



# Humanitarian Catastrophes

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*'When sorrows come, they come not single spies, but in battalions'*

## Introduction

Societies with high levels of food dependency are particularly vulnerable to sudden disruptions in the supply of food. Such disruptions are likely to appear during the direct aftermath of a natural disaster. In the absence of an effective government capable of coping with the disaster's consequences, this may produce famine and dislocation of the population in addition to widespread socio-political unrest. Societies with high levels of food dependency, significant vulnerabilities to natural disasters, and ineffective governments, are therefore at greater risk of a humanitarian catastrophe.

To assess which countries are at greater risk, we have created a 'humanitarian catastrophe monitor'. We have collected country level data for these three factors, ranked all countries (using percentilised scores) for each factor, and combined these rankings into an overall risk score.<sup>1</sup> We define food dependency as the percentage of their total consumption expenditures households spend on food.<sup>2</sup> We measure vulnerability to natural disasters by the number of killed, injured, or homeless as a percentage of the total population as a result of natural disasters in the 2000-2009 period.<sup>3</sup>

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<sup>1</sup> We weighed all factors equally. The total aggregated risk score is therefore the total sum of the percentilised scores of the three factors divided by three. For more information on the method and the data, we refer to the methodology document which can be retrieved by returning to the main page and clicking the "Download More Info" button.

<sup>2</sup> Ricardo, Sibrian, Seevalingum Ramasawmy, and Jorge Mernies, *Measuring Hunger at Subnational Levels from Household Surveys Using the FAO Approach*, Statistics Division Working Paper (Food and Agriculture Organization of the United Nations, March 2008).

<sup>3</sup> EM-DAT, The International Disaster Database, "Disaster Database EM-DAT", <http://www.emdat.be/database>.



Government effectiveness is based on the World Bank definition which is a reflection of how citizens rate the effectiveness of their governments.<sup>4</sup>

Over the past few years, these three factors have been significant drivers of instability in - and by themselves. Sudden hikes in food prices spiked social unrest in numerous countries with high levels of food dependency. The onset of the Arab spring, for instance, has been related to drastic increases in world food prices.<sup>5</sup> In a similar vein, it is pointed out that the 2007-2008 world food crisis featured a series of violent demonstrations across the world that were especially concentrated in developing economies.<sup>6</sup> The populations most affected were those with governments unable to mitigate the consequences.<sup>7</sup> In fragile states, households spend on average 57% of their total consumption expenditures on food compared to approximately 20% in the most developed economies.<sup>8</sup>

Meanwhile, Munich Re reports a global increase in both the frequency and the magnitude of impact of natural disasters.<sup>9</sup> If natural disasters cannot be prevented, their impact really is mediated by the ability of governments to oversee and execute disaster management. Societies with ineffective governments are therefore especially vulnerable to the impact of natural disasters. More generally, the quality of a country's institutions and the effectiveness of its government are considered to be one of the fundamental precursors of socio-economic development. The bottom line here then is that while these 'stressors' independently put a strain on social systems, when they collide at a certain place and a certain moment in time, a humanitarian catastrophe is likely to occur.

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<sup>4</sup> Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi. "The Worldwide Governance Indicators: Methodology and Analytical Issues - World Bank Policy Research Working Paper No. 5430", SSRN eLibrary (September 2010). [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1682130](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1682130), 4.

<sup>5</sup> See for example Marco Lagi, Karla Z. Bertrand, and Yaneer Bar-Yam, "The Food Crises and Political Instability in North Africa and the Middle East," *SSRN eLibrary* (July 15, 2011), [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1910031](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1910031)., specifically 1-4.

<sup>6</sup> Brinkman, H.J. and Cullen S. Hendrix, *Food Insecurity and Conflict: Applying the Framework* (World Bank, 2011), 10.

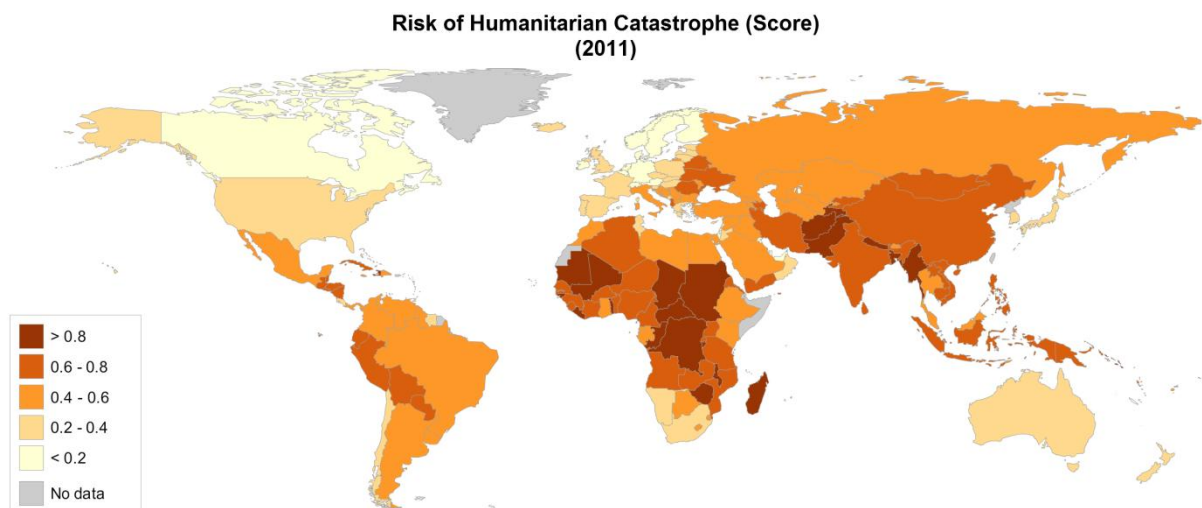
<sup>7</sup> *Ibid.*, 27-35.

<sup>8</sup> *Ibid.*, 10.

<sup>9</sup> "Munich Re - Great Natural Disasters Since 1950", May 30, 2012, [http://www.munichre.com/en/reinsurance/business/non-life/georisks/natcatservice/great\\_natural\\_catastrophes.aspx](http://www.munichre.com/en/reinsurance/business/non-life/georisks/natcatservice/great_natural_catastrophes.aspx).

## Analysis

Unsurprisingly, our Monitor indicates that the risk of humanitarian catastrophe is particularly high across Africa and in South-Asia, where multiple countries perform poorly across all three indicators. But, in addition, it exposes numerous other regions of interest.



**Figure 1 GeoRisQ Monitor: Country-level Risk of Humanitarian Catastrophe.**

Countries at very high risk in Africa are (in descending order) the Central African Republic, Burundi, Zimbabwe, Togo, the Democratic Republic of Congo, Chad, Mali, Madagascar, Sudan, Malawi, Liberia, and Mauritania. In South-Asia, we find Afghanistan, Bangladesh, Nepal, and Pakistan in the high risk category. Other countries to be watched closely are Haiti, the Solomon Islands and Tajikistan.<sup>10</sup>

<sup>10</sup> Due to missing data, Somalia and North-Korea lack aggregate risk profiles, but these countries would otherwise also belong to the high risk category.



The European Union (EU) as a whole is at significant lower risk. Within the EU, Italy, Bulgaria and most notably Romania face, at least compared to the other EU countries, higher risk levels. Italy is particularly vulnerable to natural disasters, while in Bulgaria its ineffective government combined with high levels of food dependency should be cause of concern. Especially worrisome, though, is the situation in Romania, which looks bleak across the three indicators.

In the EU's direct neighborhood, most countries are in the medium risk category, comparable to Bulgaria and Italy. Exceptions to this rule are Algeria, Albania, Belarus, and Ukraine, countries that score on par with Romania. The main sources of risk here are vulnerability to natural disasters in Algeria, high food dependency in Albania, government ineffectiveness in Belarus, and a combination of the latter two in Ukraine.

The United States runs a marginally higher risk than Northwestern Europe and Canada. This is mainly due to its slightly greater vulnerability to natural disasters and lower scores for governmental effectiveness. Its markedly low rate of food dependency cannot entirely compensate for these weaknesses.

The rising economies are at varying degrees of risk. India and Indonesia are most vulnerable due to high vulnerabilities to natural disasters combined with elevated levels of food dependency. China is at slightly lower risk scoring somewhat better across the three indicators. Brazil and Russia take up a mid-table ranking. The ineffectiveness of the Russian government is offset by its relatively low vulnerability to natural disasters and medium-level of food dependency. Brazil's relatively high position is mainly due to its low level of food dependency, which compensates for its government's poor score on effectiveness and its greater vulnerability to natural disasters. South-Africa performs well across the board and runs little risk.

Throughout the rest of the world, there are many countries scoring poorly on at least one indicator. Vulnerability to natural disasters, for instance, is particularly high in Central-America, Africa, and Asia. The Middle-East takes up a mid-table position, with Iran and Turkey at particular risk. Apart from Italy and Japan developed economies appear less exposed. High food dependency is predominantly a problem in Africa, Southern- and Central Asia as well as some parts of Eastern Europe. South-



America scores well on this parameter. Finally, government ineffectiveness is prevalent in most of Africa. Other countries with weak and ineffective governments are spread out over the non-Western world. In the Western Hemisphere these are Nicaragua, Haiti, Paraguay and Venezuela. In the Middle-East Yemen and Iraq stand out. In Asia Afghanistan, Turkmenistan, Tajikistan, Myanmar, Laos, and North-Korea have the least effective governments.

## Conclusion

This brief analysis yields three main conclusions. First, while the likelihood of humanitarian catastrophe is highest in Africa and Asia, there is reason for concern in Europe as well. On the eastern flank Albania, Belarus, Romania, and Ukraine all face higher levels of risk than most of their Latin-American, Middle-Eastern or Central-Asian counterparts. The combination of high food dependency and ineffective government in Ukraine also hints at an elevated likelihood of social turmoil in the country co-hosting this summer's European Football Championship.

Second, our analysis vividly illustrates how decision makers in the private and the public sectors would do well to look at these multiple stressors, in isolation, as well as in conjunction with each other: the incidence of a single stressor poses a hazard, their combination is highly dangerous.

Third, "prevention" and "resilience" are buzz words in policymaking circles these days. Prevention refers to taking on a problem before it arises. Resilience refers to "the ability of social units to mitigate hazards, contain the effects of disasters when they occur, and carry out recovery activities in ways that minimize social disruption and mitigate the effects of future disasters".<sup>11</sup> Our analysis highlights that while natural disasters may be unpreventable, their impact certainly can be mitigated by focusing policy efforts on increasing resilience. At a societal level such efforts include - but are not limited to - decreasing food dependency and making sure food distribution channels are in place. At

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<sup>11</sup> Bruneau, M., S.E. Chang, et al., "A Framework to Quantitatively Assess and Enhance the Seismic Resilience of Communities", in *Earthquake Spectra*, Vol. 19, No. 4, 2003, pp. 733-752; cited in Crisis and Risk Network (CRN), Centre for Security Studies (CSS), ETH Zürich Commissioned by the Federal Office for Civil Protection (FOCP), Factsheet "Examining Resilience: A concept to improve societal security and technical safety", Zurich, June 2009.



the state level, they entail increasing the capabilities of governments to deal with the aftermath of natural disasters. Such policies admittedly run on a much longer timeline, but the benefits to be reaped from them will be much greater in the end.