



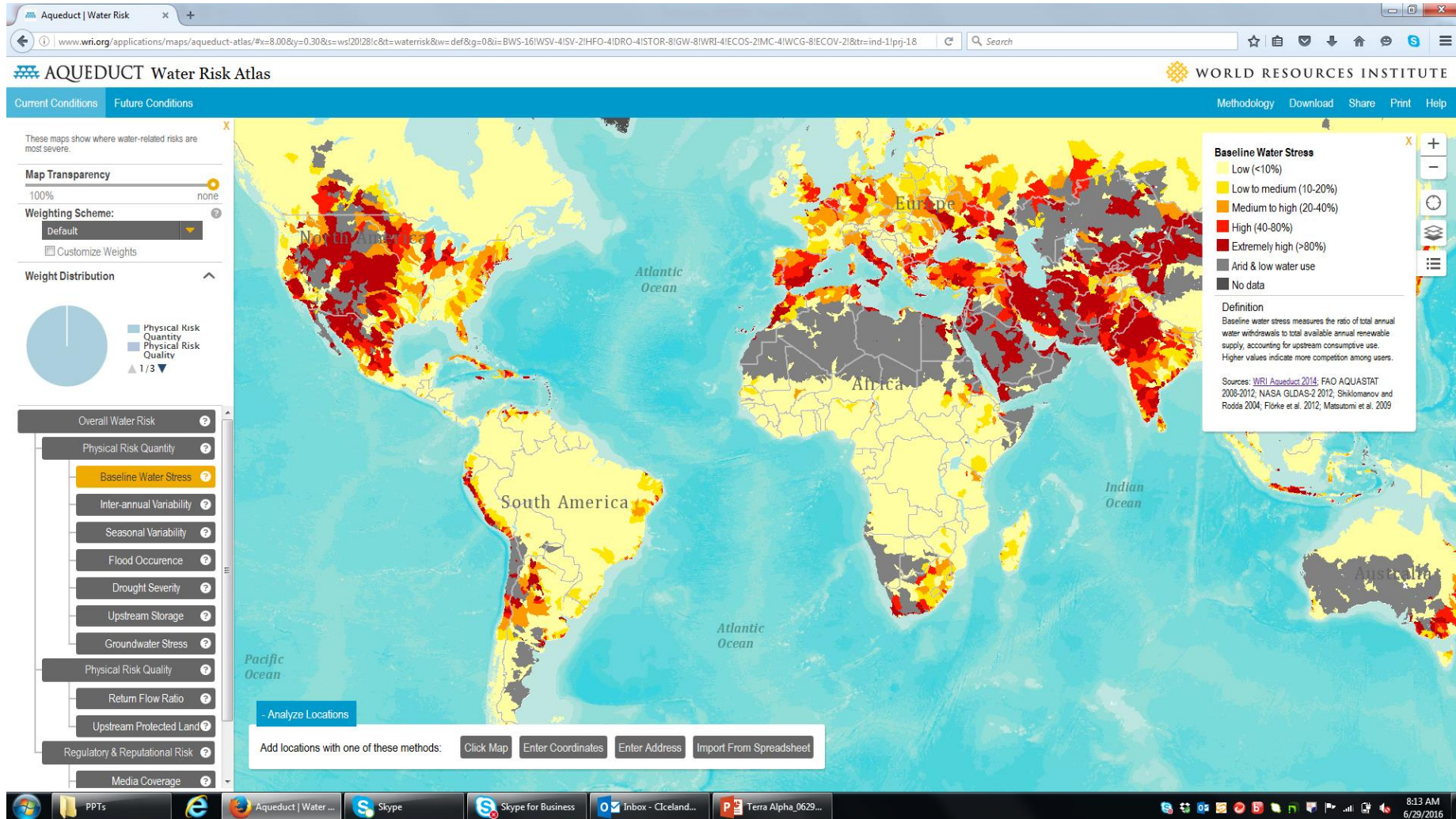
WORLD
RESOURCES
INSTITUTE

WATER & GLOBAL SECURITY

February 15, 2018
Lund University

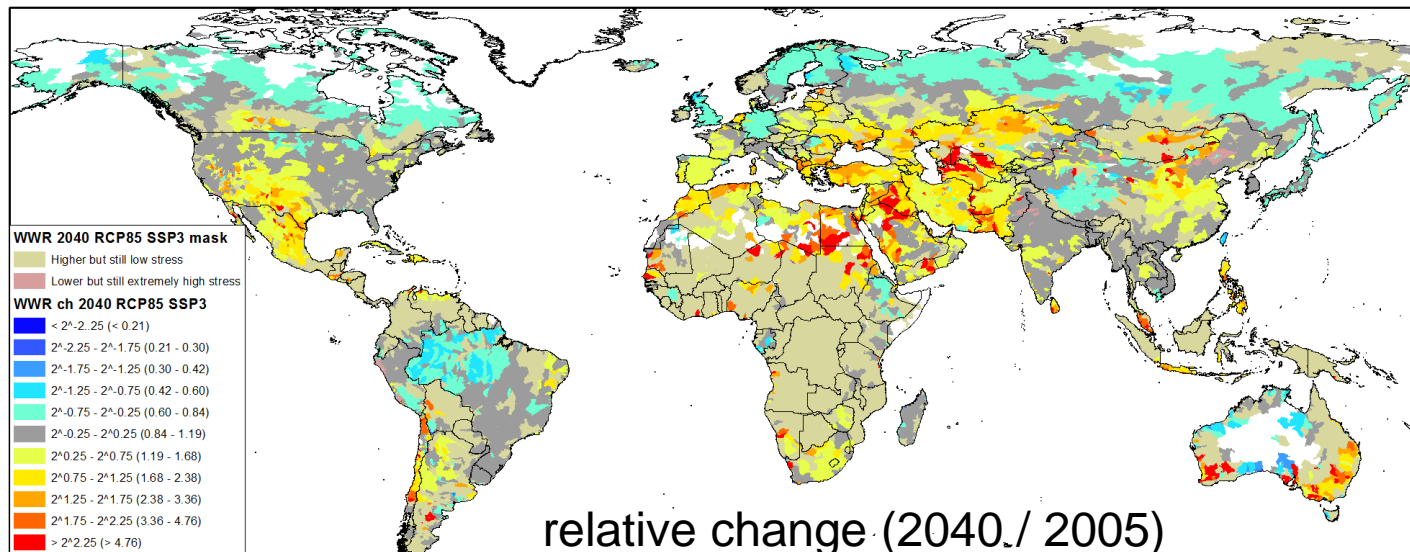
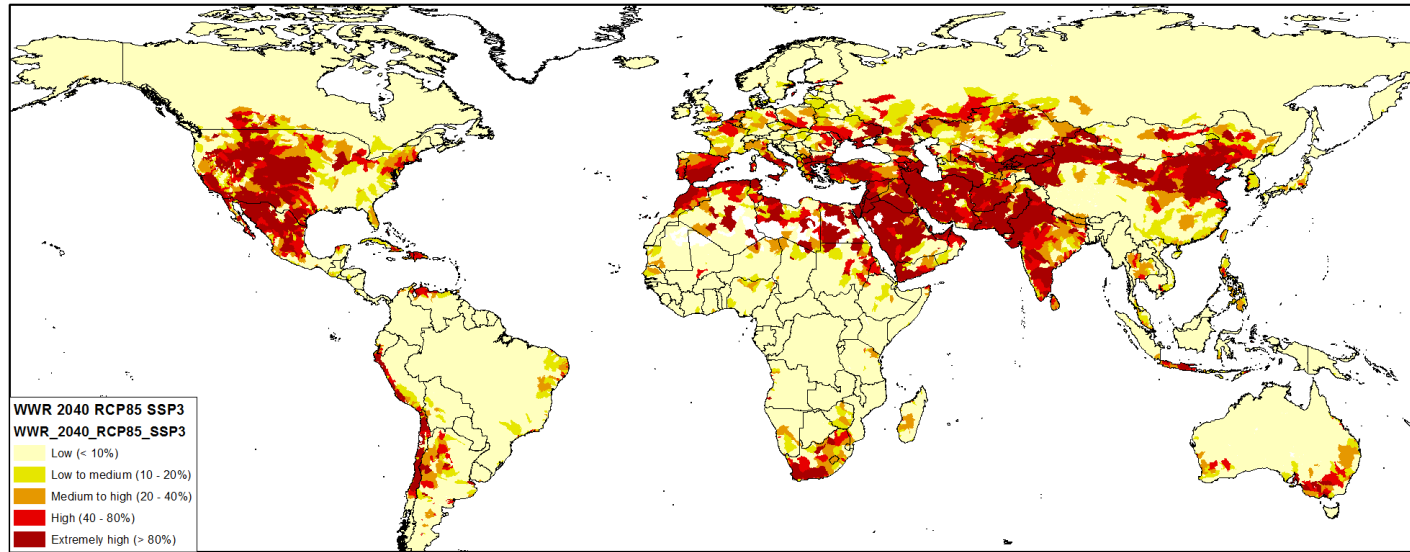
Charles Iceland, Director, Global and National Water Initiatives, WRI

GLOBAL SURFACE WATER STRESS

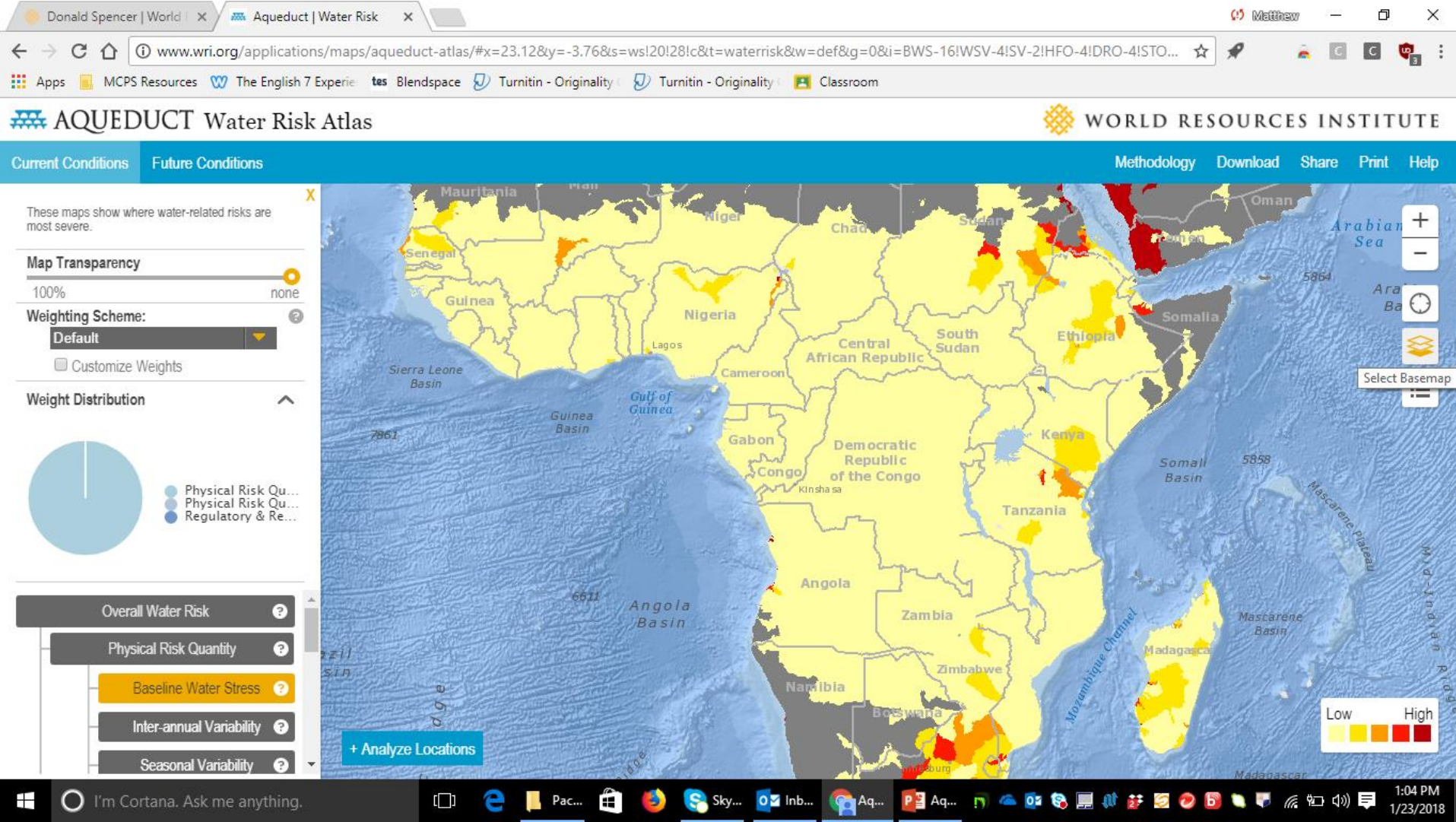


15,000 CATCHMENTS. DEMAND-SUPPLY BALANCE BY SECTOR.

WATER STRESS (RCP85/SSP3) 2040



LITTLE IRRIGATION IN SSA



THE RISE OF BOKO HARAM IN THE LAKE CHAD REGION OF THE SAHEL

Increasingly stressed water and productive land resources in the Lake Chad region has put a strain on livelihoods, triggered destabilizing migration, and made the area ripe for recruitment by terrorist groups such as Boko Haram.



Changes in the Lake Chad system, as shown in satellite images over time. Blue areas in each image show open water. These satellite images clearly show the water is receding and the lake is shrinking (United States Geological Survey).

THE DARFUR CONFLICT IN WESTERN SUDAN

Many other factors helped trigger the conflict, but it was prolonged drought conditions and desertification in Darfur in the 1980s and 1990s – together with population growth – that precipitated a sharp decline in food production and unsettled long-standing agreements between nomadic herders and sedentary farmers, bringing the crisis to a head.

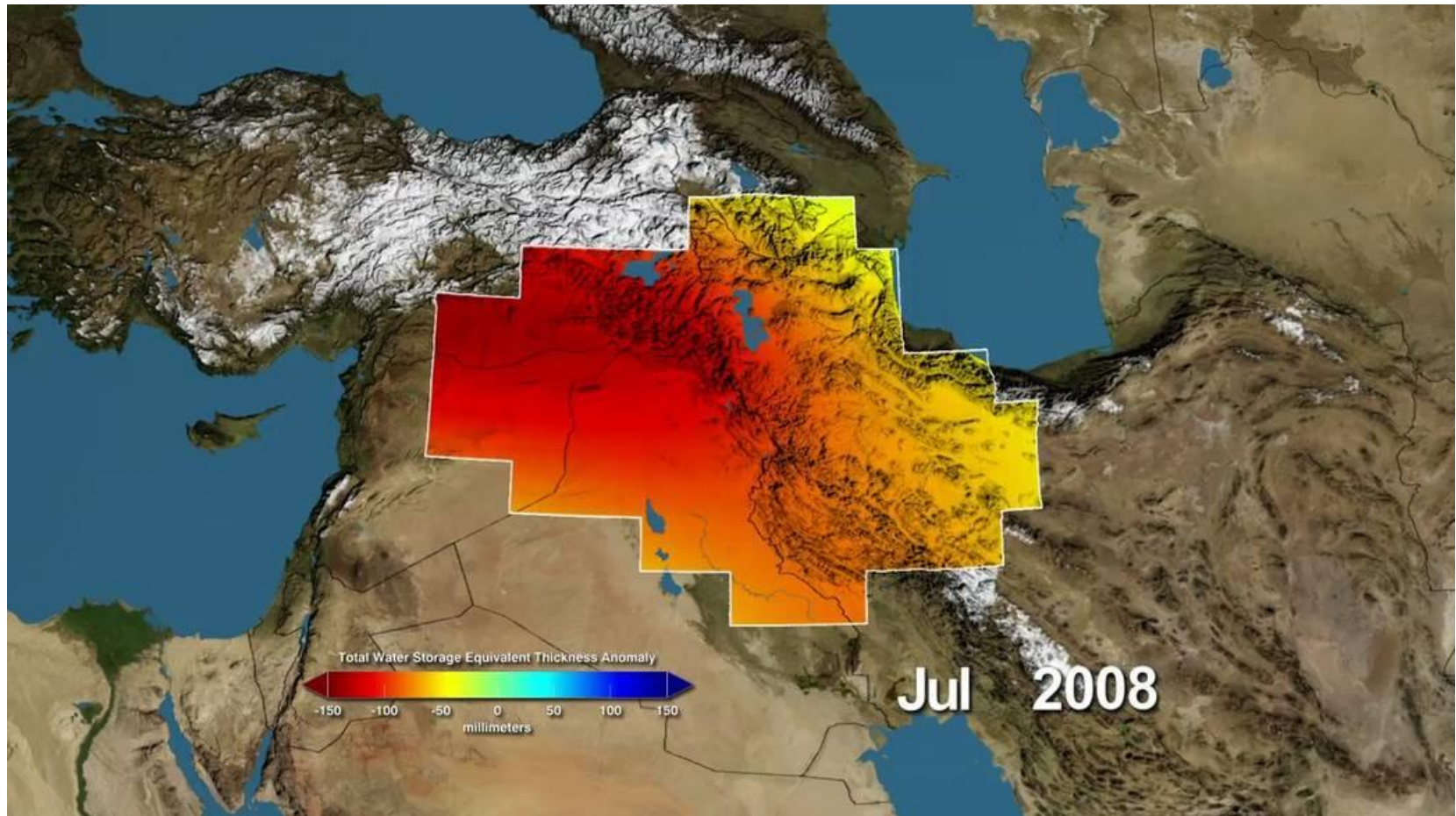


FOOD PRICE SPIKES & THE ARAB SPRING (2010-11)

In 2011, food prices spiked again, this time because of the 2010 droughts in Russia, Ukraine, China and Argentina and torrential storms in Canada, Australia and Brazil. The Middle East and North Africa region is one of the top food importers of the world, and is thus highly vulnerable to changes in food supplies and food prices. Some experts believe that the 2011 food price spike helped usher in the Arab Spring.



THE SYRIAN CIVIL WAR (2011 –)



NASA's GRACE satellites saw major groundwater losses in the Tigris and Euphrates river basins between 2003 and 2009

Current Crisis: East Africa

Trip from IAD | Expedia x Trip Detail | Expedia x Home | Famine Early War x

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Acute Food Insecurity: Near Term (November 2017 - January 2018)

Near Term Medium Term

IPC 2.0 Acute Food Insecurity Phase

Presence Countries	Remote Monitoring Countries
1. Minimal	1. Minimal
2. Stressed	2. Stressed
3. Crisis	3+. Crisis or higher
4. Emergency	! Would likely be at least one phase worse without current or programmed humanitarian assistance
5. Famine	

LARGE ASSISTANCE NEEDS & FAMINE RISK CONTINUE IN 2018

FOOD SECURITY OUTLOOK STORY MAP

Quick Links

- Food Assistance Needs
- Food Prices
- Weather Hazards

9:46 AM 1/2/2018

Current crisis: “Day Zero” in Cape Town, SA



Current crisis: Ethiopia's Grand Renaissance Dam



Current crisis: targeting Yemen's water infrastructure



A water and security taxonomy

1. Catastrophic drought in failed states (e.g. Somalia)
2. Rising resource pressures in rain-fed agricultural regions (e.g. Lake Chad Basin)
3. Severe drought in chronically water-stressed (irrigated) regions (e.g. Syria)
4. Drought, over-abstraction, and/or water pollution in urban areas (e.g. Cape Town)
5. Dams and water diversions in the absence of agreement (e.g. Indus River Basin)
6. Droughts and/or floods contribute to food price spikes (e.g. 2011 global food price spike)
7. Use of water as a weapon or victim of war (e.g. Yemen)

There are many things we can do right now to improve prospects for a brighter future

- Develop robust data and information systems
- Cap water usage
- Employ water-efficient technologies and practices
- Plant water-efficient and drought resistant crops
- Identify cost-efficient ways to reduce pollution
- Expand green and gray water storage infrastructure
- Price water to cover costs and ongoing maintenance
- Improve water management and governance systems
- Implement interventions unique to dryland farming areas
- Reduce food loss and waste at each stage of the value chain:
 - Donate unmarketable crops
 - Invest in low-cost food storage technologies
 - Re-engineer manufacturing processes
 - Donate unsold food products
 - Reduce portion sizes
- Shift to less meat-intensive/more vegetarian diets
- Reduce population growth

Water, Peace and Security Initiative (with IHE-Delft, Deltares, and The Hague Center for Strategic Studies)

- An online global early warning system for potential water-related threats to human security;
- An on-the-ground research protocol to further define the challenge and identify possible interventions;
- Training and capacity building modules to help developing countries cope with current and future crises and avert potential destabilizing conflict and migration;
- Water dialogues among key stakeholders at both international and sub-national levels, to try to diffuse tensions and pave the way for solutions.

DANIDA



Ministry of Foreign Affairs of the Netherlands



Ministry of Infrastructure and the Environment



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BMZ



Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung



skoll global threats fund



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REPRISK
ESG Business Intelligence



The Nature
Conservancy



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THE WORLD BANK



giz
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Zusammenarbeit (GIZ) GmbH



DU PONT



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QUALCOMM



Thank you
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