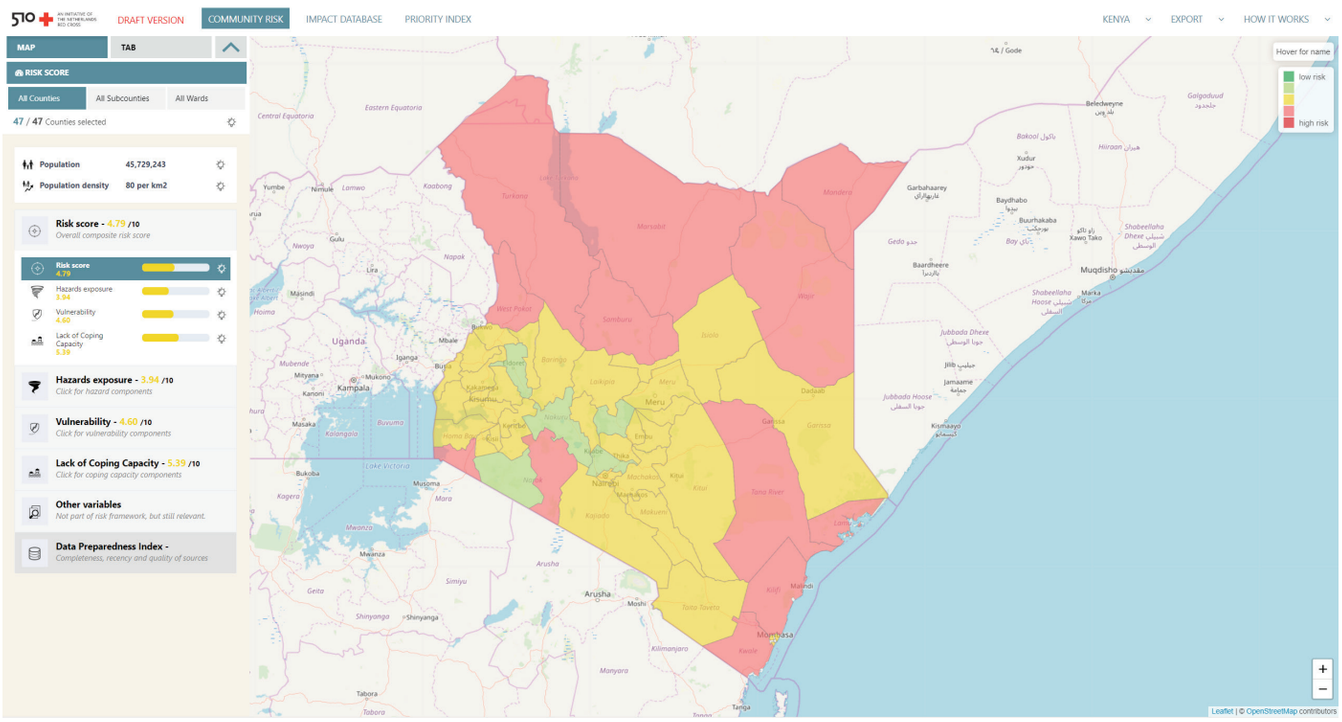
The CRA DATA BLOG
PRODUCED BY THE INTERNATIONAL CENTER FOR HUMANITARIAN AFFAIRS (ICHA)

THE CASE FOR RISK DASHBOARDS IN HUMANITARIAN ACTION



Extreme weather events are increasing across the world and this can be attributed to climate change occasioned by global warming. Droughts, floods and storms are occurring in Africa at an alarming frequency. This, compounded by development related challenges such as poverty and other vulnerability markers linked to accessing critical services, means that some parts of Africa cannot cope with hazards that cause plenty of loss and damage.

Kenya for example, had generally experienced drought cycles approximately every 10 years in the 20th Century. In the last three decades, this cycle has significantly increased to every 2-3 years, with the country experiencing roughly 12 drought periods between 1979–2017. Significantly dire consequences of these droughts were observed in 2000, 2009, 2010/2011 and 2016/2017.[1]

This noted increase in hazard frequency has impacted the humanitarian sector's capacity to respond effectively, post disaster response mechanisms that are in place face challenges in keeping pace with the rise in hazard frequency. The clarion call is now towards forecast based planning and early action to intercede in advance of disasters. This poses a new challenge for data use in humanitarian response.

Humanitarian actors need to take proactive steps towards ensuring that their capacity to act meets the dynamic needs on the ground. One of the tools that can aid this process is a risk dashboard. An ideal risk dashboard seeks to highlight the following:

- Who is vulnerable and where are they? – Spatial illustration of the hazard area overlaid with population data.

[1]Economics of Resilience to Drought: Kenya Analysis by Courtenay Cabot Venton for the USAID Center for Resilience, January 2018

- Why are they vulnerable? – The underlying conditions that make them vulnerable to hazards, for example poverty and insecurity.
- What is their coping capacity? – What resources do these populations and their institutions have to help manage impact from the hazards, for example number of health centres
- What are the hazard threatening them? – Hazard types faced by the affected population.

In essence, the risk dashboard combines data on vulnerability and coping capacity with hazard exposure to highlight how many individuals are at risk and where they are situated geographically.

Integrating analysis from early warning and forecasting systems with information generated from risk dashboards will help humanitarian actors and the population at large to act ahead of impending crisis.

Funded by the IKEA Foundation and in partnership with national Red Cross societies and 510, the Innovative Approaches to Response Preparedness (IARP) project is one such initiative that aims to change humanitarian response planning by relying on risk dashboards and predictive weather forecasts to act in the lead time to disasters in three countries, Kenya, Uganda and Ethiopia.

In Kenya, the Kenya Red Cross Society (KRCS) and 510 recently developed a risk dashboard for the country utilising the Community Risk Assessment method that 510 is implementing in 15 other countries. This assessment adopted the INFORM risk mapping methodology due to its open source nature, rigour and science based approach, making it scalable and easily reproducible to our subnational approach. Simplified, the INFORM Methodology integrates data on a geographical area's human and natural hazard risk, communities, their vulnerability and the coping capacity of local infrastructure and institutions, to hazards:

Risk = Hazard × Exposure × Vulnerability (See Chart 1)

KRCS paid emphasis on obtaining official data disaggregated up to the smallest administrative boundary (ward level). The key challenge with this data is that prior to 2013, Kenya used a different administrative structure (provinces and districts). This meant that historical data required additional processing from the national statistical office so as to conform to the new decentralised administrative demarcations (counties and wards).

Post processing of population distribution was conducted by the Kenya National Bureau of Statistics (KNBS) to enable the newly created county governments develop their planning resources i.e., the County Integrated Development Plans (CIDP) which is where KRCS sourced most of the demographic information.

A considerable amount of time was spent scouring the web for open datasets as well as data tables published in PDF reports, which needed additional manipulation and cleaning to extract the necessary data for the risk dashboard. A variety of methods were used in this exercise, but preference was given to working with programmable languages to automate most of the load, mainly working with Python and R packages to scrap tabular data.

While KRCS obtained sufficient data to develop a risk score, there is a certain limitation associated with the data. One is that population distribution data is processed from the 2009 Census and this is unlikely to capture the true reality on the ground. In addition, KRCS did not include any data on disability types and distribution patterns at ward level because available data was aggregated only at the county level. That said, the planned national census to be undertaken mid-2019, seeks to co-opt the Washington Group disability indicators. Once this data is available, it will be used to update the dashboard.

For poverty and vulnerability assessment, in 2015/16 Kenya conducted an Integrated Household Budget Survey to measure new poverty incidences and access to services indicators. The county level data was available but ward level data is yet to be made public. This necessitated reliance on data from the 2005/06 Household Budget Survey that was processed by KNBS to inform the 2013 county CIDPs. The new ward data once available, will also be used in an update to the dashboard.

Chart 2 summarises the data collected and also indicates the identified data gaps

The dashboard is now live on *https://dashboard.510.global/#/community_risk?country=KEN* and KRCS will use data from this dashboard to inform forecast and impact based financing programs, to plan and prepare in advance for hazard response. This will be done concurrently with engagements centred on building partnerships with relevant stakeholders to address the data gaps identified and improve the usability of the dashboard.

Chart 1: The INFORM Index Methodology

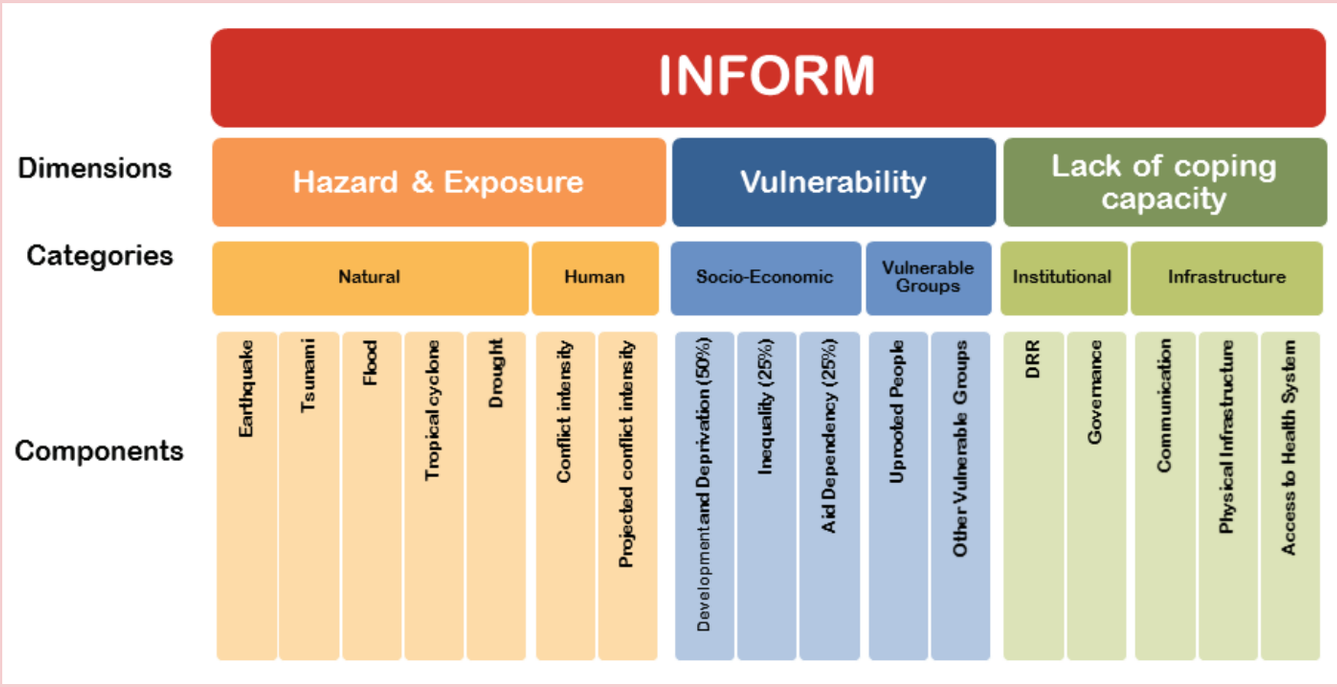
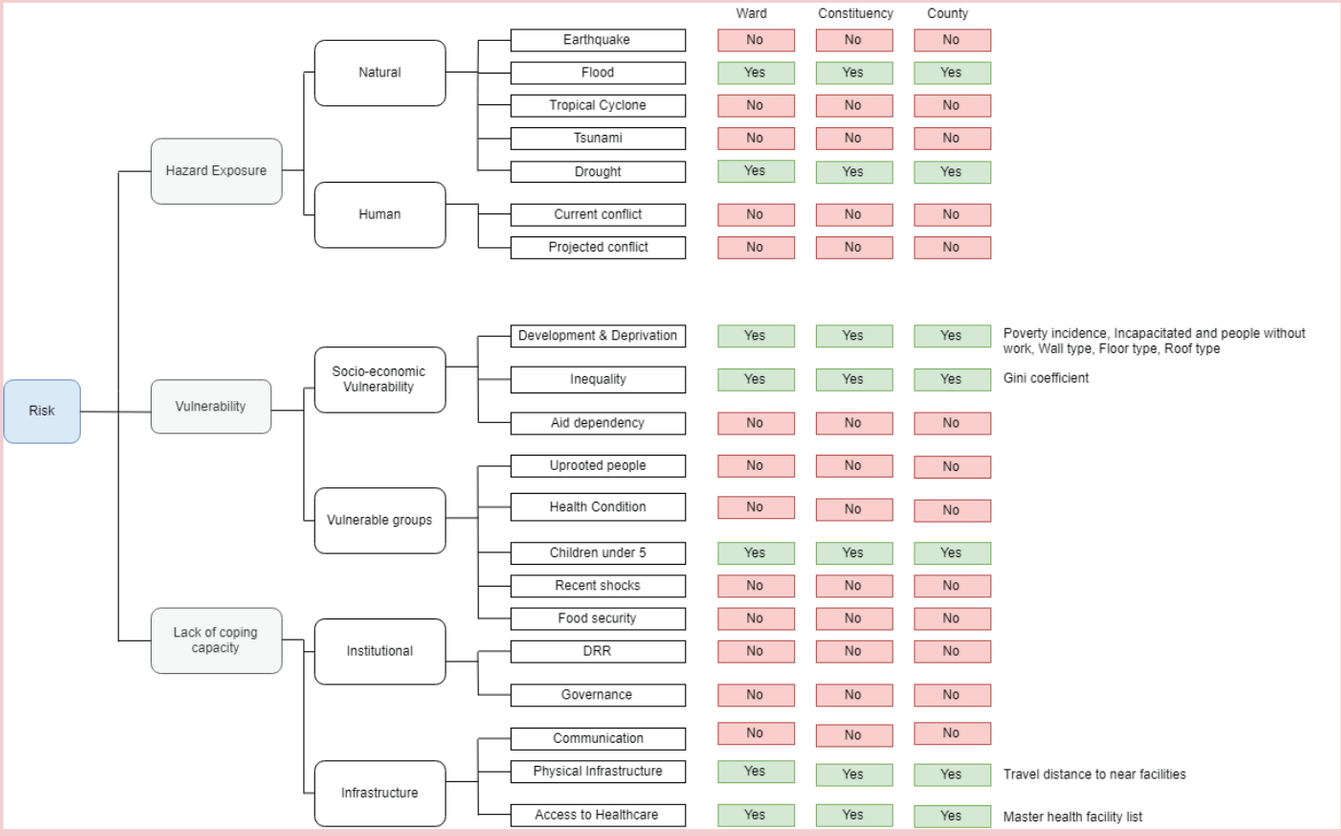


Chart 2: Summary of data collected and identified gaps in data



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