# Policy Keys to Climate Resilience

INITIATIVE ON National Policies and Strategies

INITIATIVE ON Climate Resilience

## Unlocking Investments for Climate Resilient Agri-food Systems in Low- and Middle-Income Countries

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March 2024

### Introduction

The severe effects of climate change are becoming increasingly common worldwide. As these effects grow more prominent, the need for investments to protect lives, economies and the environment escalates. Low- and middle-income countries face relatively more restricted access to and use of climate finance, with their populations growing at a higher rate, resulting in a disproportionate investment gap. Designing and implementing sustainable and agile climate policies and programs that shield people and nations against climate change necessitates mobilizing significant investment and employing a diverse set of financial instruments.

Recent studies reveal a substantial investment gap in achieving the ambitions of current climate policies, with three factors serving as the largest drivers of this gap. Firstly, there is a significant availability gap. The State of Climate Action report highlights that existing climate investment needs to multiply eightfold to USD 5 trillion a year by 2030 to fund measures against climate change (Boehm et al., 2021). Secondly, even when funds are available, deploying them takes a long time, and the transaction costs are high, significantly hindering access (Tipmann et al., 2013; Bird, 2014). Thirdly, the composition of the existing investment pool is not aligned with the demands on the ground. There is a significant imbalance between mitigation and adaptation funds, with adaptation receiving only 7% of the total available climate finance (CPI, 2020; CPI, 2023). In addition, agriculture, does not receive funding proportional to its contribution

to climate impacts (both in terms of mitigation and adaptation). In 2017/2018, only USD 20 billion of cumulative climate finance was tracked for agriculture, forestry, and land use, representing 3% of the total tracked global climate finance in this period. Additionally, only USD 10 billion was tracked as climate finance flowing to small-scale agriculture in developing countries, constituting an estimated 1.7% of total climate finance tracked (CPI, 2020; UN, 2022) in the same period. This reveals a substantial financial gap between climate mitigation and adaptation that needs to be significantly narrowed.

The CGIAR Initiatives on Climate Resilience and on National Policies and Strategies for Food, Land and Water Systems Transformation, as well as national partners in Guatemala, Kenya, Morocco, the Philippines, Senegal, and Zambia have collaboratively developed, tested, and implemented multiple climate investment solutions to address the investment gap, unlocking several large-scale investments.

## Solutions for enhancing investments

### *Combining credit and insurance to lower agricultural investment costs in Kenya and Zambia, through Risk Contingent Credit (RCC)*

Risk-contingent credit is a financial instrument that combines the provision of crop insurance with credits to farmers but requires minimal collateral. In the event of a climate-related risk, such as drought or floods, resulting in partial or complete loss of farm revenues, the repayment of the loan by the farmer is covered by insurance. This approach reduces credit risk for financiers, lowers the portfolio cost of credit, and enables reductions in interest rates. As credit risks diminish, the need for collateral decreases, making farmers with little or no collateral eligible for credit (Shee et al., 2019).

In Ethiopia, Kenya, and Zambia, RCC is being co-developed, tested, and piloted through a private partnership with Family Bank, Equity Bank, APA Insurance, Digifarm. In Kenya, approximately 3,000 farmers were trained to use RCC. Over 500 farmers were approved for the product in Machakos and Embu counties. Results indicate that RCC has reduced the cost of borrowing for farmers in Kenya and enabled those without access to credit to receive it through RCC. Implementation experience in Ethiopia and Kenya has also demonstrated that the RCC product shileds the welfare of smallholders from the adverse effects of extreme weather events safeguarding food security, ensuring economic growth, and advancing climate resilience among smallholder farmers (Timu et al., 2023b).

Family Bank and Digifarm sign partnership agreement to offer risk-contingent credit to smallholder farmers in Embu County, Kenya. October 2023.

However, the piloting experience revealed challenges that could impede the gains from RCC. Despite significantly increasing access to credit for poor farmers and promoting participation in the financial sector, enhancing financial literacy, and encouraging the use of modern agronomy practices, RCC may not be profitable at the small scale of operations; therefore, it requires wider adoption backed by the public and/or private sectors.

### *One-stop shop for managing disasters and fund mobilization in Senegal, Sri Lanka and Zambia– The Early Warning, Early Action, Early Finance (AWARE) platform:*

AWARE is a digital platform that provides a comprehensive solution for disaster management, covering all phases of the disaster management cycle–from warning and preventive action to emergency response, with an emphasis on early financing in cases of disasters such as floods, droughts, and landslides

(Amarnath et al., 2023a). AWARE utilizes an open-source large data repository of Earth observations from the world's leading climate information services such as NASA, WMO and GEO. It integrates this data with context-specific information on areas, markets, health, nutrition, and population.

The platform's unique capability to connect finances with different stages of disaster management enhances prompt access and planning for financial resources. AWARE drills have been successfully conducted in Sri Lanka, and the platform has been launched in Zambia and Senegal.

Throughout its development journey, AWARE has fostered collaboration among government agencies, donors, and NGOs, including the Red Cross, the World Food Program, and World Vision among others. This integrated approach can significantly reduce duplication of efforts, increase synergies, and facilitate the swift extension of climate finances to those affected, with a focus on prioritizing the needs of local communities in disaster management.

While governments have shown significant interest in the platform, there is still a need to support them in sustainably hosting and maintaining the platform within their existing agencies for country-specific adoption. This is especially crucial in low- and middle-income countries, enabling them to achieve the Early Warnings for All ambition by the end of 2027.

***Supporting and capacitating national systems to access Climate Investment Funds in Kenya, Uganda, and the Philippines:***

ClimBeR through the Participatory Green Climate Fund Intervention Design collaborates with African policymakers and partners to operationalize the Green Climate Fund's (GCF) investment framework, translating the Fund's overall objectives into clear guidelines for investment decisions. These guidelines encompass specific climate analyses, policies, strategies, targets, and criteria to access funds within GCF. As a result of this collaborative effort, ClimBeR's solutions and systems are facilitating and supporting governments' access to over USD 80 million from the GCF in Kenya, and Uganda. This collaboration involves National Designated Authorities (NDAs), the African Group of Negotiators Expert Support (AGNES), the Global Green Growth Institute (GGGI), accredited entities, and government institutions (Chilambe et al., 2023). ClimBeR also supports national partners in the Philippines to access over USD 100 million from the GCF by providing geospatial and insurance expertise and support on mapping and managing of zones.

The inclusive engagement of various stakeholders in the GCF investment framework brings together diverse expertise to facilitate the necessary processes and components for accessing climate finance. These synergies and inclusive cooperation systems are critical to scale efficient science-based innovations and locally-led adaptation solutions. Governments are leveraging this collaborative setting to strengthen their climate finance mechanisms, enhancing both prompt access to climate finance and narrowing the climate finance gap, particularly in low- and middle-income countries.

Catalyzing and diversifying access to climate finance remains crucial to narrowing the existing climate finance gap, particularly in key sectors such as agriculture in low- and middle-income countries (Marshall et al., 2023).

## Lessons learned for Unlocking Investments

***Bundled financial instruments are critical for enhanced climate resilience:***

ClimBeR's implementation of Risk-Contingent Credit (RCC) in Kenya has underscored the significant impact of bundled financial instruments in climate resilience. RCC's combination of crop insurance with credit facilities, as evidenced by (Shee et al., 2019), effectively reduces the financial burden on farmers in the face of climate risks. This model demonstrates how innovative financing can mitigate the adverse effects of climate change on agriculture, particularly in regions vulnerable to extreme weather events. However, as Timu et al. (2023a, 2023b) note, the scalability of such models presents challenges, particularly in terms of profitability at smaller scales without sufficient public or private sector support. ClimBeR's research calls for inclusive financial tools designed for women and youth, increased adoption

and engagement of the public and private sector in the development and scaling of financial tools, reforming policies to facilitate a wider adoption with a supportive economic environment, extending capacity building and financial literacy on these financial products, leveraging digital technology to enhance access to financial services and information, investing in rural infrastructure to reduce transaction costs and improve efficient access to financial tools and climate adaptation technologies (Otieno et al., 2023).

***Public-private partnership mechanisms need to complement public and private investments in climate finance:***

ClimBeR's success in facilitating access to climate finance through public-private partnerships is another key lesson. The collaboration with financial institutions and insurance companies in the RCC model has been instrumental in expanding access to credit and insurance for small-scale farmers. This approach aligns with the findings of Boehm et al. (2021), who highlight the necessity of multi-stakeholder engagement in bridging the climate investment gap. The involvement of diverse actors, from private sector entities to NGOs, not only diversifies the funding pool but also brings in varied expertise, enhancing the effectiveness of climate resilience initiatives. This collaborative model can serve as a blueprint for other low- and middle-income countries looking to mobilize resources for climate action.

***Building the capacity of local organizations from multiple sectors is essential to access sufficient climate funds:***

A critical lesson from ClimBeR is the importance of capacity building in enabling countries to access international climate funds effectively. In particular, the project's efforts in Kenya, Uganda, and the Philippines to operationalize the GCF investment framework have been pivotal. As documented by Chilambe et al. (2023), this involved translating the GCF's objectives into actionable guidelines and supporting local governments in navigating the fund's requirements. ClimBeR's technical assistance is not only supporting access to over USD 280 million from the GCF in Kenya, Uganda, and the Philippines but has also highlighted the need for ongoing support and training at the national level. Capacity building in this context goes beyond financial literacy; it encompasses understanding international funding mechanisms, developing robust project proposals, and managing funds effectively post-acquisition. This lesson underscores the necessity for continuous knowledge transfer and institutional strengthening to empower countries, especially those with limited resources, to leverage international climate finance mechanisms for sustainable development and climate resilience. Diversifying the sectors of organizations whose capacity is built can unlock access to many channels and lead to more funds that cannot be accessed with any single organization.

## Options for Unlocking Investments

Climate investments can be unlocked by utilizing various bundled of tailored instruments, funding mechanisms and capacity-building options. Each of these combinations has some advantages and disadvantages compared to other options. Each would be very effective in a specific context while ineffective in others. Therefore, it is important for climate investment actors to identify the right option that fits their objectives and context best. We provide a summary of climate financial instruments, their main advantages and disadvantages, best-match funding mechanism types and capacity building focus to effectively use these instruments (Table 1).

**Table 1. Climate Finance Options for Unlocking Investments for Climate Resilient Agri-food Systems in Low- and Middle-Income Countries**

| Financial Instrument | Pros | Cons | Best-Match Funding Mechanism | Necessary Capacity Building Focus |
|---|---|---|---|---|
| **Grants** | No repayment required, | Limited availability, may | Public | On governments and NGOs for |

| Financial Instrument | Pros | Cons | Best-Match Funding Mechanism | Necessary Capacity Building Focus |
|---|---|---|---|---|
| | accessible to a wide range of recipients | not cover full project costs | | understanding of funding allocation, project management skills |
| **Loans** | Structured repayment, can attract larger scale funding | Requires repayment, interest can be a burden | Private | On borrowers for financial literacy, project planning and execution |
| **Bonds** | Can raise substantial funds, market-based mechanism | Debt obligation, requires regular interest payments | Private | On issuers and investors: for knowledge in green bond standards, market analysis |
| **Equity Investments** | Potential for high returns, drives innovation | High risk, potential for loss, long-term ROI | Private | On investors for risk assessment, sector-specific knowledge |
| **Carbon Credits** | Incentivizes emission reductions, can be traded in markets | Complex to manage, market fluctuations | Private | On market participants: for Understanding carbon markets, regulatory compliance |
| **Insurance Products** | Manages climate-related risks, can attract more investment | Can be expensive, limited to specific risks | Private | On insurers and policyholders: risk modeling, understanding of climate risks |
| **Public-Private Partnerships (PPPs)** | Leverages private sector expertise and funding, shares risks and benefits | Complex to structure, long-term commitments | Public Private Partnerships | On public and private entities: collaboration skills, contract negotiation |
| **Climate Funds** | Targeted towards specific climate goals, can pool large resources | Often limited to specific regions or themes, bureaucratic | Public | On fund managers for project evaluation, impact measurement |
| **Risk Mitigation Instruments** | Reduces investment risks, attracts more private capital | Can be complex, not universally available | Private | On investors and guarantors for risk analysis, understanding of financial tools |
| **Venture Capital** | Supports innovative startups, potential for high returns | High risk, long-term commitment | Private | On investors and startups for market analysis, technological expertise |
| **Crowdfunding** | Democratizes investment, low entry barrier | Limited to smaller projects, uncertain funding | Private | On project Initiators for marketing skills, financial planning |
| **Blended Finance** | Leverages public funds to attract private investment, can fund large projects | Can be complex, requires alignment of interests | Public Private Partnership | On public and private entities for alignment of goals, project management |

*Source: Authors*

## Policy Recommendations

- There is a need to create or change policies to establish or promote collaboration among different government institutions and the private sector to embed climate finance instruments in other government services, such as credit, insurance, capacity building, and agriculture, among others (Timu et al., 2023a, 2023b).

- The transparency and accountability framework should be enhanced by extending funds so that they can benefit the targeted communities while considering gender and social equity that can enhance transformative adaptation (Hellin et al., 2022; Hellin et al., 2023); in addition, government and institutional goals on climate finance should be ambitious, science-based, inclusive, and measurable.
- Strategic partnerships should be strengthened between public and private financial institutions and research bodies to refine credit assessment methods and develop more efficient de-risking financial products for farmers.
- Public financial institutions should engage in the innovation and scaling of climate financial instruments, which also enable a supportive economic environment for wider adoption of climate finance tools.
- Public financial actors should increase their capacity for prompt participation in processes of access to climate finance and to develop and scale climate financial tools.
- International climate finance should be significantly increased through grants and concessional loans to vulnerable communities in developing countries to help countries meet their Paris Agreement goals without exacerbating the existing debt crisis (Marshall et al., 2023).
- Policies and strategic public spending should incentivize private investment flowing towards public climate action priorities, and subsidies should be reformed to shift away from activities that exacerbate climate change and towards sustainable agriculture.
- Special Drawing Rights should be channelled to developing countries through International Financial Institutions and Multilateral Development Banks to increase capital available to enhance climate resilience in developing countries (African Development Bank, 2023).

## Conclusions

The worsening effects of climate change globally are driving an urgent need for increased investment to protect lives, economies, and the environment, particularly in low- and middle-income countries where access to climate finance is limited. Studies indicate a substantial investment gap in climate policies, driven by inadequate funding, high transaction costs, and a mismatch between available funds and ground-level needs, with notable underfunding in sectors like agriculture and adaptation measures. The CGIAR Initiative on Climate Resilience, the National Policies and Strategies Initiative, and actors Guatemala, Kenya, Morocco, the Philippines, Senegal, and Zambia, are working to address this gap by developing and implementing various climate investment solutions.

Climate finance options vary widely, each suited for different contexts and objectives. Our summary table (Table 1) outlines various financial instruments for climate investment, highlighting their pros and cons, best-match funding mechanisms, and the necessary capacity building focus for effective use. These combinations show that while some options like grants and public funding are more accessible, they have limitations including availability, whereas other instruments including bonds and private funding require more specific knowledge and risk management skills. This variety underscores the importance of carefully selecting the right financial instrument, funding mechanism, and capacity-building strategy to unlock investments effectively, particularly in the context of climate-resilient agri-food systems in low- and middle-income countries.

## References

African Development Bank. (2023) COP28: International support grows for channeling IMF Special Drawing Rights through multilateral development banks. https://www.afdb.org/en/news-and-events/press-releases/cop28-international-support-grows-channeling-imf-special-drawing-rights-through-multilateral-development-banks-66663

Amarnath, Giriraj; Alahacoon, Niranga; Attoh, Emmanuel; Jampani, Mahesh; Panjwani, Shweta; Ghosh, Surajit; Amarasinghe, Upali; Musobani, L.; Melele, V. C.; Ng'andu, T.; Ndiaye, O.; Konte, O.; Sal, N. A.; Gnanatheepan, W. (2023a). The early warning, early action, early finance (AWARE) platform - promoting early warning of and effective response to climate hazards. Colombo, Sri Lanka: International Water Management Institute (IWMI). CGIAR Initiative on Climate Resilience. 8p. https://hdl.handle.net/10568/137194

Amarnath, G., Alahacoon, N., Mascarenhas, M. (2023b). Helping communities help themselves by using the Early Warning, Early Action and Early Financing (AWARE) platform: early warning systems help save lives. https://www.cgiar.org/news-events/news/helping-communities-help-themselves-early-warning-systems-help-save-lives/

Bird, N. (2014). Improving access to international climate finance within sub-Saharan Africa. Overseas Development Institute. Available online: https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9142.pdf

Boehm, S., Lebling K., Levin K., Fekete H., Jaeger J., Waite R., Nilsson A., Thwaites J., Wilson R., Geiges A., Schumer C., Dennis M., Ross K., Castellanos S., Shrestha R., Singh N., Weisse M., Lazer L., Jeffery L., Freehafer L., Gray E., Zhou L., Gidden M., and Galvin M. (2021) State of climate action 2021 systems transformations required to limit global warming to 1.5°C. https://doi.org/10.46830/wrirpt.21.00048

Chilambe, P. A., Telvin D., Shadrack A., (2023) Innovating climate finance solutions for pastoral and farming communities in the Horn of Africa. https://www.cgiar.org/news-events/news/innovating-climate-finance-solutions-for-pastoral-and-farming-communities-in-the-horn-of-africa/

Climate Policy Initiative (CPI). (2020). Examining the Climate Finance Gap for Small-Scale Agriculture. Available online: https://www.ifad.org/en/web/knowledge/-/publication/examining-the-climate-finance-gap-for-small-scale-agriculture

CPI [Daniela Chiriac, Harsha Vishnumolakala, Paul Rosane]. (2023). The Climate Finance Gap for Small-Scale Agrifood systems: A growing challenge. Climate Policy Initiative. https://www.climatepolicyinitiative.org/publication/the-climate-finance-gap-for-small-scale-agrifood-systems/

Hellin, J., Fisher, E., Taylor, M., Bhasme, S., Loboguerrero, A.M. (2023). Transformative adaptation: From climate-smart to climate-resilient agriculture. CABI Agriculture and Bioscience 4: 30. https://hdl.handle.net/10568/131688

Hellin, J.; Amarnath, Giriraj; Challinor, A.; Fisher, E.; Girvetz, E.; Guo, Z.; Hodur, J.; Loboguerrero, A. M.; Pacillo, G.; Rose, S.; Schutz, T.; Valencia, L.; You, L. (2022). Transformative adaptation and implications for transdisciplinary climate change research. Environmental Research: Climate, 1(2):023001. https://hdl.handle.net/10568/121965

Marshall, S., Chilambe, P.A., Cosgrove, B.E., Stapleton, J., Ravindranath, D., Salfi, L. and Mukherji, A. 2023. Mobilising climate finance to achieve food, land, and water system transformation. Montpellier, France: CGIAR System Organization.

Otieno, F.; Wanjau, A.; Ghosh, A.; Chilambe, P.; Girvetz, E. (2023) Financial tools for enhancing smallholder farmers' climate resilience: Strategies for synergizing insurance and credit. https://hdl.handle.net/10568/136907

Shee, A., Turvey, C. G., & You, L. (2019). Design and rating of risk-contingent credit for balancing business and financial risks for Kenyan farmers. Applied Economics, 51(50), 5447-5465

Timu, Anne G.; Shee, Apurba; and You, Liangzhi. (2023a). Feasibility of implementing a Risk-Contingent Credit (RCC) program in Zambia: Stakeholder engagement. IFPRI Project Note October 2023. Washington, DC: International Food Policy Research Institute (IFPRI). https://hdl.handle.net/10568/132713

Timu, A. G., Shee, A., You, L., Girvetz, E. H., Ghosh, A., & Chilambe, P. A. (2023b). Risk Contingent Credit: A stakeholder engagement to inform project expansion in Kenya. https://hdl.handle.net/10568/130396

Tipmann, R., Agoumi, A., Perroy, L., et. al. (2013). Assessing Barriers and Solutions to Financing Adaptation Projects in Africa. International Development Research Centre. Available online: https://idl-bnc-idrc.dspacedirect.org/bitstream/handle/10625/51972/IDL-51972.pdf

UN. (2022). Adapt or starve: COP27 spotlights agriculture challenges and solutions in the face of climate change. Available online: https://news.un.org/en/story/2022/11/1130517

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We would like to thank all funders who support this research through their contributions to the CGIAR Trust Fund: www.cgiar.org/funders.

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