© Hans Günter Brauch
Free University of Berlin, Otto-Suhr-Institute for Political Science
United Nations University, Institute for Environment and Human Security (UNU-EHS)
Peace Research and European Security Studies (AFES-PRESS), Chairman

Luncheon Lecture

Environment and Human Security

Chulalongkorn University,
Bangkok, 5 June 2006

Between Globalization and Civil Literacy
A Human Security Course Planning and Applied Research Strategies Workshop

Contents

1. Reconceptualizing Security: A Mental Mapping
2. The Environmental Security Dimension: Global Environmental Change: Research Programmes
   a) Climate Change as a New Security Challenge
   b) Desertification as a New Security Challenge
3. Four Pillars of Human Security
4. Human Security Network: its Members & Goals
5. PEISOR Model: Global Env. Change & Extreme Outcomes
   a) Cause: Pressure of Global Environmental Change
   b) Effect: Environmental Scarcity, Degradation & Stress
   c) Global, Regional and National Impacts
   d) Policy Response: Reducing Social Vulnerability & Building Resilience
   e) Policy Task: Strengthening Human Security as Free-dom From Hazard Impact
   f) Conclusions and Suggestions for Policy & Research
6. Climate Change Impacts: floods, drought, food security
7. Natural Hazard: Global Trends and Impact on Thailand
8. Implications of Climate Change for Security and Conflicts
9. Climate Change & Drought: Human & Environm. Security
10. Research Agenda & Policy Responses for Thailand

1. Reconceptualisation of Security: A Global Mental Mapping

- **Security** is a basic value and goal for each human being, for the nation-state, international community & organisat.
- **Security** is determined by our **culture, experience, perception** and what policy-makers & the media describe it to be.
- Global scientific publication project on: **Reconceptualisation of Security** aims at a mental mapping of the rethinking on security triggered by global & regional policy changes and scientific innovations: **3 major global reference books**
- Since 1990 **Global Environmental Change** has been seen as a security danger: threat, challenge, vulnerability & risk.
- **Climate change and desertification** (causes) and natural hazards (floods, droughts) are new challenges security dangers for Thailand during the 21st Century.

1.1. A Classical Definition in Political Science & International Relations

- Arnold Wolfers (1962), US of Swiss origin, realist pointed to two sides of the security concept:
- "Security, in an objective sense, measures the absence of threats to acquired values, in a subjective sense, the absence of fear that such values will be attacked".
- Absence of "threats": interest of policy-makers
- Absence of "fears": interest of social scientists, especially of contructivists: "Reality is socially constructed"
- According to Møller (2003) Wolfer's definition ignores:
  - Whose values might be threatened?
  - Which are these values?
  - Who might threaten them?
  - By which means?
  - Whose fears should count?
  - How might one distinguish between sincere fears and faked ones?

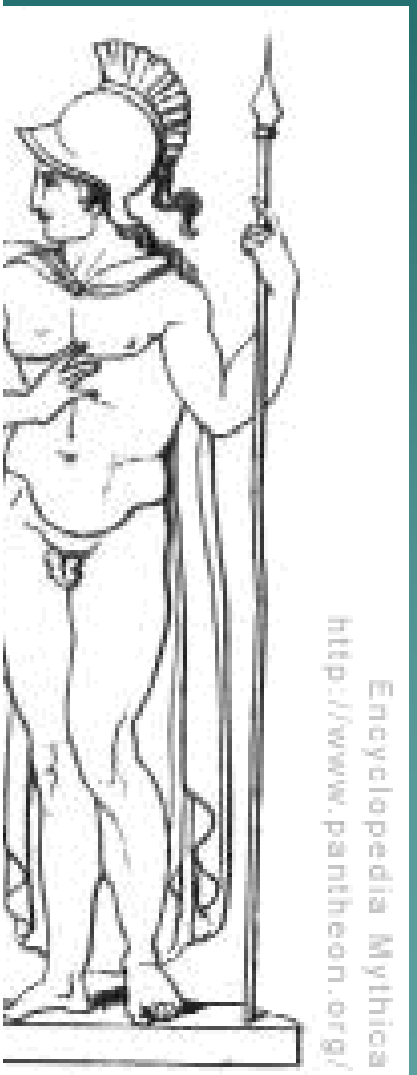
1.2. Objective, Subjective, Intersubjective Security

- From a constructivist approach 'security' is the outcome of a process of social & political interaction where social values & norms, collective identities & cultural traditions are essential.
- Security: ***intersubjective*** or "what actors make of it".
- Copenhagen school security as a "speech act", "where a securitising actor designates a threat to a specified reference object and declares an existential threat implying a right to use extraordinary means to fend it off".
- Such a process of "securitisation" is successful when the construction of an "existential threat" by a policy maker is socially accepted and where "survival"" against existential threats is crucial.

1.3. Security Perception: Worldviews/Mind-sets

- **Perceptions of security threats, challenges, vulnerabilities, risks depend** on **worldviews** of analyst & **mind-se**t of policym.
- **Mind-set** (Ken Booth): have often distorted perception of new challenges: include ethnocentrism, realism, ideological funda-mentalism, strategic reductionism
- **Booth: Mind-sets freeze international relations** into crude images, portray its processes as mechanistic responses of power and characterise other nations as stereotypes.
- Old Cold War mind-sets have survived global turn of 1989/1990
- **3 worldviews** are distinguished by the English school:
  - *Hobbesian* pessimism (realism)
  - *Kantian* optimism (idealism) where *international law* and *human rights* are crucial; and
  - *Grotian* pragmatism where *cooperation* is vital
- However, this a **Eurocentric perspective**. Are there similar ideal type perspectives in S, SE and East Asia in your culture?

1.4. Robert Kagan*): Mars vs. Venus or United States vs. Europe (2003)



On questions of power American and European perspectives are diverging.

Europe lives in a world of laws, paradise of peace & prosperity

Americans exercise power in an anarchic Hobbesian world where defence depends on military might.

⬅Americans are from Mars

Europeans from Venus ➔

I am neither from Mars nor Venus

but a pragmatist where *cooperation* is vital

* Of Paradise and Power
(New York: Alfred A. Knopf, 2003)

1.5. Conceptual Quartet: Security Concepts in relation with peace, environment & development

Pillars & linkage concepts within the quartet

IR research programmes	Conceptual Quartet	Conceptual Linkages
◆Peace Research ◆Security Studies ◆Development Studies ◆Environment Studies 4 conceptual pillars ◆ I: *Security dilemma* ◆ II:*Survival dilemma* ◆ III: *Sust. developm.* ◆ IV: *Sustain. peace*	Peace Security ◆*I: Security dilemma* IV II Developm. Environm. *III: Sustainable development*	◆Policy use of concepts & Theoretical debates on six dyadic linkages ◆L1: Peace & security ◆L 2: Peace & development ◆L 3: Peace & environment ◆L 4: Developm. & security ◆L 5: Devel. & environment ◆L 6: Security & environm. [six chapters reviewing & assessing the debates]

1.6. Conceptual Linkages:
old: peace & security (UN Charter)
new: security & environment & development

Main goal of UN-Charter: Art. 1.1.

- „to **maintain international peace and security**, and to that end: to take **effective collective measures for the prevention and removal of threats to the peace**, and for the suppression of acts of aggression or other breaches of the peace“.
- **Development & environment concepts and policies developed later, as did linkage concepts of environment & security or environmental security**

1.7. Security vs. Survival dilemma?

Security dilemma
<national security>

- A **security dilemma** exists "where the policy pursued by a state to achieve security proves to be an unsatisfactory one" and states were confronted "with a **choice between two equal and undesirable alternatives**".
- Collins: 5 definitions of a security dilemma
  - decrease in security of others;
  - decrease in the security of all;
  - uncertainty of intention;
  - no appropriate policies;
  - required insecurity.

Survival dilemma
<environm. & human security>

What is the *dilemma* about & what are choices for whom?

- Whose *survival* is at stake: **humankind, state, ethnic group, family, individual**?
- What is *referent* of such a "survival dilemma": international anarchy, nation state, society, own ethnic or religious group, clan, village, family or the individual?
- What are *reasons* for choice: to leave home or *fight* for survival?
- Is this **survival dilemma** socially or environmentally driven or both?

1.8. Causes: Contextual Change of Global International Order

Political context: Cold War and since 1990

Which change is crucial and long-lasting?

- **9 November 1989:** unification of Germany & **Europe:** triggered integration
- **11 September 2001:** vulnerability of US to terrorism **USA:** triggered revi-val of **Cold War mindset,** military build-up, and constraints on civil liberty: impact of laws on homeland security
- **Latin America: Third wave of democratisation, economic crisis?**

Did the contextual change of 1989 or the impact of 11 September trigger a global "reconceptualisation" of security?

Political science context: realism→constructivism

- **Kuhn:** Scientific revolutions lead to paradigm shifts
- **Ideas matter**: emergence of constructivist approaches, security is socially constructed (speech acts), constructivism shift, but no scientific revolution.
- **Threats matter:** evolution of the new worldview of the neo-conservative ideologues in the US & impact on IR.

1.9. Political contextual change Cold War and since 1990

	Cold War (1947-89)	Post Cold War (1990-)
Concept	Narrow	Wide (EU, OECD world)
		Narrow: non-OECD world Since 11.9. 2001 in USA
Dimensions	military, political	+ economic, societal,
Referent	nation state, alliance	+ global env. change
Threat (from)	Soviet(West), imperialist (East)	individual to global
Challenge	manifold: 5 dimensions	USA: WMD, terrorism
Vulnerability	weapons systems,cities, ICBMs, infrastructure	EU: wider spectrum, climate change
Risk	military, ideological	5 dimensions of sec.

1.10. Widening, Deepening and Sectorialisation of Security

Since 1990 3 changes of Security Concept in Science & Policy Practice

- **Widening:** Extended security concepts, e.g. in the German Defence White Paper (1994), from military & political dimension to econ., societal, environmental
- **Deepening:** Shift in the referent from the state (national security) to the individual (human security)
- **Sectorialisation:** many international organisations use security: energy security (IEA), health security (WHO), food security (FAO, WFP), water security (UNEP, UNU), livelihood security (OECD) etc.

1.11. Widening of Security Concepts: Towards Environmental Security

Trends in reconceptualis. of security since 1990:

- **Widening** (dimensions, sectors), **Deepening** (levels, actors)
- **Sectoriaisation** (energy,food,health), **Shrinking** (WMD, terrorists)

Dimensions & Levels of a Wide Security Concept

Security dimension⇒ ⇓ Level of interaction	Mili-tary	Politi-cal	Economic	Environ-mental ⇓	Societal
Human individual ⇒			Food/heal th& water sec.	Cause & Victim	Food/heal th & water sec.
Societal/Community				⇓⇑	
National	In Cold War, US since 2001: Shrinking		Energy security	⇓⇑	
Internat./Regional				⇓⇑	
Global/Planetary ⇒				GEC	

1.12. Environmental & Human Security

Expanded Concepts of Security (Møller, Oswald)

Label	Reference object	Value at risk	Source(s) of threat
National security	The State	Territ. integrity	State,substate actors
Societal security	Societal groups	Nation. identity	Nations, migrants
Human security	Indiv., humankind	Survival	Nature, state, global.
Environmental sec.	Ecosystem	Sustainability	Humankind
Gender security	Gender relations, indigenous people, minorities	Equality, identity, solidarity	Patriarchy, totalitarian institutions (governm., churches,elites) intoler.

Human security: **Referent: individuals and humankind**. [**Human Security Network**]

- **Values at risk: survival of human beings and their quality of life.**
- **Major source of threat: nature (global environmental change), globalisation, nation state with its ability to cope with this dual challenge.**

Environmental Security: Referent: Ecosystem; Value at risk is sustainability.

- **Major challenges**: **global environmental change & humankind,**
- **Focus**: **Interactions between ecosystem & humankind**, impact of **global environmental change** on **environmental degradation**, of **increasing demand** on **environmental scarcity** & **environmental stress**. [**No Environment Security Network of States, & IGOs & NGOs**]

1.13. Four Security Dangers: Threats, Challenges, Vulnerabilities & Risks

- 4 Buzzwords with many distinct meanings:
- Threats: 'hard sec.': military, political, econ,, 'soft sec.': societal, environmental, (human);
- Challenges: all five dimensions of security;
- Vulnerabilities: all five dimensions: security, GEC, climate change, hazard community;
- Risks: multiple applications: 5 dimensions: GEC, climate change, hazard community (sociology: risk society; political science, IR: risk politics; econ., psychology, geosciences)

1.14. Environmental Security Dangers: Cause and Victim of Securitisation

- Security is achieved if there is an absence of objective threats and subjective fears to basic values.
- Ecosystem was introduced as reference object of '*environmental security*'. Its values at risk are sustainability & the sources of dangers are humankind & global environmental change .
- Environment is considered as cause & object of threats, challenges, vulnerabilities and risks posed by GEC, environmental pollution & natural hazards.
- While most securitisation efforts have focused on the 'state' or on the 'society' as major referent objects, Westing (1989) introduced the environment into a 'comprehensive human security' concept that requires both *protection* (quality of envi-ronment) and *utilisation* requirement (human welfare).
- Renewable natural resources must be used in sustainable way.

1.15. Changing Referents of Security:
National or State Security vs. Human Security

- In World War II, "national security" emerged in U.S. "to explain America's relation-ship to the rest of the world".
- "National security" a guiding principle for U.S. policy.
- During Cold War: concepts of internal, national, allian-ce & international security were used for a bipolar international order where deterrence played a key role to prevent a nuclear war.
- "National" and "alliance security" focused on military and political threats posed by the rival system.
- National security legitimated the allocation of major resources and constraints on civil liberties.
- Human security is a new concept that has been used since by social scientists and international organis.(UNDP 1994):
  - Man scientific definitions
  - Four pillars:
  - Different policy goals

2. The Environmental Security Dimension:
Global Environmental Change Research Programs

- During Cold War **ecology was no security concern**.
- **Global (environmental) change** (GEC): changes in nature & society that affected humankind & will affect human beings who are both a cause of this change and often also a victim.
- Those who caused it & are most vulnerable are not identical
- **GEC** affects & combines the **ecosphere & anthroposphere**.
- Human dimension of GEC covers contribution & adaptation of societies to these changes. These processes pose questions for social, cultural, economic, ethical, & spiritual is-sues, for saving, but also **our responsibility for environment**.
- **Ecosphere**: atmosphere (climate syst.), hydrosph. (water), lithosph. (earth crust, fossil fuels), pedosph. (soil), biosph.
- **Anthroposphere:** populations, social organis., knowledge, culture, economy & transport & other human-rel. systems.

2.1. Global Environmental Change (GEC): Environment & Security Linkages

GEC poses a threat, challenge, vulnerabilities and risks for human security and survival.

2.2. Global Environmental Change: Concepts & Research Programmes

- Since 1970s, 1980s GEC focused on human-induced perturbations in environment encompassing many globally significant issues on natural & human-induced changes in environment, & socio-econ. drivers
  - IGBP or International Geosphere-Biosphere Programme;
  - IHDP or International Human Dimensions Programme;
  - World Climate Research Program (WCRP), DIVERSITAS
- IHDP: contribution & adaptation of societies to changes, social, cult., econ., ethical, spiritual issues, our role & responsibility for the environ.
- GEC deals with changes in nature & society that affect humankind as a whole and human beings both a cause and victim, however those who have caused it and are most vulnerable to are often not identical.
- GEC affects & combines ecosphere & anthroposphere.

  Ecosphere: *atmosphere* (climate system), *hydrosphere* (water), *litho-sphere* (earth crust, fossil fuels), *pedosphere* (soil), *biosphere* (life). *Anthroposphere*: populations, social organisations, knowledge, culture, economy & transport

2.3. Impact of Human Action on Environment

- Steffen (IGBP 2004) argued a **global perspective on inter-actions betw. GEC and human societies** has evolved.
- Awareness of two aspects of Earth System functioning:
  - "that the **Earth** is a single system within which the biosphere is an active, essential component;
  - that **human activities** are now so pervasive and profound in their consequences that they affect the Earth at a global scale in complex, interactive and apparently accelerating ways".
- They argued "that **humans** have the capacity to alter the Earth System in ways that threaten the very processes and components, both biotic and abiotic, upon which the human species depends".
- In the **social sciences**, the analysis of global environmental change and human-nature relationship is polarised between:
  - epistemological idealism and realism (Glaeser 2002), or
  - between *social constructivism* and *neo-realism*.
  - The *neo-idealist orientation* has highlighted two aspects:
    a) **uncertainty of scientific knowledge and claims**; and
    b) **attempt to explain the scientific and public recognition of environm. change influenced by political and historical forces**.
- **Three opposite standpoints** exist on environmental issues:
  - **a) Neo-Malthusian, b) Cornucopian, and c) pragmatist**

3. Four Pillars of Human Security

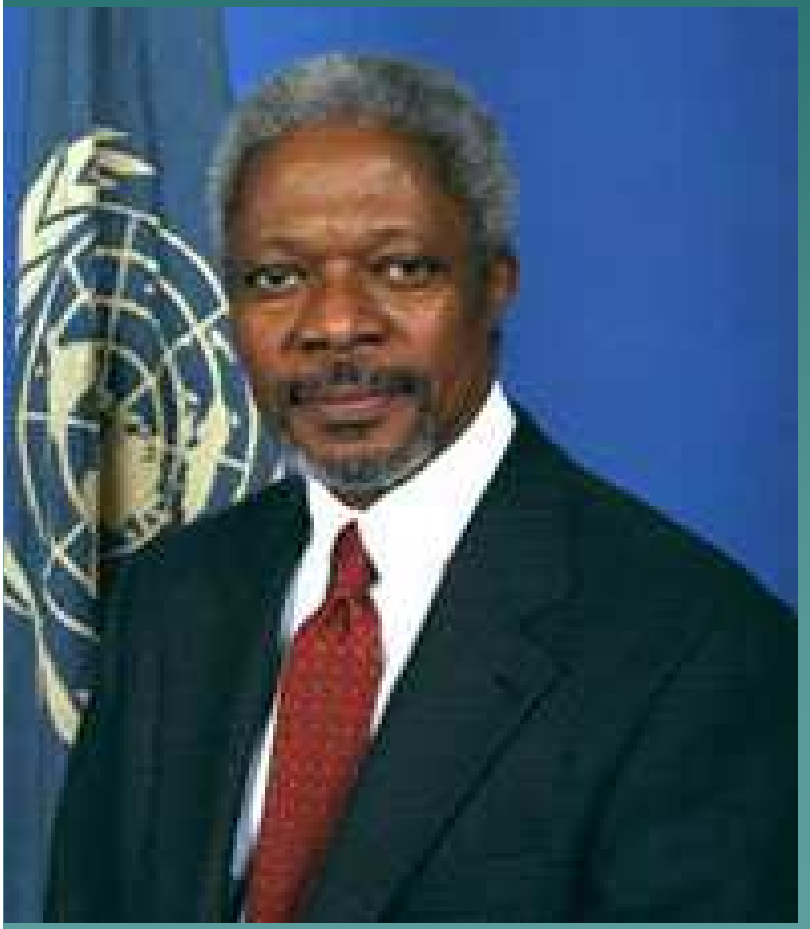
- **"Freedom from fear"** by reducing the probability that hazards may pose a survival dilemma for most affected people of extreme weather events (UNESCO, HSN), **Canadian approach:** Human Security Report
- **"Freedom from want"** by reducing societal vulnerability through poverty eradication programmes (UNDP 1994; CHS 2003: Ogata/Sen: Human Security Now), **Japanese approach;**
- **"Freedom to live in dignity"** (**Kofi Annan** in his report: *In Larger Freedom* (March 2005)
- **"Freedom from hazard impact"** by reducing vulnerability & enhancing coping capabilities of societies confronted with natural & human-induced hazards (Bogardi/Brauch 2005; Brauch 2005a, 2005b).

3.1. First Pillar of HS: "Freedom From Fear"

- **Primary Focus of the Human Security Network**
- **Requirements and objects:**
  - **Rule of Law:** ICC, International Court of Justice and national, regional and local judicial courts and mechanisms
  - **Universal Humanitarian Standards**: initiatives in international, humanitarian and human rights law, human development, human rights education,
  - **Good Governance**: capacity building of not only national, but regional and local governments or leadership authorities; fostering democracy; respect for minorities
  - **Conflict Prevention/ Post-Conflict Reconstruction**: land mines, child soldiers, protection of civilian population in armed conflict, small arms and light weapons, trans-national organized crime (Ottawa Convention on Anti-personnel Landmines)
  - **Strong International Institutions**

3.2. "Freedom From Want":
Human Security Commission: Human Security Now

- **Broad:** wider agenda, conceptually more convoluted
- **Goal:** reducing individual/societal vulnerabilities in the economic, health, environment, political, community, and food sphere. Create conditions that can lead to empowerment for individuals,
- **Japanese FM**: HS "comprehensively covers all menaces that threaten human survival, daily life, and dignity…and strengthens efforts to confront these threats."
- **Threats**:
  - diseases, poverty, financial crises, hunger, unemployment, crime,
  - social conflict, political repression,
  - land degradation, deforestation, emission of GHGs, environm. hazards,
  - population growth, migration, terrorism, drug production & trafficking.



3.3. "Freedom to Live in Dignity"

- **Kofi Annan** – need for a human centered approach to security "human security can no longer be understood in purely military terms.
- It must encompass economic development, social justice, environmental protection, democratisation, disarmament, and respect for human rights and the rule of law."
- "Embraces far more than the absence of violent conflict"

3.4. “Freedom From Hazard Impacts”

- **UNU-EHS**: Bogardi/Brauch (2005), Brauch (2005)
- **Goal:** reduce vulnerabilities & enhance capacity building & coping capabilities of societies faced with natural hazards
- **Threats/Hazards:**
  - **Environmental:** floods, droughts, and other natural disasters, environmental degradation, lack of water or clean water, human-induced climate change, exhaustion of fish resources, depletion of finite resources (e.g. oil, gas)
  - **Societal:** poverty, improper housing, insufficient food and water, malfunctioning of technical systems, traffic accidents, population explosions, terrorism and organized crime
- **Develop vulnerability indicators and vulnerability mapping** to apply to operational realm by working on solutions
  - **improved early warning systems & capacity-building for early warning**
  - **disaster preparedness** (education and training, infrastructure)
  - coordinated rapid **disaster response** by local, regional and national level
  - developing clear guidelines for **post hazard reconstruction**
  - **long term strategies:** e.g. Kyoto, Montreal Protocol
  - **adaptation measures:** e.g. dams, switching to renewable energy
  - **mitigation measures:** restrict housing in hazard areas (coastal areas-flooding, mud slides), charging more for garbage disposal and energy usage, birth control measures

4. Human Security Network Members & Goals

NATO (4)	EU (6)	Third World (6)
Canada		Chile
Greece	Austria	Costa Rica
Nether-lands	Ireland	Jordan
	Slovenia	Mali
Norway	Switzer-land	Thailand (chair)
		South Africa (observer)

Anti-pers. Landmines, Intern. Criminal Court, protection of children in armed conflict, control of small arms & light weapons, fight against transnat organized crime, human development, human rights educat., HIV/AIDS, implement. of intern. humanitarian & human rights law, conflict prevention

So far no environmental security issues on the agenda of this HS-Network.

The Network has an interregional & multiple agenda perspective, strong links to civil society & academia.

The Network emerged from landmines campaign at a Ministerial, Norway,1999.

Conferences at Foreign Ministers level in Bergen, Norway (1999), in Lucerne, Switzerland (2000), Petra, Jordan (2001) Santiago de Chile (2002), Graz (2003), Bamako, Mali (May 2004), Ottawa (2005)

The Vision of the Human Security Network

- A humane world where people can live in security and dignity, free from poverty and despair, is still a dream for many and should be enjoyed by all. In such a world, every individual would be guaranteed freedom from fear & freedom from want, with an equal opportunity to fully develop their human potential. Building human security is essential to achieving this goal.
- In essence, human security means freedom from pervasive threats to people's rights, their safety or even their lives.
- Human security has become both a new measure of global security and a new agenda for global action. Safety is the hallmark of freedom from fear, while well-being is the target of freedom from want. Human security and human development are thus two sides of the same coin, mutually reinforcing and leading to a conducive environment for each other.
- A Perspective on Human Security: Chairman's Summary 1st Ministerial Meeting of the Human Security Network, Lysøen, Norway, May 20 1999

http://www.humansecuritynetwork.org/menu-e.php

4.2. Second Human Security Network Medium Term Workplan 2005 – 2008

Guiding Principles

- **emerging threats to people's safety , security, well-being ;**
- **identifying concrete areas for collective action on human security;**
- **promoting greater understanding of, and support for, human security issues;**
- **advancing human security issues at the regional level, through international negotiations & conf.**

Areas of Cooperation

1) **Effective multilateral institutions**
2) **Human Rights**
3) **Protection of civilians** „armed conflict"
4) ***Small arms, light weapons, land-mines***
5) **Women, Peace and Security**
6) **HIV-AIDS**
7) **Poverty/People-centred Developm.**

- Poverty & underdevelopment are a source of insecurity. Poor people are more exposed to a whole range of **vulnerabilities,** such as exclusion, discrimination, human rights viol.
- Poor are more vulnerable to political & economic emergencies & violence; are powerless & lack necessary resources & access to critical life opportunities.
- address challenges of securing basic human needs, linked to freedom from want and freedom to live in dignity, with a attention to empowerment measures.

4.3. Concept paper of Thailand as chair of HSN: *„Human Agenda: Partnership for Human Security"*

1. GUIDING PRINCIPLES

- Continuity, Contribution, Constituency, Consistency

2. OBJECTIVES

- Effectiveness, Uniqueness, Visibility and Connectivity

3. APPROACH

- Thailand will take a holistic and balanced approach to human security that is based upon a realization of inter-linkages between freedom from fear and freedom from want as well as freedom to live in dignity.
- Thailand will avoid creating a hierarchy of issues bearing in mind different perspectives, interests and priorities of respective members. The issues will instead be grouped into 3 thematic clusters as follows:
- (1) Poverty, development and HIV/AIDS
- (2) Human Rights and Humanitarian Affairs
- (3) Emerging Issues

4. PRIORITY ISSUES FOR THAILAND

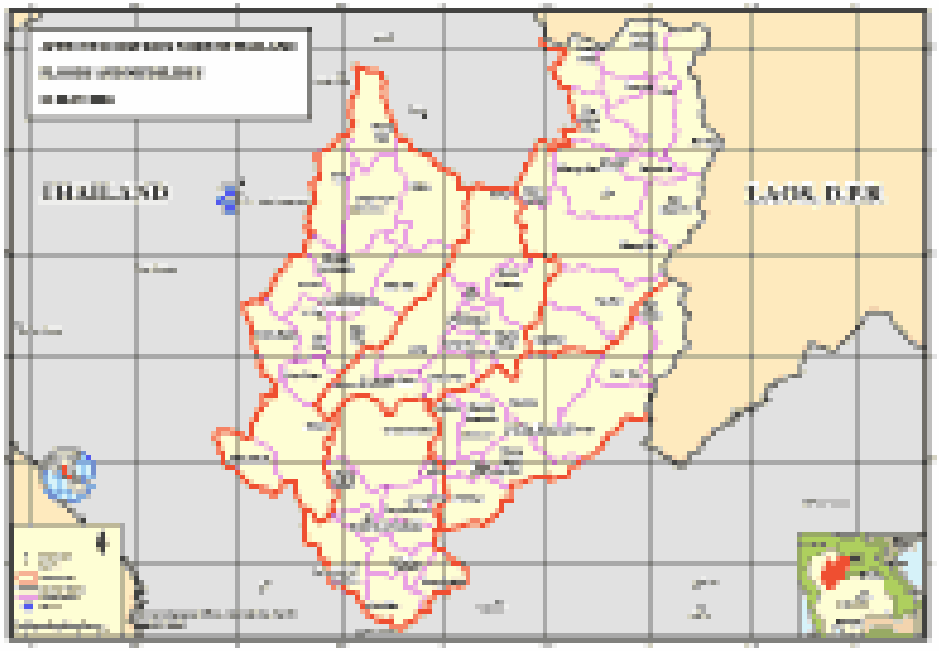
- *As lead country:* HIV/AIDS , People-centred development ., Trafficking in persons, especially women and children
- *As partner:*
- Landmines , Human Rights Education

4.4. „Freedom from Hazard Impact“:

„Emerging Issue“ for „People-centred Development“

- As the only member of the HSN, Thailand was a victim of the Tsunami of 26 December 2006
- The Tsunami was the worst natural hazard in Thailand during the past 50 years.
- 22-24 May 2006: Thailand had worst flash flood in 60 years that affected more people than the Tsunami.
- As an ASEAN Country Thailand is familiar with the complex emergency in Aceh, Sumatra.
- A new agenda item for the Human Security Network?
- Foreign Ministr of Thailand endorsed this goal at:
  - International symposium on 31 May 2006
  - 8th ministerial meeting of human security network in Bangkok on 1-2 June 2006

4.5. Flash Flood & Landslides in Thailand on 23 May 2006 as a Human Security Challenge



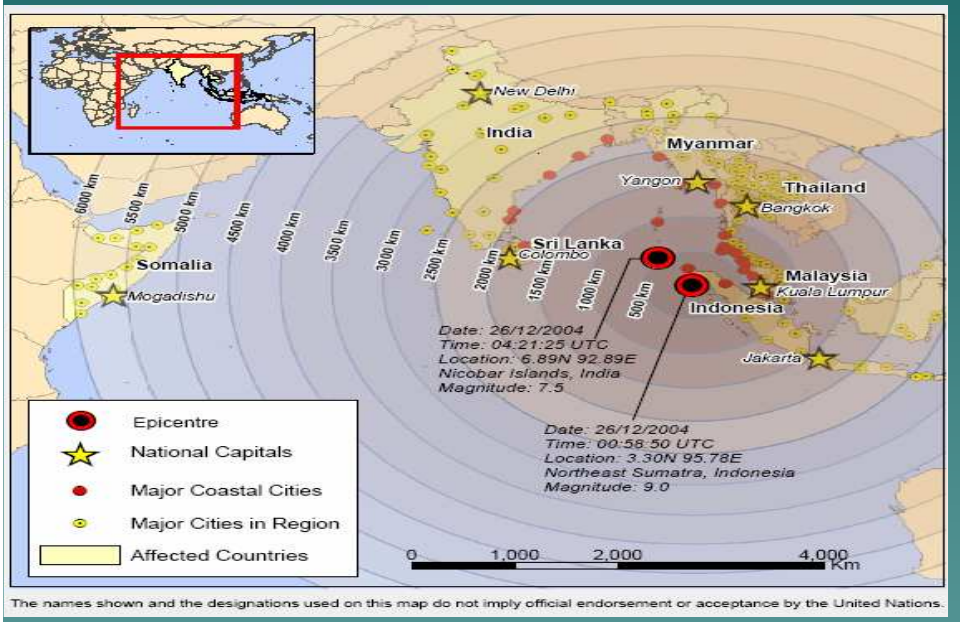
Days of rain triggered severe flash floods & landslides, which struck 23 May, damaging roads, railways and power lines. Heavy rains that started on 21 May caused rivers and reservoirs to overflow in the Northern part of Thailand. Source. OCHA, 24.5.06

Department for Disaster Prevention and Mitigation (DDPM): **357 villages** in Nan, Phrae, Lamphang, Uttaradit and Sukhothai are affected by the **flash floods since 22 May**. Water levels have receded in 3provinces (Phrae, Lampang. Nan). In Uttaradit Prov., 3 districts are still badly affected.

Losses and Casualties are :

- **70-100 persons reported dead (25.3.)**
- **75 missing**
- **70,000- 103,355 persons affected** (more than during Tsunami 26.12.2006)
- **1,240 persons evacuated**
- **80 roads & 28 bridges damaged**

4.6. Hazard Impacts of Tsunami of 26 Dec. 2004 regionally and for Thailand



HUMAN TOLL for Thailand:

- Number of fatalities: 8,212.

(2,448 non-Thais of 37 count.)

- No. of people missing: 2,817.
- No. of displaced: 6,000.

Worst natural disaster in 50-100 years.

IMPACT ON VULNERABLE POPULATIONS

- 50,000 children were affected
- estimated 1,480 children lost one or both parents.
- More women than men were killed in the tsunami.
- children more vulnerable to abuse, incl. sexual exploitation.

DAMAGES AND LOSSES

- Six southern provinces were severely impacted.
- Over 120,000 individuals in tourism sector lost their jobs.
- 30,000 individuals employed in fisheries sector lost sources of livelihood.
- 4,806 houses were affected. 3,302 were completely destroyed, and 1,504 were partially damaged.
- Ca. 5,000 boats were lost or damaged.
- 2,000 hectares of agricultural land were destroyed.
- 305 acres of mangroves, 3,600 acres of coral, and 400 seagrass beds were impacted.
- 102 large ponds, 2,321 wells, and two ground wells were contaminated.
- The loss of income in the tourist industry is estimated to be $25 million monthly.
- The Thai Hotels Association estimated that hotel occupancy fell by 20 percent in 2005.

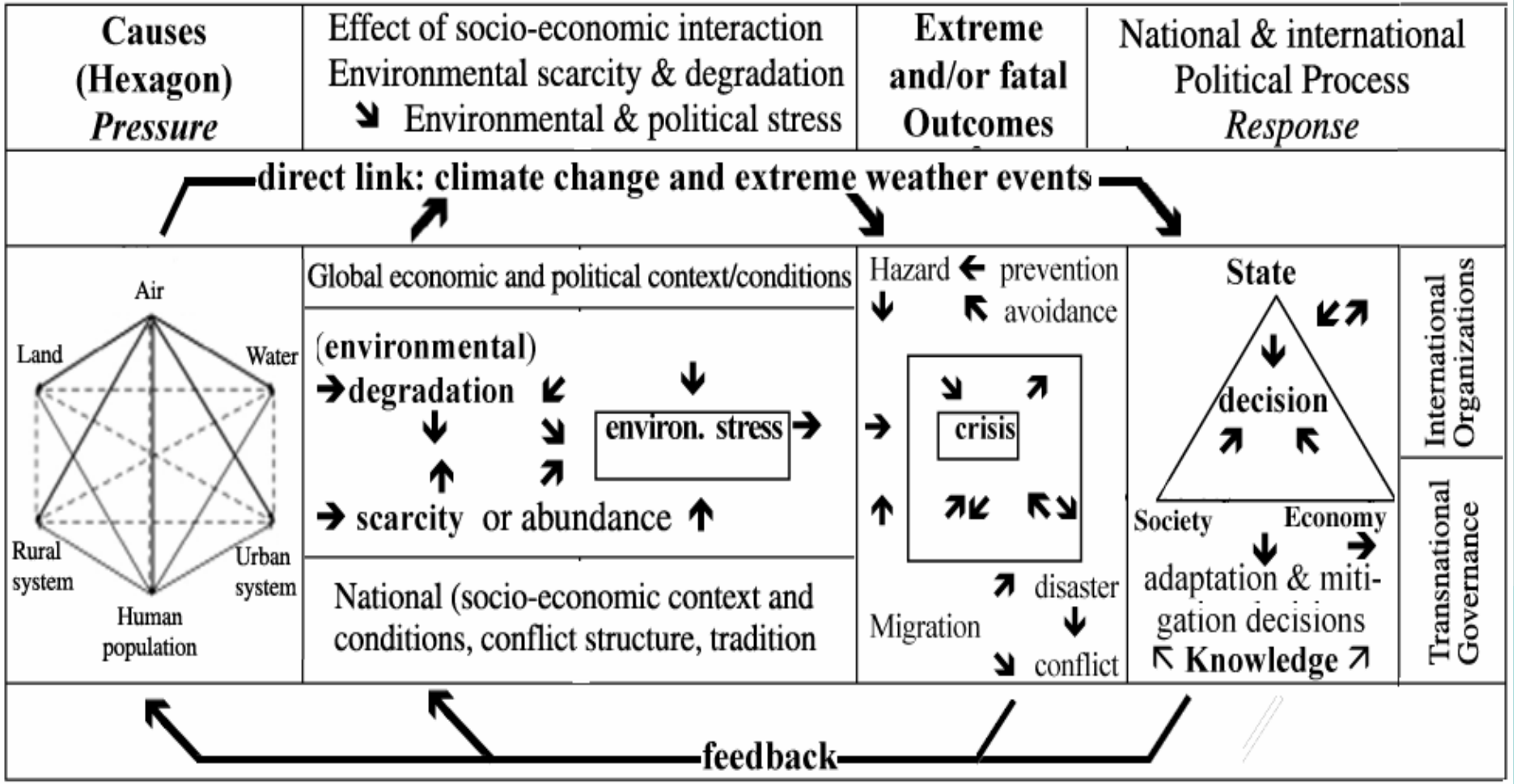
FINANCIAL IMPLICATIONS

- Losses: $1.6 billion and costs of repairing: $482 million.
- $21.4 million was requested in humanitarian assistance
- Thailand received $18 million, of which $7.5 million has been spent in Nov. 2005.
- $38.3 million is being delivered in mid- to long-term recovery programming for 2005–06.

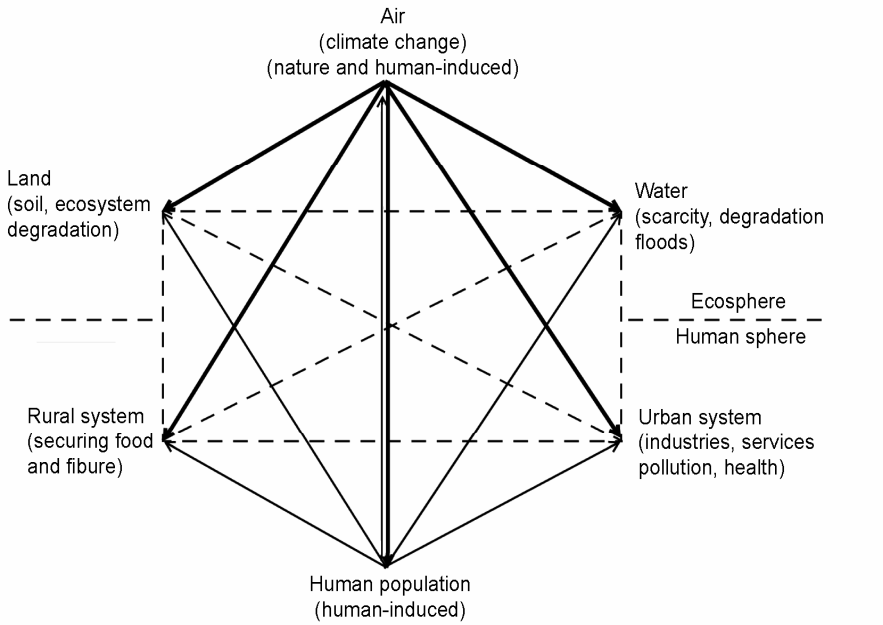
5. PEISOR Model: Global Change, Environmental Stress & Extreme Outcomes

- **The model distinguished 5 stages:**
  - **P: Pressure**: **Causes** of GEC : Survival hexagon
  - **E: Effect:** environm. scarcity, degradation & stress
  - **I: Impact**: Extreme or fatal outcome: hazards
  - **S: Societal Outcomes**: disaster, migration, crisis, conflict, state failure etc.
  - **R: Response** by the state, society, the economic sector and by using traditional and modern knowledge to enhance coping capacity and resilience

5.1. PEISOR Model: Global Change, Environmental Stress & Extreme Outcomes



5.2. Cause: Pressure of Global Environmental Change: Six Determinants: Survival Hexagon



Ecosphere:

- Air: Climate Change
- Soil: Degradation, Desertification
- Water: degradat./scarcity

Anthroposphere:

- Population growth/decline
- Rural system: agriculture
- Urban system: pollution etc.

Mode of Interaction

- Linear, Nonlinear
- Exponential
- Chaotic, abrupt

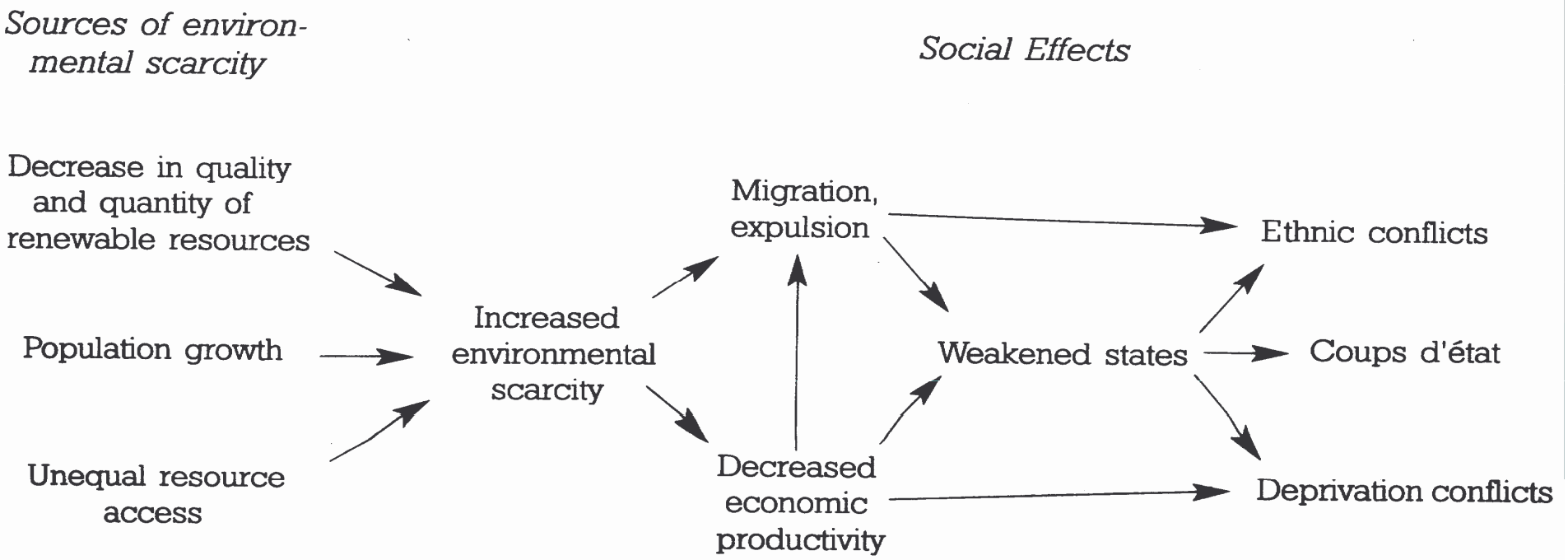
5.3. Effect: Environmental Scarcity, Degradation & Stress

Four Phases of Env. Sec, Research since 1983

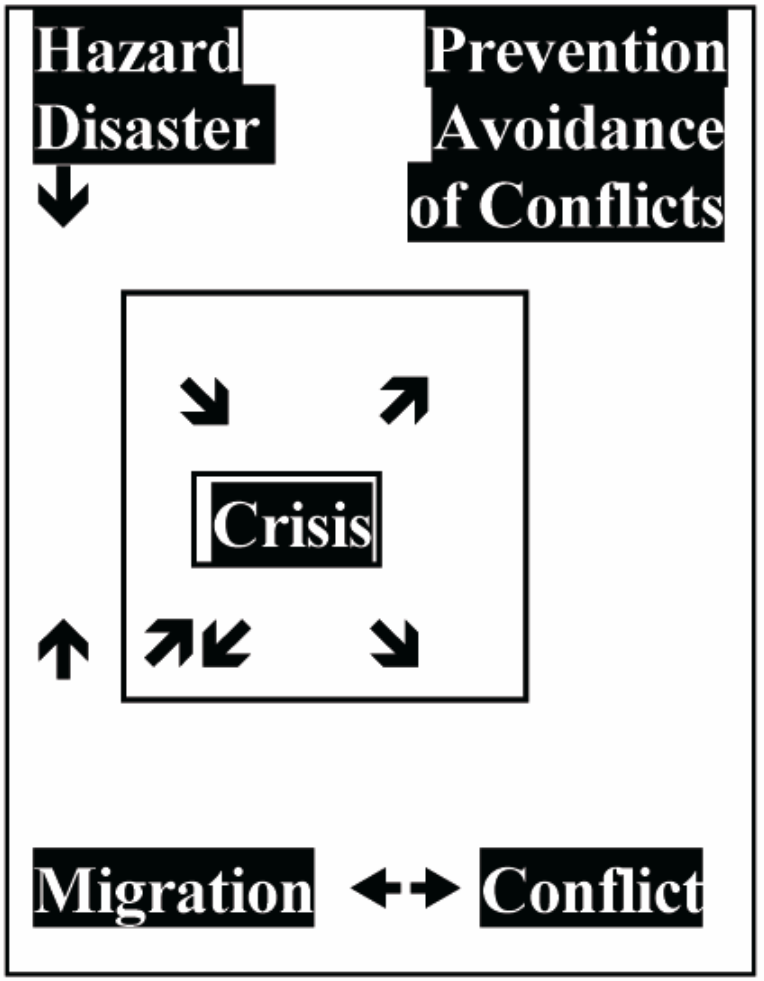
First Phase: Conceptual Phase: Concept Environmental Security
Second Phase: Empirical Phase: Case studies: Scarcity - Conflict

- Toronto: Homer-Dixon: since 1991: 3 Projects (figure © Homer-Dixon 1998)
- Zürich/Bern: Günther Bächler, K. Spillmann: environm. scarcity & degradation

Third Phase: Manifold Research without Integration (1995 - pres.)
Fouth Phase: Focus: interaction of environmental scarcity, degradation & stress



5.4. Global, Regional, National Impacts: Human-Induced Natural Hazards Drought, Famine and Societal Consequences



Much knowledge on these factors:

- ✓ Drought, migration, crises, conflicts

Lack of knowledge on linkages among fatal outcomes

- ➢ Drought & drought-ind. migration
- ➢ Famine & environm.-ind. migration
- ➢ Conflicts & conflict-induced migration

Lack of knowledge on societal consequences: crises/conflicts

- ➢ Domestic/international crises/conflicts
- ➢ Environmentally or war-induced migration as a cause or consequence of crises and conflicts

5.5. Societal Outcomes: Knowledge on Linkages of Outcomes

- **What are consequences of climate change, desertification and water scarcity for:**
  - Environmental scarcity
  - Envivironmental degradation
  - Environmental stress?
- **What are indirect Societal Outcomes of:**
  - Human-induced hydro-meteorological natural hazards (Storms, floods, landslides, drought) due to natural variability & increase due to climate change?
  - For migration, societal crises and domestic and international conflicts?

5.6. Policy Response: Reducing Social Vulnerability & Building Resilience

- **To environmental scarcity, degradation & stress:**
  - **Proactive climate policy:** reduce greenhouse gases by shifting to nonfossil energy resources, especially renewables
  - **Combat desertification and soil erosion**:
  - **Cope with water scarcity & degradation** by demand-side mana-gement and alternative supply (desalination with renewables)
  - **Cope with population growth, rural emigation and urbanisation**
- **To extreme outcomes of GEC, hydro-meteorological hazards & severe societal consequences:**
  - **Reducing the hazard impact by enhanced early warning against multiple hazards and reducing social vulnerability by improved resilience**
  - **Improved policy of conflict resolution, prevention and adaptation and mitigation against challenges of GEC that may lead to conflicts (anticipatory learning & conflict avoidance)**

6. Climate Change Impacts: Flash floods, drought & food security

- Climate change as one of six factors of global environmental change
- poses manifold security threats, challenges, vulnerabilities and risks for
  - international, national, regional & human sec.
  - economic, societal and human security
  - food, water and health security
- Policy responses require:
  - Knowledge (research): task of universities
  - Awareness (education): task of universities
  - Proacive & reactive Action (by policy makers)

6.1. Global Climate Change: Temperature Increases & Sea Level Rise

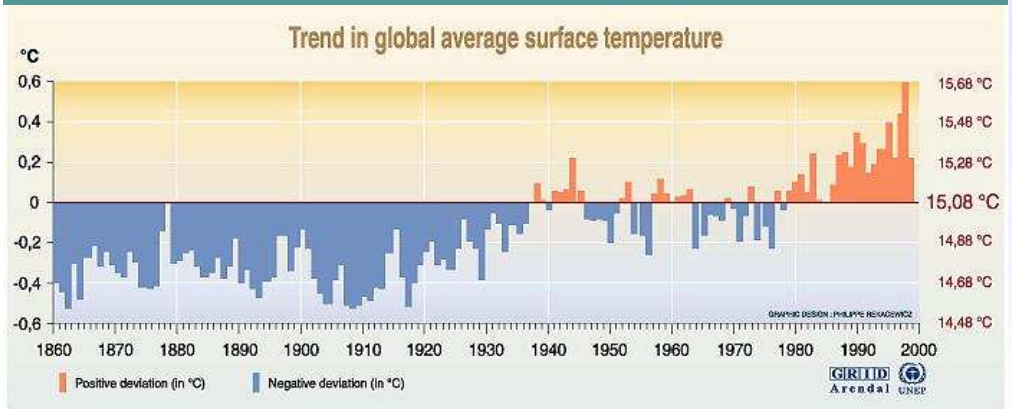
2 Climate Change Impacts: Temperature & Sea level Rise

- Global average temperature rise in 20th century: + 0.6°C
- Proj. temperature rise: 1990-2100: +1.4 – 5. 8°C

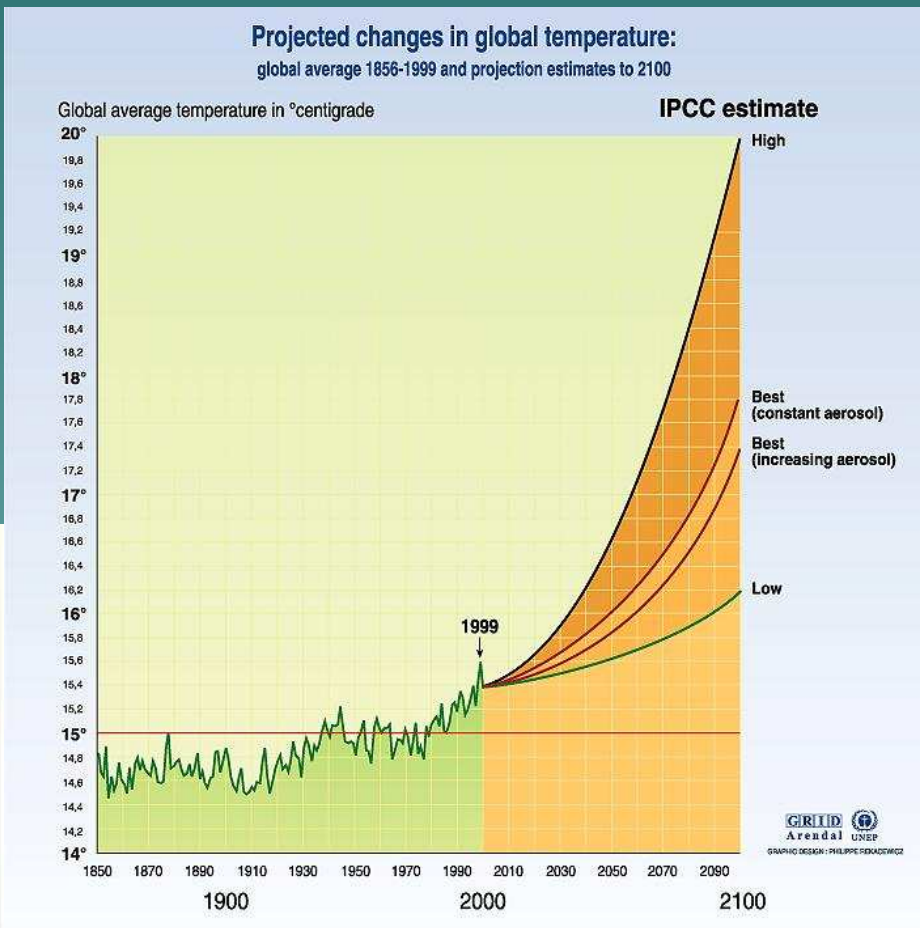
Sources: IPCC 1990, 1995, 2001

Sea level Rise:

- 20th cent.: +0,1-0,2 m
- 21st century: 9-88 cm



Source: School of environmental sciences, climatic research unit, university of East Anglia, Norwich, United Kingdom, 1999.

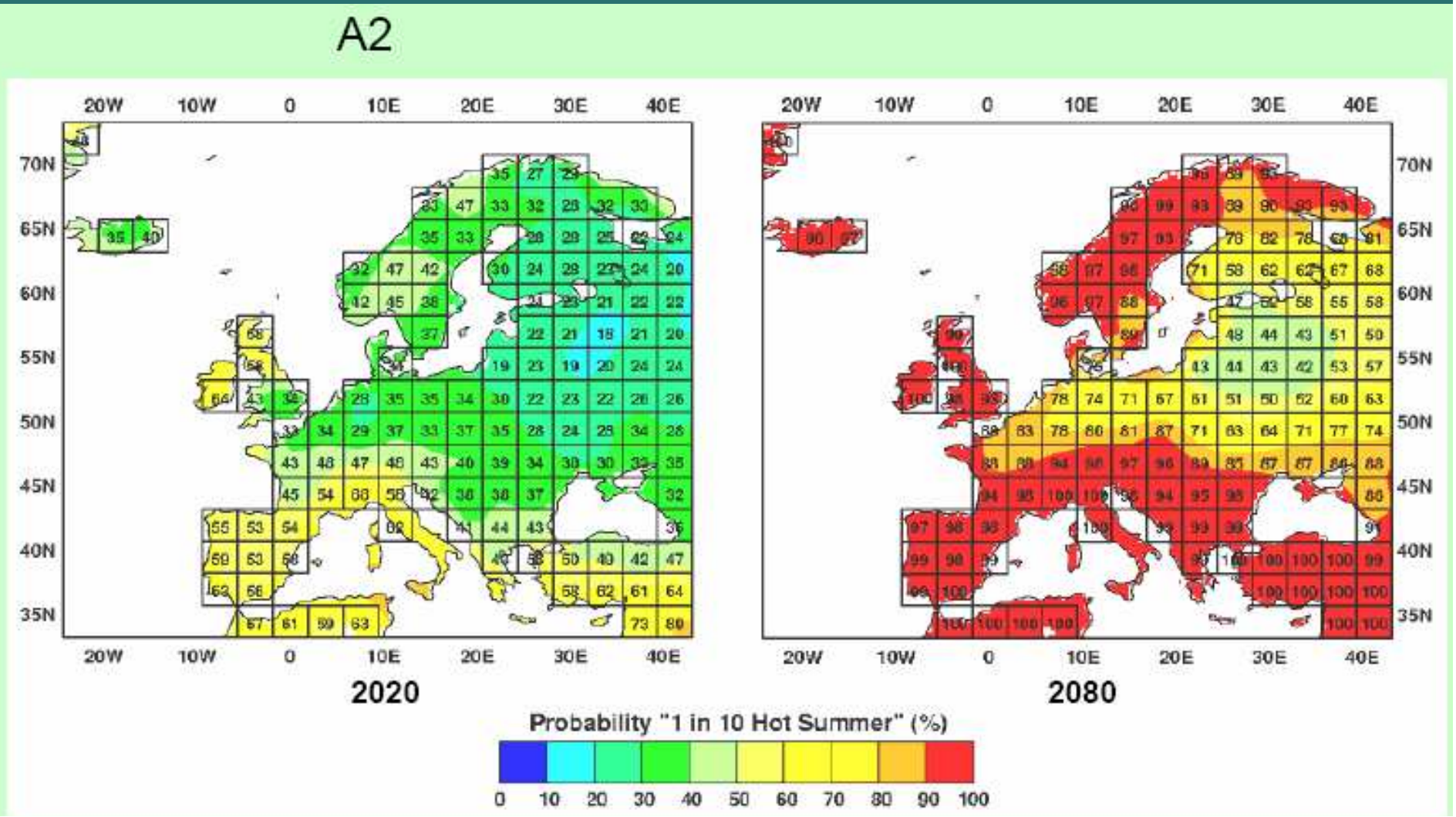


Source : Temperatures 1856 - 1999: Climatic Research Unit, University at East Anglia, Norwich UK. Projections: IPCC report 95.

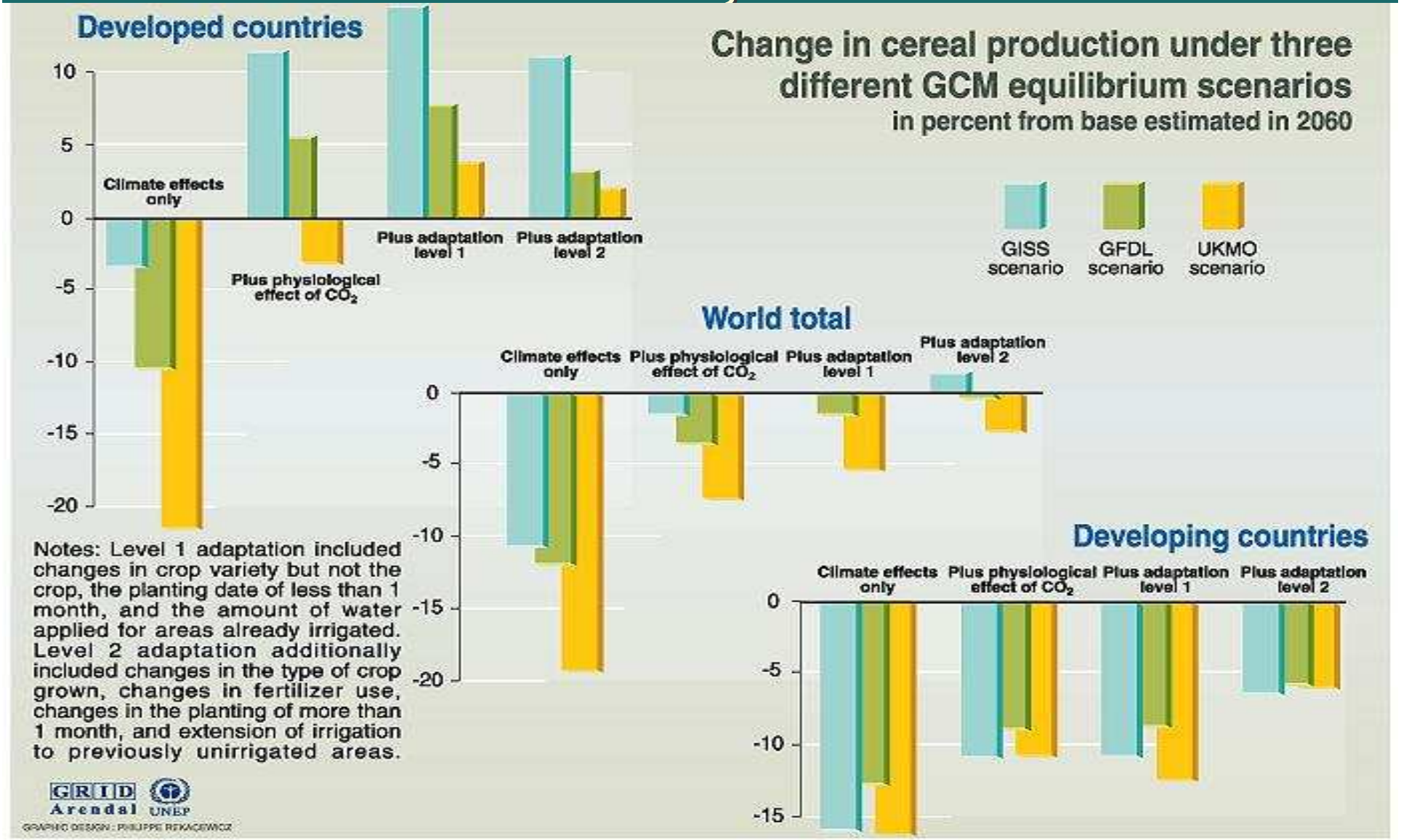
6.2. Climate Change Poses Environmental 'Threats', 'Challenges', 'Vulnerabilities' and 'Risks' for National and Human Security

Environmental causes, stressors, effects &natural hazards pose	Natural and economic factors		Societal impact factors (exposure)	
	Substantial threats for	Challenges affecting	Vulnerabilities for	Risks for
	Security objects (for what or whom?)			
Climate change - temperature increase (creeping, long-term)	- Human health - agriculture (yield decline) - biodiversity - desertification	- tourism - food security - fisheries - government action - econ. action	- infect. disease - damage to crops - natural systems - water scarcity - forest fire	- human populations - the poor, old people and children due to heat waves
Climate change - sea level rise (creeping, long-term)	- Small island states - marine eco-system, - indigenous communities, - industry, energy	- deltas - coastal zones - marine, freshwater ecosystems	- coastal cities, habitats, infrastructure, jobs - cities, homes, jobs	- livelihood - poor people, - insurance, - financial services

6.3. Change in Probability of Hot Summers, 2020 and 2080. Source: M. Parry, Meeting of EU Agriculture & Environment Ministers, 11.9.2005, London



6.4. Climate Change Impacts on Agriculture
Source: © UNEP; GRID Arendal



Source: Climate change 1995, Impacts, adaptations and mitigation of climate change: scientific-technical analyses, contribution of working group 2 to the second assessment report of the intergovernmental panel on climate change, UNEP and WMO, Cambridge press university, 1996.

Figure 4. High Potential for Food Crisis 1901-1995.

←High Potential for Food Crisis (1901-1995)

© Alcamo/Endejan 2002: 143

6.5. Food Crises

High Potential for Food Crisis (2001-2050) with GDP and Climate Change →

© Alcamo/Endejan 2002-143

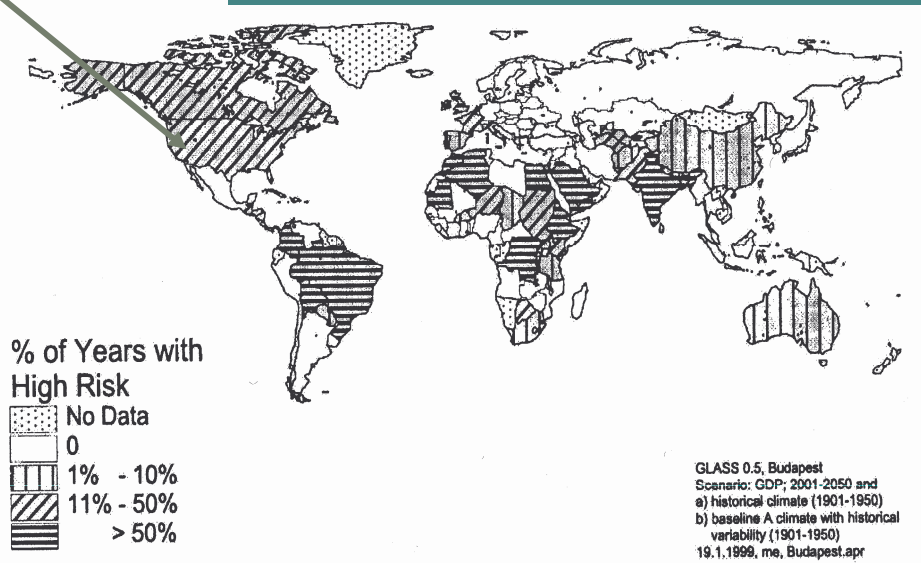
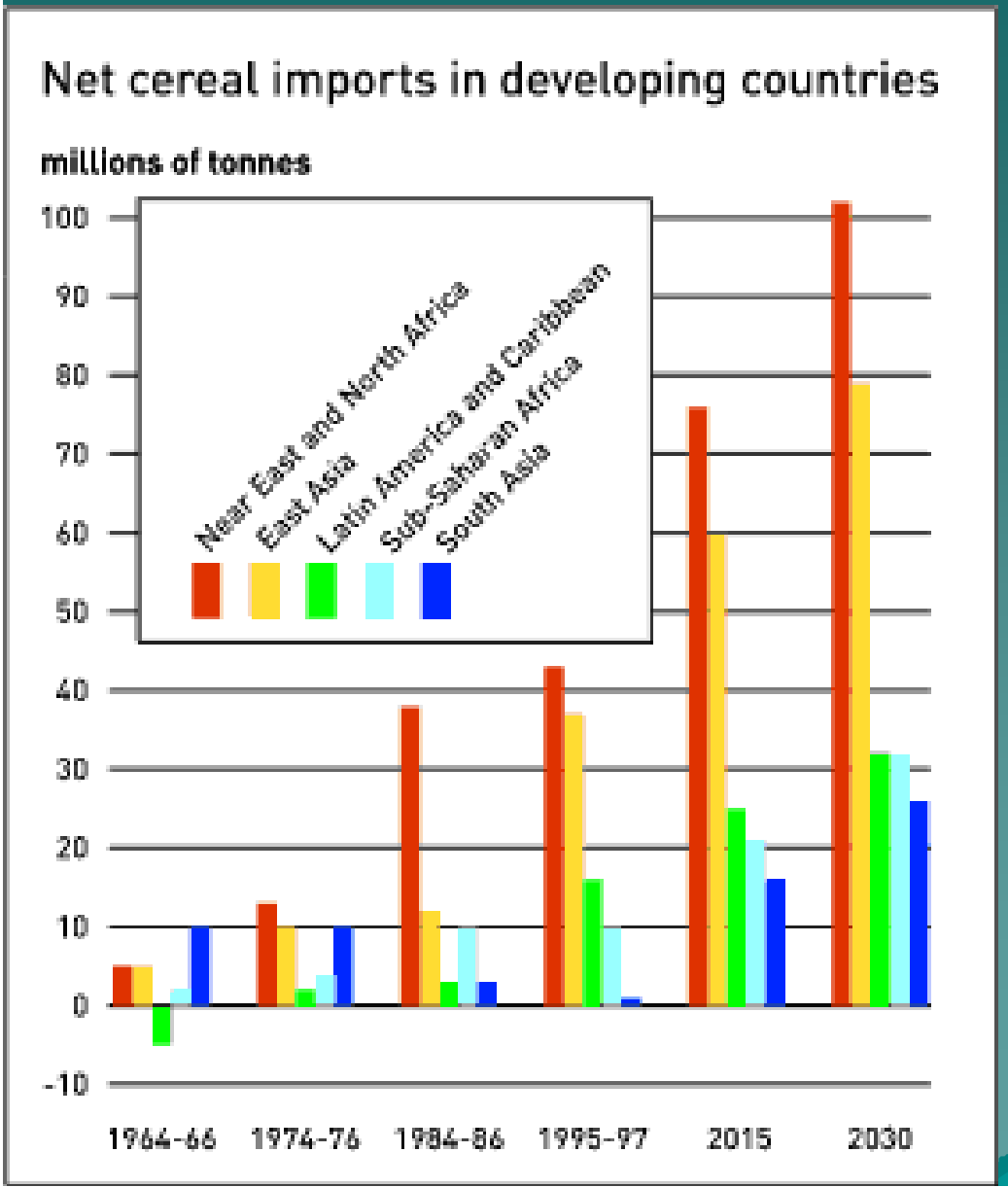


Figure 6. High Potential for Food Crisis 2001-2050 – with GDP Increase and Climate Change.

6.6. FAO (2000) Increase in Cereal Imports



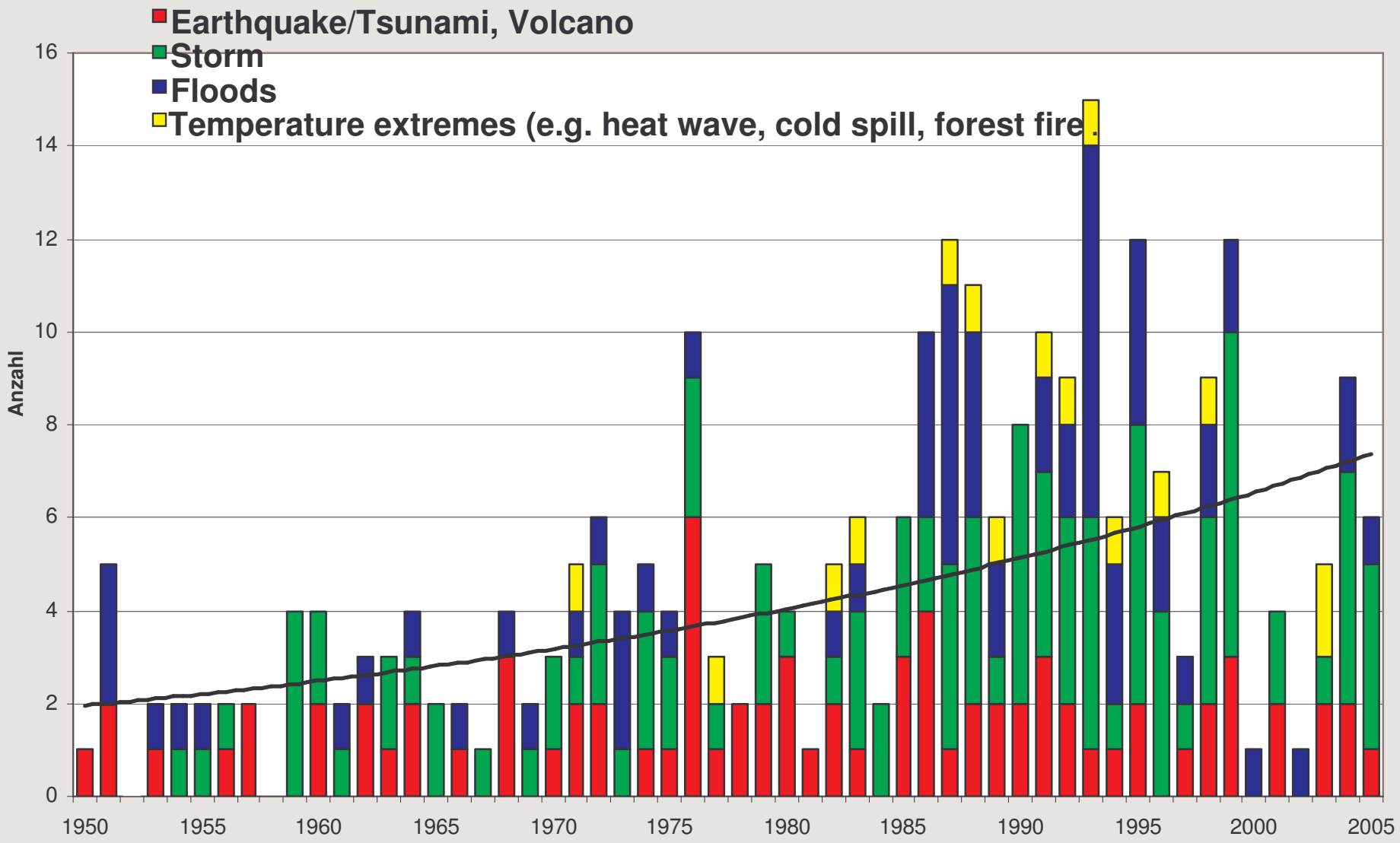
- **FAO: 4 March 2003, Rome** World's population will be better fed by 2030, **but hundreds of millions of people in develo-ping countries will remain chronically hungry.**
- Number of hungry people will decline from 800 million today to 440 million in 2030.
- **The target of the World Food Summit (1996) to reduce the number of hungry by half by 2015, will not be met by 2030.**

7. Natural & Human-induced Hazard: Global Trends and Impact on Thailand

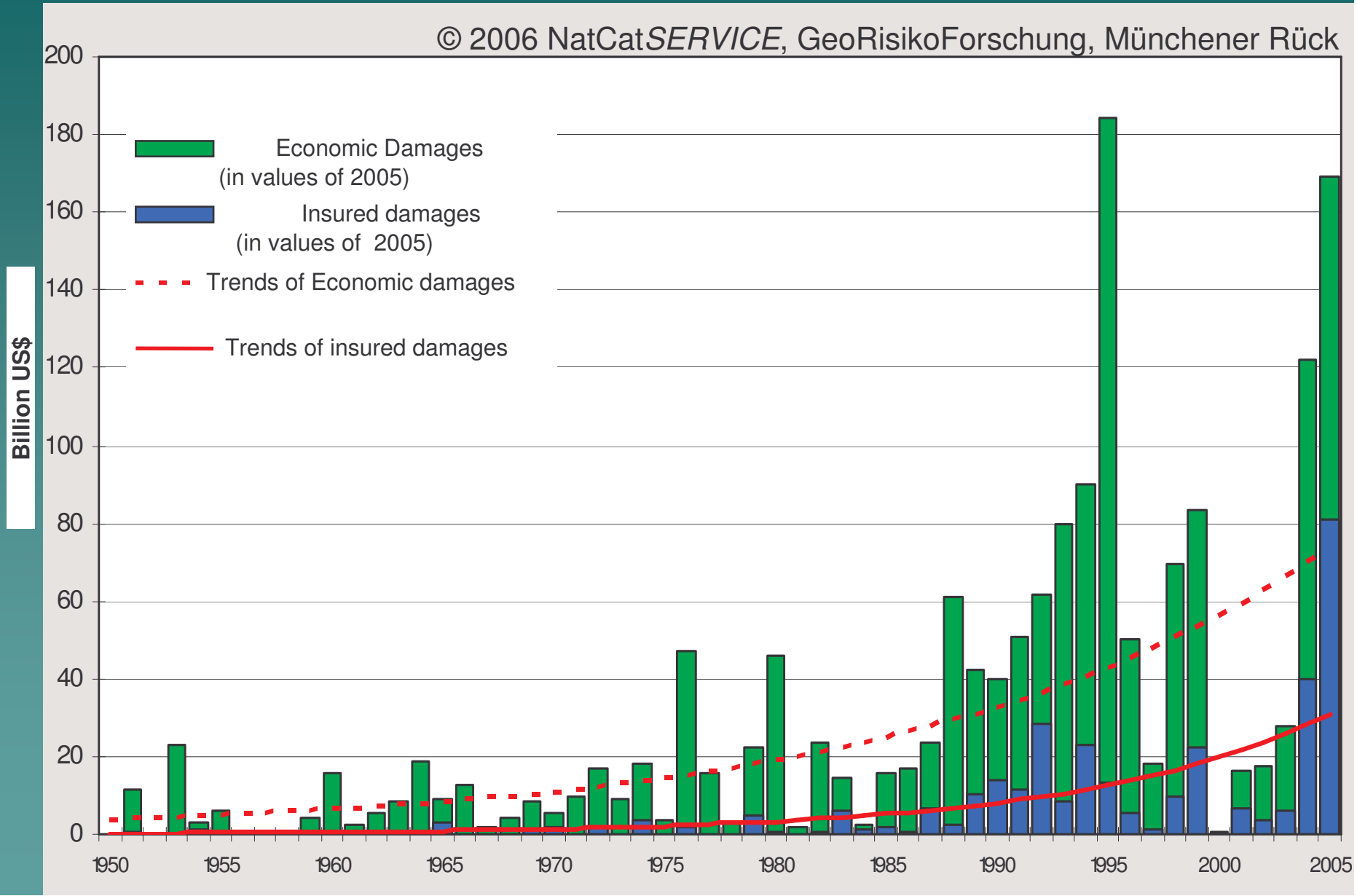
- What has been the impact of natural hazards globally (1950-2005, 1975-2004)?
- How many people where killed & affected by these events?
- What have been the economic damages and for whom?
- How relevant have weather-related hazards been for Thailand?
- Do climate change (cause) and hazards (extreme outcomes of GEC) pose national and human security dangers?

7.1. Global Impacts: Major Natural Disasters 1950 – 2005. Source: MunichRe, 2006

© 2006 NatCat*SERVICE*, GeoRisikoForschung, Münchener Rück

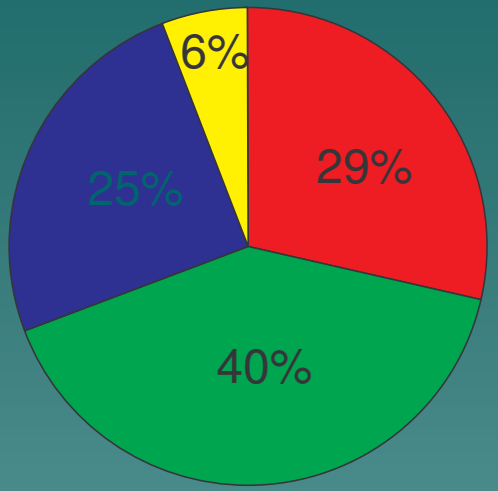


7.2. Major Natural Hazards (1950-2005), Economic and Insured Losses



7.3. Major Natural Hazards (1950-2005). Source: Munich Re Research Div., 2006

267 Events



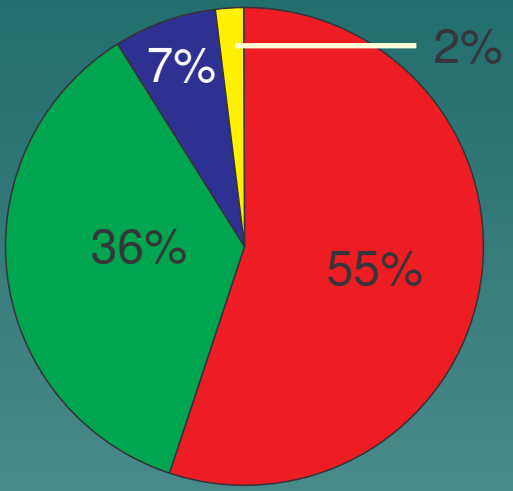
Geological events

- Earthquake/Tsunami, Volcano

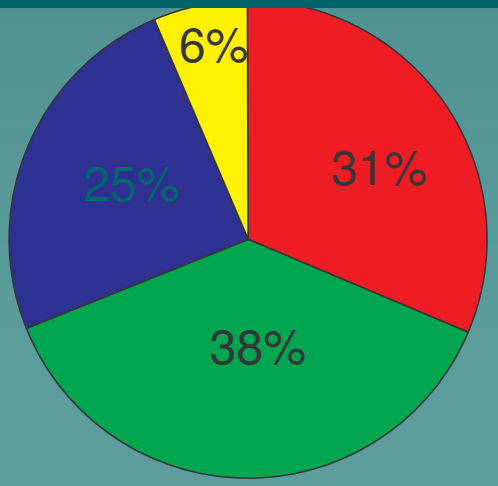
Weather-related events

- Storm
- Floods
- Extreme temperatures

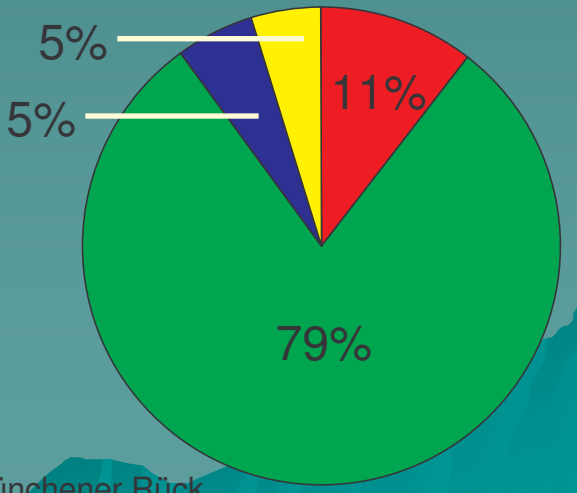
1,75 Million Dead



Economic damage: 1.400 billion US$



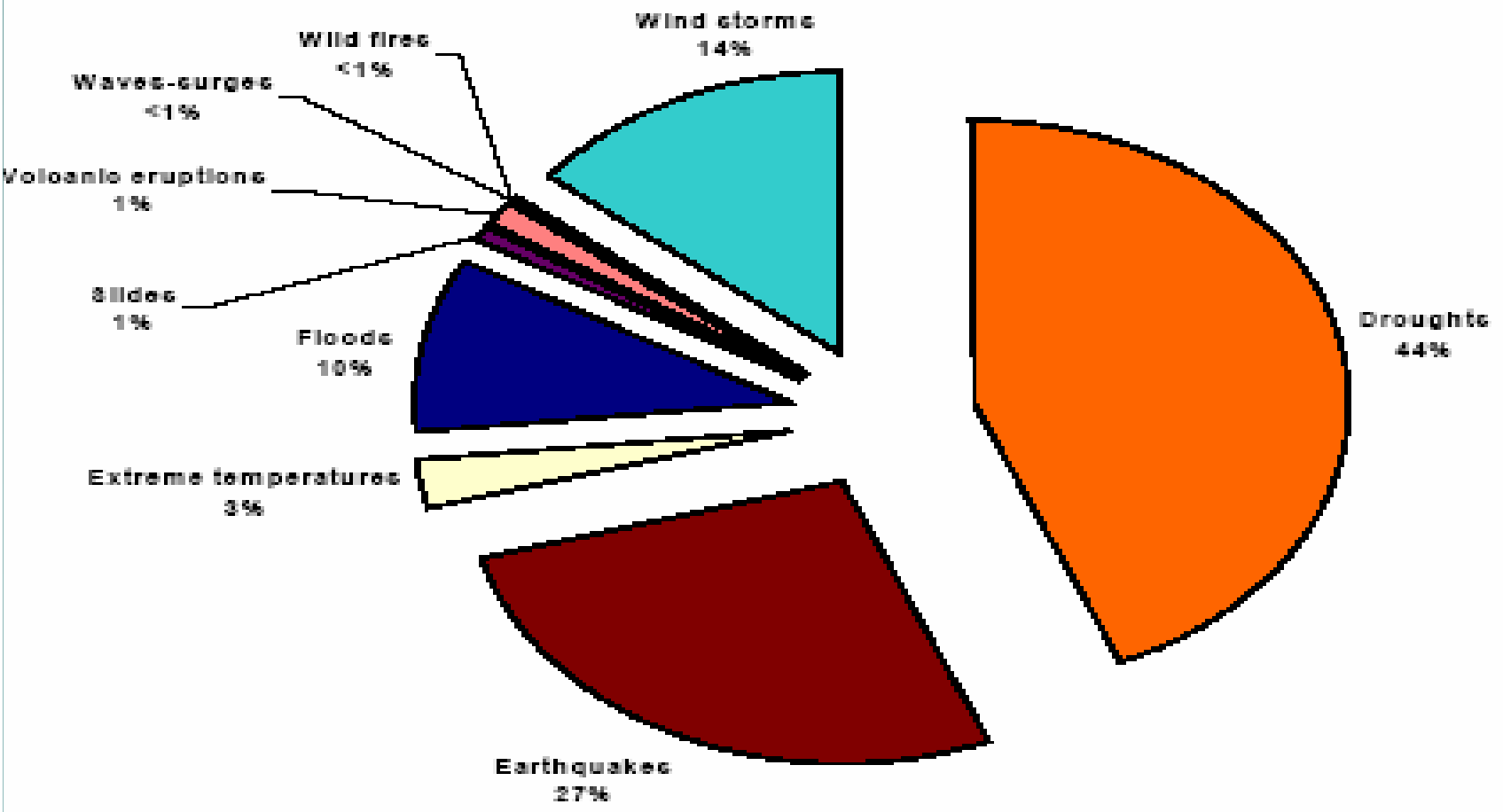
Insured damage: 340 billion US$



*in Werten von 2005

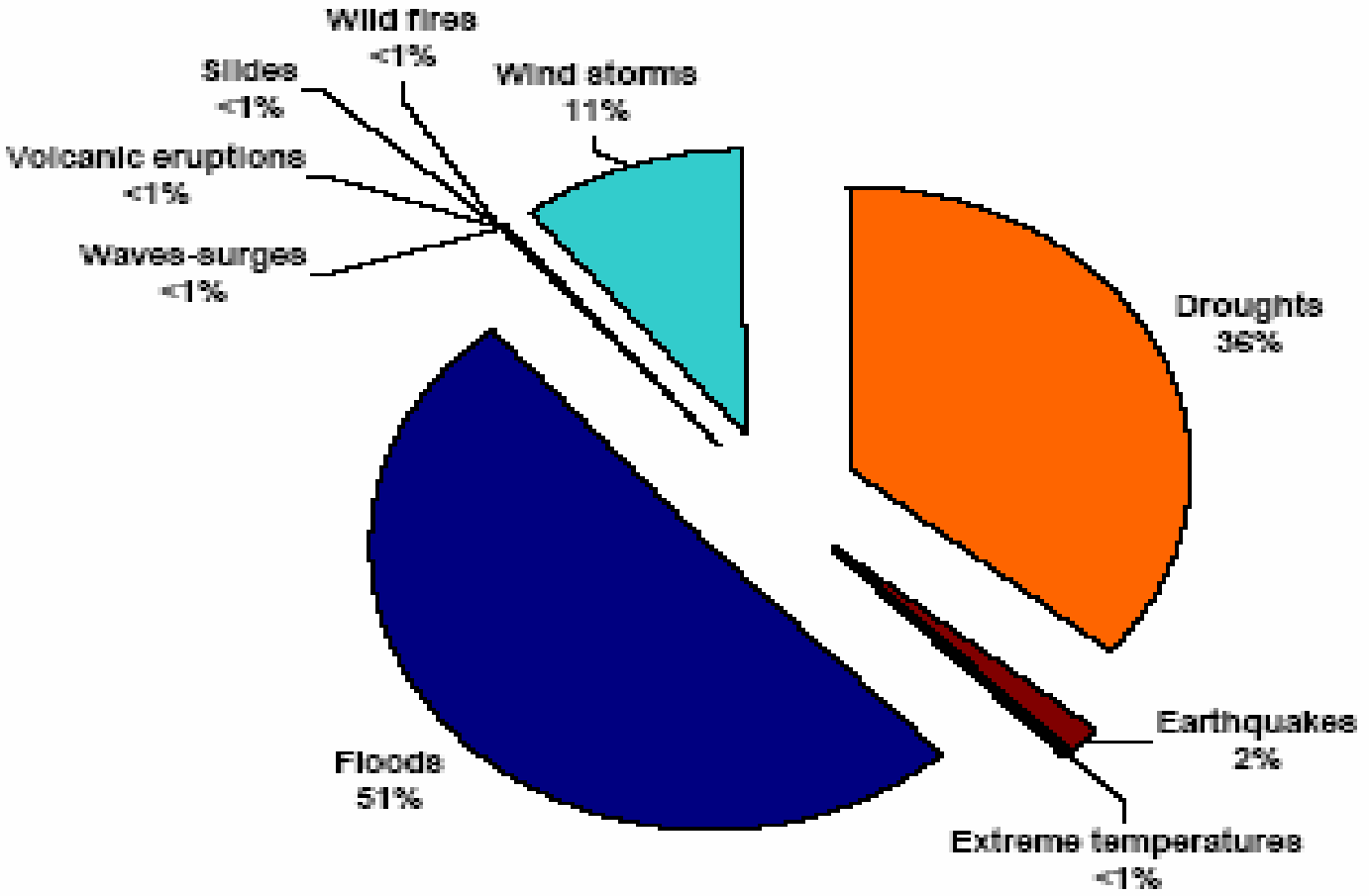
© 2006 GeoRisikoForschung, Münchener Rück

7.4. Reported Death of Natural Hazards globally (1974-2003): 2.066.273 persons



Source: © Hoyois und Guha-Sapir (2004)

7.5. Affected persons of Natural Hazards globally (1974-2003): 5 076 494 541 persons



(1) injured + homeless + affected

Source: © Hoyois und Guha-Sapir (2004)

7.6. Natural Hazards in Thailand

(Source CRED: number of people killed)

Disaster	Date	Total Killed
Wave/Surge (Tsunami)	26-Dec-2004	8,345
Wind Storm	27-Oct-1962	769
Flood	19-Nov-1988	664
Wave/Surge	June 1955	500
Wind Storm	3-Nov-1989	458
Flood	3-Jan-1975	239
Flood	8-Sep-1995	231
Flood	28-Oct-1995	200
Flood	Oct-2002	154
Flood	8-Aug-2001	104

7.7. Natural Hazards in Thailand
(Source CRED: number of people affected)

Disaster	Date	Total Affected
Drought	Jan-1999	6,000,000
Flood	Jun-1996	5,000,000
Drought	Feb-2002	5,000,000
Flood	8-Sep-1995	4,280,984
Flood	Oct-2002	3,289,420
Flood	3-Jan-1975	3,000,093
Drought	Mar-1991	2,500,000
Flood	Jul-2000	2,500,000
Wind Storm	17-Aug-1991	1,894,238
Flood	Aug-1978	1,628,400

7.8. Natural Hazards in Thailand
(Source CRED: Economic damage costs)

Disaster	Date	Damage US$ (000's)
Flood	27-Nov-1993	1,261,000
Wind Storm	3-Nov-1989	452,000
Drought	Jan-2005	420,000
Wave/Surge (Tsunami)	26-Dec-2004	405,200
Flood	Dec-1993	400,100
Flood	400,100	400,000
Flood	19-Jan-1984	400,000
Flood	28-Oct-1995	400,000
Flood	31-Oct-1993	319,850
Flood	Jul-1994	238,000

7.9. Summarized Table of Natural Disasters in Thailand (1955-2005)

Source: EM-DAT, CRED, Univ. of Louvain, Belgium

	# ev.	Killed	In-jured	Home-less	Affected	Total affected	Damage US (,000)
Drought	5	0	0	0	13,500,000	13,500,000	424,300
Earthquake	1	0	0	0	0	0	0
Epidemic	5	212	0	0	4,765	4,765	0
Floods	49	2,503	4.085	163,283	27,277,515	27,444,883	4,598,651
Slides	2	42	5	0	750,100	750,100	0
Wave/Surge Tsunami	4	8,876	8,457	200	58,550	67,207	405,467
Wind Storm	25	1,478	20	108,137	3,063,248	3,171,405	674,539

7.10. Global & National Trends: Climate Change and Climate-induded Hazards

Due to climate change model projections:

- Average temperature will rise
- Sea-level will rise (will affect Bangkok)
- Hydro-meteorological events increase in number and economic damage

But number of victims & affected depends on:

- Degree of social vulnerability
- Economic resources & level of poverty
- Empowerment, resilience of affected people

8. Implications of Climate Change for Security and Conflicts

- **Climate Change poses threats, challenges, vulnerabilities and risks for:**
  - Environmental dimension of security (Cause)
  - Human Security: fredom from hazard impact
- **Climate Change poses a survival dilemma**
  - for victims of human-induced hydro-meteo-rological hazards: droughts, storms, floods & landsldies
  - 3 unfavorable options: stay & die (old/weak); leave and fight (strong) or to emigrate (USA)
- **Climate Change poses no military threat and cannot be solved with military means**

8.1. Climate Change: A New National "Security" Challenge? Climate change may spark conflict

- Britain's Defence Secretary, John Reid, pointed to violent collision between a rising world population & shrinking world water resource: global warming. **Climate change may spark conflict between nations** and British armed forces must be ready to tackle violence.
- He forecast that violence and political conflict would become more likely in the next 20 to 30 years as **climate change turned land into desert, melted ice fields and poisoned water supplies.**
- He … listed **climate change alongside the major threats** .. in future decades, incl. terrorism, demographic changes,global energy dem.
- He warned of increasing uncertainty about the future of the countries least well equipped to deal with **flooding, water shortages and valuable agricul-tural land turning to desert**.
- „We see uncertainty growing … about the **geopolitical and human consequences of climate change**. "**Impacts such as flooding, melting permafrost & desertification could lead to loss of agricultural land, poisoning of water supplies & destruc-tion of economic infrastructure**.
- **"More than 300 million people in Africa currently lack access to safe water; climate change will worsen this dire situation.„**

8.2. Climate Change and Conflicts

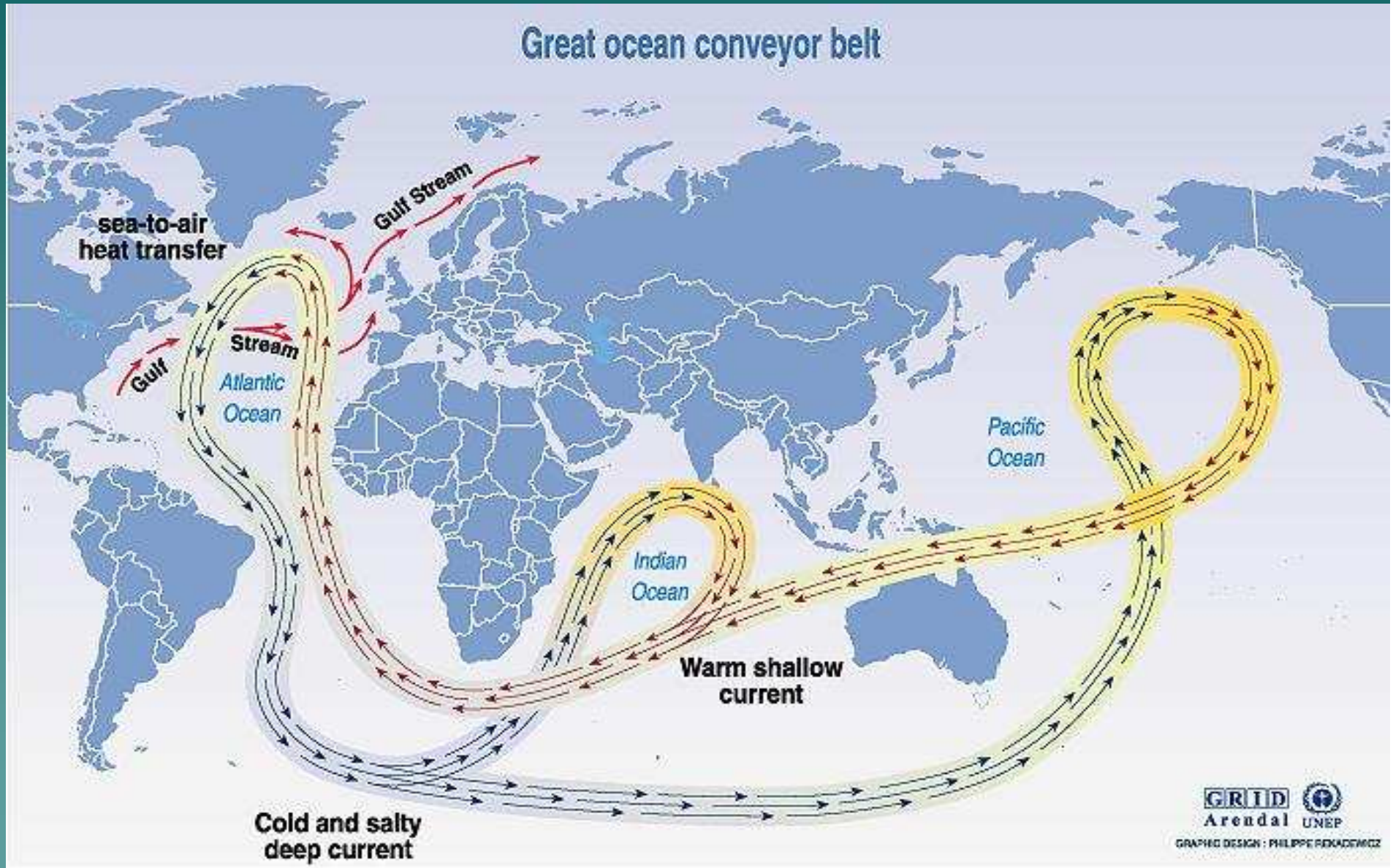
Hobbesian: http://halfgeek.net/weblog/special/gwreport/Pentagon.htm l

Grotian: http://www.bmu.de/files/climges.pdf

- **Peter Schwartz/Doug Randall**
- Contract Study for DoD, Net Assessment, Oct. 2003
- ***The purpose of this report is to imagine the unthinkable – to push the boundaries of current research on climate change so we may better understand the potential implications on United States national security.***
- Vantage point: Hobbesian
- Neo-Malthusian pessimist & Cornucopian optimist
- Pentagon, US national security

- **Hans G. Brauch (AFES-PRESS)**
- **Contract Study for German Environment Ministry, Nov. 2002**
- **Focus: Bangladesh, Mexico, Egypt & Mediterranean region**
- ***Purpose is to provide empirical evidence on climate change and conflicts and to contribute to the national and international debate on climate protection.***
- **Contribute to crisis prevention & crisis management & provide additional supportive arguments for precautionary & ambitious climate protection policy.“**

8.3. Change in Conveyer Belt & Gulf Stream



Source: Broecker, 1991, in Climate change 1995, Impacts, adaptations and mitigation of climate change: scientific-technical analyses, contribution of working group 2 to the second assessment report of the intergovernmental panel on climate change, UNEP and WMO, Cambridge press university, 1996.

8.4. Peter Schwartz and Doug Randall Abrupt Climate Change Scenario

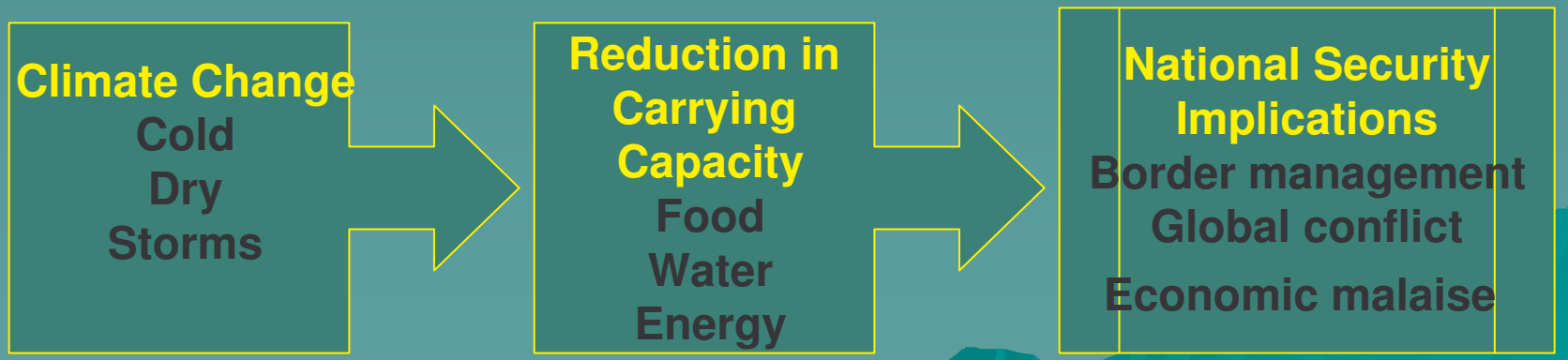
- As an alternative to gradual climatic warming they we outline an abrupt climate change scenario patterned after the 100-year event that occurred about 8,200 years ago.
- This abrupt change scenario is characterized by these conditions:
  - Annual average temperatures drop by up to 5 degrees Fahr. over Asia and North America and 6 degrees Fahre. in northern Europe
  - Annual average temperatures increase by up to 4 degrees Fahrenheit in key areas throughout Australia, South America, and southern Africa.
  - Drought persists for most of the decade in critical agricultural regions and in the water resource regions for major population centers in Europe and eastern North America.
  - Winter storms and winds intensify, amplifying the impacts of the changes. Western Europe and the North Pacific experience enhanced winds.

8.5. Impact of Abrupt Climate Change Scenario on Geopolitical Environment

- The report explores how such an abrupt climate change scenario could potentially destabilize the geo-political environment, leading to skirmishes, battles, and even war due to resource constraints such as:
  1) Food shortages due to decreases in net global agricultural production
  2) Decreased availability and quality of fresh water in key regions due to shifted precipitation patters, causing more frequent floods and droughts
  3) Disrupted access to energy supplies due to extens. sea ice and storminess
- As global & local carrying capacities are reduced, tensions could mount around the world, leading to two fundamental strategies:
  - defensive& offensive.
  - Nations with the resources to do so may build virtual fortresses around their countries, preserving resources for themselves.
  - Less fortunate nations especially with ancient enmities with their neighbors, may initiate in struggles for access to food, clean water, or energy.
  - Unlikely alliances could be formed as defense priorities shift and the goal is resources for survival rather than religion, ideology, or national honor.

8.6. Peter Schwartz and Doug Randall: Climate Change as a U.S. Security Concern

- Indications today that global warming has reached the threshold where the thermohaline circulation could start to be significantly impacted.
- These indications include observations documenting that North Atlantic is increasingly being freshened by melting glaciers, increased precipitation, & fresh water runoff making it substantially less salty over the past 40 years.
- **Report suggests that, due to pot. dire consequences, the risk of abrupt climate change, although uncertain & quite possibly small, should be elevated beyond a scientific debate to a U.S. national security concern**



8.7. Worst Case Conflict Scenario due to Climate Change (2010-2020)

Europe	Asia	United States
2012: Severe drought and cold push Scandinavian populations southward, push back from EU **2015:** Conflict within the EU over food and water supply leads to skirmishes and strained diplomatic relations **2018:** Russia joins EU, providing energy resources **2020:** Migration from northern countries such as Holland and Germany toward Spain and Italy	**2010:** Border skirmishes & conflict in Bangladesh, India, and China, as mass migration occurs toward Burma **2012:** Regional instability leads Japan to develop force projection capability **2015:** Strategic agreement between Japan & Russia for Siberia & Sakhalin energy resources **2018:** China intervenes in Kazakhstan to protect pipelines regularly disrupted by rebels & criminals	**2010:** Disagreements with Canada & Mexico over water increase tension **2012:** Flood of refugees to southeast U.S. & Mexico from Caribbean islands **2015:** European migration to United States (mostly wealthy) **2016:** Conflict with Europeans over fishing rights **2018:** Securing North America, U.S. forms integrated security alliance with Canada &Mexico **2020:** DoD manages borders & refugees from Caribbean & Europe.

8.8. Worst Case Conflict Scenario due to Climate Change (2020-2030)

Europe	Asia	United States
2020: Increasing: skirmishes over water & immigration	**2020:** Persistent conflict in South East Asia; Burma, Laos, Vietnam, India, China	**2020:** Oil prices increase as security of supply is threatened by conflicts in Persian Gulf and Caspian
2022: Skirmish between France&Germany over commerc.access to Rhine		
2025: EU nears collapse	**2025:** Internal conditions in China deteriorate dramatically leading to civil war and border wars.	**2025:** Internal struggle in Saudi Arabia brings Chinese and U.S. naval forces to Gulf in direct confrontation
2027: Increasing migration to Medit.countries such as Algeria, Morocco, Egypt, and Israel	**2030:** Tension growing between China and Japan over Russian energy	
2030: Nearly 10% of European pop. moves to a different country		

8.9. Climate Change and Conflicts? Hobbesian vs. Grotian Perspectives

- Hobbesian diagnosis: P.Schwartz Doug Randall: An Abrupt Climate Change Scenario and Its Implica-tions for US National Sccurity, Oct 2003, for DoD, NA (worst case)
- Focus: on one specific possible consequence of Global Warming:Regional Chilling (Gulf Stream collapse)
- US: European migration to US,
- Climate Refugees from Northern and Central Europe to the Mediterranean and to North Africa
- North-South migration

- Grotian Diagnosis: H.G. Brauch: Climate Change, Environ-mental Stress and Conflicts, for Fed. Min. of Environment (Nov. 2002)
- Focus: Interaction between Global Environmental Change and Fatal Outcomes, case studies: Mexico, Bangladesh, Egypt, Mediterranean
- Distress migration: from Nile Basin, across the Mediterranean, major human disasters, increase in hydro-meteorological hazards in the Mediterranean: storms, droughts, flashfloods
- South-North migration

8.10. Comparing Both Studies

- **Assumptions:** Ramerstorf,
- **Worldview**: Hobbessian
- **Concept:** US nat.security
- **Referent: U.S. DoD, elite**
- **Method**: Worst case socio-political scenario
- **Criticism:** events cannot be predicted
- **Plausibility**: relatively low
- **Research Needs:** basic re-search on probability

- **Assumption:** IPCC hypoth.
- **Worldview:** Grotian
- **Concept:** environmental security, human security
- **Referent:** GEC, individual
- **Method:** socio-economic, qualitative, hermeneutic, projection of trends by IGOs
- **Plausibility:** higher
- **Research Needs**: strategies of env. conflict avoidance

8.11. Study on Climate Change & Conflicts

- Report analyses the conflict dimension of societal & political implications of climate change in interaction with five primarily nature-induced (soil erosion, hydrological cycle & water scarcity) & human-induced (population growth, urbanisation, agriculture and food) factors.
- Nature- & human-induced effects of climate change may lead to *environmental degradation* (soil & agriculture) & *environmental scarcity* (water & food) that may result in *enviromental stress*.
- Given the specific global context & country specific socio-economic, ethnic & religious context & the history of conflict in selected regions, *environmental stress* may contribute to **five probable outcomes**:
  - a) **natural and manmade hazards and disasters,**
  - b) distress migration, internally displaced persons & env. refugees,
  - c) to severe societal, economic & political crises; some may either escalate d) to violent conflicts, that may be avoided by efforts for
  - e) conflict resolution, and prevention by the initiation of a process of deescalation. (awareness raising: task of educators, universities)

8.12. Climate Change Poses Threats, Challenges, Vulnerabilities & Risks for Human, National, Food & Health Security

- **Globally: past trends & future projections**
  - Temperature increase and change in precipitation
  - Increase in both flash floods & droughts
  - Hazard impacts depend also on social vulnerability and resilience
  - Response requires both protection & empowerment of the people
- **Regionally for South & Southeast Asia**
  - potential increases in flash floods & drought
  - Impact on decline in crop yields (food security)
- **Climate Change Impacts on Human Security**
  - Increase im temperature (flash floods & droughts) & sea level rise poses a +
  - „survival dilemma“ for affected poor people in the South:
    a) to stay at home and to protect property (women, children, old p.)
    b) to leave their home and to move to mega cities (metro poles)
    c) to fight for the access to water (nomads in Sahel countries)
- **Conceptual Response is HUGE (U. Oswald Spring, Mexico)**
  - Human, Gender and Environmental Security
    a) to cope with survival dilemma of the victims of Global Environm. Change
    b) to develop survival strategies

9. Implications of Drought for Security and Migration

- Among 10 worst hazards affecting Thai-land were three droughts that affected

  Drought Jan-1999 6,000,000 persons

  Drought Feb-2002 5,000,000 persons

  Drought Mar-1991 2,500,000 persons

- Likelihood of drought may increase up to 2100 in Thailand due to Climate Change
- This may pose severe challenges to hu-man security (further increase urbanizat.)

9.1. Desertitication & Drought: A Security Issue?

- Desertification & drought pose environmental security challenges, vulnerabilities and risks.
- Desertification & drought are human security challenges.
  - Referent: individual, family, village, province
  - Value at risk: human survival & livelihood of the poor with low resilience
  - Cause of the challenge: nature (GEC), nation states & globalisation processes
- Desertification & drought is a food security challenge.
- Drought & famine poses a health security challenge.
- Drought, famine and drought & famine-induced migration: poses livelihood security challenges, vulnerabilities & risks
- Drought, famine & migration: may trigger violent social consequences and thus become: social, national & international security challenges, risks and only in very extreme cases military threats.

9.2. Instruments and Actors for Dealing with Desertification & Drought as a Security Issue

Reactive Security Policy: Dealing with the Consequences

- Rapid disaster response: humanitarian community dealing with drought & famine & migration & conflicts
- Coping with domestic & trans-border violence: police & armed forces

Proactive Security Policy: Addressing the Causes

- Global environmental policy and combined efforts of
  - Desertification: UNCCD regime (Secretariat in Bonn)
  - Climate Change: UNFCCC regime (Secretariat in Bonn), Kyoto Protocol
  - Reproductive Health: UNPF (slowing down demand)
  - Improved Water Conservation, Harvesting and Management
  - Sustainable Agriculture: FAO, WFP
  - Dealing with urbanisation: Habitat

Task: Reduce costs & impact of drought and societal consequences by early warning of famine, migration & conflict!

9.3. Combating Desertification & Drought & Resolving, Preventing & Avoiding Violence

- Desertification, drought, famine & hunger riots must be analysed as part of : Global Environmental Change & fatal outcomes
- Desertification & drought are no hard security threats!
  - They require long-term cooperation among scientists & policy makers using traditionaland advanced technological knowledge.
  - They require a long-term, pro-active local capacity-building.
- Desertification & drought are emerging soft security challenges, they cause environmental and social vulnerabilities and they may trigger under specific global, national, regional & local conditions violent societal consequences: e.g. general strikes and hunger revolts that may challenge regime stability and the survival of governments!

9.4. Desertification > Drought > Famine > Migration > Violent Events: Research Needs

- Much knowledge on individual factors of GEC and individual fatal outcomes but little on interactions and linkages between global environmental change & fatal outcomes (Disciplinary constraints)
- Lack of multi-, trans- and interdisciplinary research integration.
  - Within global change community: between desertification & climate change specialists: among specialists of six factors of my survival hexagon.
  - Within the fatal outcome communities: on nature & human-induced hazards/ disasters, environmentally-induced or triggered migration, crises and conflicts
  - Between the climate change (desertification) and disaster community
  - ✓ June 2002: Foreign Ministries of Germany & Netherlands & IFRC-RCS
  - ✓ UNISDR project: adaptation & mitigation to climate change & disaster
  - Between early warning communities on disasters and conflicts.
- Need for a broad *Earth Systems Analysis*: Natural & Social Scientists
  - Schellnhuber/Wenzel: (1998)Potsdam (PIK): to Hadley Centre in UK: ESA
  - Manifold methods: quantitative modelling and qualitative comp. case studies

9.5. Desertification & Drought Mitigation: Some Policy Conclusions

- **Combating Desertification & Drought:** A non-military human & environmental, food, health and livelihood security task for agricultural and environment policy
- **Coping with Drought & Famine:** OCHA, ECHO, WFP et al.
- **Coping with environment.-induced migration**: UNHCR, IOM
- **Avoiding violent conflicts:** A joint task of international institutions: **NATO & EU** cooperating in the Mediterranean
- **Combating desertification** is a major environmental, development and a security task for the EU in Mediterranean
- **Need pro-active policies** by states & int. org. in the Mediterranean on causes of desertif.: **population growth** (South), **market forces** (North) and **climate change impacts** (N & S).

9.6. Policy Implications for Human & Environmental Security

- **Conclusion:**
  - Environmental Security: Widening of scope & actors
  - Human Security: shifting from state to humankind
- **Task for Research:**
  - Development the environmental dimension of human security
  - Introduce human security concerns into environmental security
  - Develop the fourth phase of research on HESP
- **Task for Policy:**
  - Mainstream early warning of hazards & conflics
  - Develop anticipatory learning and proactive policies to mitigate against impacts of GEC (climate change)
  - Empower people by building resilience and recucing social vulnerability by poverty eradication policies

10. Agenda for Research and Teaching Policy Responses for Thailand

- **Foreign Minister of Thailand adopted the goal of human security as freedom from hazard impact**
- **This implies:**
  - **Linking freedom from want (development) with**
  - **freedom from fear (disarmament) and**
  - **Freedom from hazard impact (disaster preparedness**
- **This requires:**
  - Including disaser preparedness into development strategy,
  - Reduce social vulnerability and enhance resiliences by
    - **Protection:** physical
    - **Empowerment:** local pople in hazard prone areas

10.1. Policy Response: Reducing Social Vulnerability & Building Resilience

- **To environmental scarcity, degradation & stress:**
  - **Proactive climate policy:** reduce greenhouse gases by shifting to nonfossil energy resources, especially renewables
  - **Combat desertification and soil erosion**:
  - **Cope with water scarcity & degradation** by demand-side mana-gement and alternative supply (desalination with renewables)
  - **Cope with population growth, rural emigation and urbanisation**
- **To extreme outcomes of GEC, hydro-meteorological hazards & severe societal consequences:**
  - **Reducing the hazard impact by enhanced early warning against multiple hazards and reducing social vulnerability by improved resilience**
  - **Improved policy of conflict resolution, prevention and adaptation and mitigation against challenges of GEC that may lead to conflicts (anticipatory learning & conflict avoidance)**

10.2. Simultaneously Addressing: Poverty and Violence with Hazard Impacts

- **4 pillars of human security address 4 related policy goals:**
  - Freedom from fear: „violence“, conflicts & wars and the means to fight them, small & light weapons
  - Freedom from want: „poverty“, basic human needs
  - Freedom to live in dignity: „good governance“ and „human rights“
  - Freedom from hazard impacts: „social vulnerability“ and „resilience“
- **Policy strategies to address simultaneously: violence, poverty, human tights and hazard impacts**
  - Violence in local, regional, national and international conflicts
  - Violence in complex emergencies where a hazard impacts on a conflict region: e.g. Vulcano in Goma, tsunami in Sri Lanca and Aceh
  - Where hazards cause, trigger, intensify or influence violent conflicts
  - These may be considered on the agenda of the Human Security Network

10.3. Human Security Commission: Aiming at Protection & Empowerment

- Protection: key role of the state
  - Reducing physical vulnerability: shelters, dams etc.;
  - Building infrastructure;
  - Early Warning;
  - Disaster preparedness and rapid response.
- Empowerment: role of the state and people
  - Reducing social vulnerability, e.g.habitats in hazard prone regions;
  - Local knowledge;
  - Citizens‘ participation;
  - Training and preparedness of residents.

10.4. Policy Task: Strengthening Human Security as „Freedom From Hazard Impact“

Bogardi/Brauch (2005): focus on the env. dimension of human security by trying

- to mainstream both,
- to contribute to the fourth phase of the environmental security debate,
- to develop a new pillar of the HS concept as “freedom from hazard impact”
- to strengthen prospects of a learning society & for improved human security.

This requires mainstreaming efforts on scientific and political tracks on:

- **environmental dimension of human security** (conceptualisation in scientific community),
- **a “paradigm shift” within the UN System** from national towards a human security per-spective on environmental threats, challenges, vulnerabilities and risks (Brauch 2005).

For international organisations, a dual mainstreaming may be needed:

- **to incorporate a “human security” perspective into “environmental security initiatives”,**
  - ENVSEC process of OSCE, UNEP, UNDP, and NATO
  - into the “green diplomacy” of the European Union launched at EC in Thessaloniki in June 2003; and,
- **to add a “environmental security dimension” on the agenda of the HSN**
  - **with a special focus on complex emergiencies**
  - **where violent conflicts and hazard impacts interact.**

10.5. Towards a Fourth Phase of Environmental Security Research

Future research should combine: structural factors of GEC with extreme outcomes and conflict constellations.

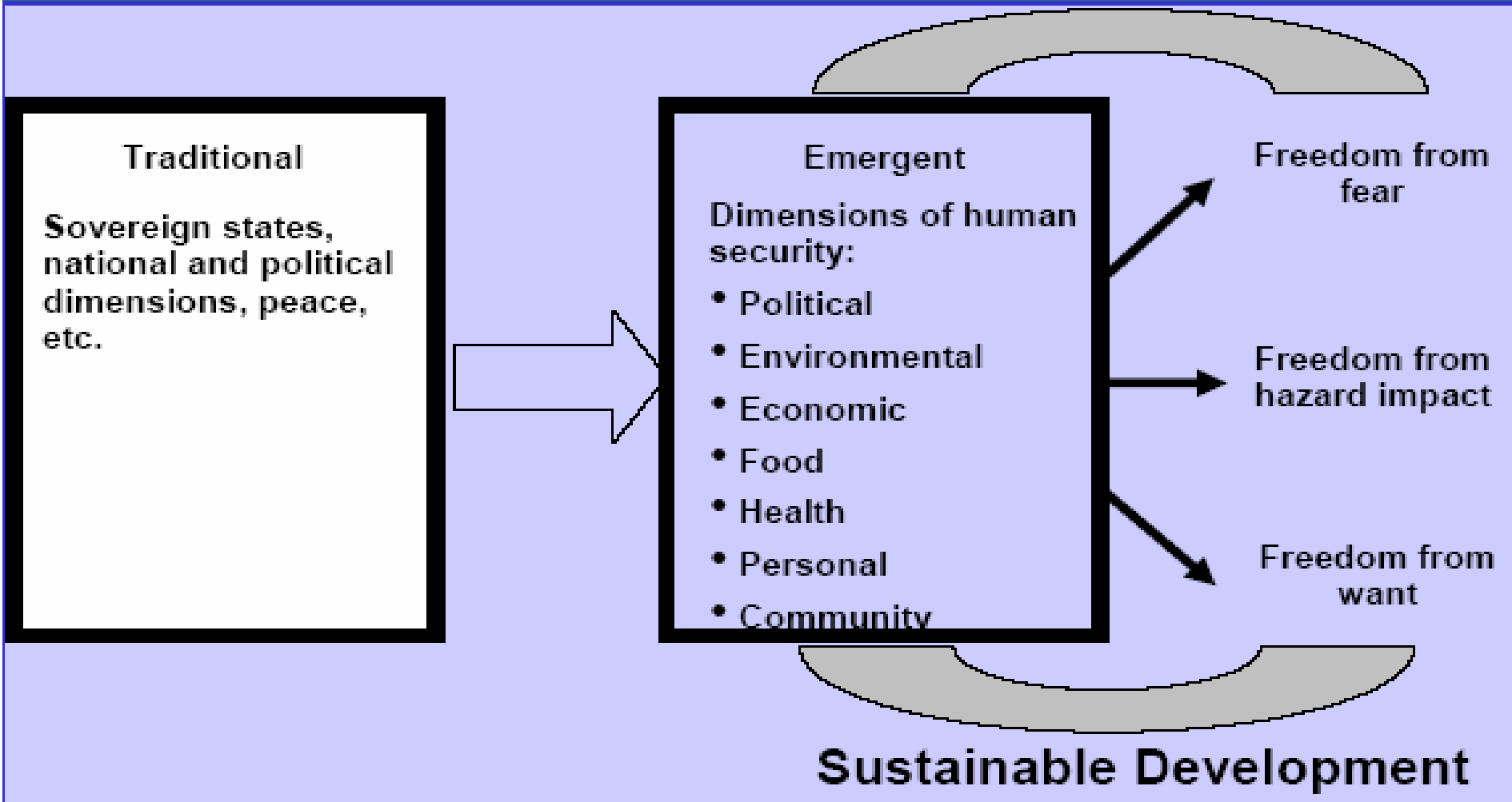
A fourth phase of social science research may aim at the following ten conceptual and policy goals:

- **Scientific Orientation and Approach**
  - Grotian perspective, political geo-ecology, human security focus,
  - Coping with Security Dilemma (states) and Survival Dilemma (human beings)
  - Dual goal: Sustainable development & sustainable peace
- **Scientific Focus on Causes, Impacts & Extreme Outcomes of Global Environmental Change**
  - Causes, outcomes., policy process, regional perspective
- **Policy Goals:**
  - *Policy Goals on Societal / Individual Level*: ESS studies should foster strategies
    - reducing the *impact* of environmental stress,
    - decreasing the *vulnerability* & strengthening coping capacities & *resilience*.
  - *Policy Goals on Communal, Sub-national, National and International Level*: Strategies for coping with outcomes of environmental stress should be developed by
    - improving disaster preparedness and response and by
    - integrating disaster reduction into development planning.
    - Resolution, prevention & avoidance of violence should become a major policy goal.

10.6. Towards a Fourth Pillar of Human Security as Freedom from Hazard Impact

- Conceptual and policy task for UNU-EHS: to develop human security as "freedom from hazard impact", contribute to it through capacity-building for early warning, vulnerability indicators, & mapping.
- Natural hazards cannot be prevented, but their impact can be reduced by early warning and better disaster preparedness.
- "Freedom from hazard impact" implies that people can mobilise their resources to address sustainable development goals rather than remain in the vicious cycle of the survival dilemma.
- "freedom from hazard impact" requires hazard specific policies & combination of technical, organisational and political measures for:
  - ***Slow-onset hazards***: sea-level & temperature increase (climate change
  - ***Rapid-onset hydro-meteorological hazards***:
  - *Rapid-onset geophysical hazards*: earthquakes, tsunamis
  - *Man-made disasters*: technical, organisational, political

10.7. Achieving Human Security through Freedom from Fear, Want & Hazard Impact
Source: J.Ganoulis, UNESCO Chair INWEB, Greece based on Brauch, UNU-EHS (2005, 2005a)



I thank you for giving me an opportunity to share with you my own emerging conceptual ideas.

Thank you for your attention and patience.

Text for download in at:

http://www.afes-press.de/html/download_hgb.html

Send your comments to:

brauch@onlinehome.de