SESSION 1: PROJECT DESIGN AND PROPOSAL DEVELOPMENT – MEETING THE GCF REQUIREMENTS

GCF Readiness Programme in Uzbekistan Workshop 2

22-25 August 2017
A Think Tank that Does
• Acid Rain Legislation
• EU Market Design
• Early design and promotion of NAMA concept
• In country work on energy, waste and transportation

• Technical, Policy, and Economic Analyses
• Publications and Outreach
• Multi-Stakeholder Partnerships and Dialogues
• Innovative Solutions
• Execution
**Goals:**

Create networks of policymakers involved in NAMAs in Asia and Latin America

Build capacity to develop bankable NAMAs

Facilitate financing for early NAMAs

Help countries go from NAMA’s to INDC’s to NDC’s

**Components:**

1. Regional dialogues of policymakers, experts, climate finance providers, private sector
2. Harvesting of best practices, case studies, policy solutions
4. Support for NAMA design, enabling policies, accessing financing
5. Bring MAIN countries input into UNFCCC, GCF, and other institutions
OPPORTUNITIES FOR LOW-CARBON AND CLIMATE RESILIENT DEVELOPMENT - ENERGY

Global Commitment

Paris Agreement lays the groundwork for ambitious country action

Climate Finance

Public and private capital waiting for deployment

Technology Advancements

Declining costs and rising efficiency of technology
DEVELOPING TRANSFORMATIONAL, BANKABLE PROJECTS

**Policy and institutional change**
Government commitment

**Financial mechanisms**
Address financial barriers to investment

**Project pipeline**
Identify portfolio of projects to attract financing at scale
• Policies can encourage low-carbon investment through:
  – **Carbon pricing** (e.g., a carbon tax)
  – **Economic instruments** (e.g., tax incentives for clean technologies)
  – **Mandates** (e.g., building codes)

• Policies can encourage climate-resilient development through:
  – **Economic instruments** (e.g., weather insurance, water tariffs)
  – **Regulations** (e.g., land zoning laws, land tenure policy, protected areas)
  – **Decision-making and planning tools** (e.g., disaster planning and preparedness plans)

• Policies should be designed to afford:
  – **Transparency**: policies should be easily understood
  – **Certainty**: policies should provide clear, long-term signals and avoid retroactive changes
  – **Economic viability**: policy incentives should lead to economically viable projects
Financial and policy instruments can boost returns and reduce risks relative to “business-as-usual” alternatives.

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Risks/Barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance guarantees</td>
<td>Lack of familiarity with technology</td>
</tr>
<tr>
<td>Concessional loans</td>
<td>High interest rate environments, lack of long-term capital</td>
</tr>
<tr>
<td>Aggregation and securitization</td>
<td>High transaction costs</td>
</tr>
<tr>
<td>Feed-in-tariffs or competitive tenders</td>
<td>High investment costs or policy risks</td>
</tr>
</tbody>
</table>
IDENTIFYING PROJECTS AND DEMONSTRATING FEASIBILITY

- Pipeline development can ensure viability and provide confidence to investors
- Approach may differ by sector and type of program

**Programs with fewer, distinct projects:** Developing an initial set of projects can showcase technical and economic soundness to inform broader replication

**Programs with many homogenous, small-scale projects:** Characterizing broader project pipeline to show market potential and scale of opportunity
GCF Overview, Requirements, and Types Of Activities Supported
World’s largest climate fund

Primary financial mechanism of the Paris Agreement

Provide support to developing countries

Mitigation: reduce greenhouse gas emissions

Adaptation: adapt to climate impacts

Country ownership

Source: GCF
GCF RESOURCES

10.3 billion in pledges
50/50 split between adaptation & mitigation
50% of adaptation resources for SIDS, LDCs and African States
~USD 80 million for Readiness support
USD 40 million for Project Preparation
HOW IS THE FUND ORGANIZED

Green Climate Fund

Accredited Entities

Programs and Projects

NDAs/ Focal Points

Source: GCF
**ROLE OF THE NATIONAL DESIGNATED AUTHORITY (NDA)**

- NDAs are the primary liaison between the country and the GCF

- The NDA, in consultation with other national stakeholders, identifies the country’s strategy for engaging the GCF

**Scope of NDA**

- Convene National Stakeholders
- Approval of readiness support
- Strategic oversight aligned with national priorities
- Nomination letters for direct access
- No-objection letters for projects/programs
ROLE OF ACCREDITED ENTITIES

- The GCF works through a wide range of AEs to channel its resources to projects and programs

<table>
<thead>
<tr>
<th>Direct access</th>
<th>International access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-national, national or regional organizations, nominated by NDAs</td>
<td>UN agencies, multilateral, bilateral and regional institutions</td>
</tr>
<tr>
<td>Public or private</td>
<td></td>
</tr>
</tbody>
</table>

- Must meet the fiduciary principles and standards, environmental and social safeguards and gender policy of the Fund.

- Countries may access GCF resources through multiple entities simultaneously
ROLE OF ACCREDITED ENTITIES

- Develop & submit proposals in consultation with NDA & country stakeholders
- Provide technical assistance and capacity building
- Deliver resources to projects/programs
- Oversee projects/programs management and implementation
ACCREDITED ENTITIES – STATE OF PLAY

54 Entities Accredited

- International: 27
- Direct (Regional): 9
- Direct (National): 18

**International AEs relevant for Uzbekistan**
- Asian Development Bank
- Agence Française de Développement
- European Investment Bank
- GIZ
- World Bank
- EBRD
- FAO
- IFC
- Japan International Cooperation Agency
- UNDP
- UNEP

**Examples of direct access AEs**
- Agency for Agricultural Development of Morocco
- Ministry of Finance and Economic Cooperation, Ethiopia
- Peruvian Trust Fund for National Parks and Protected Areas
- XacBank LLC
- South African Development Bank
- Central American Bank for Economic Integration
- Caribbean Community Climate Change Centre
- Micronesia Conservation Trust
- Infrastructure Development Company Limited (Bangladesh)
EXECUTING ENTITIES

Role:

- Channel funds, execute, implement funding proposals
- Work under supervision and management of AE
- No need for accreditation

Examples include:

- Public agencies
- Local banks
- NGOs
- Private companies
GCF PROGRAMMING

Capacity building and technical assistance through NDA and delivery partners

Readiness and Preparatory Program

Project preparation facility
Project development support accessed through Accredited Entities

Funding proposals
Country-driven programs delivered by Accredited Entities
EIGHT STRATEGIC IMPACTS AREAS

Mitigation Strategic Impacts

Energy Generation and Access

Transport

Reduced Emissions through:

Forests and Land Use

Buildings, Cities, Industries and appliances

Adaptation Strategic Impacts

Health, Food and Water Security

Livelihoods of people and communities

Increased Resilience from:

Infrastructure and built environment

Ecosystems and ecosystem services
MITIGATION AND ADAPTATION MEASURES CAN BE COMPLEMENTARY

CONNECT THE DOTS
Adaptation + Mitigation Synergies

Adaptation
- Afforestation, open space preservation
- Land use changes
- Infrastructure protection
- Building design
- Flood mitigation
- Emergency response
- Business continuity plans
- Community engagement

Mitigation
- Energy efficiency
- Renewable energy
- Combined heat and power
- Sustainable transportation
- Methane capture and use
- Industrial process improvements
- Carbon sinks

Green infrastructure
- Power System Resilience
- Protect sustainable transportation
- Water & energy conservation
- Building weatherization

CONNECT THE DOTS: Adaptation + Mitigation Synergies
PRIVATE SECTOR FACILITY (PSF)

Why the PSF?
• To mainstream climate change mitigation and adaptation actions in the private sector

Possible interventions
• Fund climate risk assessment models and tools
• Long-term debt, credit lines
• Equity to develop a project to full bankability
• Guarantees to bear specific risks

Access to the private sector
• Accredited entities with private sector operations
• Present funding proposals spontaneously or in response to calls for proposals

Source: GCF

Workshop 3, Session I
GCF INVESTMENT CRITERIA

• Six criteria reward ambitious and transformational proposals in the context of sustainable development

- **Impact potential**
  - Potential to contribute to achievement of Fund's objectives and result areas

- **Paradigm shift potential**
  - Long-term impact beyond a one-off investment

- **Sustainable development potential**
  - Wider economic, environmental, social (gender) co-benefits

- **Country ownership**
  - Country ownership and capacity to implement (policies, climate strategies and institutions)

- **Responsive to needs of recipients**
  - Vulnerability and financing needs of beneficiary in targeted group

- **Efficiency & effectiveness**
  - Economic and, if appropriate, financial soundness, as well as cost-effectiveness and co-financing for mitigation
GCF PROJECT FUNDING CYCLE

1. Calls for proposals and rolling submissions
2. Concept note (voluntary)
3. Preparation of full proposal
4. Submission of full proposal
5. Assessment by Secretariat and Technical Advisory Panel
6. Board assessment & decision
7. Legal arrangements and letter of commitment

3 months to prepare; Feedback from Secretariat in 2-4 weeks
7 months
1 month
3 weeks

Sources: GCF, Eco Ltd, 2016
STAGES OF PROPOSAL DEVELOPMENT AND SUPPORT AVAILABLE

Stage

- Preparation of concept note
- Preparation of full proposal

Support available

- Readiness support
- Project Preparation Facility

Conditions and access modalities

- Submitted by: NDA
  - Funding limit: Subject to the $1m limit per year

- Submitted by: AE
  - Financing limit: up to 10% of GCF financing, limit of $1.5m per proposal

Adopted from GCF Project Toolkit 2017, Acclimitize
<table>
<thead>
<tr>
<th>Section</th>
<th>Proposal</th>
<th>Concept note</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Project / program summary</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>B. Financing / Cost information</td>
<td>✓ (Detailed )</td>
<td>✓</td>
</tr>
<tr>
<td>C. Detailed project / program description</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>D. Rationale for GCF involvement and exit strategy</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>E. Performance against investment criteria</td>
<td>✓ (Detailed – backed by feasibility and economic/financial assessments)</td>
<td>Pre-feasibility studies only</td>
</tr>
<tr>
<td>F. Appraisal summary (summary of key assessments)</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>G. Risk Analysis and management</td>
<td>✓ (Detailed – risk probability and level of impact)</td>
<td>✓</td>
</tr>
<tr>
<td>H. Results and monitoring</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
43 projects, $2.2 billion committed, 60+ countries, $7.5 billion leveraged

Source: GCF
TYPES OF MITIGATION PROPOSALS APPROVED

Examples:

Energy generation and access

- Renewable energy competitive tenders
- Energy efficiency equipment for small businesses
- Geothermal risk-mitigation facility
- Revolving funds for clean energy lending
- Equity fund for off-grid solar businesses
- Grid infrastructure investments for renewables

Buildings, Cities, Industry and appliances

- Energy efficient building retrofits
- No waste sector proposals

Forests and Land use

- Small grant and loan facility for land use planning and sustainable agriculture
- Private sector investment in landscape approaches and renewable energy

Transportation

- None.
# TYPES OF ADAPTATION PROPOSALS SUPPORTED

**Examples:**

## Health, Food and Water Security
- Efficient irrigation systems
- Improving water management and conservation
- Climate-resilient agriculture

## Livelihoods of people and communities
- Development of hydro-meteorological weather warning systems and planning
- Improved agricultural practices and access to technologies
- Promotion of alternative, climate-resilient livelihoods

## Infrastructure and built environment
- Resilient energy infrastructure (e.g. hydropower stations, distributed energy)
- Flood protection infrastructure, planning and response
- Drainage and sanitation infrastructure

## Ecosystems and ecosystem services
- Restoration of degraded lands
- Protection of soils against erosion
- Desalination of land
## CATEGORY OF ACTIVITIES SUPPORTED IN MITIGATION

<table>
<thead>
<tr>
<th>Category</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity building &amp; technical assistance</td>
<td>• Business development skills for local energy efficiency service providers, solar companies</td>
</tr>
<tr>
<td></td>
<td>• Capacity building for public agencies to design and implement renewable energy tenders</td>
</tr>
<tr>
<td></td>
<td>• Technical assistance to project developers to design robust pipeline</td>
</tr>
<tr>
<td>Policy and regulatory strengthening</td>
<td>• Assess options for building energy efficiency standards</td>
</tr>
<tr>
<td></td>
<td>• Establish monitoring and evaluation systems</td>
</tr>
<tr>
<td></td>
<td>• Support electricity grid planning and renewable integration</td>
</tr>
<tr>
<td>Project investments</td>
<td>• Grants for technical assistance and capacity building</td>
</tr>
<tr>
<td></td>
<td>• Loans for credit lines through local banks for energy efficiency</td>
</tr>
<tr>
<td></td>
<td>• Equity for start-up clean businesses</td>
</tr>
<tr>
<td></td>
<td>• Guarantees to underpin energy efficiency bonds</td>
</tr>
</tbody>
</table>
TYPES OF ADAPTATION ACTIVITIES SUPPORTED

Results area

- **Examples**
  - Developing climate information systems
  - Designing business models for sustainable products and services
  - Building community-level adaptation response
  - Raising awareness of climate risks and responses

Capacity building & technical assistance

- **Policy and regulatory strengthening**
  - Strengthening water and land use management policies
  - Integration of climate information and risks into policy and budgetary frameworks
  - Developing public private partnerships for resilient infrastructure investment

- **Project investments**
  - **Grants** for technical assistance, capacity building, non-revenue generating investments in infrastructure, micro-grants for alternative livelihoods
  - **Loans** for revenue-generating resilient infrastructure, sustainable agriculture
  - **Equity** for sustainable agriculture and energy projects
  - **Guarantees** – none used for adaptation so far
BY FUNDING WINDOW

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>43%</td>
</tr>
<tr>
<td>Public/private</td>
<td>4%</td>
</tr>
<tr>
<td>Private</td>
<td>53%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mitigation</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitigation</td>
<td>41%</td>
</tr>
<tr>
<td>Cross-cutting</td>
<td>32%</td>
</tr>
<tr>
<td>Adaptation</td>
<td>27%</td>
</tr>
</tbody>
</table>

Funding amount distribution:

- Public: 0% - 50% - 100%
- Public/private: 0% - 50% - 100%
- Private: 0% - 50% - 100%
- Mitigation: 0% - 50% - 100%
- Cross-cutting: 0% - 50% - 100%
- Adaptation: 0% - 50% - 100%
BY SECTOR

<table>
<thead>
<tr>
<th>Sector</th>
<th>Public Funding Amount</th>
<th>Private Funding Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy access &amp; generation</td>
<td>21%</td>
<td>94%</td>
</tr>
<tr>
<td>Transport</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Energy Efficiency</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>Forest &amp; land use</td>
<td>7%</td>
<td>1%</td>
</tr>
<tr>
<td>Livelihoods</td>
<td>22%</td>
<td>3%</td>
</tr>
<tr>
<td>Health, food &amp; water security</td>
<td>19%</td>
<td></td>
</tr>
<tr>
<td>Infrastructure resilience</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Ecosystems</td>
<td>12%</td>
<td></td>
</tr>
</tbody>
</table>

Funding amount
UPDATE FROM GCF BOARD MEETING IN CAIRO
SEPT 30 – OCT 2
<table>
<thead>
<tr>
<th>Project</th>
<th>Accredited entity</th>
<th>Country</th>
<th>Thematic window</th>
<th>Public/private</th>
<th>GCF funding (million USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renewable Energy Program - Solar</td>
<td>XacBank</td>
<td>Mongolia</td>
<td>Mitigation</td>
<td>Private</td>
<td>9.5</td>
</tr>
<tr>
<td>Kazakhstan Renewables Framework</td>
<td>EBRD</td>
<td>Kazakhstan</td>
<td>Mitigation</td>
<td>Private</td>
<td>110.0</td>
</tr>
<tr>
<td>Climate-Resilient Agriculture Risk Sharing Facility</td>
<td>IDB</td>
<td>Guatemala and Mexico</td>
<td>Crosscutting</td>
<td>Private</td>
<td>20.0</td>
</tr>
<tr>
<td>Climate resilience of food insecure smallholder farmers</td>
<td>WFP</td>
<td>Senegal</td>
<td>Adaptation</td>
<td>Public</td>
<td>10.0</td>
</tr>
<tr>
<td>Protected areas and natural resource management</td>
<td>WWF</td>
<td>Bhutan</td>
<td>Crosscutting</td>
<td>Public</td>
<td>26.6</td>
</tr>
<tr>
<td>Energy efficiency and renewables in public buildings</td>
<td>UNDP</td>
<td>Bosnia &amp; Herzegovina</td>
<td>Mitigation</td>
<td>Public</td>
<td>17.3</td>
</tr>
<tr>
<td>Climate-resilient port in Nauru</td>
<td>ADB</td>
<td>Nauru</td>
<td>Crosscutting</td>
<td>Public</td>
<td>26.9</td>
</tr>
<tr>
<td>Climate change adaptation in the north coast and Nile Delta regions</td>
<td>UNDP</td>
<td>Egypt</td>
<td>Adaptation</td>
<td>Public</td>
<td>31.4</td>
</tr>
<tr>
<td>Flood reduction for the Lujan River Basin</td>
<td>CAF</td>
<td>Argentina</td>
<td>Adaptation</td>
<td>Public</td>
<td>58.5</td>
</tr>
<tr>
<td>Climate resilient water management practices for vulnerable communities</td>
<td>UNDP</td>
<td>Colombia</td>
<td>Adaptation</td>
<td>Public</td>
<td>38.5</td>
</tr>
<tr>
<td>Responding to the increasing risk of drought: building gender-responsive resilience of the most vulnerable communities</td>
<td>MOFEC</td>
<td>Ethiopia</td>
<td>Adaptation</td>
<td>Public</td>
<td>45.0</td>
</tr>
</tbody>
</table>
Two proposals were not approved after veto by UK

- Reforestation project in Paraguay with FAO
- Community-based adaptation and mitigation program in Argentina with UCAR (national entity for rural projects)

Primary concerns raised by UK: Justification of concessionality for middle-income countries

Both can revise and resubmit proposals

More generally, donor countries raised concerns around:
- Climate-relevance of adaptation proposals
- Justification of costs
- Scalability of activities
5 NEW ACCREDITED ENTITIES—ALL DIRECT ACCESS

- China Clean Development Mechanism Fund Management Centre
- Department of Environment of Antigua and Barbuda;
- Fiji Development Bank
- Palli Karma-Sahayak Foundation, Bangladesh
- Sahara and Sahel Observatory, based in Tunisia (regional African organization)
SIMPLIFIED APPROVAL PROCESS FOR SMALL SCALE, LOW RISK PROPOSALS

• Simplified approach
  – Only require pre-feasibility studies
  – Simplified templates (to be developed)

• Eligibility
  – Up to $10 million in GCF funding
  – Low-risk

• $80 allocated for a first phase
• 50% should go to direct access accredited entities
• Approach to be reviewed at the end of 2 years
THANK YOU

For more information, please visit us at

www.ccap.org
SESSION 2: INTRODUCTION TO CLIMATE FINANCE MECHANISMS AND INSTRUMENTS

GCF Readiness Programme in Uzbekistan Workshop 3

22-25 August 2017
PRESENTATION OUTLINE

• Role of finance in climate mitigation and adaptation
• Common financial barriers
• Principles of financial mechanism design and project financing structures
Climate finance is the finance needed to reach the long-run temperature goal of ‘holding the increase in the global average temperature to well below 2°C above pre-industrial levels’, and to increase ‘the ability to adapt to the adverse impacts of climate change and foster climate resilience’, both objectives of the Paris Agreement.

Scientific consensus suggests that achieving the international climate goal will require full global decarbonization before 2100.

The mitigation and adaptation finance needs to achieve these goals are staggering.
MAIN SOURCES & INTERMEDIARIES (USD billion)

Note: Public finance is only increasing because of the extended scope of Landscape 2014 compared to last year. Using last year’s scope, we see a small decrease of public finance.
PUBLIC SOURCES...

PUBLIC SOURCES & INTERMEDIARIES (USD billion)

Note: The increase in multilateral DFI finance is mainly due to expanding the scope of Landscape 2014 to research and development, and classifying CAF as multilateral DFI (national DFI last year). Finance of national DFIs would slightly decrease if we deduct investments in large hydro, a technology we track for the first time this year.
PRIVATE SOURCES…

PRIVATE SOURCES broken down by investor classes (USD billions)

![Graph showing private sources broken down by investor classes from 2012 to 2013.](image-url)
USES OF ADAPTATION FINANCE (USD billion)
USES OF MITIGATION FINANCE (USD billion)

- **RENEWABLE ENERGY**
- **ENERGY EFFICIENCY**
- **TRANSPORT**
- **PROCESS / FUGITIVE EMISSIONS**
- **AGRICULTURE, FORESTRY & LAND USE**
- **OTHER**

* Sustainable transport modes supporting modal shift
** Process emissions in industry & fugitive emissions
Estimated Annual Adaptation Finance Needs for Developing Countries Through the Years

USD Billions Per Year

Year Through Which Adaptation Finance is Needed

2015
2030
2050

High Estimate
Low Estimate


WORLD RESOURCES INSTITUTE
• Developing countries need to establish policies and enabling conditions to be able to absorb the massive inflow of funds to adaptation and mitigation.

• After policies and conditions are established, the key enabling factor in absorbing climate finance is structuring the right financial mechanisms for the right projects and programs.
Climate finance includes many mechanisms, funds, and instruments by the UNFCCC, multilateral banks, individual countries, and the private sector. The most prominent of these is the Green Climate Fund. Government- and multilaterals-sponsored climate finance will always be a small percentage of the total required investments to achieve PA goals.

There are 2 key aims of financial mechanisms:
- Financial Mechanisms provide the conduit for climate finance to reach the needed owners and invertors of the mitigation and adaptation projects.
- They help leverage private sector finance. Private sector finance will have to make up most of climate finance to achieve PA goals.

In practical climate finance applications, innovative financial instruments should help to address both the high cost of financing and the lack of access to long-term funding.
• Our understanding of how to use climate finance effectively, and of whether it adequately addresses the global investment needed to address climate change, is improving.

• However, this knowledge is scattered across projects, technologies and regions.

• We still lack a systematic understanding of how effectiveness can be ascribed to different parts of the climate finance landscape.
TYPES OF CLIMATE FINANCE INSTRUMENTS

CLIMATE FINANCE INSTRUMENTS (USD billion)

- Balance Sheet Financing
- Project-Level Equity
- Project-Level Market Rate Debt
- Low-Cost Debt
- Grant

Commercial Rate Finance
<table>
<thead>
<tr>
<th>Risks/Barriers</th>
<th>Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived credit quality of borrowers or entering a new sector</td>
<td>Partial Credit Risk Guarantee – but not helpful in high interest rate environments</td>
</tr>
<tr>
<td>High transaction costs of smaller-scale projects</td>
<td>Creation of Special Purpose Entity (SPE) for project implementation</td>
</tr>
<tr>
<td>Lack of familiarity with technology</td>
<td>Performance Guarantee</td>
</tr>
<tr>
<td>High interest rate environments and/or lack of project revenues to cover market- terms of financing</td>
<td>Extension of lending maturities</td>
</tr>
<tr>
<td></td>
<td>Soft loans</td>
</tr>
<tr>
<td></td>
<td>Co-financing with local banks</td>
</tr>
<tr>
<td>Lack of capacity in local banks</td>
<td>Special Funds</td>
</tr>
</tbody>
</table>
Risk-return ratios must match different investors

<table>
<thead>
<tr>
<th>Risk</th>
<th>Return</th>
<th>Volume</th>
<th>Instrument</th>
<th>Investor</th>
</tr>
</thead>
<tbody>
<tr>
<td>low</td>
<td>low</td>
<td>large</td>
<td>Bond</td>
<td>institutional</td>
</tr>
<tr>
<td>low/medium</td>
<td>low/medium</td>
<td>medium</td>
<td>Loan</td>
<td>banks, Governments</td>
</tr>
<tr>
<td>medium</td>
<td>medium</td>
<td>large/medium</td>
<td>Fund</td>
<td>banks, financial intermediaries</td>
</tr>
<tr>
<td>high</td>
<td>medium/high</td>
<td>medium</td>
<td>Equity</td>
<td>project developers</td>
</tr>
<tr>
<td>medium</td>
<td>medium</td>
<td>large/medium</td>
<td>Guarantee</td>
<td>Governments</td>
</tr>
<tr>
<td>low</td>
<td>low</td>
<td>small</td>
<td>PPP</td>
<td>companies</td>
</tr>
<tr>
<td>low/medium</td>
<td>low/medium</td>
<td>small</td>
<td>Contracting</td>
<td>companies</td>
</tr>
</tbody>
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CREATED ASSETS MUST MATCH LIABILITIES OF INDIVIDUAL INVESTORS

<table>
<thead>
<tr>
<th>Scope</th>
<th>Assets</th>
<th>Refinancing</th>
<th>Investors</th>
<th>Beneficiaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope 0</td>
<td>Bonds</td>
<td>of development banks and governments</td>
<td>Grant donors</td>
<td>Governments</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Guarantee providers</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Institutional investors</td>
<td></td>
</tr>
<tr>
<td>Scope 1</td>
<td>Funds</td>
<td>of local banks</td>
<td>Grant donors (governments)</td>
<td>Developing country governments</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Development banks</td>
<td>Local banks</td>
</tr>
<tr>
<td>Scope 2</td>
<td>Concessional loans</td>
<td>of loans</td>
<td>Grant donor</td>
<td>Local companies</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Local banks</td>
<td></td>
</tr>
<tr>
<td>Scope 3</td>
<td>Consumer loans</td>
<td>of equity investments</td>
<td>Subsidy providers</td>
<td>Joint ventures</td>
</tr>
<tr>
<td></td>
<td>Contracting</td>
<td></td>
<td>Guarantee providers</td>
<td>Technology providers</td>
</tr>
<tr>
<td></td>
<td>Equity</td>
<td></td>
<td>Local companies</td>
<td>End customers</td>
</tr>
<tr>
<td></td>
<td>Export/ FDI/ Financial instrument guarantees</td>
<td></td>
<td>(Project developers)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PPPs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Carbon offsets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scope 4</td>
<td>Mobilised market instruments (PoAs, Micro Credits)</td>
<td>of consumption</td>
<td>Mobilized investors</td>
<td>Low carbon development projects</td>
</tr>
</tbody>
</table>
LEVERAGING PRIVATE-SECTOR FINANCE

- Important to understand local barriers to private sector investment
- In order to lower risks to investors and assure appropriate returns to attract private capital, climate finance resources could be used to (via financial intermediaries) e.g.:
  - lower development costs of investment projects under a NAMA through technical assistance;
  - lower the cost of capital through equity and debt co-financing instruments;
  - cover the incremental costs or financing the riskier aspects of investments;
  - lowering risks through credit enhancement;
  - insurance or other forms of guarantee.

- Such mechanisms can further bring down market barriers, bridge financial gaps and share risks with the private sector.
## LEVERAGE EXAMPLES

<table>
<thead>
<tr>
<th>Financial vehicle</th>
<th>Level of investment</th>
<th>Example</th>
<th>Financial volume</th>
<th>Potential leverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity</td>
<td>a) public infrastructure</td>
<td>a) Bus Rapid Transit system</td>
<td>high</td>
<td>1:8 to 1:10</td>
</tr>
<tr>
<td></td>
<td>b) private companies</td>
<td>b) Privately owned public transport companies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guarantees</td>
<td>private activities</td>
<td>Private construction and maintenance of public transport facilities</td>
<td>high/medium</td>
<td>up to 1:20</td>
</tr>
<tr>
<td>Debt</td>
<td>a) loans</td>
<td>a) credit lines for enhanced fuels and technology</td>
<td>a) medium</td>
<td>1:8 to 1:10</td>
</tr>
<tr>
<td></td>
<td>b) micro credits</td>
<td>b) IT services to reduce transport of goods and passengers</td>
<td>b) low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) private companies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) micro entrepreneurs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon market</td>
<td>a) projects</td>
<td>a) installing a renewable energy facilities</td>
<td>low</td>
<td>up to 1:5</td>
</tr>
<tr>
<td></td>
<td>b) PoAs</td>
<td>b) energy efficiency measures in buildings</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) privately owned projects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) small-scale activities</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
WHAT KIND OF FINANCE HAS THE GCF PROVIDED SO FAR (AS OF SEPTEMBER 2017)

- Signed - $10.1 billion
- Committed - $2.2 billion
- Total value - $7.5 billion

- 43 PROJECTS
- 125m BENEFICIARIES (Anticipated number of people with increased resilience)
- 981m tons of CO2

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Percent of total funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grant</td>
<td>42%</td>
</tr>
<tr>
<td>Loans</td>
<td>39%</td>
</tr>
<tr>
<td>Equity</td>
<td>18%</td>
</tr>
<tr>
<td>Guarantees</td>
<td>1%</td>
</tr>
</tbody>
</table>
GCF TARGET—IMPORTANT TO KEEP IN MIND
GCF INVESTMENT PRIORITIES

Investment Priorities
- Climate-compatible cities
- Sustainable low-emission climate-resilient agriculture
- Scaling up finance for forests and climate change
- Enhancing resilience in small island developing States (SIDS)
- Transforming energy generation and access
DESIGNING A FINANCIAL MECHANISM: KEY PRINCIPLES

• Minimal conditions for creating a financial mechanism
  – Existence of markets and willing participating financial institutions
  – Administrative capabilities
• Sustainability
• Leverage
• Acceptable to all players (private lenders, national and local govt’s, borrowers)
• Affordability
• Unique to local conditions
DESIGNING A FINANCIAL MECHANISM: KEY ISSUES TO ADDRESS

- What is the existing market and policy/regulatory environment?
- What is the “business case” for each stakeholder (e.g. government, financial institutions, private companies, households)?
- What is the justification for GCF or other donor support? Barriers and how to address them
- What is the organizational structure of the GCF program?
  - What is the flow of funds (e.g. from GCF to project on the ground)?
- Risks and mitigation measures. Two types of risks
  - Risk of the financial mechanism itself
  - Risks of the investment projects utilizing the financial mechanism
- Choosing the right financial mechanism and instruments
- Importance of technical assistance to participating institutions
- How will project lead to more than one-off change? Paradigm shift

These principles and issues will be illustrated on two case studies
EXAMPLES OF FINANCIAL MECHANISMS TO ADDRESS BARRIERS

- Partial credit risk guarantee
- Performance risk guarantee
- Creation of special Funds or Special Purpose Entities (SPEs) to finance clean energy projects
- ESCO financing
- Equity Fund
- Lease financing
- On-lending to national development banks
- Extension of lending maturities
- Co-financial with local banks at below market rates
- Mobilization of pension financing
• Case studies will be used to review key issues and design principles in detail
THANK YOU

For more information, please visit us at

www.ccap.org
Financial mechanisms can overcome financial barriers
- High interest rates
- Insufficient loan tenors
- Insufficient creditworthiness
- Shortage of equity capital

They can also reduce perceived risk
- Technology performance risk
- Credit risk
- Offtaker risk

Renewable Energy technologies tend to have higher capital costs, lower O&M
- ↓ cost of capital important for RE investment

For distributed energy, transaction costs can be a challenge
- → special purpose entity
<table>
<thead>
<tr>
<th>Risks/Barriers</th>
<th>Instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of familiarity with technology</td>
<td>Performance guarantee</td>
</tr>
<tr>
<td>Perceived credit quality of borrowers</td>
<td>Partial credit risk guarantee</td>
</tr>
<tr>
<td>High interest rate environment and/or lack of project revenues to cover</td>
<td>Revolving fund, Co-financing, concessional loans</td>
</tr>
<tr>
<td>market-terms of financing</td>
<td></td>
</tr>
<tr>
<td>High transaction costs of smaller-scale projects</td>
<td>Creation of special purpose entity (SPE) for project implementation</td>
</tr>
<tr>
<td>Project sponsor lacks necessary equity investment to mobilize commercial</td>
<td>Creation of Equity Fund capitalized with donor contributions</td>
</tr>
<tr>
<td>bank debt financing</td>
<td></td>
</tr>
</tbody>
</table>

Source: CCAP
TWO CASE STUDIES

1. Enabling Distributed Solar Power in the Philippines

2. Development of Argan Orchards in Degraded Environment in Morocco
CASE STUDY 1: ENABLING DISTRIBUTED SOLAR POWER IN THE PHILIPPINES

- Developed by the Philippines’ Department of Energy with CCAP and World Bank
- Provisionally approved in the NAMA Facility’s 4th call in 2016
- Currently in the Detailed Preparation Phase

Source: NAMA Facility
COUNTRY CONTEXT: PHILIPPINES

- One of the fastest growing economies in Asia
- Among most vulnerable countries to impacts of climate change
- Prioritize building adaptive capacity and resilience to climate change
- Pursuing low carbon development to promote sustainable economic growth
### KEY MITIGATION POLICIES IN THE PHILIPPINES

<table>
<thead>
<tr>
<th>Policy</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renewable Energy Act (2008)</td>
<td>Provides incentives to private investors and equipment manufacturers/suppliers</td>
</tr>
<tr>
<td>Climate Change Act (2009)</td>
<td>Established <strong>Climate Change Commission (CCC)</strong> as the lead policy body on climate.</td>
</tr>
<tr>
<td>National Climate Change Action Plan 2011-2028</td>
<td>Agenda for mitigation and adaptation, including cross-cutting themes and 7 priority areas.</td>
</tr>
<tr>
<td>National Framework Strategy on Climate Change 2010-2022</td>
<td>Roadmap for building resiliency and adaptive capacity, and promotes mitigation in key sectors</td>
</tr>
<tr>
<td>Philippines’ NDC</td>
<td>70% GHG reduction relative to BAU by 2030</td>
</tr>
</tbody>
</table>
• In 2012, the energy sector was the largest contributor to GHG emissions

• 67% all power generation is derived from fossil fuel, 50% from coal
  – ¾ of coal consumed is imported, consumption could rise by 2/3 over next decade

• Emerging renewables only make up 0.4% of generation mix
What is preventing the uptake of solar rooftop units in the Philippines?

Despite what should be favorable conditions...

- Favorable rooftop solar economics (retail tariffs >0.20 USD/kWh)
- Net metering rules and interconnection standards (since 2013)
- Existing codes to cover specific aspects of integration of variable renewable energy

… Consumers aren’t taking advantage of the opportunity for distributed energy at scale.
BARRIERS TO ROOFTOP SOLAR IN THE PHILIPPINES

Policy
- Application process complexity
- Insufficient Net Metering Rates

Technical
- No Technology Certification
- No standardized Accreditation
- Limited awareness of program

Economic
- High upfront costs for RE technology
- High soft costs
Financial barriers to be addressed

• Local commercial banks are reluctant to engage in solar PV lending, attributing a high risk (regulatory, financial, technological) to the market.

• Potential investors have either no access to debt funding or only at significant costs and with long payback periods; compromising on the viability of the investments.
The €20 million program has two key components:

- **5M Euro Technical Assistance**
  - Streamline & simplify the interconnection permitting process at grid operators for DG PV installations
  - Streamline & simplify permitting process with LGUs for DG PV installations
  - Build grid operator and LGU capacity to process DG PV applications
  - Establish a PV technology certification program
  - Establish an accreditation program for PV installers
  - Provide technical assistance to government agencies for policy and regulatory reform

- **15M Euro Financial Mechanism Component**
  - A Credit Guarantee Fund to enable local banks to provide competitive financing for solar projects and to enter the solar financing market on a large scale
  - A Project Preparation Facility designed to help investors and developers overcome initial project development barriers and develop a pipeline of bankable projects;
Individual size of activities to be supported

- The **Credit Guarantee Fund**, aims to support the installation of at least 50MW (50,000kW), with the average PV capacities for individual installations being indicatively
  - 1-8 kW PV installations (households): USD 2,000-2,600 per kWp
  - 50+ kW PV installations (commercial, industrial): approx. USD 1500/kW

Description of financial mechanism

- **Credit Guarantee Fund**: Offer to commercial banks (mainly mid-size, target 5 local banks) to provide a **partial credit guarantee of 80% of the principal loan amount** of DG PV installations. This enables commercial banks to a) lower interest rates, b) extend maturity of loans, and c) lend out more funds to borrowers for the DG PV installations.
Experience of MDBs has shown that when structuring and implementing financial mechanism, it is **very important** to also design and implement an effective technical assistance programs:

- TA to improve policy
- TA to assist banks to enter into a new market
Total leverage will be 9X the initial seed funding of the Financial Component

Financial component (Credit Guarantee Fund)
- Philippines Solar DG NAMA Support Project Financing (€ 20M)
- €15 M

Technical Component
- accreditation program
- technology certification
- project pipeline development

Equity €60 M
Private Loans €75 M
Expected Leverage (€ 135 M)

Total leverage will be 9X the initial seed funding of the Financial Component.
<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Energy, RE management bureau</td>
<td>• Technical implementing Partner</td>
</tr>
<tr>
<td>Climate Change Commission</td>
<td>• Office of the President</td>
</tr>
<tr>
<td>Local Government Unit Guarantee Corporation (LGUGC)</td>
<td>• Financial implementing partner</td>
</tr>
<tr>
<td>World Bank</td>
<td>• Financial delivery org</td>
</tr>
<tr>
<td>CCAP</td>
<td>• Technical Delivery org</td>
</tr>
<tr>
<td>GIZ</td>
<td>• Member of National Steering Committee</td>
</tr>
</tbody>
</table>
Development of Argan Orchards in Degraded Environment (DARED)

Morocco
CROSSCUTTING PROJECT ADDRESSING BOTH MITIGATION AND ADAPTATION

• MITIGATION
  – Forestry and land use

• ADAPTATION
  – Increased resilience of most vulnerable people and communities
PROJECT OVERVIEW

• Support for rural communities and the argan natural forest
  • Component 1 (35.3 M): plant 10,000 hectares of argan trees and implement appropriate irrigation techniques
  • Component 2 (8.6 M): improve market access for products
  • Component 3 (5.3 M): Strengthen actors’ capacity to manage and adapt to climate and rehabilitate the argan forest

• Approved by the GCF in 10.2016
  • 39.3 M GCF grant funding
  • Co-financing: 3 grants for a total of 9.8 M

• Expected Outcomes:
  • Adaptation: argan trees halt soil erosion and desertification
  • Climate mitigation: Trees store carbon
Baseline

• The natural argan forest is recognized by UNESCO since 1998 as a Biosphere Reserve, highlighting its rich biodiversity and economic opportunities.

• High demand for argan has created competition in a disorganized sector resulting in undervaluation of the product and low added value transfer to local beneficiaries.

• 1/3 of the original tree coverage has been lost due to pressures and unsustainable agricultural practices.
• Awareness of beneficiaries of CC mitigation is limited
• Lack of structures for R&D in argan economy
• The arganiculture sector is new and not attractive for banks because of perceived high risk, making conventional financing difficult due to the high interest rates that make project unprofitable
SOLUTIONS TO THE IDENTIFIED PROBLEMS

• Institutional reform
  • Improve organization of the up/downstream sectors through
    • Developing cooperatives, improving performance of existing ones and link coops to global markets
  • Develop model of preservation and co-management based on traditional knowledge and science
    • Establish Argan National Center of Excellence
    • Improve institutional actors’ capacity to integrate climate change in management

• Market transformation
  • Grants for private companies to plant trees and install rainwater infrastructure
  • Capacity development of interest groups (including cooperatives, fruit packing, crushing, pulping and selling groups) to increase their access to financing
  • Installation of argan oil extraction pilot unit
  • Support to build market confidence, e.g. labels
  • Support production of other local argan products
• CSA measures
  • Soil conservation
  • Rain water harvesting capabilities
    • The water needs for arganiculture is 1/15th of the ones for citrus
    • A study was conducted on rainwater harvesting and identified the implantation sites and the appropriate techniques – no ground water will be used
    • water efficient technologies coupled with solar pumping system
    • technical assistance for catchment works and for supervision of construction
  • Intercropping and associations with forage crops or aromatic plants
  • Production of argan trees from healthy plants with good genetic qualities
• An estimated 3m ha of land are suitable for Argan
  • The project aims for 10,000 ha in 31 rural communes in 8 provinces
    • 5,000 ha plantation project had started in 2013, but to date only 600 ha have been planned and 25 ha achieved due to lack of funds
    • A pilot project on 500 ha will take place during the first years
  • The project also seeks to do intercropping with medical and aromatic plants on 2000 ha
    • The first yr of the project will cover an area of 100 ha in rural pilot site
• The Executing Entity, a national actor present in all territories since 2010, has a strong ability to mobilize stakeholders through
  • Information sharing on opportunities in the argan agriculture sector
  • Training and support to farmers
GCF ENGAGEMENT MODALITY

- NDA: Ministry delegate to the Ministry of Energy, Mines, Water and Environment
- AE: Agency for Agricultural Development
  - Direct access
- Executing entity: National Agency for the Development of Oases and Argan Zones
<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>GCF (USD)</th>
<th>ANDZOA (USD)</th>
<th>ANDZOA's Partners (USD)</th>
<th>TOTAL BUDGET (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component 1</td>
<td>26,996,000</td>
<td>2,484,000</td>
<td>5,800,000</td>
<td>35,280,000</td>
</tr>
<tr>
<td>Component 2</td>
<td>7,773,600</td>
<td>836,400</td>
<td>0</td>
<td>8,610,000</td>
</tr>
<tr>
<td>Component 3</td>
<td>4,523,000</td>
<td>775,000</td>
<td>0</td>
<td>5,298,000</td>
</tr>
<tr>
<td>Total budget of Project</td>
<td>39,292,600</td>
<td>4,095,400</td>
<td>5,800,000</td>
<td>49,188,000</td>
</tr>
</tbody>
</table>
• I this program **grants** are used in the more typical grant-making modality; the grants do not create any typical financial mechanism such as loan guarantee fund, or equity fund;
• Management and flow of funds will need to follow very strictly the Results Monitoring and Reporting framework developed in the GCF application.
For Component 1—**Tree Planting and Irrigation Improvement**, the grants are used to supplement Executing Entity’s own budget, and the expenses will be paid from this budget, following AE’s own internal procedures, and adhering to GCF’s standards;

For Component 2, **Argan Products Market Development**, grants will be made to beneficiaries—the cooperative of argan tree farmers;

For Component 3, **Improvement of Capacity to Manage and Adapt to Climate and Rehabilitate the Argan Forest**, the grant will be used to co-finance the establishment of the Argan National Center of Excellence that will channel the efforts of all scientific and professional actors and will promote a cluster of cultural heritage of the Argan tree.
OVERALL MANAGEMENT AND FLOW OF FINANCE
• GCF resources will be provided to the implementing partner. The funds will flow to ADA special account through GOM financial systems. Under ADA’s implementation modality, ADA advances cash funds on a Work Plan and Annual budget (WPAB- Plan de Travail et Budget Annuel- PTBA) basis to ANDZOA (executing entity) for the implementation of agreed and approved program activities. The funds will flow in accordance with ADA standard policies and the ADA's procurement manual. ANDZOA reports back expenditure via a financial report on annual basis to ADA. Any additional requirements will be as in accordance with the AMA as and when it is agreed;

• ANDZOA will engage expenditures for works and goods according planned activities by International or/and National competitive bidding for activities (works, consultants, services, workshop, training) based on Quality and Cost Based Selection (QCBS) for amount more than 40 000 USD. Payments terms will be specify into the Term of References for activities and services. For services which cost less than 40,000 USD, ANDZOA may hire direct consultation procedure based on Least Cost Selection (LCS)
FINANCIAL MECHANISM – EXAMPLE FOR COMPONENT 2
THANK YOU

For more information, please visit us at www.ccap.org.
SESSION 4: SELECTING AND DESIGNING FINANCIAL MECHANISMS FOR GCF PROPOSALS

GCF Readiness Programme in Uzbekistan Workshop 2

11-13 October 2017
FINANCIAL MECHANISM IS CENTRAL TO A TRANSFORMATIONAL PROPOSAL

Improving policy and institutional frameworks

Addressing financial risks and returns

Identifying projects and demonstrating feasibility
FINANCIAL INSTRUMENTS IN THE GCF

1. Grants
2. Equity
3. Guarantees
4. Concessional loans

Source: GCF

Workshop 2, Session 1
Most proposals combine financial instruments, e.g. grants and loans.
Types of activities

- Early warning systems
- Climate resilient infrastructure
- Water supply and wastewater management
- Coastal adaptation
- Technical assistance and capacity building

Barriers addressed

- Limited financial viability
- Technical capacity
- Vulnerable countries & populations
**Types of activities**

- Long-term financing for grid-scale renewable energy
- Credit lines for energy efficiency investments
- Lending for resilient infrastructure investments
- Small grant and loan facility for land use planning and sustainable agriculture

**Barriers addressed**

- Limited access to affordable, long-term capital
Types of activities

- Early-stage funding for green businesses
- Fund-of-fund that provides financing through local financial institutions for energy service companies
- Sustainable agriculture and energy access

Barriers addressed

- High real or perceived risk
- Long-term horizon positive cash flows
GUARANTEES

Types of activities

Energy Efficiency Green Bond program

Barriers addressed

Specific risks (policy, political, credit)
HOW DOES THE GCF EVALUATE FUNDING REQUESTS?
Components of a GCF funding proposal

A. **Project / program information** – Focus area, size, duration

B. **Financing / Cost information**
   - Financial mechanism design, amounts and sources, etc.

C. **Project / program details** – Background, market / regulation overview

D. **Rationale for GCF involvement and exit strategy**

E. **Performance against investment criteria** (including effectiveness and efficiency)

F. **Appraisal summary** (e.g., prefeasibility study)

G. **Risk Analysis**

H. **Results and Monitoring**
B. FINANCING/COST INFORMATION

Financing/cost information for GCF request and co-finance

➢ Cost estimates by major cost categories

➢ Financial model:
  • Projection covering the period from financial closing through final maturity of GCF financing with detailed assumptions and rationale

➢ How financial instrument(s) address barriers and achieve project objectives, and leverage public and/or private finance.
E. FINANCIAL ELEMENTS EVALUATED AS PART OF EFFECTIVENESS AND EFFICIENCY CRITERIA

- Impact potential: Potential to contribute to achievement of Fund's objectives and result areas
- Paradigm shift potential: Long-term impact beyond a one-off investment
- Sustainable development potential: Wider economic, environmental, social (gender) co-benefits
- Country ownership: Country ownership and capacity to implement (policies, climate strategies and institutions)
- Responsive to needs of recipients: Vulnerability and financing needs of beneficiary in targeted group
- Efficiency & effectiveness: Economic and, if appropriate, financial soundness, as well as cost-effectiveness and co-financing for mitigation
<table>
<thead>
<tr>
<th>Cost-effectiveness and efficiency</th>
<th>Co-financing (mitigation only)</th>
<th>Financial viability</th>
<th>Application of best practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial structure provides least concessionality</td>
<td>Financing leveraged from public and private sources</td>
<td>Economic and financial internal rate of return</td>
<td>Best available technologies and practices applied</td>
</tr>
<tr>
<td>Cost per ton (mitigation only)</td>
<td>Long-term financial sustainability</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
EFFICIENCY AND EFFECTIVENESS: KEY ELEMENTS

Cost-effectiveness and efficiency

Financial structure provides least concessionality

Cost per ton (mitigation only)

• How is financial structure (amount, financial instrument, tenor and term) adequate and reasonable?

• How does it provide appropriate concessionality to make project viable?

• How cost-effective are reductions?
  • Total investment cost/expected lifetime emissions reductions
EFFICIENCY AND EFFECTIVENESS: KEY ELEMENTS

**Co-financing (mitigation only)**

- Financing leveraged from public and private sources

**Workshop 2, Session 3**

- What’s the potential to catalyze investment?

- For projects without significant co-financing: what’s the potential to mobilize indirect or long-term investments?
EFFICIENCY AND EFFECTIVENESS: KEY ELEMENTS

Financial viability

- How does GCF financing make the investment more profitable? What are the benefits to the broader economy?
- How will project outcomes be sustained beyond the GCF’s intervention?
E.6.1. Cost-effectiveness and efficiency

- Long term financing can help attract co-financing for RE in a new sector and challenging economy

- Efficiency achieved through:
  - Leveraging GCF financing
  - Operational efficiency (load factors of solar and wind)

E.6.3. Financial viability

- **Sector level**: demonstrate commercially viable renewable energy projects will encourage commercial banks to lend in the future

- **Project level**: long-term power purchase agreements and long tenor assures project sustainability

E.6.4. Application of best practices

- Benchmarking against international practices

- Competitive tenders will promote cost-efficient technologies
### E.6.5. Key efficiency and effectiveness indicators

<table>
<thead>
<tr>
<th>GCF core indicators</th>
<th>Estimated cost per t CO2 eq, defined as total investment cost / expected lifetime emission reductions (mitigation only)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(a) Total project financing          US$ 1,000 m</td>
</tr>
<tr>
<td></td>
<td>(b) Requested GCF amount             US$ 150 m</td>
</tr>
<tr>
<td></td>
<td>(c) Expected lifetime emission reductions overtime</td>
</tr>
<tr>
<td></td>
<td>(d) Estimated cost per tCO2eq (d = a / c)  US$ 52.8 / tCO2eq</td>
</tr>
<tr>
<td></td>
<td>(e) Estimated GCF cost per tCO2eq removed (e = b / c) US$ 7.9 / tCO2eq</td>
</tr>
</tbody>
</table>

*Describe the detailed methodology used for calculating (d) and (e)*

Analysis based on typical solar plant under FIT scheme in previous round

---

Expected volume of finance to be leveraged by the proposed project/programme and as a result of the Fund’s financing, disaggregated by public and private sources (mitigation only)

- Public financing leveraged: $350m
- Private financing leveraged: $500m
- $1 GCF : $5.7 co-financing
WHAT ARE THE GCF POLICIES RELATED TO FINANCIAL MECHANISMS?
## Financial Terms and Conditions

<table>
<thead>
<tr>
<th></th>
<th>Public sector</th>
<th>Private sector</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grants</strong></td>
<td>Without repayment contingency only</td>
<td>With or without repayment contingency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>With payment contingency, terms and conditions on case by case basis</td>
</tr>
<tr>
<td><strong>Loans</strong></td>
<td>High and low levels of concessionality</td>
<td>Case by case basis</td>
</tr>
<tr>
<td><strong>Equity</strong></td>
<td>Case by case basis</td>
<td>Case by case basis</td>
</tr>
<tr>
<td><strong>Guarantees</strong></td>
<td>Case by case basis</td>
<td>Case by case basis</td>
</tr>
</tbody>
</table>
Table 1: Terms and conditions of outgoing grants

<table>
<thead>
<tr>
<th></th>
<th>Currency</th>
<th>Interest rate</th>
<th>Maturity</th>
<th>Grace period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grants</td>
<td>Major convertible currency</td>
<td>Grants without repayment contingency: no reimbursement required¹</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grants with repayment contingency: terms adapted to the required concessionality of the project or programme</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Terms and conditions of outgoing concessional loans to the public sector

<table>
<thead>
<tr>
<th></th>
<th>Currency</th>
<th>Maturity (years)</th>
<th>Grace period (years)</th>
<th>Annual principal repayment years 11–20/6–20 (% of initial principal)</th>
<th>Annual principal repayment years 21–40 (% of initial principal)</th>
<th>Interest</th>
<th>Service fee (per annum)</th>
<th>Commitment fee (per annum)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High concessionality</td>
<td>Major convertible currency</td>
<td>40</td>
<td>10</td>
<td>2%</td>
<td>4%</td>
<td>0.00%</td>
<td>0.25%</td>
<td>Up to 0.50%</td>
</tr>
<tr>
<td>Low concessionality</td>
<td>Major convertible currency</td>
<td>20</td>
<td>5</td>
<td>6.7%</td>
<td>NA</td>
<td>0.75%</td>
<td>0.50%</td>
<td>Up to 0.75%</td>
</tr>
</tbody>
</table>
The GCF Risk Management Framework provides the following guidance for funding:

- AEs should only grant funding to acceptable and identified executing entities
- GCF should be co-investor rather than sole investor, where possible
- Co-financing from accredited entities is desirable
- Execution liabilities should be borne by AE and EE, not the GCF

Source: GCF Results Management Framework
Proposals should provide:

- Clarity on requirements and terms for co-investors
- Rules and responsibilities in case of project failure
- Clear disbursement and repayment schedule
- Clear ability and willingness of borrower to repay from cash flows

The GCF will consider external risk evaluator when GCF faces different risks than co-investors, e.g.:

- Different level of credit risk
- Equity stake on different terms
The GCF should be used strategically to unlock additional investment.

Strong proposals can accelerate and increase additional climate investment.

While there is threshold value, the GCF values projects that attract high levels of co-financing.
CO-FINANCING LEVELS IN GCF PROPOSALS

As of July 2017

- All: 47%
- Mitigation: 64%
- Adaptation: 25%
- Cross cutting: 50%
Co-financing can come from a range of public and private sources

- Accredited entities
- National and local governments
- Development Finance Institutions
- Commercial Banks
- Private equity
ALIGNING CO-FINANCING WITH NEEDS

Accredited entities
National and local governments
Other development institutions
Public private partnerships
Commercial banks
Private equity

**Types of finance:**
- Loans, equity, guarantees, generally at commercial terms

**Uses of funding:**
- Enabling policies, legislation, institutions
- Technical assistance and project development
- Project implementation and monitoring
- Technology piloting and deployment

**Types of finance:**
- Grants, loans, equity generally at concessional terms

**Uses of funding:**
- Facilitate investment and capital flows
- Risk mitigation via partnership with GCF
- Creation of new markets
• **New public investment**: Allocation of new resources in support of mitigation or adaptation

• **“Greening” existing budgets**: Elimination of subsidies and re-alignment of existing budgets
  - Can improve incentives and be a major source of capital

• **Legal and Regulatory Changes**: Regulatory changes (for both real and financial sectors)
  - Can significantly improve the environment, may face political challenges

• **Public Mandates**: Requirements placed on households or firms
  - Can be more efficient and effective than public spending

• **Carbon Pricing and internalizing externalities**: Carbon pricing
  - Cost-effective and efficient way to level the playing field, but politically challenging
THANK YOU

For more information, please visit us at

www.ccap.org
SESSION 5: FINANCIAL ASSESSMENTS FOR CLIMATE-RELATED PROJECTS

GCF Readiness Programme in Uzbekistan Workshop 3
• Introduction to climate finance mechanisms and instruments
  – Role of finance in climate mitigation and adaptation
  – Common financial barriers
  – Principles of financial mechanism design and project financing structures
  – Financial mechanism case studies

• Selecting and Designing Financial Mechanisms for GCF proposals
  – GCF financial instruments, and GCF policy relevant to project financial structure (e.g., financial terms and conditions, minimum concessionality)
  – Identification of appropriate financial mechanism, terms and conditions to request from the GCF
  – Leveraging additional funding for GCF proposals
  – Additional public and private funding sources, relative strengths and alignment with identified needs
A. Project / program information – Focus area, size, duration

B. Financing / Cost information
   • Financial mechanism design, amounts and sources, etc.

C. Project / program details – Background, market / regulation overview

D. Rationale for GCF involvement and exit strategy

E. Performance against investment criteria

F. Appraisal summary (e.g., prefeasibility study)

G. Risk Analysis

H. Results and Monitoring
B. FINANCING/COST INFORMATION: KEY CONSIDERATIONS

- Need to justify why climate finance is needed
  - What barriers need to be overcome?
  - What are private investor concerns?
    - E.g., High risks from unfamiliar technologies or new providers?
  - What are project developer concerns?
    - E.g. Affordability, accessibility
- Make the case that climate finance will be used well
  - Demonstrate leverage, efficiency, financial feasibility, least concessionality
    - Mobilization of indirect or long-term investment for project/programs that do not leverage significant co-financing
  - Show that host country and accredited entity will invest own resources
  - Sustainability –
    - E.g., reinvestment of returns in the mechanism to fund more projects
B. FINANCING/COST INFORMATION

Financing/cost information for GCF request and co-finance

➢ Cost estimates by major cost categories

➢ Financial model:
  • Projection covering the period from financial closing through final maturity of GCF financing with detailed assumptions and rationale

➢ How financial instrument(s) address barriers and achieve project objectives, and leverage public and/or private finance.
The purpose of a financial assessment is to understand how the project will be financed and (if applicable) the structure of revenues:

- Is the project going to be profitable (if meant to be private sector-driven)?
  - What rate of return? Who will receive the revenues and when?
- Is the project going to cost what it is budgeted?
- When will the funds be needed, expended, and debt refunded?
- What are the costs and benefits?
- What are the scenarios that make the project viable?

Various models of financial assessment:

- Viability analysis
- Cost-benefit analysis
The project should be cost-effective and compelling not only on the level of its budget, but also on the level of its goals, objectives, and design.

Questions to consider:
- What are the project objectives?
- How does the project address them?
- What is the financial mechanism?
- What is the role of GCF funds?
- What are the intended benefits?
- Who are the intended project beneficiaries?
- What are the expected costs?
- What are the primary barriers?
- What are the assumptions underlying the intended benefits and expected costs and benefits?
- Are the expected outcomes and benefits realistic?
- Is the project viable?
- What are the lessons from this project for Uzbekistan?
• Viability analysis is determining whether the project will meet the project objectives for profit and social and environmental benefits
  – Requires the development of a financial model for the project from inception to conclusion
  – Tracks the costs and revenues/benefits over the course of the project
  – Is based on understanding of key assumptions about parameters of the project, such as cost structure, degree of subsidy, etc.
VIABILITY ANALYSIS

- Inputting the key parameters of the project
  - Design, duration, cost structure
  - Range of possible costs
  - Timetable of expected costs & revenues

Use the following assumptions to define the project:

Traffic Scenario: Choose Toll Scenario Template

Project Delivery Structure: Design-Build-Finance-Operation-Maintenance-Toll Collection

Projected Schedule
- Base Year: 2013 Concession Period (years): 30
- Construction Period: 2 years; Construction Start: 2014; Construction End: 2015
- Tolling Period: 28; Tolling Start: 2016
VIABILITY ANALYSIS

Use the following assumptions to estimate project costs:

Other Project Costs:
There are no other project costs – Zero out any costs in this section

Construction Costs
• Asset type: Road
• Construction Costs: $100,000,000 (Year 1:30% Year 2:70%;Years 3 to 10:0%
• Delete any other asset type and zero out its costs
• Annual Operations Costs:$5,000,000
• Annual Maintenance Costs:$5,000,000
• Periodic Maintenance Costs:0%(do not zero out the years per period.

Use the following assumptions for Toll & Other Revenue:
• Toll Revenue Leakage:-5%
• Revenue Ramp Up: Months Per Period:12(default value)
• Revenue Ramp Up Period 1:-67%;Period 2:-33%;Period 3 to 6:0%

Input parameters:
• Construction costs, year-by-year
• Annual operations and maintenance costs
• Periodic maintenance
• Expected revenue, structure or revenue
• Debt repayment?
• Other revenue diversion (private profits, taxes, etc.)
• Role of GCF subsidy, other government funds
VIABILITY ANALYSIS

Use the following assumptions to apply appropriate adjustments:

**Funding:**
- Project Subsidy (Or $ of Subsidy): $0

**Inflation**
- CPI: 3%
- Other Index 2 _Construction Phase: 0%
- Other Index 3 _Operation Phase: 3%
- Other Index 4 _Toll Rates: 3%
- Leave the Other inflation rates blank

**Risk Values**
- Design-Build Cost Impact: (P10): $28,000,000; (P70): $56,000,000; (P90): $30,000,000
- Operation Phase Cost Impact: (P10): $28,000,000; (P70): $56,000,000; (P90): $84,000,000-based on the 28 year operation phase.
- Design-Build Schedule Impact: all values are $0

**Discount Rate**
- Nominal Discount Rate: 5%; Discount Rate Selected: 5% (the "Discount Rate Selected" is editable even though it is white)

Key input parameters:
- Interest rates
- Risk values – various cost scenarios
- Costs of various project phases
- Discount rate for calculating net project cost (in present value terms)
### Sample cash flow viability model: various cost scenarios

<table>
<thead>
<tr>
<th>Nominal Discount Rate</th>
<th>Initial Project Estimate</th>
<th>P10</th>
<th>P70</th>
<th>P90</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.00%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Costs</th>
<th>Initial Project Estimate</th>
<th>P10</th>
<th>P70</th>
<th>P90</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Costs</td>
<td>88,762,142</td>
<td>88,762,142</td>
<td>88,762,142</td>
<td>88,762,142</td>
</tr>
<tr>
<td>O&amp;M</td>
<td>203,384,304</td>
<td>203,384,304</td>
<td>203,384,304</td>
<td>203,384,304</td>
</tr>
<tr>
<td>NPC of life Cycle Costs</td>
<td>292,146,446</td>
<td>292,146,446</td>
<td>292,146,446</td>
<td>292,146,446</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Revenues and Funding</th>
<th>Initial Project Estimate</th>
<th>P10</th>
<th>P70</th>
<th>P90</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toll and Other Revenue</td>
<td>(290,082,714)</td>
<td>(290,082,714)</td>
<td>(290,082,714)</td>
<td>(290,082,714)</td>
</tr>
<tr>
<td>Project Subsidy</td>
<td>(290,082,714)</td>
<td>290,082,714</td>
<td>290,082,714</td>
<td>290,082,714</td>
</tr>
<tr>
<td>NPC of Revenues and Funding</td>
<td>(290,082,714)</td>
<td>290,082,714</td>
<td>290,082,714</td>
<td>290,082,714</td>
</tr>
</tbody>
</table>

| NPC of Risk Impacts    | NA                       | 292,146,450 | 58,429,289 | 87,643,934 |

| Net Project Cost (excluding financing) | 2,063,732 | 31,278,376 | 60,493,021 | 89,707,666 |
| Cost of Financing (Interest & Fee)      |           |           |           |           |
| Net Project Cost (including financing)  | 2,063,732 | 31,278,376 | 60,493,021 | 89,707,666 |
COST-BENEFIT ANALYSIS (CBA)

- Cost-benefit analysis (CBA) is a tool for decision-making
- CBA is a means of comparing various scenarios and project options
- Assigning value to costs (financial, social) and benefits (profits, other non-financial benefits), and comparing which is greatest
- Cost-benefit analysis has 9 basic steps (see below)

The Major Steps in CBA
1. Specify the set of alternative projects.
2. Decide whose benefits and costs count (standing).
3. Identify the impact categories, Catalogue them, and select measurements indicators.
4. Predict the impacts quantitatively over the life of the project.
5. Monetize (attach dollar values to) all impacts.
6. Discount benefits and costs to obtain present values.
7. Compute the net present of each alternative.
8. Perform sensitivity analysis.
9. Make a recommendation.
COST-BENEFIT ANALYSIS

• Specify the set of alternative projects
  – What are the options for the project?
    • Build/not build?
    • Build in different locations?
    • Build different sizes?
    • Build with different technologies?
    • Distribute the benefits to different groups?

• Decide whose benefits and costs count (standing)
  – Will the project benefit or harm people:
    • In the community?
    • In the region?
    • In the country?
    • Outside the country and around the world?
Costs and benefits categories should be identified
Costs and benefits should be quantified with indicators
   – Examples: Lives saved; crops produced; water conserved; economic losses averted
Costs and benefits should be converted to monetary values
   – What is a ton of cotton worth?
Costs and benefits should be discounted by social discount rate S to determine present value
   – What are the expected cash flows, benefits, Costs, and benefits in future years?
   – What is the present value (PV) of future cash flows, non-monetary cost of those future costs and benefits?

\[
PV(B) = \sum_{i=0}^{n} \frac{B_t}{(1 + s)^t}
\]

\[
PV(C) = \sum_{i=0}^{n} \frac{C_t}{(1 + s)^t}
\]
COST-BENEFIT ANALYSIS

- Using CBA to find optimal values (inputs, outputs, project size, etc.)
- Sensitivity analysis can show optimal values, as well as indicate potential cost and benefit outcomes with different conditions and assumptions
**Table 1-3 Coquihalla Highway CBA (1986 $ Million)**

<table>
<thead>
<tr>
<th>Projects Benefits</th>
<th>No Tolls</th>
<th>With Tolls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time and Operating Cost Savings</td>
<td>A Global Perspective: 389.8</td>
<td>B Provincial Perspective: 292.3</td>
</tr>
<tr>
<td>Horizon Value of Highway</td>
<td>A Global Perspective: 53.3</td>
<td>B Provincial Perspective: 53.3</td>
</tr>
<tr>
<td>Safety Benefits (Lives)</td>
<td>A Global Perspective: 36.0</td>
<td>B Provincial Perspective: 27.0</td>
</tr>
<tr>
<td>Alternative Routes Benefits</td>
<td>A Global Perspective: 14.6</td>
<td>B Provincial Perspective: 10.9</td>
</tr>
<tr>
<td>Toll Revenues</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>New Users</td>
<td>0.8</td>
<td>0.6</td>
</tr>
<tr>
<td>Total Benefits</td>
<td>494.5</td>
<td>384.1</td>
</tr>
</tbody>
</table>

**Project Costs:**

| Construction                              | A Global Perspective: 338.1 | B Provincial Perspective: 338.1 | C Global Perspective: 338.1 | D Provincial Perspective: 338.1 |
| Maintenance                               | A Global Perspective: 7.6   | B Provincial Perspective: 7.6   | C Global Perspective: 7.6   | D Provincial Perspective: 7.6   |
| Toll Collection                           | 0.0      | 0.0        | 0.0      | 0.0 |
| Toll Booth Construction                    | 0.3      | 0.3        | 0.3      | 0.3 |
| Total Costs                               | 345.7    | 345.7      | 345.7    | 345.7 |
| Net Social Benefits                        | 148.8    | 38.4       | 24.2     | -19.7 |

Source: Adapted from Anthony Boardman, Aidan Vining, and W.G. Waters II, "Costs and Benefits through Bureaucratic Lenses: Example of a Highway Project," Journal of Policy Analysis and Management. 12(3) 1993, 532-555, Table 1 p.537
CLIMATE CHANGE-SPECIFIC COSTS AND BENEFITS

- **Climate change-related costs**
  - Social cost of carbon (CO₂ emissions)
  - Health costs of air pollution
  - Crop losses from droughts and floods
  - Property damage from climate-related disasters (storms, floods, wildfires)
  - Loss of land productivity due to soil erosion, desertification
  - Additional investments required in disaster response, recovery and other climate adaptation measures
  - Costs of inventory, wages, profits lost by businesses & households from climate-related disasters and weather volatility

- **Climate change-related benefits**
  - Emissions and air pollution reduced
  - Increased agricultural productivity
  - Energy savings or renewable energy generated
  - Savings from avoided climate-related losses
  - Earnings from new climate-related businesses
Table 3.3 Irrigation Water Requirements Changes Relative to Current Situation to 2040 under the Three Climate Scenarios, For Each Crop And AEZ (Assuming No CO2 Fertilization) % Change

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Crop</th>
<th>Desert and Steppe East</th>
<th>Desert and Steppe West</th>
<th>Highlands South</th>
<th>Piedmont East</th>
<th>Piedmont Southwest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Alfalfa</td>
<td>-10</td>
<td>-7</td>
<td>-10</td>
<td>-47</td>
<td>-7</td>
</tr>
<tr>
<td></td>
<td>Apples</td>
<td>7</td>
<td>9</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Cotton</td>
<td>6</td>
<td>9</td>
<td>N/A</td>
<td>N/A</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Potatoes</td>
<td>3</td>
<td>8</td>
<td>5</td>
<td>-2</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Tomatoes</td>
<td>-5</td>
<td>-2</td>
<td>N/A</td>
<td>N/A</td>
<td>-9</td>
</tr>
<tr>
<td></td>
<td>Spring Wheat</td>
<td>7</td>
<td>4</td>
<td>4</td>
<td>-40</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Winter Wheat</td>
<td>7</td>
<td>-1</td>
<td>-5</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Medium</td>
<td>Alfalfa</td>
<td>-2</td>
<td>-2</td>
<td>-4</td>
<td>-39</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Apples</td>
<td>12</td>
<td>7</td>
<td>14</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Cotton</td>
<td>12</td>
<td>9</td>
<td>N/A</td>
<td>N/A</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Potatoes</td>
<td>9</td>
<td>7</td>
<td>11</td>
<td>-2</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Tomatoes</td>
<td>0</td>
<td>2</td>
<td>N/A</td>
<td>N/A</td>
<td>-4</td>
</tr>
<tr>
<td></td>
<td>Spring Wheat</td>
<td>17</td>
<td>9</td>
<td>22</td>
<td>-35</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Winter Wheat</td>
<td>8</td>
<td>3</td>
<td>5</td>
<td>-12</td>
<td>6</td>
</tr>
<tr>
<td>High</td>
<td>Alfalfa</td>
<td>-3</td>
<td>-1</td>
<td>-2</td>
<td>-41</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Apples</td>
<td>32</td>
<td>21</td>
<td>30</td>
<td>111</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>Cotton</td>
<td>18</td>
<td>14</td>
<td>N/A</td>
<td>N/A</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Potatoes</td>
<td>18</td>
<td>18</td>
<td>22</td>
<td>74</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Tomatoes</td>
<td>18</td>
<td>12</td>
<td>N/A</td>
<td>N/A</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>Spring Wheat</td>
<td>44</td>
<td>26</td>
<td>44</td>
<td>19</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>Winter Wheat</td>
<td>9</td>
<td>5</td>
<td>10</td>
<td>-34</td>
<td>19</td>
</tr>
</tbody>
</table>

Note: N/A - the crop is not grown in the AEZ. Orange indicates an increase in crop irrigation water requirements, while green indicates a decrease.

SOURCES OF INFORMATION ON CLIMATE CHANGE FACTS AND PROGRAMS IN UZBEKISTAN

- UNFCCC national communications, nationally determined contributions
- National climate adaptation plans
- National climate risk assessments, agriculture & climate change studies
- Uzbek government national and ministry strategies and reports
- UNDP, World Bank, ADB, IDB national financing strategies
- Other published studies related to Uzbekistan, climate change, and clean energy
- Similar projects in the same sectors in Uzbekistan
- Similar projects in the same sectors in neighboring countries, countries with similar geographic and economic characteristics
Figure 12: MOB Adaptation Finance by Sector Grouping, 2015

- Water and wastewater systems - USD 1,362 million (27%)
- Crop production and food production - USD 927 million (18%)
- Other agricultural and ecological resources USD 217 million (4%)
- Industry, extractive industries, manufacturing and trade - USD 29 million (1%)
- Coastal and riverine infrastructure (including built flood protection infrastructure) - USD 589 million (12%)
- Energy, transport, and other built environment infrastructure - USD 1,230 million (24%)
- Financial services - USD 81 million (2%)
- Institutional capacity support or technical assistance – USD 234 million (5%)
- Cross-cutting sectors – USD 215 million (4%)
- Multiple - USD 140 million (3%)

Note: Adaptation finance reported for some projects/project components for which there was not enough data granularity to allow apportioning of the adaptation finance among the sector groups are included in "Multiple:
• Climate finance projects for adaptation and mitigation often use traditional finance mechanisms for development

• Adaptation projects are more commonly led by the government, building infrastructure and improving governance, and are less likely to deliver profit

• Grants
  – Often used for technical assistance, trainings, pre-feasibility and feasibility studies, project preparation, and for innovative projects demonstrating new technologies or operating in new markets

• Loans
  – Most common for large-scale sovereign (government-led) infrastructure projects

• Equity
  – Commonly paired with loans for profit-making ventures, both corporate and off-balance sheet project finance

• Loan guarantees
  – Common for commercial projects in markets or with technologies that private investors perceive as risky
Many financial institutions and international donors are developing new financial mechanisms to address climate change

- Many of these are niche products that only apply to certain sectors and project types

Climate financing structures include:

- **Carbon finance**: Revenues from international donors and investors to purchase emissions reductions (tons CO$_2$ equivalent)
- **Disaster risk insurance**: Insurance to protect households, governments, and businesses from climate-related disasters, often tied to measures to reduce risk
- **Catastrophe bonds**: Bonds purchased by investors that forgive principal borrowed in the case of natural disaster events.

Other climate finance projects are not specific to climate change. These include:

- Infrastructure finance (sovereign, on-balance sheet and project finance), SME lending and microfinance, venture capital, private equity, bonds, loans
BUDGET CONSTRUCTION AND COMPONENTS

Figure 22. How to estimate the total budget

TOTAL PROJECT COST

![Diagram showing budget components]

Table 20. Table for presenting the breakdown of cost estimates

<table>
<thead>
<tr>
<th>Component</th>
<th>Sub-component (if applicable)</th>
<th>Amount for entire project (includes co-financing)</th>
<th>Currency</th>
<th>Amount for entire project</th>
<th>Local currency</th>
<th>GCF funding amount</th>
<th>Currency of disbursement to recipient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component 1</td>
<td>Sub-component 1.1</td>
<td>………………</td>
<td>Options</td>
<td>………………</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sub-component L</td>
<td>………………</td>
<td>Options</td>
<td>………………</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Component 2</td>
<td>Sub-component 2.1</td>
<td>………………</td>
<td>Options</td>
<td>………………</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total project financing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: GCF funding proposal template version 1.1
USES OF GCF FUNDING

- GCF funds can be used for a range of legitimate project-related costs
- Categories of legitimate costs include:
  - project or programme implementation and supervision
  - monitoring and reporting
  - material and equipment (including renting of meeting/workshop venues)
  - technical assistance (consultant services)
  - capacity building (training for implementers and beneficiaries)
  - policy design
  - project or programme completion and evaluations
  - any contingencies
USES OF GCF FUNDING – AE FEES

• The GCF fees for implementing accredited entities (AEs) are limited to 7-10% of project amount, based upon project size.
• GCF fees to AE can cover the following items (subject to specific arrangements with the executing entity, or EE):
  – project or programme implementation and supervision (including consultancies and other procurement)
  – project or programme completion and evaluations
  – monitoring and reporting
  – material and equipment (rental of meeting venues)
  – any contingencies.

Source: CDKN Acclimatise, Green Climate Fund Proposal Toolkit 2017: Toolkit to develop a project proposal for the GCF, 2017
CO-FINANCING FOR THE PROJECT

• Sources of co-financing
  – Uzbekistan government
  – Private banks
  – State banks
  – Multilateral development institutions (UN, bilateral donors)
  – International finance institutions (World Bank, IFC, ADB, IDB, EBRD)
  – Other investors

• How much funding is available for the project?
  • What are the government, donors and investors willing to provide? Are they prioritizing this project?
  • Is there a shortfall in funding? How much?
  • Why is GCF funding needed?
Figure 23. How to calculate the amount of GCF financing required

\[
\text{Total project cost} + \text{AE Management fee} - \text{Co-financing} = \text{Amount Of GCF Financing requested}
\]
• **4.10.1 Justification of the level of concessionality**

The GCF applies a ‘least concessional’ approach.

A project proponent must provide strong economic and financial justification for the level of concessionality of finance requested, particularly for a grant but also in estimating the loan rate and tenor requirements.

The level of concessionality should correspond to the level of the proposal’s expected performance against the investment criteria – efficiency and effectiveness.

- For loans, a project proponent should determine the low interest rate based on:
  - risk–return metrics that include yield curves of comparable traded debt
  - expected loss norms
  - market comparability
  - the reputation, capacity and expertise of the AE channelling agency.

## FINANCIAL TERMS AND CONDITIONS

<table>
<thead>
<tr>
<th></th>
<th>Public sector</th>
<th>Private sector</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grants</strong></td>
<td>Without repayment contingency only</td>
<td>With or without repayment contingency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>With payment contingency, terms and conditions on case by case basis</td>
</tr>
<tr>
<td><strong>Loans</strong></td>
<td>High and low levels of concessionality</td>
<td>Case by case basis</td>
</tr>
<tr>
<td><strong>Equity</strong></td>
<td>Case by case basis</td>
<td>Case by case basis</td>
</tr>
<tr>
<td><strong>Guarantees</strong></td>
<td>Case by case basis</td>
<td>Case by case basis</td>
</tr>
</tbody>
</table>
# FINANCIAL TERMS AND CONDITIONS FOR GRANTS AND LOANS TO THE PUBLIC SECTOR

## TABLE 1: TERMS AND CONDITIONS OF OUTGOING GRANTS

<table>
<thead>
<tr>
<th>Currency</th>
<th>Interest rate</th>
<th>Maturity</th>
<th>Grace period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grants</td>
<td>Grants without repayment contingency: no reimbursement required</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major convertible currency</td>
<td>Grants without repayment contingency: terms adapted to the required concessionality of the project or program</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Table 2: Terms and conditions of outgoing concessional loans to the public sector

<table>
<thead>
<tr>
<th>High concessionality</th>
<th>Currency</th>
<th>Maturity (years)</th>
<th>Grace period (years)</th>
<th>Annual principal repayment years 11-20/6-20 (% of initial principal)</th>
<th>Annual principal repayment years 21-40 (% of initial principal)</th>
<th>Interest</th>
<th>Service fee (per annum)</th>
<th>Commitment fee (per annum)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major convertible currency</td>
<td>40</td>
<td>10</td>
<td></td>
<td>2%</td>
<td>4%</td>
<td>0.00%</td>
<td>0.25%</td>
<td>Up to 0.50%</td>
</tr>
<tr>
<td>Low concessionality</td>
<td>Major convertible currency</td>
<td>20</td>
<td>5</td>
<td>6.7%</td>
<td>NA</td>
<td>0.75%</td>
<td>0.50%</td>
<td>Up to 0.75%</td>
</tr>
</tbody>
</table>
The GCF Risk Management Framework provides the following guidance for funding:

- AEs should only grant funding to acceptable and identified executing entities
- GCF should be co-investor rather than sole investor, where possible
- Co-financing from accredited entities is desirable
- Execution liabilities should be borne by AE and EE, not the GCF

Source: GCF Results Management Framework
### F.1. Economic and Financial Analysis

Please provide the narrative and rationale for the detailed economic and financial analysis (including the financial model, taking into consideration the information provided in section E.6.3).

**Based on the above analysis, please provide economic and financial justification (both qualitative and quantitative) for the concessionality that GCF provides, with a reference to the financial structure proposed in section B.2.**
FINANCIAL ASSESSMENT: CASE STUDIES

• Examples of GCF projects and their financial approaches
  • How to structure financing & assessment for agriculture and adaptation projects
    – GCF: Kazakhstan EBRD renewables framework
    – GCF: Morocco agriculture & resilience
    – GCF: Namibia agriculture & resilience
• Total investment of USD 550 million is estimated based on the projected pipeline of up to 330 MW in renewable energy projects.
• Total requested contribution from the GCF is USD 110 million for concessional loans (USD 106 million) and technical assistance (USD 4 million).
• Based on the experience with the current portfolio, the expected direct CO2 emissions reductions by the new RES generation = 640,000 tons CO₂ equivalent per year once all sub-projects are operational (with the expected project lifetime of 20 years).
The main objectives of the Programme are the following:

- to facilitate competitive entry of low-carbon investors into the market currently dominated by conventional fossil fuel power producers and kick-start renewable investments;

- to support the construction of an estimated 330 MW of new RE capacity (ca. 18% of the Government’s RES target by 2020) under the FiT scheme and the auction scheme (no more than 35% of the total GCF financing), in combination with the power grid upgrades;

- to support further regulatory reforms in the energy and carbon market of Kazakhstan, including the development of the auction system; and

- to provide capacity building support to RES sector to promote gender equality.
• Project purpose:
  – Building on the construction of a new dam upstream of the Boudnib Valley, increase value of date value-chain, increase the resilience of a highly vulnerable area with regard to climate change.

• The project is organized in three components:
  – C1: Connecting to the dam and transfer of surface water to the Boudnib Valley [45,6 MEUR]
  – C2: Building the climate - resilience of oasis communities through a holistic approach [12,5 MEUR]
  – C3: Cross-cutting sustainability measures (technical assistance, groundwater preservation, environmental and social impacts management) [8,3 MEUR]
  – C4: Project Management [2,4 MEUR]
The project intersects several national strategies:

- *Plan Maroc vert* (Green Morocco Plan, GMP)
- Irrigation Extension Programme (160,000 ha planned)
- The agriculture resilience and water preservation strategy, aligned with Morocco’s adaptation strategy for 2020 as described in its INDC.

Project financing:

- a concessional loan (40M EUR), mostly for infrastructure and commercial agriculture, and
- grant resources (21M EUR) building climate resilience
  - technical assistance (4.5M EUR)
  - Project activities, groundwater management and preservation (16 M EUR)
Project objective:
Reduce rural human population’s vulnerability and food insecurity to climate risks and threats while increasing the adaptive capacity, well-being and resilience of the vulnerable small-scale farming communities in crop production landscapes that are threatened by climate variability and change.

Three components:
- Increased adaptive capacity and enhanced climate change resilience,
- Reduced exposure to risks and strengthened adaptive capacity to climate change adaptation,
- Solar energy technologies & solar water pumping promoted and widely adopted.
Three main activities are:

a) Establishment of the Mashare Climate Resilient Agriculture Centre of Excellence (MCRACE) including the Demonstration pilots-, Fertilizer mixing plant, organic manure and guano trials

b) Farmers Training and Adoption of Comprehensive Conservation Agriculture plus Good Agricultural Practices (GAP)
   i. Small scale farmer’s horticultural pre, production & post production
   ii. Small scale farmer’s comprehensive conservation agriculture pre, production (rain fed/dry land crop production) & post production
   iii. Micro incentive-based Crop Insurance Scheme (piloting and scaling up)

c) Solar Energy Technologies for adapted agricultural diversification and water pumping
LUNCH BREAK
AFTERNOON PROGRAM

- Review of case studies in small groups (1:30-2:15)
- Presentation of case study findings and discussion (2:15-3:45)
- Discussion and Q&A (3:45-4:45)
FINANCIAL ASSESSMENT: CASE STUDIES

- Questions to consider:
  - What are the project objectives?
  - How does the project address them?
  - What is the financial mechanism?
  - What is the role of GCF funds?
  - What are the intended benefits?
  - Who are the intended project beneficiaries?
  - What are the expected costs?
  - What are the primary barriers?
  - What are the assumptions underlying the intended benefits and expected costs and benefits?
  - Are the expected outcomes and benefits realistic?
  - Is the project viable?
  - What are the lessons from this project for Uzbekistan?
SESSION 6: EVALUATION OF RISKS IN CLIMATE CHANGE PROJECTS

GCF Readiness Programme in Uzbekistan Workshop 3
COMPONENTS OF A GCF FUNDING PROPOSAL

A. Project / program information— Focus area, size, duration
B. Financing / Cost information
   • Financial mechanism design, amounts and sources, etc.
C. Project / program details— Background, market / regulation overview
D. Rationale for GCF involvement and exit strategy
E. Performance against investment criteria
F. Appraisal summary (e.g., prefeasibility study)
G. Risk Analysis
H. Results and Monitoring
RISK ASSESSMENT AND MITIGATION: WHAT IS THE PROJECT TRYING TO ACHIEVE? WHAT THREATENS THE ACHIEVEMENT OF THOSE OBJECTIVES?

Potential to achieve the GCF’s six investment criteria

- **Impact potential**: Potential to contribute to achievement of Fund's objectives and result areas
- **Paradigm shift potential**: Long-term impact beyond a one-off investment
- **Sustainable development potential**: Wider economic, environmental, social (gender) co-benefits
- **Country ownership**: Country ownership and capacity to implement (policies, climate strategies and institutions)
- **Efficiency & effectiveness**: Economic and, if appropriate, financial soundness, as well as cost-effectiveness and co-financing for mitigation
- **Responsive to needs of recipients**: Vulnerability and financing needs of beneficiary in targeted group
There are two types of risk: inherent risk and residual risk.

- Risk that exists before an organization takes mitigation actions is **inherent risk**
- Risk that remains after control measures are taken is **residual risk**.

The objective of risk management is to maintain the residual risk level within risk appetite and tolerance set by the board of an organization.
F. RISK ANALYSIS

Substantial risks that the project/program may face, and proposed risk mitigation measures

➢ Potential risks include:
  • Technical risk
    • E.g., Underperformance of the technology leading to lower revenues.
  • Financial risks
    • E.g., Ability of borrower to convert local currency into US Dollars may affect its capacity to service debt.
  • Operational risk
    • E.g., Inadequate technical capacity or processes may impact operations of newly installed energy efficient equipment
  • Environmental and social risks
    • E.g., Adverse impacts on community health

➢ How will risks be monitored and mitigated?
  ➢ E.g. criteria for sub-projects, terms of contracts, reserve accounts, institutional arrangements, capacity building
The logical framework demonstrates how project/program will achieve results in line with GCF objectives: Risk analysis should review the robustness of the logic framework’s assumptions and susceptibility to risks

- Based on GCF Results Management Framework
Detailed description of risk factors

Level of impact (estimated % of project /program value)

Probability of risk occurring (high/medium/low)

Mitigation measures
• **Interviews and Desktop Research** – Historical data and expert perceptions

• **Probability distributions** – Continuous probability distributions are used extensively in modeling and simulations and represent the uncertainty in values such as tasks durations or cost of project components.

• **Quantitative risk analysis & modeling techniques** - Used for event-oriented as well as project-oriented analysis.

• **Decision tree analysis** – Use of discrete options/possible outcomes to identify and analyze possible outcomes

• **Sensitivity analysis** – For determining which risks may have the most potential impact on the project. Examines the effect of varying the inputs of a mathematical model on the output of the model, when all other uncertain elements are held at their baseline values.
• **Expected Monetary Value analysis (EMV)** – A statistical concept that calculates the average outcome when the future includes scenarios that may or may not happen (generally: opportunities are positive values, risks are negative values).

• **Modeling & simulation** – A project simulation, which uses a model that translates the specific detailed uncertainties of the project into their potential impact on project objectives.

• **Cost risk analysis** - cost estimates are used as input values, and varied to study impact on overall project viability.

• **Schedule risk analysis** - Used to calculate the probability of completing a project by a certain date or within a certain cost constraint.

• **Expert judgment** – used for identifying potential cost & schedule impacts, evaluate probabilities, interpretation of data, identify weaknesses of the tools, etc.
Detailed description of risk factors

Revisit the logic model: What are the necessary conditions and factors for success to achieve:

- Activities
- Outputs
- Outcomes
- Impacts
### Background local and national conditions

- Supportive legal and regulatory regime
- Positive macroeconomic situation
- Appropriate natural resource endowments
- Sufficient and reliable infrastructure

### Project-specific: Politics and community

- Government support (national, regional, local)
- Support from the local population/customer base
- Investor and business community support

### Project-specific: Necessary resources & inputs

- Adequate funding
- Adequate implementation capacity
- Adequate human capital and technical know-how
- Sufficient supply chains and access to technology
RISK ASSESSMENT AND MITIGATION

Risks can and should directly address the logic model and theory of change

- Background local and national conditions
- Project-specific: Politics and community
- Project-specific: Necessary resources & inputs

Defined at the project/program level

Indicators corresponding to eight GCF results areas

Reduced emissions/increased resilience as per eight GCF results areas

Low-carbon and/or resilient development

Activities — Outputs — Outcomes — Impacts — Paradigm shift objectives

Background local and national conditions

Project-specific: Politics and community

Project-specific: Necessary resources & inputs

Risks can and should directly address the logic model and theory of change

Indicators corresponding to eight GCF results areas

Reduced emissions/increased resilience as per eight GCF results areas

Low-carbon and/or resilient development

Activities — Outputs — Outcomes — Impacts — Paradigm shift objectives
### RISK CATEGORIES: EXAMPLES

#### A. OVERALL RISK RATING AND EXPLANATION OF KEY RISKS

Table 1: Risk Ratings Summary Table

<table>
<thead>
<tr>
<th>Risk Categories</th>
<th>Rating (H,S,M or L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Political and governance</td>
<td>H</td>
</tr>
<tr>
<td>2. Macroeconomic</td>
<td>S</td>
</tr>
<tr>
<td>3. Sector strategies and policies</td>
<td>M</td>
</tr>
<tr>
<td>4. Technical design of project or program</td>
<td>M</td>
</tr>
<tr>
<td>5. Institutional capacity for implementation and sustainability</td>
<td>S</td>
</tr>
<tr>
<td>6. Fiduciary</td>
<td>M</td>
</tr>
<tr>
<td>7. Environmental and social</td>
<td>I</td>
</tr>
<tr>
<td>8. Stakeholders</td>
<td>I</td>
</tr>
<tr>
<td>9. Other</td>
<td>n/a</td>
</tr>
<tr>
<td>Overall</td>
<td>M</td>
</tr>
</tbody>
</table>

Risk ratings; H=high; S=Substantial; M=Moderate; L=Low
DETAILED RISK ANALYSIS

Risk prioritization is a function of
- probability of occurrence and
- impact (low, somewhat non-disruptive, somewhat disruptive, high)

Risk factor analysis and mitigation should focus on the key risks with the highest priority

Table 1. Priority table

<table>
<thead>
<tr>
<th>Probability of occurrence</th>
<th>Low (L)</th>
<th>Somewhat non-disruptive (SND)</th>
<th>Somewhat disruptive (SD)</th>
<th>High (H)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (L)</td>
<td>Low priority</td>
<td>Low priority</td>
<td>Low priority</td>
<td>Medium priority</td>
</tr>
<tr>
<td>Somewhat unlikely (SU)</td>
<td>Low priority</td>
<td>Low priority</td>
<td>Medium priority</td>
<td>Medium priority</td>
</tr>
<tr>
<td>Somewhat likely (SL)</td>
<td>Low priority</td>
<td>Medium priority</td>
<td>Very High priority</td>
<td>High priority</td>
</tr>
<tr>
<td>High (H)</td>
<td>Medium priority</td>
<td>Medium priority</td>
<td>Very High priority</td>
<td>Very High priority</td>
</tr>
</tbody>
</table>

Source: Document GCF/B.10/07 titled "initial risk management framework: methodology to determine and define the Fund’s risk appetite"
Ideally, the probability and impact of risk should be based on the actual risk/loss events (historical data).

- In such cases, the GCF can observe the risk probability and impact from its historical risk data, thereby directly arriving at risk priority.

However, many of the estimates of risks will always be based on "expert judgment"

- Some of the risk types will occur very rarely, no or little data
- Historical data may not reflect future probabilities, especially with climate change
• Definitions of probability of occurrence categories
  – High – highly likely to occur within the next 12 months;
  – (ii) Somewhat likely – would not be surprising if it occurred within the next 36 months;
  – (iii) Somewhat unlikely – would be surprising if it occurred within the next 36 months; and
  – (iv) Low – highly unlikely to occur within the next 36 months.
Definitions of probability of impact categories

- High – a material adverse impact that could impede the organization’s ongoing viability and/or its ability to meet its strategic objectives;
- Somewhat disruptive – an adverse impact that would be disruptive to the viability of the GCF and/or its ability to meet its strategic objectives;
- Somewhat non-disruptive – a relatively contained adverse impact that could impact the financials of the GCF and/or its ability to meet its strategic objectives by up to 10 per cent; and
- Low – minimal and contained impact.
### G.2. Risk Factors and Mitigation Measures

Please describe financial, technical and operational, social and environmental and other risks that might prevent the project/programme objectives from being achieved. Also describe the proposed risk mitigation measures.

#### Selected Risk Factor 1

<table>
<thead>
<tr>
<th>Description</th>
<th>Risk category</th>
<th>Level of impact</th>
<th>Probability of risk occurring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select</td>
<td>Select</td>
<td>Select</td>
<td></td>
</tr>
</tbody>
</table>

**Mitigation Measure(s)**

Please describe how the identified risk will be mitigated or managed. Do the mitigation measures lower the probability of risk occurring? If so, to what level?

#### Selected Risk Factor 2

<table>
<thead>
<tr>
<th>Description</th>
<th>Risk category</th>
<th>Level of impact</th>
<th>Probability of risk occurring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select</td>
<td>Select</td>
<td>Select</td>
<td></td>
</tr>
</tbody>
</table>

**Mitigation Measure(s)**

Please describe how the identified risk will be mitigated or managed. Do the mitigation measures lower the probability of risk occurring? If so, to what level?
## RISK FACTORS AND MITIGATION MEASURES: GCF TEMPLATE SAMPLE – OPERATIONAL, SOCIAL AND ENVIRONMENTAL RISK (MADAGASCAR)

### Selected Risk Factor 3 – Operational risk

<table>
<thead>
<tr>
<th>Description</th>
<th>Risk category</th>
<th>Level of impact</th>
<th>Probability of risk occurring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madagascar ranks 177 out of 189 in the World Bank’s Ease of Doing Business Rankings, is therefore a difficult place to undertake businesses and every stage of business development should be expected to be challenging.</td>
<td>Technical and Operational</td>
<td>High</td>
<td>High</td>
</tr>
</tbody>
</table>

**Mitigation Measure(s)**

CI, through its office in Madagascar, has over 24 years of work in the country and has developed the operational procedures, network of partners and necessary capacity to operate successfully. The Investment Fund will be established with a blend of International and Local expertise to ensure that best practices in operations can be tailored to the realities of Madagascar. A clear understanding of the challenges will allow time and resource budgets to be designed appropriately and expectations of stakeholders be well be managed. The long tenure of the Investment Fund (10 year.) Is designed to give flexibility Should delays be encountered.

### Selected Risk Factor 4 - Social and Environmental risk

<table>
<thead>
<tr>
<th>Description</th>
<th>Risk category</th>
<th>Level of impact</th>
<th>Probability of risk occurring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generally, the Social and Environmental risk of the Project is classified as category B” as described in section F3; however, the possibility of unforeseen social and environmental risks cannot be disregarded and may be discovered during project execution. This is particularly the case for Ille Investment Fund's investments because the portfolio of Investments Is not yet fixed. Risks could include: disputes over land tenure, creation of perverse Incentives for</td>
<td>Social and Environmental</td>
<td>Medium</td>
<td>Low</td>
</tr>
</tbody>
</table>
RISK ASSESSMENT AND MITIGATION:
CASE STUDIES

• Climate-Smart Agriculture (CSA) and case study assessment
  – Case studies
CLIMATE SMART AGRICULTURE MAINSTREAMING:

KEY MESSAGES

• CSA needs to be mainstreamed into core government policies and programmes, including policy, expenditure and planning frameworks.
• Priority needs to be given to CSA practices that bring productivity gains, enhance resilience and reduce emissions.
• CSA and CSA policies must contribute to broader economic growth, poverty reduction and sustainable development goals.
• CSA requires coordination, between concerned agencies across different sectors at central and local levels.
• Partnerships with non-state stakeholders play a key role in CSA.
• A wider landscape approach is needed for the better management of agricultural production and ecosystem services.
• An integrated approach to providing incentives for CSA, such as payments for environmental services, is needed.

• Public support that focus on research, the development of human capital, the sustainable management of soil and land, social protection and safety nets, and the development of technology and value chains are conducive to CSA adoption.

• Secure land rights provide the enabling environment for investments in sustainable land and water management, which are key elements of CSA.

• The successful design and implementation of CSA approaches require integration with disaster risk management strategies and actions, and social safety net programmes.
$27M World Bank project, funded April 2017

Goal: Help Moldovans to protect their farms, forests and pastures from climate change in specific zones, and strengthen national disaster management systems.

The objectives of the Climate Adaptation Project are to:

- Enhance adoption of climate-smart practices in selected rural landscapes by supporting: 1) the scale-up of farmers’ climate-smart technologies and agricultural practices, as well as the provision of related advisory services; and 2) expanded up-take of irrigation services.

- Enhance the climate resilience of Moldova’s forest and pasture lands through restoration of degraded lands at the community and village level, and improved climate-smart management of forest reproductive material.

- Strengthen Moldova’s climate and disaster risk management systems and, in the event of an eligible crisis or emergency, provide immediate financing to respond quickly to said crisis or emergency.
• Eastern Madagascar Sustainable Landscapes Fund:
  – Received $70M in GCF support, December 2016
• The Project goal is to implement sustainable landscape measures to enhance resiliency of smallholders, reduce GHG emissions and channel private finance into climate-smart investments in agriculture and renewable energy that transform livelihoods.
• The Project aims to demonstrate a replicable model for addressing smallholder vulnerability that mobilizes both the public and private sector.
• Not-for-profit activities will prepare smallholders to ultimately access private sector investment, providing a pathway out of extreme vulnerability and dependency.
## FUNDING STRUCTURE, MADAGASCAR SUSTAINABLE LANDSCAPES

<table>
<thead>
<tr>
<th>GCF Financing</th>
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<tbody>
<tr>
<td>Instrument</td>
<td>USD 35.0M</td>
<td>Equity</td>
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<tr>
<td>Instrument</td>
<td>USD 18.5M</td>
<td>Grant</td>
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<th>Co-Financing</th>
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<tr>
<td>EIB (Green Bond)</td>
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<td>Loan</td>
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<tr>
<td>EIB</td>
<td>USD 5.0M</td>
<td>Loan</td>
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<td>Althelia</td>
<td>USD 500,000</td>
<td>Equity</td>
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<tr>
<td>CI</td>
<td>USD 800,000</td>
<td>Equity</td>
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RISK ASSESSMENT AND MITIGATION: CASE STUDY REVIEW

- Small group activity: Risk assessment for an Uzbekistan project concept
- Review an existing project concept
- Complete the risk framework for this project
- Review the existing risk framework (if completed)
- Discussion:
  - What are the key risks?
  - How can the project mitigate them?
  - Is the project viable, given the major risks and the risk mitigation potential?
Why is the GCF concerned with risk mitigation?
  - How can project applicants demonstrate risks are mitigated?

Closing thoughts:
  - Role of participating institutions
  - Role of enabling policies
  - Role of planning – financial, project, timelines, etc.
  - Support of key government agencies
  - Financial and operational sustainability
THANK YOU
For more information, please visit us at www.ccap.org