

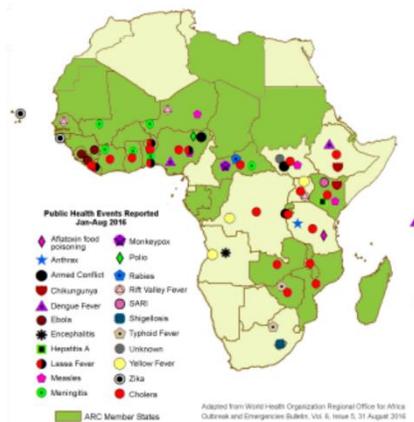
# Public Health Emergencies: The Challenge Facing Africa and the African Union's Response

The enforcement of the International Health Regulations (IHR) IHR (2005) in 2007, as a mechanism for ensuring global health security through containment of spread of infectious diseases towards maintaining stable international travel and trade, led to the Joint External Evaluations (JEE) of country capacity and preparedness. The JEE revealed that most African Union Member States are poorly prepared to handle any disease outbreak in the continent.

In view of the above, several global and regional initiatives have emerged to support Member States in epidemic and pandemic response. These have included Africa Centers for Disease Control, The World Bank Pandemic Emergency Facility, African Risk Capacity Outbreak and Epidemics (O&E) and WHO Emergency Funds.

## ARC's O&E Pilot Programme: An African Union Initiative to Public Health Emergencies Preparedness and Early Response Financing

ARC's Outbreaks and Epidemics (O&E) insurance programme was born in the wake of the devastating 2014 West African Ebola crisis. The lessons from the Ebola outbreak in West Africa, revealed that, in addition to weaknesses in health systems, slow and unpredictable funding was a major contributing factor to the inability of the Guinea, Sierra Leone and Liberia to rapidly respond to the initial outbreaks. This led the ARC Conference of the Parties, States and African Ministers of Finance in 2015<sup>1</sup>, to request the ARC Secretariat to develop a product to address Africa's financing needs to contain outbreaks of viruses and diseases common to the continent. Such a product will also assist to prevent secondary transmission.



Funded by The Rockefeller Foundation and the Swiss Agency for Development and Cooperation, and building on its experience in disaster risk management related to droughts, ARC in 2016 commenced a Research and Development programme to establish the systems and funds needed to identify, contain and ultimately respond to outbreaks and epidemics.

For Africa, the need for an O&E product is based on the increasing occurrence of multiple, complex trans-border public health emergencies over the past 20 years, characterised by delayed and ineffective response mechanisms.

The aim of the O&E product is therefore to:

- Establish a pool of cost-effective capital that can be rapidly deployed at the early onset of a disease outbreak;

<sup>1</sup> Resolution 9:2 of the report of the First Joint Session Of The AU Specialized Technical Committee on Finance, Monetary Affairs, Economic Planning And Integration And ECA Conference Of African Ministers of Finance, Planning And Economic Development, Addis Ababa, Ethiopia, 25-31 March 2015

- Incentivize countries to acknowledge O&E by tying declaration of epidemiologic events to immediate financial payout;
- Facilitate better health systems strengthening and preparedness (e.g. through better surveillance mechanisms and incentivized contingency planning);
- Promote pan-African and sub-regional solidarity and coordination.



The pilot has focused 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 African Union Member States. ARC O&E is built on thorough country risk analysis, contingency planning and sovereign parametric insurance, the success of which reduces the need for pandemic scale response. ARC O&E programme aims to be funded via the private sector as far as possible with the support of global reinsurers and ILS funds.

ARC strongly believes that multiple systems are necessary to help deliver global protection against outbreaks and epidemics. ARC is heavily engaged with the World Bank to link their Pandemic Emergency Financing Facility (PEF) with the O&E product as far as possible for the exposed African nations. It is expected that upon renewal of the PEF in 2020 that the ARC O&E programme would sit below PEF to provide early response payout before PEF is triggered. There are ongoing discussions on the best mechanisms to link the two programmes which will require consultation with the market to understand appetite over the next few months.

## Choice of Pathogens

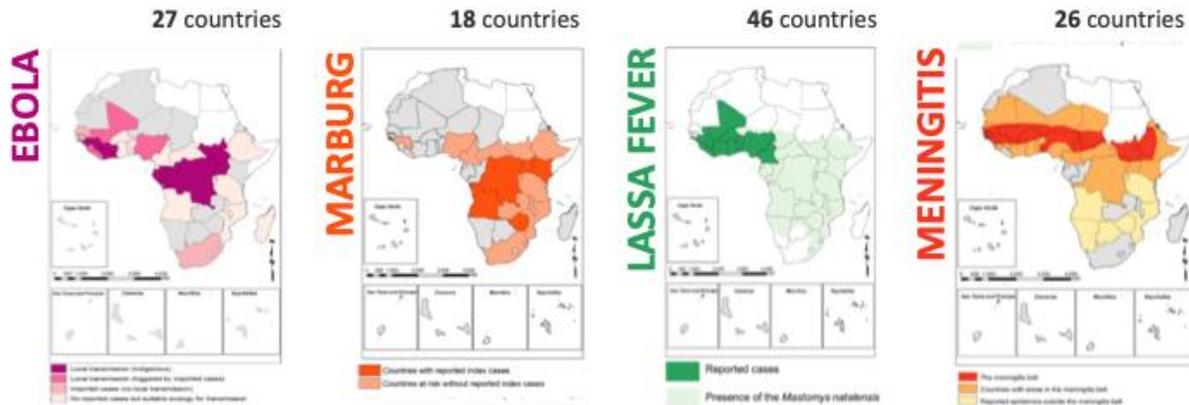
Infectious diseases such as Ebola Virus Disease, Marburg Virus Disease, Lassa fever, and Meningococcal meningitis pose an ever increasing threat to health, security and development in Africa. The 2014-2016 Ebola outbreak in West Africa resulted in over 11,000 deaths in Guinea, Sierra Leone and Liberia, and the estimated economic impact of the outbreak was USD 2.8 billion on the three countries, according to the World Bank. It is estimated that initiating the Ebola response two months earlier could have averted the fatalities by up to 80% in Sierra Leone and Liberia<sup>2</sup>.

The meningitis belt in Africa covers 26 countries and has an estimated population of approximately 300 million people, and the region experiences large epidemic outbreaks in cycles lasting between 8 to 15

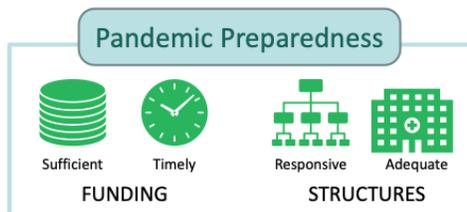
<sup>2</sup> Source: NYTimes —How the Speed of Response Defined the Ebola Crisis.]; CDC —Estimating the Future Number of Cases in the Ebola Epidemic — Liberia and Sierra Leone, 2014–2015]; UN; WHO; The Guardian; BCG research & analysis.

years<sup>3</sup> with an average incidence of 1,000 cases per 100,000 population. In 1996, almost 190,000 cases were notified to WHO in Burkina Faso, Chad, Mali, Niger, Nigeria, and other countries in the meningitis belt leading to a loss of economic output to a significant swathe of the continent.

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 has serious health and socio-economic effects on affected populations.



## Product Design, Characteristics, and Coverage



The O&E product will be a parametric Excess of Loss insurance contract, to be issued by ARC with the beneficiaries being the sovereign African governments during a covered outbreak. The product will trigger using a Data Index which serves to describe the alert level in a particular country based on reported cases and other data collected during the outbreak and validated by historical data.

More than one source of data will be expected for reporting including WHO and sub-national resolution data sources. Modelling of response costs will determine how much limit/coverage a country may need. The contingency planning and preparedness work will serve to reduce the premiums paid by countries and serve to contain the risk early. The product is expected to be layered to ensure staggering of payments.

### Proposed product structure

- One-year or three-year cover based on modelled outbreak response cost. Policy periods are subject to reinsurer and capital markets' appetites for supporting this programme.
- Multi-peril cover with first attachment for a country equal to peak pathogen exposure for the country in question
- Parametric non-indemnity single payout per layer.
- Policies per country stacked at different probability threshold.
- Payment through one layer should serve to reduce the risk of trigger other layers if the disease is contained.
- Dual-trigger mechanism; with initial trigger following WHO's confirmation and reporting of an outbreak in the country in question

<sup>3</sup> Harrison, Lee H., Caroline L. Trotter, and Mary E. Ramsay. "Global epidemiology of meningococcal disease." *Vaccine* 27 (2009): B51-B63.

- Triggering payout based on the Data Index. Index levels would be referenced in the contract per covered peril, these will vary by pathogen.
- Data sources used in the Data Index will be consistent in their reporting, credible and avoid moral hazard.

The diagram below illustrates the expected transition from pilot to full programme.

<b>Phase 1</b>	<b>Phase 2</b>	<b>Phase 3</b>
<b>2018-2019</b>	<b>2020-21</b>	<b>2022-23</b>
<b>Technical and Funding Agencies</b>	<b>Partnerships with Private Sector and Global Development Agencies</b>	<b>Scaling and addition of more pathogens</b>
To finalize the development of O&E tools and templates	Product launch - Live Insurance: Testing premium financing; To test the viability, validity, robustness, and sensitivity of the tools and templates of the O&E product	To scale up the O&E insurance product
<b>Outputs</b>	<b>Outputs</b>	<b>Outputs</b>
O&E risk models, disease spark and spread models, index design, trigger design, and contingency planning standards & guidelines, and templates	Validated O&E models, contingency planning templates and risk profiling frameworks; Live O&E insurance run	Offer parametric O&E insurance in collaboration with the private sector to AU member states with the aim of complementing existing mechanisms
2 Countries 4 Pathogens	5 Countries 4-6 Pathogens	12 Countries 6-8 Pathogens

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