Climate 'green swan' events: Financial sector braces for shocks

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India's financial system faces a growing threat from green swan events—climate-driven crises marked by unpredictable, cascading impacts that could destabilise markets and worsen inequality. Unlike rare black swan events, green swans are inevitable due to the climate crisis, combining physical risks (floods, droughts) and transition risks (policy shifts, tech disruptions). With over $70 billion in climate-related losses since 2019 and 2,000+ fatalities, India ranks among the most vulnerable nations globally.

Green swans represent systemic climate threats that defy conventional risk modelling. Traditional risk assessment models that extrapolate from historical trends are insufficient for fully appreciating the systemic risks posed by the climate crisis. They involve non-linear, irreversible environmental shifts—like melting glaciers, draughts, or collapsing ecosystems—that trigger financial chaos. The Reserve Bank of India (RBI) warns these events could recur with rising intensity, overwhelming traditional insurance and hedging tools. For India, where 45% of the workforce relies on climate-sensitive agriculture, the stakes are existential. The interconnected nature of these risks means that localized climate disasters can cascade through the entire financial system, affecting institutions and markets far beyond the initially impacted areas. Also, unlike health shocks, climate disks are here to stay. While health crises like Covid-19 caused acute, time-bound disruptions, green swans pose perpetual threats with irreversible tipping points. For example, coastal flooding could permanently displace millions, unlike pandemic recovery cycles. Traditional risk assessment models that extrapolate from historical trends are insufficient for fully appreciating the systemic risks posed by the climate crisis.

The RBI is rolling out phased guidelines to address climate risks, including green deposit frameworks, climate disclosure rules, and stress-testing protocols. Specifically, in the context of financial inclusion, banks and microfinance institutions (MFIs) face dual pressures where cyclones and floods destroy collateral (homes, livestock), spike loan defaults, and disrupt operations and policy transition risks where sudden policy changes (e.g., coal phaseouts) could strand assets in carbon-intensive sectors.

Microfinance, a $70 billion industry serving 60 million low-income borrowers, is especially exposed. Climate disasters threaten 30-40% of MFI portfolios tied to agriculture and livestock. Women, who form 95% of microfinance clients, face heightened risks of income loss and displacement. Having made some strides in financial inclusion, green swans could reverse those gains. MFIs report repayment rates dropping to 60% post-disasters. Given that these events could reshape finance, particularly for marginalised communities, it would be useful to seek lessons from Bangladesh's experience with similar climate-related challenges in financial inclusion. Bangladesh, which shares many climate vulnerabilities with India, has implemented several innovative approaches to address the financial implications of green swan events. A comparable context is Bangladesh's 1998 floods, where the country's financial sector had to deal with smallholder farmers and microfinance borrowers losing livestock and crops, their primary loan security. Through Green Refinancing, Bangladesh Bank provides low-cost loans for solar energy and waste management, supporting 20 million people through its Solar Home System programme. Grameen Bank's experience with green swan events is pioneering. It transitioned its group-based lending and emergency savings accounts to buffer climate shocks. During floods, repayment flexibility and asset diversification (e.g., shifting from crops to poultry) helped sustain its high recovery rates. A key lesson was that post-disaster loan waivers eroded repayment discipline in Bangladesh. Instead, staggered repayments and climate-resilient livelihood training proved more effective.

One of the aspects that the Indian financial sector must prioritize are climate stress tests, which mandate banks to simulate monsoon failures or renewable energy transitions. Green bonds for financial inclusion can channelise funds into affordable flood-resistant housing or drought-tolerant crops.

Green swan events represent a profound challenge for India's financial system, particularly in terms of maintaining inclusive financial services for vulnerable populations in the face of increasing climate risks. For India's 800 million people living on under $6 daily, balancing growth with climate resilience isn't optional—it's survival. Bangladesh's mix of regulatory innovation and community-centric finance provides a blueprint, but scaling solutions demands urgent public-private collaboration. As India continues to develop its approach to green swan events, coordination between financial regulators, government agencies, financial institutions, and civil society will be essential to ensure that vulnerable populations are not left behind in the transition to a more climate-resilient financial system. In the age of green swans, preparedness is the only hedge against the unpredictable.

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