

CLIMATE FINANCE

BUILDING RESILIENT AND SUSTAINABLE AGRICULTURAL ECONOMY

The UN has estimated that world population would reach 9.7 billion by 2050. To feed this escalating population, global food demand is expected to increase from 35% to 56% by 2050, necessitating agricultural expansion while straining natural resources.

Climate Change and Agriculture

Climate change adds an additional layer of challenge as agriculture is highly dependent on weather and climatic conditions. Climate change shrank agricultural yield by 21% worldwide between 1961 and 2021. Further, rising global temperatures are expected to lead to a 10-40% loss in crop productivity by 2100. Lower agricultural yields would have cascading effects on farmers' incomes, food security and livelihoods, exposing them to unfamiliar and unprecedented extremities.

Simultaneously, agriculture exacerbates climate change through GHG

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emissions arising from production-linked on-farm activities, animal husbandry, crop cultivation, land use, land use change and forestry. The AFOLU sector represents 22% of global GHG emissions, with agriculture contributing to 45% of methane and 80% of nitrous oxide emissions.

Climate change and agriculture, therefore, are critically intertwined. Since developing economies rely significantly on this sector, climate-related impacts are bound to affect economic drivers through productivity losses, reduced yields, and heightened food, energy, and water insecurity.

Strained Climate Financing

India, with 45.5% of its population employed in agriculture, is highly vulnerable and Indian government had estimated an annual economic loss in agriculture worth USD 9-10 billion in 2018 due to climate change-related events. Field and simulation models

project a 20% reduction in rainfed rice yields by 2050 and 19.3% reduction in wheat yields by 2050, if adaptation measures are absent.

Urgent action, therefore, is required towards adaptation and resilience which include finance. Globally, nations need USD 680 billion annually to tackle climate change within agriculture by 2030. However, only 22% of global climate-related development finance was allocated to AFOLU. Agri-food systems witnessed a dismal contribution worth 4% of global climate finance. Asia witnessed a stark 44% drop in funding. Closing this gap to enable the sector's climate resilient transition would require multiple stakeholders coming together.

Financing the sector has its limitations and farmers continue to face challenges due to high actual and perceived risks by capital providers. Smallholder farmers particularly, need long-term capital to boost growth and its unavailability hinders this. Greater risks, combined with high transaction and monitoring costs, serve as a deterrent, which are further impacted by low profitability, and low margins for financiers. This leads to limited capital flows and high borrowing costs, especially for climate adaptation and mitigation.

Resultantly, unavailability of capital



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on account of low risk mitigating financial products, accessibility of finance for various types of farmers, and unaffordability due to excessive interest rates, lead to farmers depending on informal sources like moneylenders, who charge exorbitant rates, creating a vicious circle of indebtedness.

Government Support

Many governments are supporting with schemes that go beyond conventional farming. India's multiple schemes to tackle impact of climate change on agriculture is improving the sector's. For example, National Adaptation Fund for Climate Change provides funds towards adaptation costs for climate related vulnerable areas. Projects like National Innovations in Climate Resilient Agriculture have been working to identify areas of vulnerabilities to design coping mechanisms and IMD's recent update on providing panchayat-level weather forecast data for farmers is slated to improve planning and help cut-down on climate-related losses.

With rising recognition of adaptation in agriculture, specific policy interventions or strengthening of existing policies would delineate explicit financial mechanisms and enhance capital flows. Capacity building and guiding farmers through a robust sustainable financial landscape can influence sustainable practices and improve capital access.

Policy Interventions

To foster transition towards sustainable farming practices and reducing sector's impact on climate, approaches like Climate Smart Agriculture (CSA) need to be mainstreamed into national policies. CSA encourages sustainable farming practices such as adoption of climate-resilient crop varieties, conservation techniques, agroforestry, precision farming, water management strategies and improved livestock management. It helps maximize productivity, enhance resilience, and lower GHG emissions, while providing a holistic solution to food insecurity and achieving sustainable development.

Measures towards innovative financ-

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ing mechanisms to scale up on credit enhancements, guarantees and interest subvention schemes need to be encouraged at policy level. This would provide risk-based mechanisms and access to long term capital to banks and NBFCs to lend onward to farmers and FPOs for adopting sustainable farming practices. Towards this, opening central / state subsidies or leveraging CSR funds to support guarantee programs and/or blended finance funds could be an added advantage, as this would accelerate capital flows.

Regulatory guidance on climate risks management techniques by capital providers to include climate scenario analysis and stress testing, would facilitate navigation of these complex topics and emerge with climate risk-based pricing and tenures, that are factored in traditional risk management systems.

Alternate Financial Resources

Including climate as a sub sector in RBI's priority sector lending (PSL), categorised as nature-based solutions, and climate-related technologies, would help build momentum within PSL, beyond renewable energy and increase its allocation towards climate focused interventions in the agriculture sector.

The quantum of institutional funding required for anticipatory adaptation and climate resilience is huge, especially since climate sensitive sectors such as agriculture and forestry, contribute significantly to India's GDP. Therefore, a particular focus on adaptation finance, to prepare for and manage climate-related risks, need to be deployed by FIs at local level for activities such as irrigation management, crop va-

riety development, precision farming and crop-sensing technology.

Blended finance has emerged as an effective instrument that attracts commercial capital and offers larger pool of funds for financing longer term and risky investments in high-risk sectors such as agriculture. Replication of successful models such as AGRI3 Fund that supports sustainable agriculture investments in Central and South America, East Africa, and South Asia, would accelerate capital flows and bring scalability to climate related agricultural projects.

Building Social Capital

Gender equality and social inclusion, integrating vulnerable and marginalized communities, through financing will help to build resiliency in the face of climate shocks. Replicating proven models such as Ukama Ustawi from Eastern and Southern Africa that support women and youth through financial inclusion and governance frameworks by providing soft loans and linkages to financial services, are enablers to gender and social inclusion.

Improving efficiency of rural credit bureaus and partnering with fintechs to source alternative data, would help FIs overcome the hurdle of information asymmetry by providing access to up-to-date information on the present and past credit behaviour. This would enhance the evaluation of the credit worthiness of borrowers, significantly lowering monitoring and transaction costs for FIs, and speed of access to finance for farmers.

Awareness and capacity building programs for farmers, alongside existing schemes, can help advance towards sustainable farming and deepen adoption of technology for CSA transition.

Bolstering climate finance mechanisms, intensified by efforts from policymakers, financial sector players and farmers, is vital for India to meet its Nationally Determined Contribution of reducing emission intensity by 45% and SDG goals by 2030. A partnership approach such as this would go a long way in unlocking climate smart financing solutions, whilst supporting a just transition.