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Risk Informed Decision Making in Refugee Camps and Displacement Contexts

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Introduction

The concept of vulnerability affords an opportunity to explore why and to what extent certain people are impacted over others (Weichselgarter 2001), which in turn informs the development of protocols to prioritize and de prioritize disaster populations. In contrast to disaster risk reduction, disaster vulnerability reduction should, in theory, decrease losses. Numerous examples exist of this holding true, for example for Volcanic impacts in Tenerife (Scaini et al. 2014), tropical cyclone impacts in Bangladesh (Asgary and Halim 2011), and riverine floods in Pakistan (Jongman et al. 2015). While each of these case studies, along with the majority of examples and theoretical framework, seek to identify vulnerable populations in order to decrease potential impact on them – there are 3 important elements to consider:

1. The majority of work does not consider the spatial and temporal uncertainty in estimates population spatial and temporal distribution

2. Most examples usually describe solutions for traditional and/or stable socio economic conditions of a particular focus area

3. For case studies focusing on a specific event, the evaluation and accountability structures are either nonexistent or are insufficiently designed for assessment of if populations were correctly de-prioritized over a specific target period

Amongst the mandates of the humanitarian community, the mandate to address considerations related to the most vulnerable populations is paramount. However, what can be done when we cannot be certain who they are and where they are? Who is responsible for defining the most vulnerable and who is responsible for evaluating if the most vulnerable were supported in a proportionate way relative to their vulnerability level? Have we been irresponsible to using available data to make progress?

Main

From discussions with local level stakeholders, to national level policies to high-level global compacts, attention and interest in risk informed disaster risk reduction and social protection is

growing. For an example of the latter, a recent policy paper, the 2021 G7 Famine Prevention and Humanitarian Crises Compact (UK Government 2021), enhanced anticipatory action is highlighted as an overarching priority, with conflict and complex settings specifically noted as an area where progress is needed. It is also noted that anticipatory action must be taken 'even when robust data is not available'. This is a recurring theme across various levels of DRR decision making which has led to statements such as: forecast information is not designed to be perfect, so can't we all agree that we need to take action based on probability?

This question has been presented within and across each natural science, policy and implementation communities, and increasingly it is becoming harder to find opposition to taking risk-informed action based on prognostic, inherently uncertain information. Given substantive and deliberate efforts from the Red Cross Red Crescent (IFRC, Climate Centre, German Red Cross, for example), Various UN agencies (such as WFP, OCHA, FAO, WMO), and academic research groups (IRI, CIESIN, PIK, for example), progress has been made on each the geophysical, policy and implementation aspects over the past decades, leading to more granular understanding of the enabling environments of disaster risk reduction, including anticipatory action, in a variety of socioeconomic contexts.

Specifically, in terms of uncertainty, where does the threshold of responsible action lie? Is there a critical point whereby all stakeholders would agree that action should or should not be taken? How does this threshold, and the process to identify a threshold, both theoretical and in practice, apply in complex settings such as migration, displacement and refugee contexts? Fortunately, there is increased attention to these questions as more people become aware of the growing gap between availability of data and use of that data, to specifically address socioeconomic challenges within the most vulnerable communities. But more can be done, especially related to data ethics, privilege and responsibility (Campo et al. 2018) as well as post in addressing colonialist sentiments in humanitarian program design (Madianou 2019), in particular as it relates to influencing behavior (of decision makers and of the people) in humanitarian emergencies and unstable socioeconomic settings such as those found in many refugee camps (Broussard et al. 2019, Young et al. 2019).

Discussion

Given the challenges specific to DRR and anticipatory action in complex environments, such as refugee camps, there is an urgent need to explore how to improve operational effectiveness. This will undoubtedly, to some degree, require a critical reflection on risk communication and risk perception and cognition (Padilla et al. 2021), however we have an opportunity to align progress in these fields with the growing interest within and across other sectors, such as geography, peacebuilding, governance, remote sensing and climate science.

To advance discussions on evaluation and accountability related to integration of climate data into decision making linked to humanitarian action, we could move away from a binary representation of right and wrong, towards a more nuanced approach that may be more accurate in representing various layers of uncertainty, responsibility and mandates. In a refugee camp management context, this could lead to progress to identify scenarios when both data should not

be integrated into decision making (due to higher than acceptable level of uncertainty, for example) and of course when it should happen.

The framing of 'influencing behavior of refugees through data' could be employed as a useful lens to explore, perhaps uncomfortably, the responsibility that should come with sharing data, including derived products, that may influence behavior of the most vulnerable. This approach could also be beneficial in developing a set of guidelines and next steps around describing roles and competencies for a decision maker whereby a data scientist can achieve a level of comfort and responsibility in disseminating data to a 'qualified' decision maker and/or intermediary/broker/translator. This could be a step towards developing a responsible approach to stewardship of data with significant and unknown uncertainty.

Reflecting on DRR work in both stable and complex settings, the following questions should be prioritized when exploring opportunities for progress across sectors:

1. How can we prioritize actions to address risks faced by the most vulnerable when everyone is the most vulnerable?

By definition people living in refugee and displacement context are amongst what would be defined as 'the most vulnerable'. If there were a global map of vulnerability, entire refugee camps, for example, would fall into the category with the highest value. While this classification may be useful for decision makers operating at global levels (such as global NGOs trying to decide what countries receive more or less funding), it will likely be far less useful, possibly useless and potentially detrimental, when decisions of prioritization need to take place within a single refugee camp – which, as exemplified in Cox's Bazar, could equate to thousands of people. In summary, what are the implications of creating a new, distribution of vulnerability with extremely tight gradients already situation within the tails of a distribution?

2. How can we de prioritize action for slightly less vulnerable, but still extremely vulnerable?

While this question may seem repetitive, it is presented here as many decisions made in humanitarian context are framed around question 1 rather than question 2. The reality in decision making contexts in non-stable environments remains that justifying where to de prioritize an action (such as a risk reduction action), is more difficult, and presents a different set of ethical tensions, than reinforcing the "savior mentality" by incentivizing activities around where to prioritize (Flaherty 2016, Arshad-Ayaz et al. 2020). This is difficult to do in non refugee and displacement settings, however in context where decisions can lead to essentially choosing who survives, showing a map with colored polygons of 'risk and vulnerability' may not be sufficient for justification.

3. Merging population and demographic data with uncertain natural hazard risk data does not necessarily decrease the uncertainty of the coupled natural hazard + socioeconomic risk product

From our experience, operating within the impact-based framework in humanitarian settings, there could be an increased perception of trust and quality when socioeconomic layers are joined to natural hazard layers. This is anecdotal, however I find this to be especially true for population data sets, as population is a metric that is more familiar to many disaster risk managers, and may be perceived as a metric to approach more comfortably.

4. Earth observations can be used for disaster monitoring and understanding of risk in non-stable socioeconomic scenarios, such as displacement and refugee settings, but certain aspects must be kept in mind

For example, it may not be apparent to decision makers that Earth observation (EO) data 1. May not align with a government and/or influential NGO assessment, 2. May exist at various levels of quality over a period of time of interest, even over a relatively small area of interest, 3. Should necessitate a reflection of privilege and geopolitical power.

These elements could contribute to developing a set of minimum standards when integrating EO data, especially when the integration will inform decision making that will influence the lives and livelihoods of refugee and those displaced – whom are already managing various layers of uncertainty, unclear governance and lost agency. In some contexts, EO data and derived products effectively ‘disrupt’ the status quo of industries. In doing so, there is likely to be collateral damage across sectors, which the risk for is generally captured in a business model. In a refugee camp settings disruption can lead to distrust and induce disaster, potentially even more so than the disaster in which the technology aims to address.

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