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Inequality, COVID-19 and Conflict: Brief on Food Security

Earlier this month, TMP Systems released a geospatial model to show communities where COVID-19 and inequality may interact to create conflict. This brief summarizes a derivative of the model related to food security, which is now available as an interactive map at:

www.tmpsystems.net/coronavirus/foodsecurity

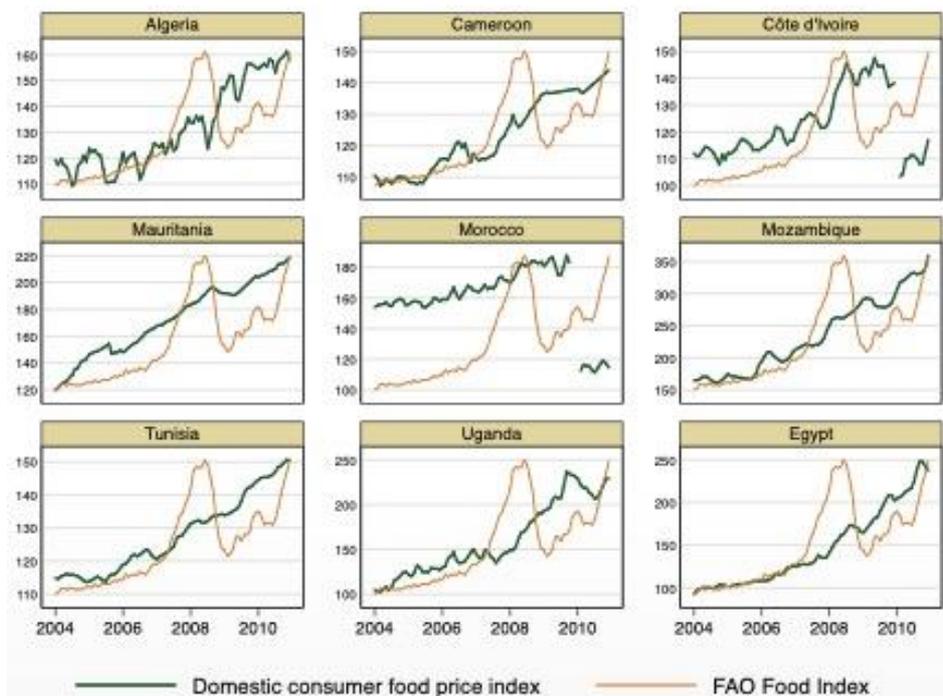
What does the model show?

The model shows that 283 million people live in areas where COVID-19¹, food prices, and food insecurity risks are extreme enough to lead to significant unrest. 75.3% of those people are concentrated in just five countries – Ethiopia, Nigeria, Mozambique, Sudan and Angola – suggesting that issues facing these countries might warrant urgent consideration. The model also gives some cause for concern about food issues in South Asia, because the risks seem concentrated in districts with existing religious tensions and/or refugee issues. We continue to evaluate its results.

¹ This is assessed by our COVID-19 conflict risk model, available at www.tmpsystems.net/coronavirus and explained in a paper available at https://tmpsystems.net/wp-content/uploads/2020/04/TMP-Systems-COVID-19-8-April-20_FINAL.pdf. Many of the local indicators used in the COVID-19 model are informed by our development of the Landscape risk analysis system, under which we were able to identify 14 different indicators that correlated with a somewhat similar form of risk. Landscape was developed under the United Kingdom Department for International Development's LEGEND program in collaboration with the Rights and Resources Group and is explained at papers available at <https://landscape.info/about.php>.

What evidence informs the model?

The model is based on our review of research and reporting of the 2007-2011 food price crises, which caused outbreaks of unrest across the developing world. We found very little evidence to suggest that global food market spikes were important, despite the large amount of attention paid to these. Instead, violence seemed to coincide with inordinate intermediate-term price rises in local markets, as summarized in excellent research on local prices done by Todd G. Smith²:



We also noticed that there was usually a crucial element contributing to the unrest that was both local and not purely related to food. The table below shows a sample of these across Africa and Asia³.

² See Smith (2013), *Food price spikes and social unrest in Africa*, CCAPS, available at https://www.files.ethz.ch/isn/165516/researchbrief%20no%2011_final.pdf. Also, it is worth reading Burk and McGuirk (2017), *Food fights: Food prices and civil conflict in Africa*, International Growth Center, available at <https://www.theigc.org/blog/food-fights-food-prices-and-civil-conflict-in-africa/>, all accessed April 15th, 2020.

³ See Hossain, N. & Jahan, F. (2018). *Food Riots in Bangladesh?*, Garments Worker Protests and Globalized Subsistence Crises. 5. - Berazneva, J. & Lee, D (2013), *Explaining the African food riots of 2007-2008: An empirical analysis*, Food Policy. 39. - Besada, H. & Moyo, N. (2008), *Zimbabwe in Crisis: Mugabe's Policies and Failures*, Center for International Governance Innovation - Dekker, M. (2009), *Livelihoods and economic crisis: the case of smallholder farmers in Zimbabwe (1999-2008)*, paper for the conference "Economic Development in Africa", African Studies Center

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<i>Country</i>	<i>Type of unrest</i>	<i>Contributing element</i>
<i>Egypt</i>	General strike leading to confrontation between police and protestors	Low wages in the textile industry, combined with dissatisfaction over upcoming show elections
<i>Mauritania</i>	Protests, coup d'état	Reaction by forces tied to regime deposed in 2005, racial tensions between Arab and black Mauritians
<i>Mozambique</i>	Mass protest, looting	Rise in local bus fares
<i>Bangladesh</i>	Strikes, major economic disruption	Working conditions in the garment industry
<i>Cameroon</i>	Riots, killings	Decision by President Paul Biya to change term limits in constitution
<i>Zimbabwe</i>	Civil strife, soldier riots	Cholera epidemic, persistent inflation, ongoing smallholder farmer discontent with government policy

This is not to say that no global trends were discernable, and it is therefore impossible to make sensible high-level risk assessment. On the contrary! We also noticed a repeated pattern of unrest occurring among marginalized people who were already dealing with significantly higher food prices and food insecurity well prior to the appearance of these contributing elements. Understanding and quantifying that marginalization seemed possible based on the prior work mentioned in footnote 1.

All of this to say that the risk appears to come from highly localized sparks setting off powder kegs of ongoing issues. Since the “sparks” are impossible to predict, it is best to locate the kegs. Data cannot substitute for qualitative assessments, but can help guide that assessment by identifying places where this convergence of marginalization, recent food price rises, and generalized food insecurity is already worrisome. This is the purpose of the model.

How does the model make that identification?

Its foundation is our COVID-19 risk score, which uses 22 social, political and health indicators to show communities where COVID-19 and inequality may interact to create conflict. To this, we add three new elements:

1. A metric showing how similar 2018-19 food price movements are to the grinding rise in prices discussed above, as seen in a basket of countries that experienced unrest during the 2008 food price crisis.

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2. A derivative of the recently published Proteus composite index⁴, which was developed by experts at the World Food Programme and uses 21 different indicators to identify national-level food insecurity.
3. A mild weighting scheme that gives greater weight to areas with higher population densities.

The score returns values for communities (20x20 kilometer squares) and then aggregates these into districts (Level 1 administrative units) and countries. To show these, we have made an interactive map available on TMP Systems' website at www.tmpsystems.net/coronavirus/foodsecurity.

Inside the risky countries, are risk levels similar from place to place?

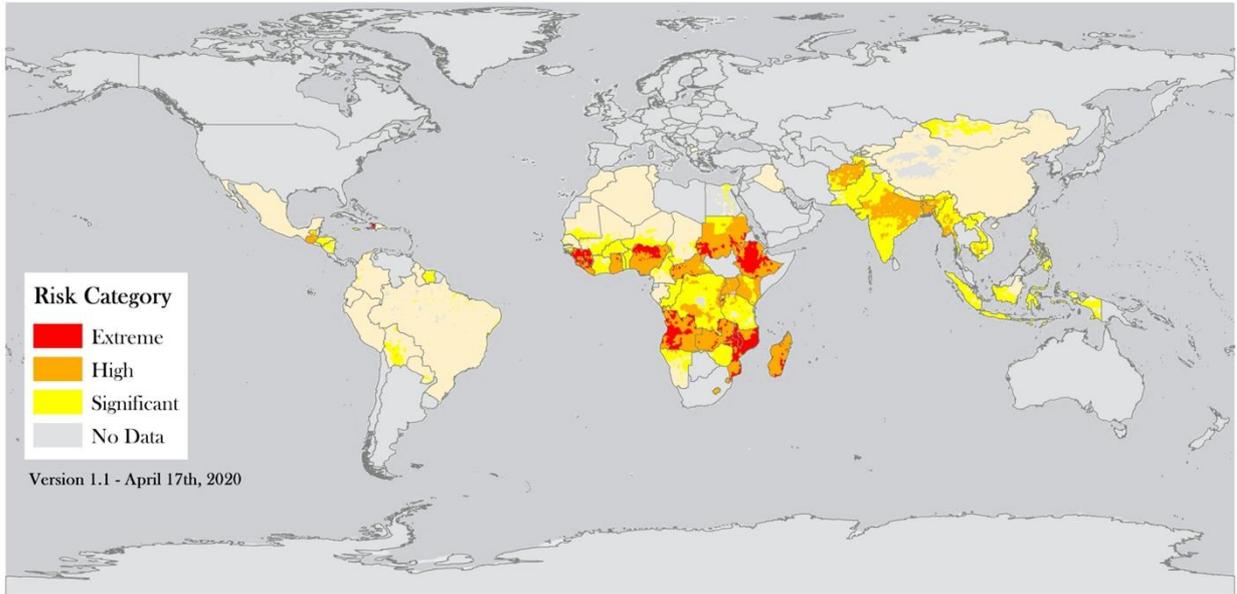
This depends quite a lot on the country. Ethiopia, Mozambique, Angola and Bangladesh have almost uniformly bad scores across most areas (Malawi and Haiti also fit this description but have smaller populations). But places like Nigeria and India are more varied, as shown in the maps overleaf. We are still considering what implications these differences might have for suggested responses.

Will the model be updated?

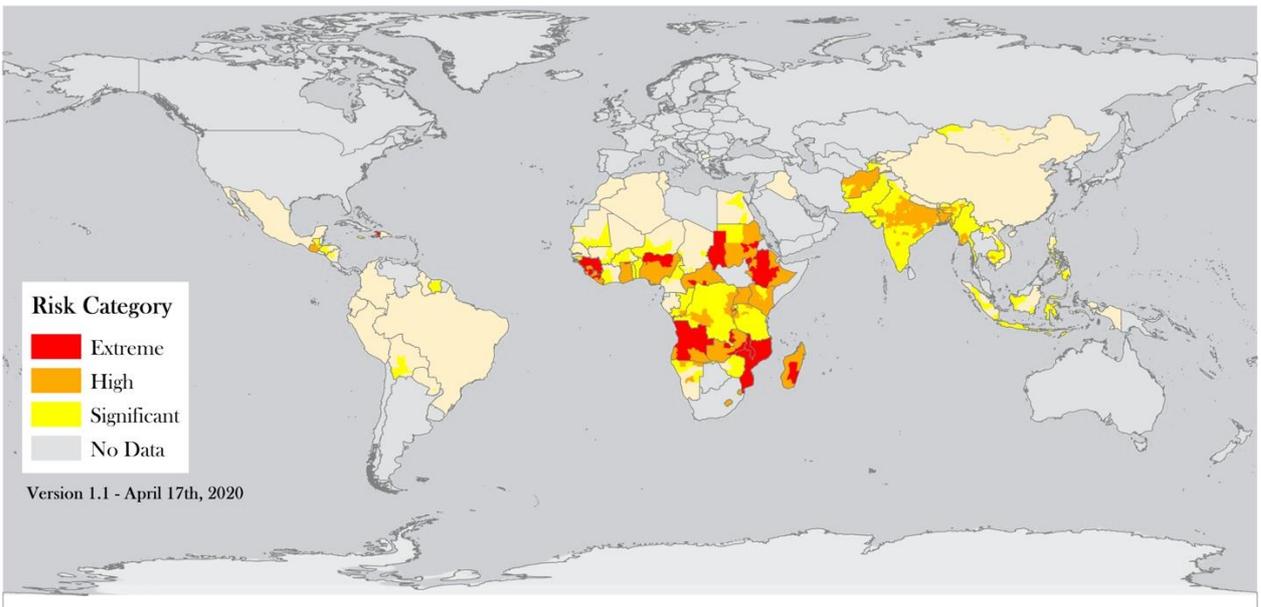
Yes, but not with real-time food price data. As we say above, we think experience shows that the drivers of food-related unrest are likely to be less immediate. Instead, we will look to better inform our view of those drivers, and better understand what kind of countermeasures have been successful in the past and might be adapted to this particular crisis.

⁴ Caccavale, O. & Guiffrida, V. (2020), *The Proteus composite index: Towards a better metrics for global food security*, World Development. 126.

Community Risk of COVID-19 Unrest Caused by Food Insecurity



District Risk of COVID-19 Unrest Caused by Food Insecurity



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