

GCF Sector Guide on Agriculture and Food Security

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GREEN
CLIMATE
FUND

1. Global Context

Introduction

▶ Agriculture is key to:

- climate change adaptation and mitigation
- food security and economic development in low-income countries
- livelihoods for 86% of the world's rural population
- linkages with forest and land use, ecosystem health, water use, and nutrition

▶ Producers:

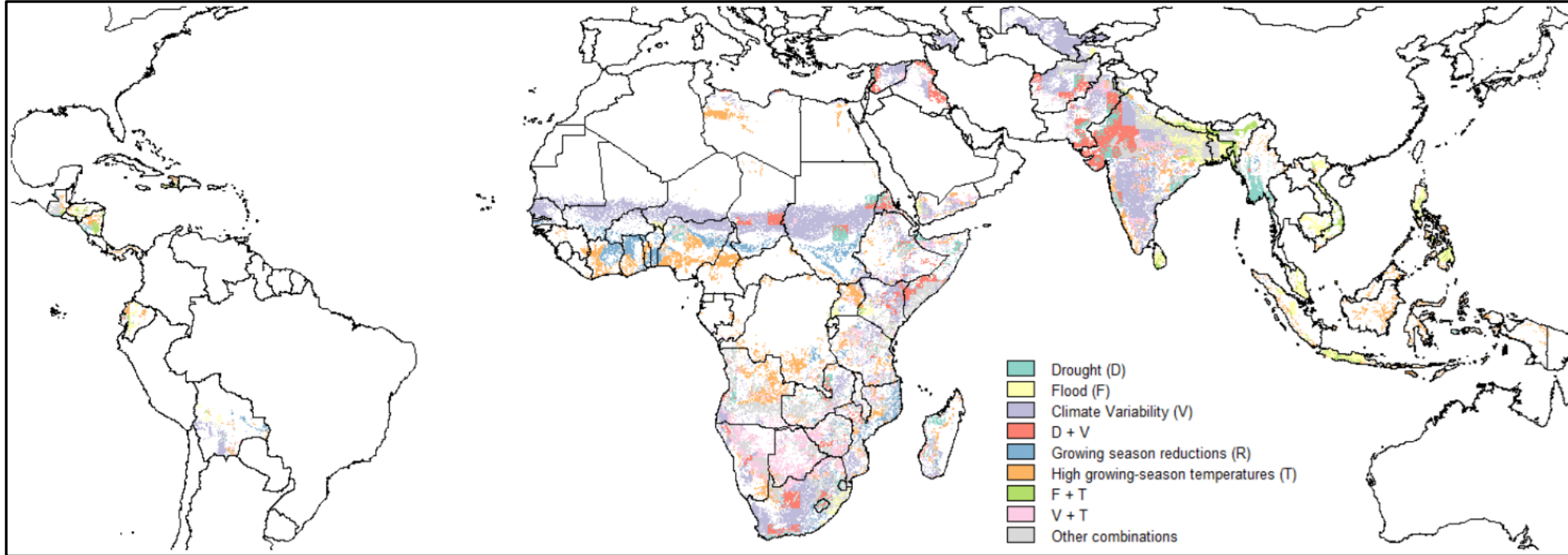
- 500 million small-scale producers living in poverty, worsened by COVID
- challenges: climate change, increasing demand for food from growing cities and populations, and degrading agricultural and natural landscapes

▶ Synergistic targets:

- people and communities; especially women, youth, and indigenous communities
- health, food, and water security; forest and land use
- ecosystem and ecosystem services, resilient infrastructures
- and energy access and generation

Scientific Basis

High climate risk areas in agriculture: 73 countries



High exposure and acute vulnerability climate hazards by one or more of:

- Drought
- Flood
- Climate variability
- Shorter growing season
- High temperatures during growing season

Scientific Basis

Agriculture is highly **impacted** by climate change and also **contributes** to climate change

- ▶ crop yields predicted to **decrease** by 10-50% by 2030
- ▶ challenges ahead in producing 30-60% more food by 2050 while lowering GHG emissions from agriculture

Agriculture GHG emissions are 19% of global GHG emissions

- ▶ 11% through direct emissions
- ▶ 8% indirect emissions from converting land for agricultural expansion
- ▶ food losses account for another 8%

Mitigation and Adaptation Baseline

- ▶ Goals in nationally determined contributions (NDCs):
 - ▶ 90% (120 out of 133) non-Annex I countries included agricultural adaptation policies and measures; majority focusing on crops and livestock
 - ▶ 68% (128 of 189) countries included economy-wide GHG emissions targets involving agriculture
 - ▶ 31% (59 of 189 countries) included agriculture sector-specific mitigation targets, policies, or measures

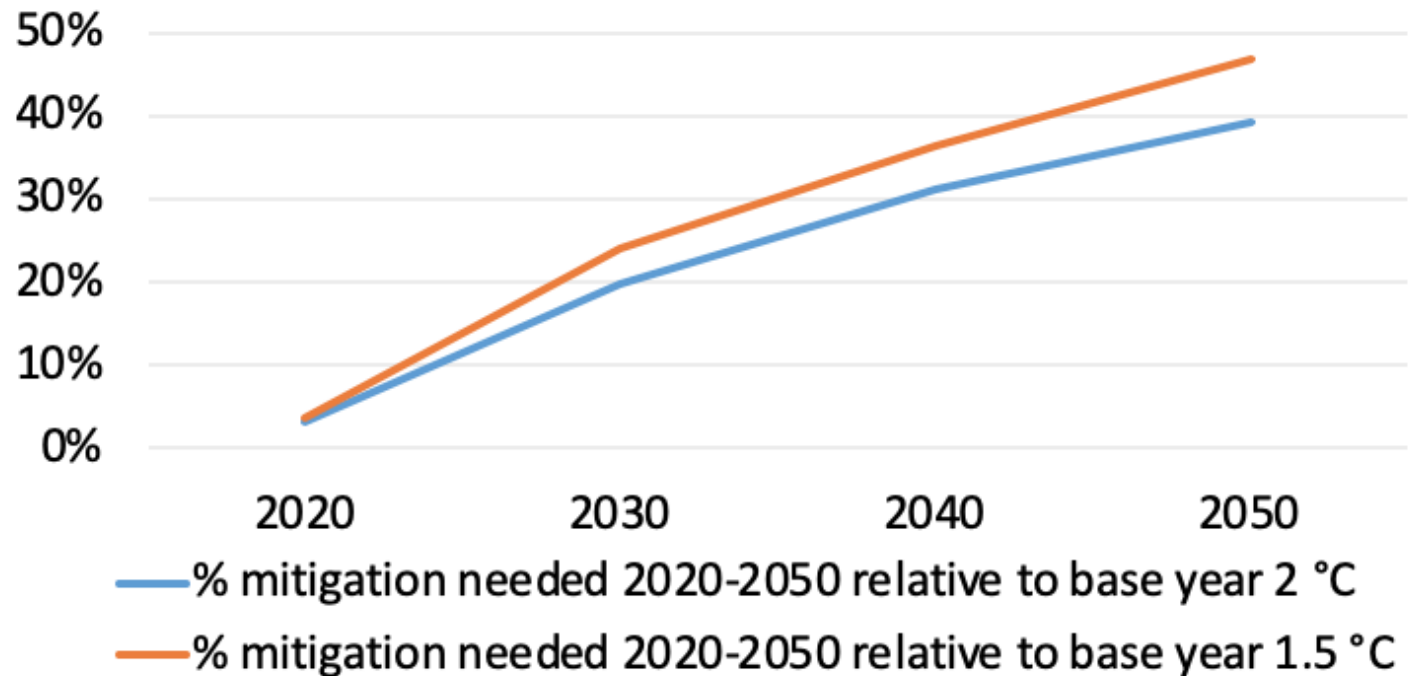
Global Development and Mitigation Targets

Development:

- ▶ Zero hunger by 2030 (SDG 2)
- ▶ Halve global food waste by 2030 (SDG 12.3)
- ▶ Halt biodiversity loss (SDG 15)
- ▶ Poverty reduction (SDG 1)
- ▶ Economic growth and jobs for youth (SDG 8)
- ▶ Improving women's status in agricultural value chains (SDG 5)
- ▶ Peace, justice and strong institutions (SDG 16)
- ▶ Build resilience of 300+ million small-scale producers by 2030 (many are women) (GCA)

Mitigation:

Mitigation needed from 2020 to 2050 to stay below the 2 °C and 1.5 °C policy targets



- ▶ ~1 GtCO₂e y⁻¹ by 2030 to meet 2 °C (direct emissions)
- ▶ reducing 2020 emission rates by about 20%

2. Pathways

THREE COMPLEMENTARY PATHWAYS

Promoting Resilient Agriculture

Facilitating Climate Informed Advisory and
Risk Management Services

Reconfiguring Food Systems

Pathway 1: Promoting Resilient Agriculture

- ▶ **2.4 billion people** on 19 million km² of agricultural land in the southern hemisphere are threatened by climate hazards
- ▶ Promoting resilient agriculture includes:
 - ▶ **Improved seeds, crop varieties, and breeds** (e.g. drought-tolerant maize, etc.)
 - ▶ **Diversifying crops, aquaculture and livestock** (e.g. crop rotation, intercropping, etc.)
 - ▶ **Sustainable practices and technologies** (e.g. landscape approaches, water and soil management, IPM, agroforestry, solar irrigation, micro-pumps, minimum tillage, residue management, etc.)

Pathway 2: Facilitating Climate Informed Advisory and Risk Management Services

- ▶ **Climate information and early warning systems**
- ▶ **Digital agricultural advisory and extension to meet gaps**
 - ▶ Extension programming gaps exist for women (43% of developing country farmers), youth, smallholders, vulnerable groups
 - ▶ **Effective delivery mechanisms** that facilitate personal relationships and multi-way communication at low or no cost (e.g. Farmradio.org and Shamba Shape-up)
- ▶ **Financial literacy training, access to finance** (e.g. mobile money) helps ensure financial services reach women, youth, impoverished
- ▶ **Index Insurance** increase resilience by linking insurance payouts to predetermined index e.g., rainfall, temperature, yield
- ▶ **Social Safety Nets** for food insecure households and supporting innovation

Pathway 3: Reconfiguring Food Systems

- ▶ **Changing how food is stored, transported, sold and consumed**
 - ▶ reshaping supply chains, food retail, marketing, and procurement;
 - ▶ reducing food loss and waste;
 - ▶ shifting consumers to demand safer, healthier and more environmentally sustainable diets;
 - ▶ building supply chain resilience
- ▶ **Must be** environmentally sustainable, deforestation-free, inclusive, and enhancing rural employment opportunities
- ▶ **Low-emissions goals for food systems** include reducing food loss and waste, improving energy efficiency, finding alternative energy sources

Six Cross-Cutting Issues

**Creating enabling environments
for Paradigm-Shifting Pathways**

Capacity
building

Monitoring,
evaluation &
learning

Local
communities
& leadership

**Enabling
Policies &
Institutions**

Private sector
engagement

Women &
youth
empowerment

**Reconfiguring
food
systems**

**Promoting resilient
agriculture**

**Facilitating climate
informed
advisory and risk
management
services**

3. GCF Drivers of Paradigm Shifts

The Four GCF Drivers of a Paradigm Shift

1.

Transformational Planning and Programming

- Strengthen country capacity
- Prepare for GCF investment
- Seek funding sources

2.

Catalyzing Climate Innovation

- Develop innovative, high-potential models, technologies, and practices that are demonstrated on the ground

3.

Mobilization of Finance at Scale

- Enable public and private finance to scale up successful, high-potential, climate-compatible investments

4.

Coalitions & Knowledge to Scale up Success

- Disseminate best practices, methodologies, and standards
- Enable replication and systemic change to shift finance flows

Twelve GCF Action Areas for Paradigm Shift

Three Investment Pathways

Transformational
Planning and
Programming

Catalyzing
Climate
Innovation

Mobilization of
Finance at
Scale

Coalitions &
Knowledge to
Scale up
Success

Pathway 1: Promoting Resilient Agriculture

Pathway 2: Facilitating Climate Informed Advisory and
Risk Management Services

Pathway 3: Reconfiguring Food Systems

Drivers of *Promoting Resilient Agriculture* Pathway

Transformational Planning and Programming

- Target existing community-responsive technologies, practices, and interventions
- Maximize resilience and adaptation-mitigation synergies

Catalyzing Climate Innovation

- Promote business models for reaching scale that incentivize low emissions and resilience
- Integrate climate-responsive technologies, services, and programs
- Promote landscape level NRM for hazard prevention

Mobilization of Finance at Scale

- Strengthen private sector opportunities
- Offer guarantees and concessional finance for input suppliers, SMEs, and cooperatives
- Provide financial services for SME resiliency innovations
- Bundle services and interventions

Coalitions & Knowledge to Scale up Success

- Share technologies, management practices, & business models for different agro-ecological and socio-economic contexts through knowledge platforms
- Promote successful business models for scaling resilient agriculture

Drivers of *Facilitating Climate Informed Advisory and Risk Management Services* Pathway

Transformational Planning and Programming

- Leverage emerging digital technologies for scaling, planning for financial services and safety nets
- Understand needs gaps and address barriers for early warning, extension, etc.

Catalyzing Climate Innovation

- Develop business models for agricultural insurance and social safety net programs
- Build public infrastructure and human resources for information services
- Build national expertise and capacity to develop, package, and deliver information

Mobilization of Finance at Scale

- Engage private-sector ICT providers, maximize PPP synergies, support startups
- Enable private sector and blended finance with proven risk management models

Coalitions & Knowledge to Scale up Success

- Identify successful information and advisory system business models
- Engage regional and global platforms to promote learning
- Support incubation and acceleration of startups and SMEs

Drivers of *Reconfiguring Food Systems* Pathway

Transformational Planning and Programming

- Identify leverage points for high-impact adaptation and mitigation
- Identify how to drive demand for low-emissions, resilient nutritious food

Catalyzing Climate Innovation

- Support quality and sustainability certification and regulation
- Enable NRM, market, trade, and transport infrastructure
- Strengthen policy coherence and cross-institutional coordination

Mobilization of Finance at Scale

- Support PPPs to stimulate resilient value chains
- Capitalize climate and food security funds
- Provide guarantees, concessional debt, equity investments to low-emissions, resilient companies

Coalitions & Knowledge to Scale up Success

- Engage food system platforms and agri-food system actors
- Support private-sector actors mainstreaming climate risk in business models, internal policies and investments
- Provide challenge grants for SMEs

4. Financing

Financial Requirements: Cost to Meet Targets

- ▶ For achieving food security under climate change:
 - ▶ Estimated to become > **USD 100 billion per year**
- ▶ For mitigation:
 - ▶ **USD 5-30 billion per year** is required by 2030 to implement mitigation measures at up to USD 20 per tCO₂e globally
- ▶ It is feasible and worth investing:
 - ▶ Unlocking **USD 1.8 trillion** to invest in food system adaptation globally from 2020 to 2030 will generate **USD 7.1 trillion** in total net benefits

5. Country Case Studies by Driver: Examples

Case Study:

Transformational Planning and Programming

- ▶ *Integrating Risk Management for Food Security and Livelihoods in Zimbabwe*
 - ▶ Leverages **GCF grant funding** to focus on the long-term adaptation of vulnerable and food-insecure households
 - ▶ Employs **climate forecasts** and weather-based **index insurance** (Pathway 2)
 - ▶ Supports **community-based asset creation** to enhance smallholders' (including 66% women) **investment capacity** (Pathway 1) in **climate-resilient development**

Case Study: Catalyzing Climate Innovation

- ▶ *Carbon Sequestration Through Climate Investment in Forests and Rangelands in Kyrgyz Republic*
 - ▶ Focuses on integrated rangeland and forestry resource planning; **blends GCF funds** with those of a regional development bank
 - ▶ Reduces land degradation drivers and resulting emissions by providing:
 - ▶ support to national institutions
 - ▶ green growth investments
 - ▶ participatory and ecosystem-based sustainable management approaches

Case Study :

Mobilization of Finance at Scale

- ▶ ***Acumen Resilient Agriculture Fund (ARAF):***
 - ▶ The Fund supports pioneering and early-growth stage innovative agribusinesses that enhance the climate resilience of smallholder farmers in east & west Africa through:
 - ▶ (a) aggregator platforms; (b) digital platform; (c) innovative financial services
 - ▶ Investments aim to:
 - ▶ Support 18 - 20 early stage African agribusinesses are intended to benefit through financial investment and technical assistance to strengthen their business models to provide climate adaptation
 - ▶ Benefit 10 million people over 12 years

Case Study :

Expansion and Replication of Knowledge

- ▶ *Inclusive Green Financing for Climate Resilient and Low Emissions Smallholder Agriculture in Niger*
 - ▶ Employs incentives to engage **commercial banks** and **microfinance institutions** (Pathway 2)
 - ▶ Applies **blended financing** from **GCF** and **co-financing** institutions to support rural communities and farmers' organizations
 - ▶ Provides **technical assistance** and **capacity building** to smallholders
- ▶ Will support farmers transitioning production systems to climate-resilient, low-emissions management (Pathway 1) via climate resilient and low-emissions credit line

6. GCF Guidance: Examples of Investment Criteria

Investment Criteria: Pathway 1

Promoting Resilient Agriculture

- ▶ **Impact:** Quantifiable landscape level changes in line with NDC goals; area & farmers adopting resilient production tools and practices; level of emissions reduction
- ▶ **Paradigm shift:** What new practices, innovations or varieties are ready for regional expansion with a strong potential for replication?
- ▶ **Sustainable development:** How do the actions align with national SDG priorities? What are expected environmental, social, gender, and economic co-benefits?
- ▶ **Recipient needs:** What are the financial needs and barriers for to address climate impacts and emissions trends for key crops, livestock and fisheries? How would investment address specific environmental, social or economic impacts? Are key vulnerable groups targeted?
- ▶ **Country ownership:** What other national actions boost resilience & lower emissions? Are new institutional, governance, or coordinating mechanisms needed?
- ▶ **Efficiency and effectiveness:** What does financial analysis show for BAU vs. resilient production with & without GCF support over time, as climate impacts worsen?

Investment Criteria: Pathway 2

Facilitating Climate Informed Advisory and Risk Management Services

- ▶ **Impact:** How are farmers using digital information weekly? Is the area covered by early warning systems? How many people benefit from insurance, saving, & loans?
- ▶ **Paradigm shift:** How will access to new information, technology, & services change planting, harvesting, storage or transport opportunities and/or mitigate risks?
- ▶ **Sustainable development:** How do the actions align with national SDG priorities? What are expected environmental, social, gender, and economic co-benefits?
- ▶ **Recipient needs:** Are barriers to information & advisory services (financial, structural, or technical) identified & addressed?
- ▶ **Country ownership:** Is there an enabling environment for country-wide information sharing? What is needed to support financial & risk services & safety nets?
- ▶ **Efficiency and effectiveness:** Can information & advisory services be tailored to specific audiences & financed partly by insurance companies, or PPPs?

Investment Criteria: Pathway 3

Reconfiguring Food Systems

- ▶ **Impact:** Number & value of new value chains created; hectares under sustainable production; employment in new supply chains
- ▶ **Paradigm shift:** What are key leverage points & actions for sustainable production, supporting business models & supply chains?
- ▶ **Sustainable development:** How do the actions align with national SDG priorities? What are expected environmental, social, gender, and economic co-benefits?
- ▶ **Recipient needs:** Are users along the value chain involved in identifying needed improvements in NRM, market, trade, & transport infrastructure?
- ▶ **Country ownership:** Do key stakeholders understand & are they committed to reorienting how food is produced & consumed in the country? Do policy frameworks support this?
- ▶ **Efficiency and effectiveness:** Will promoting nutritious, low emissions food create demand? What value would this have for national nutritional & economic security? At what financial cost?

Conclusion

- ▶ Current food systems will not enable us to reach the Paris Agreement and the Sustainable Development Goals by 2030
- ▶ Food systems must become more inclusive, sustainable, and climate-resilient
- ▶ Goals are achievable via a paradigm shift
- ▶ Guide supports stakeholders in developing robust funding proposals, based on:
 - ▶ Three key investment pathways → catalyze a paradigm shift in agriculture and food security
 - ▶ Four drivers → enables paradigm shift to support millions of small and vulnerable farm households, contributing to reducing emissions and adapting to climate challenges

Thank you



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



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