



Combating and adapting to climate change through DIGITAL FINANCIAL INCLUSION

In 2021, around 3.6 billion people lived in contexts that were highly vulnerable to climate change. This number is expected to rise as global warming severely affects water availability, food, and the livelihoods of millions of people. Women and people with low incomes are disproportionately affected by climate-related shocks and stresses.¹

OPPORTUNITY

Digital financial services can help vulnerable businesses, governments, and individuals, especially women, to mitigate and adapt to climate and disaster risks by enabling access to funds during an emergency, and for longer-term investments in more resilient and climate-friendly assets, livelihoods, and infrastructure.^{2,3}

CHALLENGES

- Emerging economies will need to finance an estimated **\$250 billion per year by 2030 to adapt to climate change**; five to 10 times more than current public finance flows for adaptation.⁴
- The social and economic transformations needed for climate-change mitigation and adaptation will impact particularly those who rely on natural resources for their livelihoods.⁷
- Over the past decade, **over 250 million people were forcibly displaced by natural disasters**; in emerging countries, **80% of these people were women**.^{11, 12, 13}
- **Women are more vulnerable to the impacts of climate change and yet have less access to technology, social capital, and productive resources** to adapt and diversify their livelihoods.¹⁹
- Smallholder farmers have **limited access to finance, technology, public services, and the information needed** to adopt climate adaptation solutions.²¹

SOLUTIONS

- Digital financial services can enable climate financing to reach the people and places needing it the most. **Savings, loans, insurance and payment products** can incentivize and remunerate local communities' climate actions.^{5,6}
- By accessing loans, insurance, and savings products, households and businesses can **invest in the skills, assets, and practices needed** to participate in the transition to low-carbon economies.^{8,9,10}
- Digital payment systems offer **fast, targeted, and cost-efficient channels for financial assistance and insurance pay-outs**, as well as for information and early warnings, including to climate migrants.^{14,15, 16, 17, 18}
- Digital financial services can enable women in rural and agricultural livelihoods to access finance, training, and climate-smart and time-saving tools that help to **maintain income sources, increase farm productivity, build financial resilience, and shift social norms**.²⁰
- Access to climate risk insurance and safety nets gives farmers the **confidence they need to invest in their farms** by protecting them and their assets from hazards.²²

TANZANIA

Mobile money users were more likely to receive remittances than non-users and, after a rainfall shock, the value of remittances received rose for mobile money users, replacing two-thirds of the losses incurred through the shock.²³



KENYA

Through DigiFarm's digital mobile platform, **1.3 million farmers—with half of the active users being women smallholders—significantly raised their profits** in 2021, and were able to build their capacities to weather external shocks through access to financing, and quality seeds and inputs.²⁴



INDIA

SMV Green Solutions has helped 1,700 rickshaw drivers to switch to e-rickshaws through a suite of services, including rickshaw sales, asset financing, and a pay-per-use battery swap service that enables drivers to avoid long charging times.²⁵



KENYA

Despite the harsh climatic and economic conditions that affected about 2.5 million Kenyan farmers in 2020, **81% of those with a SunCulture solar irrigation system were able to raise their revenue.** This was compared with 88% of non-SunCulture farmers seeing a worsening of their economic situations. SunCulture aims to mitigate 2–3 million tonnes of CO₂ by scaling up its solar irrigation solutions across the continent within the next seven years.^{26,27}



MALI

In 2021, severe storms hit rural regions in Mali and OKO Finance's mobile-based crop insurance product triggered a payout to 1,850 affected farmers totaling \$100,000.²⁸ They were previously otherwise unprotected against this type of disaster.



BRAZIL

Carbon marketplace Acorn and startup reNature, in partnership with a Brazilian farmers' cooperative, produced their first round of 242 carbon removal units, resulting in each farmer earning around \$19.²⁹

CHINA

Between 2016 and 2021, 600 million Alipay Ant Forest users planted more than 326 million trees.³⁰ Working with farmers to plant them, to develop organic agricultural products, and to connect with e-commerce platforms, Alipay Ant Forest has also contributed to the creation of about 400,000 climate-smart jobs and \$8.4 million in income between 2016 and 2019.³¹

1. IPCC, 2022. 2. Ibid. 3. Naughton and Brady, 2022. 4. Chapagain et al., 2020. 5. IIED, 2021. 6. UNEP, 2019. 7. CIF, 2021. 8. Aggarwal et al., 2020. 9. Paulson Institute Green Finance Center and the Research Center for Green Finance Development of Tsinghua University, 2020. 10. Liu et al., 2021. 11. UNDRR, 2022. 12. Quiñones, 2021. 13. UNDP, 2017. 14. IPCC, 2022. 15. Riley, 2018. 16. Lopez, 2019. 17. Calderone, Weingärtner and Kroessin, 2019. 18. Pasricha and Baur-Yazbeck, 2020. 19. Anderson, Coetzee, and Mattern, 2021. 20. Ibid. 21. Ibid. 22. Ibid. 23. Riley, 2018. 24. Koyama et al., 2021. 25. Karelia, 2021. 26. Sunfinder, 2021. 27. Aggarwal et al., 2020. 28. Njiraini, 2021. 29. reNature, 2021. 30. Business Wire, 2021. 31. UNFCCC, no date.