
Supplementary information

Global food insecurity and famine from reduced crop, marine fishery and livestock production due to climate disruption from nuclear war soot injection

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Supplemental Material for

Global food insecurity and famine from reduced crop, marine fishery and livestock production due to climate disruption from nuclear war soot injection

Lili Xia¹, Alan Robock¹, Kim Scherrer², Cheryl S. Harrison³, Benjamin Leon Bodirsky^{4,5}, Isabelle Weindl⁴, Jonas Jägermeyr^{4,6,7}, Charles G. Bardeen⁸, Owen B. Toon⁹, and Ryan Henseghan¹⁰

¹Department of Environmental Sciences, Rutgers University, New Brunswick, NJ, USA

²Institut de Ciència i Tecnologia Ambientals, Universitat Autònoma de Barcelona, Cerdanyola del Vallès, Spain (Now at: Department of Biological Sciences, University of Bergen, Bergen, Norway)

³Department of Ocean and Coastal Science, Center for Computation and Technology, Louisiana State University, Baton Rouge, Louisiana, USA

⁴Potsdam Institute for Climate Impact Research, Potsdam, Germany

⁵World Vegetable Center, P.O. Box 42, Shanhua, Tainan, Taiwan

⁶NASA Goddard Institute for Space Studies, New York, NY, USA

⁷Center for Climate Systems Research, Columbia University, New York, NY, USA

⁸National Center for Atmospheric Research, Boulder, CO, USA

⁹Laboratory for Atmospheric and Space Physics, Department of Atmospheric and Ocean Sciences, University of Colorado, Boulder, CO, USA

¹⁰School of Mathematical Sciences, Queensland University of Technology, Brisbane, QLD, Australia

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Table S1. Changes in calorie production (%) from the major food crops (maize, rice, soybean and spring wheat) and marine fish in Year 2 after simulated nuclear wars for the nations with nuclear weapons and the global average for all nations calculated. China here includes Mainland China, Hong Kong, and Macao. Bold is used for headings and global averages.

Nations	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg
China	-14.2	-47.7	-64.2	-77.4	-82.8	-98.6
France	-7.1	-22.9	-25.4	-31.9	-35.1	-99.8
India	-4.4	-2.1	-0.9	-6.0	-19.1	-65.2
Israel	0.9	-1.7	-6.6	-9.2	-24.9	-87.9
North Korea	-18.1	-89.0	-91.1	-98.6	-98.9	-99.4
Pakistan	-2.2	25.4	24.4	-10.3	-12.3	-81.8
Russia	6.0	-64.3	-84.2	-90.1	-90.3	-99.3
United Kingdom	1.0	-33.8	-45.3	-64.7	-82.0	-99.6
United States	-13.8	-50.6	-67.0	-81.2	-90.2	-99.7
Global Average	-6.9	-22.7	-32.8	-41.1	-48.0	-81.6

Table S2. Changes in calorie production (%) from the major food crops (maize, rice, soybean and spring wheat) and marine fish in Year 2 after simulated nuclear wars for all nations calculated. China here includes Mainland China, Hong Kong, and Macao. Bold is used for headings and global averages.

Nation	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg
Afghanistan	-16.9	-22.3	-27.1	-29.2	-32.9	-100.0
Albania	-12.0	24.3	12.7	-18.5	-13.1	-98.5
Algeria	-6.2	39.8	16.2	119.7	312.5	-61.3
Angola	1.3	-9.5	-20.3	-24.4	-37.5	-67.3
Antigua and Barbuda	-2.6	-7.4	-6.8	-6.3	-7.3	-17.1
Argentina	-2.5	7.4	-7.5	-18.4	-32.7	-73.9
Armenia	13.9	4.7	-1.2	-3.3	-35.3	-99.5
Australia	-7.7	-20.7	7.4	32.2	36.0	24.2
Austria	-33.9	-63.9	-70.1	-93.4	-91.9	-100.0
Azerbaijan	5.4	-11.9	-13.1	-18.1	-28.7	-100.0
Bahamas	-0.6	0.0	-4.5	-5.4	-6.6	-26.3
Bangladesh	-3.7	24.7	63.0	24.5	9.2	-96.6
Barbados	-2.7	-9.2	-11.4	-10.6	-11.1	-14.5
Belarus	50.2	11.5	-45.6	-95.4	-99.5	-99.9
Belgium	-18.5	-35.8	-37.2	-52.2	-68.3	-99.8
Belize	-1.5	-3.4	-4.4	-3.6	-11.2	-47.1
Benin	7.4	-9.5	0.7	-6.1	1.7	-60.4
Bermuda	-2.7	-3.8	-8.3	-15.2	-19.2	-57.0
Bolivia	-4.1	-17.2	-28.5	-38.3	-41.6	-72.6
Bosnia and Herzegovina	-33.8	-25.2	-64.4	-80.0	-79.8	-99.9
Botswana	17.5	-3.2	-2.9	-13.1	-24.5	-71.5
Brazil	-5.8	-2.8	-12.6	-22.5	-31.3	-67.1
Brunei	0.1	-1.3	-2.3	-3.0	-4.4	-10.4
Bulgaria	-7.9	18.3	6.1	-21.8	-6.7	-100.0
Burkina Faso	3.3	-7.7	-3.1	3.8	-6.3	-70.3
Cambodia	-22.4	-22.1	-12.9	-27.6	-51.3	-95.0
Cameroon	2.1	-8.4	-16.0	-13.5	-18.1	-82.3
Canada	-32.4	-80.1	-96.2	-99.4	-99.5	-99.8
Cape Verde	-1.0	-4.5	-5.0	-6.0	-7.0	-11.8
Central African Republic	-1.7	-6.7	-23.4	-21.3	-27.3	-79.8
Chad	1.9	11.9	19.2	5.2	42.6	-69.3
Chile	16.3	-17.2	4.4	5.2	-15.4	-63.7
China	-14.2	-47.7	-64.2	-77.4	-82.8	-98.6
Colombia	-6.6	-9.5	-19.4	-28.1	-33.2	-85.9
Republic of Congo	2.7	6.0	-6.3	-7.9	-11.1	-43.2
Costa Rica	-31.0	286.8	68.2	281.7	157.0	228.6
Croatia	-16.6	-24.4	-47.2	-72.0	-72.0	-99.8
Cuba	15.3	35.0	17.9	16.1	4.1	-69.3
Cyprus	2.6	-2.1	9.0	29.0	73.2	-66.8
Czech Republic	-8.6	-23.3	-35.4	-93.7	-88.1	-99.6

Nation	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg
Denmark	48.4	0.1	-76.2	-97.2	-97.4	-98.5
Dominica	-2.4	-7.4	-8.1	-8.3	-9.0	-12.3
Dominican Republic	13.0	77.1	38.5	59.1	39.0	-30.7
Ecuador	-5.5	-12.2	-15.2	-15.1	-21.2	-68.3
Egypt	-0.1	-3.3	-3.8	-11.8	-20.7	-82.7
El Salvador	2.2	33.0	26.4	20.7	11.0	-79.7
Estonia	75.3	-72.2	-96.2	-96.4	-96.6	-98.2
Ethiopia	-1.4	-17.0	-31.4	-37.3	-55.4	-90.5
Fiji	-3.4	-2.7	-3.3	-4.5	-3.2	-10.1
Finland	-48.2	-96.7	-97.1	-97.1	-97.3	-98.5
France	-7.1	-22.9	-25.4	-31.9	-35.1	-99.8
French Polynesia	-3.9	-4.9	-5.7	-5.6	-10.1	-23.0
Gabon	-2.0	0.4	-14.8	-13.6	-17.7	-61.1
Gambia	-6.1	-56.8	-27.2	10.6	-29.4	843.0
Georgia	5.6	-21.1	-49.9	-64.9	-69.0	-98.3
Germany	-5.6	-35.9	-37.1	-84.9	-86.4	-99.9
Ghana	5.9	-8.3	-4.7	-9.5	-2.6	-67.1
Greece	-9.4	40.8	35.7	7.9	9.4	-96.4
Grenada	-15.7	-28.5	-29.4	-28.5	-29.0	-30.5
Guatemala	0.9	5.0	-0.1	2.8	-10.1	-82.6
Guinea	-7.0	-2.8	-4.6	12.8	6.7	-81.3
Guinea-Bissau	-3.9	2.6	28.5	26.7	24.3	-13.9
Guyana	28.1	127.8	93.4	87.8	86.6	-4.8
Haiti	86.4	453.8	376.6	370.6	294.6	23.7
Honduras	-1.2	8.3	10.7	5.9	-4.2	-74.4
Hungary	-13.8	-56.6	-64.1	-81.3	-83.1	-99.9
Iceland	-9.0	-18.2	-29.1	-33.4	-35.6	-64.5
India	-4.4	-2.1	0.9	-6.0	-19.1	-65.2
Indonesia	-2.4	-1.5	-13.9	-17.1	-26.9	-64.5
Iran	-8.9	-15.8	-30.0	-34.2	-37.9	-98.0
Iraq	-2.8	-0.6	-12.2	-28.4	-26.8	-99.3
Ireland	9.1	-26.0	-32.5	-45.6	-68.3	-97.4
Israel	0.9	-1.7	-6.6	-9.2	-24.9	-87.9
Italy	-10.1	-17.8	-29.7	-52.2	-49.9	-98.3
Jamaica	17.9	94.2	90.2	78.5	49.3	-16.7
Japan	-7.3	-50.0	-66.9	-79.6	-84.7	-93.4
Jordan	2.2	-0.6	-5.4	-10.8	-32.0	-96.9
Kazakhstan	-11.0	-22.4	-48.7	-71.1	-88.9	-99.9
Kenya	-4.0	-20.1	-25.0	-34.2	-42.4	-84.9
Kiribati	-4.8	-10.9	-12.7	-17.2	-19.4	-31.9
Kuwait	-0.4	-9.5	-6.3	-16.5	-18.5	-93.7
Kyrgyzstan	-7.5	-29.8	-53.2	-70.4	-88.0	-100.0
Laos	-18.1	-44.8	-51.5	-55.2	-64.9	-99.0
Latvia	78.6	-20.6	-93.9	-98.0	-98.0	-99.0
Lebanon	0.9	-8.0	-8.1	2.1	7.3	-76.3

Nation	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg
Lesotho	0.7	-33.7	-41.5	-46.7	-63.2	-89.4
Liberia	-3.5	7.6	8.2	-3.9	5.4	-79.0
Lithuania	65.5	12.2	-70.0	-98.9	-98.9	-99.4
Luxembourg	-2.7	-17.6	-19.2	-43.5	-57.5	-100.0
Madagascar	-0.8	3.1	-15.9	-12.0	-27.9	-62.6
Malawi	6.5	4.2	-10.5	-23.3	-41.5	-69.3
Malaysia	0.7	-6.3	-16.3	-11.0	-14.8	-60.2
Maldives	-2.7	5.4	4.4	-0.6	-6.0	-8.9
Mali	-11.5	-16.8	-13.9	8.5	-15.4	-78.2
Malta	0.2	0.2	0.0	-0.4	-0.8	-3.1
Mauritania	-18.5	-28.6	-12.1	-12.3	-13.8	-53.5
Mauritius	-1.8	-0.9	-5.1	-3.3	-5.6	-23.7
Mexico	-8.0	-25.5	-37.9	-44.8	-57.3	-93.9
Moldova	-8.1	-42.6	-60.5	-79.7	-81.0	-99.9
Mongolia	-25.8	-70.0	-98.9	-99.9	-100.0	-100.0
Montenegro	-20.4	-8.6	-51.3	-69.4	-67.8	-98.5
Morocco	-10.6	39.3	5.7	87.9	95.4	-83.5
Mozambique	23.1	-3.5	3.1	-3.1	-18.3	-51.7
Myanmar	-6.3	-25.3	-44.9	-59.0	-74.2	-97.9
Namibia	4.0	-21.4	-15.6	-21.4	-15.2	-50.7
Nepal	-11.8	-32.5	-39.2	-49.4	-64.2	-97.5
Netherlands	7.7	-32.6	-32.8	-55.9	-76.3	-97.3
New Caledonia	-0.8	-0.5	-1.0	-1.2	-1.9	-3.6
New Zealand	-7.9	-6.1	-14.3	-24.2	-25.0	-60.9
Nicaragua	-4.0	5.8	-5.5	-5.4	-12.6	-73.4
Niger	-5.1	11.9	41.0	48.0	45.0	-67.7
Nigeria	2.0	-5.6	1.2	-6.0	4.2	-67.0
North Korea	-18.1	-89.0	-91.1	-98.6	-98.9	-99.4
Norway	-24.0	-44.5	-49.0	-51.6	-53.6	-74.7
Oman	-2.3	11.8	-4.8	8.8	-8.9	36.0
Pakistan	-2.2	25.4	24.4	-10.3	-12.3	-81.8
Panama	-14.2	161.8	43.9	134.5	141.7	55.3
Paraguay	2.4	-0.3	-4.0	-13.6	-30.6	-77.2
Peru	-1.6	-15.5	-23.1	-26.2	-31.3	-64.2
Philippines	-4.2	-20.8	-6.1	-6.7	-2.1	-51.9
Poland	24.5	-5.8	-19.3	-94.0	-92.2	-99.9
Portugal	4.3	-10.4	-35.1	-49.2	-62.0	-96.5
Romania	-10.0	-40.6	-51.9	-74.8	-76.3	-99.8
Russia	6.0	-64.3	-84.2	-90.1	-90.3	-99.3
Rwanda	-6.5	-28.0	-38.0	-52.8	-54.2	-80.4
Saint Kitts and Nevis	-1.4	-7.0	-5.4	-6.1	-5.7	-15.0
Saint Lucia	-4.0	-9.9	-11.0	-9.4	-9.7	-14.8
Saint Vincent and the Grenadines	-8.4	-15.0	-16.0	-14.5	-13.9	-17.3
Samoa	-4.4	-2.1	-1.5	0.7	-0.9	-8.1

Nation	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg
Sao Tome and Principe	-0.5	2.7	0.5	1.8	1.7	-1.7
Saudi Arabia	6.0	31.0	19.9	-1.9	39.8	-45.5
Senegal	-7.5	-15.1	14.8	9.0	6.8	-28.4
Serbia	-21.5	-60.1	-70.3	-83.8	-86.6	-100.0
Sierra Leone	-12.0	-8.3	-11.5	-4.6	13.0	-77.0
Slovakia	-10.4	-37.9	-42.0	-78.4	-78.4	-100.0
Slovenia	-22.3	-53.2	-63.0	-83.4	-81.4	-99.9
Solomon Islands	-6.0	-5.9	-8.9	-10.7	-10.4	-14.4
South Africa	-4.6	-21.8	-31.2	-40.9	-50.1	-86.2
South Korea	-6.1	-48.5	-58.6	-83.6	-91.7	-95.7
Spain	3.4	24.4	7.9	19.1	10.6	-96.2
Sri Lanka	-15.0	-4.0	-4.9	0.5	-11.0	-19.4
Sudan	21.9	27.2	24.4	35.8	36.8	-42.8
Suriname	32.2	200.3	170.1	165.4	161.0	43.7
Sweden	-36.6	-79.0	-97.7	-98.5	-98.6	-99.2
Switzerland	-18.4	-34.2	-40.1	-79.2	-75.5	-99.9
Taiwan, province of China	-13.2	-36.7	-43.3	-61.6	-68.8	-86.4
Tajikistan	-15.0	-45.2	-52.6	-62.0	-76.8	-100.0
Tanzania	2.2	-37.6	-42.6	-46.6	-53.7	-82.1
Thailand	-19.6	-26.9	-29.3	-38.0	-53.9	-97.9
Togo	6.6	-8.3	-4.5	-8.8	1.6	-60.9
Trinidad and Tobago	-2.3	-7.0	-7.3	-7.9	-7.7	-10.3
Tunisia	1.7	13.6	35.3	97.5	113.0	-64.4
Turkey	4.7	22.1	7.4	5.9	10.5	-99.0
Turkmenistan	-19.5	-31.3	-36.6	-40.2	-41.1	-99.9
Uganda	-11.5	-28.7	-41.5	-60.5	-72.0	-94.6
Ukraine	17.2	-23.2	-25.8	-69.1	-68.7	-100.0
United Arab Emirates	3.3	87.4	341.8	-1.4	-15.0	-36.7
United Kingdom	1.0	-33.8	-45.3	-64.7	-82.0	-99.6
United States	-13.8	-50.6	-67.0	-81.2	-90.2	-99.7
Uruguay	-4.2	-8.7	-3.0	-18.6	-35.4	-62.1
Uzbekistan	-16.7	-19.5	-28.4	-29.5	-34.8	-100.0
Vanuatu	-1.7	0.7	-2.9	-7.7	-7.3	-13.6
Venezuela	-3.5	15.5	3.3	4.4	-4.3	-72.1
Vietnam	-8.1	-34.7	-48.8	-54.2	-65.4	-96.0
Yemen	20.3	69.2	52.3	51.7	45.1	-57.7
Zambia	6.7	0.2	-18.1	-28.0	-42.2	-69.8
Zimbabwe	9.2	-4.9	-9.2	-19.0	-37.2	-69.2
Total	-7.0	-22.8	-32.3	-41.1	-48.1	-81.6

Table S3. Assumptions for the *Livestock*, *Partial Livestock*, and *No Livestock* cases. Livestock includes meat, dairy, eggs, and aquaculture. Inland fish capture, a minor source of food, is not considered in any of the cases

Assumptions	Livestock	Partial Livestock	No Livestock
Reduction in cereals	✓	✓	✓
Reduction in vegetables, fruit and nuts	✓	✓	✓
Reduction in marine wild catch	✓	✓	✓
Final product of biofuel	✓	✓	✓
Marine fishery effort	Business as usual	Five times the effort ¹²	Five times the effort ¹²
Livestock, aquaculture	No change	Portion of livestock remains	Consumed in Year 1
Livestock feed from crops	For animal feed	Portion for human consumption	Portion for human consumption

Table S4. Number of people who would die from starvation (millions) after the simulated nuclear war in Year 2 for all nations assuming no trade under the *Livestock* case (livestock production is continued). The second column is the population in millions in 2010⁴⁵. 150 Tg + hw is half of the household waste added to food consumption, and 150 Tg + tw is total household waste added to food consumption. Bold is used for headings and global averages, and italic is used for population in 2010.

Nation	<i>Population</i>	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg	150 Tg +hw	150 Tg + tw
Afghanistan	<i>28.4</i>	4.5	6.2	8.1	9.1	10.5	28.4	28.4	28.4
Albania	<i>3.2</i>	0.7	0.0	0.5	1.1	1.0	2.8	2.7	2.7
Algeria	<i>37.1</i>	19.6	11.6	16.4	0.0	0.0	30.4	29.3	28.2
Angola	<i>19.5</i>	0.0	1.2	3.4	4.3	7.0	13.1	12.6	12.1
Antigua and Barbuda	<i>0.1</i>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Argentina	<i>40.4</i>	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0
Armenia	<i>3.0</i>	0.7	0.8	1.1	1.3	1.9	3.0	3.0	3.0
Australia	<i>22.4</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Austria	<i>8.4</i>	0.0	2.9	3.9	6.4	6.5	8.4	8.4	8.4
Azerbaijan	<i>9.1</i>	1.7	2.8	3.4	3.7	4.4	9.1	9.1	9.1
Bahamas	<i>0.4</i>	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Bangladesh	<i>151.1</i>	0.0	0.0	0.0	0.0	0.0	145.4	144.9	144.4
Barbados	<i>0.3</i>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Belarus	<i>9.5</i>	0.0	0.0	3.0	8.4	9.3	9.5	9.5	9.5
Belgium	<i>10.9</i>	2.2	3.1	3.8	6.8	6.2	10.9	10.9	10.9
Belize	<i>0.3</i>	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
Benin	<i>9.5</i>	0.0	1.1	0.2	0.8	0.1	5.8	5.5	5.1
Bermuda	<i>0.1</i>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bolivia	<i>10.2</i>	0.0	0.0	0.0	0.7	1.2	5.7	5.7	5.7
Bosnia and Herzegovina	<i>3.8</i>	1.7	1.4	2.5	3.0	3.2	3.8	3.8	3.7
Botswana	<i>2.0</i>	1.3	1.4	1.4	1.5	1.5	1.8	1.8	1.8
Brazil	<i>195.2</i>	0.0	0.0	0.0	0.0	0.0	77.2	57.5	37.7
Brunei	<i>0.4</i>	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Bulgaria	<i>7.4</i>	0.0	0.0	0.0	0.0	0.0	7.4	7.4	7.4
Burkina Faso	<i>15.5</i>	0.0	0.0	0.0	0.0	0.0	10.1	9.3	8.5
Cambodia	<i>14.4</i>	1.9	1.9	0.5	2.8	6.5	13.3	13.2	13.2
Cameroon	<i>20.6</i>	0.0	0.2	1.9	1.2	2.4	16.8	16.4	16.0
Canada	<i>34.1</i>	0.0	18.5	30.2	33.3	33.5	34.0	33.9	33.9
Cape Verde	<i>0.5</i>	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3
Central African Republic	<i>4.4</i>	0.0	0.1	0.8	0.7	1.0	3.4	3.4	3.3
Chad	<i>11.7</i>	0.0	0.0	0.0	0.0	0.0	8.1	8.1	8.1
Chile	<i>17.2</i>	0.0	3.4	0.0	0.0	3.1	11.2	10.6	10.0
China	<i>1367.4</i>	66.3	570.7	823.1	1029.1	1117.4	1360.5	1359.4	1358.4
Colombia	<i>46.4</i>	1.6	3.7	8.3	12.1	14.4	37.1	36.5	35.9
Republic of Congo	<i>4.1</i>	0.8	0.7	1.4	1.3	1.6	3.1	3.1	3.1
Costa Rica	<i>4.7</i>	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Croatia	<i>4.3</i>	0.0	0.4	1.5	2.7	2.7	4.2	4.2	4.2

Nation	Population	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg	150 Tg +hw	150 Tg + tw
Cuba	11.3	0.2	0.0	0.0	0.0	1.2	8.2	7.8	7.3
Cyprus	1.1	0.5	0.5	0.4	0.4	0.2	0.8	0.8	0.8
Czech Republic	10.6	0.0	0.0	0.7	8.9	8.5	10.5	10.5	10.5
Denmark	5.6	0.0	0.0	2.8	4.5	4.6	5.1	5.1	5.0
Dominican Republic	10.0	0.3	0.0	0.0	0.0	0.0	2.4	2.1	1.8
Ecuador	15.0	0.0	0.0	0.0	0.0	0.0	7.7	7.4	7.1
Egypt	78.1	8.3	9.5	22.3	27.2	32.2	68.0	65.4	62.9
El Salvador	6.2	0.0	0.0	0.0	0.0	0.0	4.6	4.6	4.5
Estonia	1.3	0.0	0.7	1.2	1.3	1.2	1.2	1.2	1.2
Ethiopia	87.1	0.0	0.0	12.8	18.8	37.5	75.2	75.1	75.0
Finland	5.4	1.8	5.2	5.3	5.3	5.3	5.3	5.3	5.3
France	63.2	0.0	0.0	0.0	0.0	0.0	61.5	61.1	60.8
French Polynesia	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Gabon	1.6	0.5	0.4	0.6	0.6	0.7	1.2	1.1	1.1
Gambia	1.7	0.5	1.1	0.8	0.2	0.8	0.0	0.0	0.0
Georgia	4.4	2.5	2.8	3.3	3.6	3.7	4.4	4.4	4.4
Germany	83.0	0.0	2.1	9.8	61.2	64.6	82.8	82.8	82.7
Ghana	24.3	0.0	1.1	0.1	1.3	0.0	16.2	14.7	13.1
Greece	11.1	0.3	0.0	0.0	0.0	0.0	10.5	10.4	10.3
Grenada	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Guatemala	14.3	0.0	0.0	0.0	0.0	0.0	10.6	10.3	10.0
Guinea	10.9	0.2	0.0	0.0	0.0	0.0	8.7	8.5	8.2
Guinea-Bissau	1.6	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0
Guyana	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haiti	9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Honduras	7.6	0.0	0.0	0.0	0.0	0.0	5.0	4.8	4.6
Hungary	10.0	0.0	1.3	2.9	6.1	7.0	10.0	10.0	10.0
Iceland	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
India	1205.6	0.0	0.0	0.0	0.0	118.8	745.9	707.9	670.0
Indonesia	240.7	0.0	0.0	0.0	0.0	17.9	133.8	121.1	108.4
Iran	74.5	11.0	14.6	27.4	31.5	33.1	73.2	73.0	72.8
Iraq	31.0	13.4	12.9	15.2	18.2	17.8	30.9	30.9	30.8
Ireland	4.5	0.0	0.1	0.5	0.6	1.7	3.0	2.7	2.4
Israel	7.4	3.4	4.4	4.3	4.4	4.1	6.3	6.0	5.7
Italy	60.5	9.6	13.4	20.5	31.3	31.0	58.2	57.7	57.3
Jamaica	2.7	0.0	0.0	0.0	0.0	0.0	0.8	0.6	0.5
Japan	127.4	76.9	99.7	108.1	115.2	118.6	124.5	124.3	124.0
Jordan	6.5	4.1	4.5	4.5	4.7	4.7	6.3	6.3	6.3
Kazakhstan	15.9	0.0	0.3	4.6	8.6	11.9	15.9	15.9	15.9
Kenya	40.9	1.8	7.8	9.4	13.5	17.0	33.5	33.4	33.3
Kuwait	3.0	2.6	2.6	2.6	2.7	2.7	3.0	3.0	3.0
Kyrgyzstan	5.3	0.1	1.2	2.3	3.2	4.0	5.3	5.3	5.3
Laos	6.4	0.2	2.2	2.7	3.0	3.8	6.3	6.3	6.3
Latvia	2.1	0.0	0.0	1.7	2.0	1.9	2.0	2.0	2.0

Nation	Population	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg	150 Tg +hw	150 Tg + tw
Lebanon	4.3	2.3	2.5	2.5	2.3	2.0	3.8	3.7	3.6
Lesotho	2.0	1.1	1.4	1.5	1.5	1.6	1.9	1.9	1.9
Liberia	4.0	1.0	0.6	0.6	1.0	0.7	3.3	3.3	3.3
Lithuania	3.1	0.0	0.0	1.5	3.0	2.9	3.0	3.0	3.0
Luxembourg	0.5	0.0	0.0	0.0	0.2	0.2	0.5	0.5	0.5
Madagascar	21.1	0.0	0.0	0.2	0.0	3.3	11.6	11.4	11.2
Malawi	15.0	0.0	0.0	0.0	0.7	4.1	9.3	8.8	8.3
Malaysia	28.3	0.0	0.0	0.0	0.0	0.0	14.2	12.0	9.8
Maldives	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Mali	14.0	0.0	0.4	0.3	0.0	0.4	9.8	9.0	8.2
Malta	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Mauritania	3.6	2.3	2.5	2.2	2.0	2.2	2.7	2.6	2.4
Mexico	117.9	14.1	33.6	46.6	54.1	67.5	106.7	105.1	103.5
Moldova	3.6	0.0	0.3	1.3	2.5	2.6	3.6	3.6	3.6
Mongolia	2.7	0.9	1.6	2.2	2.4	2.6	2.7	2.7	2.7
Montenegro	0.6	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6
Morocco	31.6	6.9	0.0	2.3	0.0	0.0	26.7	25.7	24.8
Mozambique	24.0	0.0	0.0	0.0	0.0	1.2	10.5	9.8	9.1
Myanmar	51.9	0.0	5.6	17.5	26.2	35.4	50.1	50.0	49.9
Namibia	2.2	0.4	1.0	0.8	0.9	0.7	1.5	1.5	1.5
Nepal	26.8	1.8	7.7	9.4	12.5	16.4	26.2	26.2	26.1
Netherlands	16.6	0.0	4.0	6.5	11.7	11.2	16.3	16.3	16.2
New Caledonia	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
New Zealand	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nicaragua	5.8	0.0	0.0	0.0	0.0	0.0	3.5	3.4	3.3
Niger	15.9	0.0	0.0	0.0	0.0	0.0	12.4	11.9	11.4
Nigeria	159.7	0.0	8.1	0.0	8.3	0.0	107.6	98.8	90.0
North Korea	24.5	6.7	22.1	22.5	24.1	24.3	24.5	24.5	24.5
Norway	4.9	2.7	4.4	4.6	4.6	4.7	4.7	4.7	4.6
Oman	2.8	1.8	0.6	1.4	0.2	1.1	0.0	0.0	0.0
Pakistan	173.1	0.0	0.0	0.0	0.0	12.1	143.6	141.1	138.7
Panama	3.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Paraguay	6.5	0.0	0.0	0.0	0.0	0.0	1.6	1.3	0.9
Peru	29.3	0.7	4.8	7.1	8.1	9.4	19.0	18.2	17.4
Philippines	93.4	0.0	10.5	0.0	0.0	0.0	43.5	37.0	30.5
Poland	38.2	0.0	0.0	0.7	34.2	34.0	38.1	38.1	38.1
Portugal	10.6	2.3	3.2	5.4	6.1	7.1	9.2	8.9	8.6
Romania	21.9	0.0	2.2	6.1	13.9	14.8	21.8	21.8	21.8
Russia	143.6	0.0	81.1	115.6	126.4	128.5	142.0	141.8	141.5
Rwanda	10.8	0.0	0.3	1.7	3.9	4.2	8.0	7.9	7.8
Saint Kitts and Nevis	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Saint Lucia	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Saudi Arabia	27.3	19.2	18.1	18.8	20.0	17.9	23.2	22.5	21.9
Senegal	13.0	2.3	3.1	0.0	0.0	0.3	4.5	3.9	3.3

Nation	Population	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg	150 Tg +hw	150 Tg + tw
Serbia	9.6	0.0	2.9	4.8	6.7	7.2	9.5	9.5	9.5
Sierra Leone	5.8	0.0	0.0	0.0	0.0	0.0	4.3	4.2	4.1
Slovakia	5.4	0.0	1.4	1.8	3.9	4.1	5.4	5.4	5.4
Slovenia	2.1	0.5	0.9	1.2	1.5	1.5	2.0	2.0	2.0
Solomon Islands	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Africa	51.5	0.0	6.0	11.1	16.5	21.7	41.9	40.4	38.9
South Korea	48.5	27.5	37.2	39.4	44.9	47.6	48.1	48.1	48.0
Spain	46.2	0.0	0.0	0.0	0.0	0.0	42.1	41.6	41.1
Sri Lanka	20.8	3.1	0.8	1.0	0.0	2.3	4.1	2.8	1.6
Suriname	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweden	9.4	2.4	7.2	9.1	9.2	9.3	9.3	9.3	9.3
Switzerland	7.8	2.8	3.5	4.2	5.8	5.7	7.7	7.7	7.7
Taiwan, province of China	23.1	15.7	18.0	18.6	20.4	21.1	22.6	22.6	22.5
Tajikistan	7.6	2.5	4.0	4.6	5.2	6.2	7.6	7.6	7.6
Tanzania	45.0	0.0	7.9	10.6	13.0	17.2	33.2	33.1	33.0
Thailand	66.4	0.0	0.0	0.0	2.0	18.8	64.5	64.3	64.1
Togo	6.3	0.0	0.4	0.1	0.4	0.0	3.8	3.7	3.5
Trinidad and Tobago	1.3	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Tunisia	10.6	4.0	3.2	2.6	0.0	0.0	8.0	7.5	7.0
Turkey	72.1	0.0	0.0	0.0	0.0	0.0	70.3	69.9	69.5
Turkmenistan	5.0	1.0	2.1	2.5	2.7	2.7	5.0	5.0	5.0
Uganda	34.0	0.0	6.3	11.4	18.6	23.8	32.9	32.8	32.7
Ukraine	46.1	0.0	0.0	0.0	24.3	24.7	46.0	46.0	46.0
United Arab Emirates	8.4	7.6	6.0	0.7	7.9	8.1	8.2	8.2	8.2
United Kingdom	62.3	3.7	21.6	27.8	37.4	46.2	55.9	54.8	53.8
United States	312.2	0.0	30.7	115.2	186.0	240.9	305.9	304.6	303.3
Uruguay	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Uzbekistan	27.8	1.9	4.4	7.1	7.7	9.4	27.8	27.8	27.8
Venezuela	29.0	10.4	7.4	9.7	9.6	11.3	23.4	22.8	22.1
Vietnam	89.0	0.0	21.9	36.7	42.4	54.2	86.1	85.7	85.4
Yemen	22.8	12.9	9.0	10.3	10.4	11.0	19.3	19.2	19.1
Zambia	13.2	0.0	0.0	0.0	0.0	1.7	7.1	7.1	7.1
Zimbabwe	13.1	0.7	2.3	2.8	3.8	5.8	9.3	9.3	9.3
Total	6700.1	409.2	1249.3	1798.4	2363.8	2812.0	5441.9	5318.2	5195.7

Nation	<i>Population</i>	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg	150 Tg + hw	150 Tg + tw
Croatia	4.3	0.0	0.0	0.0	1.6	1.6	4.3	4.3	4.3
Cuba	11.3	0.0	0.0	0.0	0.0	0.0	7.7	7.2	6.7
Cyprus	1.1	0.4	0.4	0.3	0.2	0.0	0.8	0.8	0.8
Czech Republic	10.6	0.0	0.0	0.0	8.7	7.6	10.5	10.5	10.5
Denmark	5.6	0.0	0.0	0.7	4.7	4.8	5.1	5.1	5.0
Dominican Republic	10.0	0.0	0.0	0.0	0.0	0.0	2.0	1.7	1.4
Ecuador	15.0	0.0	0.0	0.0	0.0	0.0	7.9	7.6	7.3
Egypt	78.1	0.4	2.3	9.0	15.0	21.3	65.8	62.7	59.6
El Salvador	6.2	0.0	0.0	0.0	0.0	0.0	4.5	4.5	4.4
Estonia	1.3	0.0	0.6	1.2	1.3	1.2	1.3	1.3	1.3
Ethiopia	87.1	0.0	0.0	10.7	17.0	36.8	75.7	75.6	75.5
Finland	5.4	0.5	5.3	5.3	5.3	5.3	5.3	5.3	5.3
France	63.2	0.0	0.0	0.0	0.0	0.0	62.2	62.0	61.8
French Polynesia	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Gabon	1.6	0.3	0.3	0.5	0.5	0.5	1.1	1.1	1.0
Gambia	1.7	0.4	1.1	0.7	0.2	0.7	0.0	0.0	0.0
Georgia	4.4	2.6	3.0	3.5	3.7	3.8	4.4	4.4	4.4
Germany	83.0	0.0	0.0	0.0	57.0	60.2	82.8	82.8	82.8
Ghana	24.3	0.0	0.0	0.0	0.0	0.0	15.2	13.4	11.7
Greece	11.1	0.0	0.0	0.0	0.0	0.0	10.4	10.3	10.2
Grenada	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Guatemala	14.3	0.0	0.0	0.0	0.0	0.0	10.2	9.9	9.5
Guinea	10.9	0.0	0.0	0.0	0.0	0.0	8.5	8.2	8.0
Guinea-Bissau	1.6	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Guyana	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haiti	9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Honduras	7.6	0.0	0.0	0.0	0.0	0.0	4.9	4.7	4.4
Hungary	10.0	0.0	0.0	0.0	2.7	3.7	10.0	10.0	10.0
Iceland	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
India	1205.6	0.0	0.0	0.0	0.0	65.7	720.5	680.5	640.4
Indonesia	240.7	0.0	0.0	0.0	0.0	0.0	122.7	108.6	94.6
Iran	74.5	0.0	0.3	14.2	18.4	21.2	72.9	72.7	72.5
Iraq	31.0	11.1	10.7	13.1	16.5	16.1	30.9	30.9	30.8
Ireland	4.5	0.0	0.0	0.0	0.4	1.9	3.7	3.6	3.4
Israel	7.4	3.7	4.2	4.3	4.4	4.5	6.6	6.5	6.3
Italy	60.5	0.0	0.0	8.2	23.9	22.8	58.6	58.3	57.9
Jamaica	2.7	0.0	0.0	0.0	0.0	0.0	0.7	0.6	0.4
Japan	127.4	71.5	98.2	108.5	116.5	120.0	125.2	125.0	124.8
Jordan	6.5	4.0	4.3	4.3	4.5	4.8	6.4	6.4	6.3
Kazakhstan	15.9	0.0	0.0	1.4	7.3	12.0	15.9	15.9	15.9
Kenya	40.9	2.9	9.0	10.7	14.6	17.9	34.4	34.2	34.1
Kuwait	3.0	2.6	2.7	2.7	2.7	2.7	3.0	3.0	3.0
Kyrgyzstan	5.3	0.0	0.4	1.9	3.1	4.2	5.3	5.3	5.3
Laos	6.4	0.0	1.4	2.0	2.3	3.2	6.4	6.3	6.3

Nation	<i>Population</i>	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg	150 Tg + hw	150 Tg + tw
Latvia	2.1	0.0	0.0	1.7	2.0	2.0	2.0	2.0	2.0
Lebanon	4.3	2.0	2.3	2.3	2.0	1.8	3.7	3.7	3.6
Lesotho	2.0	1.1	1.4	1.5	1.5	1.7	1.9	1.9	1.9
Liberia	4.0	0.9	0.6	0.6	1.0	0.7	3.3	3.3	3.3
Lithuania	3.1	0.0	0.0	0.6	3.0	3.0	3.0	3.0	3.0
Luxembourg	0.5	0.0	0.0	0.0	0.2	0.2	0.5	0.5	0.5
Madagascar	21.1	0.0	0.0	0.0	0.0	2.0	11.1	10.9	10.7
Malawi	15.0	0.0	0.0	0.0	0.0	1.5	8.0	7.4	6.8
Malaysia	28.3	0.0	0.0	0.0	0.0	0.0	10.4	7.6	4.8
Maldives	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Mali	14.0	0.0	0.0	0.0	0.0	0.0	9.9	9.2	8.5
Malta	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Mauritania	3.6	2.5	2.7	2.3	2.2	2.3	2.9	2.8	2.6
Mexico	117.9	0.0	9.1	26.8	36.8	54.7	107.1	105.6	104.1
Moldova	3.6	0.0	0.0	0.0	1.8	1.9	3.6	3.6	3.6
Mongolia	2.7	1.1	1.9	2.5	2.6	2.7	2.7	2.7	2.7
Montenegro	0.6	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6
Morocco	31.6	2.9	0.0	0.0	0.0	0.0	26.2	25.2	24.2
Mozambique	24.0	0.0	0.0	0.0	0.0	0.0	9.4	8.6	7.8
Myanmar	51.9	0.0	0.0	0.3	13.6	28.1	50.5	50.4	50.3
Namibia	2.2	0.5	1.1	0.9	1.0	0.8	1.5	1.5	1.5
Nepal	26.8	0.3	6.6	8.5	11.6	16.0	26.2	26.1	26.0
Netherlands	16.6	0.0	3.2	4.4	9.6	11.7	16.4	16.4	16.4
New Caledonia	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1
New Zealand	4.4	0.0	0.0	0.0	0.0	0.0	1.1	0.7	0.4
Nicaragua	5.8	0.0	0.0	0.0	0.0	0.0	3.7	3.6	3.4
Niger	15.9	0.0	0.0	0.0	0.0	0.0	12.1	11.5	11.0
Nigeria	159.7	0.0	0.0	0.0	0.0	0.0	97.7	87.2	76.8
North Korea	24.5	5.7	22.1	22.5	24.3	24.4	24.5	24.5	24.5
Norway	4.9	3.1	4.5	4.7	4.7	4.7	4.8	4.7	4.7
Oman	2.8	1.9	0.7	1.5	0.2	1.2	0.0	0.0	0.0
Pakistan	173.1	0.0	0.0	0.0	0.0	4.2	140.1	137.4	134.6
Panama	3.7	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Paraguay	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peru	29.3	0.0	1.0	3.8	5.0	6.7	18.1	17.3	16.4
Philippines	93.4	0.0	0.9	0.0	0.0	0.0	37.8	30.5	23.3
Poland	38.2	0.0	0.0	0.0	32.9	31.8	38.1	38.1	38.1
Portugal	10.6	1.7	2.8	5.1	6.1	7.2	9.8	9.6	9.5
Romania	21.9	0.0	0.0	0.0	9.5	10.4	21.8	21.7	21.7
Russia	143.6	0.0	70.8	111.4	123.7	124.9	141.9	141.7	141.5
Rwanda	10.8	0.0	0.3	1.8	3.9	4.2	8.0	7.9	7.9
Saint Kitts and Nevis	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Saint Lucia	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Saudi Arabia	27.3	18.1	16.3	17.2	18.9	15.7	22.6	21.8	21.1

Nation	Population	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg	150 Tg + hw	150 Tg + tw
Senegal	13.0	1.8	2.7	0.0	0.0	0.0	4.2	3.5	2.8
Serbia	9.6	0.0	0.0	0.2	4.3	5.3	9.6	9.6	9.6
Sierra Leone	5.8	0.0	0.0	0.0	0.0	0.0	4.1	4.0	4.0
Slovakia	5.4	0.0	0.0	0.1	3.4	3.5	5.4	5.4	5.4
Slovenia	2.1	0.4	1.0	1.2	1.6	1.6	2.0	2.0	2.0
Solomon Islands	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Africa	51.5	0.0	0.0	4.6	11.1	17.3	41.4	39.8	38.2
South Korea	48.5	24.9	36.1	38.7	45.2	47.7	48.2	48.1	48.1
Spain	46.2	0.0	0.0	0.0	0.0	0.0	42.2	41.7	41.2
Sri Lanka	20.8	2.5	0.1	0.3	0.0	1.6	3.5	2.2	0.9
Suriname	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweden	9.4	0.2	6.5	9.1	9.3	9.3	9.3	9.3	9.3
Switzerland	7.8	3.1	3.9	4.4	6.3	6.1	7.8	7.8	7.8
Taiwan, province of China	23.1	15.1	17.7	18.4	20.3	21.1	22.8	22.8	22.7
Tajikistan	7.6	0.9	3.1	3.8	4.5	5.8	7.6	7.6	7.6
Tanzania	45.0	0.0	6.2	9.2	11.7	16.1	33.4	33.3	33.2
Thailand	66.4	0.0	0.0	0.0	0.0	4.2	64.5	64.4	64.2
Togo	6.3	0.0	0.0	0.0	0.0	0.0	3.7	3.5	3.4
Trinidad and Tobago	1.3	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Tunisia	10.6	2.6	1.7	0.4	0.0	0.0	7.7	7.1	6.6
Turkey	72.1	0.0	0.0	0.0	0.0	0.0	70.7	70.3	70.0
Turkmenistan	5.0	0.0	0.3	0.8	1.1	1.1	5.0	5.0	5.0
Uganda	34.0	0.0	6.1	11.3	18.9	23.9	33.0	33.0	32.9
Ukraine	46.1	0.0	0.0	0.0	7.0	6.9	46.0	46.0	46.0
United Arab Emirates	8.4	7.6	5.8	0.0	8.0	8.2	8.3	8.3	8.3
United Kingdom	62.3	0.0	11.7	20.0	33.8	46.2	59.1	58.5	58.0
United States	312.2	0.0	0.0	0.0	106.7	202.7	307.4	306.4	305.4
Uruguay	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Uzbekistan	27.8	0.0	0.0	1.9	2.4	4.4	27.8	27.8	27.8
Venezuela	29.0	8.6	4.9	7.4	7.2	9.1	23.1	22.4	21.7
Vietnam	89.0	0.0	12.1	29.3	35.8	49.4	86.2	85.8	85.5
Yemen	22.8	12.9	8.8	10.2	10.2	10.8	19.4	19.3	19.1
Zambia	13.2	0.0	0.0	0.0	0.0	1.1	6.9	6.9	6.9
Zimbabwe	13.1	0.3	2.0	2.5	3.6	5.7	9.4	9.3	9.3
Total	6700.1	254.7	925.6	1426.1	2080.9	2512.2	5340.8	5205.1	5081.2

Table S6. Number of people who would die from starvation (millions) after the simulated nuclear war in Year 2 for all nations, assuming no trade, under the *No Livestock* case (assuming livestock is killed in Year 1 and 50% of livestock grain feed is used for human consumption). The second column is the population in millions in 2010⁴². 150 Tg + hw is half of the household waste added to food consumption, and 150 Tg + tw is total household waste added to food consumption. Bold is used for headings and global averages, and italic is used for population in 2010.

Nation	<i>Population</i>	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg	150 Tg + hw	150 Tg + tw
Afghanistan	<i>28.4</i>	5.9	7.3	8.6	9.2	10.2	28.4	28.4	28.4
Albania	<i>3.2</i>	1.1	0.3	0.6	1.3	1.1	3.1	3.1	3.1
Algeria	<i>37.1</i>	19.1	10.3	14.8	0.0	0.0	29.7	28.5	27.3
Angola	<i>19.5</i>	0.0	0.0	0.1	1.1	4.5	11.9	11.3	10.7
Antigua and Barbuda	<i>0.1</i>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Argentina	<i>40.4</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Armenia	<i>3.0</i>	1.0	1.1	1.2	1.3	1.8	3.0	3.0	3.0
Australia	<i>22.4</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Austria	<i>8.4</i>	0.0	3.1	4.0	7.4	7.2	8.4	8.4	8.4
Azerbaijan	<i>9.1</i>	1.3	2.5	2.6	3.0	3.8	9.1	9.1	9.1
Bahamas	<i>0.4</i>	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Bangladesh	<i>151.1</i>	0.0	0.0	0.0	0.0	0.0	146.3	145.8	145.4
Barbados	<i>0.3</i>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Belarus	<i>9.5</i>	0.0	0.0	0.0	8.5	9.4	9.5	9.5	9.5
Belgium	<i>10.9</i>	1.9	3.8	4.0	5.7	7.4	10.9	10.9	10.9
Belize	<i>0.3</i>	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
Benin	<i>9.5</i>	0.0	0.0	0.0	0.0	0.0	5.3	4.9	4.4
Bermuda	<i>0.1</i>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bolivia	<i>10.2</i>	0.0	0.0	0.0	0.2	0.8	5.8	5.8	5.8
Bosnia and Herzegovina	<i>3.8</i>	1.6	1.3	2.6	3.2	3.2	3.8	3.8	3.8
Botswana	<i>2.0</i>	1.5	1.6	1.6	1.6	1.7	1.8	1.8	1.8
Brazil	<i>195.2</i>	0.0	0.0	0.0	0.0	0.0	54.0	30.2	6.5
Brunei	<i>0.4</i>	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Bulgaria	<i>7.4</i>	0.0	0.0	0.0	0.0	0.0	7.4	7.4	7.4
Burkina Faso	<i>15.5</i>	0.0	0.0	0.0	0.0	0.0	10.1	9.3	8.5
Cambodia	<i>14.4</i>	1.0	0.9	0.0	1.9	5.9	13.4	13.3	13.2
Cameroon	<i>20.6</i>	0.0	0.0	0.3	0.0	0.8	16.6	16.2	15.8
Canada	<i>34.1</i>	0.0	7.5	29.2	33.6	33.7	34.0	34.0	33.9
Cape Verde	<i>0.5</i>	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.3
Central African Republic	<i>4.4</i>	0.2	0.4	1.2	1.1	1.3	3.6	3.6	3.6
Chad	<i>11.7</i>	0.0	0.0	0.0	0.0	0.0	8.0	8.0	8.0
Chile	<i>17.2</i>	0.0	3.7	0.0	0.0	2.9	12.0	11.5	11.0
China	<i>1367.4</i>	25.2	558.4	821.9	1031.9	1117.3	1362.3	1361.6	1360.8
Colombia	<i>46.4</i>	1.6	2.9	7.8	12.0	14.5	40.0	39.5	39.1
Republic of Congo	<i>4.1</i>	0.8	0.7	1.4	1.3	1.6	3.1	3.1	3.1
Costa Rica	<i>4.7</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Croatia	<i>4.3</i>	0.0	0.0	0.0	1.9	1.9	4.3	4.3	4.3

Nation	Population	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg	150 Tg + hw	150 Tg + tw
Cuba	11.3	0.0	0.0	0.0	0.0	0.0	8.0	7.5	7.0
Cyprus	1.1	0.6	0.6	0.5	0.4	0.2	0.9	0.9	0.9
Czech Republic	10.6	0.0	0.0	0.0	9.2	7.9	10.5	10.5	10.5
Denmark	5.6	0.0	0.0	1.2	4.9	4.9	5.2	5.1	5.0
Dominican Republic	10.0	0.0	0.0	0.0	0.0	0.0	3.5	3.2	2.9
Ecuador	15.0	0.0	0.0	0.0	0.0	0.0	9.4	9.1	8.9
Egypt	78.1	8.0	10.1	10.6	16.3	22.6	66.2	63.2	60.2
El Salvador	6.2	0.0	0.0	0.0	0.0	0.0	4.8	4.7	4.6
Estonia	1.3	0.0	0.7	1.3	1.3	1.3	1.3	1.3	1.3
Ethiopia	87.1	0.0	0.0	13.4	19.7	39.2	76.9	76.8	76.7
Finland	5.4	1.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
France	63.2	0.0	0.0	0.0	0.0	0.0	63.0	62.9	62.9
French Polynesia	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0
Gabon	1.6	0.3	0.3	0.5	0.5	0.6	1.1	1.1	1.0
Gambia	1.7	0.4	1.1	0.7	0.2	0.7	0.0	0.0	0.0
Georgia	4.4	3.0	3.3	3.7	3.9	4.0	4.4	4.4	4.4
Germany	83.0	0.0	0.0	0.0	61.7	63.9	82.9	82.9	82.8
Ghana	24.3	0.0	0.0	0.0	0.0	0.0	15.3	13.5	11.8
Greece	11.1	0.0	0.0	0.0	0.0	0.0	10.6	10.5	10.4
Grenada	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Guatemala	14.3	0.0	0.0	0.0	0.0	0.0	10.5	10.2	9.9
Guinea	10.9	0.0	0.0	0.0	0.0	0.0	8.6	8.3	8.1
Guinea-Bissau	1.6	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0
Guyana	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haiti	9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Honduras	7.6	0.0	0.0	0.0	0.0	0.0	5.2	5.1	4.9
Hungary	10.0	0.0	0.0	0.0	3.4	4.0	10.0	10.0	10.0
Iceland	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
India	1205.6	0.0	0.0	0.0	0.0	97.1	731.1	691.9	652.8
Indonesia	240.7	0.0	0.0	0.0	0.0	0.0	124.6	110.8	97.0
Iran	74.5	0.0	5.2	17.0	20.4	23.5	73.0	72.8	72.6
Iraq	31.0	11.5	11.0	13.4	16.6	16.3	30.9	30.9	30.9
Ireland	4.5	0.0	0.6	1.0	1.7	2.9	4.4	4.4	4.4
Israel	7.4	5.0	5.1	5.2	5.3	5.6	7.1	7.1	7.0
Italy	60.5	0.2	5.3	13.3	28.4	26.9	59.4	59.2	59.0
Jamaica	2.7	0.0	0.0	0.0	0.0	0.0	1.0	0.9	0.7
Japan	127.4	79.2	102.8	112.2	119.1	121.9	125.6	125.5	125.3
Jordan	6.5	4.5	4.5	4.6	4.7	5.1	6.4	6.4	6.4
Kazakhstan	15.9	0.0	0.0	3.0	8.7	13.1	15.9	15.9	15.9
Kenya	40.9	5.7	11.6	13.4	16.8	19.9	35.5	35.4	35.3
Kuwait	3.0	2.8	2.8	2.8	2.8	2.8	3.0	3.0	3.0
Kyrgyzstan	5.3	0.0	1.0	2.5	3.5	4.6	5.3	5.3	5.3
Laos	6.4	0.0	1.5	2.1	2.4	3.3	6.4	6.4	6.4
Latvia	2.1	0.0	0.0	1.8	2.0	2.0	2.0	2.0	2.0

Nation	Population	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg	150 Tg + hw	150 Tg + tw
Lebanon	4.3	2.3	2.5	2.5	2.3	2.1	3.9	3.8	3.7
Lesotho	2.0	1.2	1.5	1.5	1.6	1.7	1.9	1.9	1.9
Liberia	4.0	1.0	0.6	0.6	1.0	0.7	3.3	3.3	3.3
Lithuania	3.1	0.0	0.0	0.8	3.0	3.0	3.0	3.0	3.0
Luxembourg	0.5	0.1	0.1	0.1	0.2	0.3	0.5	0.5	0.5
Madagascar	21.1	0.0	0.0	0.0	0.0	2.7	11.6	11.4	11.2
Malawi	15.0	0.0	0.0	0.0	0.0	1.7	8.1	7.5	6.9
Malaysia	28.3	0.0	0.0	0.0	0.0	0.0	11.0	8.3	5.6
Maldives	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Mali	14.0	0.0	0.4	0.0	0.0	0.2	10.5	9.9	9.3
Malta	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Mauritania	3.6	2.7	2.8	2.5	2.4	2.5	3.1	3.0	2.9
Mexico	117.9	0.0	18.3	34.9	44.2	61.0	109.9	108.8	107.7
Moldova	3.6	0.0	0.0	0.2	1.9	2.0	3.6	3.6	3.6
Mongolia	2.7	1.5	2.2	2.7	2.7	2.7	2.7	2.7	2.7
Montenegro	0.6	0.4	0.4	0.5	0.6	0.6	0.6	0.6	0.6
Morocco	31.6	4.3	0.0	0.0	0.0	0.0	26.7	25.8	24.8
Mozambique	24.0	0.0	0.0	0.0	0.0	0.0	9.6	8.8	8.0
Myanmar	51.9	0.0	0.0	2.6	15.4	29.4	50.8	50.7	50.6
Namibia	2.2	0.6	1.1	1.0	1.1	0.9	1.5	1.5	1.5
Nepal	26.8	1.4	7.4	9.3	12.2	16.5	26.2	26.1	26.0
Netherlands	16.6	1.7	7.5	7.5	10.8	13.7	16.5	16.5	16.5
New Caledonia	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1
New Zealand	4.4	1.0	0.9	1.2	1.6	1.6	3.0	2.9	2.7
Nicaragua	5.8	0.0	0.0	0.0	0.0	0.0	4.0	3.9	3.8
Niger	15.9	0.0	0.0	0.0	0.0	0.0	12.3	11.8	11.3
Nigeria	159.7	0.0	0.0	0.0	0.0	0.0	98.4	88.1	77.7
North Korea	24.5	6.3	22.2	22.7	24.4	24.4	24.5	24.5	24.5
Norway	4.9	3.6	4.7	4.7	4.7	4.7	4.8	4.8	4.8
Oman	2.8	2.1	1.0	1.7	0.6	1.5	0.0	0.0	0.0
Pakistan	173.1	0.0	0.0	0.0	11.1	14.7	140.4	137.7	134.9
Panama	3.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Paraguay	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peru	29.3	0.0	2.4	5.2	6.2	7.9	19.0	18.2	17.4
Philippines	93.4	0.0	4.7	0.0	0.0	0.0	40.1	33.1	26.2
Poland	38.2	0.0	0.0	0.0	33.9	32.5	38.1	38.1	38.1
Portugal	10.6	3.4	4.4	6.2	7.2	8.1	10.4	10.4	10.4
Romania	21.9	0.0	0.0	0.0	10.4	11.0	21.8	21.7	21.7
Russia	143.6	0.0	78.4	114.7	125.4	125.8	142.0	141.8	141.6
Rwanda	10.8	0.0	0.5	1.9	4.1	4.3	8.1	8.0	7.9
Saint Kitts and Nevis	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Saint Lucia	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Saudi Arabia	27.3	20.0	18.2	19.0	20.5	17.6	23.5	22.9	22.3
Senegal	13.0	2.0	2.8	0.0	0.0	0.0	4.3	3.7	3.1

Nation	Population	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg	150 Tg + hw	150 Tg + tw
Serbia	9.6	0.0	0.0	0.9	4.9	5.7	9.6	9.6	9.6
Sierra Leone	5.8	0.0	0.0	0.0	0.0	0.0	4.2	4.1	4.0
Slovakia	5.4	0.0	0.3	0.6	3.6	3.6	5.4	5.4	5.4
Slovenia	2.1	0.7	1.2	1.4	1.8	1.7	2.1	2.1	2.1
Solomon Islands	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Africa	51.5	0.0	2.1	8.0	14.1	20.0	42.8	41.4	40.1
South Korea	48.5	27.6	37.7	40.0	45.9	47.8	48.2	48.1	48.1
Spain	46.2	0.0	0.0	0.0	0.0	0.0	43.5	43.2	42.8
Sri Lanka	20.8	2.7	0.3	0.5	0.0	1.8	3.6	2.3	1.1
Suriname	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweden	9.4	1.2	6.7	9.2	9.3	9.3	9.3	9.3	9.3
Switzerland	7.8	4.5	5.2	5.4	7.0	6.8	7.8	7.8	7.8
Taiwan, province of China	23.1	16.9	18.9	19.5	21.0	21.6	23.0	23.0	22.9
Tajikistan	7.6	1.3	3.5	4.1	4.8	5.9	7.6	7.6	7.6
Tanzania	45.0	0.0	7.4	10.4	12.9	17.1	34.3	34.2	34.1
Thailand	66.4	0.0	0.0	0.0	0.0	6.1	64.8	64.6	64.4
Togo	6.3	0.0	0.1	0.0	0.1	0.0	3.7	3.6	3.4
Trinidad and Tobago	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.1
Tunisia	10.6	3.3	2.4	0.8	0.0	0.0	8.1	7.6	7.1
Turkey	72.1	0.0	0.0	0.0	0.0	0.0	71.2	71.0	70.8
Turkmenistan	5.0	0.0	0.5	0.9	1.1	1.2	5.0	5.0	5.0
Uganda	34.0	0.3	7.2	12.2	19.7	24.3	33.2	33.2	33.1
Ukraine	46.1	0.0	0.0	0.0	8.5	8.0	46.0	46.0	46.0
United Arab Emirates	8.4	7.8	6.1	0.3	8.1	8.3	8.4	8.4	8.4
United Kingdom	62.3	0.0	18.4	26.0	39.0	50.5	62.2	62.2	62.2
United States	312.2	0.0	0.0	0.0	131.1	217.8	309.6	309.1	308.6
Uruguay	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Uzbekistan	27.8	0.0	0.5	3.5	3.9	5.7	27.8	27.8	27.8
Venezuela	29.0	10.9	7.3	9.6	9.4	11.0	23.9	23.3	22.7
Vietnam	89.0	0.0	17.0	33.2	39.3	52.1	86.6	86.3	86.0
Yemen	22.8	13.5	9.5	10.9	10.9	11.4	19.6	19.5	19.4
Zambia	13.2	0.0	0.0	0.0	0.0	1.4	7.1	7.1	7.1
Zimbabwe	13.1	0.9	2.5	3.0	4.1	6.1	9.7	9.7	9.6
Total	6700.1	335.4	1122.4	1579.2	2238.7	2675.3	5412.9	5286.1	5159.4

Table S7: Number of people who would die from starvation (millions) after the simulated nuclear war in Year 2 for all nations assuming that trade would continue under the *Livestock* case (livestock production is continued). The second column is the population in millions in 2010⁴⁵. 150 Tg + hw is half of the household waste added to food consumption, and 150 Tg + tw is total household waste added to food consumption. Bold is used for headings and global averages, and italic is used for population in 2010.

Nation	<i>Population</i>	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg	150 Tg +hw	150 Tg + tw
Afghanistan	28.4	0.5	2.5	4.7	5.8	7.3	28.4	28.4	28.4
Albania	3.2	0.0	0.0	0.0	0.1	0.0	2.7	2.7	2.7
Algeria	37.1	0.0	0.0	0.0	0.0	0.0	19.8	17.0	14.3
Angola	19.5	0.0	0.0	1.5	2.5	5.5	12.3	11.7	11.1
Antigua and Barbuda	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Argentina	40.4	0.0	0.0	0.0	0.0	0.0	20.9	18.5	16.0
Armenia	3.0	0.0	0.0	0.0	0.0	1.0	3.0	3.0	3.0
Australia	22.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Austria	8.4	0.0	3.1	4.1	6.7	6.7	8.4	8.4	8.4
Azerbaijan	9.1	0.0	0.0	0.0	0.6	1.7	9.1	9.1	9.1
Bahamas	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bangladesh	151.1	0.0	0.0	0.0	0.0	0.0	145.2	144.6	144.1
Barbados	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Belarus	9.5	0.0	0.0	3.1	8.7	9.4	9.5	9.5	9.5
Belgium	10.9	0.0	0.1	0.8	4.4	4.9	10.9	10.9	10.9
Belize	0.3	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
Benin	9.5	0.0	0.0	0.0	0.0	0.0	5.1	4.6	4.1
Bermuda	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bolivia	10.2	0.0	0.0	1.2	2.4	2.8	6.5	6.5	6.5
Bosnia and Herzegovina	3.8	0.5	0.1	1.9	2.7	2.8	3.7	3.7	3.7
Botswana	2.0	0.0	0.0	0.0	0.0	0.3	1.3	1.3	1.3
Brazil	195.2	0.0	0.0	0.0	2.1	21.7	106.1	91.4	76.7
Brunei	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bulgaria	7.4	0.0	0.0	0.0	0.5	0.0	7.4	7.4	7.4
Burkina Faso	15.5	0.0	0.0	0.0	0.0	0.0	10.2	9.4	8.6
Cambodia	14.4	1.5	1.4	0.0	2.4	6.2	13.3	13.2	13.1
Cameroon	20.6	0.0	0.0	0.3	0.0	0.8	16.4	16.0	15.6
Canada	34.1	2.5	24.0	31.1	33.3	33.5	33.9	33.9	33.9
Cape Verde	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Central African Republic	4.4	0.0	0.0	0.5	0.4	0.7	3.3	3.3	3.3
Chad	11.7	0.0	0.0	0.0	0.0	0.0	7.9	7.9	7.9
Chile	17.2	0.0	0.0	0.0	0.0	0.0	9.8	9.1	8.3
China	1367.4	0.0	516.1	785.6	1005.8	1100.2	1360.0	1358.9	1357.8
Colombia	46.4	0.0	0.0	0.4	5.1	7.9	35.8	35.0	34.3
Republic of Congo	4.1	0.0	0.0	0.2	0.2	0.5	2.7	2.7	2.7
Costa Rica	4.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Croatia	4.3	0.0	0.0	1.2	2.5	2.6	4.2	4.2	4.2

Nation	Population	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg	150 Tg +hw	150 Tg + tw
Cuba	11.3	0.0	0.0	0.0	0.0	0.0	6.8	6.2	5.5
Cyprus	1.1	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5
Czech Republic	10.6	0.0	0.0	1.4	9.0	8.7	10.5	10.5	10.5
Denmark	5.6	0.0	0.0	3.8	5.2	5.2	5.4	5.4	5.4
Dominican Republic	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ecuador	15.0	0.0	0.0	0.0	0.0	0.7	8.4	8.1	7.8
Egypt	78.1	0.0	0.0	0.0	0.0	3.7	61.8	57.7	53.6
El Salvador	6.2	0.0	0.0	0.0	0.0	0.0	4.1	4.0	3.9
Estonia	1.3	0.0	0.8	1.2	1.3	1.3	1.3	1.3	1.3
Ethiopia	87.1	0.0	3.9	17.7	23.2	40.7	75.8	75.7	75.7
Finland	5.4	1.5	5.2	5.3	5.3	5.3	5.3	5.3	5.3
France	63.2	0.0	0.0	0.0	2.2	5.1	61.6	61.3	61.0
French Polynesia	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gabon	1.6	0.0	0.0	0.0	0.0	0.1	0.9	0.8	0.8
Gambia	1.7	0.0	0.8	0.2	0.0	0.3	0.0	0.0	0.0
Georgia	4.4	0.0	0.1	1.6	2.4	2.7	4.4	4.4	4.4
Germany	83.0	0.0	0.1	6.6	60.8	64.0	82.5	82.4	82.3
Ghana	24.3	0.0	0.0	0.0	0.0	0.0	15.1	13.3	11.5
Greece	11.1	0.0	0.0	0.0	0.0	0.0	10.2	10.1	10.0
Grenada	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Guatemala	14.3	0.0	0.0	0.0	0.0	0.0	10.7	10.5	10.2
Guinea	10.9	0.0	0.0	0.0	0.0	0.0	8.5	8.2	7.9
Guinea-Bissau	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Guyana	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haiti	9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Honduras	7.6	0.0	0.0	0.0	0.0	0.0	4.9	4.6	4.4
Hungary	10.0	0.0	3.2	4.5	6.9	7.7	10.0	10.0	10.0
Iceland	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
India	1205.6	0.0	0.0	0.0	0.0	142.1	756.2	719.1	682.0
Indonesia	240.7	0.0	0.0	0.0	7.8	35.5	141.6	129.9	118.1
Iran	74.5	0.0	0.0	10.9	16.1	18.5	72.8	72.6	72.3
Iraq	31.0	0.0	0.0	0.0	3.9	2.7	30.7	30.7	30.7
Ireland	4.5	0.0	0.0	0.3	0.9	2.3	3.9	3.8	3.7
Israel	7.4	0.0	0.0	0.0	0.0	0.0	5.4	5.0	4.6
Italy	60.5	0.0	0.0	3.2	18.5	18.3	57.0	56.3	55.6
Jamaica	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Japan	127.4	0.0	55.6	81.2	101.1	109.8	122.6	122.2	121.7
Jordan	6.5	0.0	0.0	0.0	0.0	0.4	6.1	6.1	6.0
Kazakhstan	15.9	0.0	1.5	5.3	9.0	12.0	15.9	15.9	15.9
Kenya	40.9	0.0	2.4	4.3	9.1	13.1	32.5	32.4	32.2
Kuwait	3.0	0.0	0.0	0.0	0.0	0.0	2.9	2.8	2.8
Kyrgyzstan	5.3	0.0	0.5	1.8	2.9	4.0	5.3	5.3	5.3
Laos	6.4	0.4	2.3	2.8	3.1	3.9	6.3	6.3	6.3
Latvia	2.1	0.0	0.0	1.9	2.1	2.0	2.1	2.1	2.1

Nation	Population	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg	150 Tg +hw	150 Tg + tw
Lebanon	4.3	0.0	0.0	0.0	0.0	0.0	2.8	2.5	2.3
Lesotho	2.0	0.0	0.4	0.6	0.7	1.1	1.7	1.7	1.7
Liberia	4.0	0.0	0.0	0.0	0.0	0.0	3.0	2.9	2.9
Lithuania	3.1	0.0	0.0	1.8	3.0	2.9	3.0	3.0	3.0
Luxembourg	0.5	0.0	0.0	0.0	0.2	0.2	0.5	0.5	0.5
Madagascar	21.1	0.0	0.0	0.4	0.0	3.4	11.7	11.5	11.3
Malawi	15.0	0.0	0.0	0.0	1.6	4.8	9.6	9.1	8.7
Malaysia	28.3	0.0	0.0	0.3	0.0	0.0	16.8	15.1	13.3
Maldives	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mali	14.0	0.0	0.4	0.4	0.0	0.5	9.8	9.0	8.2
Malta	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mauritania	3.6	0.5	1.0	0.0	0.0	0.0	1.7	1.3	1.0
Mexico	117.9	0.0	6.1	23.6	33.6	51.5	103.8	101.8	99.8
Moldova	3.6	0.0	0.9	1.7	2.7	2.8	3.6	3.6	3.6
Mongolia	2.7	0.2	1.3	2.2	2.4	2.6	2.7	2.7	2.7
Montenegro	0.6	0.0	0.0	0.2	0.3	0.3	0.6	0.6	0.6
Morocco	31.6	0.0	0.0	0.0	0.0	0.0	24.9	23.6	22.3
Mozambique	24.0	0.0	0.0	0.0	0.0	1.1	10.4	9.7	9.0
Myanmar	51.9	0.0	7.3	18.9	27.3	36.2	50.4	50.2	50.1
Namibia	2.2	0.0	0.6	0.3	0.5	0.1	1.3	1.3	1.3
Nepal	26.8	0.0	6.2	8.0	11.3	15.6	26.2	26.1	26.0
Netherlands	16.6	0.0	1.0	2.4	8.4	10.8	16.4	16.3	16.3
New Caledonia	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Zealand	4.4	0.0	0.0	0.0	0.1	0.2	2.0	1.8	1.5
Nicaragua	5.8	0.0	0.0	0.0	0.0	0.0	3.8	3.6	3.5
Niger	15.9	0.0	0.0	0.0	0.0	0.0	12.4	11.9	11.4
Nigeria	159.7	0.0	0.0	0.0	0.0	0.0	98.6	88.2	77.9
North Korea	24.5	3.1	21.6	22.1	24.1	24.3	24.5	24.5	24.5
Norway	4.9	2.2	4.4	4.6	4.7	4.8	4.7	4.7	4.7
Oman	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pakistan	173.1	0.0	0.0	0.0	0.9	13.2	143.9	141.5	139.0
Panama	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Paraguay	6.5	0.0	0.0	0.0	0.0	0.9	4.4	4.2	4.1
Peru	29.3	0.0	0.0	2.8	4.1	5.9	18.3	17.4	16.6
Philippines	93.4	0.0	7.1	0.0	0.0	0.0	41.2	34.4	27.6
Poland	38.2	0.0	0.0	0.0	34.2	33.8	38.0	38.0	38.0
Portugal	10.6	0.0	0.0	0.6	2.3	4.2	8.8	8.4	8.0
Romania	21.9	0.0	4.0	7.5	14.7	15.5	21.8	21.8	21.8
Russia	143.6	0.0	76.1	113.7	125.6	127.8	142.2	142.0	141.9
Rwanda	10.8	0.0	1.8	3.0	4.9	5.1	8.4	8.3	8.3
Saint Kitts and Nevis	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saint Lucia	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saudi Arabia	27.3	0.0	0.0	0.0	0.0	0.0	8.7	5.7	2.7
Senegal	13.0	0.0	0.2	0.0	0.0	0.0	2.0	1.1	0.3

Nation	Population	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg	150 Tg +hw	150 Tg + tw
Serbia	9.6	0.0	3.9	5.5	7.1	7.5	9.5	9.5	9.5
Sierra Leone	5.8	0.0	0.0	0.0	0.0	0.0	4.3	4.2	4.1
Slovakia	5.4	0.0	0.7	1.1	3.7	3.9	5.4	5.4	5.4
Slovenia	2.1	0.0	0.6	0.9	1.4	1.4	2.0	2.0	2.0
Solomon Islands	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Africa	51.5	0.0	1.8	7.4	13.4	19.0	41.2	39.6	37.9
South Korea	48.5	0.0	19.2	25.4	40.8	47.1	48.0	47.9	47.9
Spain	46.2	0.0	0.0	0.0	0.0	0.0	40.7	40.0	39.3
Sri Lanka	20.8	0.5	0.0	0.0	0.0	0.0	1.8	0.4	0.0
Suriname	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweden	9.4	1.3	6.9	9.1	9.2	9.2	9.3	9.3	9.3
Switzerland	7.8	0.0	0.9	1.8	5.0	4.8	7.7	7.7	7.7
Taiwan, province of China	23.1	0.0	7.4	9.3	14.8	17.0	21.9	21.7	21.6
Tajikistan	7.6	0.1	2.5	3.3	4.1	5.6	7.6	7.6	7.6
Tanzania	45.0	0.0	11.6	14.0	16.2	19.9	34.4	34.3	34.2
Thailand	66.4	1.7	7.6	9.6	16.8	29.9	64.8	64.6	64.4
Togo	6.3	0.0	0.0	0.0	0.0	0.0	3.5	3.3	3.2
Trinidad and Tobago	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tunisia	10.6	0.0	0.0	0.0	0.0	0.0	5.5	4.6	3.7
Turkey	72.1	0.0	0.0	0.0	0.0	0.0	70.3	69.8	69.4
Turkmenistan	5.0	0.3	1.5	2.0	2.1	2.2	5.0	5.0	5.0
Uganda	34.0	0.0	6.1	11.3	18.6	23.8	32.9	32.8	32.7
Ukraine	46.1	0.0	1.0	4.1	28.6	29.0	45.9	45.9	45.9
United Arab Emirates	8.4	0.0	0.0	0.0	2.7	5.5	7.2	7.1	7.0
United Kingdom	62.3	0.0	6.9	15.4	28.7	40.9	54.3	53.0	51.6
United States	312.2	0.0	86.4	152.3	207.1	251.6	305.6	304.3	303.0
Uruguay	3.4	0.0	0.0	0.0	0.0	0.6	1.6	1.5	1.3
Uzbekistan	27.8	0.0	1.6	4.6	5.2	7.1	27.8	27.8	27.8
Venezuela	29.0	0.0	0.0	0.0	0.0	0.0	18.4	17.2	16.0
Vietnam	89.0	0.0	23.2	37.4	42.8	54.5	85.3	84.9	84.4
Yemen	22.8	0.0	0.0	0.0	0.0	0.0	11.6	11.2	10.8
Zambia	13.2	0.0	0.0	1.2	2.7	4.7	8.7	8.7	8.7
Zimbabwe	13.1	0.0	0.0	0.0	0.5	3.2	8.0	8.0	8.0
Total	6700.1	17.1	953.6	1521.6	2155.8	2684.4	5422.7	5292.6	5163.5

Nation	Population	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg	150 Tg + hw	150 Tg + tw
Croatia	4.3	0.0	0.0	0.0	1.4	1.4	4.3	4.3	4.3
Cuba	11.3	0.0	0.0	0.0	0.0	0.0	6.2	5.5	4.7
Cyprus	1.1	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1
Czech Republic	10.6	0.0	0.0	0.0	8.9	7.9	10.5	10.5	10.5
Denmark	5.6	0.0	0.0	0.6	5.2	5.3	5.4	5.4	5.4
Dominican Republic	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ecuador	15.0	0.0	0.0	0.0	0.0	0.0	8.7	8.5	8.2
Egypt	78.1	0.0	0.0	0.0	0.0	0.0	57.9	52.8	47.6
El Salvador	6.2	0.0	0.0	0.0	0.0	0.0	4.1	4.0	3.8
Estonia	1.3	0.0	0.7	1.3	1.3	1.3	1.3	1.3	1.3
Ethiopia	87.1	0.0	1.4	15.9	21.8	40.2	76.4	76.3	76.2
Finland	5.4	0.0	5.2	5.3	5.3	5.3	5.3	5.3	5.3
France	63.2	0.0	0.0	0.0	0.0	0.0	62.2	62.0	61.8
French Polynesia	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gabon	1.6	0.0	0.0	0.0	0.0	0.0	0.9	0.8	0.7
Gambia	1.7	0.0	0.8	0.2	0.0	0.2	0.0	0.0	0.0
Georgia	4.4	0.0	0.0	1.5	2.3	2.6	4.4	4.4	4.4
Germany	83.0	0.0	0.0	0.0	54.4	57.8	82.5	82.4	82.3
Ghana	24.3	0.0	0.0	0.0	0.0	0.0	14.0	12.0	10.0
Greece	11.1	0.0	0.0	0.0	0.0	0.0	10.2	10.1	9.9
Grenada	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Guatemala	14.3	0.0	0.0	0.0	0.0	0.0	10.6	10.3	10.0
Guinea	10.9	0.0	0.0	0.0	0.0	0.0	8.3	8.0	7.7
Guinea-Bissau	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Guyana	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haiti	9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Honduras	7.6	0.0	0.0	0.0	0.0	0.0	4.7	4.5	4.2
Hungary	10.0	0.0	0.0	0.4	4.9	5.7	10.0	10.0	10.0
Iceland	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
India	1205.6	0.0	0.0	0.0	0.0	90.5	731.4	692.3	653.2
Indonesia	240.7	0.0	0.0	0.0	0.0	15.0	132.5	119.7	106.8
Iran	74.5	0.0	0.0	0.0	0.0	0.8	72.4	72.1	71.8
Iraq	31.0	0.0	0.0	0.0	0.3	0.0	30.7	30.7	30.7
Ireland	4.5	0.0	0.0	0.0	0.0	0.7	4.2	4.1	4.1
Israel	7.4	0.0	0.0	0.0	0.0	0.0	5.3	4.9	4.4
Italy	60.5	0.0	0.0	0.0	7.2	5.6	57.7	57.1	56.5
Jamaica	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Japan	127.4	0.0	39.3	73.6	99.1	109.8	123.6	123.2	122.9
Jordan	6.5	0.0	0.0	0.0	0.0	0.0	6.1	6.1	6.0
Kazakhstan	15.9	0.0	0.0	2.9	8.1	12.3	15.9	15.9	15.9
Kenya	40.9	0.0	3.4	5.4	9.9	13.9	33.3	33.2	33.0
Kuwait	3.0	0.0	0.0	0.0	0.0	0.0	2.9	2.9	2.9
Kyrgyzstan	5.3	0.0	0.0	1.2	2.6	4.0	5.3	5.3	5.3
Laos	6.4	0.0	1.5	2.1	2.4	3.3	6.3	6.3	6.3

Nation	<i>Population</i>	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg	150 Tg + hw	150 Tg + tw
Senegal	13.0	0.0	0.0	0.0	0.0	0.0	1.5	0.6	0.0
Serbia	9.6	0.0	0.0	1.9	5.3	6.0	9.6	9.6	9.6
Sierra Leone	5.8	0.0	0.0	0.0	0.0	0.0	4.1	4.1	4.0
Slovakia	5.4	0.0	0.0	0.0	3.0	3.1	5.4	5.4	5.4
Slovenia	2.1	0.0	0.4	0.7	1.4	1.3	2.0	2.0	2.0
Solomon Islands	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Africa	51.5	0.0	0.0	0.2	7.3	14.1	40.6	38.8	37.1
South Korea	48.5	0.0	10.8	19.1	39.9	47.1	48.1	48.0	47.9
Spain	46.2	0.0	0.0	0.0	0.0	0.0	40.7	40.0	39.3
Sri Lanka	20.8	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0
Suriname	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweden	9.4	0.0	6.0	9.1	9.2	9.2	9.3	9.3	9.3
Switzerland	7.8	0.0	0.2	1.0	5.1	4.7	7.8	7.8	7.8
Taiwan, province of China	23.1	0.0	0.8	3.7	12.0	15.2	22.3	22.2	22.1
Tajikistan	7.6	0.0	1.0	1.9	3.0	4.9	7.6	7.6	7.6
Tanzania	45.0	0.0	10.2	12.8	15.1	19.1	34.6	34.5	34.4
Thailand	66.4	0.0	0.0	0.0	2.6	19.4	65.0	64.8	64.7
Togo	6.3	0.0	0.0	0.0	0.0	0.0	3.3	3.2	3.0
Trinidad and Tobago	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tunisia	10.6	0.0	0.0	0.0	0.0	0.0	4.4	3.2	2.1
Turkey	72.1	0.0	0.0	0.0	0.0	0.0	70.6	70.3	69.9
Turkmenistan	5.0	0.0	0.0	0.0	0.2	0.3	5.0	5.0	5.0
Uganda	34.0	0.0	6.0	11.2	18.8	23.8	33.0	33.0	32.9
Ukraine	46.1	0.0	0.0	0.0	15.8	15.8	45.9	45.9	45.9
United Arab Emirates	8.4	0.0	0.0	0.0	2.4	6.0	7.8	7.7	7.6
United Kingdom	62.3	0.0	0.0	3.6	22.8	40.2	58.2	57.5	56.8
United States	312.2	0.0	0.0	45.3	153.3	226.5	307.3	306.3	305.3
Uruguay	3.4	0.0	0.0	0.0	0.0	0.0	1.0	0.8	0.6
Uzbekistan	27.8	0.0	0.0	0.0	0.0	1.3	27.8	27.8	27.8
Venezuela	29.0	0.0	0.0	0.0	0.0	0.0	17.2	15.9	14.5
Vietnam	89.0	0.0	15.5	31.7	37.9	50.9	85.9	85.5	85.1
Yemen	22.8	0.0	0.0	0.0	0.0	0.0	11.3	10.8	10.4
Zambia	13.2	0.0	0.0	0.7	2.2	4.4	8.6	8.6	8.6
Zimbabwe	13.1	0.0	0.0	0.0	0.0	2.9	8.0	8.0	8.0
Total	6700.1	4.2	626.4	1162.2	1861.2	2352.5	5321.2	5182.2	5044.8

Table S9. Number of people who would die from starvation (millions) after the simulated nuclear war in Year 2 for all nations, assuming that trade would continue, under the *No Livestock* case (assuming livestock is killed in Year 1 and 50% of livestock grain feed is used for human consumption). The second column is the population in millions in 2010⁴². 150 Tg + hw is half of the household waste added to food consumption, and 150 Tg + tw is total household waste added to food consumption. Bold is used for headings and global averages, and italic is used for population in 2010.

Nation	<i>Population</i>	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg	150 Tg + hw	150 Tg + tw
Afghanistan	<i>28.4</i>	1.8	3.5	5.0	5.7	6.9	28.4	28.4	28.4
Albania	<i>3.2</i>	0.0	0.0	0.0	0.1	0.0	3.1	3.1	3.1
Algeria	<i>37.1</i>	0.0	0.0	0.0	0.0	0.0	16.9	13.7	10.4
Angola	<i>19.5</i>	0.0	0.0	0.0	0.0	3.4	11.3	10.7	10.1
Antigua and Barbuda	<i>0.1</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Argentina	<i>40.4</i>	0.0	0.0	0.0	0.0	0.0	21.6	19.2	16.8
Armenia	<i>3.0</i>	0.0	0.0	0.0	0.0	0.7	3.0	3.0	3.0
Australia	<i>22.4</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Austria	<i>8.4</i>	0.0	2.4	3.4	7.3	7.1	8.4	8.4	8.4
Azerbaijan	<i>9.1</i>	0.0	0.0	0.0	0.0	0.3	9.1	9.1	9.1
Bahamas	<i>0.4</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bangladesh	<i>151.1</i>	0.0	0.0	0.0	0.0	0.0	146.1	145.7	145.2
Barbados	<i>0.3</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Belarus	<i>9.5</i>	0.0	0.0	0.0	8.4	9.4	9.5	9.5	9.5
Belgium	<i>10.9</i>	0.0	0.0	0.0	0.0	2.9	10.9	10.9	10.9
Belize	<i>0.3</i>	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
Benin	<i>9.5</i>	0.0	0.0	0.0	0.0	0.0	4.5	3.9	3.4
Bermuda	<i>0.1</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bolivia	<i>10.2</i>	0.0	0.0	1.1	2.4	2.8	6.7	6.7	6.7
Bosnia and Herzegovina	<i>3.8</i>	0.0	0.0	1.8	2.7	2.7	3.8	3.8	3.8
Botswana	<i>2.0</i>	0.0	0.0	0.0	0.1	0.3	1.3	1.3	1.3
Brazil	<i>195.2</i>	0.0	0.0	0.0	0.0	0.0	95.2	78.6	62.0
Brunei	<i>0.4</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bulgaria	<i>7.4</i>	0.0	0.0	0.0	0.0	0.0	7.4	7.4	7.4
Burkina Faso	<i>15.5</i>	0.0	0.0	0.0	0.0	0.0	10.2	9.4	8.7
Cambodia	<i>14.4</i>	0.5	0.4	0.0	1.4	5.6	13.4	13.3	13.2
Cameroon	<i>20.6</i>	0.0	0.0	0.0	0.0	0.0	16.2	15.8	15.4
Canada	<i>34.1</i>	0.0	19.3	31.3	33.7	33.8	34.0	33.9	33.9
Cape Verde	<i>0.5</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Central African Republic	<i>4.4</i>	0.0	0.0	0.8	0.7	1.0	3.6	3.5	3.5
Chad	<i>11.7</i>	0.0	0.0	0.0	0.0	0.0	7.8	7.8	7.8
Chile	<i>17.2</i>	0.0	0.0	0.0	0.0	0.0	9.6	8.9	8.2
China	<i>1367.4</i>	0.0	494.7	778.9	1005.6	1097.6	1361.9	1361.1	1360.3
Colombia	<i>46.4</i>	0.0	0.0	0.0	3.1	6.2	38.3	37.7	37.2
Republic of Congo	<i>4.1</i>	0.0	0.0	0.3	0.3	0.6	2.8	2.8	2.8
Costa Rica	<i>4.7</i>	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Nation	Population	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg	150 Tg + hw	150 Tg + tw
Croatia	4.3	0.0	0.0	0.0	1.7	1.7	4.3	4.3	4.3
Cuba	11.3	0.0	0.0	0.0	0.0	0.0	6.6	6.0	5.3
Cyprus	1.1	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.2
Czech Republic	10.6	0.0	0.0	0.0	9.3	8.2	10.5	10.5	10.5
Denmark	5.6	0.0	0.0	0.8	5.3	5.3	5.4	5.4	5.4
Dominican Republic	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ecuador	15.0	0.0	0.0	0.4	0.4	1.5	10.2	10.1	9.9
Egypt	78.1	0.0	0.0	0.0	0.0	0.0	58.3	53.3	48.3
El Salvador	6.2	0.0	0.0	0.0	0.0	0.0	4.5	4.4	4.3
Estonia	1.3	0.0	0.8	1.3	1.3	1.3	1.3	1.3	1.3
Ethiopia	87.1	0.0	4.3	18.6	24.5	42.6	77.6	77.5	77.5
Finland	5.4	0.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
France	63.2	0.0	0.0	0.0	0.0	0.0	62.8	62.7	62.6
French Polynesia	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gabon	1.6	0.0	0.0	0.0	0.0	0.1	0.9	0.9	0.8
Gambia	1.7	0.0	0.9	0.2	0.0	0.3	0.0	0.0	0.0
Georgia	4.4	0.0	0.2	1.8	2.6	2.8	4.4	4.4	4.4
Germany	83.0	0.0	0.0	0.0	58.3	60.8	82.5	82.4	82.3
Ghana	24.3	0.0	0.0	0.0	0.0	0.0	14.1	12.2	10.2
Greece	11.1	0.0	0.0	0.0	0.0	0.0	10.5	10.4	10.3
Grenada	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Guatemala	14.3	0.0	0.0	0.0	0.0	0.0	11.0	10.8	10.5
Guinea	10.9	0.0	0.0	0.0	0.0	0.0	8.3	8.0	7.8
Guinea-Bissau	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Guyana	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haiti	9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Honduras	7.6	0.0	0.0	0.0	0.0	0.0	5.1	4.9	4.7
Hungary	10.0	0.0	0.0	1.5	5.6	6.0	10.0	10.0	10.0
Iceland	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
India	1205.6	0.0	0.0	0.0	0.0	121.7	741.9	703.7	665.4
Indonesia	240.7	0.0	0.0	0.0	0.0	19.6	135.3	122.7	110.2
Iran	74.5	0.0	0.0	0.0	0.0	3.1	72.5	72.2	72.0
Iraq	31.0	0.0	0.0	0.0	0.7	0.1	30.8	30.8	30.7
Ireland	4.5	0.0	0.0	0.0	0.0	1.1	4.5	4.5	4.4
Israel	7.4	0.0	0.0	0.0	0.0	0.0	5.9	5.5	5.2
Italy	60.5	0.0	0.0	0.0	13.5	11.3	58.8	58.5	58.1
Jamaica	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Japan	127.4	0.0	45.4	78.5	102.5	112.3	124.1	123.9	123.6
Jordan	6.5	0.0	0.0	0.0	0.0	0.0	6.2	6.2	6.1
Kazakhstan	15.9	0.0	0.0	4.6	9.6	13.5	15.9	15.9	15.9
Kenya	40.9	0.0	6.0	8.1	12.2	15.8	34.4	34.3	34.2
Kuwait	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0
Kyrgyzstan	5.3	0.0	0.0	1.8	3.1	4.4	5.3	5.3	5.3
Laos	6.4	0.0	1.7	2.3	2.6	3.4	6.4	6.4	6.4

Nation	Population	5 Tg	16 Tg	27 Tg	37 Tg	47 Tg	150 Tg	150 Tg + hw	150 Tg + tw
Senegal	13.0	0.0	0.0	0.0	0.0	0.0	1.8	1.0	0.1
Serbia	9.6	0.0	0.3	2.7	5.8	6.5	9.6	9.6	9.6
Sierra Leone	5.8	0.0	0.0	0.0	0.0	0.0	4.2	4.1	4.0
Slovakia	5.4	0.0	0.0	0.0	3.3	3.3	5.4	5.4	5.4
Slovenia	2.1	0.0	0.6	0.9	1.6	1.5	2.1	2.1	2.1
Solomon Islands	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Africa	51.5	0.0	0.0	3.8	10.6	17.0	42.1	40.5	39.0
South Korea	48.5	0.0	12.9	20.8	40.9	47.2	48.1	48.0	47.9
Spain	46.2	0.0	0.0	0.0	0.0	0.0	42.4	42.0	41.5
Sri Lanka	20.8	0.5	0.0	0.0	0.0	0.0	1.5	0.1	0.0
Suriname	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweden	9.4	0.0	6.2	9.1	9.2	9.2	9.3	9.3	9.3
Switzerland	7.8	0.0	1.5	2.0	5.8	5.5	7.8	7.8	7.8
Taiwan, province of China	23.1	0.0	2.6	5.3	13.1	16.1	22.8	22.7	22.7
Tajikistan	7.6	0.0	1.4	2.2	3.3	5.0	7.6	7.6	7.6
Tanzania	45.0	0.0	11.4	14.1	16.3	20.1	35.5	35.4	35.3
Thailand	66.4	0.0	0.0	0.0	5.2	21.2	65.3	65.2	65.1
Togo	6.3	0.0	0.0	0.0	0.0	0.0	3.4	3.2	3.1
Trinidad and Tobago	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tunisia	10.6	0.0	0.0	0.0	0.0	0.0	4.8	3.7	2.7
Turkey	72.1	0.0	0.0	0.0	0.0	0.0	71.2	71.0	70.7
Turkmenistan	5.0	0.0	0.0	0.0	0.2	0.3	5.0	5.0	5.0
Uganda	34.0	0.1	7.0	12.1	19.6	24.2	33.2	33.1	33.1
Ukraine	46.1	0.0	0.0	0.0	17.3	17.0	45.9	45.9	45.9
United Arab Emirates	8.4	0.0	0.0	0.0	3.3	6.9	8.3	8.3	8.3
United Kingdom	62.3	0.0	0.6	11.3	29.4	45.6	62.1	62.0	62.0
United States	312.2	0.0	0.0	73.9	176.1	240.7	309.5	308.9	308.3
Uruguay	3.4	0.0	0.0	0.0	0.0	0.0	1.3	1.1	0.9
Uzbekistan	27.8	0.0	0.0	0.1	0.5	2.6	27.8	27.8	27.8
Venezuela	29.0	0.0	0.0	0.0	0.0	0.0	18.5	17.3	16.1
Vietnam	89.0	0.0	21.9	37.0	42.7	54.6	86.8	86.5	86.2
Yemen	22.8	0.0	0.0	0.0	0.0	0.0	11.7	11.3	10.9
Zambia	13.2	0.0	0.0	1.0	2.5	4.6	8.8	8.8	8.8
Zimbabwe	13.1	0.0	0.0	0.0	0.6	3.4	8.3	8.3	8.3
Total	6700.1	9.5	769.9	1318.5	2014.2	2514.9	5400.5	5271.3	5143.4

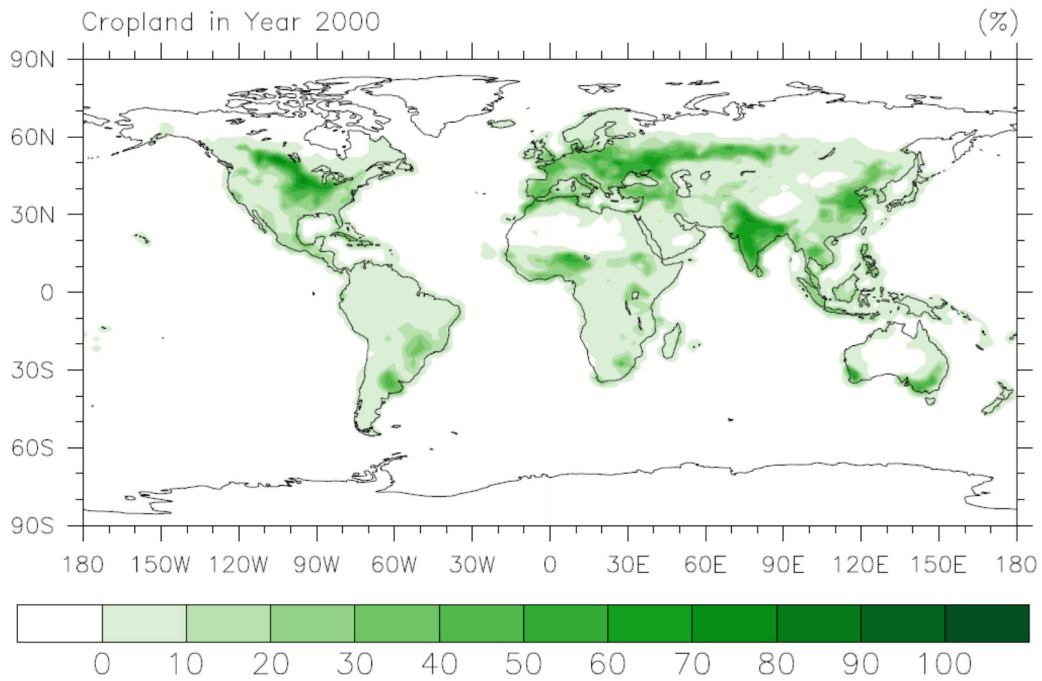


Figure S1: Cropland mask used to produce Figure 1 in the main text. Values are percent of each grid box used for crops. This is from land surface data of 2000 used in the Community Earth System Model. The resolution of this land file is 1 degree, and therefore along coastal lines and islands, the green color covers small parts of the ocean.

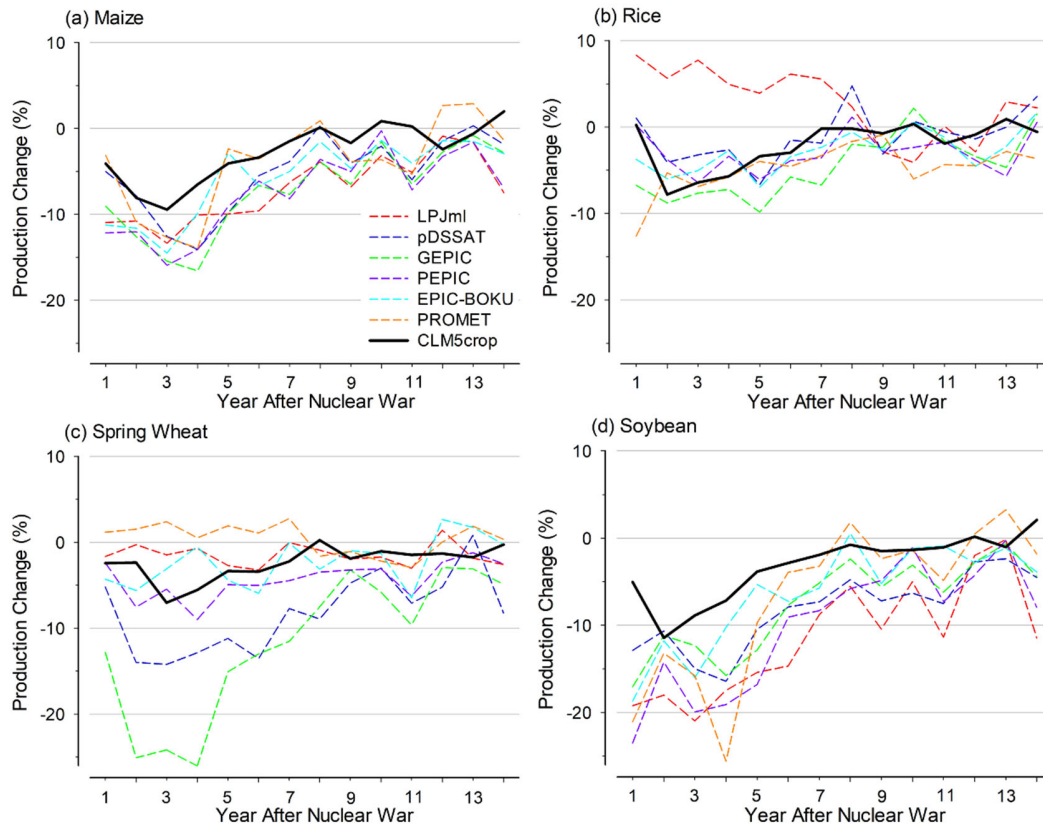


Figure S2. Global average crop production changes (%) of maize (a), rice (b), spring wheat (c) and soybean (d) in CLM5crop using raw climate forcing and in six other crop models¹¹ using the delta downscaling method under the 5 Tg scenario.

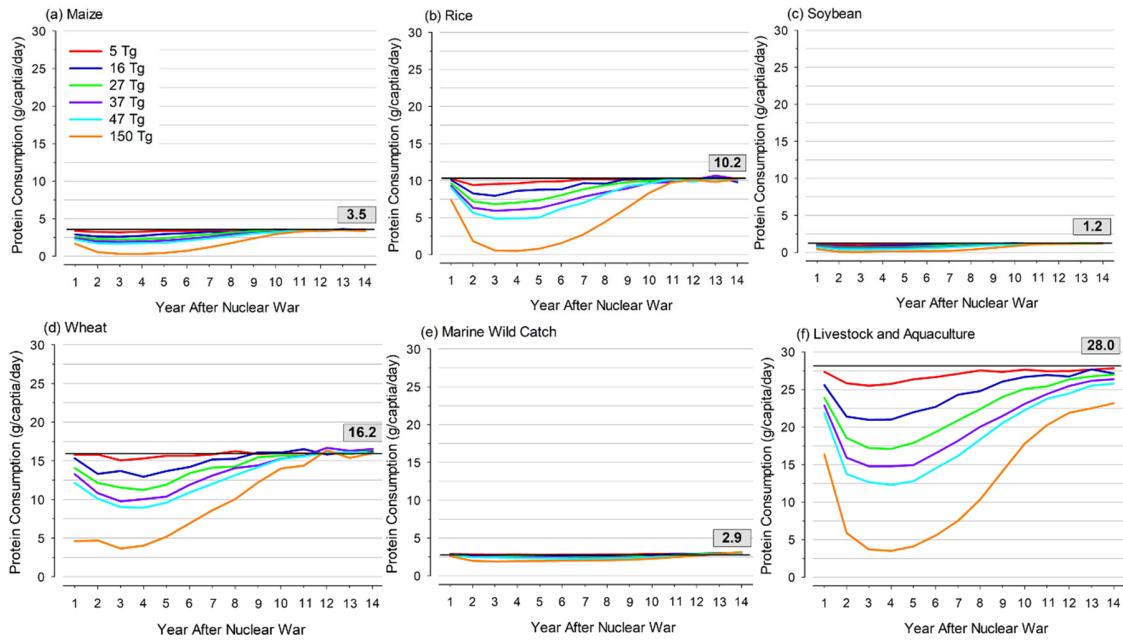


Figure S3. Global average annual protein consumption (g/capita/day) for maize, rice, soybean, wheat, marine wild catch, and livestock, aquaculture and inland fish under different nuclear war scenarios. The black lines and numbers in gray boxes are the protein supply in 2010²³.

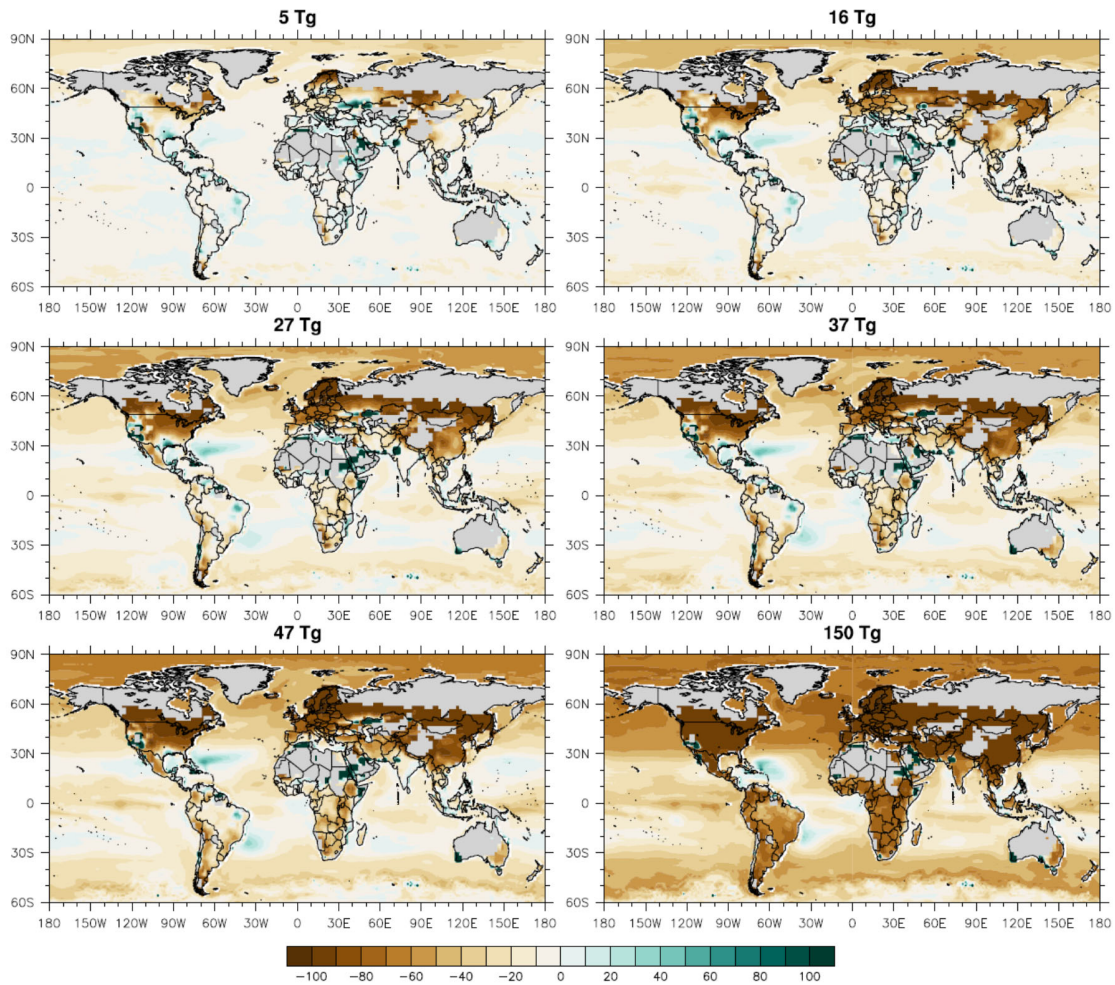


Figure S4. Change in calorie production (%) for the explicitly simulated agricultural crops and wild-caught marine fisheries combined. Percent change is for the nuclear war scenarios as compared to the control simulation, averaged for the first five years after the nuclear wars from the four cereals and marine fish we modeled. The dark green regions over the border area between India and Pakistan, and tropical dry regions, have close to zero crop yield in the control simulation with year 2000 climate forcing, and in CLM5crop, those areas have crop land percentage larger than 0 since the resolution is 1 degree. Therefore, those regions have small crop production in the control simulation. When the nuclear war perturbation is applied, those regions still show a low crop yield but higher than the control. Therefore, the percentage is positive and large.

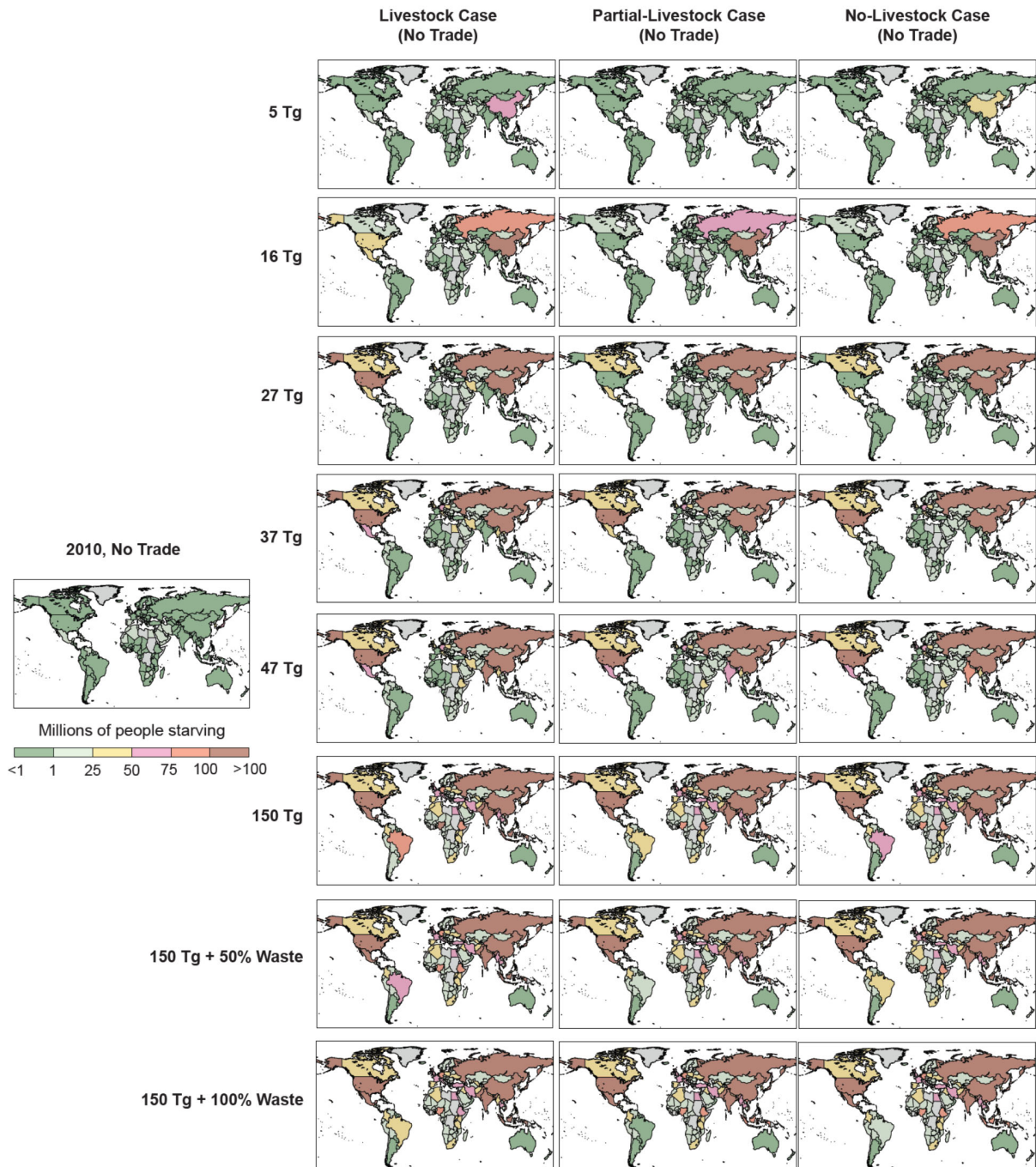


Figure S5. Millions of people without food in each country at the end of Year 2 for no international trade and if the available food were divided so that everyone who would survive got the minimum needed to support normal physical activity (1911 kcal/capita/day), and the rest got none. 150 Tg + 50% Waste is half of the household waste added to food consumption, and 150 Tg + 100% Waste is all household waste added to food consumption.

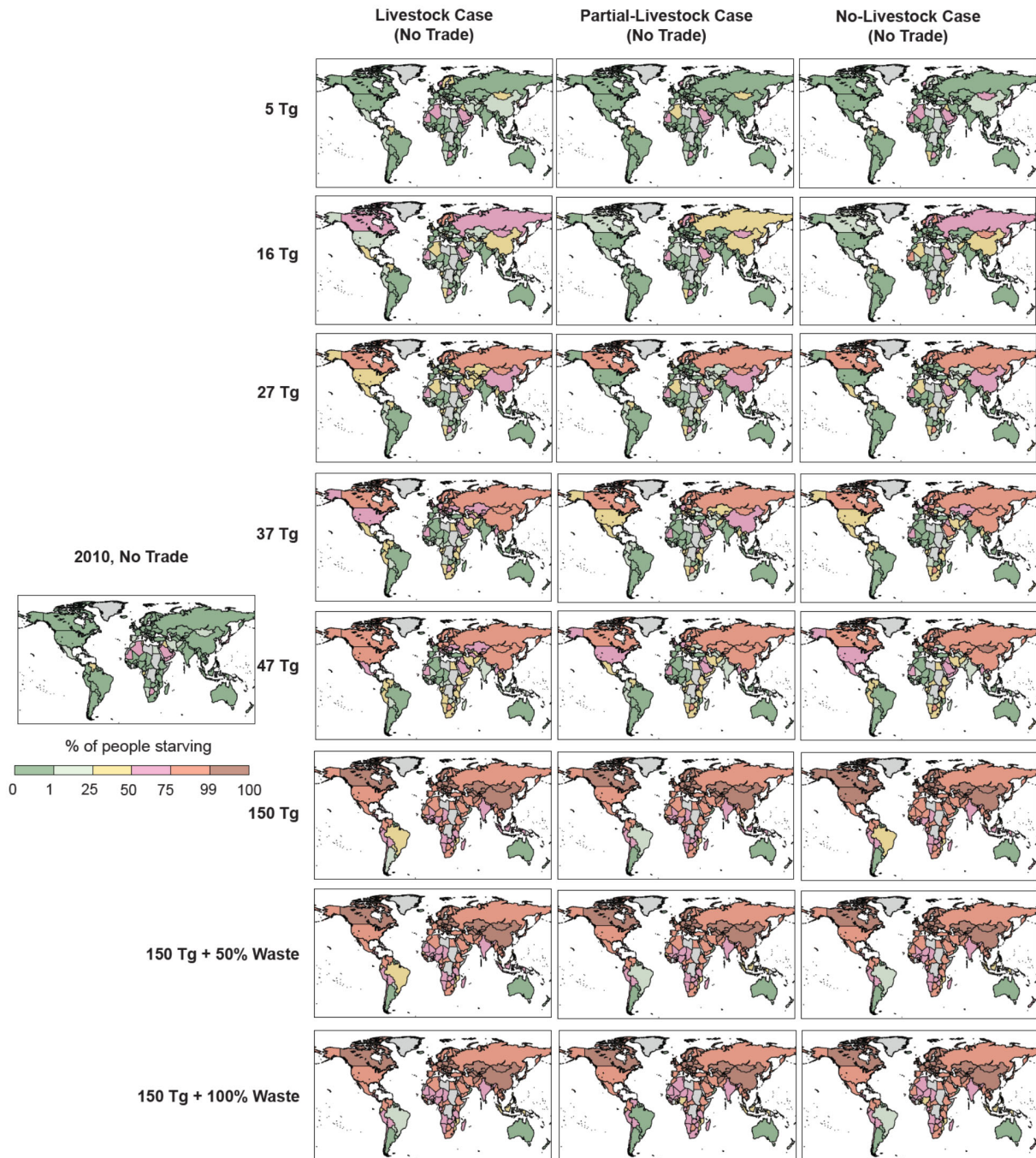


Figure S6. Percentage of people without food in each country at the end of Year 2 for no international trade and if the available food were divided so that everyone who would survive got the minimum needed to support normal physical activity (1911 kcal/capita/day), and the rest got none. 150 Tg + 50% Waste is half of the household waste added to food consumption, and 150 Tg + 100% Waste is all household waste added to food consumption.

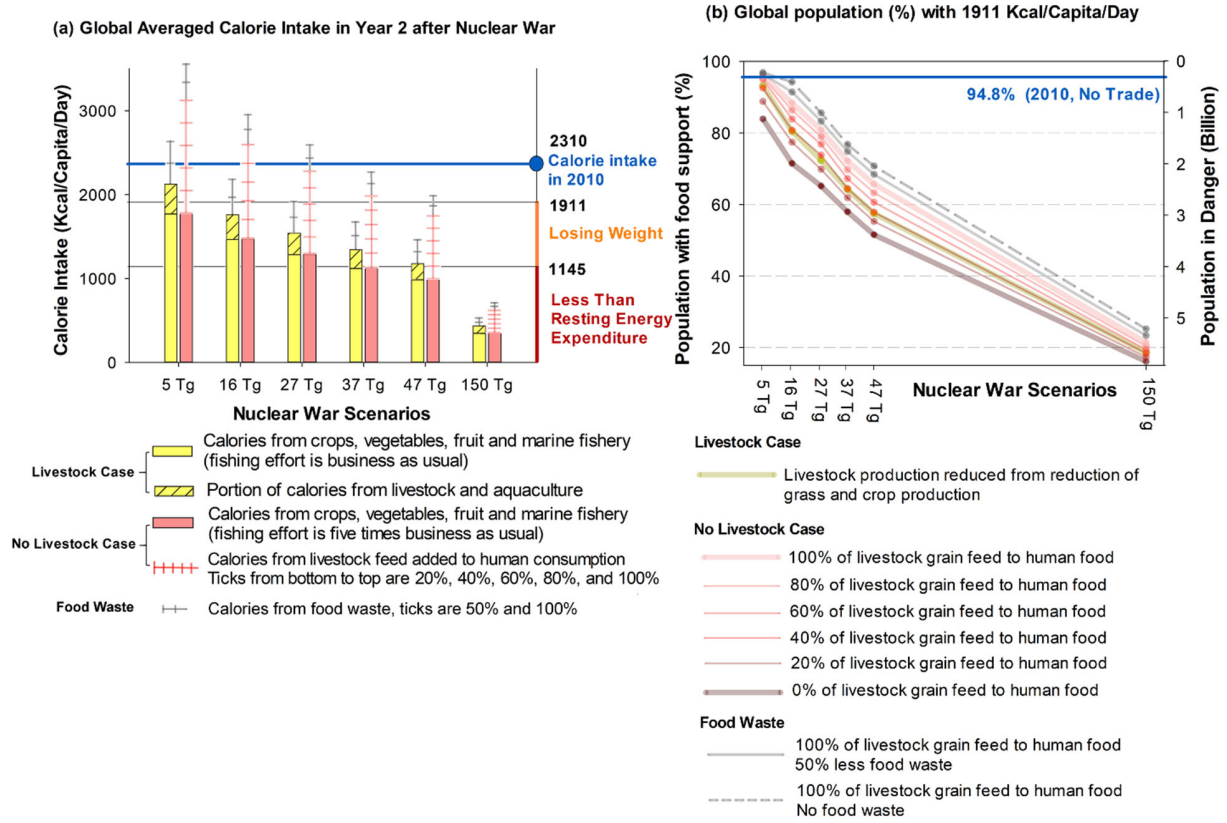


Figure S7. Overview of global calorie intake and sensitivity to livestock and trade assumptions. This figure is similar to Figure 5 but with the *No Livestock Case* instead of *Partial Livestock Case*. (a) The global average change in calorie intake per person per day in year 2 post-war under the *Livestock case* (yellow bars), and for the *No Livestock case* (red bars), in which also there are no meat, dairy, or eggs. For the *No Livestock case*, additional calories potentially available by human consumption of animal feed, mainly maize and soybeans, are plotted for various portions of converted animal feed (pink tick marks). Critical food intake levels are marked in the right margin. (b) Without international trade, the global population (%) that could be supported by domestic food production at the end of Year 2 after a nuclear war if they receive the calorie supporting their regular physical activity²⁷ and the rest of the population would receive no food, under the *Livestock* and *No Livestock cases*. The blue line in (b) shows the percentage of population that can be supported by current food production when food production does not change, but international trade is stopped. National data are calculated first (Tables S4 and S6, Figure S5), and then aggregated to global data.

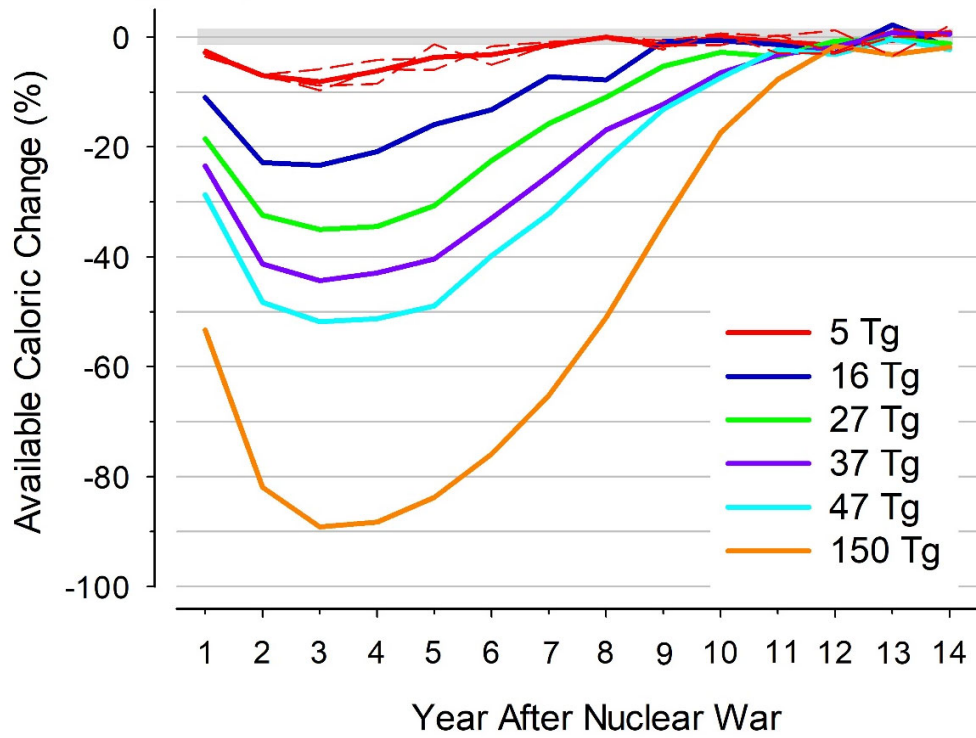


Figure S8. Global average annual crop calorie production change (%) (maize, wheat, rice and soybean, weighted by their observed production for 2010 and calorie content). The gray shading is the standard deviation of 45 years of control (3 ensemble control simulation of 15 years). The dashed red lines are the three ensemble members from the 5 Tg simulation.