Policy brief – June 2026

Leveraging parametric insurance for climate adaptation and resilience in India

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Summary

- India faces a growing number of climate-driven secondary perils. These perils are high-frequency, low- to medium-severity events that often occur as effects of primary hazards. They include floods that are caused by the increased frequency and intensity of extreme rain events, a more variable monsoon season, and increased average summer temperatures and relative humidity in Indian cities.
- India also continues to grapple with a large natural-catastrophe insurance protection gap, in which insurance does not cover many of the growing economic losses caused by climate change. Figures from the National Insurance Academy show that between 1980 and 2019, there were 1,036 weather-related loss events in India, resulting in losses of US$158 billion – less than 6% of which were covered by insurance.
- Previous research has shown that Indian workers are among the most exposed to heat stress in the world, suffering from reduced productivity due to high heat and humidity. They are also regularly exposed to the physical impacts of climate change, and are often unable to afford insurance because they tend to work in the informal sector.
- Parametric insurance can help build resilience in India by providing a social safety net and financing climate adaptation investments. This is because such insurance automatically triggers payments based on predetermined climatic thresholds (e.g. temperature or precipitation levels) rather than requiring proof of damages.
- Efforts to scale up parametric insurance have faced challenges because climatic thresholds are not always precise enough to capture real-world impacts, and because insurance premiums may not be affordable to beneficiaries, especially those who are on low incomes and are highly exposed to climate change.
- However, several pilot projects in India have demonstrated how states and municipalities can co-finance solutions as part of their social protection efforts, underwrite risks by working with private reinsurance companies, and structure payouts to mitigate these real-world impacts.
- Recent regulatory changes as part of the Insurance Regulatory and Development Authority of India's 'Insurance for All by 2047' vision could provide a window of opportunity to scale up parametric insurance coverage in India.

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Parametric insurance as a tool for mobilising climate finance

This policy brief explores governments' increasing use of parametric insurance in emerging markets, focusing on how a series of pilot projects have addressed some of the challenges traditionally associated with this form of insurance. We analyse initiatives to scale up such projects into municipal-, state- or national-level products that could increase fiscal resilience against the growing impacts of climate change and transfer risks to capital markets, thereby closing the insurance protection gap. This aligns with India's recent efforts to promote innovation in the insurance market through, for example, regulatory changes designed to attract foreign capital to the country's insurance market, as well as its announcement of a national parametric insurance scheme (Reuters, 2025).


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The natural-catastrophe insurance protection gap

Secondary perils such as droughts, floods and heat stress episodes are more frequent and localised than primary perils, which are high-severity, infrequent natural catastrophes such as storms, earthquakes and hurricanes. As standalone events, secondary perils generate smaller losses than primary perils. However, rising temperatures are increasing the frequency and severity of secondary perils around the world. In 2024, they were responsible for US$81.5 billion in natural-catastrophe insurance losses, or nearly 60% of the global total (SwissRe, 2025).

In addition, a wide natural-catastrophe insurance protection gap persists in emerging markets, totalling US$181 billion, or 57% of the global total, in 2024 (SwissRe, 2025). Between 1980 and 2019, less than 6% (US$9.1 billion) of weather-related economic losses in India were covered by insurance (National Insurance Academy, 2023). Responsibility for offsetting the economic damage caused by such losses falls on either national or subnational governments as insurers of last resort. This creates a significant fiscal burden during and after climatic events. As climate change causes both primary and secondary perils to intensify and become more frequent, this will increasingly affect governments' fiscal sustainability, especially in the emerging markets that are most exposed to these effects.

Governments are sometimes unable to act as insurers of last resort due to the limitations of their social safety nets and public finances. This is why individuals, households and small enterprises in emerging markets increasingly bear such losses, especially those from lower-impact secondary perils – despite the fact they have contributed relatively little to the causes of climate change and are the least able to afford adaptation and resilience measures.

The insurance protection gap can be closed by either incentivising increased insurance uptake or reducing overall risk by, for instance, investing in adaptation and resilience measures. However, the continued loss of income and wealth from primary and secondary

perils means that individuals, households and small businesses are unlikely to have the resources to implement these measures. Accordingly, there is an urgent need for parametric insurance products and other financing solutions that address local needs.

What is parametric insurance?

Parametric insurance is a type of non-traditional insurance. While traditional insurance provides compensation equal to losses suffered after they have been assessed and verified, parametric insurance provides payouts automatically when a covered event meets or exceeds a pre-defined threshold, as measured by an objective parameter.

This structure allows for faster payouts and interventions, making parametric insurance particularly suitable as a first response to a catastrophe or extreme weather event (Pullanikkatil et al., 2024). Parametric insurance has proven to be a useful tool for communities around the world that are susceptible to extreme hazards, helping governments extend financial protection to citizens who are unreachable through traditional insurance (United Nations Development Programme [UNDP], 2025). This is particularly the case in emerging markets, where low insurance penetration, limited claims infrastructure and large informal workforces make conventional indemnity-based products difficult to administer and fund. In these contexts, parametric insurance products are increasingly being used as a safety net for a broad range of risks associated with the growing impacts of climate change, leading to improved livelihoods and enhanced long-term risk management (UNDP, 2024).

Globally, the successful rollout of parametric insurance products has largely been restricted to the use of catastrophe bonds. These bonds provide post-disaster liquidity in the aftermath of a catastrophe or extreme weather event, thereby preserving fiscal space and fiscal resilience (Reitmeier et al., 2025a). Governments increasingly use catastrophe bonds to transfer risks associated with the growing impacts of climate change to the private sector, aligning their needs with investors' objectives (Reitmeier et al., 2025b). For example, Mexico's pioneering catastrophe bonds (originally aimed at earthquake risks) have met with high investor demand. The Government successfully issued a tranche valued at US$125 million that provided protection against named Atlantic storms, effectively transferring specific climate risk exposures to global capital markets.

While investor demand for catastrophe bonds continues to grow, many are now turning their attention to extending the successful use of parametric insurance products to cover climate impacts. In the past few years, a growing number of community-based parametric insurance products have been piloted to address climate-related risks, especially those associated with the growing impact and severity of secondary perils in India. These pilots show that parametric insurance mechanisms could offer rapid relief to smallholder farmers and informal workers who are unable to carry out work during episodes of extreme heat or flooding.

"Parametric insurance mechanisms could offer rapid relief to smallholder farmers and informal workers."

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The policy and regulatory landscape for parametric insurance in India

India is the tenth-largest insurance market globally, with a market share of 1.8%. However, insurance penetration (the ratio of insurance premiums to GDP) remains low at just 3.7%, primarily consisting of life insurance at 2.7% (Press Information Bureau, 2026). The market is expected to grow at an annual rate of 6.9% from 2026 to 2030, outpacing China at 4% and the US at 2% (SwissRe, 2026). This growth is being driven by regulatory changes introduced through the Sabka Bima Sabki Raksha (Amendment of Insurance Laws) Bill that Parliament passed in 2025. The legislation aims to deepen insurance coverage and has introduced several changes by amending three Acts on the insurance sector.

A key feature of the reforms is that there is no longer a cap on foreign direct investment in Indian insurance companies (raised from the previous ceiling of 74%), subject to the condition that the entire premium income is reinvested within India (Press Information Bureau, 2025). The legislation provides the first definition of 'insurance business' and lends the Government the flexibility to notify other forms of contracts that insurers may undertake alongside traditional insurance, in consultation with the Insurance Regulatory and Development Authority of India (IRDAI). The provision creates regulatory space for insurers to package insurance products with complementary services. This could also increase parametric insurance products' share of the market.

These regulatory reforms sit within IRDAI's broader 'Insurance for All by 2047' vision, which commits to providing every citizen with suitable life, health, and property insurance coverage, and ensuring that every enterprise is supported with adequate insurance solutions. With one of the world's largest agricultural insurance programs, India already has substantial experience providing insurance at the scale this vision requires. Launched in 2016, the Pradhan Mantri Fasal Bima Yojana (PMFBY) and Restructured Weather Based Crop Insurance Scheme incorporate elements of parametric insurance, using weather indices and satellite-based yield estimation to trigger payouts without requiring individual farm loss assessments. However, these initiatives continue to face significant implementation challenges, including delayed claim settlement, a lack of expertise in crop insurance and actuarial science, and slow adoption of technology. This highlights the gap between parametric insurance's theoretical efficiency and practical use at scale (UNDP, 2024).

The Government recently began talks with local insurers about the design of a nationwide climate-linked parametric insurance programme designed to simplify the payout process after extreme weather events (Reuters, 2025). This builds on the numerous parametric insurance pilot programmes in recent years.

"India already has substantial experience providing insurance at the scale this vision requires."

Photo: Akash Yadav on Pixabay

Parametric insurance pilot in Bihar

Bihar is located in the fertile Indo-Gangetic Plain of eastern India. Its 120 million inhabitants make it one of India's most populous states, but it is also one of its poorest. The economy is highly dependent on

agriculture, which is highly vulnerable to the impacts of climate change. Bihar is frequently affected by devastating floods, extreme heat and prolonged droughts. Twenty-eight of Bihar's 38 districts (around 74% of the state by area) are classified as flood-prone and are hit by major floods almost every year. The most devastating of these in recent memory were the 2008 Kosi Floods (International Water Management Institute [IWMI], 2019).

In response to these challenges, the Governments of India and Bihar initially launched the Comprehensive Crop Insurance Scheme in 1985, followed by the National Agricultural Insurance Scheme in 1999 and the Modified National Agricultural Insurance Scheme in 2010. The WBCIS launched in 2007 a more weather-based crop insurance product, which made payouts during adverse weather events linked to rainfall patterns. The most recent scheme was introduced in 2016 in the form of the PMFBY. However, previous schemes have largely favoured larger farmers (Singh and Singh, 2013; Aheeyar et al., 2019a) and have excluded sharecroppers, tenant farmers and female farmers because they lacked formal documentation of their land rights or bank accounts for receiving payouts, or were simply unaware of the scheme. The PMFBY has led to reduced coverage because crop losses are measured at the level of villages rather than district subdivisions. Furthermore, because crop damage is collected manually by field staff, payouts often take more than a year to reach farmers, which delays recovery efforts for several cropping seasons. The PMFBY was terminated in 2018 due to unsatisfactory levels of claim disbursement to farmers (Aheeyar et al., 2019a).

Recent efforts have piloted the use of parametric insurance solutions as a more cost-effective and efficient solution to closing the insurance protection gap in Bihar. Between 2017 and 2018, the IWMI piloted an index-based flood insurance scheme in Bihar's Muzaffarpur District, covering 200 farmers in flood-prone villages. Premiums were calculated at 9.5% (INR 2,200 per hectare) of the insured amount (INR 20,000 per hectare), plus taxes, and were fully subsidised. The scheme used detailed satellite imagery, remote sensor data and flood modelling to set predetermined thresholds based on flood height and the duration of inundation. This resulted in payouts of over US$160,000 to 40 farmers who experienced flooding, enabling them to reinvest the following season without losing productive assets or falling into debt. The scheme addressed some of the previous challenges faced by crop insurance schemes by using 10 m-resolution satellite images to verify the depth, duration and extent of flooding, and to effectively target farmers who were eligible for payouts without the need to verify crop damage in person. Payouts occurred more quickly than in similar schemes because they came as direct transfers to bank accounts (without intermediaries), which reduced both administrative burdens and the risk of leakage.

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Nonetheless, this parametric insurance pilot had some drawbacks. For example, there continued to be little public trust in traditional or parametric crop insurance products, which is one of the most important determinants of success. Accordingly, the pilot required community service organisations to sustain engagement and awareness-raising initiatives. An important lesson from the pilot is that only farmers who received payouts were willing to contribute 1–2% (up to INR 500) of future premiums in instalments (due to lack of

affordability), while those who enrolled but did not receive compensation (60% of participants) developed mistrust in the scheme and refused to re-enrol, partly because they did not understand the method for determining compensation (Aheeyar et al., 2019b). The pilot also required improvements to ensure the participation of sharecroppers or tenant farmers who do not have formal documentation.

Parametric insurance pilot in Gujarat, Maharashtra and Rajasthan

In 2023, the Self Employed Women's Association (SEWA), India's largest national trade union for women workers in the informal economy, piloted a parametric insurance product focused on extreme heat. The organisation did so in partnership with Blue Marble and Arsht-Rock, which covered the insurance premiums of 21,000 of SEWA members working across a variety of sectors. The scheme began in the state of Gujarat, before it was expanded to Maharashtra and Rajasthan. These states are highly exposed to episodes of extreme heat that make it difficult for informal workers without insurance coverage to raise income. Keeping in mind the objective of compensating women for lost income due to climate-driven heat events, the product monitored daily maximum temperatures to trigger an automatic payment when predefined heat thresholds were reached.

This pilot insurance product did not trigger any payouts, despite the fact that 2023 was the second-warmest year on record. The threshold was set too high, and satellite-recorded temperatures differed significantly from the conditions workers experienced on the ground, where heat exposure is compounded by heat from surfaces, physical exertion and other factors. While participants in the scheme received adaptation equipment such as umbrellas, water flasks and tarpaulins, the product design did not account for wet-bulb temperatures and the variation between heat perception and satellite-recorded temperatures (Jena, 2025). This mismatch between the parameters of the product and the actual losses incurred due to the inability to carry out work is an example of 'negative basis risk', an important challenge in parametric models (see Box 1).

In 2024, the SEWA product was redesigned with support from Climate Resilience for All, Swiss Re and ICICI Lombard. The coverage was expanded to cover 22 districts in the states of Gujarat, Rajasthan and Maharashtra, increasing the number of beneficiaries from 21,000 to 50,000. The redesign introduced a two-tier payout structure. The cash-assistance tier triggered payouts when a moderate temperature threshold was reached. This threshold was kept lower than 45–46°C so as to provide immediate support during moderate heat stress, and was triggered in all districts. This meant that every participant received a payment of INR 400 even if the higher threshold was not met. The second insurance tier followed a percentile-based approach whereby historic temperature data was analysed to calculate individual trigger points for each participating community. This approach ensured geographic equity: a fixed threshold might suit landlocked regions but would not trigger in coastal locations, leaving workers there unprotected. The second tier triggered in 17 districts, with 46,339 people (92% of participants) receiving payouts that ranged from INR 151 to INR 1,651. In 2025, the programme was scaled up to cover 250,000 women across seven

Box 1. Basis risk

Basis risk stems from the inherent aim of parametric insurance to provide greater objectivity and certainty than traditional insurance. However, by pursuing objectivity through standardised triggers and monitoring conditions using satellite data, there is a risk of "governance from a distance" (Bergsvik and Kloppenburg, 2024: 8). This can create discrepancies between satellite data and variance on the ground. To mitigate basis risk, parametric insurance solutions need to close the spatial distance between monitoring infrastructure and the insured relative to the geographic scale of the hazard (Gao et al., 2024). When monitoring stations are located close to the places where the insured work or live, this enables close monitoring of parameters and results in a low spatial ratio (the distance between the insured and monitoring infrastructure, divided by the size of a loss event). Basis risk rises as the spatial ratio increases, be it due to greater distance between the insured and monitoring infrastructure or a reduction in the size of an event. This may result in recipients not receiving payouts even though they have been affected by heat stress. Therefore, addressing basis risk requires the use of reliable local data and modelling techniques that are informed by in-person consultation with target populations.

states through two bundled products that provided protection against heat, cyclones and excessive rainfall (International Labour Organization, 2026).

Parametric insurance pilot in Nagaland

Nagaland is a small northeastern state with largely mountainous terrain. Due to its heavy storms and high levels of rainfall, the state is subject to flash floods that cause widespread destruction across multiple districts. Under India's National Disaster Management Policy, states are primarily responsible for disaster management. State governments must take measures and allocate funding for prevention, mitigation, preparedness and capacity building in the event of a disaster. They engage in relief efforts using the State Disaster Response Fund (SDRF) and can benefit from additional assistance from the National Disaster Response Fund (NDRF) if the disaster is severe in nature. However, in the event of a severe disaster, the two funds are unable to provide emergency aid in a timely manner. NDRF disbursement is subject to a three-tier assessment and approval process, while the SDRF is only released in two equal instalments (Ministry of Home Affairs, 2026). The State Government also needs to ensure that money drawn from the SDRF is used only for items of expenditure approved by the Central Government.

Photo: Akash Yadav on Pixabay

To increase the Government of Nagaland's financial capacity to deliver emergency aid during and after extreme weather events, the Nagaland State Disaster Management Authority (NSDMA) has implemented India's first subnational extreme precipitation insurance scheme: the Disaster Risk Transfer Parametric Insurance Solution. The latest iteration of the scheme came out in 2024 as a joint venture between the State Bank of India (SBI) and Insurance Australia Group (Government of Nagaland, 2024). The state pays SBI General Insurance and reinsurer Munich Re an annual premium of INR 42 million for coverage of up to INR 500 million, and INR 1.5 billion for three years.

The programme has shifted from a single-year to a multi-year structure and implemented revisions to its initial design, which suffered from high thresholds and inaccurate data, resulting in high negative basis risk. These revisions incorporated the India Meteorological Department's gridded rainfall data and the network of NSDMA Automated Weather Stations covering 111 tehsils (sub-districts) across the state into the trigger design. The current scheme classifies subdistricts as at either high, medium or low risk of flooding, with each zone assigned a pre-defined insurance payout. This has enabled the State Government to reduce negative basis risk, target payouts more accurately and increase its fiscal resilience against increasingly frequent climate-related disasters. Premiums are partly funded through an InsuResilience Solutions Fund, which covers 50% of the premium in the first year, before tapering off to 40% and then 35%. This approach incentivises the State Government to assume a progressively greater share of the cost. The scheme also includes a 30% no-claims bonus, further reducing the premium burden in years when there are no payouts. A structured blockchain-based payout platform, the Decentralised Relief Payout System (DRPS), has been developed to address the needs of local communities. This platform will facilitate timely and efficient disbursement of payouts through decentralised digital payment mechanisms.

Core insights

Several core insights emerge from the three case studies above:

- **The uneven distribution of payouts could threaten the financial sustainability of a parametric insurance scheme**. In the case study of Bihar, farmers who paid premiums but did not receive payouts refused to continue paying into the scheme because they distrusted it. The involvement of community service organisations could help build awareness and trust in such schemes, especially against the backdrop of past failures. Another way to build trust and strengthen financial sustainability would be to redistribute the benefits of the scheme. This could involve offering reduced premiums in subsequent cycles to those who paid into the scheme but did not receive a payout.
- **Parametric insurance products provide fast, unbureaucratic payouts**. A major advantage of the piloted parametric insurance schemes is that they improve the speed and efficiency of payouts. They reduce administrative burdens and thereby avoid leakage when payouts are managed via intermediaries.
- **A multi-tier scheme could mitigate basis risk where there is a discrepancy between standardised triggers based on satellite data and microclimatic nuances on the ground**. There will always be a spatial distance between a weather station and the insured, which may cause participants to miss out on payments despite being heavily impacted by a weather event (negative basis risk). To minimise basis risk, a structure with a cash-assistance tier could provide a universal payment (or reimburse premiums, as above) based on a lower threshold.
- **Historical climate data and a percentile-based approach can be used to calculate individual trigger points for each participating community and reduce negative basis risk**. Given the variance in local climate conditions, a fixed absolute threshold (such as 43.5°C or average precipitation) may not capture individual local contexts within the geographic scope of a community-based parametric insurance product, such as a community's proximity to coastal locations or surface water. Improved data collection and modelling can help reduce negative basis risk in parametric insurance schemes.
- **Subnational parametric insurance mechanisms could scale up community-based parametric insurance pilots while strengthening states' fiscal resilience to the growing impacts of climate change**. The case study of Nagaland demonstrates that Indian states can partner with domestic banks and international insurance companies to design parametric insurance products and thereby transfer increasing climate risks to international capital markets.
- **The parametric insurance schemes in Bihar, Gujarat, Maharashtra and Nagaland all benefited from fully subsidised insurance premiums**. However, the case study of Nagaland demonstrates that State Governments can step in to co-finance parametric insurance schemes in a way that increases fiscal resilience. This model could be used to scale up pilots to the municipal or state level while strengthening fiscal resilience.

"Improved data collection and modelling can help reduce negative basis risk."

Photo: Akash Yadav on Pixabay

Financing and scalability

To date, two main factors have limited efforts to scale up parametric insurance products to uninsured workers in emerging markets, most of whom are informally employed. First, the success of the pilots is largely dependent on grant subsidies from international donors. The SEWA pilots, for example, benefited from US$500,000 from the Rockefeller Foundation to cover the premiums and design of the product. This funding came from the foundation's Cool Capital Stack, a US$750 million investment pipeline designed to protect communities from extreme heat. This largely helped keep premiums sufficiently low at US$3, while also financing payouts totalling US$350,859 (World Economic Forum, 2025). Second, scaling initiatives will require parametric insurance products to be held by sovereign or sub-sovereign entities that package the product in line with investors' objectives, while administering payouts to individuals or households. In practice, large reinsurance companies that underwrite parametric insurance schemes will only work with national or subnational schemes rather than smaller, community-based pilots.

The Nagaland pilot provides an example of how a State Government can achieve this. For State Governments, parametric insurance products can increase fiscal resilience during extreme weather events by reducing reliance on disaster risk funds, which may not always provide support when states are affected by secondary perils such as episodes of extreme heat or flooding. Parametric insurance payouts provide an important source of social security for those who are unable to work or support their livelihoods during extreme weather events, such as smallholder farmers and other informal workers. This is especially true for schemes with a two-tier structure. By subsidising premiums for parametric insurance products, State Governments can more effectively and proactively manage their budgets in the face of increased exposure to the primary and secondary perils caused by climate change.

There is growing demand from investors for parametric insurance products. These products form a growing part of the insurance-linked securities (ILS) market. ILS are financial instruments that enable insurers and reinsurers to transfer the risk of large-scale disasters, such as widespread heat stress, to capital markets. The most common type of ILS is a catastrophe bond, which provides coupon and principal payments to investors unless a predefined catastrophic event occurs. If such an event takes place, the issuer retains the bond's principal to cover losses, and investors absorb the financial impact of this. ILS have proved popular with institutional investors such as hedge funds, pension funds and insurance companies, as they provide an opportunity to earn attractive returns that are uncorrelated with other financial instruments. Weather derivatives are a more specialised segment of the derivatives market (see International Association of Insurance Supervisors, 2024). State or municipal governments can meet this demand by sponsoring reinsurance companies to implement parametric insurance schemes, as the Government of Nagaland has done with Munich Re.

This allows states to redistribute risks to the international reinsurance market, aligning with IRDAI's objectives to attract more foreign investment in India's insurance industry. In future, State Governments could also sponsor reinsurance companies to issue catastrophe bonds, transferring risk to global capital markets.

"Parametric insurance payouts provide an important source of social security."

Photo: Subhashis Das on Unsplash

Subnational governments play a crucial role in linking community-based parametric insurance products with global financial markets and thereby helping them scale up. To satisfy the needs of global reinsurers and institutional investors, subnational governments need to ensure that the scheme is large enough to benefit from economies of scale and reduce administrative burdens. They also need to provide reliable and transparent data to determine standardised and transparent thresholds, which global investors can use to assess risks and returns. To satisfy the needs of local communities, subnational governments will need to design structured payouts in accordance with the severity of weather events, and to ensure that payouts are processed quickly and efficiently using decentralised digital payment systems.

Policy implications

Our findings show that parametric insurance is a valuable risk transfer instrument that can help close the insurance protection gap, but it is not a substitute for public aid or long-term social protection. Realising its potential in India requires coordinated action across state governments, the central government, insurance regulators and disaster management agencies.

State governments can help scale up parametric insurance schemes while strengthening fiscal resilience and extending social safety nets. This is because:

- Parametric insurance is a valuable risk transfer instrument that provides quick payouts in high-severity disasters. When integrated into a tiered system of the kind SEWA adopted for cash assistance and adaptive equipment, this can provide social protection while increasing State Governments' fiscal resilience against the impacts of climate change.
- States play a crucial role in connecting individual beneficiaries with global reinsurance markets and thereby helping distribute climate risks, in line with IRDAI's efforts to attract international finance to India's insurance market.
- Parametric insurance is not a substitute for public aid. It can be used to help close the insurance protection gap, particularly for secondary perils. Sovereign or international disaster risk funds will continue to be required for more severe primary and secondary perils.
- Parametric insurance is not a sustainable solution without complementary investment in broader adaptation and resilience-building efforts. As the impacts of climate change grow, premiums will rise until the risks become uninsurable. The only solution to this is for Governments to address the underlying causes of climate change by reducing carbon emissions.

Governments need to design parametric insurance products to address spatial basis risk. In doing so, they should be aware that:

- Methodologies and data need to be adapted to local conditions. This could involve, for instance, using historical data collected from gridded weather stations to predefine thresholds based on local climatic conditions.
- International donors could focus their efforts on improving data availability and monitoring to support the rollout of effective parametric insurance solutions.
- When structuring parametric insurance products, subnational governments should use structured payout functions, including a minimum universal cash-assistance tier that is triggered at a relatively low threshold. This will help build public trust in insurance solutions.

"As the impacts of climate change grow, premiums will rise until the risks become uninsurable."

Photo: Touann Gatouillat Vergos on Unsplash

Parametric insurance has several co-benefits in emerging economies. These include:

- Financial inclusion and social protection for populations that may have been excluded from formal systems. By opening or reactivating bank accounts, the SEWA pilot covered 37,000 participants who did not have bank accounts or who had only dormant accounts. This brought them into the formal financial system.
- The extension of insurance coverage to people such as gig workers, migrant workers and street vendors, who are typically beyond the reach of traditional insurance products. Parametric insurance's strengths in rapid disbursement and minimal documentation requirements make it well suited to this task.

Next steps: leverage political momentum for insurance innovation

The National Disaster Management Authority is currently testing the feasibility of four interventions to close India's insurance protection gap. These are: a national insurance scheme for disaster-related deaths; an effort to synchronise disaster relief assistance with crop insurance; a risk pool for infrastructure protection and recovery; and an initiative to provide access to international reinsurance for outlier hazard events (Ministry of Home Affairs, 2024). The case studies discussed above demonstrate how State Governments can support these efforts by establishing subnational parametric insurance schemes.

At the same time, IRDAI has enacted reforms broadly designed to promote innovation and attract international finance for the development of India's insurance market. The Regulatory Sandbox Regulations 2025 seek to facilitate innovation in the insurance sector by creating a testing ground for new business models, processes and applications.

Nagaland's adoption of subnational parametric insurance and these new regulations provides an opportunity to scale up and innovate on parametric insurance models, including SEWA's pilots. Linking the success of parametric insurance pilots with long-term resilience-building efforts at the subnational level could help these schemes scale up while reducing the spatial basis risk associated with earlier initiatives. This would help reduce India's natural-catastrophe insurance protection gap as the country deals with the growing impacts of climate change.

"Parametric insurance has several co-benefits in emerging economies."

Photo: Dibakar Roy on Unsplash

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Authors' declaration
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Authors' declaration of AI use
The authors declare that no generative AI or AI-assisted tools were used in the research, analysis or preparation of this publication, beyond those used to check language usage.

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