Science, Climate Change & the Evolution of Security Policy in the Asia-Pacific Region

J. Scott Hauger, Ph.D.
Asia-Pacific Center for Security Studies

APN
4 Sep 2012
Kobe, Japan

Image source: NBC News

“Dealing with climate change … ‘involves a level of global cooperation that has never happened and the mechanisms for that are not in sight.’”

Image source: ASTM International

Stewart Brand quoted by Joel Achenbach in “Spaceship Earth: A new view of environmentalism,” *Washington Post* 1/2/2012.

Agenda

- Why climate change is a security issue
- Science and security policy
  - Phase 1: Science leading policy
  - Phase 2: Science informing policy
  - Phase 3: Policy informing research(?)
- Future Needs: A new level of global cooperation
- Take away points

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Comprehensive Security

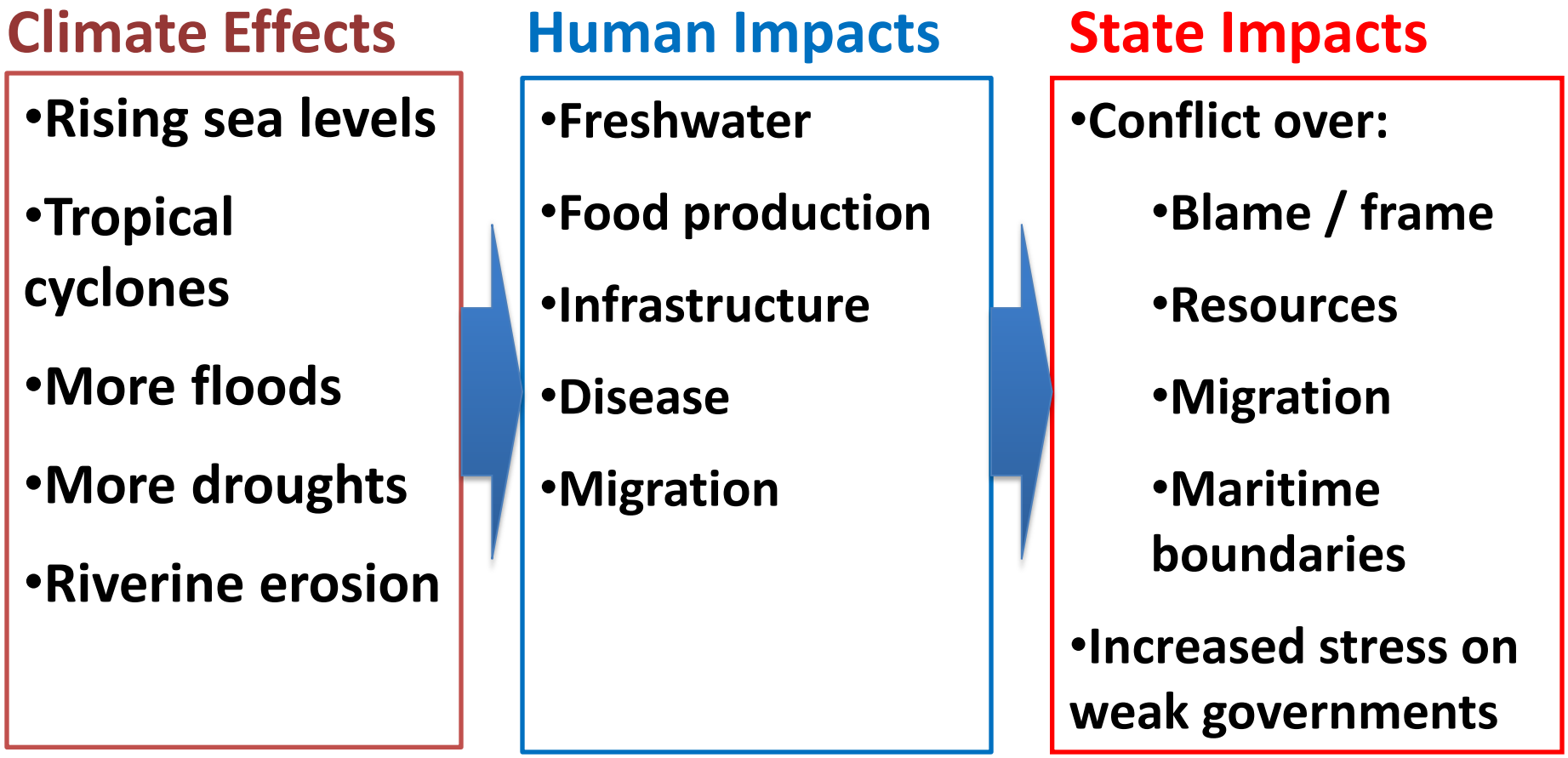
“Security is … about the pursuit of freedom from threat and the ability of states and societies to maintain their independent identity and their functional integrity against forces of change, which they see as hostile.”

----- Buzan, Barry, „New Patterns of Global Security in the Twenty-first Century“, in: *International Affairs 67:3* (1991)

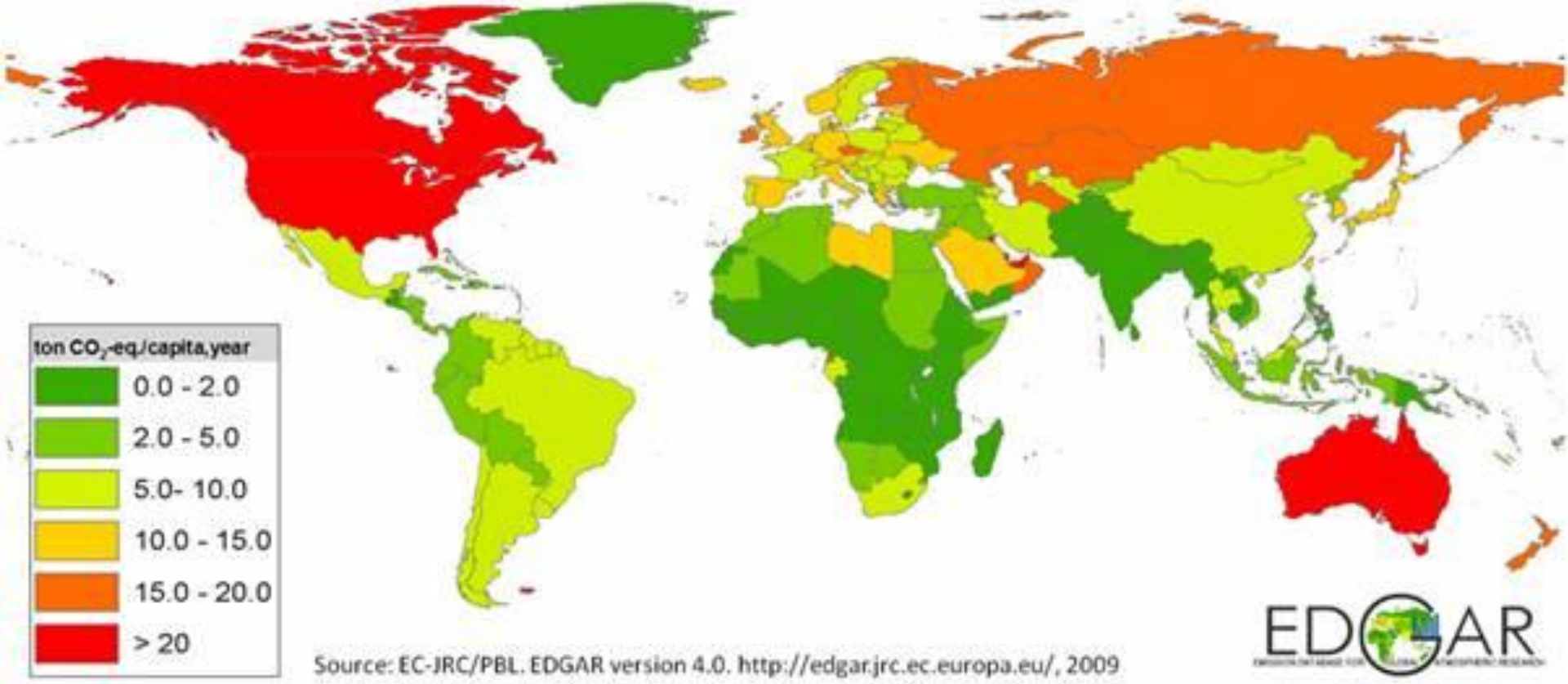
“The understanding of comprehensive security is strongly related to the understanding that in a more and more interdependent world as we have experienced it to be in the past 20 years, cooperation across national borders and over administrative bodies is strongly necessary.”

----Holl, Otmar, “Concepts of Comprehensive Security” (4 Feb 2011)

Climate change and security



Conflict over blame



Conflict over blame

Source: EquityBD

Conflict over frame

Image source: Globalwarming.org

A Development Issue

Wang Min (China) said climate change could affect security, but it was fundamentally a sustainable development issue. The Council did not have the means and resources to address it.

A Security Issue

Susan Rice (U.S.) said climate change had very real implications for international peace and security. These were as powerful as they were complex and many of them were already upon us.

Source: UN Security Council SC/10332. 20 July , 2011

Conflict over resources

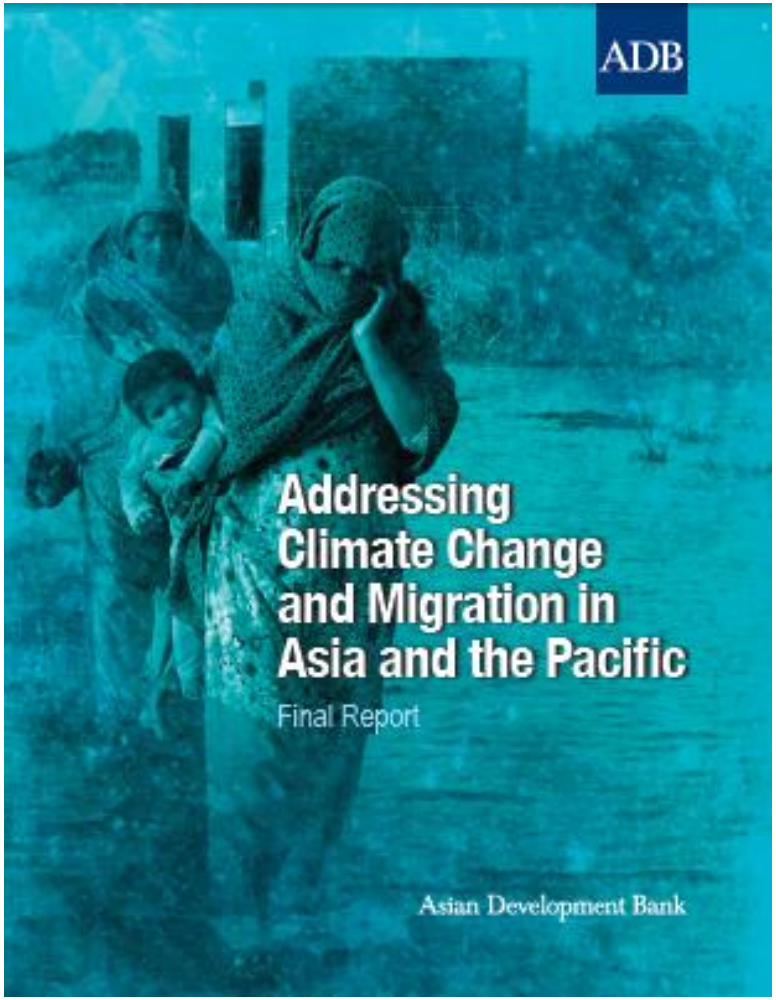
"Unquenchable thirst: A growing rivalry between India, Pakistan and China over the region's great rivers may be threatening South Asia's peace."

– The Economist, 19 Nov 2011

"Bangladesh has 54 shared rivers with India, so that changes in upstream runoff and demand due to climate change, could significantly impact future water availability.: Adaptation to climate change might therefore require not just local action but also cross-boundary cooperative arrangements." ["Climate Change: South Asia." World Bank]

Conflict over migration

"In 2010, more than 30 million people in Asia and the Pacific were displaced by environmental disasters such as storms and floods... Climate change is expected to increase the frequency of extreme weather events, bringing about significant changes in migration patterns. This will pose a major threat to the growth and security of Asia and the Pacific unless measures are taken soon." -- Asian Development Bank. 15 Sep, 2011



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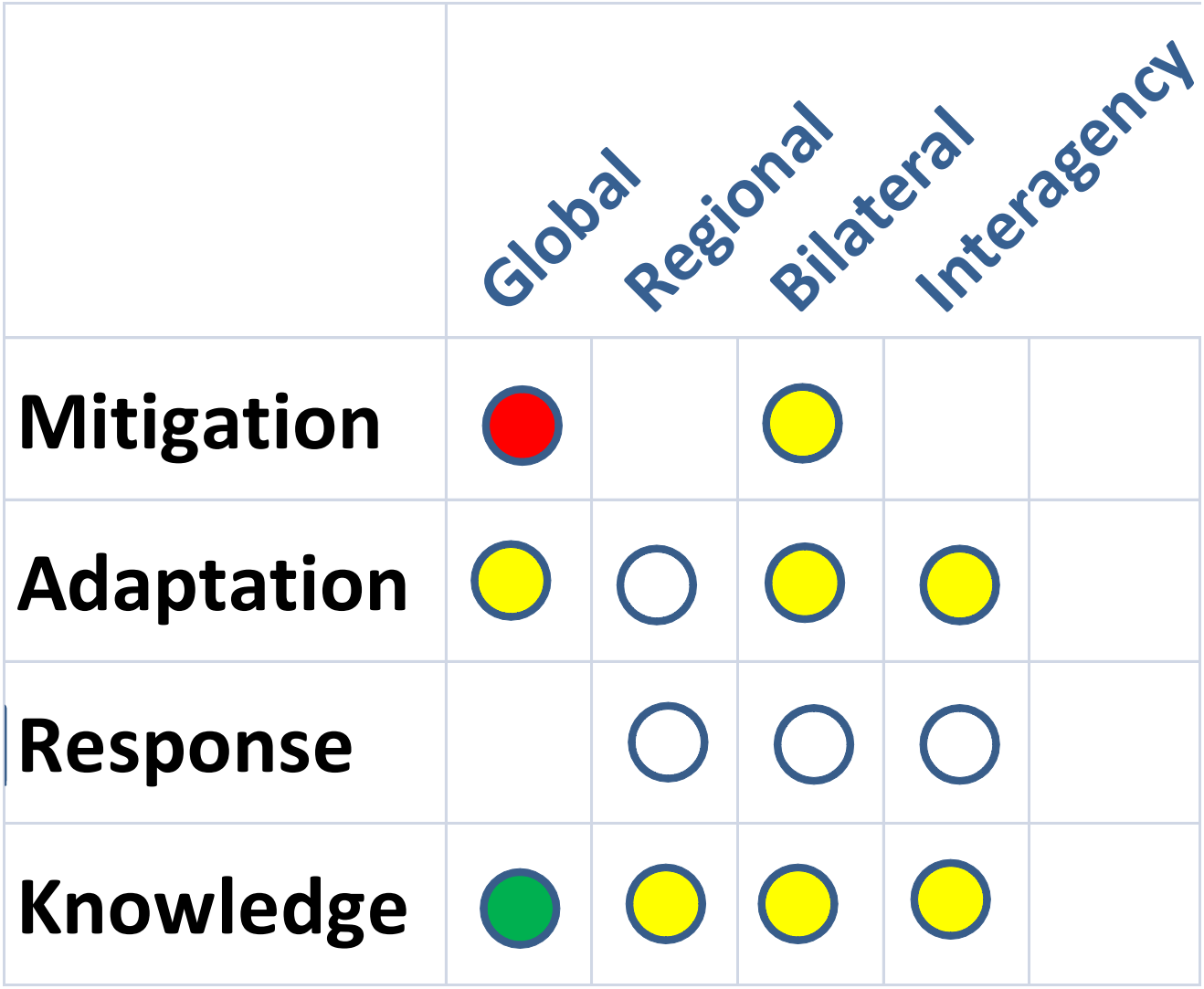
Climate change: Security policy goals & arenas



A Hierarchy of Climate Change Related Research Questions

1. What is happening to Earth's climate and why?
2. What is likely to happen to the climate in the future?
3. What will climatic changes mean for the environment?
4. How will environmental impacts affect the human environment or social order?
5. What can we do to mitigate or adapt to those environmental impacts?
6. What do security organizations need to know to prepare to adapt and respond to those changes?

Phase 1: Science leading policy

1. What is happening to Earth's climate and why?
2. What is likely to happen to the climate in the future?
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Phase 1: Science leading policy

1988 UNEP & WMO est. IPCC

1990 IPCC AR1

1992 UNFCCC

1995 IPCC AR2

1997 Kyoto Protocol

2001 IPCC AR3

2001 COP7: Adaptation

Phase 2: Science informing policy

1. What is happening to Earth's climate and why?
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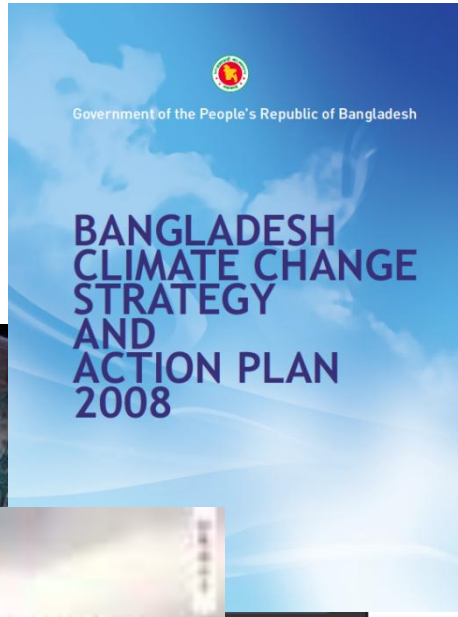
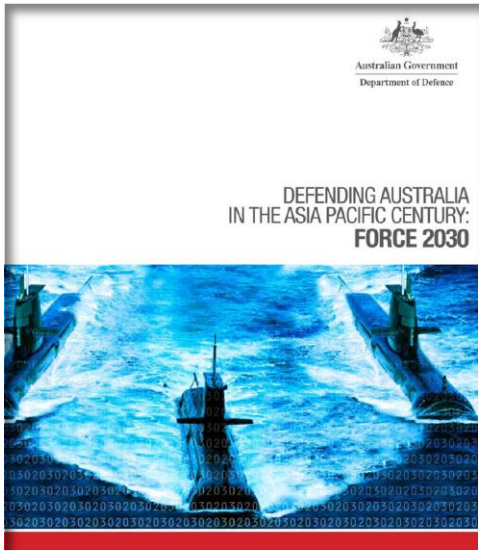
Phase 2: Science informing policy

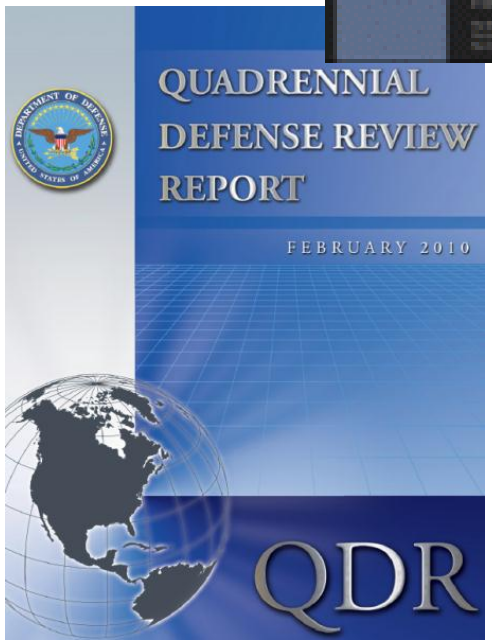
2007 IPCC AR 4

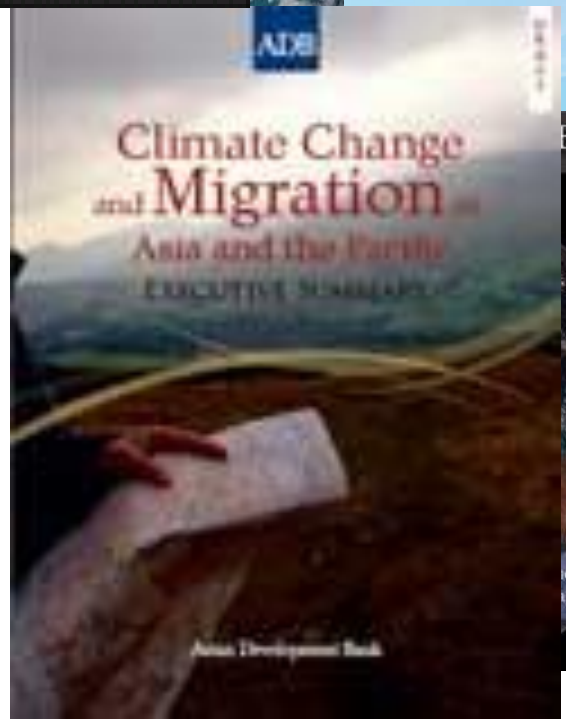
2008 and after

- Development
- Human security
- Defense







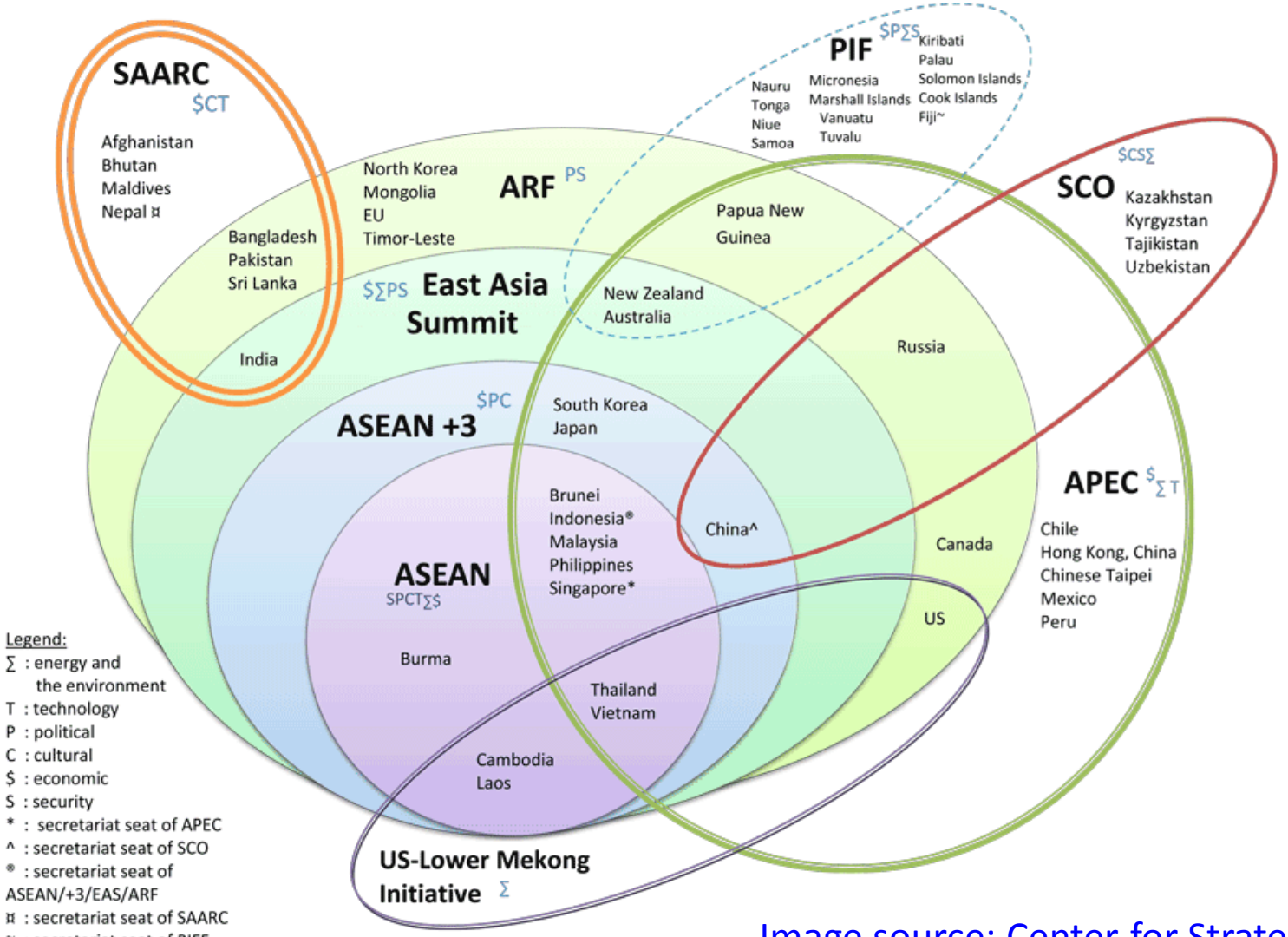


Science leading /informing policy: Progress to date

Global

- **GHG mitigation**
  - Kyoto Protocol 1997: Partial, problematic
  - Durban 2011: No agreement. Target of 2015
- **Adaptation**
  - Marrakesh, 2001: NAPAs for 47 LDCs
  - Durban 2011: Green Climate Fund: $100 billion / yr
- **Response: Security / Development agency interaction**
  - Disagreement in Security Council (2011).
- **Knowledge creation & dissemination**
  - IPCC AR4 (2007): Basis for planning worldwide.
  - IPCC AR 5 (2013): Need for finer scale projections.

Asia-Pacific Multilateral Orgs



[Image source: Center for Strategic & International Studies]

Progress on outstanding issues: Regional

- **Common Positions for UNFCC Meetings**
  - ASEAN Joint statement to Copenhagen (COP-15, 2009)
  - Common SAARC Position for Cancun (COP-16 Dec 2010)
- **Declarations of Commitment**
  - APEC Sydney Declaration (2007)
  - ASEAN Leaders' Statement on Joint Response to Climate Change (2010)
  - SAARC Thimphu Statement on Climate Change (2010)
- **Knowledge creation and exchange**
  - APEC Climate Center (est. 2005, Busan, RoK)
  - Asia-Pacific Network for Global Change Research (est. 1996, Kobe, Japan)
  - ASEAN Jakarta workshop on urban tools to address climate change (Jan 2011)
- **Partnering**
  - PIF Joint Pacific-EU Initiative on Climate Change (Dec 2010)

Science leading / informing policy: Progress to date

Regional

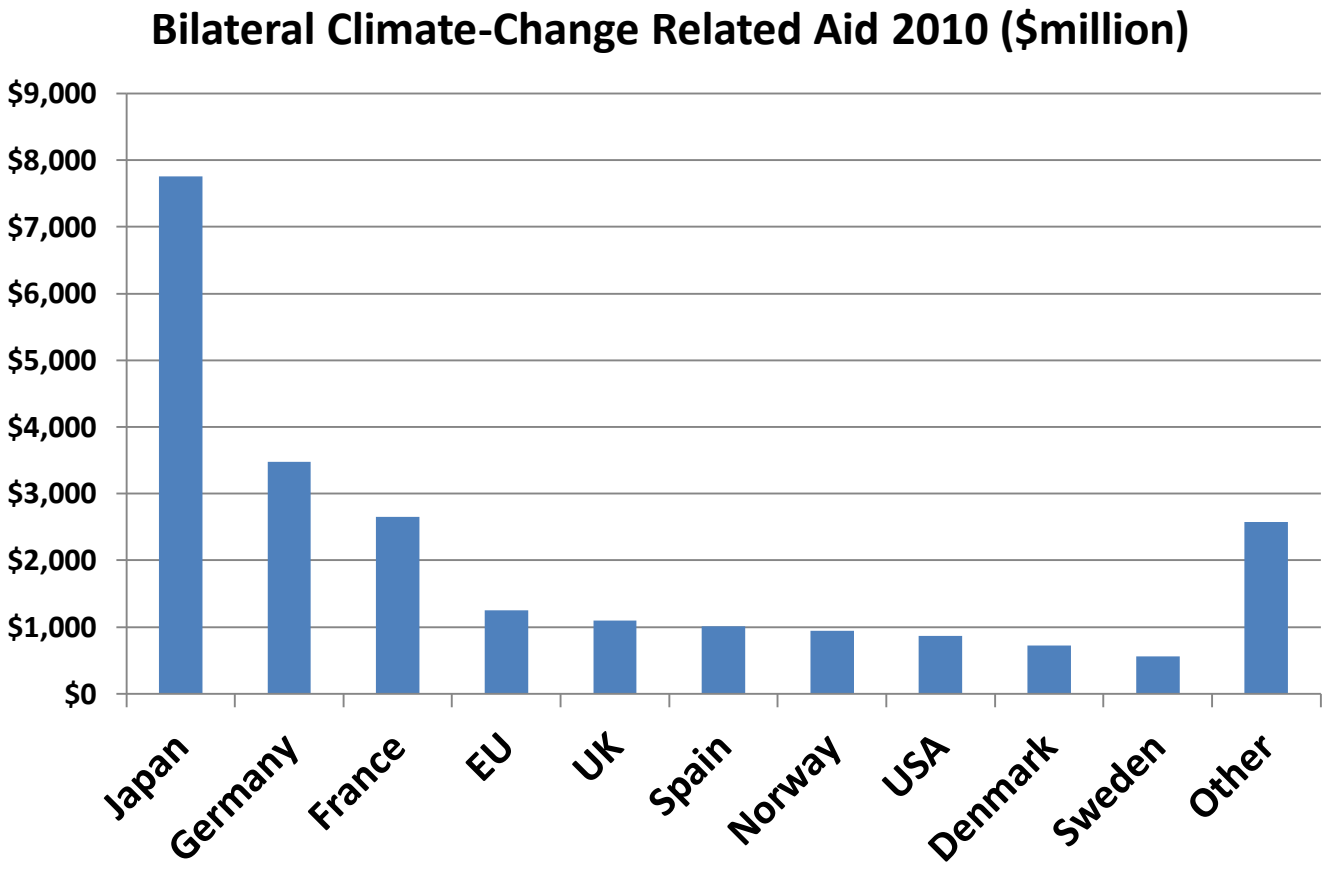
Regional forums yet to find a clear role

- Joint statements of members
- Knowledge creation and exchange
- APEC Climate Center

Progress on outstanding issues: Bilateral

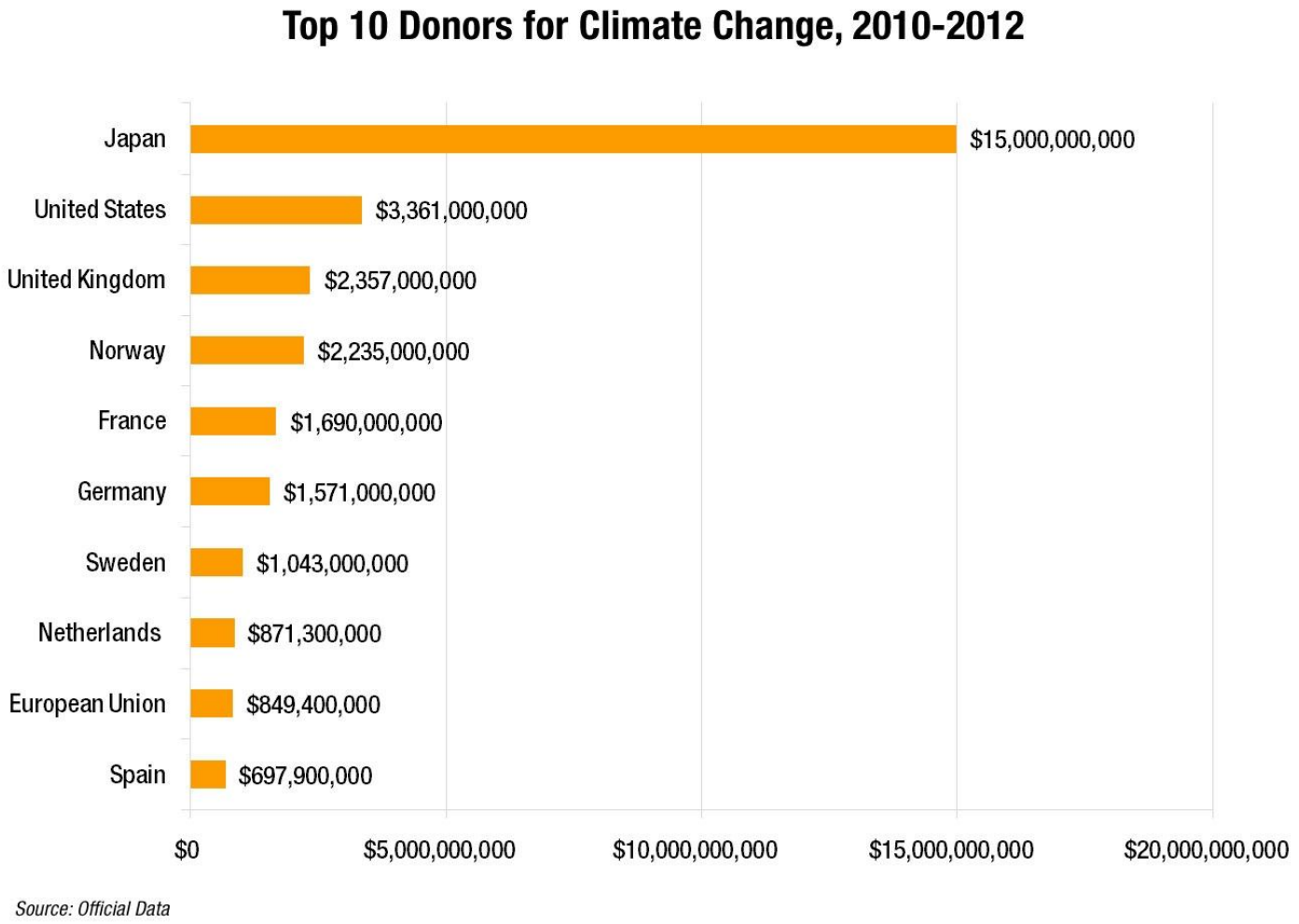
- **Many bilateral agreements in AP region that address climate change.**
  - State general areas of policy agreement
  - Provide for exchange of information
  - Research cooperation
  - Technical assistance and aid for mitigation & adaptation

Bilateral aid by nation



Source: OECD

Bilateral aid by nation



Source: Aileen Cruz. 2012. "Going green: Top 10 bilateral climate change donors in 2010-2012." (January 2). Devex

Phase 3: Policy informing research

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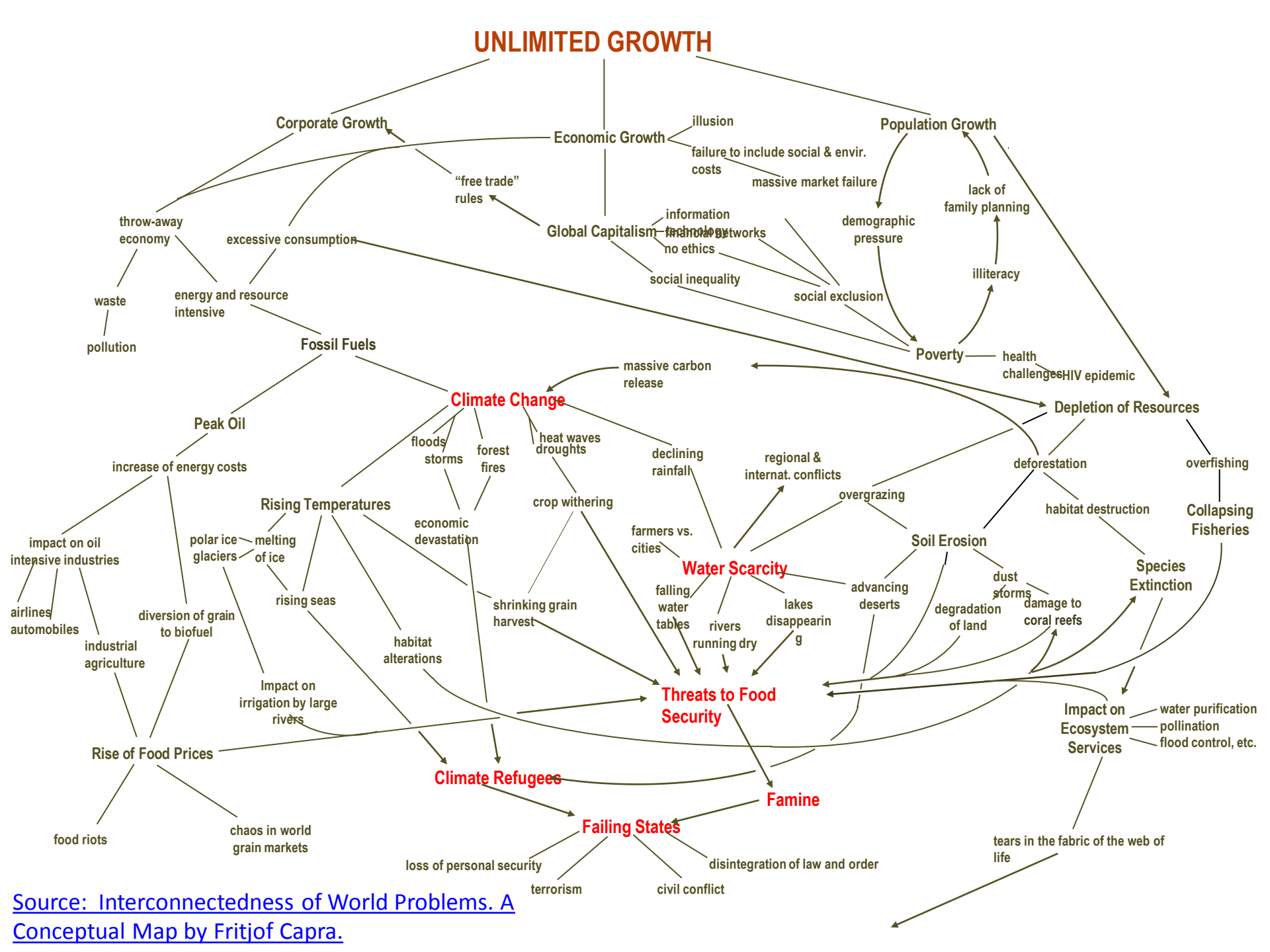
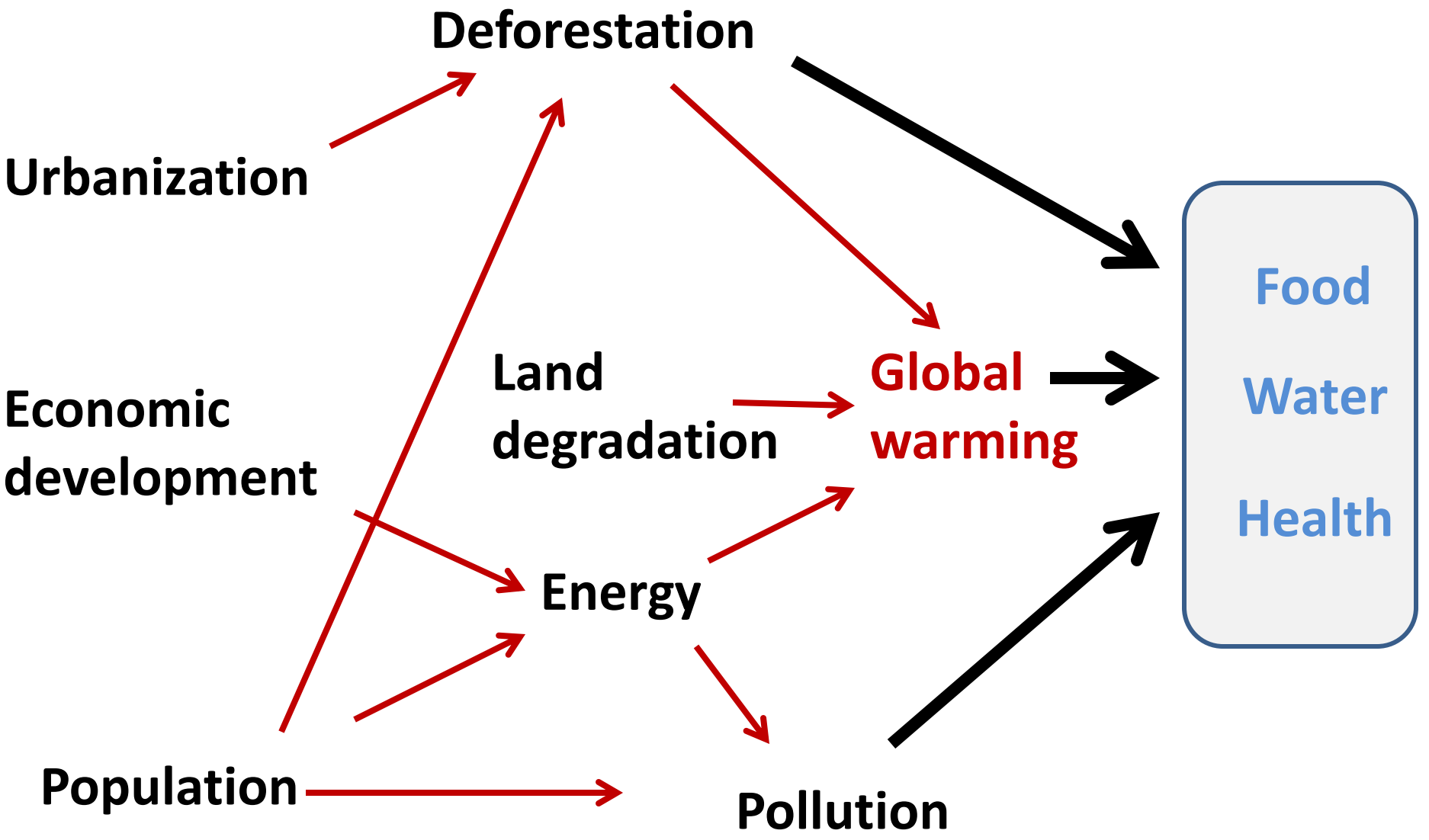


Source: Interconnectedness of World Problems. A Conceptual Map by Fritjof Capra.

Knowledge needs: Managing complex heterogeneous systems



Security sector knowledge needs

- Better understanding of environmental security complexity
  - Reinforcing and balancing loops
  - Anticipating tipping points
- More robust projections of impacts (local scale)
- Better knowledge dissemination and framing
  - Interagency, cross-sectoral, international, public
  - Common frames for understanding the problems
- Better knowledge interchange with research communities
- Better social science knowledge on effective collaboration to address issues of the global commons

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USGCRP: A model for regional cooperation?

"To be useful, scientists must understand the needs of decision makers at all levels in the public and private sectors and effectively make research results relevant to those decision makers."

-- USGCRP Strategic Plan 2012 – 2021 Draft of 30 Sep 2011

United States Global Change Research Program

NRC review of USGCRP strategic plan

- Shift from climate change to climate-related global changes an “important step in the right direction.”
- Broadening to better integrate social and ecological sciences to inform decisions about mitigation & adaptation “is welcome and in fact essential…”
- An effective global change research enterprise requires an integrated observational system that connects observations of the physical environment with a wide variety of social and ecological observations.

NRC review of USGCRP strategic plan

- USGCRP and its member agencies lack the capacity to achieve the proposed broadening of the program
  - Insufficient expertise
  - Lack of clear mandate
- USGCRP needs an overall governance structure with responsibility and resources needed to broaden the program.

Toward a new level of global cooperation: Future needs

- Shared conceptual framework of climate-related global change that challenges human security.
- Institution building for:
  - Security / research community interaction resulting in science-based policies and actions,
  - Integrated social science research linking natural science to policy,
  - Regional level cooperation and assistance in addressing these issues,
  - New or evolved national & regional governance structures.
- Dedication of national resources to regional problem solving.

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Take away points

- Climate –related global change poses a threat to human and state security.
- Climate change is complexly related to other global trends impacting environmental security.
- The Asia-Pacific region is especially vulnerable to the threat.
- Scientific research has engendered security sector awareness and preliminary engagement on global change issues.

Take away points

- Asia-Pacific security sector collaboration on global, regional, bilateral and interagency levels is emergent -- tentative and scattershot.
- Unprecedented, complex problems of environmental security confront inadequate
  - knowledge,
  - institutions,
  - governance.
- USGCRP strategic plan may provide a conceptual framework for regional and/or global collaborations.

“Dealing with climate change … ‘involves a level of global cooperation that has never happened and the mechanisms for that are not in sight.’”

Image source: ASTM International

The challenge to science & policy is to bring the resources and mechanisms for this level of cooperation into sight.

QUESTIONS?

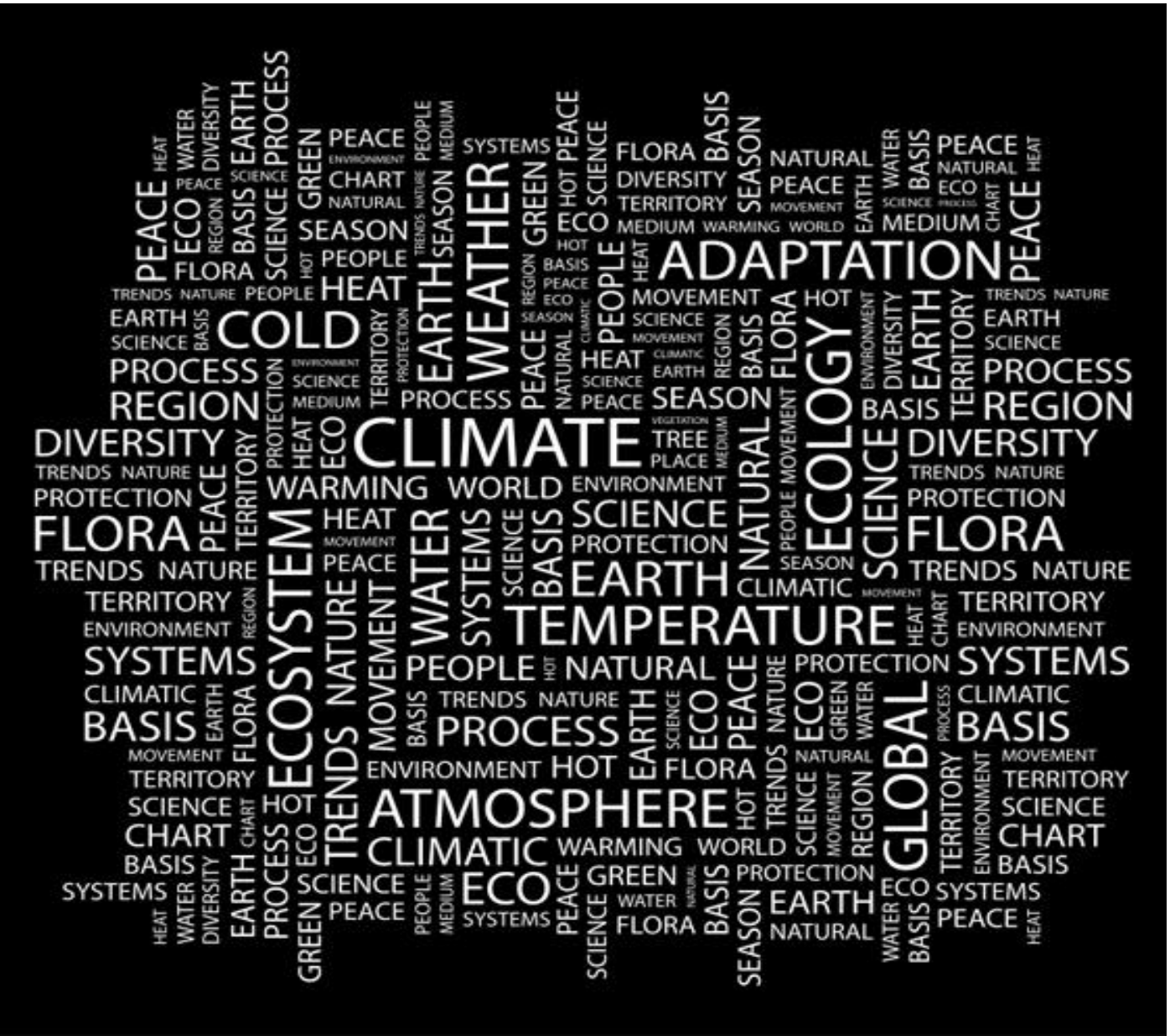


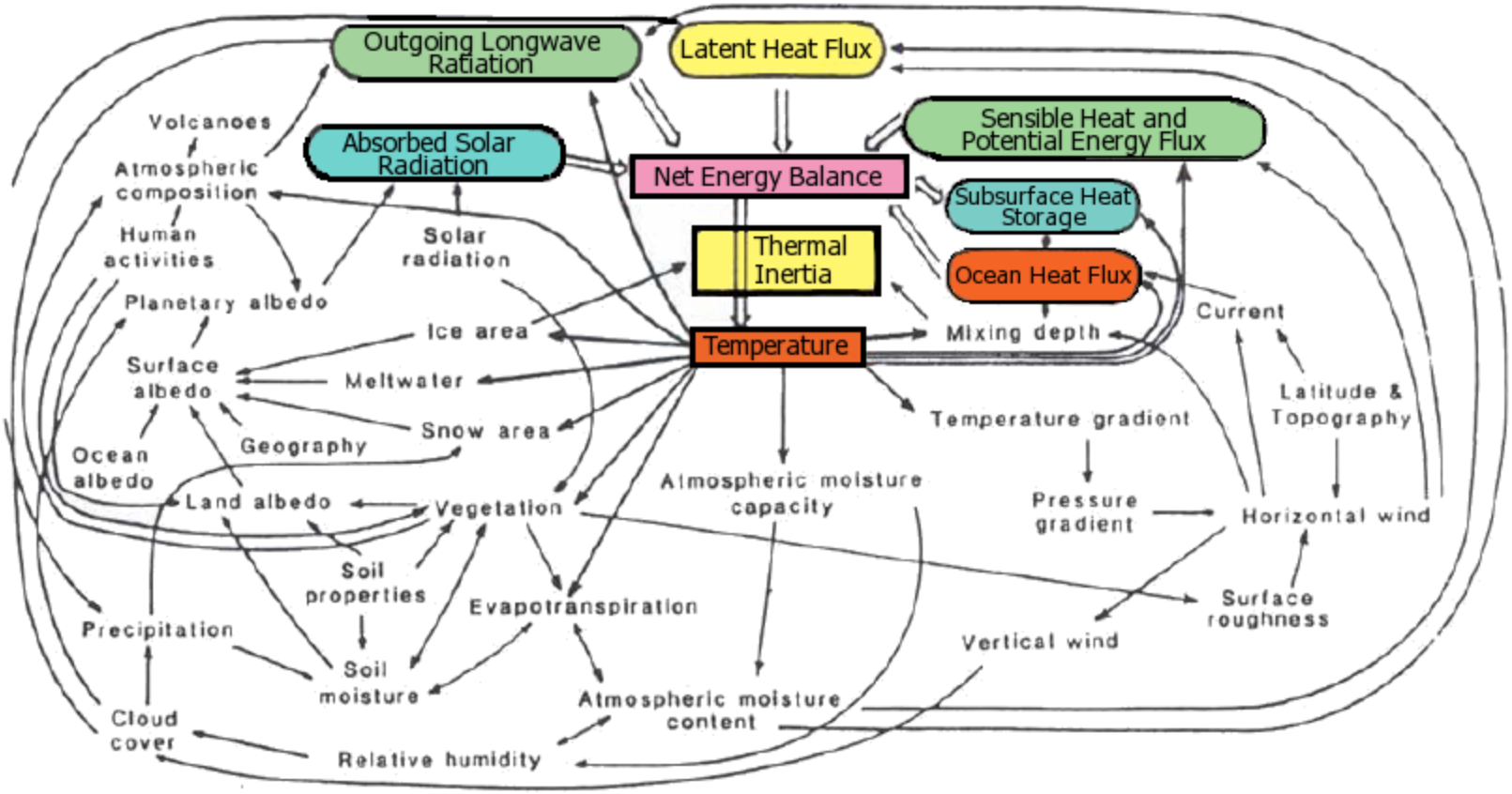
Image source:
[Risk Management Monitor]

Backup slides

Rising Food Prices

Source: UN FAO

Session 1: The Complexity of Global Change



Climate feedback loops. After Robock (1985)

Interagency task forces

- **USA**
  - U.S. Global Change Research Program 1990
  - Climate Change Adaptation Task Force 2009
- **China**
  - National Working Group for Dealing with Climate Change, 1990
  - National Coordination Committee on Climate Change 1998
- **Singapore**
  - Inter-ministerial Council on Climate Change, 2007
  - National Climate Change Secretariat, 2010

Thimphu Declaration (2010)

"The leaders, deeply concerned by the extent of environmental degradation in the region, reiterated the importance of sustainably managing environment and development through adoption of eco-friendly approaches and technologies, and that South Asia should become a world leader in low-carbon technology and renewable energies"

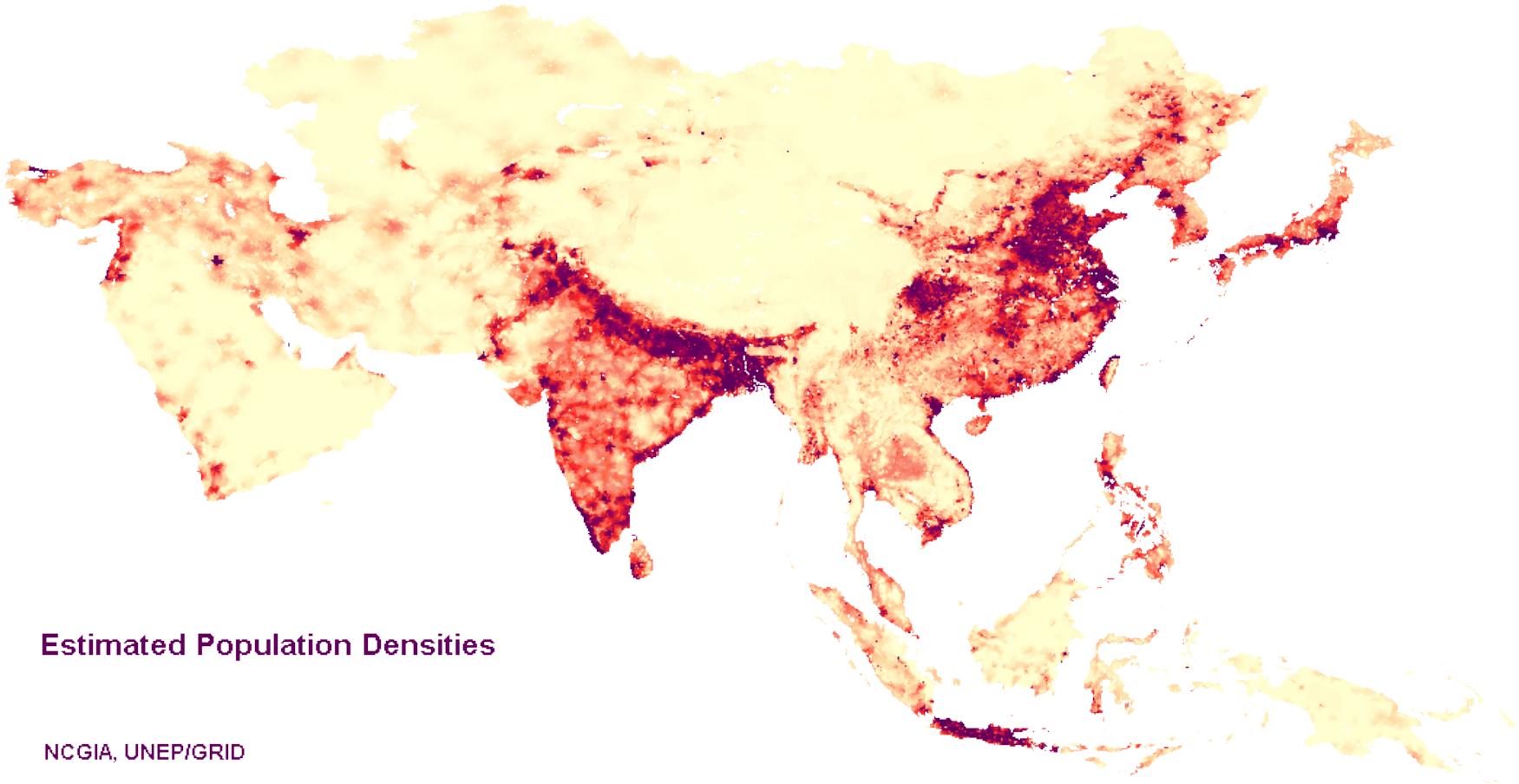
--(SAARC Thimphu [Bhutan] Silver Jubilee Declaration, Apr 29, 2010).

Asia-Pacific Participation in IPCC AR5

USA	179	S. Korea	7
China	44	Philippines	5
India	31	Malaysia	4
Australia	31	Bangladesh	4
Japan	28	Fiji	3
Canada	25	Singapore	2
Russia	15	Thailand	2
N. Zealand	9		
Indonesia, Maldives, Pakistan, Samoa, Seychelles, Sri Lanka, Viet Nam	1		

Source: IPCC

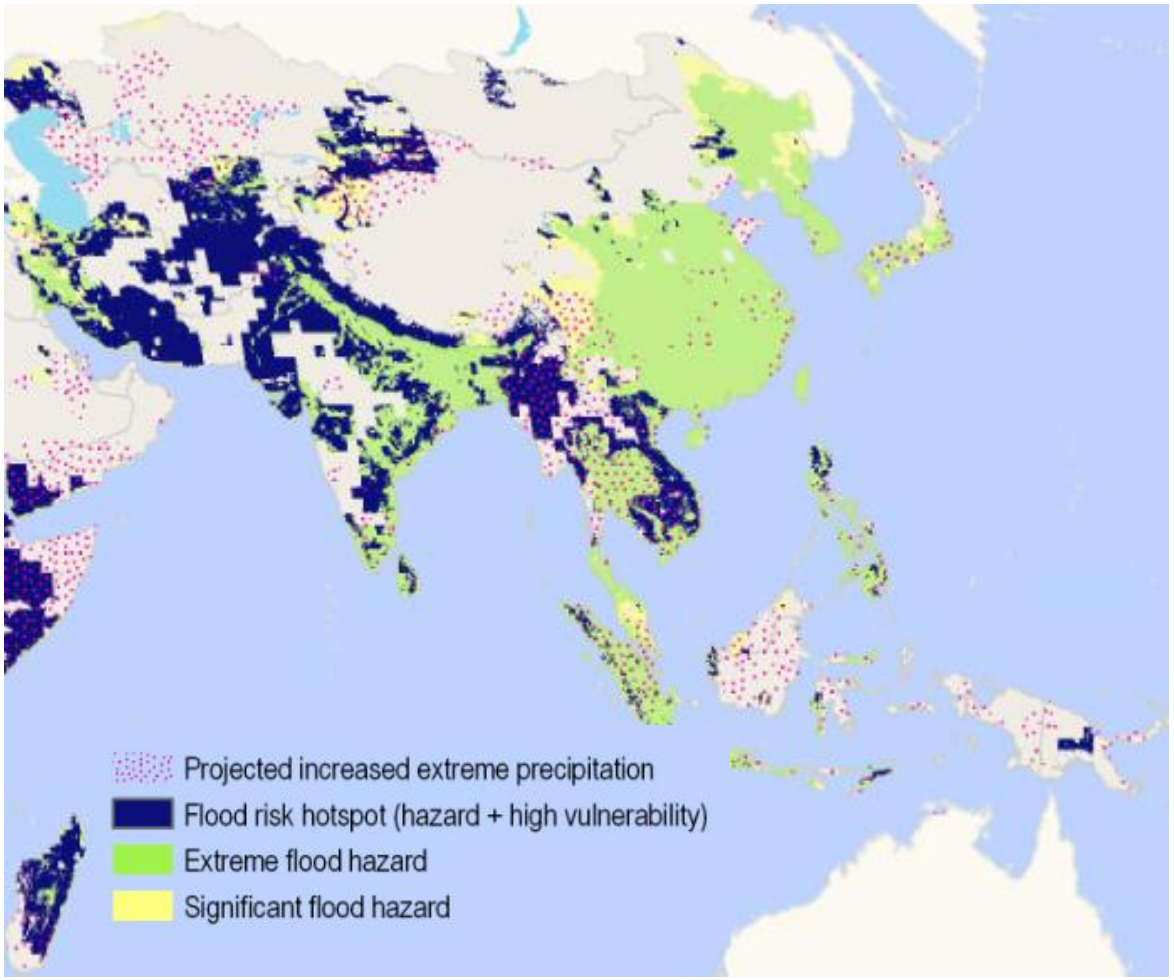
Population Density, Asia



Source: UNEP

Flood risk indicators, 2030-2040

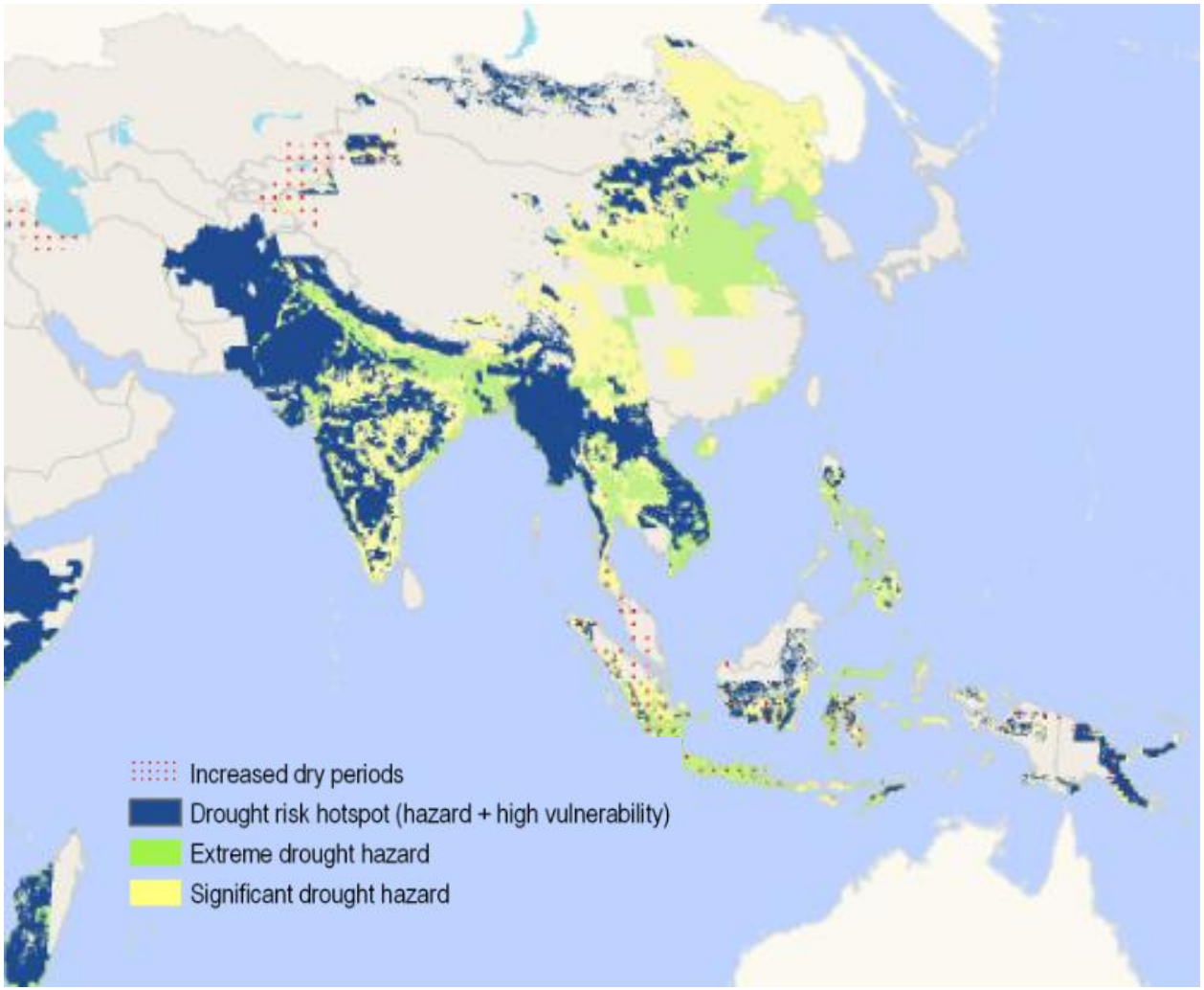
Based on current global climate models and IPCC A1B emissions scenario.



Source: CARE International Climate Change Information Centre

Drought risk indicators, 2030-2040

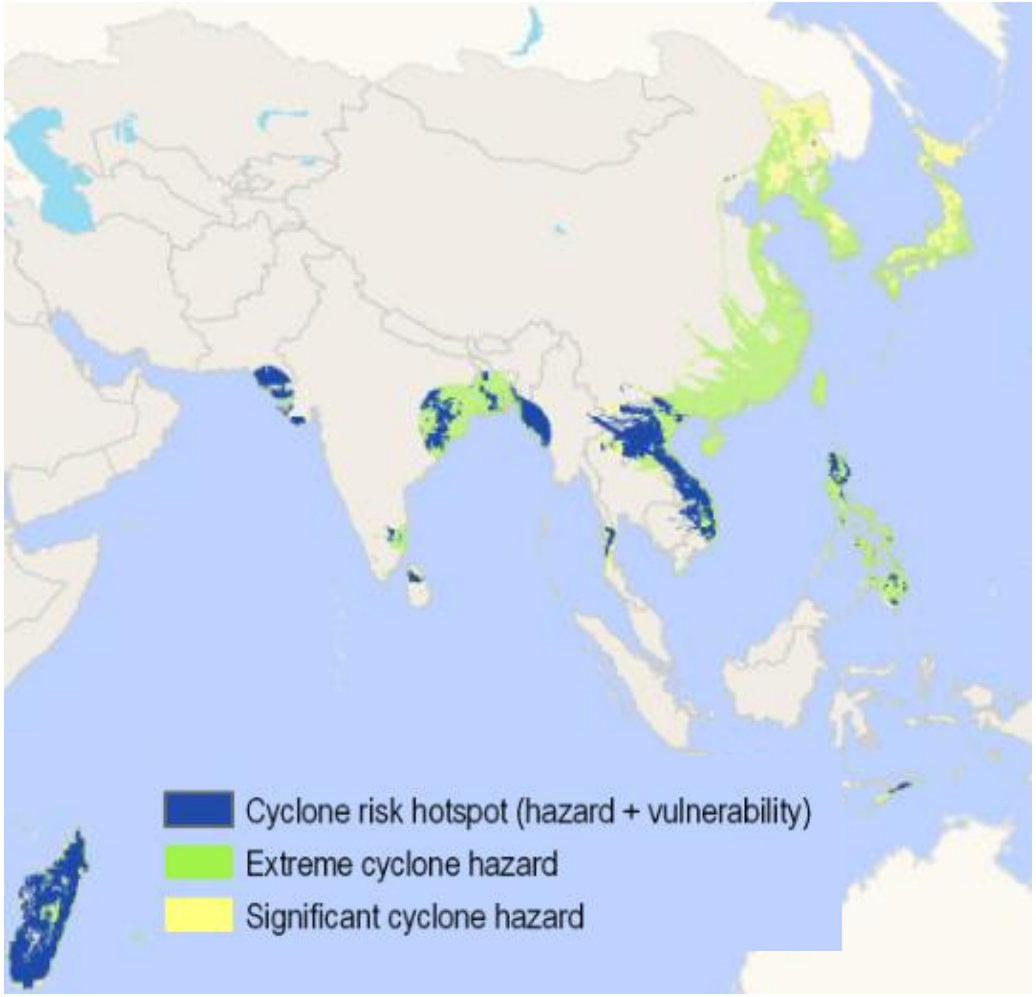
Based on current global climate models and IPCC A1B emissions scenario.



Source: CARE International Climate Change Information Centre

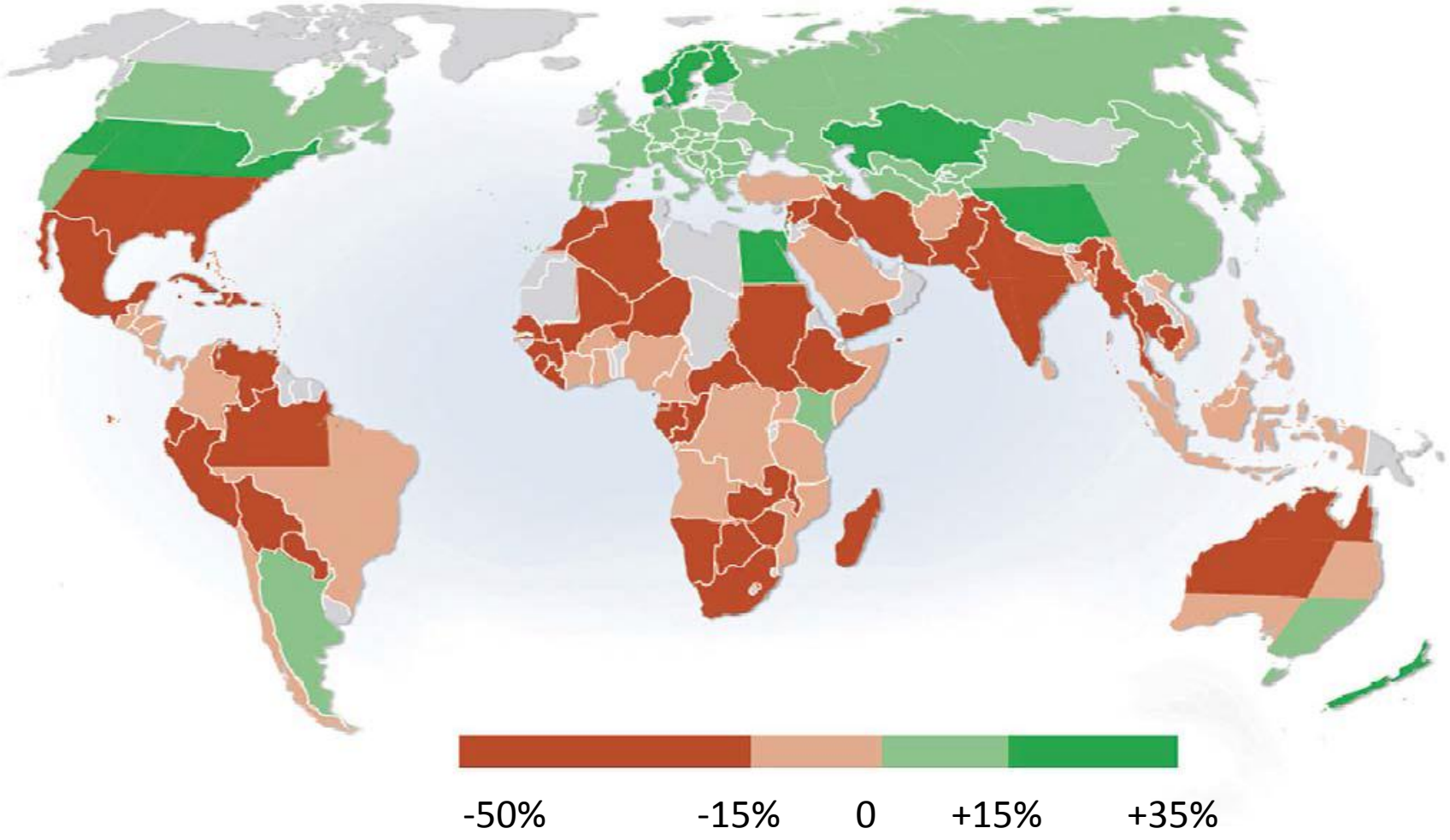
Cyclone risk indicators, 2030-2040

Based on current global climate models and IPCC A1B emissions scenario.

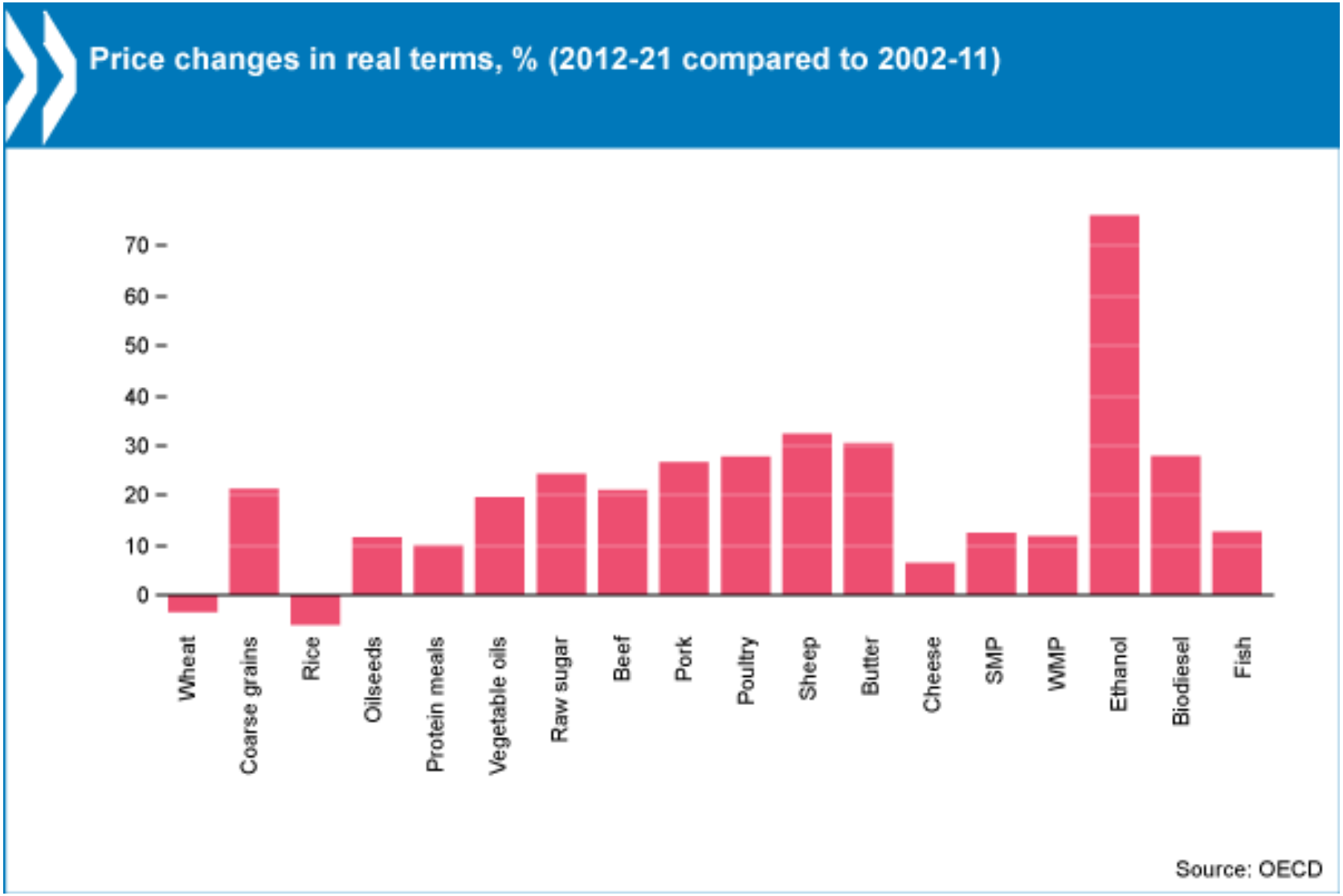


Source: CARE International Climate Change Information Centre

Projected changes in agricultural production in 2080 due to climate change



Source; Cline, W. R. 2007. Global Warming and Agriculture: Impact Estimates by Country. Washington D.C., USA: Peterson Institute.



Source: [OECD-FAO Agricultural Outlook 2012-2021]