Extending coverage to the most vulnerable by integrating risk pooling schemes and microinsurance products

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Introduction

Historically, floods have been the most common natural disaster in South Africa (Zuma, 2012). Climate change is expected to make flooding events more common and intense in the region. The socio-economic impacts of flooding events have been particularly severe in the Western Cape of South Africa (Abiodum *et al.*, 2015) with costs estimated to be US $ 66.0 million annually for municipalities (WRI, 2017). Cities and local municipalities in developing countries seldom possess the financial resources to manage the costs of floods. Traditionally, South African municipalities have relied on financial transfers from national government and their own budgets to manage the costs from floods; however, increasing costs in the future may make this unrealistic.

There is a growing demand for insurance products by municipalities as these products can assist municipalities in reducing their financial risk and exposure in response to floods. Risk pooling is a type of insurance scheme that can be used for this purpose. Despite providing risk pooling participants with funds when a disaster occurs, the payout process can be time-consuming and slow. As is the case with internal municipal budgets and payouts from risk pools, finance received after a disaster is mostly used for critical infrastructure reconstruction (e.g. road, bridge and ICT rebuild), payment of salaries and debt management of the municipality. Therefore, there is often less financial assistance available for low-income individuals that are severely affected by flooding events.

To ensure that vulnerable communities are considered, an additional microinsurance scheme could be integrated within risk pools. Microinsurance is similar to traditional insurance, however, the products are targeted at low-income individuals who have less savings. Therefore, premium costs are usually lower, and coverage is provided for basic assets. Despite lower costs of microinsurance premiums, costs may still be too exorbitant for poorer individuals. A joint scheme may allow for risk pooling premiums paid by the municipality to subsidize the cost of microinsurance premiums. However, this may also place the solvency of the risk pool.

Research Aims and Objectives:

The primary aim of this research was to outline how microinsurance could be used within risk pool structures to extend coverage to the most vulnerable individuals affected by flooding events in the Western Cape, South Africa.

The specific objectives assessed include:

(1.) To determine whether there is a need for risk pooling to possess microinsurance schemes.
(2.) To evaluate how vulnerable groups support themselves financially, post-disaster.
(3.) To determine how the functionality of a risk pool is changed when complementary microinsurance schemes are implemented that is an understanding of how the solvency and financial stability of the risk pool changes if a microinsurance scheme is included.

Methodology:

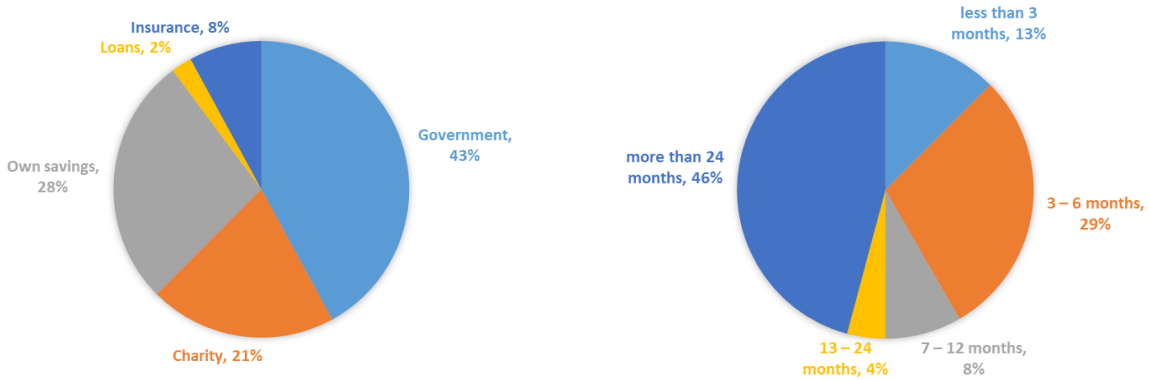
A mixed methods approach was used for the research conducted. Surveys in floodprone communities, interviews with key disaster risk managers in the Western Cape Government as well as a stakeholder engagement workshop were undertaken to determine the extent to which a microinsurance and risk pooling facility would be filling a distinct financing gap. A questionnaire survey was also disseminated to the residents of the Powertown community in the Western Cape, South Africa, to understand the resilience initiatives used by individuals to cope with flooding events and the ways in which these initiatives are financed. Lastly, a quantitative model was developed to determine: (a.) whether a risk pool facility would stay financial stable in the long term while subsidizing microinsurance premiums (b.) the percentage of risk pool premiums that would be needed to maintain solvency, and (c.) the initial pool capitalization needed to maintain stability in the long term.

Results:

The most critical factor that determines the solvency estimations and premium costs in the long term is the future costs of flooding events. Under the high climate change scenario (RCP 8.5), without increases

in the cost of insurance, future flood costs result in the risk pool being insolvent in 2042 where losses exceed risk pool reserves. Under a medium climate change scenario (RCP 4.5), this extends to 2054. If up-pricing of insurance premiums also include an increase for "climate risk" then the solvency of the risk pool may be maintained for an additional 6 years. It is expected that the higher economic growth in combination with a medium climate change scenario, would allow for the risk pool to be stable for the longest – In reality, this is perhaps the most unlikely scenario. According to the premium analysis, depending on the climate scenario, premiums will be 5 – 10% more expensive on average. Therefore, in a developing country context, a risk pool would not viable in the long term without donor support.

Based on the survey conducted with individuals in flood risk prone communities and disaster risk managers and officials at the stakeholder engagement, the development of a risk pool was addressing a distinct financing gap and was needed in comparison to other disaster risk financing strategies. Key stakeholders including vulnerable communities were critical to ensure that theoretical aspects of risk pools were reflective of reality. Some of the key findings demonstrate the government is still responsible for the payment of damages which makes a self-insurance risk pool viable (Figure 1 (a)). Furthermore, 46% of individuals have not recovered from financial losses incurred 24 months after a disaster (Figure 1(b.)).



a *b*

Figure 1: (a.) Financial sources of resilience finance used post-disaster; and, (b.) recovery timelines for individuals affected by flooding after relief aid has been delivered.

From the modelling undertaken, 3 – 6 % of the risk pooling premiums allocated to microinsurance premium subsidization will ensure that stability of the risk pool is maintained under a moderate climate change scenario. There is uncertainty in the modelling process owing to the difficulty in projecting future costs of flooding events in the Western Cape. In conclusion, microinsurance and risk pools may be viable

in the same adaptation finance framework should there be sufficient initial capitalization; future climate change is moderate; and, donor support is garnered for premiums.

Policy Implications

There are several policy implications and recommendations that were identified from the research conducted with the findings being especially useful to public entities interested in developing risk pooling facilities, insurance and reinsurance companies and disaster risk practitioners.

1.) Poorer communities are less financially buffered to the impacts of floods. Therefore, insurance targeted at low-income individuals is necessary to extend coverage to the most vulnerable.
2.) Microinsurance products can be integrated into risk pooling schemes; however, a high degree of subsidization is required, particularly in the developing country context. Total subsidization may be necessary in a South African context as most vulnerable communities have no financial resources to pay for microinsurance premiums.
3.) Microinsurance contract holders must be spatially independent across risk pooling municipalities. If a flood occurs in a risk pooling municipality where all microinsurance policy holders are based, multiple policies would be triggered at the same time. This could impact the solvency of the risk pool resulting the financial reserves being eroded.
4.) Risk pools and microinsurance products will not be viable indefinitely into the future as the risk pool will not be financially stable when flooding events become too frequent and costly. Therefore, these products need to be adopted with proactive climate adaptation and risk reduction.

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