REPORT OF THE AFRICAN RISK CAPACITY SPECIALIZED AGENCY OF THE AFRICAN UNION

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African Risk Capacity’s Outbreaks & Epidemics Programme: An African Union Initiative to Public Health Emergencies Preparedness and Early Response Financing

The African Risk Capacity (ARC), is a specialised agency of the African Union (AU), founded in 2012 and tasked with the role of assisting AU Member States improve their capacities to plan, prepare for and respond to extreme weather events and natural disasters, as well as to develop an outbreak and epidemic (O&E) insurance product and systems that enable African governments to protect the lives and livelihoods of populations at risk from such catastrophes. Its objective is to assist AU Member States minimise the risk of loss and damage resulting from such events by providing targeted responses to disasters in a timely, cost-effective, objective and transparent manner.

ARC’s Outbreaks and Epidemics (O&E) programme was born in the wake of the devastating 2014 West African Ebola crisis. The lessons from this West African Ebola outbreak revealed that, in addition to weaknesses in health systems, slow unpredictable funding was a major contributing factor to the inability of affected countries to rapidly respond to the initial outbreak. In its capacity as a specialised agency of the African Union (AU), ARC will be launching an Outbreaks and Epidemics parametric product in 2020 as part of the AU’s response to outbreaks and epidemics. For the last eight years, ARC has been successful in implementing climate and weather risk mitigation programmes for several African countries through disaster risk management efforts and innovative financing solutions.

With the support of the ARC Board, Expert Advisory Panel and Partners, ARC has secured the interest of global, including African Reinsurers and financial market investors to support the product with a capital of with US$ 300 million. The O&E programme comprises of in-country capacity building work on preparedness and contingency planning for outbreaks and a risk transfer parametric product that aims to cover early response costs of an outbreak. The product will provide payouts to the affected country, given an outbreak of a specific pre-agreed size.

During the 2015\(^1\) ARC Conference of Parties, Member States and African Ministers of Finance requested that the ARC Secretariat develop a product to address Africa’s financing and disaster risk management needs to enable early containment of outbreaks. Subsequently, ARC initiated a research and development programme to establish the systems and funds needed to identify, contain and ultimately respond to outbreaks and epidemics. The programme is funded by The Rockefeller Foundation and The Swiss Agency for Development and Cooperation. It was successfully piloted in Guinea and Uganda in partnership with many institutions. ARC has built a partnership comprising of international organisations, donor and aid agencies, technical, academic and capital market players to advise, guide and support the development of the O&E insurance product.

O&E Partnerships & Supporters

Pathogens Covered

The Insurance product focuses on four diseases of epidemic potential: Ebola Virus Disease, Marburg virus Disease, Lassa fever, and Meningococcal meningitis. The corresponding four pathogens can potentially cause outbreaks in 40 AU Member States as shown in the specific disease maps below.

The objective of this product is to support countries to respond faster to such catastrophes. To start, four diseases with widespread coverage and economic impact have been selected. These diseases have proven human and economic costs and have a history of destabilising economies and societies should initial outbreaks be not arrested in a timely, efficient and effective manner. The 2014-2016 Ebola outbreak in West Africa is a case in point. According to the World Bank, this outbreak resulted in over 11,000 deaths in Guinea, Sierra Leone and Liberia, with an estimated economic impact of USD 2.8 billion on the three countries. To date, the ongoing 10th Ebola outbreak in DRC has claimed over 2000 lives since the onset on 1 August 2018, and is proving to have huge social, political, security and economic consequences.

The meningitis belt in Africa covers 26 countries and has an estimated population of approximately 300 million people. The region experiences large epidemic outbreaks in cycles lasting between 8 to 15 years with an average incidence of 1,000 cases per 100,000 population. Lassa fever has an at-risk population estimated to be as high as 59 million, with an annual incidence of illness of three million, in Sierra Leone, Guinea, and Nigeria. Similar to Ebola virus disease, Marburg virus disease (MVD) has a case fatality rate of around 50% and tends to have serious health and socio-economic effects on affected populations.

It has been estimated that initiating an Ebola response to the West African epidemic two months earlier could have averted the fatalities by up to 80% in Sierra Leone and Liberia. It is clear that a lot of factors must come together to link preparedness to finance and response. The O&E product seeks to bring together the key elements for successful outbreak control, and this means ensuring a balance between finance and systems.

**Product characteristics**

The O&E product will be a Catastrophe bond (Cat bond) to be issued by ARC, with beneficiaries being the sovereign African governments during a covered outbreak. A Cat bond is a type of debt issuance that transfers catastrophe risk to investors. The product is likely to trigger using a data index which is based on confirmed reported cumulative cases of infections. The ARC data index will be populated using WHO data, Ministries of health data, outbreak situation reports, or Africa CDC /ARC subnational level data collected during the outbreak.

**Structure of ARC O&E product:**

- Simple transparent trigger based on case numbers reported from credible sources;
- Low case numbers trigger(s) to ensure early intervention with early payout;
- Three-year cover, based on outbreak response cost needs of the country in question;

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• Cat bond is issued by ARC (sponsor) to reinsurers, capital markets and donors (investors) for a premium plus coupons;
• Payout is equal to debt issue amount (principal);
• Losses Occurring During basis of cover: Events occurring in coverage period;
• Single payout per cat bond tranche: each tranche pays 100% of payout in contract when triggered;
• If trigger event occurs and the cat bond pays out, the debt is forgiven;
• Tranches of coverage per country staked at different probability of trigger thresholds;
• Total payout cap is considered for now corresponding to single event peak exposure but covering all four pathogens. Variations to this structure can be introduced.

Product pricing and structuring require a credible stochastic model for disease spread. The chosen vendor is Metabiota. The model utilises multi-state stochastic modelling of population, given disease sparks from different locations. The model is then adjusted based on the country’s preparedness to deal with the outbreak, and finally, it is overlaid by modelling the impact of travel within a country and outside it via ground and air commuting. Modelling incorporates a country’s preparedness to deal with an outbreak which impacts the severity of the outbreak.

5 Year Product O&E Plan and Timeline
The section below describes ARC’s five-year plan for rolling in countries into the programme. The intended deadline for the first issue of the Cat bond and or re-insurance cover is 2021. ARC aims to sign up at between 8 to 20 Countries or more in the first 5 years of operation. These will be signed up to the O&E capacity building programme and to the Catastrophe bond. To initiate the sign-up process, ARC’s technical team will need to engage with more than the 8 targeted countries. The table below provides an example of estimated cost of premiums and expected payouts for Guinea one of the pilot countries, for different outbreak thresholds (infection case counts)

<table>
<thead>
<tr>
<th>Guinea - O&amp;E Pricing Analysis</th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
<th>Option 4</th>
<th>Option 5</th>
<th>Option 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ebola/Marburg Cases Trigger</td>
<td>1</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>Limit</td>
<td>10,000,000</td>
<td>10,000,000</td>
<td>10,000,000</td>
<td>10,000,000</td>
<td>10,000,000</td>
<td>10,000,000</td>
</tr>
<tr>
<td>Expected Loss</td>
<td>542,000</td>
<td>529,333</td>
<td>514,667</td>
<td>486,000</td>
<td>442,000</td>
<td>416,000</td>
</tr>
<tr>
<td>Expected Premium</td>
<td>1,084,000</td>
<td>1,058,667</td>
<td>1,029,333</td>
<td>972,000</td>
<td>884,000</td>
<td>832,000</td>
</tr>
<tr>
<td>RoL %</td>
<td>10.8%</td>
<td>10.6%</td>
<td>10.3%</td>
<td>9.7%</td>
<td>8.8%</td>
<td>8.3%</td>
</tr>
</tbody>
</table>
Conclusion
The ARC O&E product makes the case for investment in the outbreak and epidemics programme by showing the linkages from preparedness and outbreak response to outbreak finance, with the aim of providing African countries the tools to improve their epidemics preparedness and response capacities through risk profiling and disease modelling. This O&E product links capacity building to ready and available funding that would be speedily disbursed in the event of an insured disease outbreak (Ebola, Marburg, Lassa Fever and Meningitis). A case has been made for the economic advantages of investment in preparedness and early intervention, something that is at the forefront of ARC’s work and is integral to the design and structures of the O&E product. The plan is to launch the product in 2020 and have the insurance cover and additional countries into a larger insurance risk pool from 2021 onwards.
ANNEX I

DRAFT DECLARATION/RESOLUTION ON THE REPORT OF THE AFRICAN RISK CAPACITY SPECIALIZED AGENCY
OF THE AFRICAN UNION (ARC AGENCY)
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The Conference of Ministers:

1. **WELCOMES** the Report of the African Risk Capacity on Outbreaks and Epidemics together with the recommendations contained therein;


3. **COMMENDS** the African Risk Capacity for the progress made on innovative risk transfer instruments for climate related hazards and specifically on the Outbreaks and Epidemics insurance product;

4. **CALLS** for the launch of the Outbreak and Epidemics insurance product, in line with ARC’s rules and procedures, to provide coverage in order to address Africa’s financing and health risk management needs to enable early containment of outbreaks for Member States faced with public health emergencies;

5. **ENCOURAGES** Member States to commit to support this outbreaks and epidemic product through participation in the sovereign risk pools.