable energy developer

Despite the unfavourable enabling conditions, renewable energy developers and international investors remain hopeful given the potential for growth within Indonesia. Independent power providers (IPPs) remain vigilant on what is happening in the market, given the potential for growth, whilst pursuing opportunities elsewhere. In the event that regulatory conditions and tariffs improve, many IPPs have projects and sites that have been identified and are ready to be developed.

> *"The market is still kind of undeveloped. The regulations are uncertain. But everybody is looking in the future, so they all want to come in, make their presence, do the project even not really profitable with the hope that comparing Indonesia to other countries, the market will open and then they will have an advantage. That is their goal."* – Renewable energy developer

Some of the key sector experts also highlighted the potential for the development of small-scale renewables in Eastern Indonesia on the outer islands where communities are reliant on diesel generation. Although a number of international developers and investors have shown interest, particularly in the mini-grid sector, we have been unable to find evidence of any projects been developed. The UK Foreign and Commonwealth Office has launched the new Prosperity Fund Indonesia Renewable Energy Programme (2019-2022) with the intention of catalysing the development of renewable energy projects on the more remote, eastern islands.

A number of ICF-supported developers and fund managers remain in Indonesia, intending to continue with project development if/when the enabling and regulatory conditions improve.

## 10.2 Uganda

**ICF programmes, particularly GET FiT Uganda and REACT, have increased investor appetite for financing renewables projects in Uganda. Through changing the regulatory environment (PPAs and deemed energy clause), GET FiT gave project developers and their financiers confidence in the sector and country. REACT funded solar home system developers, which became market leaders, generating demonstration effects for subsequent investors. The role of energy industry associations in connecting investors and companies, sharing knowledge and lobbying for private sector interests, is key.**

There are early signs of transformation in Uganda's renewable energy sector, aided partially by the ICF-supported programme, GET FiT Uganda. Through the programme's focus on the regulatory environment, renewable energy projects were bolstered with the introduction of a standardised PPA. This legal contract gave renewable project developers and their financiers increased confidence in the predictability of the price and terms of payment for produced electricity. With this confidence encouraging investment, the GET FiT Uganda projects were able to materialise and demonstrate the potential for delivering successful renewables projects in Uganda, whilst highlighting the country's positive policy and regulatory environment.

> *"I think [GET FiT] ushered in a golden age of project development in Uganda where you could go forward as a developer with three or four projects, and we haven't had that certainty in a lot of other markets. It is the most solvent, well-structured sector in the whole of sub-Saharan Africa and that's partly the Ugandan set-up, and it's partly because of GET FiT."* – Programme partner

GET FiT Uganda has had a wide impact. Stakeholders involved in the original supported projects are keen to develop more projects at the new tariff introduced by the government, without the need for an additional top-up. In the past, negotiating a bespoke project-specific PPA with the government was estimated to have taken between two-three years, but the new standardised PPA and other documentation developed by the programme has vastly reduced the time required and transaction costs involved for developers. Several developers are now using this standardised PPA to negotiate new projects inside and outside of Uganda. The programme also helped to lobby the government on behalf of developers, helping to resolve issues relating to import duties and tax reform, ensuring that the enabling environment remains favourable for renewable energy projects.

> *"I think the real lasting legacy is that they have made a tremendous improvement of the framework of doing these projects. Of course, the PPA implementation agreement, all of those are now sort of off-the-shelf documents and we've been able to negotiate PPAs in Uganda in like two hours. That was unheard of before, there would be just the project specifics, everything else we're not even going to open it up. Also, for non-GET FiT projects afterwards. So that's a huge transaction cost saving for all the projects, which is absolutely amazing, and something that we've tried to emulate."* – Programme partner

The impact of the programme has also reached beyond those involved and been a positive catalyst for investment in the sector. Sector experts confirm that the bankable contract structures borne out of the programme have proliferated outside of it. For example, one interviewee and recipient of indirect demonstration effects from the programme is currently part of a wind power development and claims that the tariff top-up put in place during GET FiT helped push that investment:

> *"When we started that project, that was 2015, and the GET FiT programme was still on. So, I think that subsidy by the GET FiT programme was also important in pushing us because the tariffs were subsidised."* – Developer

This is an interesting example of demonstration effects from this regulatory change encouraging investment, especially given that this is a wind project and GET FiT only supported hydroelectric and solar projects.

Since the influx of new projects feeding into Uganda's grid, there is now an oversupply in terms of projected generation capacity, meaning more electricity than can be consumed is going to be produced. This is apparently already translating into less investment in the energy sector and a level of uncertainty around the future direction of investment. The energy off-taker (Uganda Electricity Transmission Company Limited, or UETCL) later decided to remove the deemed energy clause from the PPA. The deemed energy clause de-risked projects for developers by ensuring that if they were ready to supply power to the grid but the government transmission line to the project is not ready, then they would be paid energy for the energy that they could have provided regardless. According to one sector expert, this caused some investors to 'shy away' from projects as this shifted additional risk onto them. In spite of these obstacles, new investment in renewable energy is expected to be mobilised faster and with less concessionality once they have been resolved.

Another ICF programme that contributed to Uganda's renewable energy market development is REACT. The REACT programme supported innovative solar home businesses with repayable grants, providing them with the capital required to build inventories and prove the market for their products, and the viability of their business models, to direct investors. Several of these 'big players' in the off-grid solar market have now obtained private investment, and other businesses have been inspired to enter the market. Though it could be argued that REACT-supported businesses are dominating the market, they have also created demonstration effects for other solar power developers:

Evidence from success stories of other projects and businesses signal that the market is taking off and can be an important demonstration effect. However, this alone is not enough to convince investors to put their money into Ugandan renewables. It is clear that of similar importance for those thinking of investing in Uganda is the government's strategy and appetite for private investment. For on-grid projects, government capacity to take on more energy generation and distribute it is a key determinant of investor interest, as evidenced by the GET FiT Uganda case. This also works for investors in the off-grid space. As an off-grid sector expert explains, investors are comforted by clarity regarding government direction:

> *"Positive signs from the government that they support the sector is really important. When they have a rural electrification strategy or plan that formally endorses and recognises the role that off-grid systems play [...]. So, when they've integrated, for example, solar off-grid systems into the electrification planning, then for the industry the predictability is there; it formally recognises it is incorporated into the mix."*
> – Off-grid sector export

In terms of communicating these conditions to potential investors and developers, demonstration effects from ICF programmes are not the only source. Research conducted for this focus area highlighted the importance of industry associations in the mobilisation of private finance. Uganda has a number of renewable industry associations which sit under the umbrella organisation, Uganda National Renewable Energy & Energy Efficiency Association (UNREEA).

Their demonstration effect communication work is often three-fold: 1) they act as a 'match-making' force, connecting companies with investors; 2) they produce and disseminate information on their associated markets and regulatory environments; and 3) they lobby for private sector interests at government level. Interviews suggest that the presence of such associations provide additional comfort to investors considering investment in Uganda and a key source of information once they have invested.

> *"The Uganda Solar [Energy] Association, which has just been a tremendous partner and asset over the last year, year and a half, has really become our main interaction."*
> – Solar developer

## 10.3 Institutional investors

**Institutional investors, particularly pension funds, are generally risk averse. Increasingly, mainstream institutional investors are seeking social and environmental impact in addition to financial returns, but still at market rates. Although some, such as foundations, make direct investments into projects, most find reassurance in investing through funds, working with fund or asset managers. As a result, the communication chain for a demonstration effect is long. We found little evidence of success stories reaching those who determine asset allocations, though stakeholder pressure is beginning to take effect. Demonstration effects will take a long time to happen in large institutional investors, whose decision-making processes are often slow.**

The institutional investor community in Europe and the United States is alive with talk of impact investing. Driven by stakeholder, peer and government pressure, increasing numbers of institutional investors are aligning their investments with the SDGs, and signing up to initiatives such as the UN Principles of Responsible Investment. The Global Impact Investment Network reports growing membership and estimates that over 1,340 organisations currently manage US$502 billion in impact investing assets worldwide. All this in a setting where expected returns are low from what are described as mainstream investments. This might lead to an expectation that institutional investors would be open to opportunities in LCCR markets in developing countries, keen to achieve both impact and potentially higher returns. But the institutional investors in the wider market that we spoke to were not active in LCCR markets in developing countries, and had no immediate plans to invest.

The most commonly quoted barrier was risk. Coupled with emphasis on fiduciary responsibilities, this means that pension funds in particular are reluctant to move into new countries, where they have no experience. It feels too risky, and the perception of the risk/reward balance is not favourable:

> *"I suspect these projects don't compensate you for that risk. I suspect you're dealing with returns of 5, 6, 7% not 14 to 18, or whatever the number is."* – Pension fund

> *"Some of these emerging markets or transition economies are just too dicey to our taste. You know, we don't have the network, we don't have the experience or the expertise."* – Pension fund

Impact investment managers and the sector bodies encouraging institutional investors towards LCCR and other impact investments use demonstration effects to give investors confidence that they can achieve acceptable levels of return.

> *"Fiduciary investors were very cautious to come into the impact market because they felt it was sort of necessarily concessional. [...] financial performance data has been really useful in arming us to go out to institutional investors and saying you know your fiduciary mandate, you [...] can't hide behind that anymore because we've proven that these products can make above-the-market rate of return."* – Sector expert

None of the investors we spoke to was aware of ICF demonstration projects, and most had minimal knowledge or experience of investing alongside development finance or in follow-on projects or funds. Demonstration funds could be useful in boosting investors' confidence in the fund manager.

The risk of investment in developing countries may be mitigated by having a local partner fund manager with a track record of delivering results over several years and even multiple funds. This would show reaching first close, delivering returns and exiting successfully. The time elapsed for this process helps to explain why demonstration effects can take years to happen.

> *"Show me a local partner with a track record who understands how the activity works, they've got a track record of success. Then it gets a bit more credible. If they haven't got it, frankly I just don't want to know."* – Pension fund

Several investors mentioned Climate Investor One (which was developed with support from the Lab, for which ICF provided the secretariat) because they like the approach to providing support at development, construction and re-financing stages, which will provide them with a lifetime track record for the fund.

Ticket size is another barrier which was often mentioned - many of the opportunities on offer are simply too small. Hence if a demonstration effect is to work, it needs to be of a suitable scale – otherwise it will be dismissed as irrelevant.

> *"For us if it's less than 20 million, 30 million, it's just not worth it. You know, getting a million pound here or there it's just not worth our while."* – Pension fund

Another significant barrier is the asset allocation and investment strategy. If the mandate from the trustees or board does not allow investment into certain classes, the demonstration effect will not work.

> *"The big insurers, the big pension funds or sovereign wealth funds [...] all have their own journey [...] to have more allocation internally enabling them to do anything at all in terms of unlisted activity in emerging markets."* – Sector expert

We did not hear of anyone actually using demonstration effects to get the mandate changed, but one pension fund manager referred to it as a possibility:

> *"I think the demonstration effect is so much more powerful than any moral case you want to bring to a board of trustees - an asset manager that makes consistent returns then outperforms the market or a segment of the market that is relevant, sends a very clear message, much clearer than any plea for solving the world's problems."* – Pension fund

# 11 Have there been unintended outcomes from demonstration effects, in what circumstances, for whom and why?

We found evidence of a range of unintended outcomes from demonstration effects, particularly crowding out of private finance by development finance and reduced ethical standards in replication projects.

## 11.1 Crowding out

Evidence of crowding out of private finance by development finance was identified in six interviews. This was attributed by interviewees to two causes: DFIs have large sums of money to invest in LCCR projects and are prepared to accept lower rates of return or easier terms than private finance. This results in businesses and developers choosing to secure finance from DFIs rather than seeking private finance which can be more expensive or on more onerous terms. Example comments include:

> *"So, all the DFIs, we have a relationship with most of them, they all want green. Everyone wants the green stuff and to keep everyone happy we have to give small parts of the pie. Because it's easier to get the money than it is to on-lend."* – Bank

> *"Why would we go to a local bank when we can get 700-800 basis point margin on a variable rate, 10-year financing when we could go to a DFI and get 15-year financing at 500 basis points fixed." – Developer*

> *"If you speak to a bank like XX they would certainly say that they go heads on with the development banks and would wish to see them more generously giving away more volume of a certain transaction."* – Institutional Investor

> *"And recently we have got approval from GCF, Green Climate Fund. The largest climate fund. And that's a lot cheaper fund because it's a UN-sponsored fund."* – Bank

> *"Partner institutions often consider the GCPF capital to be expensive due to the availability of cheaper concessional financing through development banks and the costs of local currency hedging. This poses a risk for the attraction of further partner institutions and also for the retention of some existing relationships which would affect the scale of impact achieved by the GCPF."* – GCPF mid-term evaluation

One respondent identified a consequence for equity investment that valuations are driven too high as DFIs have more money to spend. This can make it harder to bring in private investors who want a lower valuation and disadvantage businesses without DFI finance.

> *"Well first of all they drive the valuations too high, so it's difficult to bring on board follow-on investors. And then secondly, people like [XX], they've raised tons of money and spent it in places like Tanzania and others. [XX] shut down in Tanzania, they let go about 30% of their staff."* – Business

## 11.2 Reduced ESG standards

Three respondents from three programmes reported follow-on projects with lower environmental standards than would have been required by ICF investment. This can be because the demonstration project attracted new entrants to a market but those new entrants did not enforce the same level of environmental protection.

Comments included:

> *"But we find that other banks are not asking for the same. They don't have the same requirements. In consequence, we have already lost a couple of clients which did not want to follow our demands and they moved to other banks that are not requesting these things. They couldn't care about the environment; they couldn't care less."* – Bank

> *"So, we actually we saw this mad flood of these cheap solar systems, sold out of - I think you call them - the boot of a car. And that, unfortunately, leaves the customers having to go back to their kerosene lanterns and just completely out of their investment. So, there is like a negative trend."* – Business

> *"Two plants that applied for GET FiT support, but were rejected, were nonetheless able to get financing (one plant was rejected for encroaching on protected land, and the other received an aggregate bid score that was too low, although it achieved the minimum scores required for the individual scoring categories)."* – GET FiT Performance Review and Baseline Report

## 11.3 Other unintended consequences

We identified four other examples of unintended consequences. One respondent reported that the ESG standards imposed by DFIs could make it hard for private investors to partner with them, as they found the approval and due diligence processes cumbersome. They suggested that DFIs do more to educate partner investors in the reason for the standards and due diligence processes.

> *"Many do find it relatively cumbersome and long, that first encounter with the development banks and then there's a lot about education as well. Why do they have all the processes in place? Why the diligence process is longer which is grounded in very thorough environmental and social due diligence?"* – Institutional investor

Another felt that DFIs did not generate enough evidence about an approach before moving on to the next type of demonstration in a search for innovation.

> *"It's also a little bit of a risk of always having concessional capital providers wanting to do the new and the most innovative part of the market, without necessarily helping to facilitate that replication and to facilitate that moving the market to scale. Because I think one has to recognise that there is a bit of a journey even if there has been one transaction, it doesn't mean that institutional investors are comfortable to come in and do the next one alone."* – Institutional investor

We had hypothesised that the fact that development finance was required could deter private investors because it would signal that the investment was risky. However, only one interviewee, an implementing partner, suggested this was a factor.

> *"So, you're trying to give people comfort but somehow the signalling frequently kind of derails, and what people actually read into that is there's a real question about whether you're going to make commercial returns and therefore you need this subsidy. And so, it signals the wrong thing and ends up undermining people's confidence instead of giving them additional confidence."* – Implementing partner

The StARCK+ Learning Report identified an unintended consequence where interest rate caps are imposed on lenders, this can reduce the ability of the fund to generate capital and may reduce their ability to raise commercial finance. The StARCK+ programme initially set a limit on the maximum interest rate that could be charged on loans, with the aim of ensuring affordability for loan recipients. However, if interest rate limits are set too low, they can impair the ability of funds to generate capital stocks large enough to weather external shocks, such as repayment issues. Additionally, they may contribute to challenges MFIs face in accessing commercial finance, if they cannot generate sufficient returns to satisfy lenders. (StARCK+ Learning Report).

# 12 Whether, how and in what circumstances demonstration effects support transformational change

**ICF aims to make visible, distinctive and catalytic investments that can be scaled up and replicated by private finance. Transformational change that could result from demonstration effects is where private finance is mobilised and continues to be mobilised in a self-sustaining way, without the need for further intervention or subsidies. We found evidence of transformational change in four areas (see main report for more details):**

**1. Solar home systems in East Africa.**
**2. Solar energy in Nigeria.**
**3. Private equity in Southeast Asia.**
**4. Microfinance institutions in Kenya.**

**Our refined theory is:**
***Demonstration effects provide evidence that aspects of transformation (capacity and capability, innovation, effectiveness, incentives, replicability and scalability) are in place in a sector. This encourages more investors to enter the market as they are persuaded of the opportunity which, in turn, helps to achieve critical mass.***

In order to mobilise private sector investments at scale towards the US$100 billion per annum target, public climate finance must address investment barriers and create enabling conditions for transformational impact.

ICF's KPI15 definition paper describes transformational change as complicated and multifaceted. At its core, it is change which catalyses further changes, enabling either a shift from one state to another (e.g. from conventional to lower-carbon or more climate-resilient patterns of development) or faster change (e.g. speeding progress on cutting the rate of deforestation). It entails a range of simultaneous transformations to political power, social relations, markets and technology, which may include developing partner government priorities and strategies, unlocking and/or creating markets, exploiting and proving new technologies, adjusting tariffs and taxation.

ICF therefore focusses upon demonstration and making visible, distinctive and catalytic investments that can be scaled up and replicated by private finance. In this way, mobilising private finance into climate investments and programmes and 'making markets work' is a core pillar of ICF's overarching strategy and is expected to lead to transformational change.

Examples of possible types of transformational change that could result from demonstration effects are where private finance is mobilised and **continues to be mobilised in a self-sustaining way**, and without the need for intervention or subsidies. This could involve:

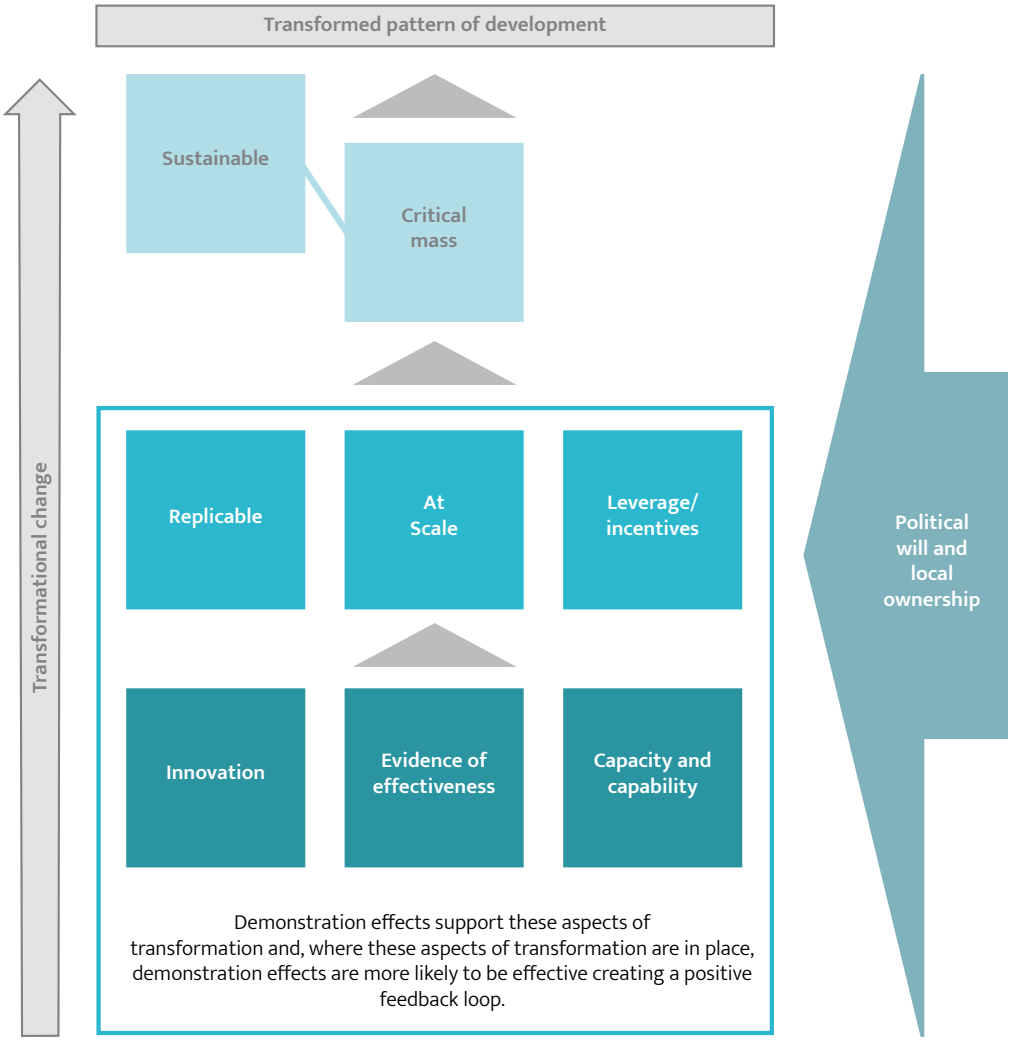
- A settled and widespread shift in private investors' attitudes to investment in a specific country or sector; this could be caused by a better understanding of risks or greater awareness of the existence of enabling conditions.
- A step change in developing country governments' ability to provide an attractive investment environment for the private sector; this could be caused by a better understanding of the needs of private investors, leading to changes to the systems and structures that influence the mobilisation of private finance.

Transformational change occurs when a broad range of factors align. It is extremely context specific; the same set of factors may result in transformational change in one setting at a certain point in time, but not in another

at the same point in time. This is shown in ICF's own theory of change below[10] where political will and local ownership is important at every level, and jointly lead to critical mass, with sustainability being relevant when critical mass has been achieved.

Demonstration effects can support transformational change, particularly in the aspects of replicability, scale, incentives, innovation, evidence of effectiveness and capacity and capability. This is shown in the figure below.

**Figure 6:** ICF's theory of change for transformational change taken from the KPI definition paper and amended to show the influence of demonstration effects




Demonstration effects may both contribute to and be supported by the various aspects of transformational change that have been identified by ICF as part of its theory of transformation. Table 7 develops this theory and identifies sectors where we have found evidence for transformation.

[10] ICF KPI 15: Extent to which ICF intervention is likely to have a transformational impact. Available at: *https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/714109/KPI-15-Transformational-impact.pdf*

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**Table 7:** Evidence for demonstration effects contributing to and being supported by transformational change. Colour codes reference those in the Theory of Change diagram.

| Aspect of transformational change | | Where we have seen evidence of this[11] |
|---|---|---|
| **Political will and local ownership** | Demonstration effects contribute to political will and local ownership by showing that private finance has been mobilised and provided consequent economic, social and environmental benefits.<br><br>Political will and local ownership support the mobilisation of private finance by providing a stable positive investment environment. | No evidence seen for this; however, this was not a priority area for investigation so we cannot be sure that evidence does not exist. |
| **Capacity and capability can be increased** | Demonstration effects can build the capacity and capability of businesses and investors to mobilise private finance.<br><br>Where there is increased capacity and capability of businesses, fund managers and investors, it is more likely that demonstration effects will be more successful in leading to transformational change. | **Solar home systems in East Africa**<br><br>Solar energy in Nigeria |
| **Innovation** | Demonstration effects contribute to innovation by mobilising private finance for innovative financial structures, technologies and business models.<br><br>Demonstration effects are more likely to lead to transformational change when the action being demonstrated is innovative. | **Solar home systems in East Africa**<br><br>Private equity in Southeast Asia<br><br>Solar energy in Nigeria<br><br>MFIs in Kenya |
| **Evidence of effectiveness is shared** | Demonstration effects provide evidence of successful investment and so represent an element of transformation.<br><br>Where evidence of effectiveness (e.g. relating to enabling conditions or technologies) is shared, this supports transformational change. | **Solar home systems in East Africa**<br><br>**Solar energy in Nigeria**<br><br>Private equity in Southeast Asia<br><br>**MFIs in Kenya** |
| **Leverage/create incentives for others to act** | Demonstration effects create incentives for private investors to act because they can see that LCCR projects represent attractive investment opportunities.<br><br>Where there are incentives for others to act to address climate change issues and opportunities, the returns on LCCR projects will be improved making it more likely that demonstration effects will mobilise private finance. | **Solar home systems in East Africa**<br><br>Solar energy in Nigeria<br><br>Private equity in Southeast Asia<br><br>MFIs in Kenya |

[11] Where the process-tracing analysis has shown there is strong evidence for demonstration effects influencing transformational change, the sector is shown in bold.

| Aspect of transformational change | | Where we have seen evidence of this |
|---|---|---|
| **Replicable** | Demonstration effects stimulate the replication of successful investment and business models.<br>Where other enabling conditions are replicated, this provides support for demonstration effects in mobilising private finance. | Solar home systems in East Africa<br>Solar energy in Nigeria<br>**Private equity in Southeast Asia**<br>MFIs in Kenya |
| **At scale** | Demonstration effects promote investment in LCCR projects at a greater scale than would otherwise be the case.<br>Where action is taken at scale, investment is attractive to more private investors and so demonstration effects will have the opportunity to mobilise more private finance. | Solar home systems in East Africa<br>Private equity in Southeast Asia |
| **Critical mass** | Critical mass is a key concept in transformational change. With respect to mobilisation of private finance, this can be seen as investment in LCCR projects becoming business as usual for mainstream investors. This generates positive demonstration effects as more investors see people like them successfully investing in LCCR projects and so are motivated to do so themselves. | Solar home systems in East Africa |
| **Sustainable** | Demonstration effects, by definition, are not reliant on continuing support from ICF to mobilise private finance. Transformational change is supported where learning from demonstration programmes is widely accepted and used. | Evidence for initial contribution by demonstration effects in all four areas and some likelihood of this being achieved. |

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