

# The Parametric Panacea

## A next-generation pricing framework for catastrophe insurance

Parametric insurance has proved to be an effective risk transfer mechanism for certain perils in developing countries. It offers flexibility, both in terms of scope of risks and potential outreach. What differentiates a parametric insurance contract from other risk transfer arrangements is that it pays out when certain pre-defined parameters are experienced or recorded. These parameters could be wind speed, the volume of rainfall, temperature, etc. The full loss is not indemnified for the protection buyer.

With various leading insurers and reinsurers in the region engaging in discussions about the potential models to be implemented across the insurance sector in Africa, the industry in the region is on the verge of providing niche and affordable index-based products covering crops, drought and livestock. These changes have been driven by a need for bringing down operational costs and providing financial resilience to uninsured habitats with bespoke risk assessment and guaranteed customer satisfaction.

The protection gap - the difference between economic and insured losses - in natural catastrophe risk has been growing and the difference is not limited to less-developed and developing countries only. As shown by the recent impact of hurricane Harvey in the U.S., it is a global issue. Filling this gap will be one of the biggest challenges for the industry going forward and also one of the most significant opportunities for growth. At the same time, the changing customer behavior and digital disruptions are driving the industry to refine current strategies and operating models.

### Why parametric?

Traditional indemnity insurance approaches have proved inadequate and expensive in providing insurance in scenarios such as earthquakes, drought, storms, and floods. African Insurance Organization's 'Africa Insurance Barometer 2017' found that insurance adoption in the region is low due to the high poverty rate, the absence of robust legal, judicial and regulatory systems, usage of informal types of insurance, and lack of capital and expertise within insurance companies. The market survey also suggests that non-life insurance penetration levels in almost all African countries are lower than the global average of 2.7%, presenting significant opportunities for growth.

Parametric insurance has been around for last three decades, used commonly in the insurance-linked securities (ILS) space and increasingly in public sector and developing markets to deliver quicker payouts to support immediate recovery efforts. However, the approach still lacks enough global penetration mainly due to the absence of a standard costing framework. The combination of digital advancements, digital innovation around climate-smart villages, and economic necessity has now created the optimum platform for building a robust pricing framework. Such a framework should be able to support underwriting needs, meteorological infrastructure (especially in Africa), poor data availability and quality, lack of reinsurance, and in the long term, rising levels of risk as climate change gathers pace.

The new generation of parametric insurance process will look to convert a continuous block process of traditional offerings into a more integrated approach by bringing program design and premium decision within the modeling framework itself to help provide more objective

and optimized client solutions, and still offering all the primary advantages of index based product e.g. speed, certainty, ease of Integration with business plan, and ability to incorporate non-modeled perils and difficult-to-insure risks.

### Traditional indemnity based insurance process:



### Parametric insurance process:

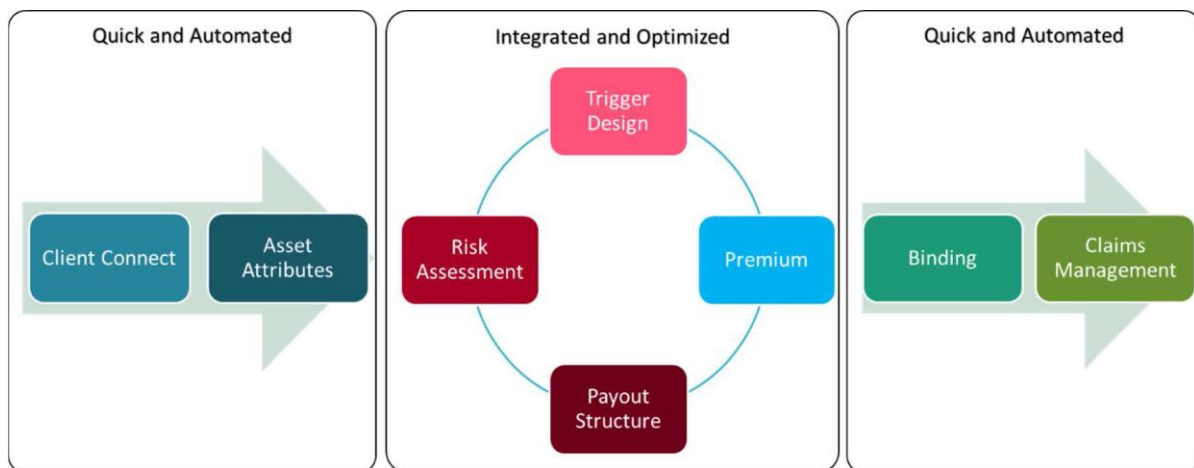


Figure 1 (source: Xceedance): Integrated costing framework for parametric insurance solutions

## Current status of parametric insurance

The list of countries in the implementation phase of pilot parametric insurance programmes has grown rapidly.

### Case Studies:

#### Source: Swiss Re Global Partnerships, August 2016

1. African Risk Capacity - Insuring governments' drought response costs
  - Through its insurance subsidiary ARC Insurance Ltd., it provides African governments with index-based macro drought cover.
  - It addresses potential payouts to affected populations to ensure faster response through African Risk View (ARV) applications. Through its capitalization by DfID and KfW, payouts to date include Niger, Senegal and Mauritania of which Senegal received USD 16.5m
2. Kilimo Salama "Safe Agriculture" in Kenya
  - Agricultural Index Insurance Initiative of UAP Insurance and Syngenta Foundation with Swiss Re providing risk capacity, underwriting expertise, structuring and claims support.
  - Designed for Kenyan farmers (currently 185,000 in both Kenya and Rwanda) to cover perils against extreme drought and excessive rainfall.
  - Policy registration, premium and benefit payments are paperless transactions through the mobile platform - "M-PESA"

### 3. Kenya Livestock Insurance Programme in Kenya

- This is an innovative and scalable insurance solution funded by the government to help pastoralists bring their cattle through severe times of droughts.
- It is not about compensating for the death of livestock, but to protect the camel, cow or goat from the effects of drought.

Parametric insurance is potentially an attractive new line of business for local insurance companies in the African region, which however often require the help of experienced commercial institutions to deploy public insurance programs. Mitigating catastrophic events effectively will require complete synergy between both private and public sector players. Now more than ever, there is a need for greater effort to develop sustainable and scalable local markets for parametric insurance.

### **The role of technology**

Technology is a key enabler in keeping the whole value proposition of parametric insurance intact by accelerating the process lifecycle - from submissions to claims - and improving visibility, all the while employing complex data and methods to achieve that. Parametric insurance contracts are inherently 'if-then' logical functions, and hence it makes a lot of sense to use Block chain-based smart contracts.

The idea of 'decentralized insurance' can be actualized with the use of this next-generation technology. It would not only help reduce transaction costs further and deliver a seamless customer experience and would also empower policyholders in developing countries with immutable smart contracts.

### **Conclusion**

With the benefit of certainty and speed in a parametric cover, comes the risk for policyholders to face losses greater than the specified payment amount in the contract. However, the growth of data analytics and remote sensing technology along with meticulous modeling and higher data availability is helping the industry write more innovative and sophisticated parametric solutions. In turn, minimizing basis risk and increasing the appeal of such products even further. With standardization of parametric framework, onus is shifting from uncertain post event efforts to a better pre-event risk planning and crafting of bespoke solutions covering various modeled/non-modeled risks for a wide range of clients.

*This article has been published jointly by KPMG , RCL and Xceedance subject matter experts. The views and opinions are those of the author's and do not necessarily represent the views and opinions of KPMG Advisory Services Limited.*