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Developing Meso-Level Disaster Risk Management Approaches for Climate Risks in Ghana

Flood risk management and transfer

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Allianz Re



The Greater Accra Metropolitan Area (GAMA) is Ghana's economic hub and it is exposed to floods almost every year. Given that the impact of flooding is often catastrophic, there is an urgent need to enhance GAMA's resilience and move to a proactive disaster risk management approach. The Strategic Alliance between GIZ and Allianz Re has therefore empowered three municipalities in GAMA to adopt an **Integrated Disaster Risk Management (IDRM)** approach with the aim of increasing urban resilience. This encompasses the design of a flood risk-transfer solution at the sub-national level for publicly managed assets like schools and markets.

Country context

Although GAMA occupies less than 1.4% of Ghana's total land mass, it is home to more than 16% of Ghana's population and generates 25% of the national GDP. Cities like GAMA are becoming increasingly vulnerable to the impacts of extreme weather events. This is due to expansion of sealed-off surfaces, unplanned urbanization, weak infrastructure, inefficient systems for collection and disposal of waste, and a changing climate with more intense rainfall events. In addition, GAMA's reactive approach to shocks and the lack of critical instruments, such as contingency plans, contingency budget allocations and early warning systems, result in insufficient preparation and delays in rebuilding damaged infrastructure. The economic effects of such delays are critical. The severe floods of 2015 were a wake-up call for many stakeholders. 52,622 people were affected, with 150 deaths recorded. Damage to infrastructure totalled USD 55 million, and rebuilding costs were estimated at USD 105 million. Since then, a range of different measures have been rolled out to improve flood risk management. However, these activities were solely focused on the sovereign level and did not empower the capacities of municipalities to implement a proactive approach themselves. In addition, integration of risk transfer as a component of an IDRM approach had not yet been considered.

Project description

While DRM and standalone risk-transfer solutions have been significantly advanced at the sovereign and partially at the household levels, the sub-sovereign level has been neglected to date. In addition, integration of risk transfer as a component of an IDRM approach had not yet been considered in GAMA. To be innovative in this regard, the project applied an IDRM approach at the munic-

ipal level to increase the resilience of three GAMA municipalities to flood risks by applying a continuous process of risk analysis, reduction and transfer, preparedness, and response measures.

The project collected missing data, modelled flood hazards, and conducted extensive risk assessments based on the Economics of Climate Adaptation (ECA) methodology. The data collected on assets and their flood exposure facilitated completion of public-asset registers and creation of individual risk profiles for publicly managed assets in flood-prone areas. By conducting cost-benefit analyses for individual assets, cities gained a solid basis for investment decisions regarding cost-effective, eco-friendly adaptation measures.

Since these risk assessment and risk reduction activities alone would not have been sufficient to holistically improve resilience, flood risk preparedness measures were identified and implemented at local level. These encompassed larger-scale efforts, such as DRM and climate change literacy, waste management, contingency planning (including design, simulation, monitoring) and early warning. The "My Flood Risk Accra" app was developed based on previous efforts conducted by the World Bank project **GARID** to enable risk-informed decision-making and serve as an early-warning channel for citizens and authorities. The project activities were accompanied by comprehensive Urban Resilience trainings that enabled local authorities to establish a holistic IDRM strategy, including risk transfer as a key element.

Allianz Re used the extensive activities involved in data collection, risk modelling and risk reduction to design an indemnity-based flood cover insurance product for publicly managed assets in line with preferences of the municipalities. This included a 20% fast pay-out for response activities to help the households most badly affected. Since this tailor-made insurance



GAMA regularly experiences heavy floods, destroying infrastructure and severely affecting people

Urban resilience trainings for various stakeholders increased local IDRM capacities significantly

product is the first of its kind for public assets in Ghana, GIZ currently supports the regulator in facilitating a sandbox approach for final rollout in the market. Such a sandbox approach provides a regulatory framework that allows to test innovative financial products in a controlled environment for a limited duration.

Challenges and lessons learned in 2021

Risk awareness and understanding of available options for adaptation and an IDRM were limited among stakeholders. This included limited knowledge on hazards, possible adaptation measures and their impact, how to conduct exposure modelling or design risk-transfer solutions, and how to access the required financial resources. Capacity building through comprehensive training sessions, e.g. on urban resilience, was crucial for addressing these challenges. Moreover, it is vital to carry out contingency planning as one of the first activities to identify early on “who” needs “what” and “when” and to conduct an affordability analysis, e.g. using the recently developed budget assessment tool.

Last but not least, cooperation between public (GIZ) and private (Allianz RE) actors was key for combining different areas of expertise in order to achieve a sustainable solution.

“We will continue to apply the knowledge acquired throughout this period of success. The municipality has benefited a great deal from the project, especially in terms of capacity building. The [municipal] assembly will further engage with the insurance company to continue with the risk-transfer component.”

GA West municipality

Hazards covered
Flood

Product/Solution
Early warning, development of a DRF strategy, sub-sovereign risk transfer

Topic/theme
Anticipation, resilient infrastructure, risk data and information, risk finance, climate and disaster risk management

Objective of the project
Preparing the ground for implementing risk-transfer solutions for public assets within an integrated flood risk management approach for three municipalities in the Greater Accra Metropolitan Area, Ghana.

Impact and (envisaged) number of beneficiaries

- Improved understanding of risk financing and transfer among local officials and key stakeholders
- Increased municipalities’ range of DRM instruments for 800+ public assets against flood
- Design of an insurance product for public assets of three municipalities that will be piloted in a sandbox approach

Involved organizations/ parties in the project
Project partners: GIZ, Allianz Re
Local partners: Administrations of GA East, GA West and AMA, the Ghana Meteorological Agency (GMet) and the National Disaster Management Organization (NADMO)

Project duration
01.01.2018 – 30.11.2021

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Anticipation	Relief	Recovery	Reconstruction

For more information on the project, please refer to the [Roadmap for Integrated Climate Risk Management in Ghana](#).

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