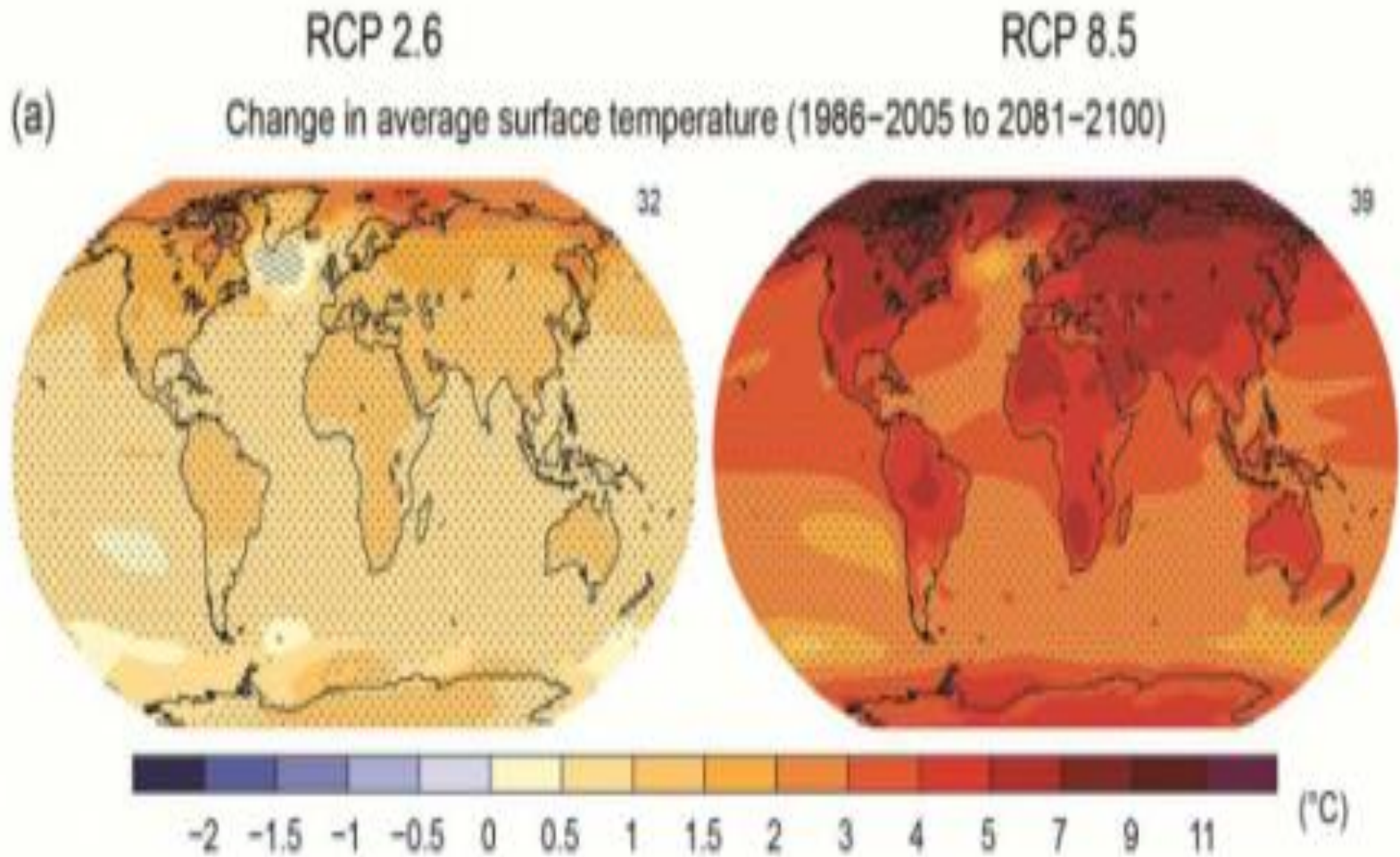# The Importance of Climate Change in Africa's Security Future

by James Lee, American University

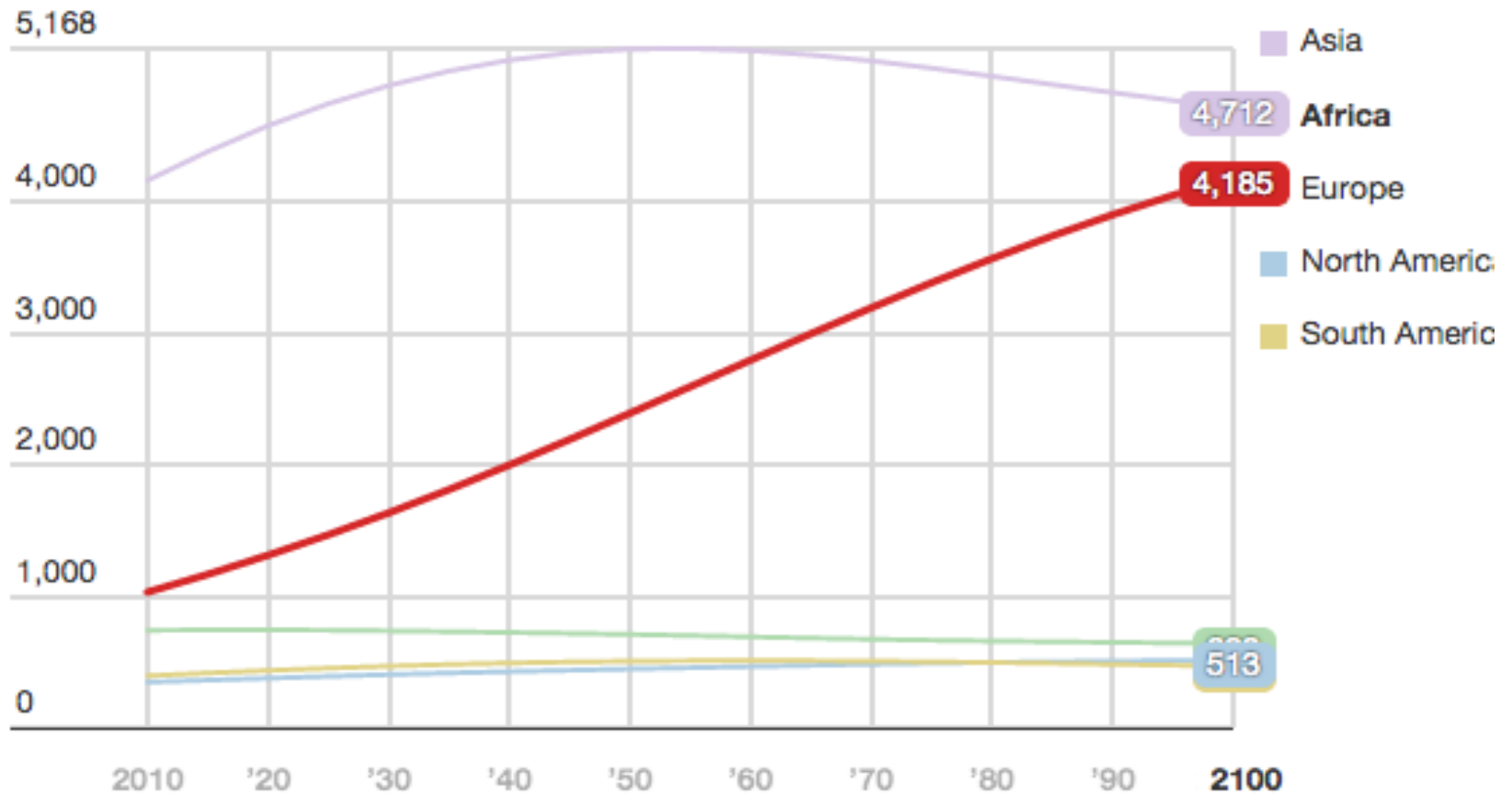## May, 2016

Low and High Forecasts of Climate Change in 2100 (IPCC, AR5)
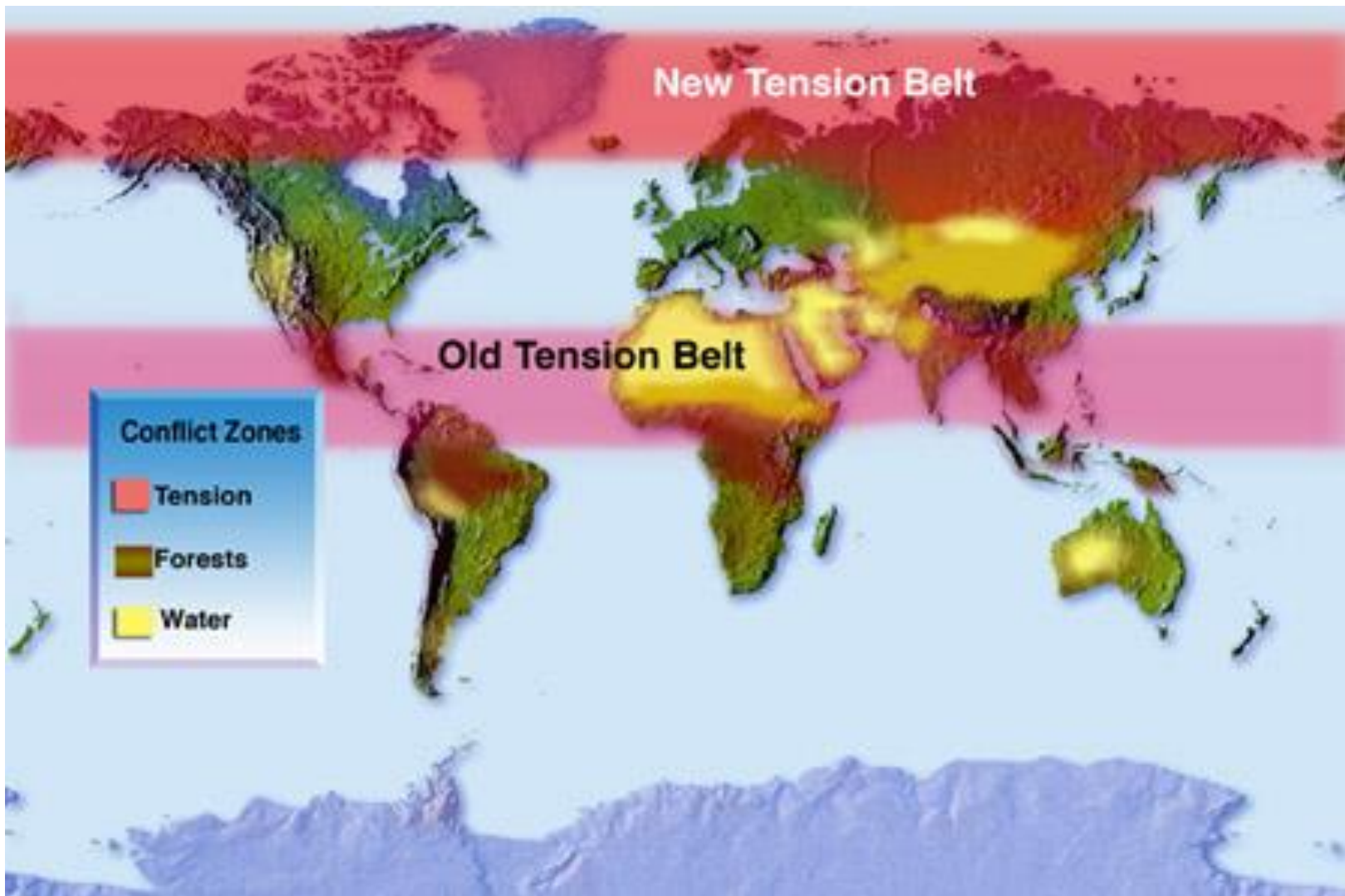

RCP 2.6   RCP 8.5

(a) Change in average surface temperature (1986–2005 to 2081–2100)

Africa's Rapidly Growing Population
(UN Forecasts)

Predicted population by continent, in millions

- Asia
- **Africa** 4,712
- Europe 4,185
- North America
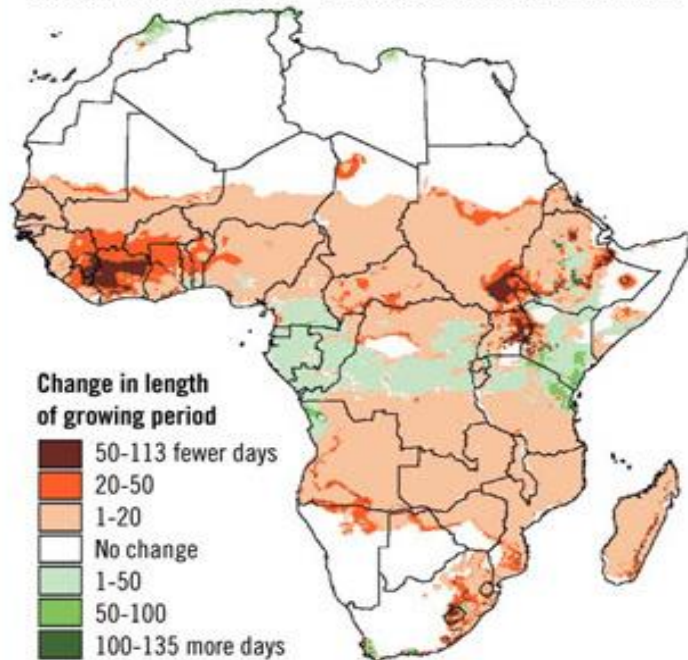- South America

513

Climate and Conflict: Hot and Cold Wars

African Food Security and Climate Vulnerability

Figure 1.2 Climate change and food security — Changes in Projected Growing Season, 2000-2050
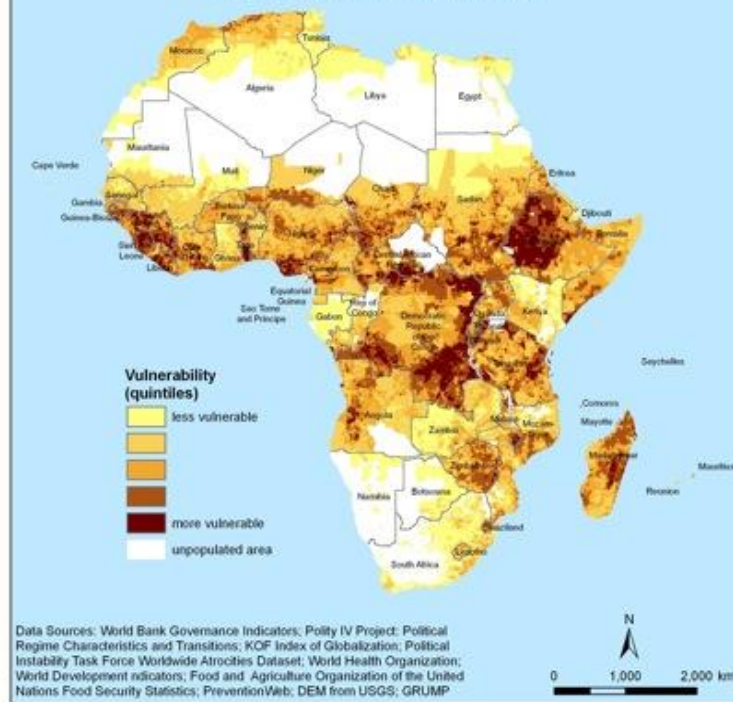
Change in length of growing period:
- 50-113 fewer days
- 20-50
- 1-20
- No change
- 1-50
- 50-100
- 100-135 more days

Source: Thornton et al. 2002:89
Reproduced from *World Resources 2005*. All rights reserved

Global Climate Change Related Vulnerability in Africa

Vulnerability (quintiles):
- less vulnerable
- more vulnerable
- unpopulated area

Data Sources: World Bank Governance Indicators; Polity IV Project; Political Regime Characteristics and Transitions; KOF Index of Globalization; Political Instability Task Force Worldwide Atrocities Dataset; World Health Organization; World Development Indicators; Food and Agriculture Organization of the United Nations Food Security Statistics; PreventionWeb; DEM from USGS; GRUMP
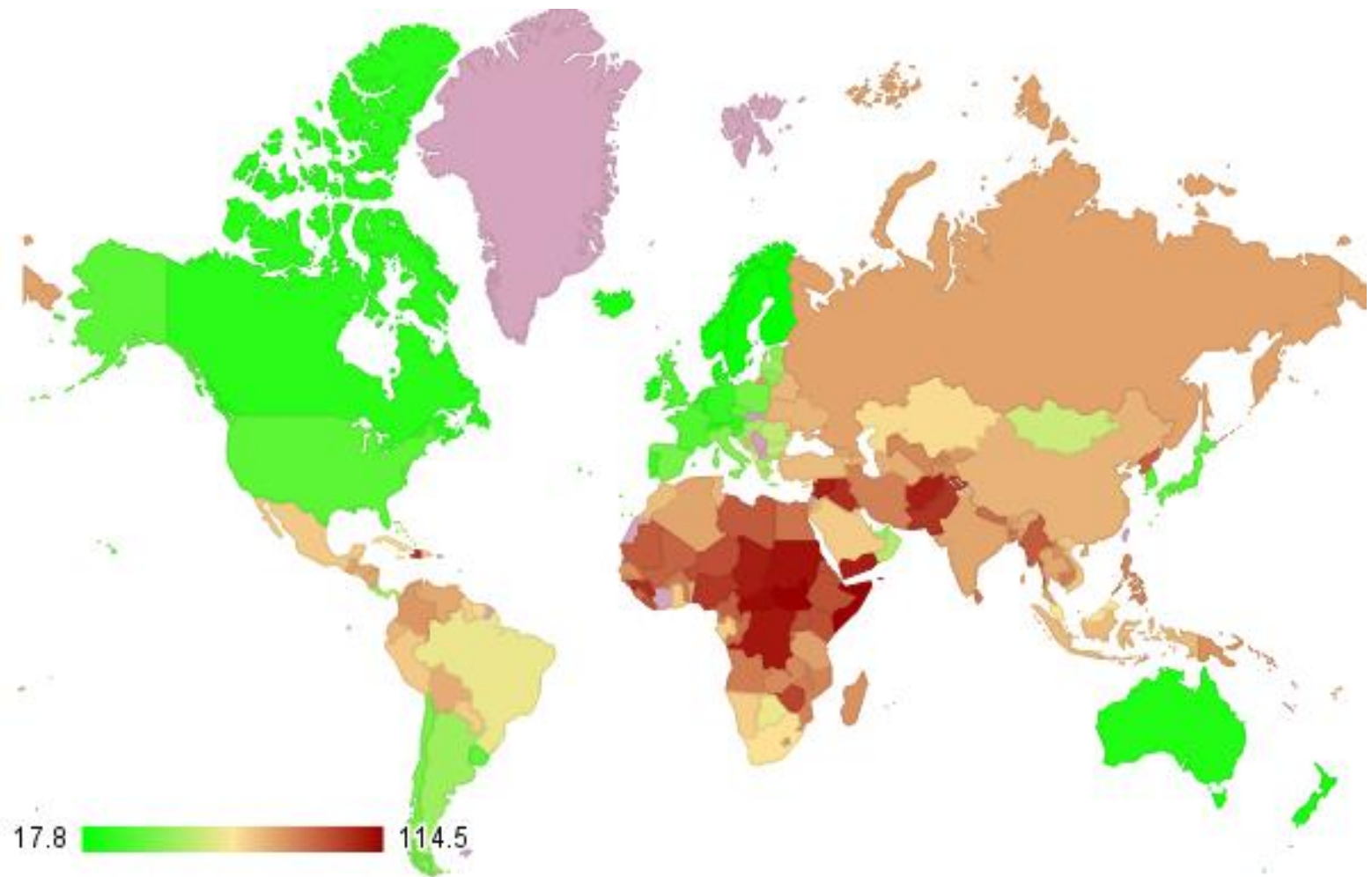
The Climate Forecasts and Repercussions: Implications for Africa

- 1. Climate models <u>fail to fully account for feedback</u> that may accelerate or slow rates of climate change. The result: stalling of Economic Growth and Demographic Transition

- 2. <u>Slowing in Agricultural Productivity</u> Growth.

- 3. <u>High Population Growth Rates Persist</u>, adding millions, in Africa and South Asia. Continuing reliance on agricultural sector for employment and income.

- 4. <u>De-coupling of economy from carbon</u> use will impact Africa development especially, reducing growth.

- 5. <u>Weak government institutions</u> often cannot manage disruptive adaptation brought on by climate and people factors.

- 6. There will be a <u>hard rather than a soft landing</u> of climate and demographic forces. Sets the stage for conflict.
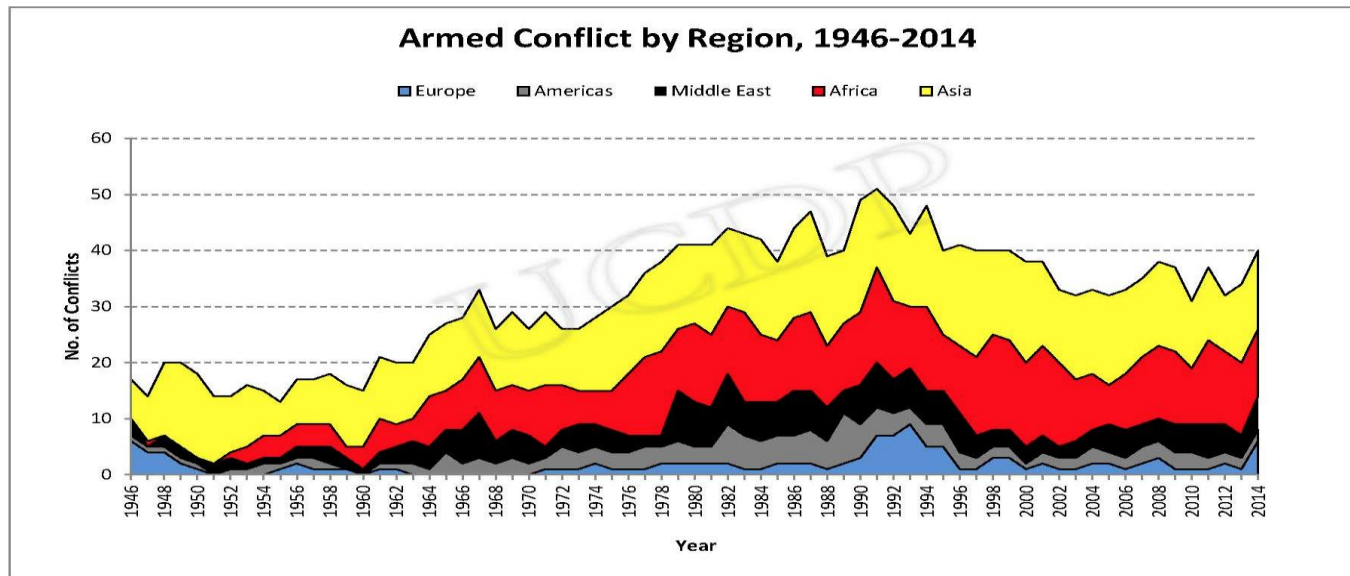
Fragile States are More Vulnerable to Climate Change

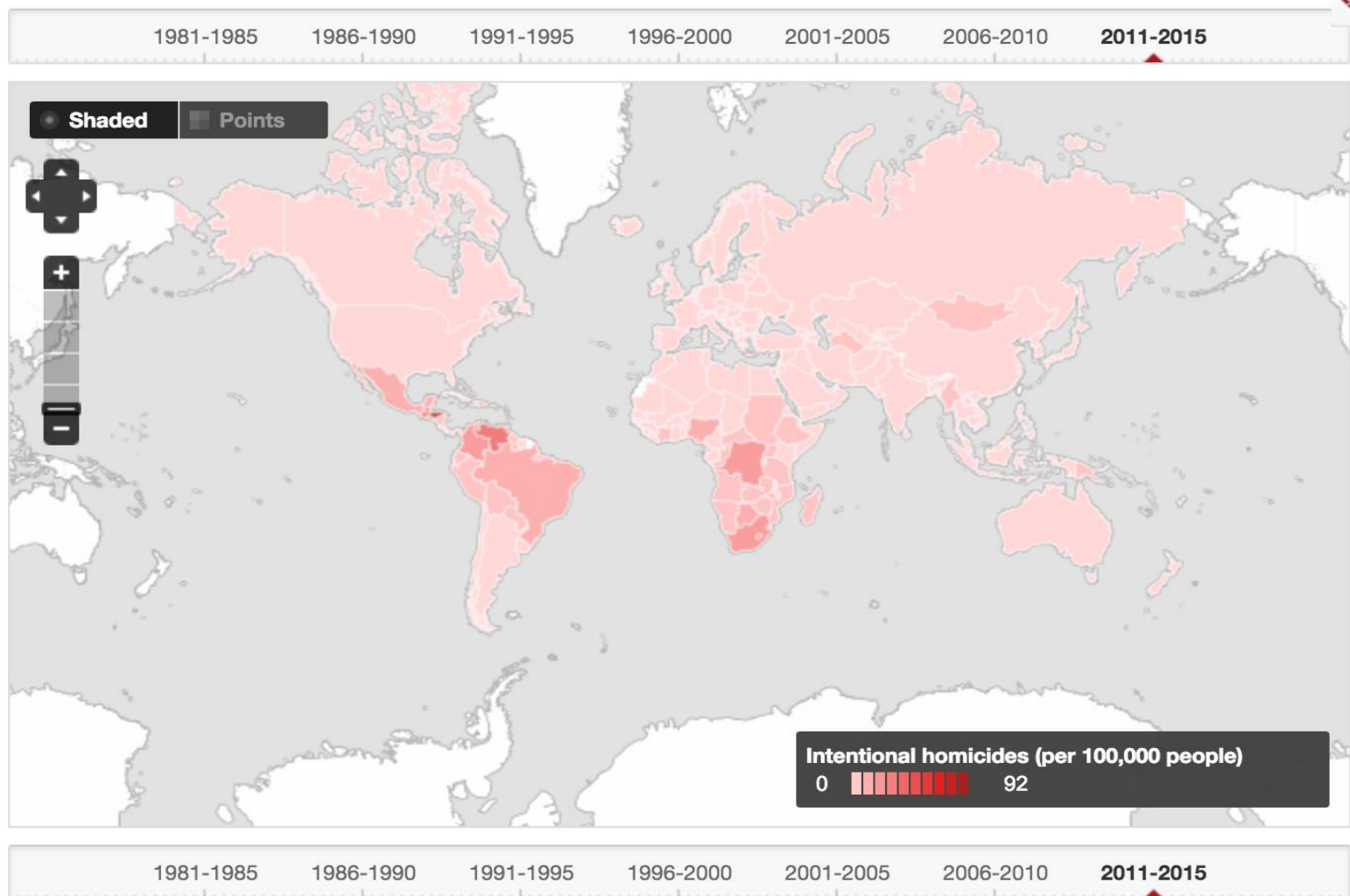(Social, Economic and Political Indicators, *Fund for Peace*)

17.8 ▮▮▮▮▮▮▮▮ 114.5

Organized Conflict by Region
(Percent of Total Conflicts)

Armed Conflict by Region, 1946-2014

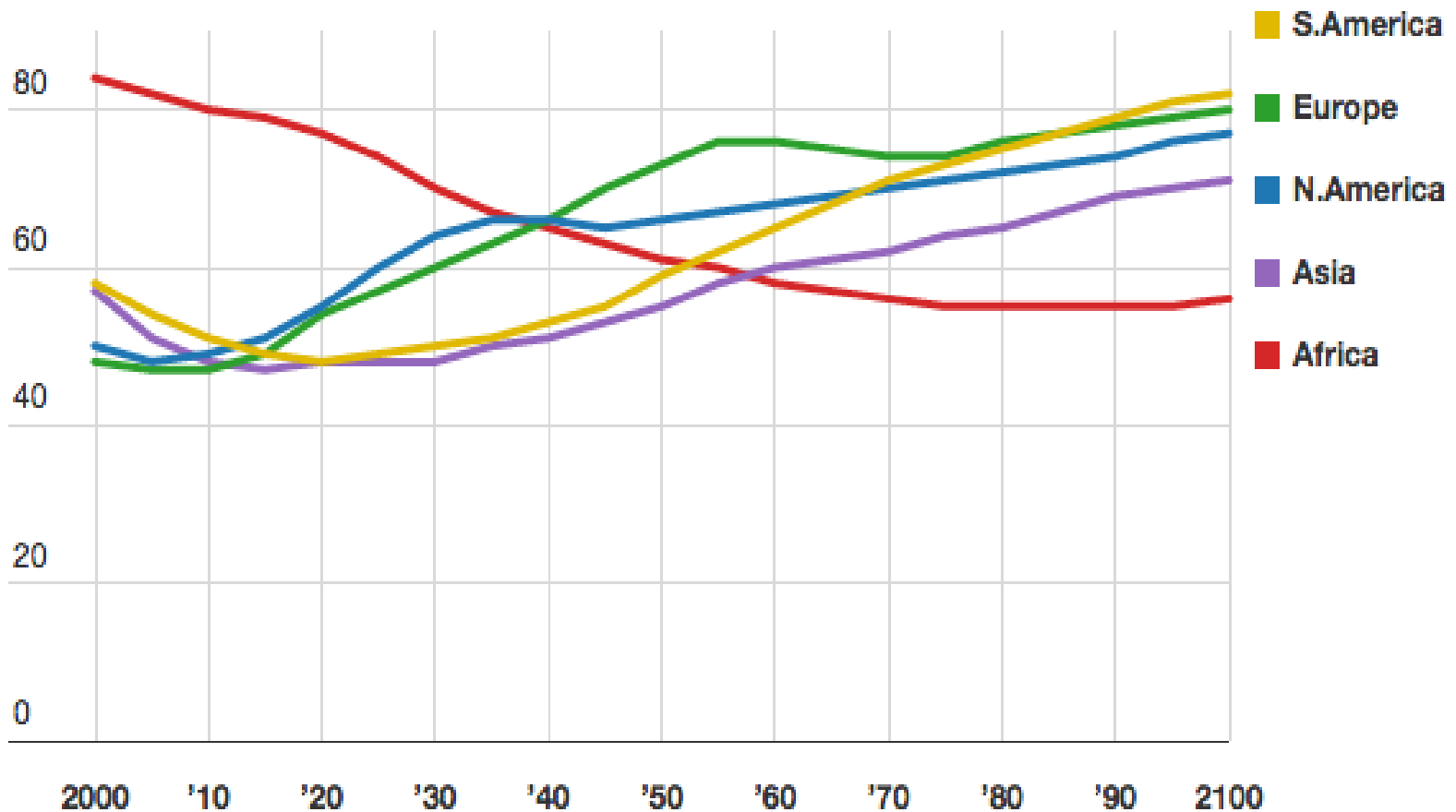Europe | Americas | Middle East | Africa | Asia

© UCDP 2015

Personal Conflict (Percent of Homicides per Population)

The maps displayed on the World Bank web site are for reference only and do not imply any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries.

The Future World Workforce by Region

Dependency ratio: Percentage of the population either under age 15 or over 65.

Explanations for climate and conflict behavior

- <u>Fully and Empty Belly</u> war theories. Too much or too little food leads to conflict? Is it scarcity or surplus of resources? <u>General vs. specific resources</u>.

- It's also a <u>question of timing.</u> Too much precipitation or temperature can be a problem if it occurs at the wrong time.

- Climate and conflict are <u>lagged variables</u>. You gradually go hungry over many years.

- <u>Multiple factors lead to conflict</u> that all must be assessed.

- Climate change is a structural factor. <u>Conflict requires triggers</u>.

- <u>Adaptation to climate can itself lead to conflict</u>.

Building Decision-Making Tools Using Case Studies:
Inventory of Conflict and Environment

Search Criteria		
FIELD	**VALUE**	**IMPORTANCE WEIGHTING**
CONTINENT >	Any	1
REGION >	Any	1
COUNTRY >	Any	1
HABITAT >	Any	1
ENV. PROBLEM >	Any	1
SCOPE >	Any	1
TRIGGER >	Any	1
TYPE >	Any	1
OUTCOME >	Any	1
LEVEL OF CONFLICT >	Any	1
BEGINNING YEAR >	Any	1
DURATION >	Any	1

Perform Search   or Refine Search by Relevance or Decision

Score	Case Title	Abstract
100% = 12 (score)/ 12 (total poss)	No.1 – Nile	The Nile river is the main sou... river is barely enough to sati...
100% = 12 (score)/ 12 (total poss)	No.2 – Eritrea	The Eritrean-Ethiopian War ... Democracy and Justice) capt...
100% = 12 (score)/ 12 (total poss)	No.3 – Sudan	The civil war in the Sudan is... and South. Religion, ethnicit...
100% = 12 (score)/ 12 (total poss)	No.4 – Mururoa	On June 13, 1995, French Pr... testing in French Polynesia. I...
100% = 12 (score)/ 12 (total poss)	No.5 – Peruecwar	The Cordillera del Condor ha... years. Despite claims that th...
100% = 12 (score)/ 12 (total poss)	No.6 – Jordan	The struggle for fresh water... military disputes in the regio...
100% = 12 (score)/ 12 (total poss)	No.7 – Codwar	What do fish have to do with... where those fish could be ca...
100% = 12 (score)/ 12 (total poss)	No.8 – Kurile	More than fifty years have p... former Soviet Union. The rea...

Policy Recommendations

- 1. <u>Climate policy and people policy</u> are both important. Good governance integrates security decisions.

- 2. Security is a <u>state level and personal level</u> issue.

- 3. <u>Security is more than a military issue</u>, security forces are more than military might.

- 4. Climate, people, and security is an age <u>old problem</u>. Look at old cases and cases elsewhere.

- 5. Find and/or build <u>smart tools for analyzing conflict</u> and environmental cases.

- 6. <u>Cooperate on trans-border environment and security</u> issues.