

Vulnerability: Drought



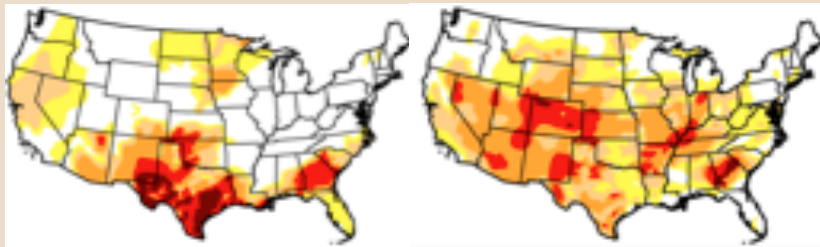
Case studies:
US (2012) versus Ethiopia (2009) Drought

Charlotte Chung, Tae Eun Kim, Yusuke Fukuyama, Isabel Wilson

Characteristics: Areal Extent

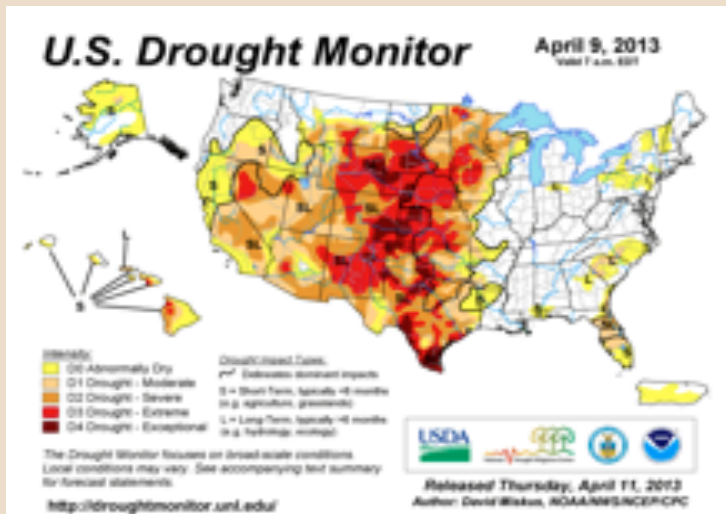
US

2012-2013



January 3 2012

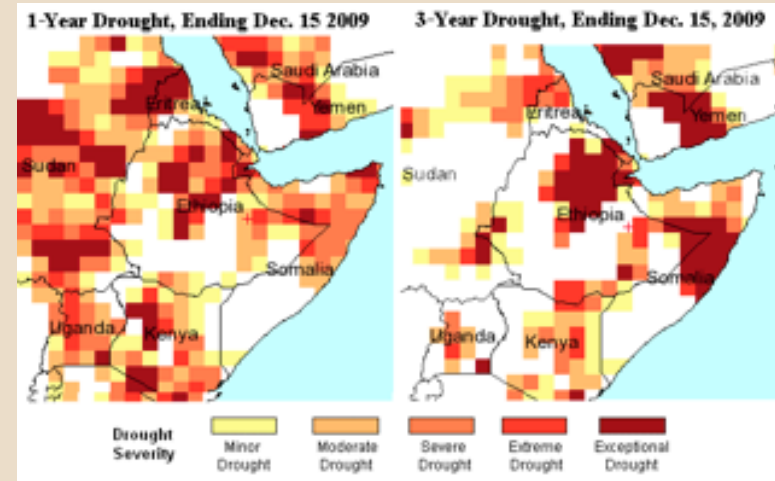
July 3 2012



April 9 2013

Ethiopia

March 2008-April 2009



2009

Characteristics: Frequency

US

- Dust Bowl (1930s)
- Droughts of the 1950s
- Droughts of the 1970s

not as frequent as
Ethiopian droughts, but of
larger severity

Ethiopia

Increased frequency of
droughts in eastern Africa
over the past 20 years



Horn of Africa

Characteristics: Magnitude

US

- 54.6% of the states experienced drought by the end of June 2012, reaching its highest percentage since 1956
- Covered much larger area compared to past droughts, but more concentrated in severity

Ethiopia

- Precipitation levels fell under 30% of the average in 1995-2010

Characteristics: Speed of Onset

US

Ethiopia



Socio-Economic Vulnerability



Wealth


More wealth=less vulnerability

US

GDP: \$15,653 trillion
per capita: \$49,800
below poverty line: 15.1%
Labor Force: farming
forestry fishing (0.7%),
manufacture extract
transport craft (20.3%),
technical professional
(37.3%), office (24.2%),
services (17.6%)

Ethiopia

GDP: \$103.1 billion
per capita: \$513
below poverty line: 29.2%
Labor Force: agriculture
(85%), industry (5%),
services (10%)



Lower Vulnerability
because of better
economy and higher
income

Education

Higher education=less vulnerability

US

School life expectancy:

- Male (15)
- Female (17)

Literacy rate

- Total: 99.9%
- Male: 99.9%
- Female: 99.9%

Education Expenditure

- 5.4% of GDP

Ethiopia

School life expectancy:

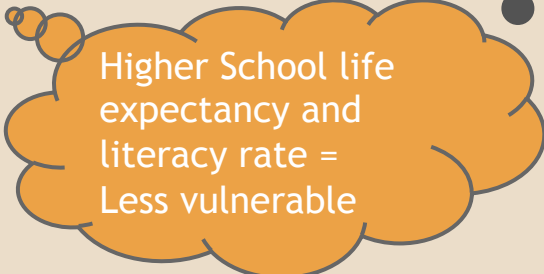
- Male (9)
- Female (8)

Literacy rate

- Total: 42.7%
- Male: 50.3%
- Female: 35.1%

Education Expenditure

- 4.7% of GDP



Higher School life expectancy and literacy rate = Less vulnerable

Health

Better health care=less vulnerability

US

Health expenditure

17.9% of GDP

Children under the age of 5
underweight - 1.3%

Infant mortality rate

6 deaths per 1000 births

Ethiopia

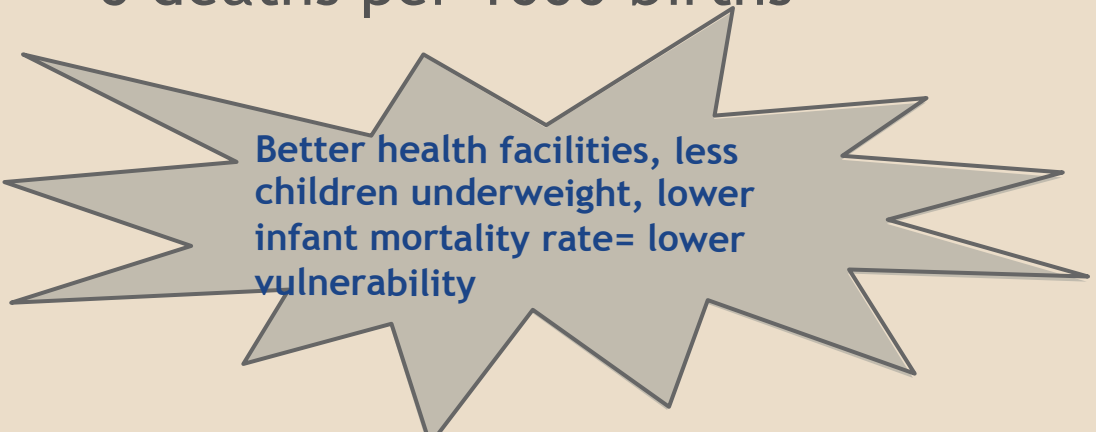
Health expenditure

4.9% of GDP

Children under the age of 5
underweight - 29.2%

Infant mortality rate

60.9 deaths per 1000 births



Better health facilities, less
children underweight, lower
infant mortality rate= lower
vulnerability

Demographics

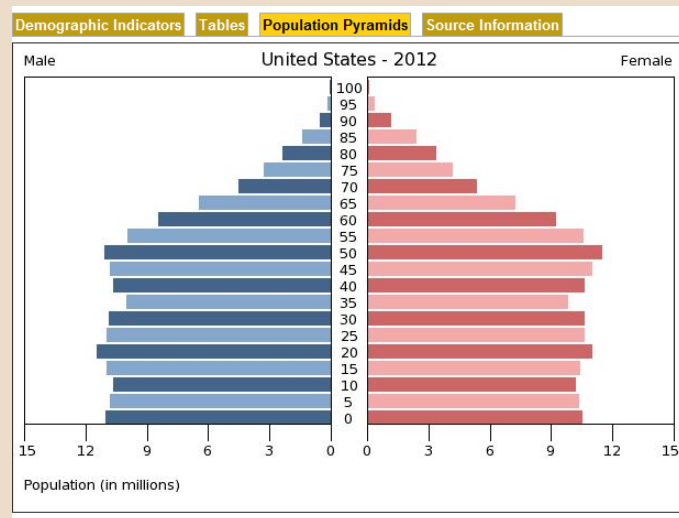
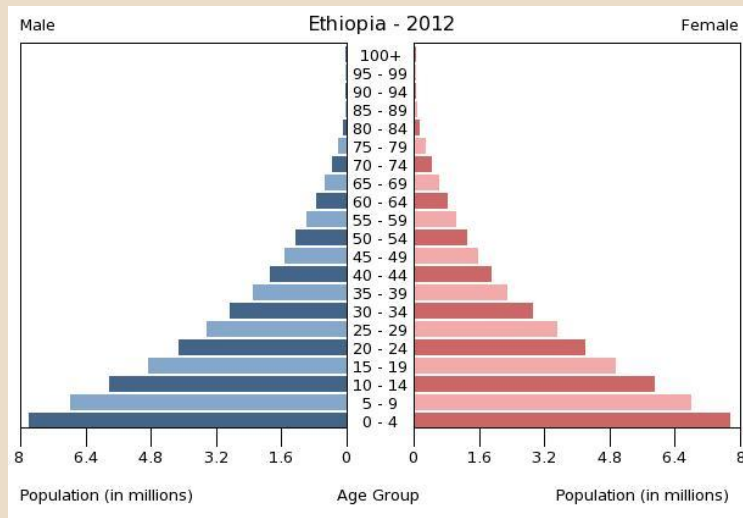
Very differentiated

Ethiopia

- 80 million in population
- Average family size of 6-7
- 41.5% of population aged between 0-14
- Very youthful population
- Urban population is 17% of the total population

USA

- Urbanized, while 82% residing in cities and suburbs
- 3rd populous country in the world (more than 300 million)
- Stationary population structure, and many are still in their active age (low dependency)



Ethiopia: Ethnic Variations

Ethnic inequality=higher vulnerability

Figure 1: Map of the Ethnically-based Regional States of Ethiopia



Source: BBC News, 2005.

Ethnicity	% of Population
Oromo	40
Amahara	25
Tigray	7

Certain ethnic groups were considered more important than the others

Limited opportunities: lack of education, political involvement, manifestation of cultural

USA: Ethnic Variations

Low vulnerability from ethnicity

2012 Drought Devastates Crops

Crop Damage in the Top 10 Hardest-Hit States

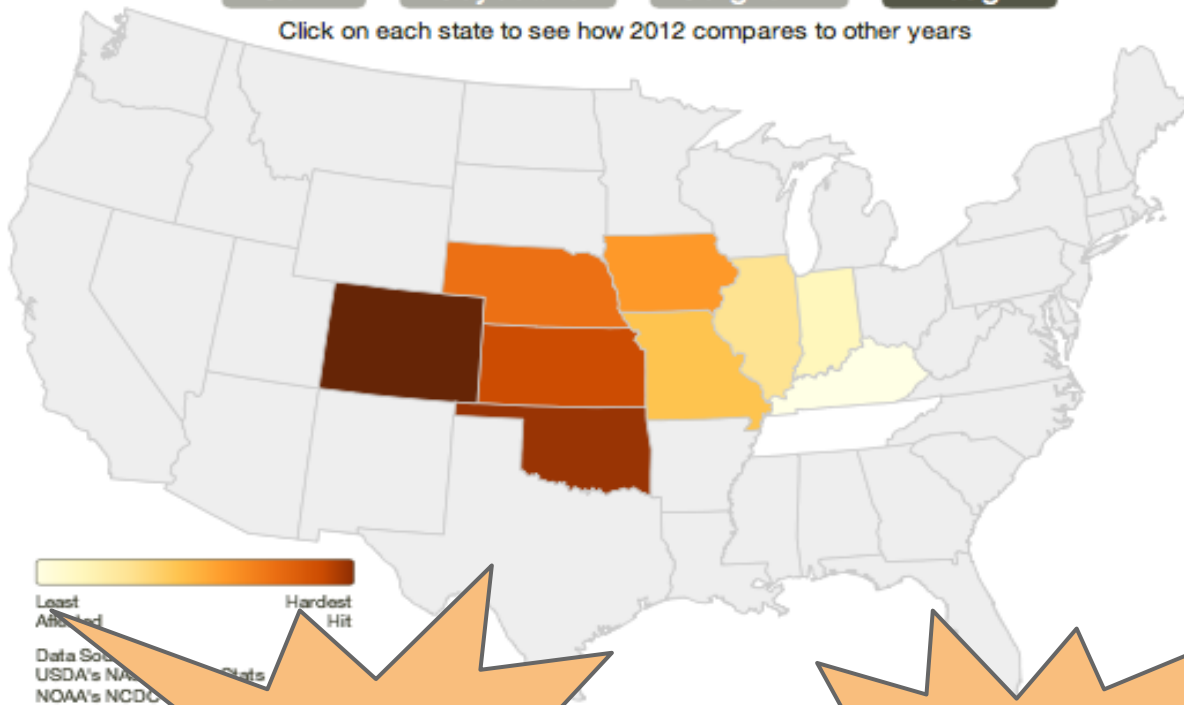
Corn

Soybeans

Sorghum

Drought

Click on each state to see how 2012 compares to other years



Most affected areas:

Colorado, Kansas, Oklahoma, Nebraska, Arkansas, Missouri, Illinois, Kentucky, Indiana, Georgia

Inequality between ethnicities is very low

Receive equal opportunities

Low vulnerability from ethnicity

Overall Evaluation

USA

- Only the first year of drought
- Less time needed for recovery

Ethiopia

- Caught in a deadly cycle of death and famine
- Around US\$176 million was donated in international aid - not enough