Hunger in a Heating World: How the climate crisis is fuelling hunger in an already hungry world

METHODOLOGY NOTE

ACUTE HUNGER

Our discussion of the key drivers of acute hunger (or hunger resulting from a shock and causing risks to lives and livelihoods) is based on the annual Global Reports on Food Crises, 2017-2022 (“GRFC Reports”), which focus on conflict and insecurity, economic shocks (including, but not limited to, those related to the coronavirus pandemic), and weather extremes (droughts, floods, dry spells, storms, cyclones, hurricanes, typhoons and the untimely start of rainy seasons). The reports are available at https://www.fsinplatform.org/.

We also rely on the GRFC Reports (2017-2022) as a source on the levels of acute hunger from 2016 to 2021, as each report cover data from the previous year. The reports use data from the Integrated Food Security Phase Classification System (IPC, see https://www.ipcinfo.org/), and for each year covered indicate the highest number of acutely food insecure people reported in the year in question (“the observed peak”). For countries not covered by IPC, the reports use data from the cadre harmonisé of the Permanent Interstate Committee for drought control in the Sahel (see: http://www.cilss.int/index.php/2019/10/04/cadre-harmonise-manuel-version-2-0/), which is compatible with IPC, and other compatible sources such as the Famine Early Warning Systems Network (https://fews.net/fews-data/333) and the UN World Food Programme (www.wfp.org).

IPC measures five phases of acute food insecurity: 1) none or minimal, 2) stressed, 3) crisis, 4) emergency and 5) catastrophe or famine. Both the GRFC Reports and our media brief focus on people at IPC Phase 3 or higher (“IPC 3+”). The table below provides additional descriptions of the five IPC phases.

<table>
<thead>
<tr>
<th>Phase name and description</th>
<th>Phase 1 None/Minimal</th>
<th>Phase 2 Stressed</th>
<th>Phase 3 Crisis</th>
<th>Phase 4 Emergency</th>
<th>Phase 5 Catastrophe/Famine</th>
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|                             | Households are able to meet essential food and non-food needs without engaging in atypical and unsustainable strategies to access food and income. | Households have minimally adequate food consumption but are unable to afford some essential non-food expenditures without engaging in stress-coping strategies. | Households either:  
  - have food consumption gaps that are reflected by high or above-usual acute malnutrition;  
  - or are marginally able to meet minimum food needs but only by depleting essential livelihood assets or through crisis-coping strategies. | Households either:  
  - have large food consumption gaps that are reflected in very high acute malnutrition and excess mortality;  
  - or are able to mitigate large food consumption gaps but only by employing emergency livelihood strategies and asset liquidation. | Households have an extreme lack of food and/or other basic needs even after full employment of coping strategies. Starvation, death, destitution and extremely critical acute malnutrition levels are evident. (For famine classification, area needs to have extreme critical levels of acute malnutrition and mortality.) |


Looking at the six years of GRFC reports, we determined that acute hunger (i.e., the number of people living at IPC 3 or higher) more than doubled in the 10 climate hotspots that are the focus
of the media brief between 2016 and 2021, from 21 million to 48 million people. As the
geographic coverage in the reports differs from year to year, these figures need to be treated as
indicative. We also found that nearly 18 million people in the 10 countries were on the brink of
starvation in 2021, based on the total number of people living at IPC phases 4 or 5. As the 10
countries are those with the highest number of UN appeals related to major weather extremes
since 2000 (see below), the correlation between extreme weather and acute hunger is clear.

**SELECTION OF THE 10 CLIMATE HOTSPOTS**

We focus on 10 of the worst climate hotspots in the world which had the highest number of UN
appeals related to major extreme weather events since 2000: Afghanistan, Burkina Faso,
Djibouti, Guatemala, Haiti, Kenya, Madagascar, Niger, Somalia and Zimbabwe. We used the
database developed for our June 2022 briefing paper, “Footing the Bill: Fair finance for loss and
damage in an era of escalating climate impacts”, the landing page for both the paper and the
accompanying technical note).

Our research for the paper looked at funding requirements of the appeals as well as funding
actually received, to determine shortfalls, with all figures in US dollars. The research focused on
“extreme weather” as a catch-all term to include the three categories of weather and climate
events used by the Intergovernmental Panel on Climate Change (IPCC): 1) extremes of
atmospheric weather and climate variables (temperature, precipitation, wind), 2) weather and
climate phenomena that influence the occurrence of extremes in weather or climate variables,
or are extremes themselves (monsoons, El Niño and other modes of variability, tropical and
extratropical cyclones) and 3) impacts on the natural physical environment (droughts, floods,
extreme sea levels, waves and coastal impacts, as well as other physical impacts, including
cryosphere-related impacts, landslides and sand and dust storms).

The research included key word searches of individual Humanitarian Response Plans (these
are usually country-specific, but sometimes include several countries) issued between 2000 and
2021, focusing on the following terms:

• Climate • Drought/dry • Flood/floods/flooding • Rain/precipitation • El Niño/La Niña • Heat
• Cold • Temperature • Weather • Natural disaster • Landslide • Fire • Glacier/glacial •
Thaw/melt • Sea level • Storm/cyclone/hurricane/monsoon/typhoon/tornado

Using the key words, the research determined if extreme weather was a factor in the appeal
(yes or no), and if yes, whether or not extreme weather was a major factor. Oxfam deemed
extreme weather to be a major factor if it was mentioned as a key crisis factor or priority
response at the outset of the plan.

We used the Oxfam database compiled during the ‘Footing the Bill’ research to calculate the
shortfall in funding the appeals linked to extreme weather in the 10 climate hotspot countries

**UN HUMANITARIAN APPEALS**

We discuss UN humanitarian appeals at several points in the media brief. These appeals
represent the largest combined request for humanitarian aid, and reflect the magnitude of
humanitarian needs in those spots. They bring together UN and non-governmental agencies to
assess the degree of devastation and humanitarian need, the capacity of each country to
respond, and accordingly develop response plans. In addition to overall country, regional, and
global figures, the appeals are broken down by sector, with food security being one of these sectors.

Our source on UN humanitarian appeals is OCHA’s financial tracking service database (https://fts.unocha.org/) as of 30 August 2022. It is important to note that not all emergencies have UN-tracked appeals – these only represent a subset of need, focusing on crises that are beyond the response capacity of states.

**EXTREME WEATHER**

For the statement that the Somali drought is the worst in 40 years, we relied on the UN Office for the Coordination of Humanitarian Affairs (OCHA) press release of 5 September 2022.

The source for stating that the world has experienced a five-fold increase in extreme weather events over 50 years is the UN World Meteorological Organization (WMO) Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes (1970–2019) (WMO-No. 1267), Geneva.

**CARBON EMISSIONS**

We calculated the sum of cumulative carbon emissions of the 10 climate hotspots for 2020 as 0.002 trillion tons of carbon – that is 0.13% of the world emissions (1.696524177 trillion tons of carbon) in same year – using data posted at Our World in Data. We used the same source to calculate the sum of cumulative carbon emissions of the G20 countries for 2020 at 1.299570755 trillion tons of carbon, which is 76.60% of global carbon emissions, and 650 times more than the emissions of the 10 climate hotspot countries.

**VULNERABILITY AND READINESS**

We used data from the Notre Dame Global Adaptation Initiative (ND-GAIN) to calculate the vulnerability to and readiness for climate change percentiles for the 10 climate hotspots and the G7 countries. See the ND-GAIN website.

**FOSSIL FUEL COMPANY PROFITS**

For the daily average of $2.8 billion in profits over the last 50 years, which is also an annual average of $1.022 trillion, we used this 2022 article from the Guardian: Revealed: oil sector’s ‘staggering’ $3bn-a-day profits for last 50 years. Based on the daily average, we calculated that less than 18 days of company profits would cover the full UN global humanitarian appeal for 2022 of $48.82 billion. We used the annual average of $1 trillion to calculate the returns from a 1% tax on fossil fuel profits ($10 billion). The total UN food security appeal is $14.9 billion for 2022. Only $5 billion of that appeal is currently funded, thus $10 billion would cover the gap in funding (see https://fts.unocha.org/, last visited 8 August 2022).