

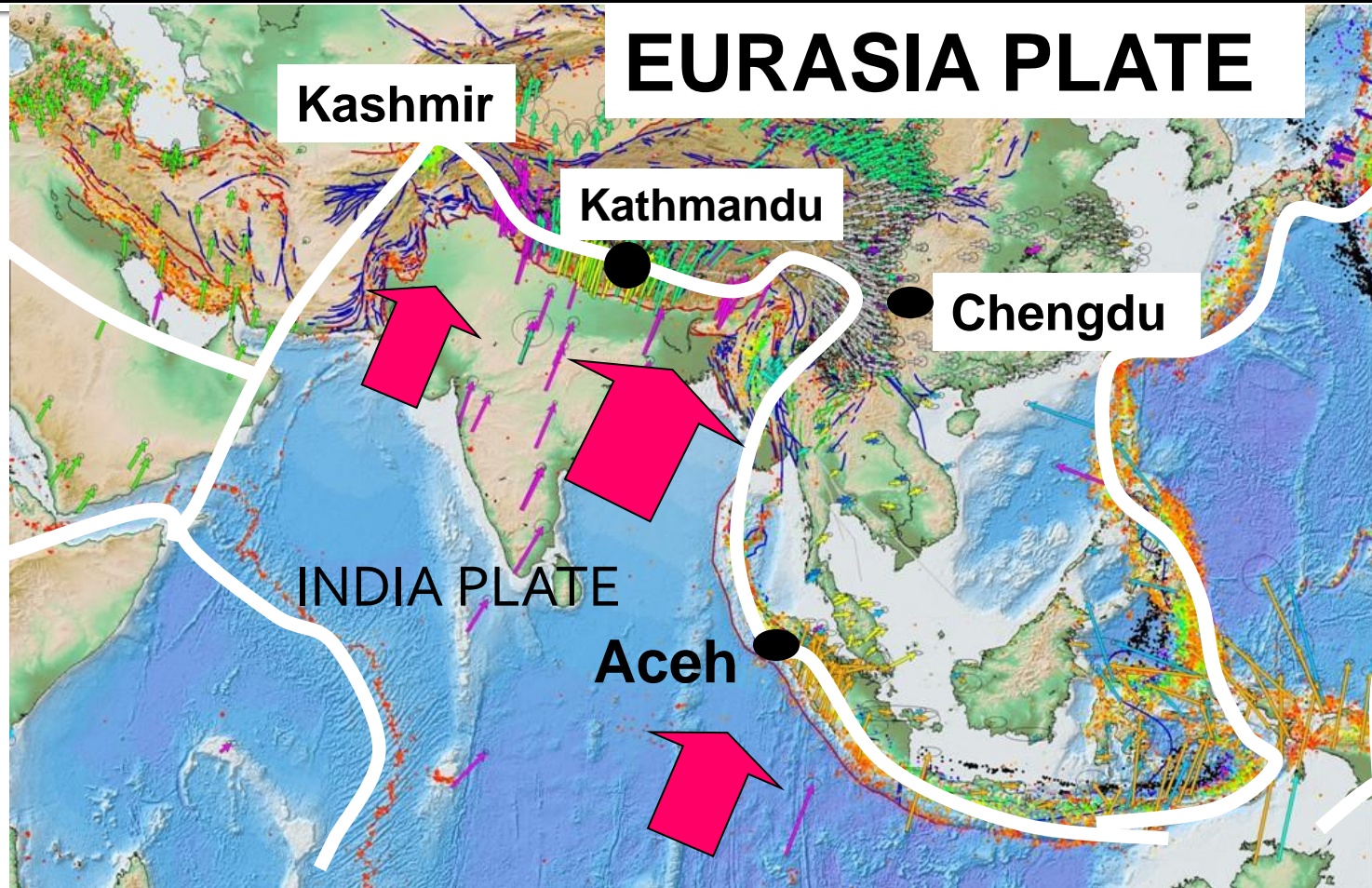
Asia: Portrait of a Changing Region

**Charles E. Morrison, East-West Center
American Council of Engineering Companies
October 2014**

Connecting Dots: Three Mega-Disasters

- December 2004: Indian Ocean Earthquake and Tsunami: 230,000 dead
- October 2005: Kashmir Earthquake: 80,000 dead
- May 2008: Sichuan Earthquake: 70,000 dead

Tectonic Plates in Southern Asia



Change



Certainties/Uncertainties

Near Certainties:

- The diffusion of power/ “rise” of Asia
- Demographic changes
- Continued pressures on the resources base and the environment
- New health challenges

Uncertainties:

- Sustainable development?
- Social and political evolution?
- International relations?
- Asia-Pacific role in addressing global issues?

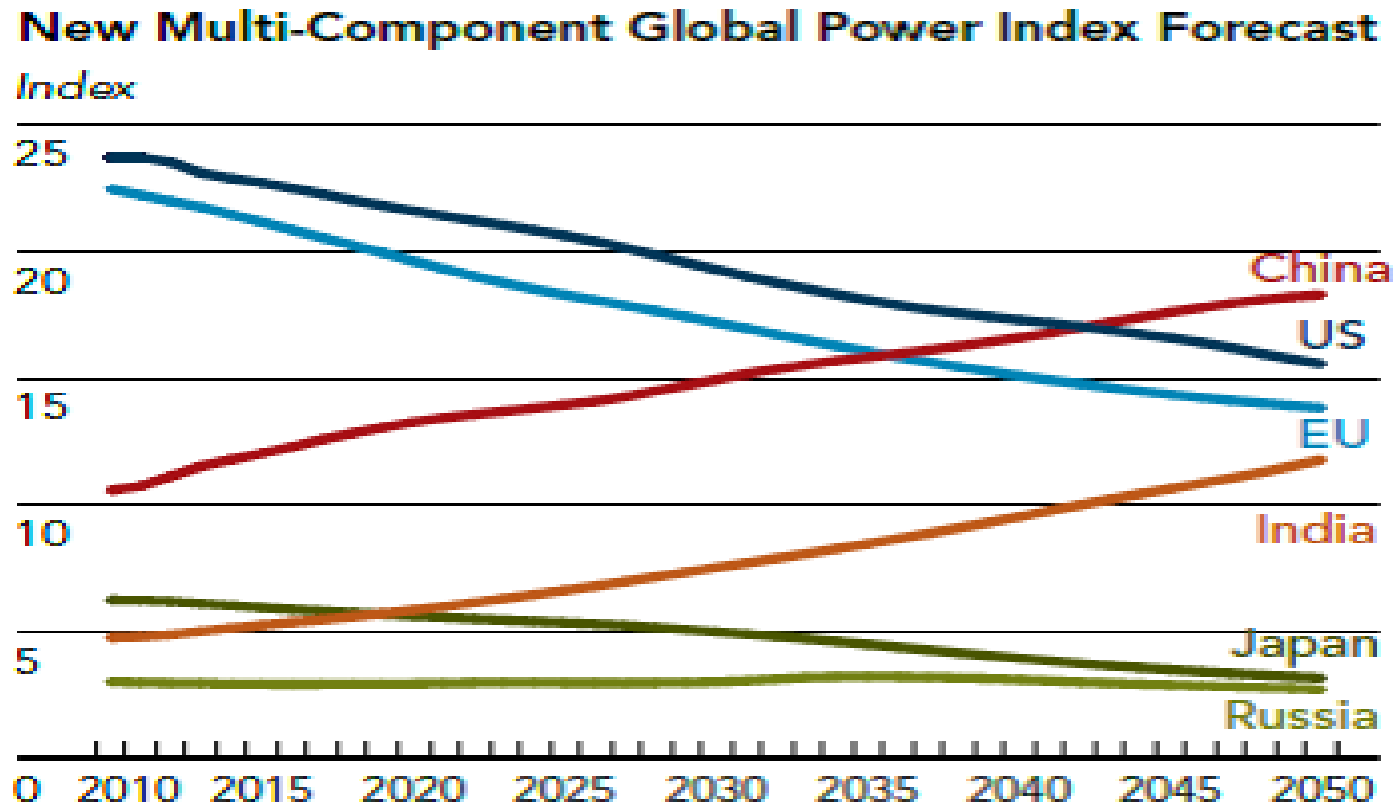
The 20th Century: An Atlantic-Centered World



The 21st Century: An Asia-Pacific-Centered Global World

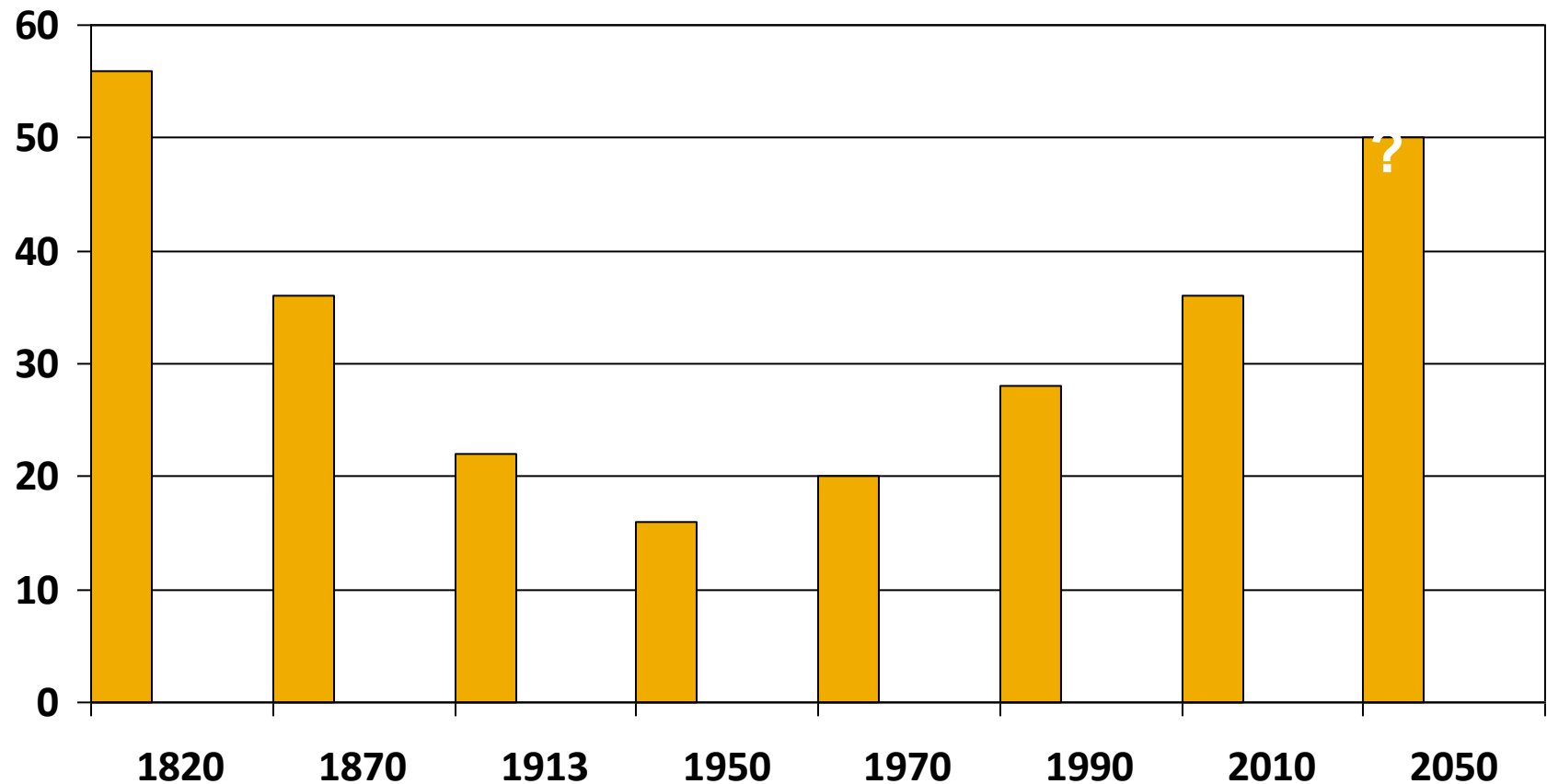


Global Power: Diffused and Shifted



National Intelligence Council, Global Trends 2030: Alternative Worlds. Index Includes population, GDP, military spending, technology, health, education, and governance.

Rise/Re-rise of Asia: Asia's Share of World Gross Product Over 200+ Years



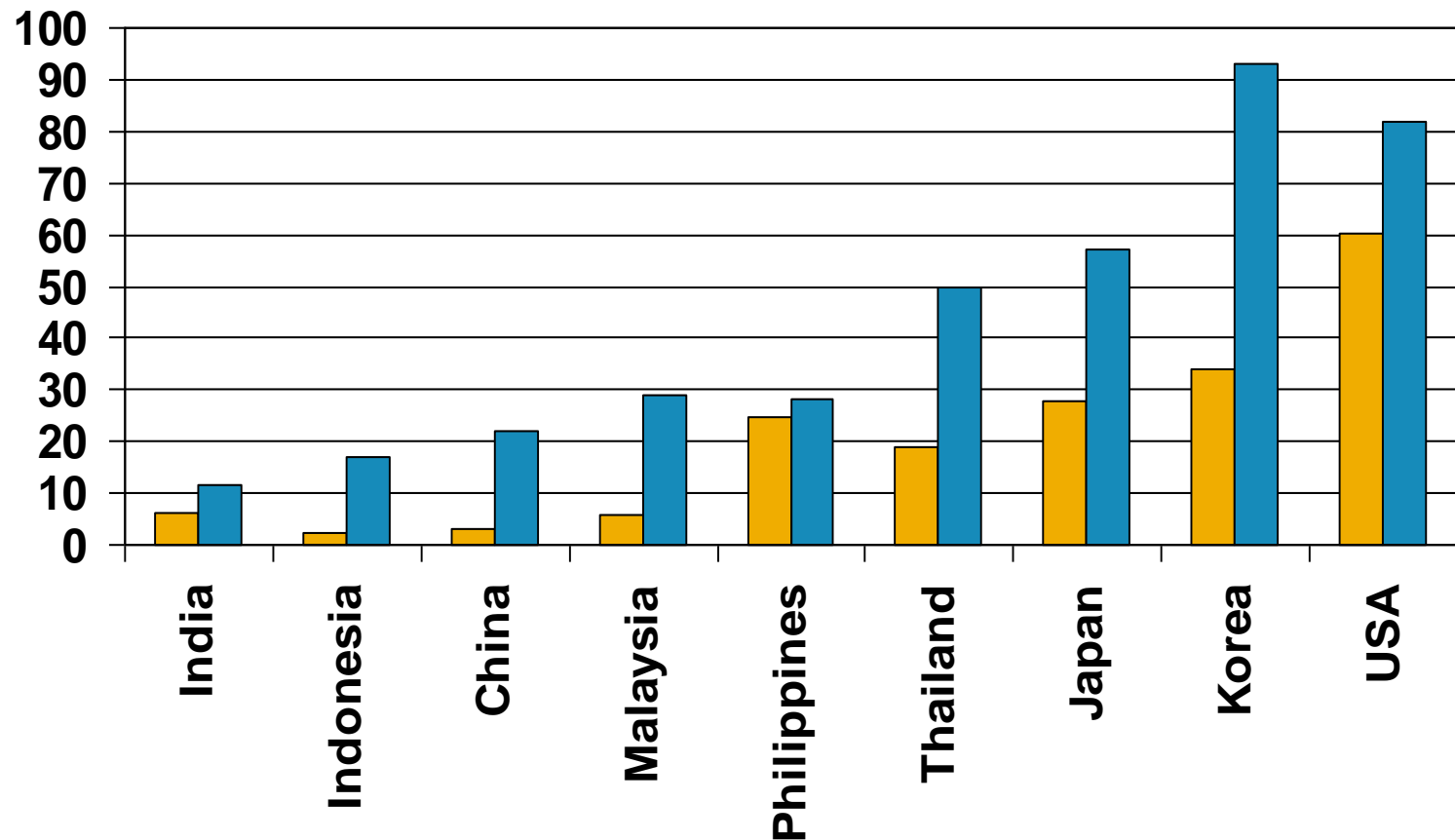
Derived from "World Population, GDP and Per Capita GDP, 1-2006 A.D.,"
by Angus Maddison; Asia includes South Asia

Asia's Rise Will Likely Continue

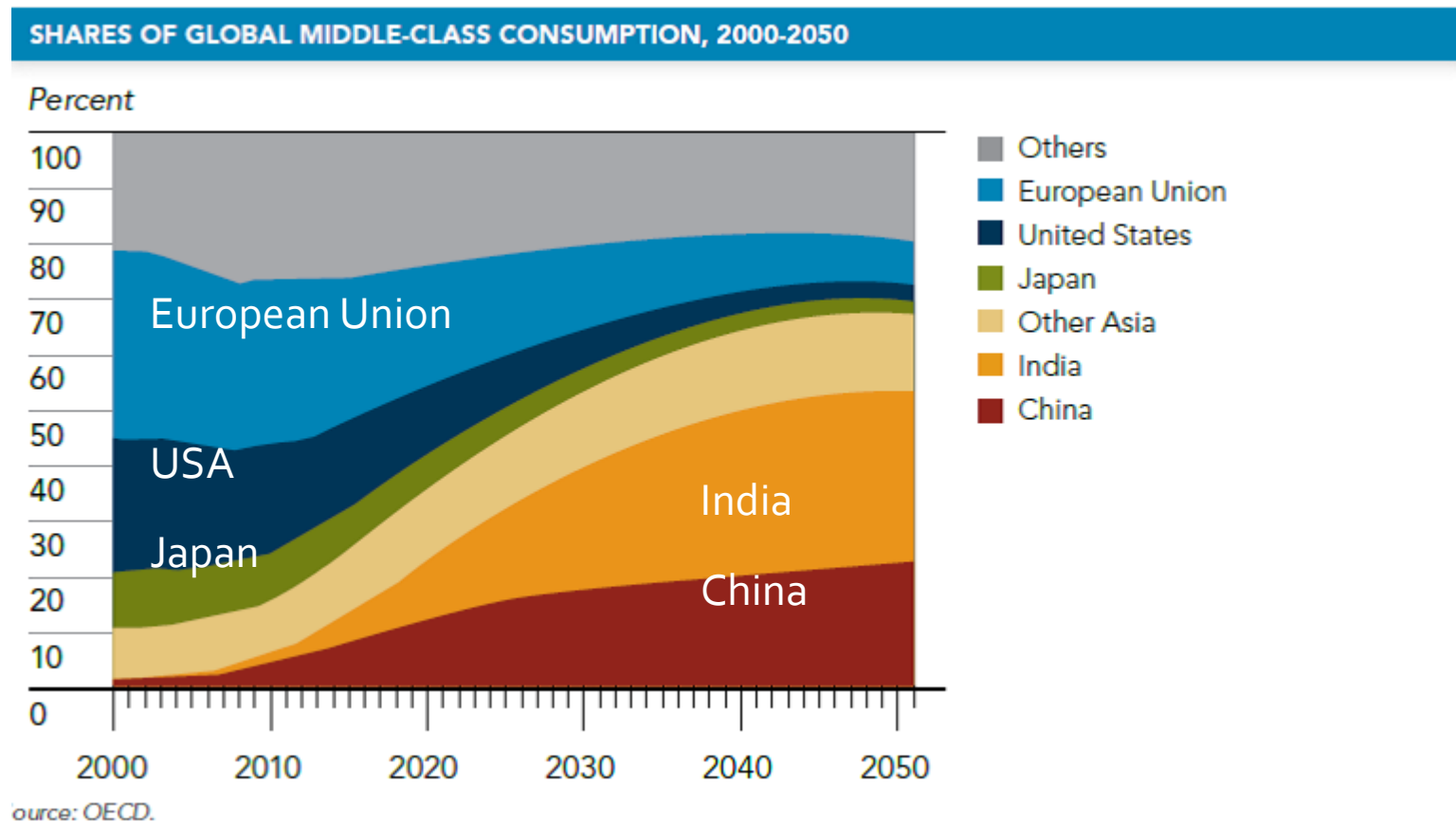
- Human resource improvements (far higher portions of student age population in higher education) – has long-term effects
- Growth of middle class
- Integrating: intra-regional trade exceeds NAFTA and almost at EU level
- Technology, especially communications tech, permits leapfrogging
- Continued economic reform programs

Growth of Tertiary Enrollment (Enrollment Ratios, 1985-2007)

Source: World Bank



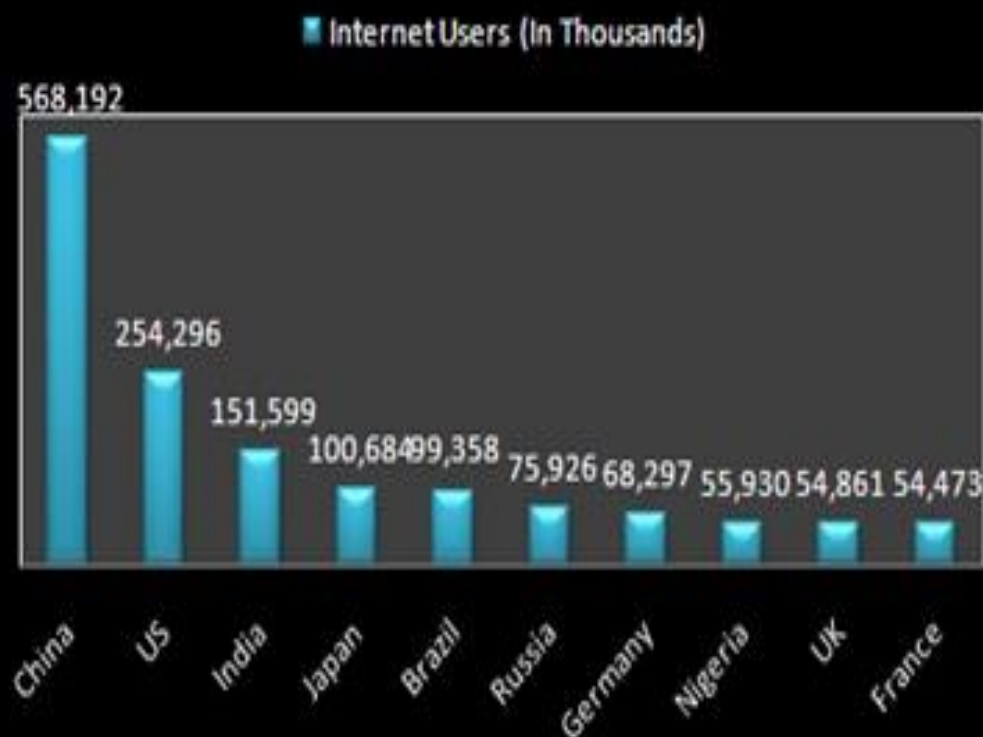
Growth of Middle Class



From National Intelligence Council: Global Trend 2030: Alternative Worlds, 2012

Internet Users - 2014

Region	Internet Users (In Thousands)	Share
Worldwide	7,100,000	
China	568,192	8.0%
US	254,296	3.6%
India	151,599	2.1%
Japan	100,684	1.4%
Brazil	99,358	1.4%
Russia	75,926	1.1%
Germany	68,297	1.0%
Nigeria	55,930	0.8%
UK	54,861	0.8%
France	54,473	0.8%



Importance of North America

- Continued immigration into the region helps result in highly dynamic and younger societies
- Region likely to continue to lead the world in advanced scientific and technological research and innovation, spurred by venture capital and close government, business, academic ties
- International education hub
- US continues to provide public goods in security, disaster assistance, and financial realms

Foreign-born Population

- United States: 45.8 million
- Canada: 7.3 million
- Australia: 6.5 million
- Thailand: 3.7 million
- Malaysia: 2.4 million
- Japan: 2.4 million
- South Korea: 1.2 million
- China: 0.8 million

Source: United Nations

The Asia-Pacific Policy Agenda

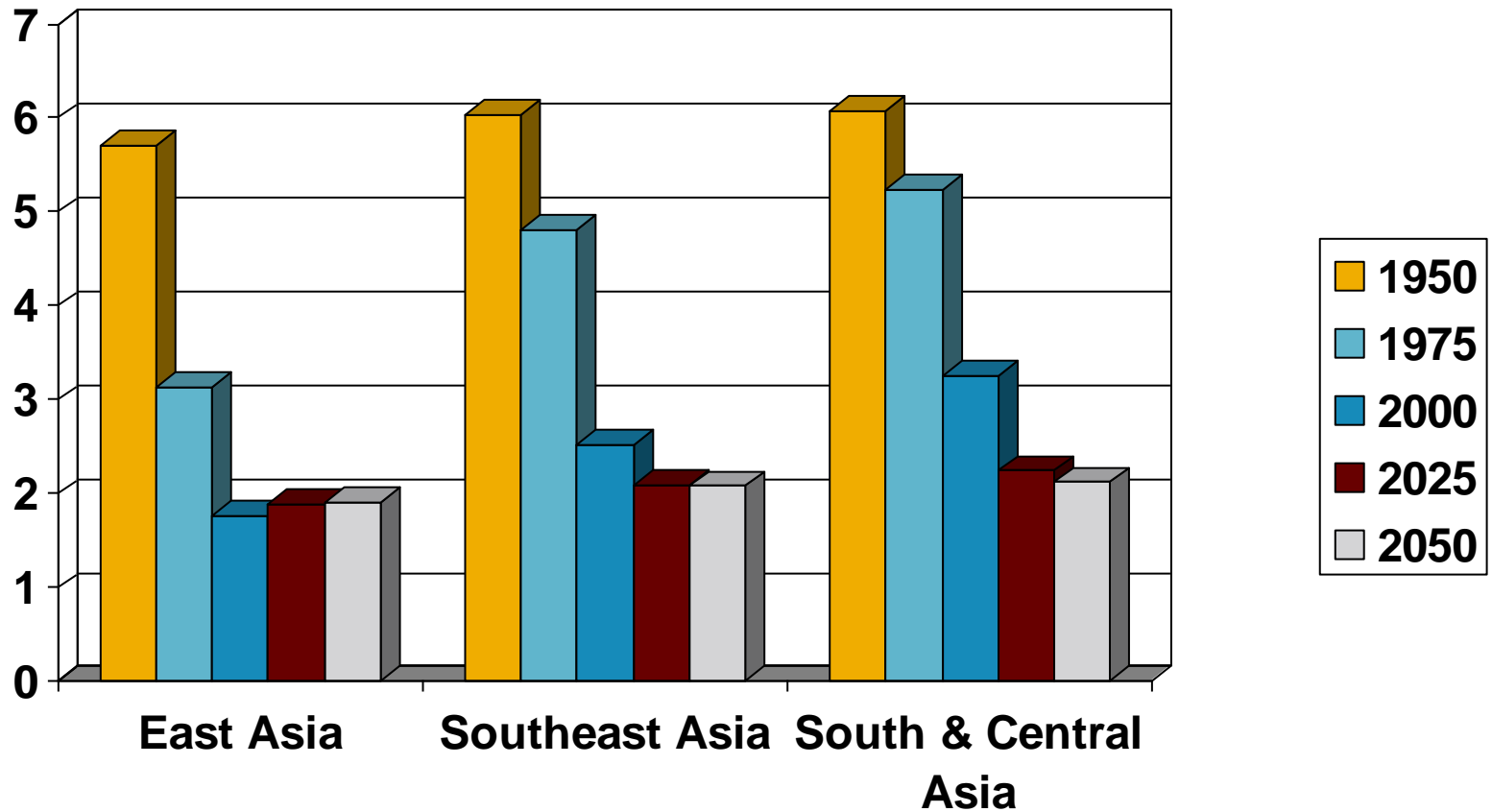
- Demographic change
- Resource Scarcities and the Environment
- New Health Challenges
- Many others, e.g., development gaps, trade and financial system, poverty alleviation, territorial disputes, disaster resilience and relief, for example

Demographics



Fertility Decline

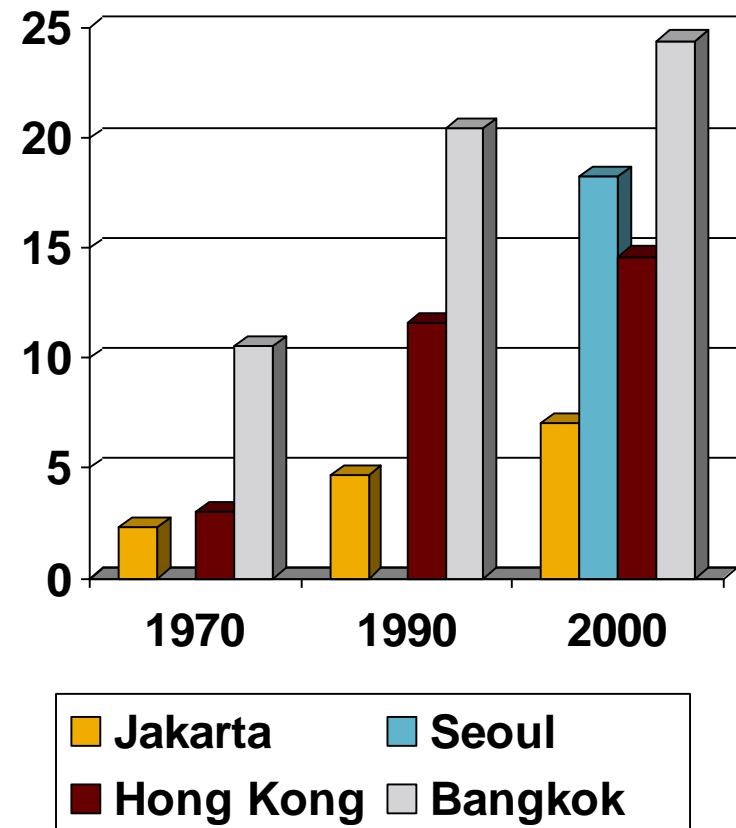
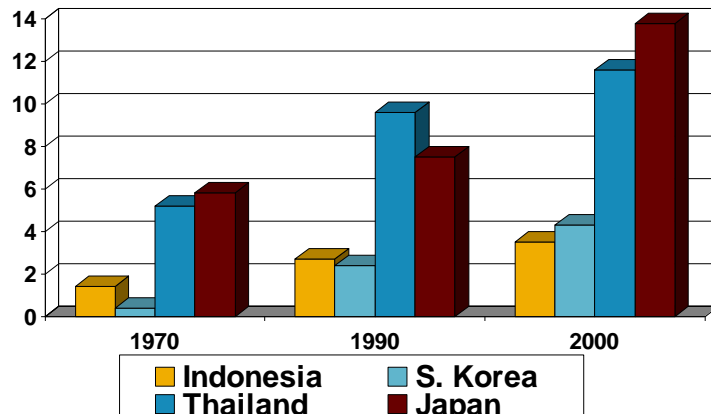
Total Fertility Rate: Babies per Female



East-West Center, The Future of Population in Asia.

“Flight from Marriage:”

(Never Married Rates: Female, Age 35-39)



Adapted from Gavin C. Jones, The “Flight from Marriage” in South-East and East Asia

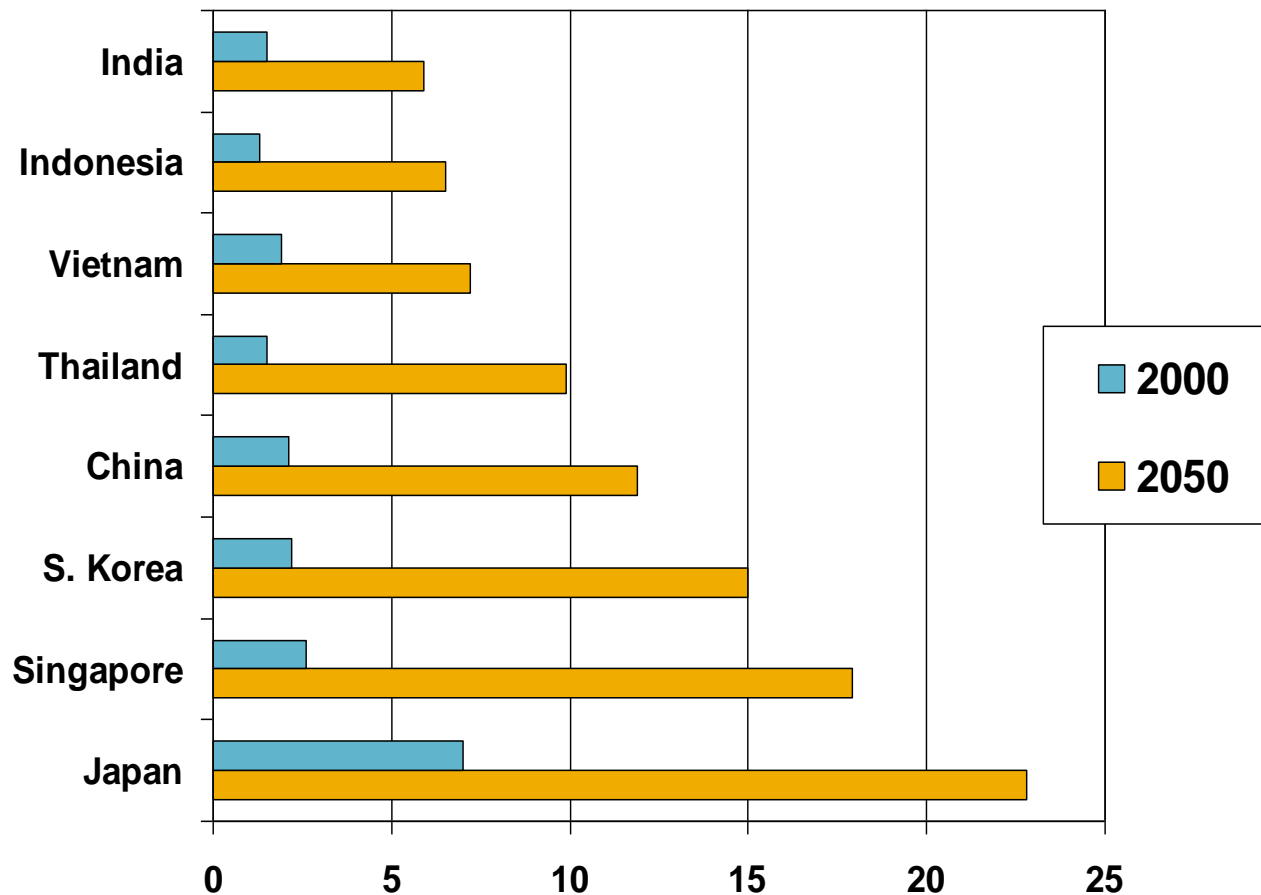
Average Age of Populations

Country	Median Age, 2010	Median Age, 2030	Demographic Window of Opportunity
Brazil	29	35	2000 to 2030
India	26	32	2015 to 2050
China	35	43	1990 to 2025
Russia	39	44	1950 to 2015
Iran	26	37	2005 to 2040
Japan	45	52	1965 to 1995
Germany	44	49	before 1950 to 1990
United Kingdom	40	42	before 1950 to 1980
United States	37	39	1970 to 2015

UN Projections

Growth of Elderly

Percent of Population Over Age 75



Source: East-West Center, Future of Population.

Urbanization



East Asian Urban Agglomerations (Megacities) over 10 million

1950

Tokyo, 11.3 million

1975

Tokyo, 26.3 million

Osaka, 14.0 million

Seoul-Inchon, 12.0 million

Shanghai, 11.4 million

2010 estimates

Tokyo, 34.4 million

Jakarta, 21.8 million

Seoul-Inchon, 20.0 million

Manila, 19.6 million

Osaka, 19.0 million

Shanghai, 14.5 million

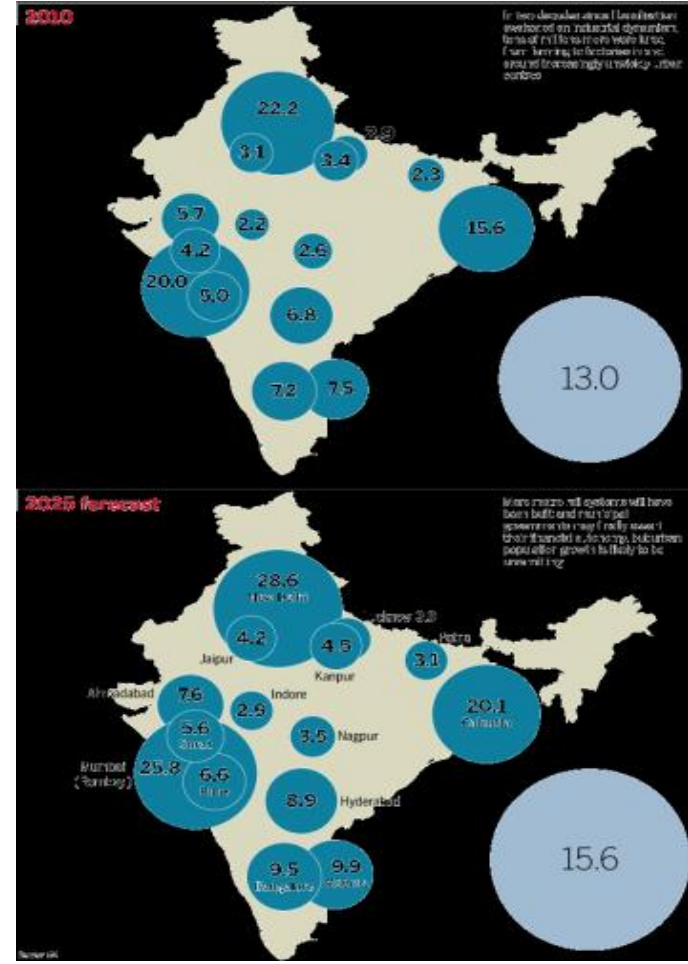
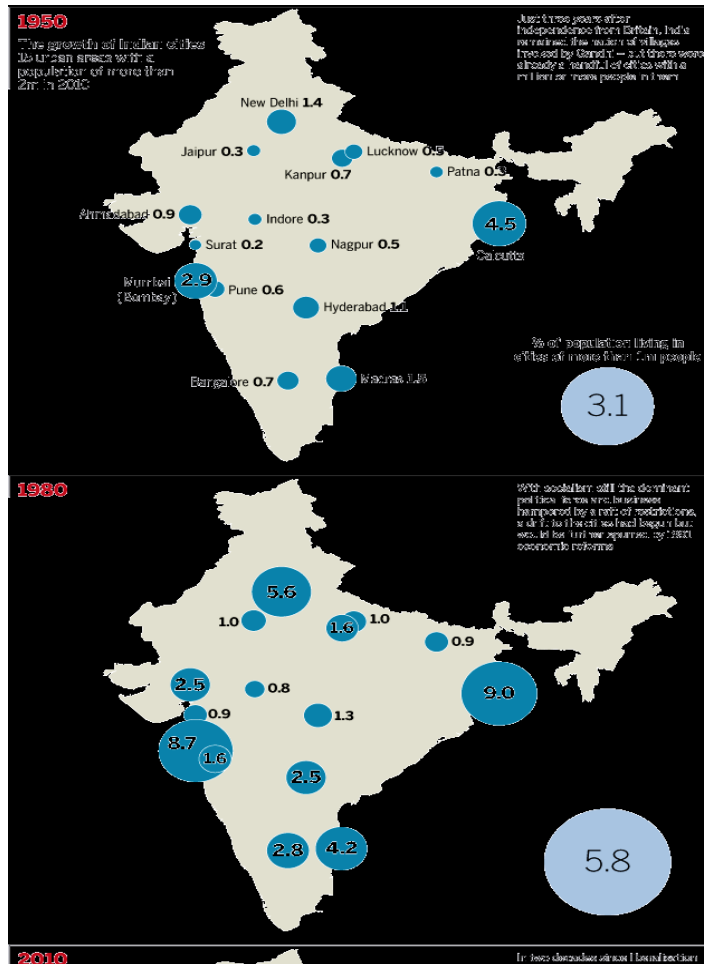
Beijing, 12.8 million

Guangzhou, 11.8 million

Shenzhen, 11.7 million

Bangkok, 10.8 million

Growth of Indian Cities: 1950-2025

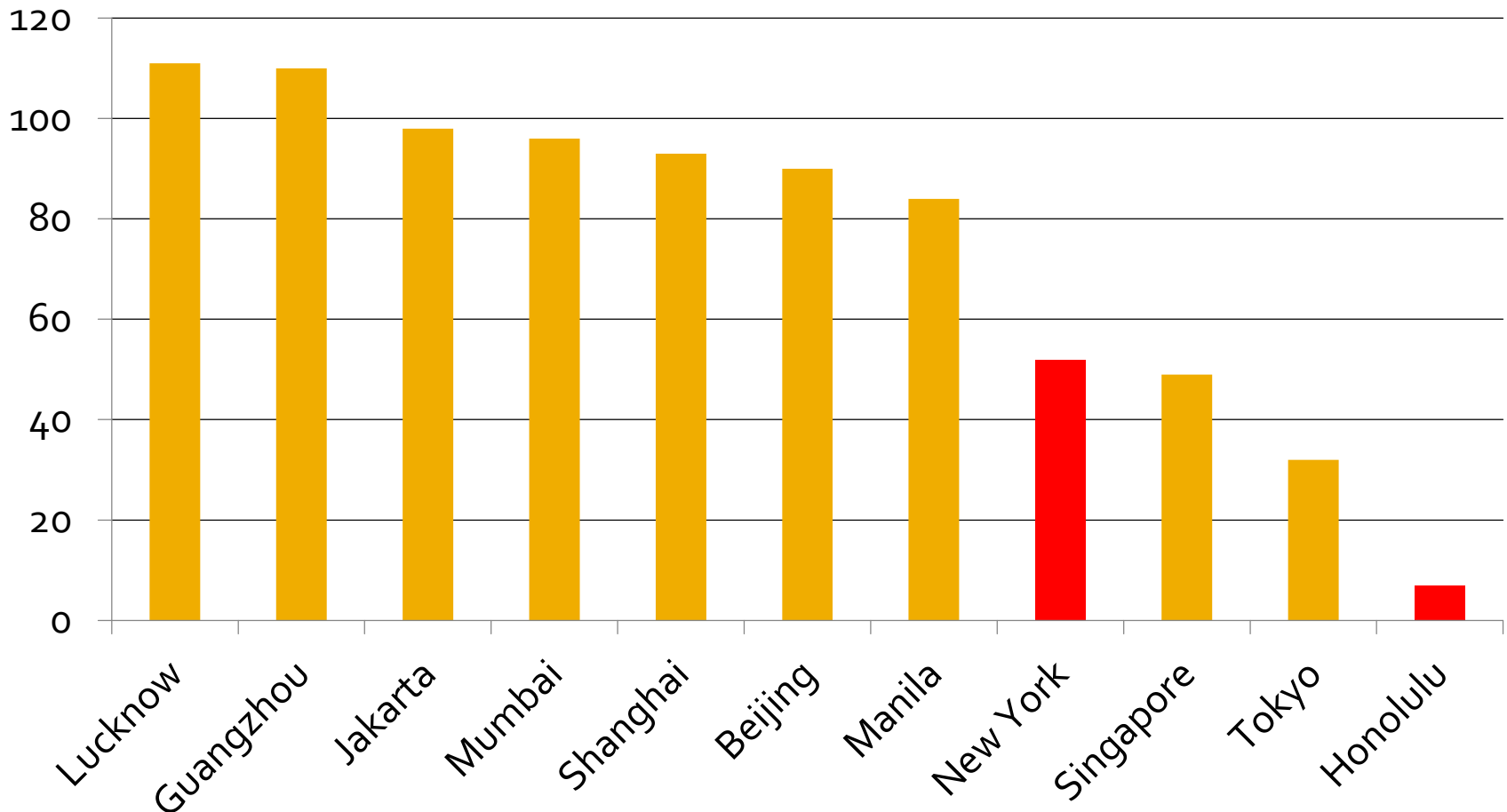


Comparative GDP, cities (2012), countries (2013). PPP estimates

- ✓ Canada, \$1,526 billion
- ✓ Tokyo, \$1,520 billion
- ✓ Indonesia, \$1,293 billion
- ✓ Australia, \$1,000 billion
- ✓ Seoul, \$774 billion
- ✓ Thailand, \$674 billion
- ✓ Shanghai, \$517 billion
- ✓ Beijing, \$427 billion
- ✓ Vietnam, \$360 billion
- ✓ Hong Kong, \$350 billion
- ✓ Bangladesh, \$325 billion

Source: Cities, Brookings Institute. Countries, IMF

Urban Pollution Index (selected cities: air plus water)



Source: www.numbeo.com

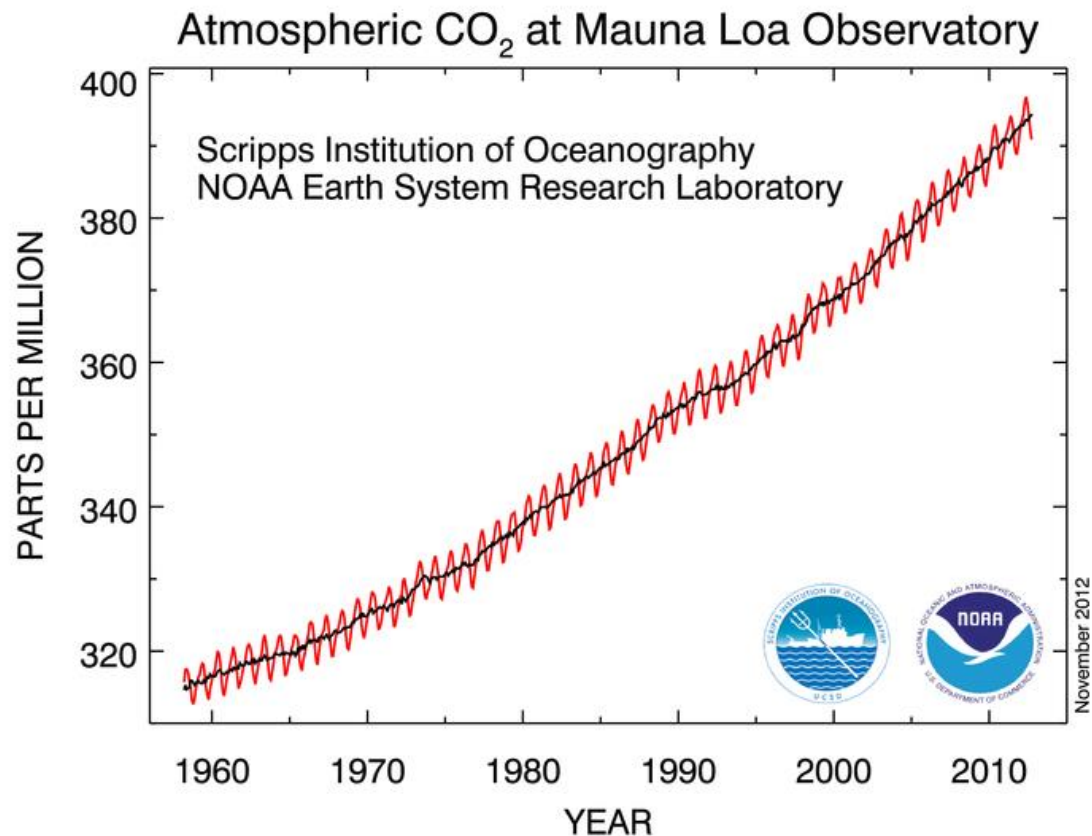
Resource Pressures



<http://forbes.tumblr.com/post/98462941363/st-eve-case-defines-the-three-components-of-giving>



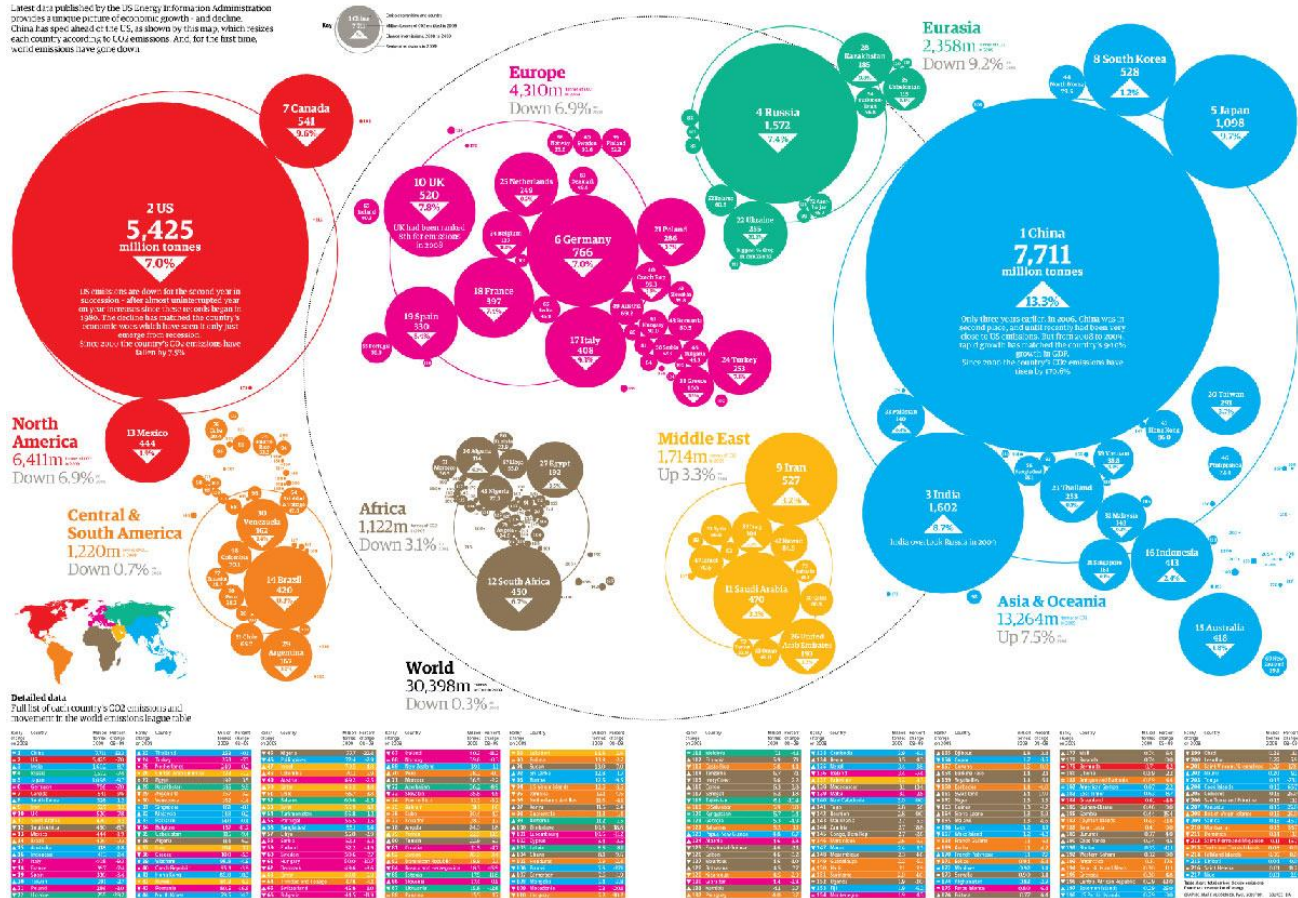
Carbon Dioxide Levels



Global Carbon Emissions (1)

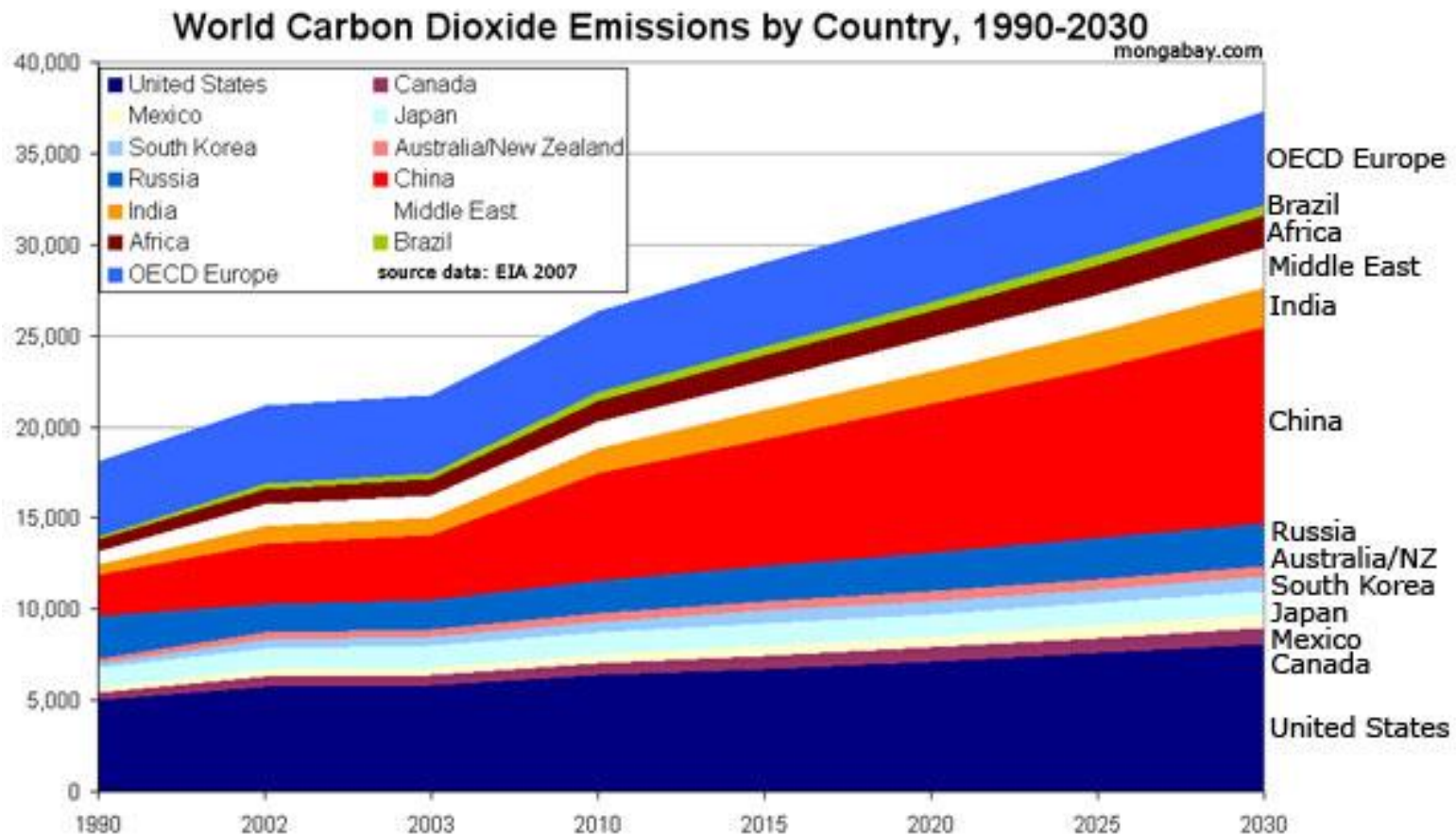
An atlas of pollution: the world in carbon dioxide emissions

Latest data published by the US Energy Information Administration provides a unique picture of economic growth - and decline. China has sped ahead of the US, as shown by this map, which resizes each country according to CO₂ emissions. And, for the first time, world emissions have gone down.



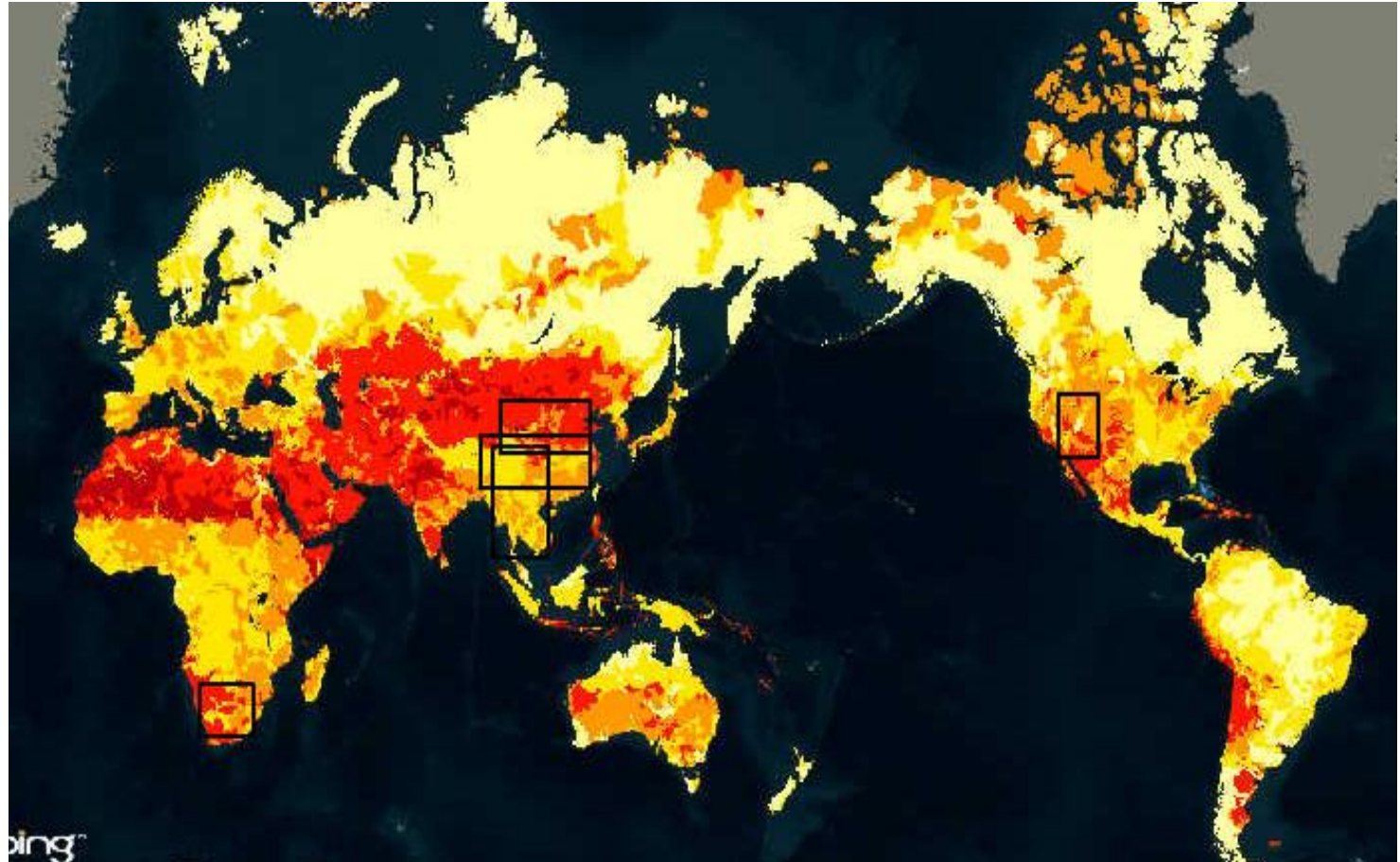
Map from The Guardian Datablog

Growth of World CO₂ Emissions: 1990-2030

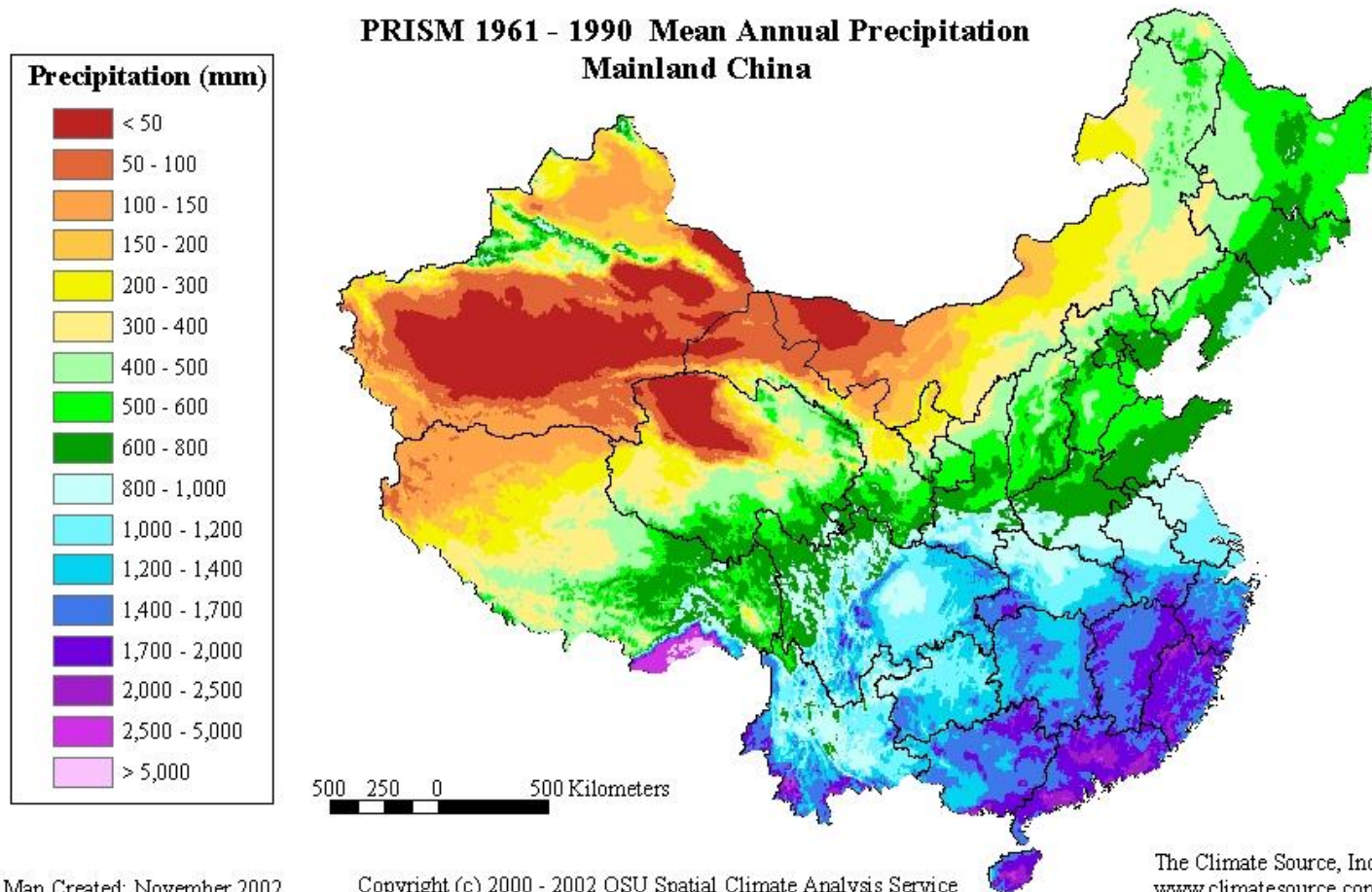


International Energy Agency: World Energy Outlook 2013

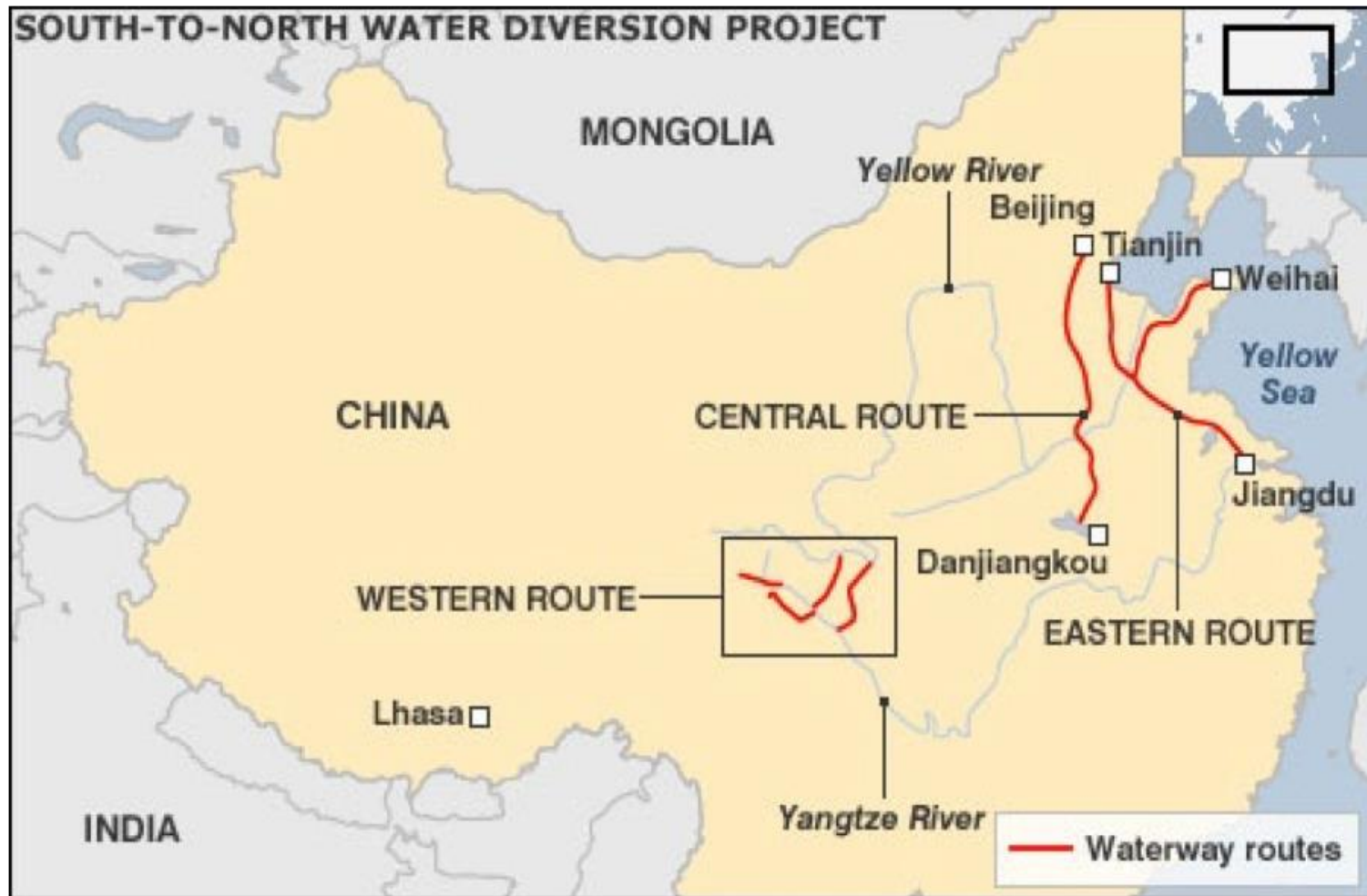
Water Availability



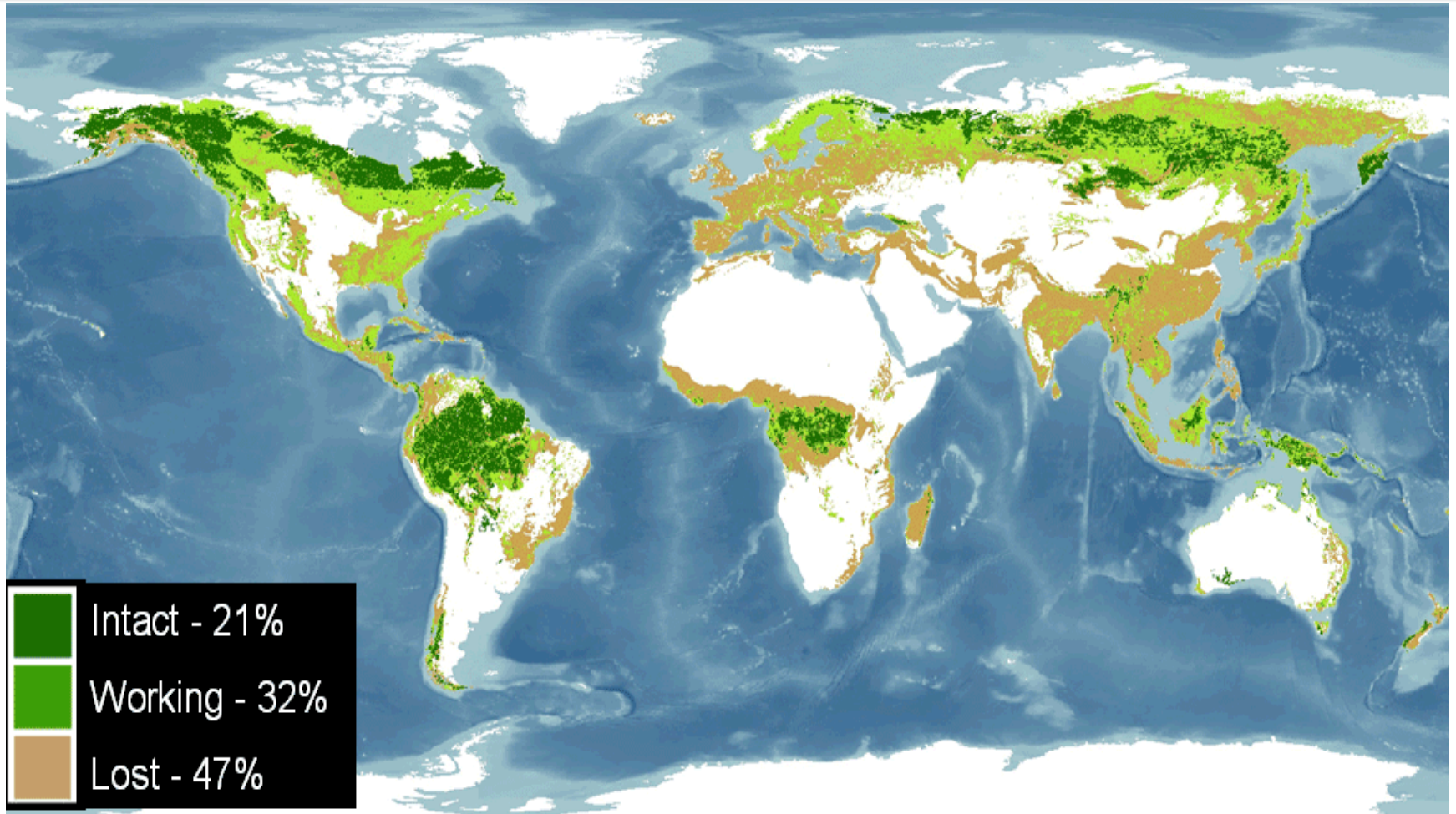
China's Rainfall



South-North Water Transfer



Global Forests



Borneo Forest Cover

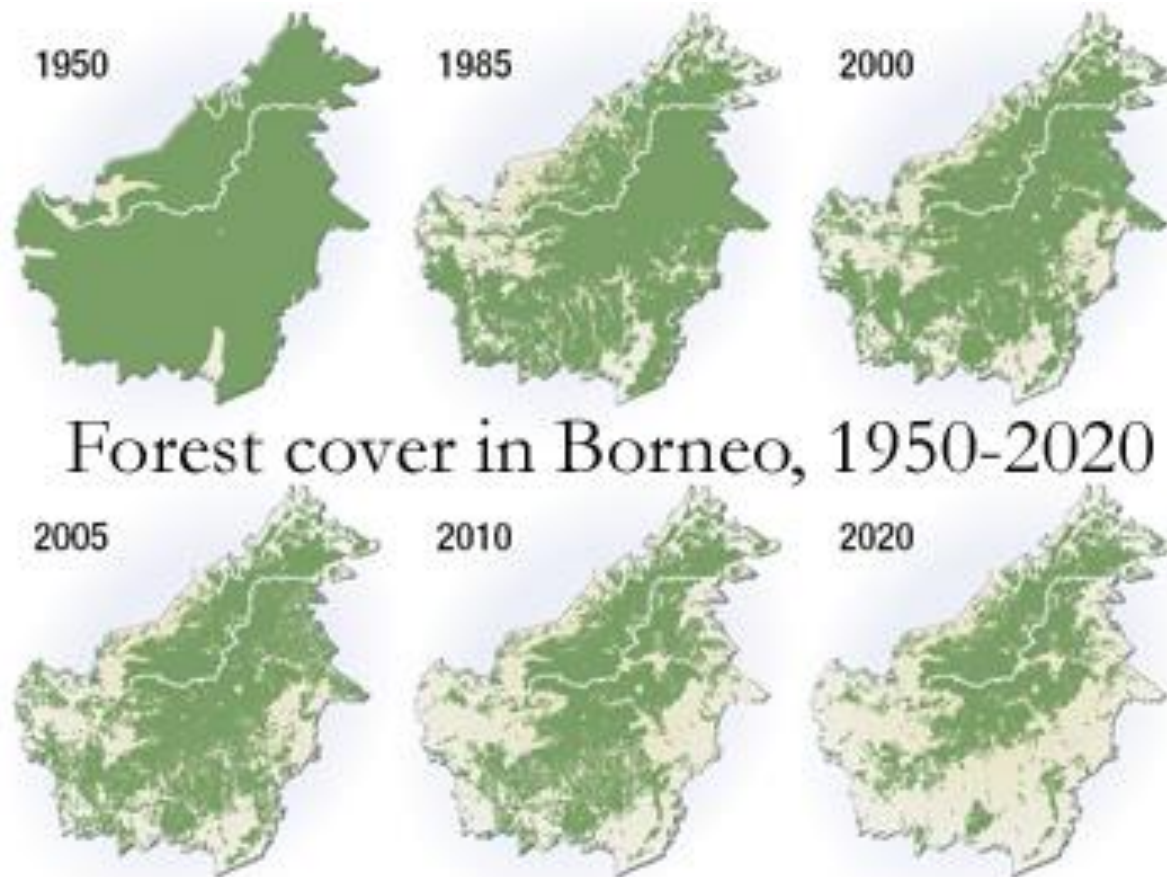
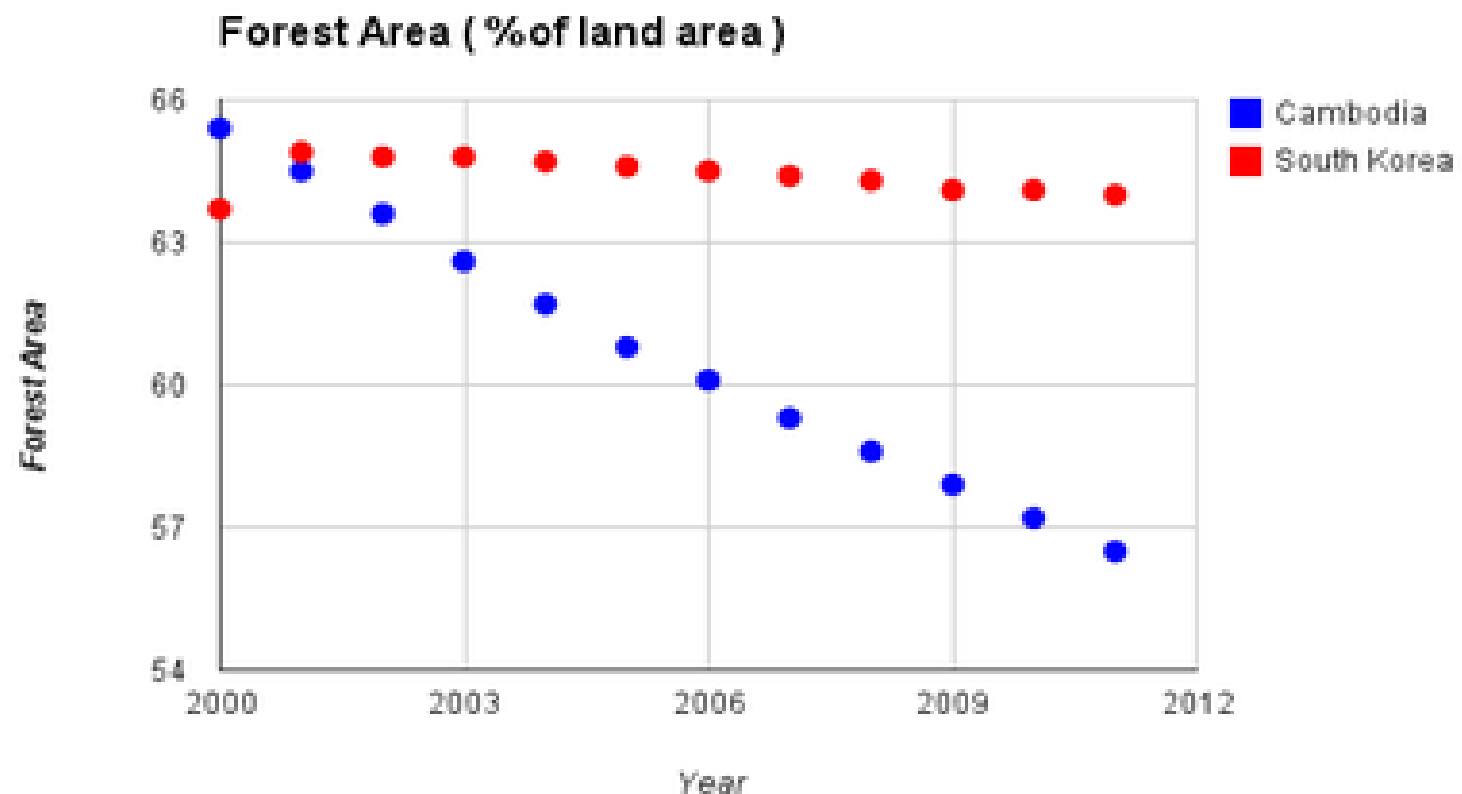


Figure 5: Extent of deforestation in Borneo 1900–2005, and projections towards 2020. Source: WWF.

South Korean/Cambodian Forest Cover



Health Tectonics

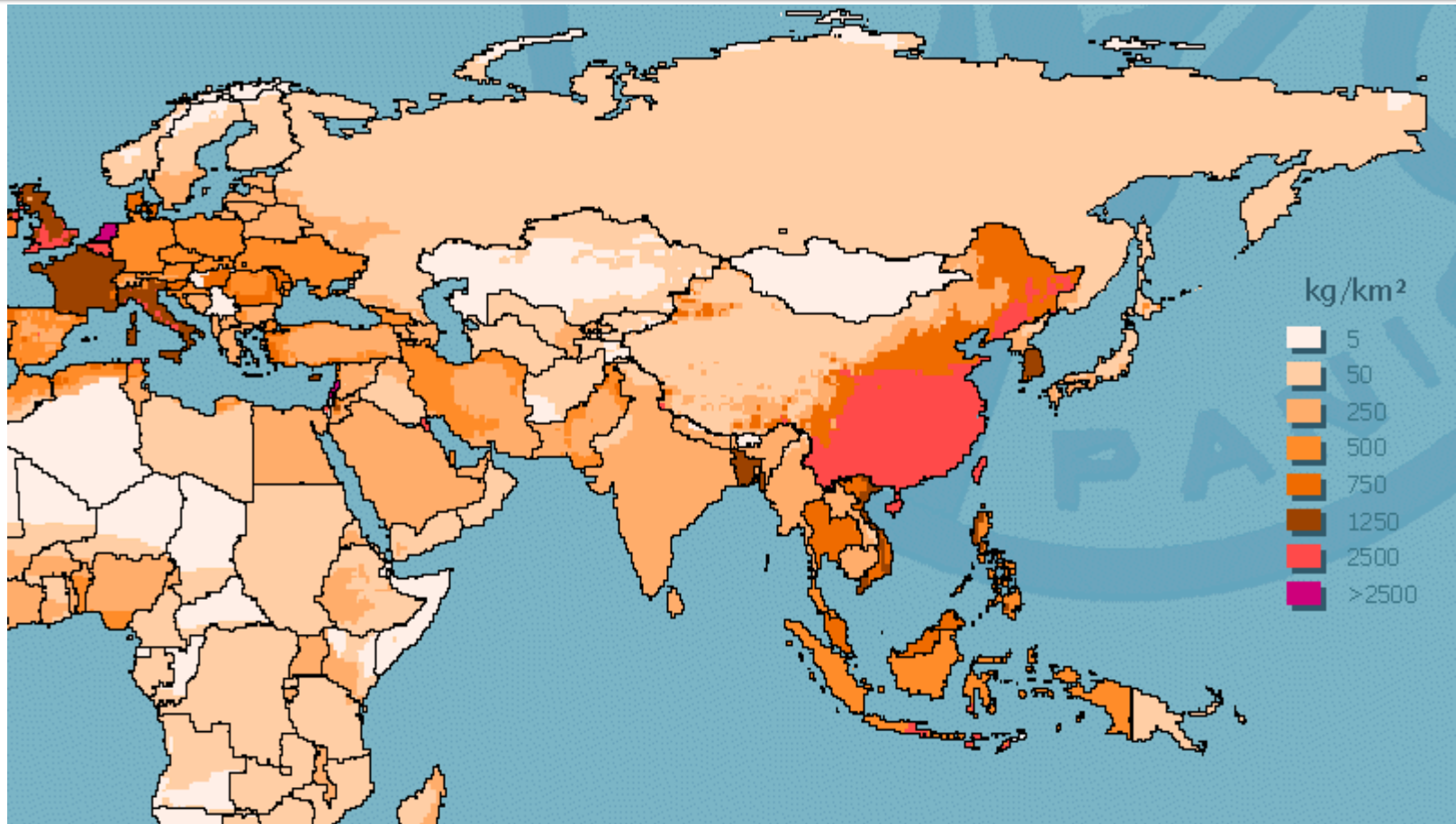
- Traditional Health Risks (down)
- New infectious diseases, including HIV/AIDS, avian flu, new strains of tuberculosis (careful monitoring required)
- Chronic conditions and diseases associated with aging and life style changes (up)

Infectious Diseases: A Health Fault Line in Asia?

Infectious diseases originated in Asia:

- “Spanish Flu” Pneumonia: 1919
- Asian Flu: 1967
- Bird Flu (Hong Kong): 1997
- SARS: 2003
- Avian Flu: 2004

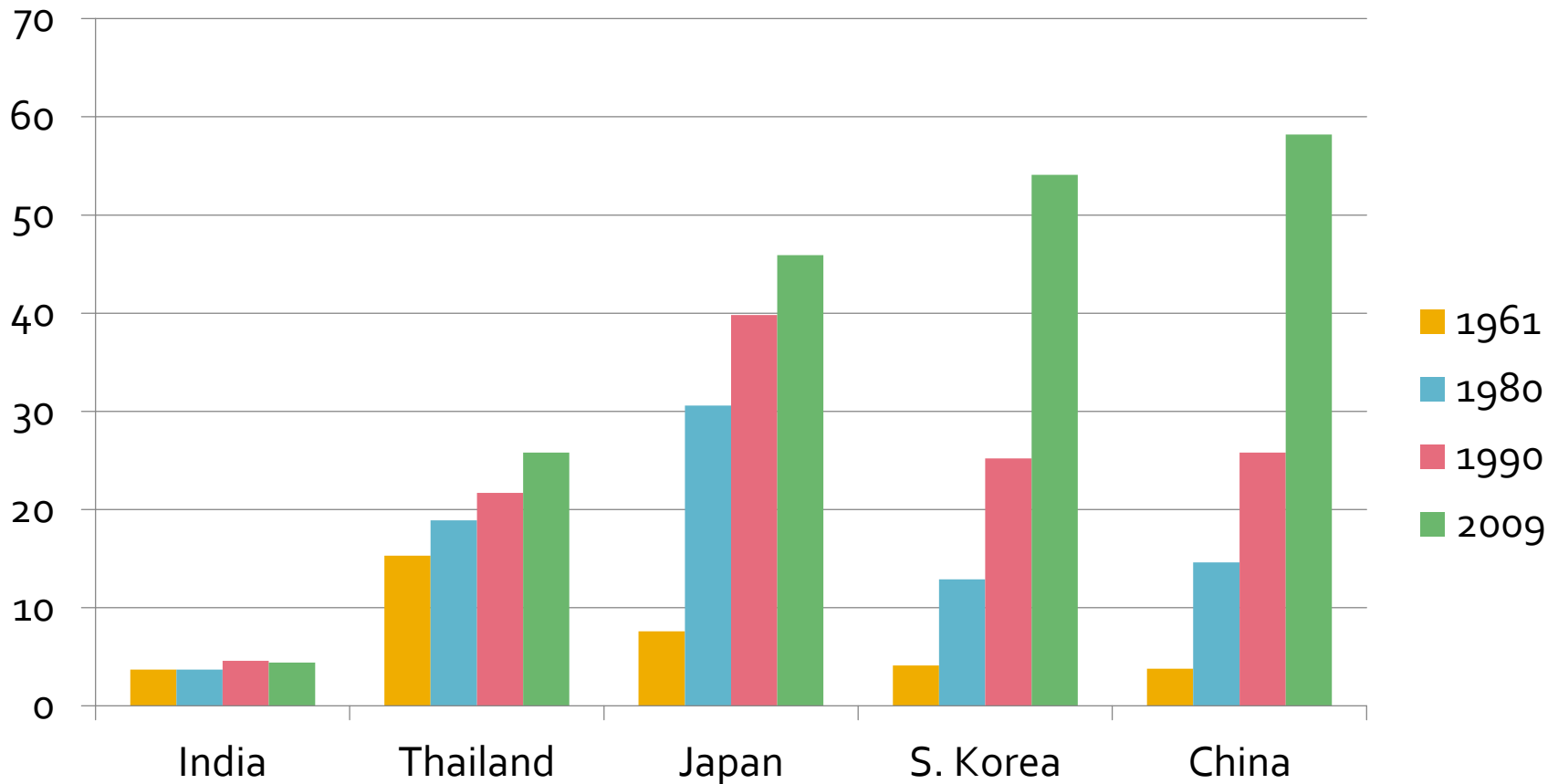
Poultry Density in Asia



Source: FAO.

Asian Meat Consumption

kilograms per capita by year

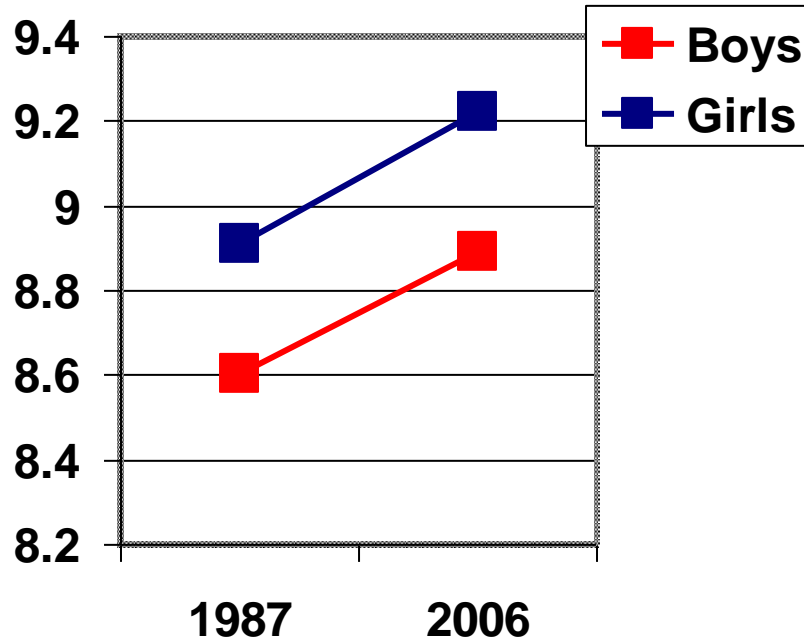


Source: Food and Agricultural Organization

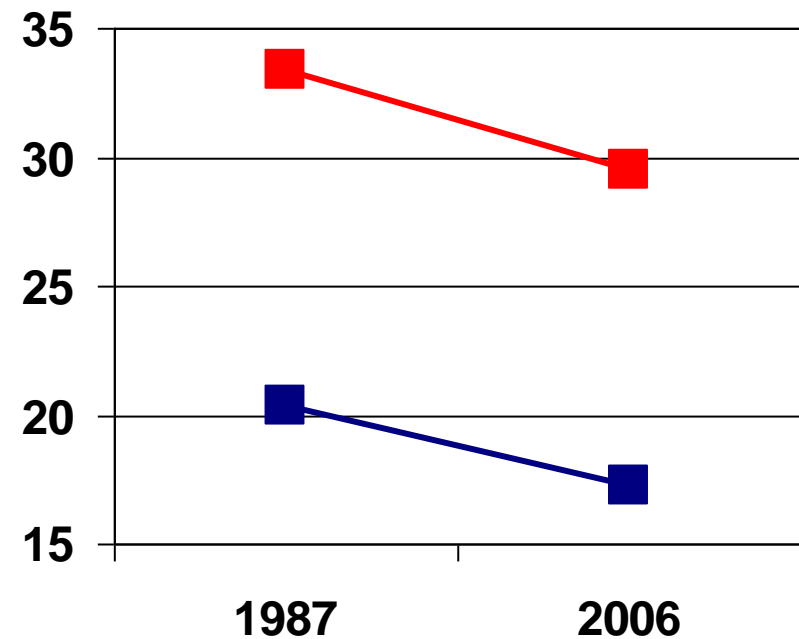
11-Year-Old Children's Fitness

Japan

**Seconds to Run
50 Meters**

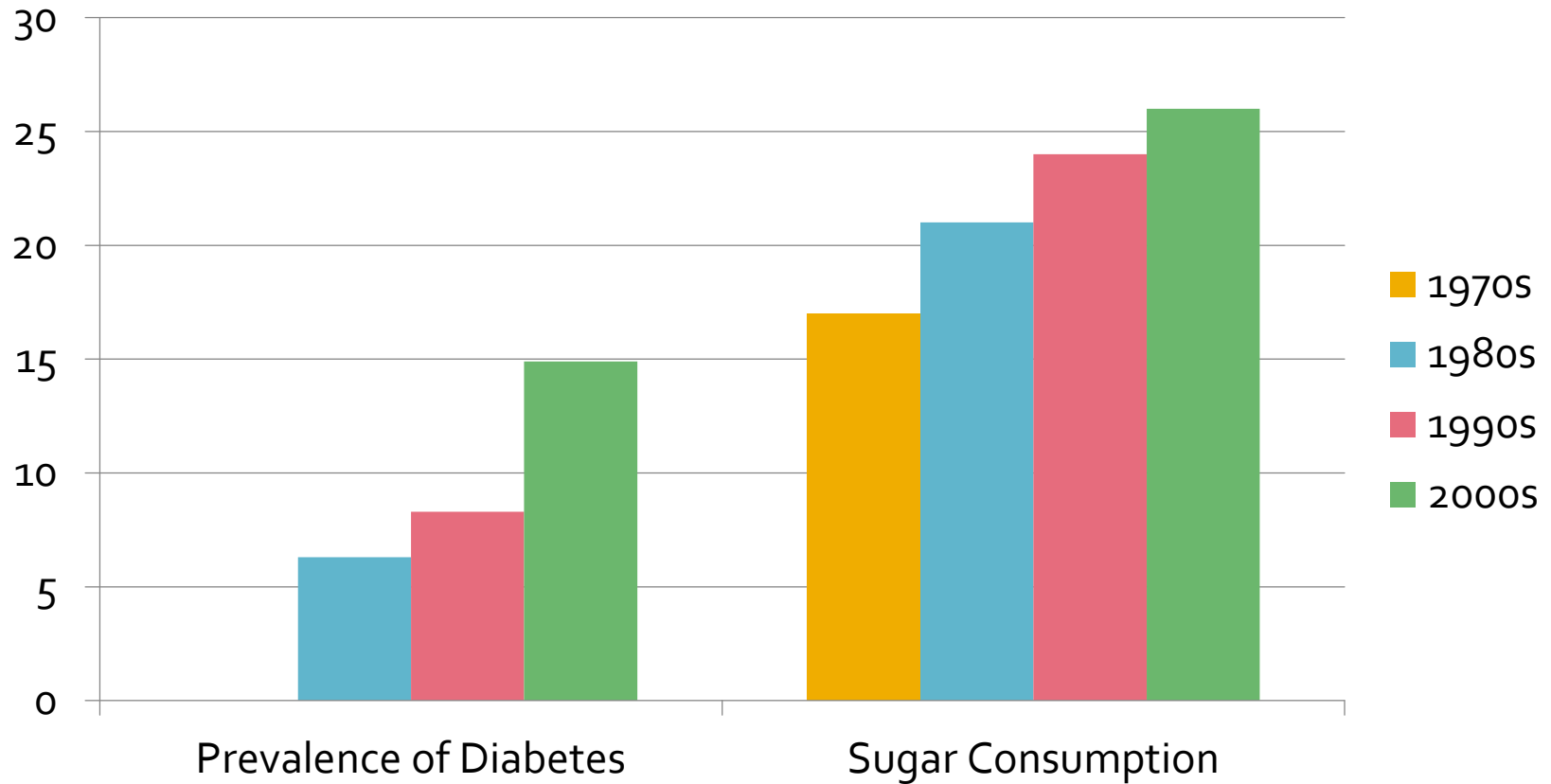


**Average Soft-Ball
Throw (Meters)**



Source: Japan Ministry of Education, Science and Technology, 2007

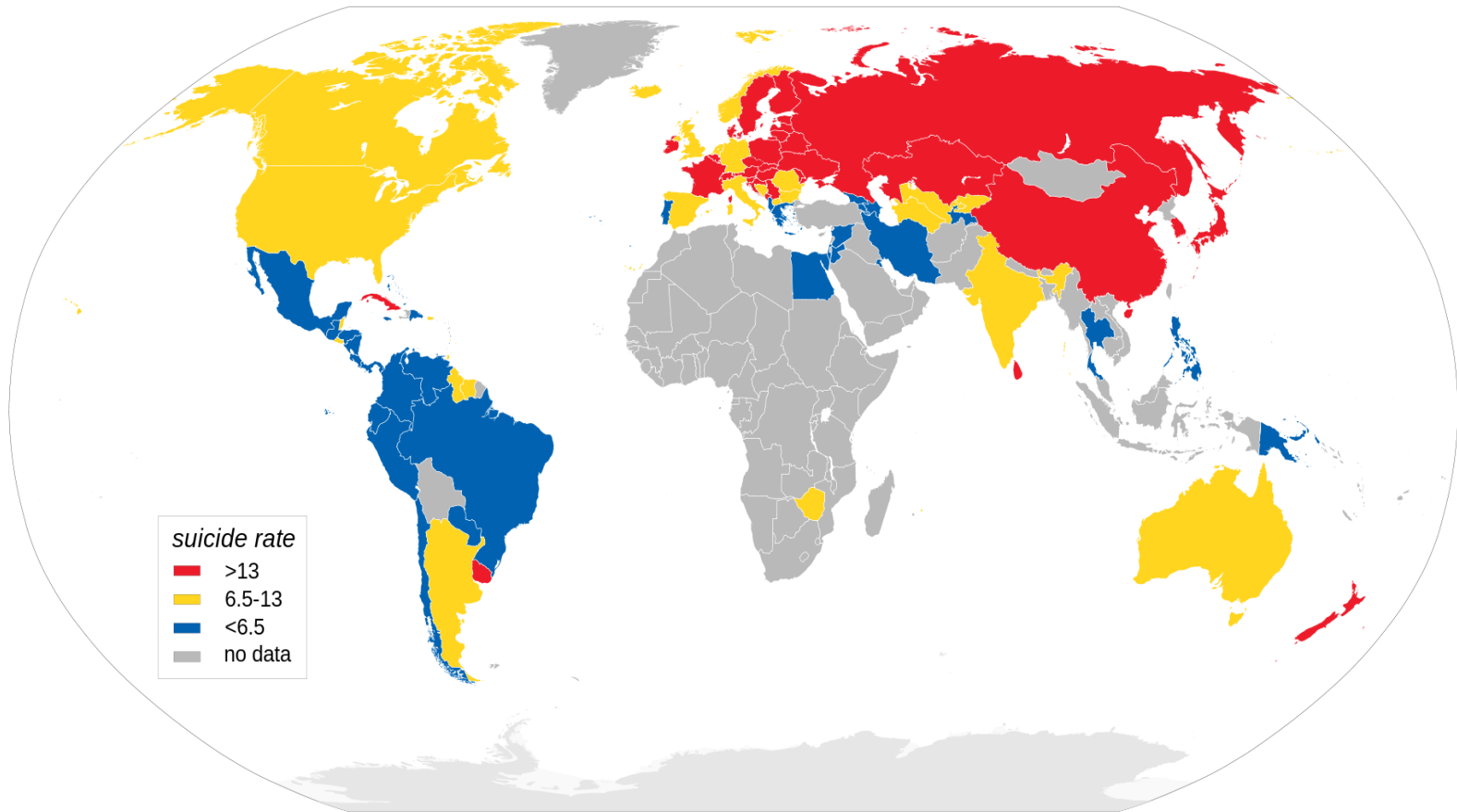
Sugar Consumption in Malaysia



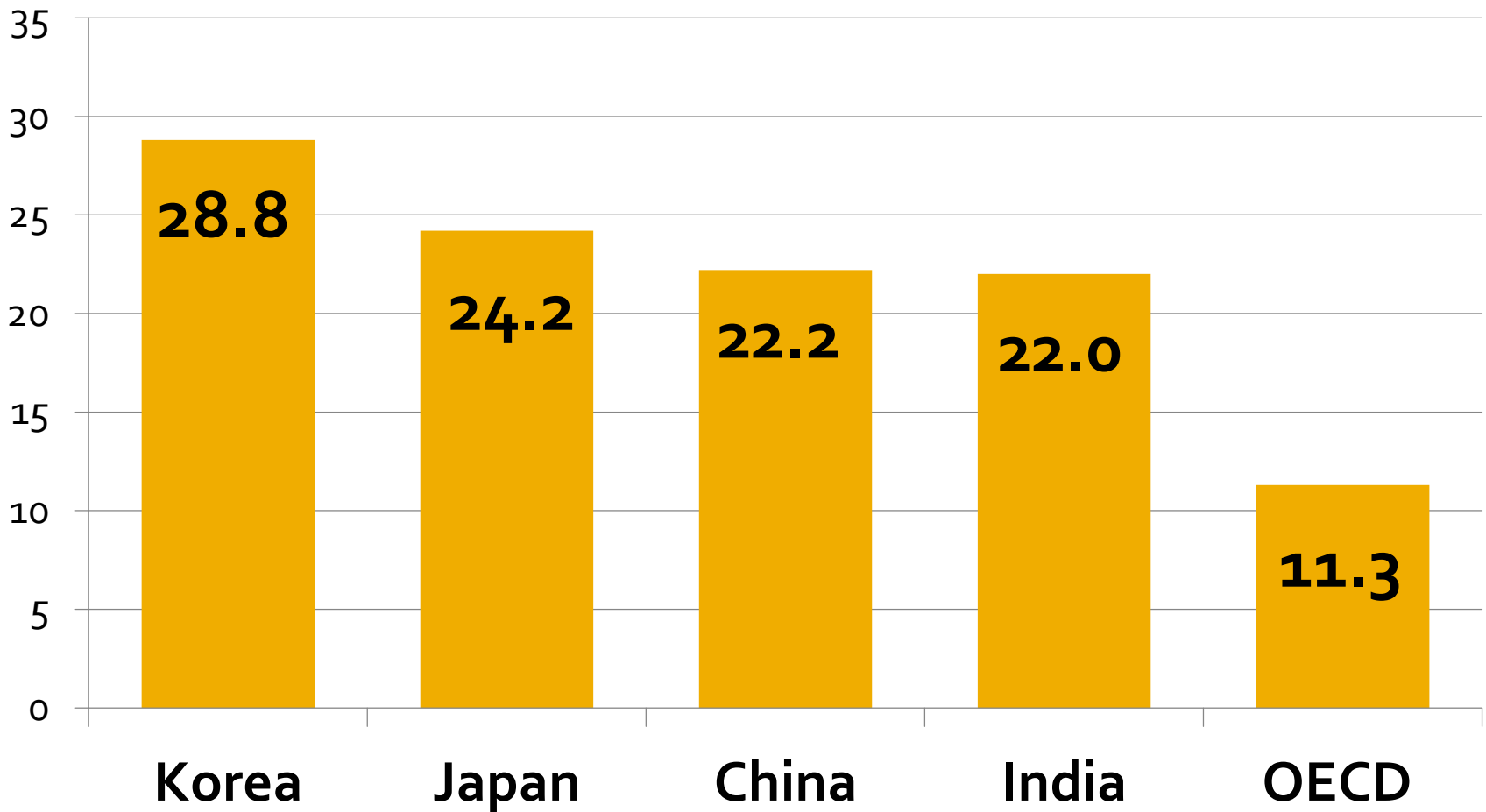
Diabetes by percentage; sugar consumption in number teaspoons per day

Source: Consumers Association of Penang

Suicide Rates

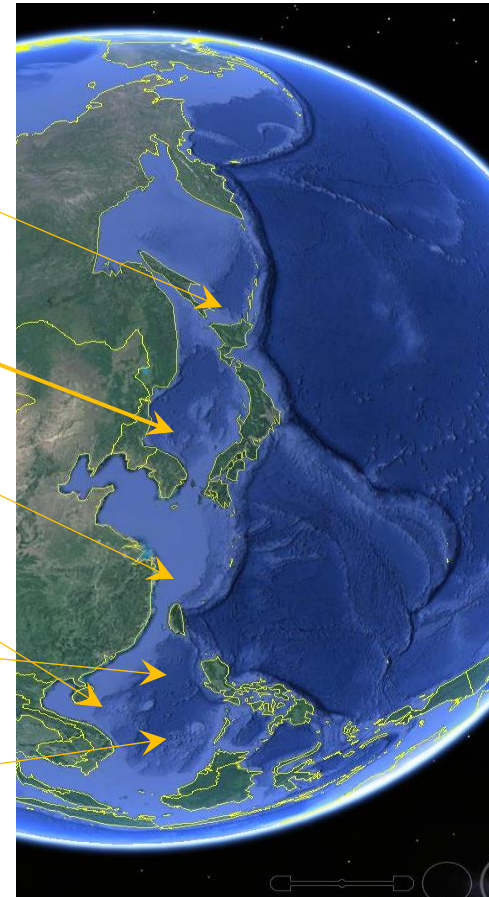


Asian Suicide Rates Compared (per 100,000)



Maritime Territorial Disputes

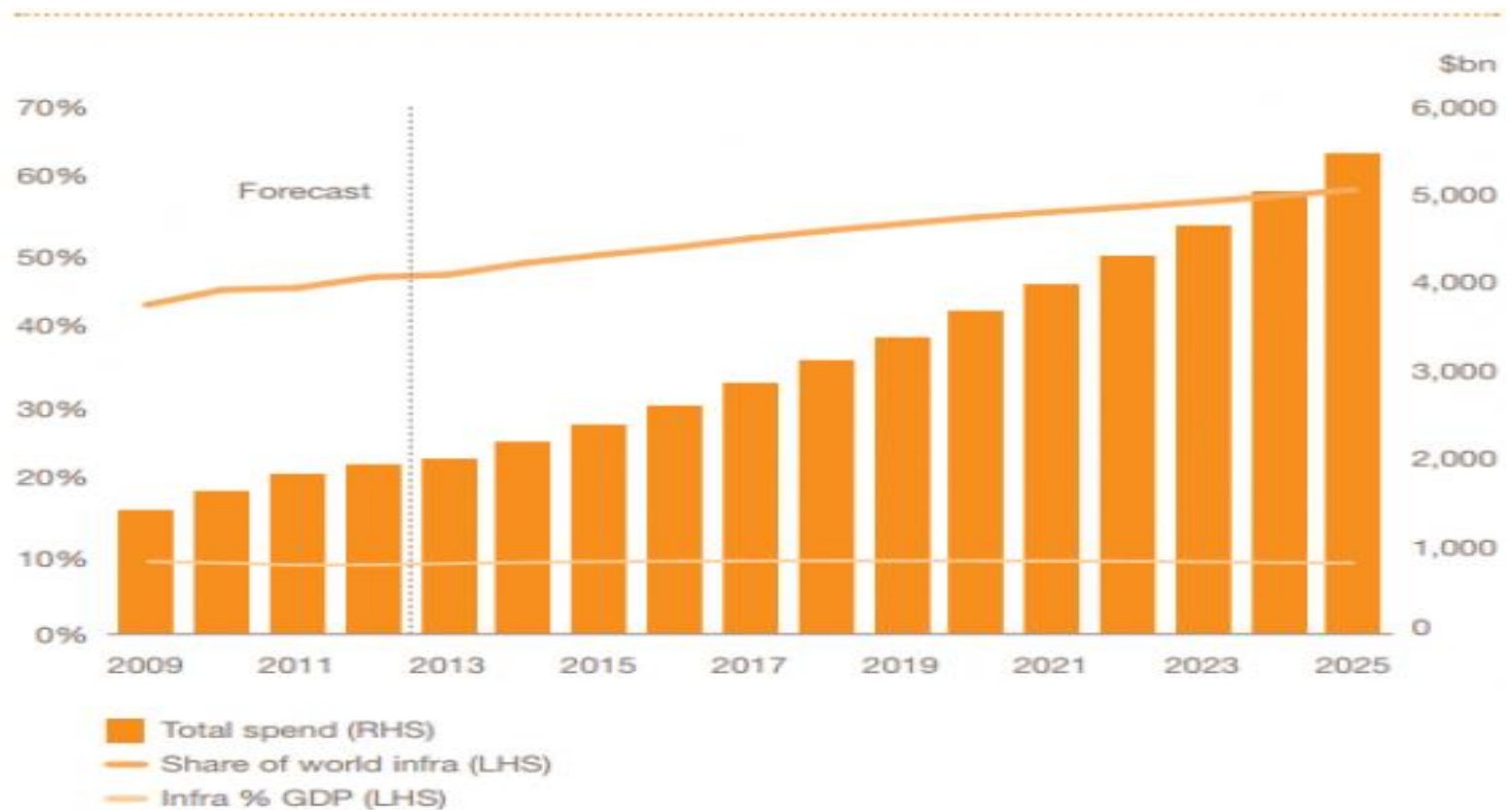
- “Northern Territories”
(Russian control)
- Dokto/Takeshima islands
(Korean control)
- Senkaku/Diaoyu islands
(Japanese control)
- Paracels (Chinese control)
- Scarsborough Reef (Chinese control)
- Spratlys (China, Philippines, Taiwan, Vietnam, and Malaysia all control islets)



Asia Infrastructure

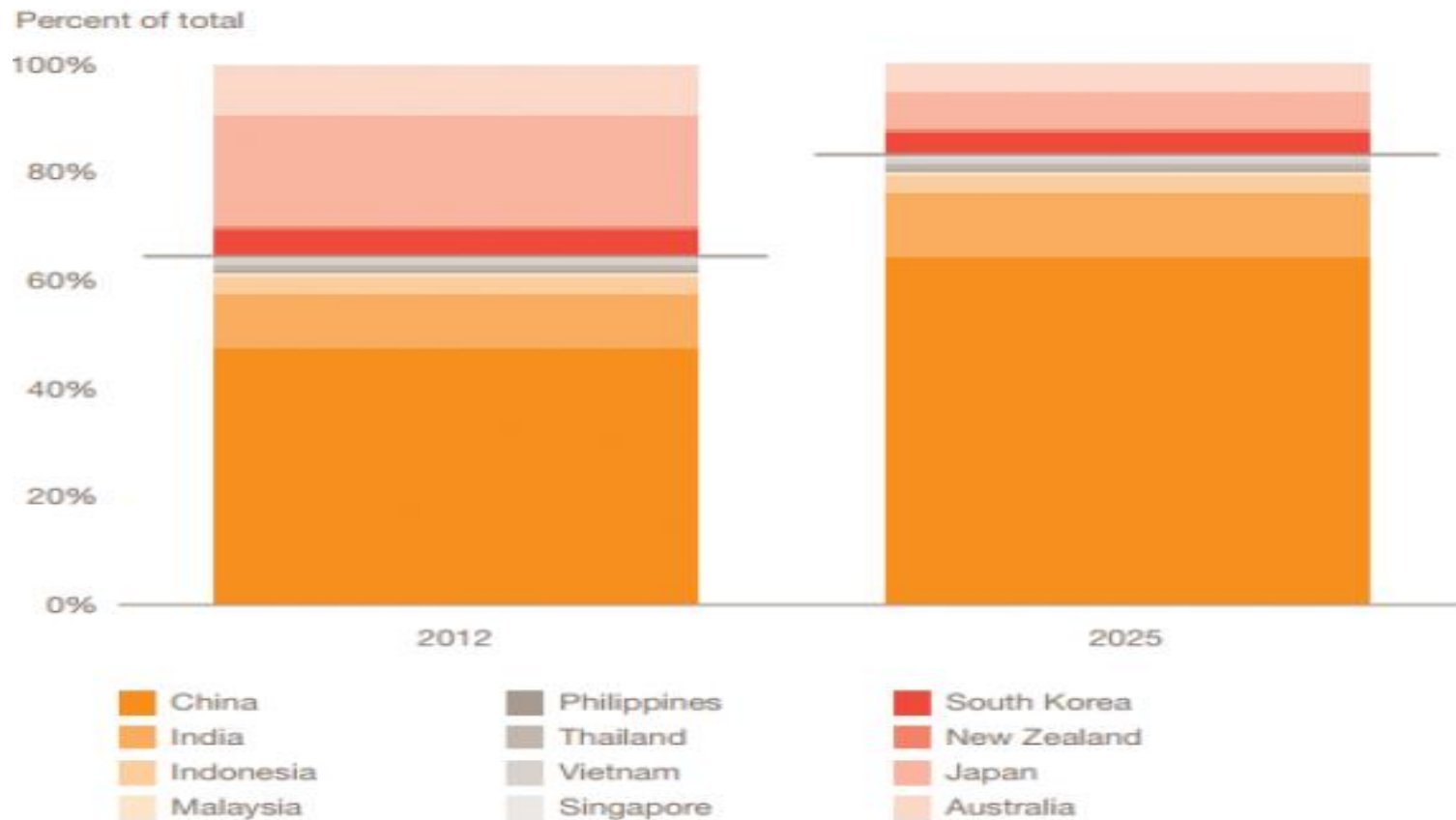


Asia-Pacific Infrastructural Spending Growth



Source: Oxford Economics

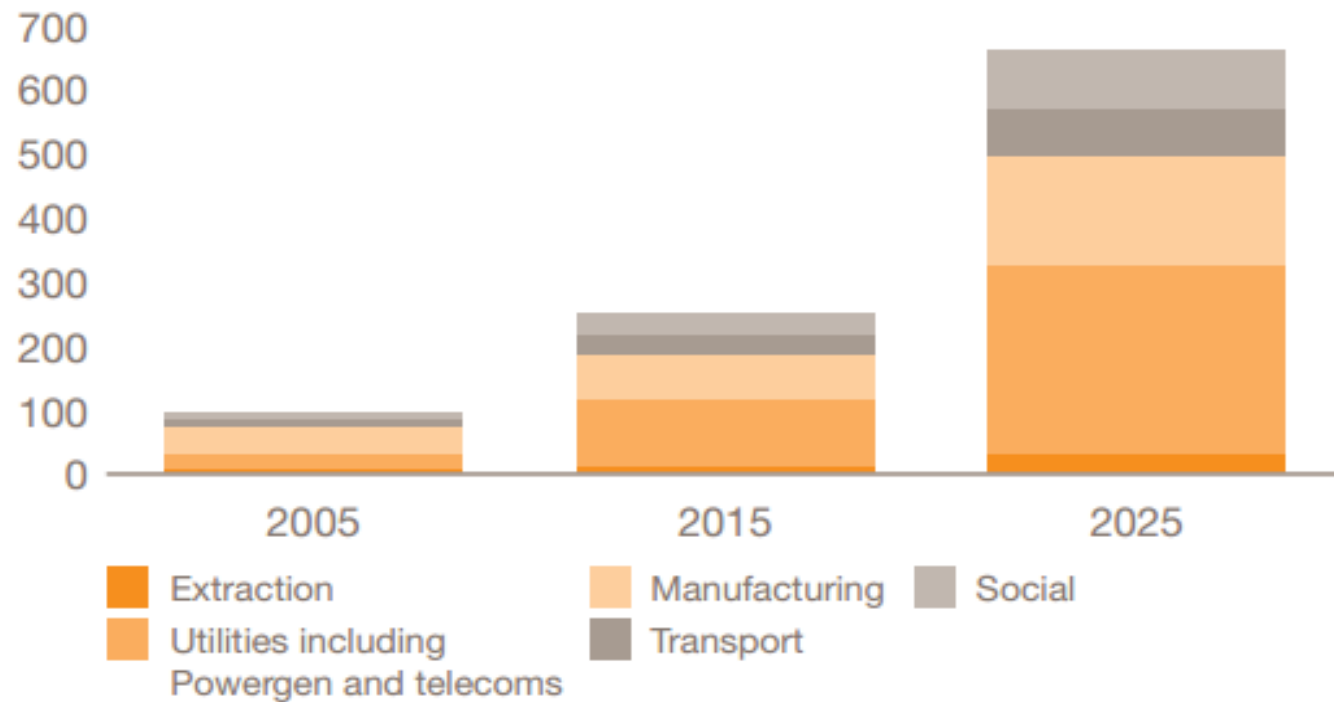
Spending by Country



Source: Oxford Economics

Spending by Sector

\$bn per year, current prices



Importance of Asia to US

- Accounts for 28% of goods and 27% of service exports
- 32% of US jobs from exports depends on export to Asia
- Asian investment in US growing rapidly
- 64% of international students from Asia
- More than \$40 billion annually in Asian visitor spending in US

Source: EWC: Asia Matters for America, America Matters for Asia

An aerial photograph of a tropical coastline. In the foreground, the ocean is a deep blue-green color. A sandy beach runs along the coast. Behind the beach is a lush green golf course with several fairways and sand traps. A small river or stream flows through the landscape, winding between the golf course and a large, dark, rocky area. In the background, a large, green mountain rises against a blue sky with scattered white clouds.

Thank you very much