Climate Change & Manitoba:

Planning for a *better* future

Overview

- Where are we **now**?
- What are the **change** drivers?
- What's the **result**?
- How should we **prepare**?

Where are we

Now?

What are the Change drivers?

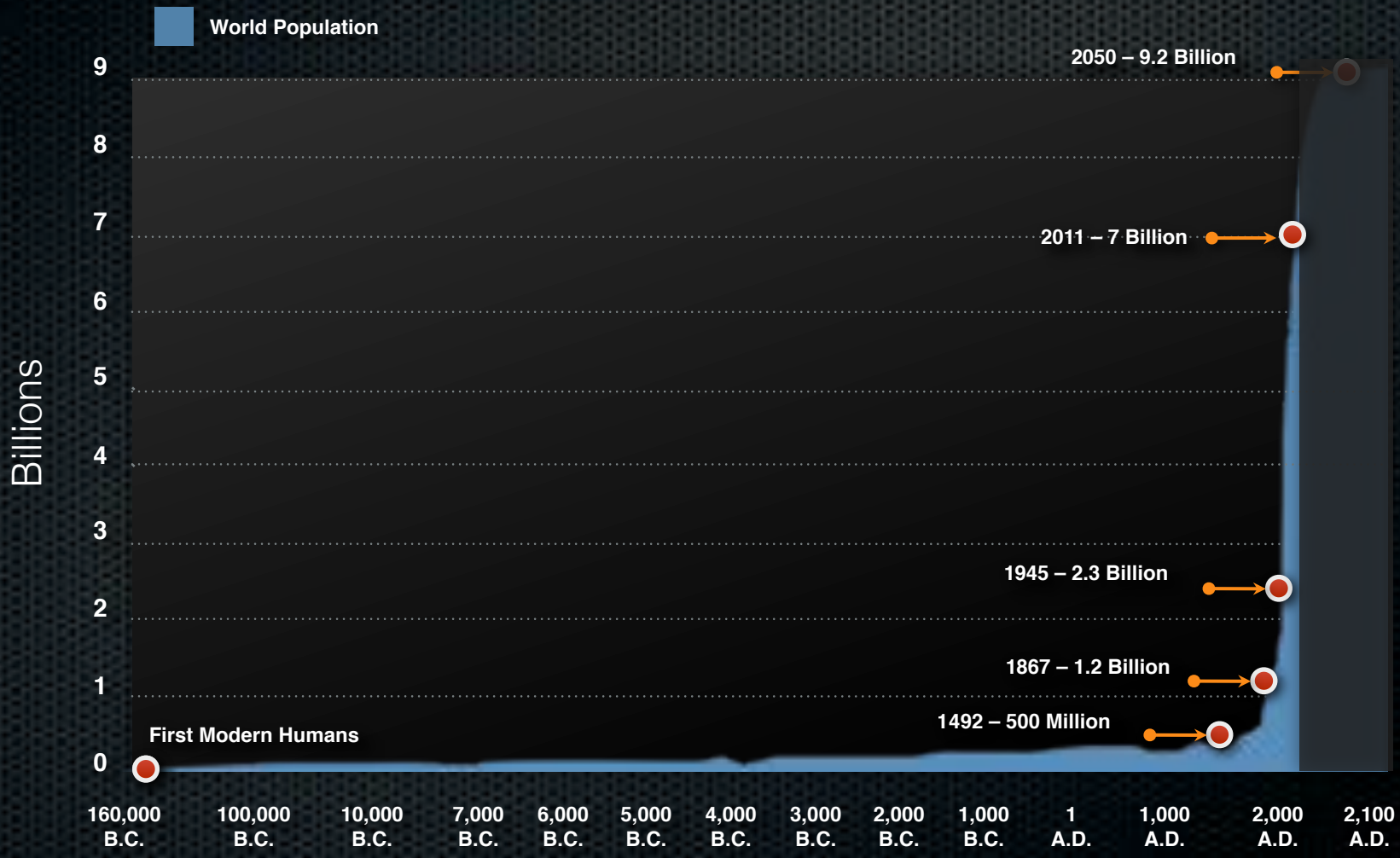
Change drivers

1. **Population**
   - Resource depletion
2. *growth dependant* **Economy**
   - Debt
   - Wealth migration
3. **Climate change**
   - Food

Driver 1

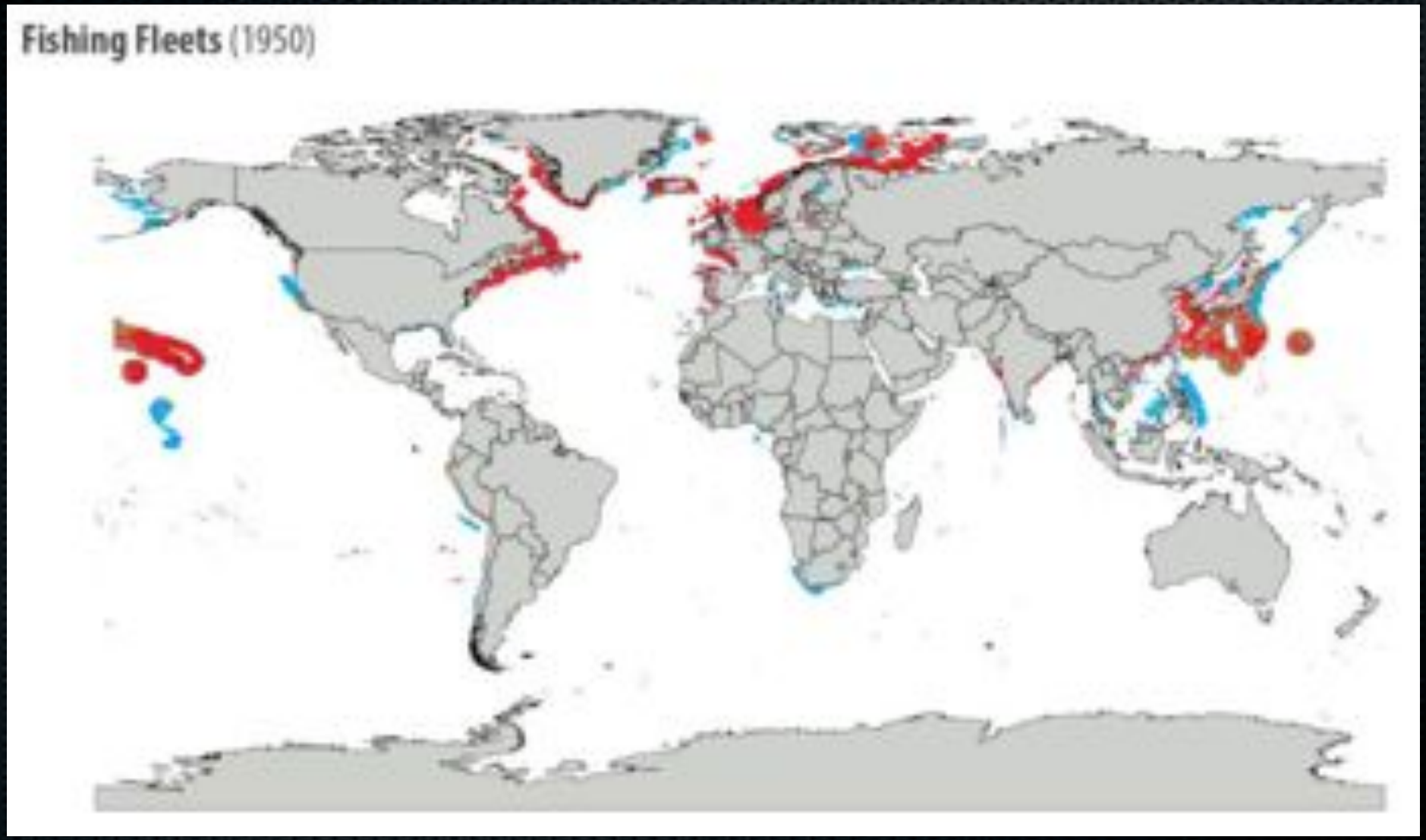
Population

Population

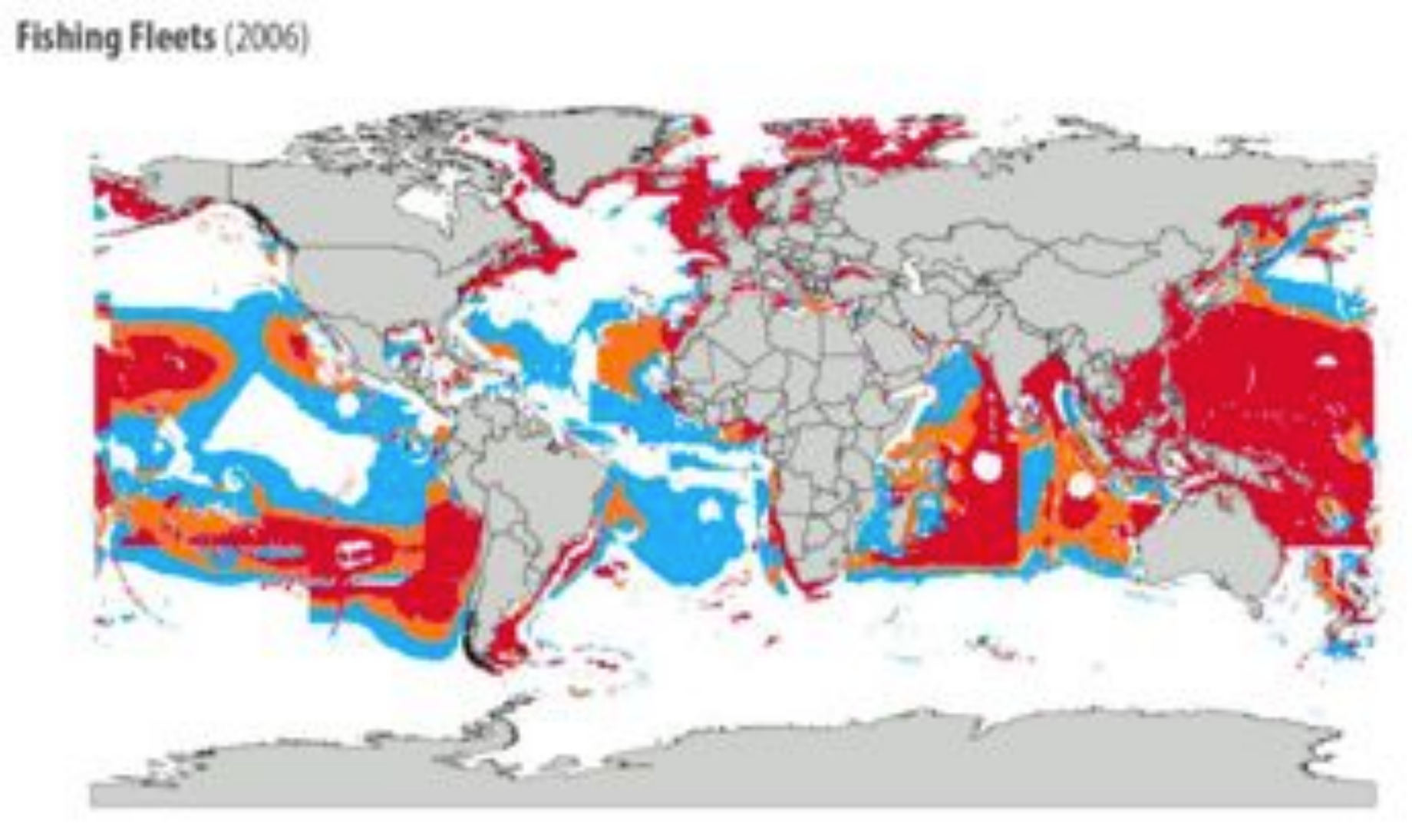


Source: United Nations

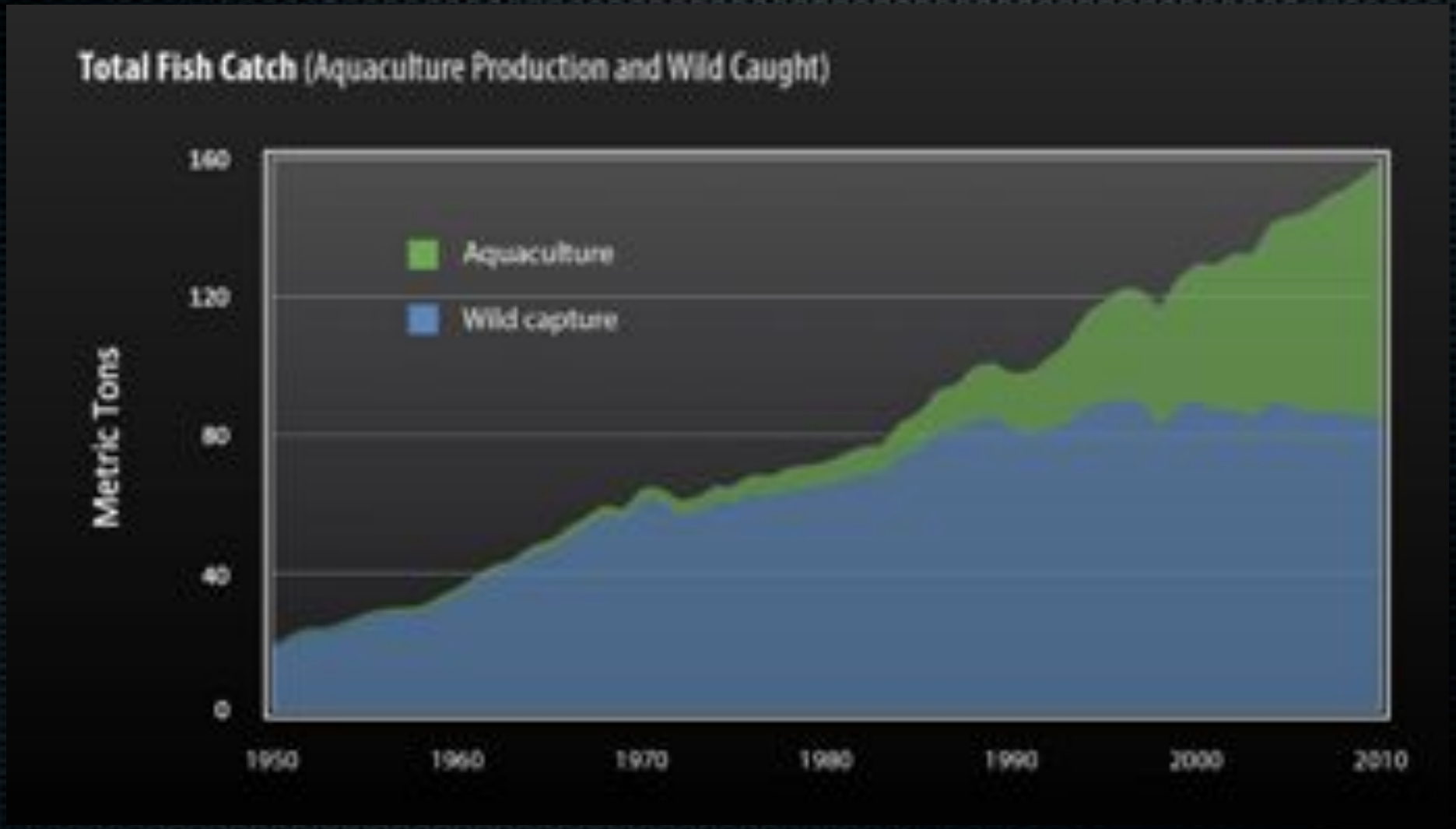
Resource supply



Resource supply



Resource supply



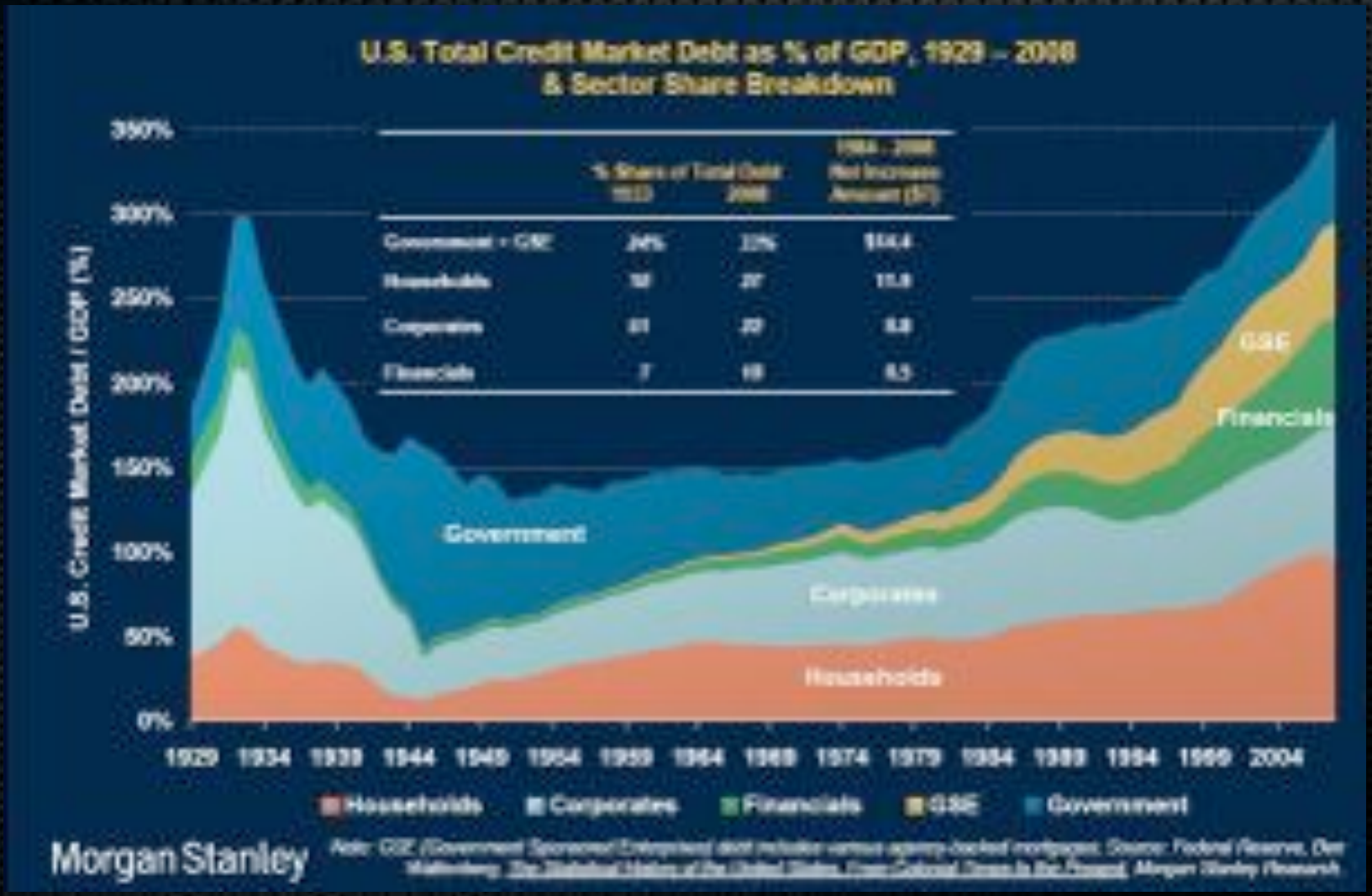
Driver 2

Economy

Driver 2: Economy

Debt

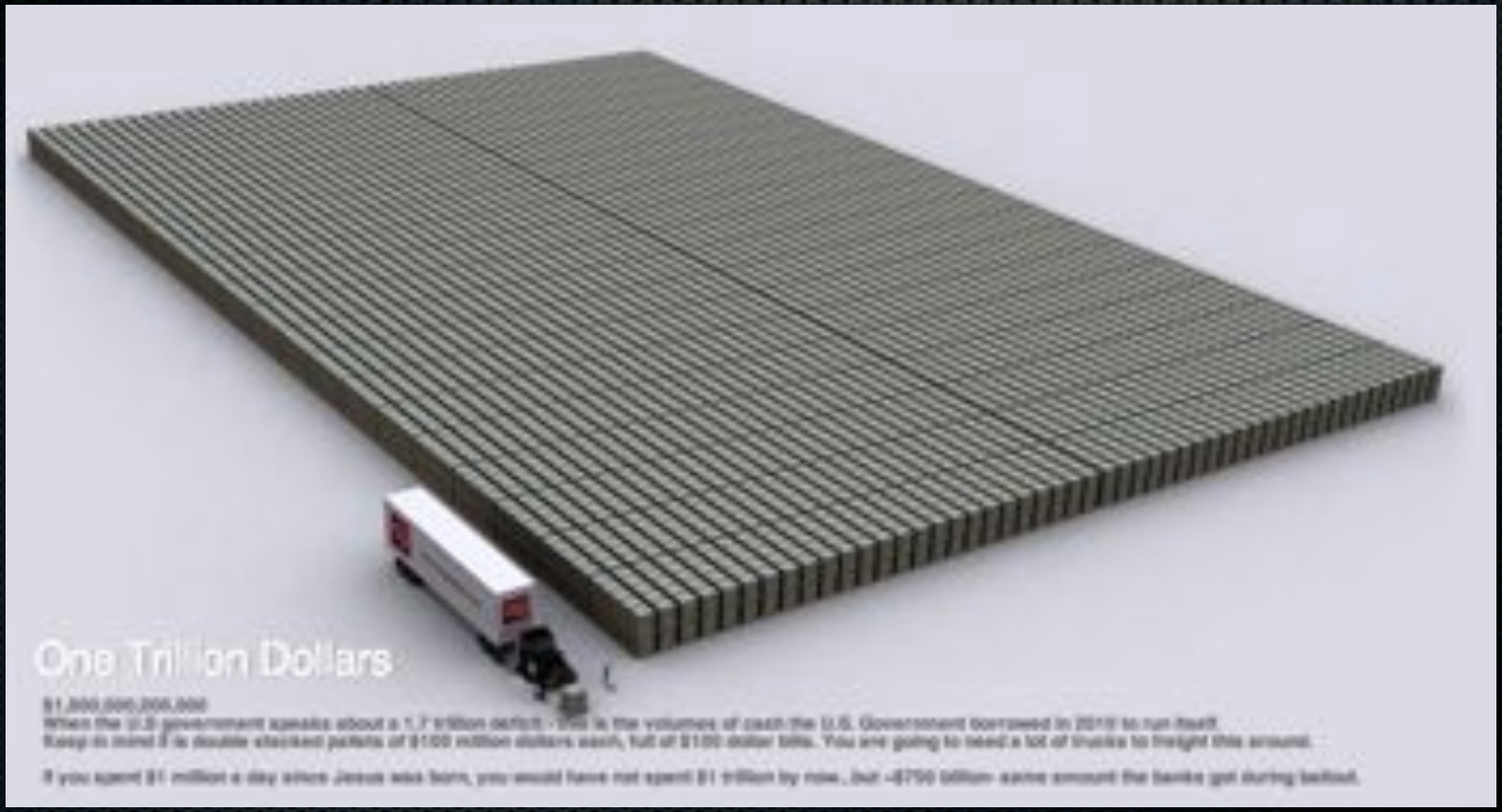
Debt


U.S. Total Credit Market Debt as % of GDP, 1929 – 2008
& Sector Share Breakdown
U.S. Credit Market Debt / GDP (%)
350%
300%
250%
200%
150%
100%
50%
0%
1929 1934 1939 1944 1949 1954 1959 1964 1969 1974 1979 1984 1989 1994 1999 2004
Government
Corporates
Households
GSE
Financials
Households
Corporates
Financials
GSE
Government
Morgan Stanley

Debt $100 million

Debt $1 billion

Debt $1trillion



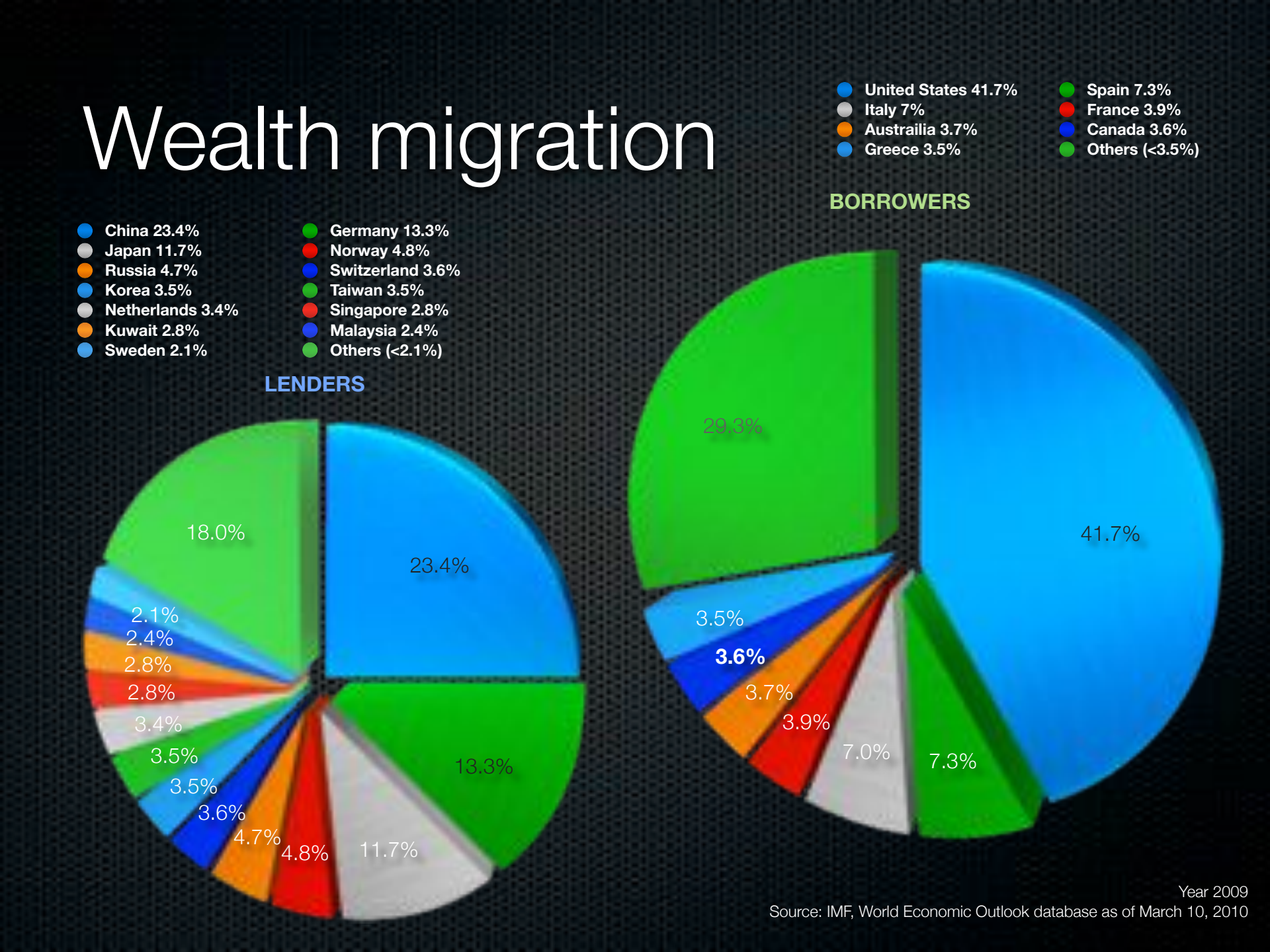
Debt $15 trillion

Driver 2: Economy

Wealth migration

Wealth migration

Wealth migration



Year 2009

Source: IMF, World Economic Outlook database as of March 10, 2010

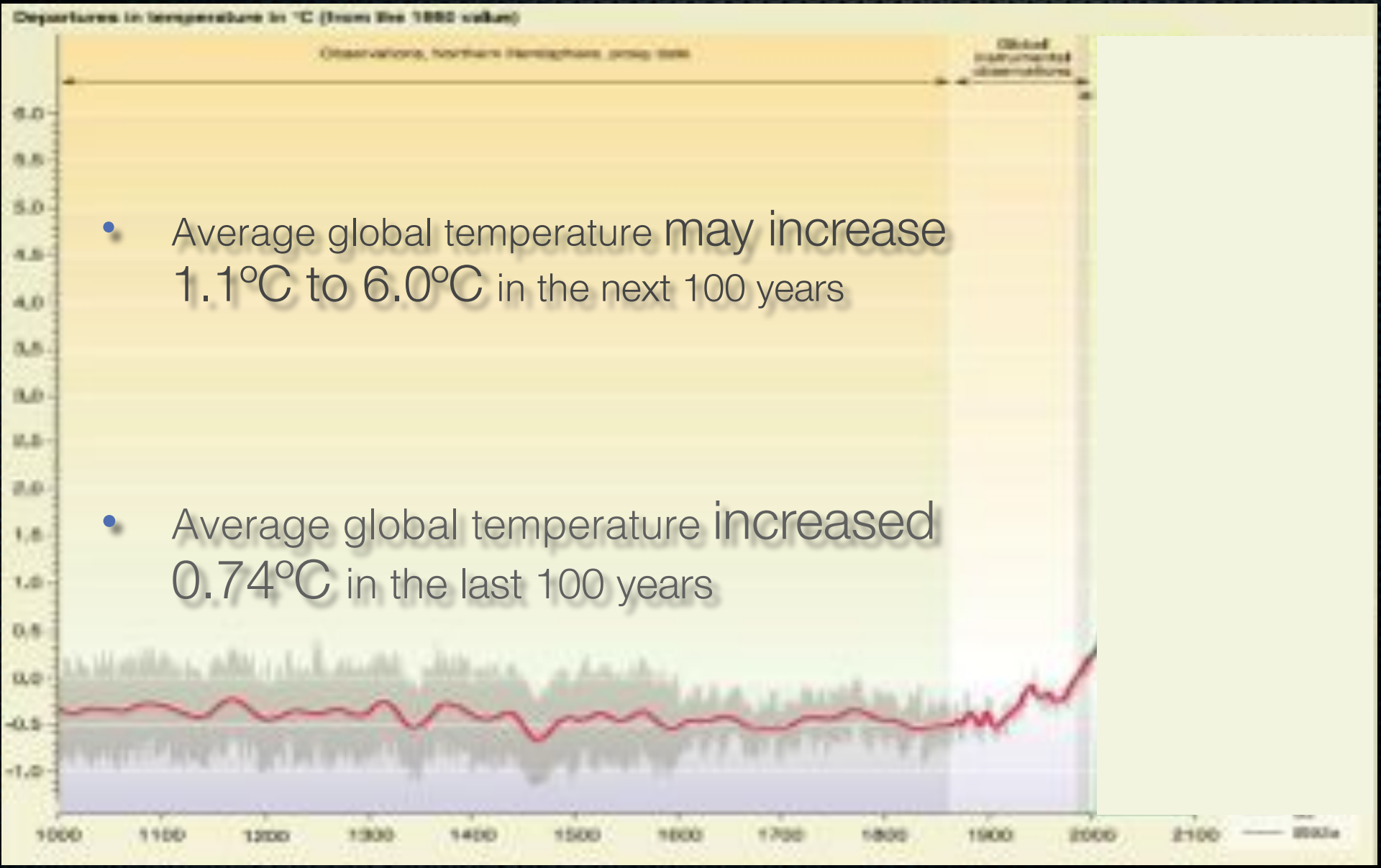
Driver 3

Climate change

Climate change

1. **It's happening**
   - Ice depletion
   - Severe weather
2. **It's due to us**
   - Greenhouse gases
3. **It's bad**
   - Food

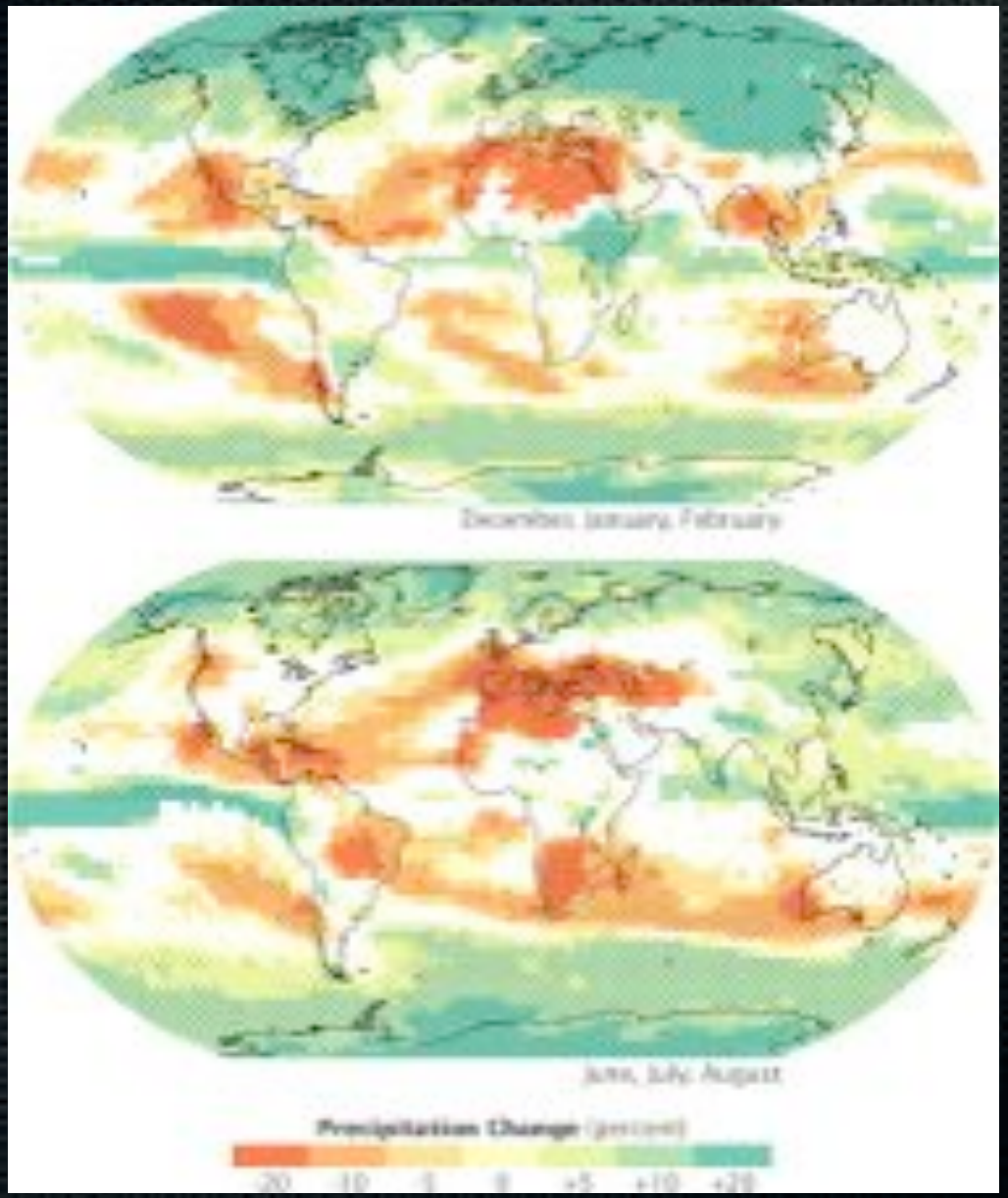
Temperature change



- Average global temperature may increase 1.1ºC to 6.0ºC in the next 100 years

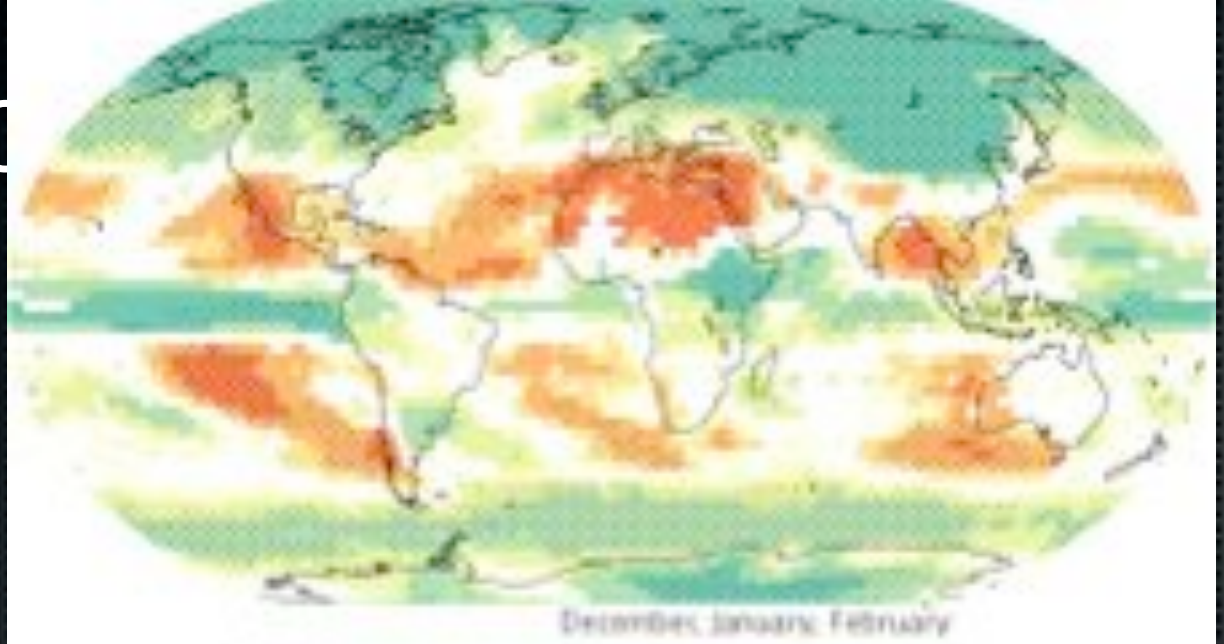
- Average global temperature increased 0.74ºC in the last 100 years

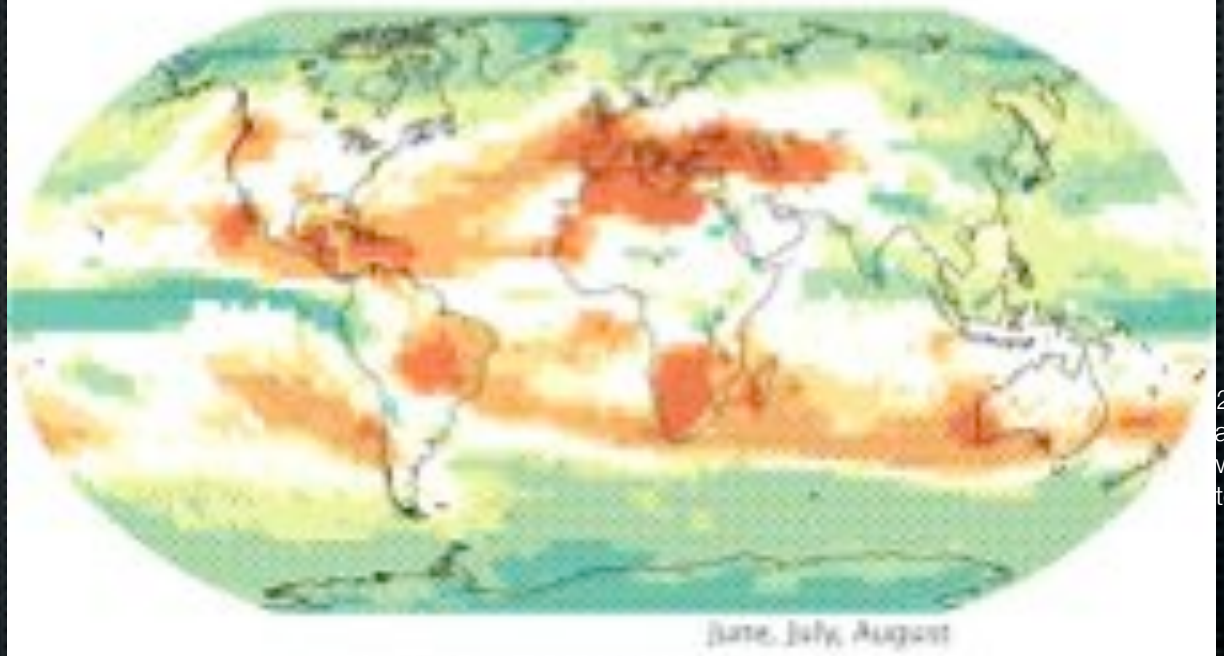
Precipitation change



IPCC 2007 A1B scenario comparing the period 2080 to 2099 with the control period 1980 to 1999

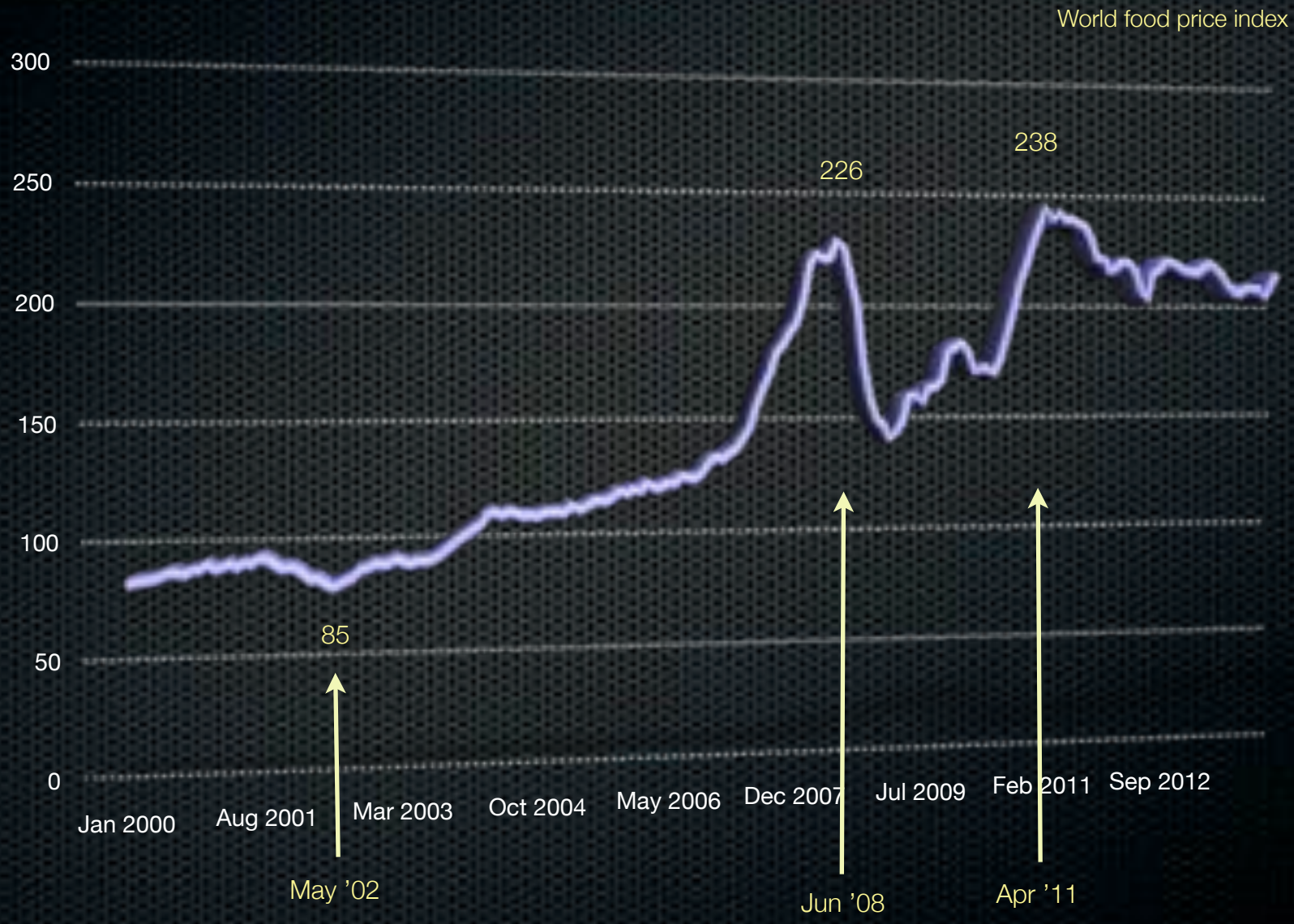
Prec





2007 A1B scenario
aring the period 2080 to
with the control period
to 1999

Food


World food price index
300
250
200
150
100
50
0
238
226
85
Jan 2000
Aug 2001
Mar 2003
Oct 2004
May 2006
Dec 2007
Jul 2009
Feb 2011
Sep 2012
May '02
Jun '08
Apr '11

- **2° Celsius**
  - Runaway climate change
- **600 Gt**
  - Carbon we can emit and stay below 2°
- **2,800 Gt**
  - Carbon in proven coal, oil, and gas reserves

WHAT WILL BE THE

Result?

How should we

Prepare?

1. Water

- Floods & droughts
- Contamination

2. Food

- Cost
- Availability

3. Heat

4. Transportation

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climatechangeconnection.org