JANUARY 2026

Disaster Risk Financing in Real Time

Ghana Case Study

By Noam Unger and Madeleine McLean

Introduction

The West African country of Ghana—population approximately 34 million—is facing compounding challenges related to climate change. The resiliency of Ghana's economy, the stability of its infrastructure, and the lives and livelihoods of its citizens are increasingly at risk from floods, droughts, wildfires, and pests. Approximately **40 percent** of Ghana's economy is agrarian, and the **majority** of Ghanaians operate in the informal sector; as a result, extreme weather events pose a significant risk to the country's economic growth. In urban areas, where much of the infrastructure is uninsured, flooding has destroyed millions of dollars of property with little financial support to rebuild.

In Accra, Ghana's capital and largest city, floods have proven fatal on several occasions in the past decade: The deadliest occurred in May 2015, killing over 200 people and destroying millions of dollars' worth of infrastructure. In 2023, due to heavy rainfall and the intentional release of water from the Akosombo Dam (a common technique known as "spillage"), 100 communities and over **26,000 people** were displaced. The government gave warnings and designated "safe haven" locations prior to the spillage, but a lack of trust, literacy, and coordination caused many not to seek shelter in advance. Most recently, in May 2025, **five people** were killed during intense rainfall in Greater Accra's Ga East and Adenta municipalities.

While flooding has long been accepted as a threat, drought in Ghana has proven trickier to identify—until recently. From mid-2015 to early-2016, Ghana experienced a prolonged El Niño-driven drought that cut cereal production by approximately **13 percent** (compared to 2014) and left the Akosombo reservoir below its minimum operating level for power generation, triggering **159 days** of nationwide blackouts. From June to August 2024, an extended dry spell across eight northern and central regions affected **871,000 hectares** of crops, devastating up to 90 percent of maize and rice yields in some

CSIS | CENTER FOR STRATEGIC & INTERNATIONAL STUDIES

areas and impacting more than 1 million people. While it is easy in retrospect to see the impact of drought in Ghana, the slow onset of the disaster—paired with limited tracking data—has meant that few experts could even agree that these droughts were present as they were developing, let alone prepare for future ones.

The Ghanaian response to climatic events has been sporadic, slow, and sometimes nonexistent. Recognizing the growing impacts of climate change and the increased importance of preparation for climatic events, the government has undertaken several steps in recent years to secure prearranged financing for such disasters. This has taken the form of sovereign and sub-sovereign parametric insurance products, as well as micro-insurance solutions implemented through community-led product development.

In May 2025, one week after the flooding in Accra that killed five, the authors of this paper traveled to the capital city to meet with government, private sector, and civil society organizations to discuss the innovative financing mechanisms that Ghana has in place, and is trying to create, to derisk its disaster response in the face of mounting climate risks. There were two specific areas of discussion:

- The sovereign parametric drought insurance policy provided by the African Risk Capacity (ARC), developed with technical assistance from the Global Shield Against Climate Risks, and purchased by Ghana in 2024 with financial support from the German government through KfW.
- Two sub-sovereign parametric urban flood risk insurance solutions for the Greater Accra Metropolitan Area, developed in partnership with the Tripartite Initiative and for which the procurement process began in September 2025, following approval from the Ministry of Finance.

As international foreign aid budgets shrink, innovative financing mechanisms such as parametric insurance solutions have the potential to unlock additional rapid funding for disaster response, encourage investment through public-private partnerships, and strengthen economic development. In practice, these efforts have faced challenges, including political disruption, the Covid-19 pandemic, and popular perceptions that catastrophes are uninsurable "acts of God."

Creating an Appetite for Insurance: The Key Players

Insurance in Ghana is not new, but the sector is currently dominated by traditional forms and has primarily focused on the formal economy. The country has taken several steps to enable insurance penetration, including passing the **2021 Insurance Act** and creating the **Agricultural Insurance Fund**, which provides insurance coverage to farmers with premium support and subsidies from the government, insurance companies, and international donors. Despite these efforts, insurance penetration remains low, with only an estimated **30 percent** of the population having access to forms other than life and **health**. The unbanked and informal sectors have little to no access, and there are no travel insurance products to protect those who transport their goods from one place to another. The insurance industry itself is underdeveloped, and few outside the sector know how it works. Literacy remains an issue, further limiting the ability of farmers to benefit from protection. In addition, there is a lack of trust caused by several factors: corruption scandals, limited transparency in payout amounts and timing, and the industry's habit of raising rates during hard times.

As the government of Ghana and international organizations work to close the insurance gap through innovative parametric insurance schemes, several key players have been shaping the conversation. Within the Ghanaian government, the National Disaster Management Agency (NADMO) and the National Insurance Commission (NIC) have led these efforts, with past support from the president and the Ministry of Finance. **NADMO**, with a mandate to strengthen Ghana's disaster prevention and response, oversees the country's risk reduction and climate risk management portfolios. **NIC**, established through the 1989 Insurance Law and modernized through the 2021 Insurance Act, serves as the government's insurance regulatory body. NIC's efforts also focus on creating an enabling environment for micro and inclusive insurance products, with the aim of increasing the diversification and penetration of insurance products around the country. Both agencies have been integral to the sovereign drought parametric product and products related to the Greater Accra flood.

Through the **Global Shield Against Climate Risks**, the Climate Vulnerable Forum (CVF), the UN Development Programme (UNDP), and the **Insurance Development Forum** (IDF), the government of Ghana has received technical and financial assistance as they have worked to strengthen the enabling environment for insurance.

The Global Shield—a joint G7 and Vulnerable 20 (V20) initiative spearheaded by the German government during its 2022 G7 presidency—evolved from the InsuResilience Secretariat's knowledge and convening platform to take on a more practical implementation focus. Ghana partnered with the Global Shield in mid-2023 to develop and purchase the sovereign drought insurance policy.

The UNDP created an insurance-specific role that is now present in 20 country offices—11 of which are in Africa. Through this function, the UNDP supports both inclusive insurance market development and sovereign disaster risk financing. As part of the inclusive insurance interventions, the program works to increase financial resilience across the formal and informal sectors through tailored technical assistance, advisory services, policy diagnostics, and implementation support.

In addition, Ghana has benefited from the technical expertise provided by the IDF, a public-private partnership of insurance leaders, multilateral organizations, and governments with a mandate to leverage insurance as a tool to close the global protection gap. Drawing upon the technical expertise of two of its members, Allianz and Swiss Re, the IDF assisted in the design of the Greater Accra flood products through the Tripartite Initiative with Germany's Federal Ministry for Economic Cooperation and Development (BMZ) and UNDP.

Through collaboration, the different ministries, agencies, and international organizations have helped to shape Ghana's insurance approach. The V20's Climate Vulnerable Forum has also played an educational role, helping shape the country's insurance journey and providing a throughline across the development of both the sovereign parametric drought insurance policy and the Greater Accra flood products. Similarly, the German government has been integral to both insurance products through its roles with the Global Shield and the Tripartite Initiative, as well as by providing premium support for the drought product and pledging support for the flood product once the procurement process is complete. At the regional level, the UNDP program officers attend biweekly working group meetings to share best practices, challenges, and ways to better incorporate community viewpoints into the insurance development process.

At the Sovereign Level: Ghana's Sovereign Parametric Drought Product

In July 2024, Ghana purchased its first sovereign parametric drought insurance policy through ARC, with premium support financed by KfW on behalf of the Global Shield Solutions Platform and BMZ.

THE PROCESS

Following the Global Shield's creation in 2022, its leaders were wary of pitfalls that could render it just another initiative announced at a COP without tangible follow-through. That led to consultations with the V20 and its member base in search of viable participants. Ghana was one of the first V20 members to show interest, mainly at the political level, and became the first country to begin the Global Shield's In-Country Process. During the process, the Ministry of Finance, with support from the Global Shield Secretariat, organized two workshops, engaged stakeholders, and conducted an in-depth analysis of the country's financial protection gap, all of which culminated in the submission of a "Request for Support" by Ghana to the Global Shield at COP28. NADMO and NIC were integral in shaping the process and providing technical expertise; in addition, NADMO was designated as the fund distributor in the final implementation plan that was required upon purchase of the product. To help bridge the gap between political will and technical capabilities, the V20's Climate Vulnerable Forum supported a liaison officer to work with the Ghanaian government throughout the Global Shield process.

The plans stemming from the In-Country Process were shared with the Global Shield's coordinating hub and its financing structure in order to identify existing programs that could support Ghana, as well as to connect the country with a financing vehicle to take on the risk.

After two years of preparation, Ghana purchased its first sovereign parametric drought insurance policy in August 2024, covering the 2024 dry season (November–March). Through the policy, if specific measured drought conditions are met, they would trigger a payout to the government of Ghana to fund its disaster response. ARC provided the insurance, and the initial $1 million premium was paid for by Germany's KfW.

The one-year policy was designed with the expectation that Global Shield—through the German government—would provide premium support for a total of three years. Due to Ghana's status as a middle-income country, it will receive support for two years before it is expected to begin paying an increasing share of its own premium costs if it wishes to continue to purchase the product through ARC. This has caused concerns, since Ghana may not be politically willing to wholly support the premium payments. In the time between the purchase of the drought product, the first triggering of policy, and receiving the first payout from ARC, President John Mahama was sworn in on January 7, 2025, to serve his second (nonconsecutive) term in office; this political transition has slowed the process and necessitated a relearning period to account for staff turnover.

THE PAYOUT

As of September 2025, Ghana is the only country to have received a payout from an insurance product supported by Global Shield. The policy's triggers and payout amounts were measured, per design, by ARC's Africa RiskView Model using a combination of rainfall-based agricultural drought models and vulnerable population data. The triggers for drought insurance payouts were met in Ghana's northern regions in December 2024, and the government received its first payout ($960,202) in February 2025. In

April 2025, the government received a second payout, this time totaling $1,927,334, for the drought that occurred further south.

> *As of September 2025, Ghana is the only country to have received a payout from an insurance product supported by Global Shield.*

Once the funds were received by the Ghanaian Ministry of Finance, they were expected to be released to NADMO for disbursal within a fixed term. As outlined in the final implementation plan, these funds were to be used to cover food and seed costs, salaries of some government employees, and educational workshops to teach farmers about resilient techniques and to provide local NGOs with the technical knowledge to explain, distribute, and capitalize on future insurance products. Even if those impacted would not see direct prorated payouts of the approximately $3 million in funds, the money was to be used to strengthen the country's resilience efforts.

THE LAST HURDLE

From the outside, this process appears to be working; announcements from the Global Shield and ARC point to the successful release of funds after the drought measurements surpassed the pre-agreed triggers in the northern and central regions. Indeed, the fact that the quick payouts nearly tripled the premium speaks to the important impact that insurance can have, as well as the ability of governments to preplan to unlock capital for significant disasters. However, throughout the duration of the authors' trip, during meetings with government officials, private sector representatives, and civil society advocates, one constant frustration surfaced: The money, despite being received by Ghana's Ministry of Finance in January and April, had not yet moved from the ministry's coffers to NADMO for disbursement. A variety of reasons were given as to why the process seemed to have stumbled at the last hurdle, including the necessary resocialization that accompanies the transition of policy decisionmakers from one administration to the next, hesitancy on the part of President Mahama's administration to support the policies of the previous president, and even suspicion of inherent political corruption.

While it was during President Mahama's previous term in office that parametric drought insurance was first raised as a potential de-risking tool, the changeover in January 2025 necessitated relearning efforts across the government. In addition, given the current administration's distrust of the previous administration's policies, the civil service has been significantly reshuffled, meaning that much of the institutional knowledge that had been built up throughout the product's design and implementation process has been lost or at least rendered harder to access. As key architects of the insurance approach—including technical specialists from CVF, NADMO, and NIC—worked to brief the new leaders on the value of the effort and the importance of acting on the implementation plans in a timely manner, the money remained with the Ministry of Finance.

In addition, because there was limited buy-in or awareness from people outside of the government, particularly across civil society, local NGOs, and implementing partners, there had been less focused pressure on the government to transfer the funds to NADMO for disbursement. While the civil society organizations spoken to were aware that this product had been purchased, they had not seen any press

about the payouts. One NGO director even remarked that he was only aware that Ghana had purchased a sovereign drought product last year because his father-in-law had worked on that set of issues under the previous administration. At the beginning of the process, the Global Shield hosted working groups with stakeholders to discuss the policy, but once the in-country process had concluded, these conversations stopped, and the lack of media attention compounded the lack of public awareness.

The fact that the payout went into the finance ministry's general fund instead of a specific account creates an opportunity for the payout to be used not as intended, or at least for the perception of such. Representatives from civil society reflected almost passively that the money was unlikely to be used as intended, and even if it was, it was needed months ago. Agriculture is cyclical, and the money may have missed the window in which it could have been used to purchase seeds for the next growing cycle. By creating specific accounts to hold, monitor, and spend the payout funds, the ministry could streamline the disbursement process, rely less on institutional knowledge, and mitigate accusations of corruption. This would also help to decouple the payout from politics, as the accounts would be preset, thereby limiting the disruption of future political transitions.

Despite these challenges, there remains a lot of energy and hope that the product will be a success. While the authors were in Accra, representatives from NADMO, NIC, and the CVF were meeting with (or developing plans to meet with) high-level Ministry of Finance officials to discuss the payout funds. It may not be that the funding will be routed to those directly impacted by the drought in the past year, but that does not mean the money cannot, or will not, go toward other adaptation-related necessities, since droughts are becoming more common in Ghana. Through these efforts, the funds were finally released to NADMO at the end of September 2025.

At the Regional Level: The Greater Accra Metropolitan Area Parametric Flood Risk Insurance Products

To address the risk of flooding in Ghana, the IDF, UNDP, and BMZ, with support from the InsurResilience Solutions Fund (through the Tripartite Initiative) launched a project in 2022 to develop urban flood insurance products for the Greater Accra Metropolitan Area. The insurance solutions were formulated alongside a **Flood Contingency Plan for the Greater Accra Metropolitan Area**, which, after two years of product development, was sent to the Ministry of Finance in August 2025 for approval to go to market and be picked up by a consortium of insurance companies.

Designed to be a test case for the other regions, the products use satellite-based flood detection by the Finnish microsatellite manufacturer **ICEYE Ltd.**, along with radar measurements, to determine if and when a flood event occurs. The products cover the metropolitan, municipal, and district assemblies that make up Greater Accra, with an emphasis on providing support to the most vulnerable communities.

As specified in the design, within 10 days of the flood reaching specified triggers, insurers are obligated to release the payout funds to the Ministry of Finance; the Ministry of Finance, in turn, is then obligated to release the funds to NADMO within three days. As outlined in the Flood Contingency Plan, NADMO will use the funds to provide food and cash assistance, support the distribution of aid, and rebuild key infrastructure.

Once the products are released onto the market, both local and international insurers will have the opportunity to bid for the offer. While the products were designed by IDF members Allianz and Swiss Re, it is not guaranteed that either company will take on the policies. Because of the way they were designed, any international insurer that wishes to bid for the products must partner with a local insurance company. As part of the Global Shield support package, BMZ, through the InsuResilience Solutions Fund, has pledged $2 million in premium support over the next three years, committing to cover 75 percent of the premium in year one, 50 percent in year two, and 25 percent in year three.

When this paper's authors met with people knowledgeable about the products in Accra in May 2025, they expressed hope that the Minister of Finance would review the policies within the next week; however, the policies were not released until the end of September 2025. As with the sovereign drought products, the presidential transition in January 2025 has greatly slowed the flood product process; in fact, despite beginning after Ghana, Nigeria has seen a similar product in Lagos progress farther toward deployment thanks to political continuity. Given that Ghana's rainy season lasts from March to August, the policy ideally would have been put into effect before the rainy months. The government of Ghana has taken steps to institutionalize the proposed insurance solutions by integrating the premium into the national budget for 2026 and is actively working to mobilize additional resource to support its implementation. It is expected that the products will be placed on the market in 2026 through a competitve tender process, enabling the government to strengthen its financial preparedness.

At the Micro Level: Looking Beyond the "Bigger Fish"

Beyond the sovereign and sub-sovereign district-level insurance products, micro-insurance can provide additional opportunities for people who otherwise would not be able to afford or access products that protect their livelihoods. The NIC is working to build individual resilience through community-level insurance and making policies more accessible through innovative premium financing. Products that incorporate community pricing—in which each member of a community pays a small portion to support a larger policy covering everyone—can be more inclusive than individual insurance policies, reduce the risk of fraud from both the insurer and the insured, and function more efficiently. These products take the principle of sovereign insurance and shrink it to the level of the community. The NIC is also experimenting with innovative premium financing, including the use of phone credits as payment, to enable more people to purchase policies.

> *Beyond the sovereign and sub-sovereign district-level insurance products, micro-insurance can provide additional opportunities for people who otherwise would not be able to afford or access products that protect their livelihoods.*

In addition to helping to develop the flood product for Greater Accra, the UNDP Insurace and Risk Finance Facility has partnered with NIC to create an inclusive insurance certification program, host inclusive insurance awareness campaigns, and launch an **Inclusive Insurance Innovation Challenge** to "discover, develop and scale bold ideas that can transform Ghana's insurance landscape for the

better," further strengthening the role that community-led innovation plays within Ghana's insurance sector. Not only could this challenge lead to improvement in the sector itself, but it could also work to educate the community on the role and importance of insurance for economic growth and stability.

However, micro-insurance in Ghana faces several challenges. The country's current regulatory framework is tiered and oriented toward institutional insurance licenses, making it difficult for micro-insurance products to be developed, viable, and beneficial. Unlike in Kenya, where micro-insurance is codified into law, Ghanaian micro-insurance must instead be an "add-on" to a larger product, a setup that ultimately undermines its value.

Learning from Ghana's Experience: Recommendations for Developing Countries

Through both the Global Shield and Tripartite Initiative processes, the government of Ghana has built up technical expertise to design, develop, and implement insurance on the national and sub-national levels and has begun to understand the potential of insurance to unlock additional and intentionally rapid capital. Yet these processes have faced, and continue to face, roadblocks. Developing countries looking to build their own resilience through parametric insurance can learn from Ghana's successes and challenges. Going forward, this paper offers several overarching recommendations that could streamline these insurance processes, augment transparency, and further cement insurance as a tool to build resilience against the increasing frequency of extreme weather events:

1. **Develop country-level disaster risk reduction and financing strategies:** Designing and implementing disaster risk reduction (DRR) and disaster risk financing (DRF) plans into national strategies will lead to proactive, efficient, and smarter approaches to mitigating climate risks. In Ghana, there is no country-level strategy to address the compounding risks of weather; instead, it is the individual districts that design and implement these strategies. Currently, DRR is codified in each district's Medium-Term District Plan and Annual Action Plan, and a specific percentage of districts' budgets is earmarked for DRF. NADMO is working with a UNDP-funded consultant to develop both DRR and DRF strategies at the national level. Building out specific national DRR and DRF strategies that include accountability structures, advocacy programs, and responsibility designations will work to streamline disaster response, remove inefficiencies, and enhance coordination across agencies.
2. **Educate local organizations on the role of insurance:** For insurance to work, it is imperative that there is buy-in across the political, civil society, and private sectors, at both local and national levels. This builds accountability, decreases the risk of fraud, and—as beneficiaries gain a greater understanding of the role that insurance can play—encourages the continued use of insurance. At the beginning of the Global Shield process, the government did include civil society and NGOs in a series of workshops to better understand the enabling environment for insurance and where the risk was, but this effort was limited, and it did not continue past the initial in-country process. It was smart for NADMO to include a funding line for educational efforts in the final implementation plan, and there are plans to engage local organizations not only to help distribute the assistance but also to teach them about insurance going forward. A broader range of stakeholders in government and across affected communities needs a more nuanced set of expectations. Parametric insurance is not a silver bullet: If a damaging event does not meet the specific pre-agreed triggers, such as wind speed or groundwater levels, the

policyholder will not see a payout. However, parametric insurance does provide an additional layer of catastrophe protection when such events meet the triggers, unlocking funding for the response that is intended to arrive rapidly. Through dedicated training and capacity-building workshops, awareness campaigns, and continued discussions, the role of insurance can be better understood at all levels of society.

3. **Build accountability and transparency in payout procedures:** One of the main challenges that Ghana has faced is the release of funds from the Ministry of Finance to NADMO. Once a payout is received, it is the responsibility of the government to see the final implementation plan through. If the government does not do so and does not receive pressure from civil society and others to use the funding as designed, there is a risk that the payout will be used as, or at least perceived as, a slush fund. As such, building accountability and transparency through awareness efforts and specified funding guidelines is important to ensure that the product is used as intended. In addition, the creation of financial accounts specifically to house payout funds could lead to increased accountability and make it more challenging for the money to be delayed or diverted.
4. **Strengthen data infrastructure:** Designing parametric insurance products requires sophisticated, accurate, and accessible data to model risk, define triggers, and assess payout amounts. The parametric risk insurance products in Ghana initially faced design challenges due to inconsistent flood data and limited access to satellite imagery—highlighting the importance of investing in robust meteorological, hydrological, and geospatial data systems. Developing countries looking to scale up innovative insurance solutions should prioritize building partnerships with national and international weather data agencies to strengthen data collection, sharing, and analysis practices. Strengthening data infrastructure improves the accuracy of risk models; this enables better product development, which then builds stakeholder trust in these mechanisms.
5. **Foster regional collaboration and risk-pooling mechanisms:** Regional risk pools such as ARC and international initiatives like the UNDP Insurance and Risk Finance Facility and Global Shield provide technical assistance to strengthen insurance solutions and build out the architecture needed to support the scaling up of these solutions. Through ARC, African countries gain access to members' expertise and can benefit from lessons learned in previous insurance solutions, as well as from pooled financial resources that lower premium costs and reduce risk. Ghana's partnership with Global Shield and ARC has not only led to the implementation of the parametric drought insurance product but has also facilitated educational opportunities for stakeholders to raise awareness of the potential impact of insurance solutions. Developing countries can benefit from similar partnerships to accelerate their DRR capabilities and unlock additional pools of funding.

Conclusion

The world will continue to face climate-related challenges; the question is no longer if catastrophic events will occur, but how prepared countries are to respond. In the case of Ghana, critics of the sovereign drought product have argued that the money should be spent elsewhere, instead of being put toward a hypothetical future event. However, the almost immediate payout—triple that of the premium—

illustrates how parametric insurance has the potential to unlock fast funding for disaster recovery when it is needed most. The benefits of parametric insurance include its efficiency and transparency, but as Ghana has shown, governance is key, and administrative transitions can cause delays that carve away at benefits. It is in countries' strategic interest to preplan for natural hazards and to find ways to unlock greater amounts of timely capital to assist in post-disaster recovery. As countries look for innovative ways to close the gap between the cost of disasters and the funding available to respond to them, insurance can be a useful tool in their toolbox. ■

Noam Unger *is vice president of the Global Development Department and the director of the Sustainable Development and Resilience Initiative at the Center for Strategic and International Studies (CSIS) in Washington, D.C.* ***Madeleine McLean*** *is a program manager and research associate with the Sustainable Development and Resilience Initiative and the Project on Prosperity and Development at CSIS.*

This paper is made possible through the generous support of the Trafigura Foundation.

This report is produced by the Center for Strategic and International Studies (CSIS), a private, tax-exempt institution focusing on international public policy issues. Its research is nonpartisan and nonproprietary. CSIS does not take specific policy positions. Accordingly, all views, positions, and conclusions expressed in this publication should be understood to be solely those of the author(s).

© 2026 by the Center for Strategic and International Studies. All rights reserved.