Social Vulnerability and Resilience
Hurricanes in the Gulf of Mexico and the Tsunami in the Indian Ocean:
Case Studies on USA, Mexico, Cuba and in Central America

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Survival Dilemma, Hazards and Human Security

Contents

1. Rethinking of Security: Definitions & Conceptual Quartet

Term and Concept

- **Term: Security (lat.: *securus* & *se cura*; fr.: *sécurité*, sp.: *seguridad*)**
- Security was introduced by **Cicero & Lucretius** referring to a **philosophical & psychological status of mind.**
- **P**olitical concept for 'Pax Romana'.
- **Social science concept**, *security* is ambiguous & elastic in its meaning.
- **Political concept: Tool to legitimate** public funding for an accepted purpose: safety, protection. **Political acceptability** (support) gaining and regaining power.

Classical definition

- **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".**
- **Objective: Absence of "threats": interest of policy-makers**
- **Subjective: Absence of "fears": interest of social scientists**
- **Intersubjective: for contructivists: security is** what actors make of it.

1.1. Reasons for Reconceptualizing Security?

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 revival 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. No scientific revolut.
- **Ideas matter**: emergence of constructivist approaches, security is socially constructed (speech acts), constructivism shift, but no scientific revolution.
- **Risk Society & reflexive modernity: (international) risk society (Beck)**
- **Threats matter:** evolution of the new worldview of the neo-conservatives in the US & impact on realist thinking in International Relations.

1.2. 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.

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

Pillars and linkage concepts within the quartet

IR research programs	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* • •　V　　　　　　　　I • • **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]**

2. Worldview and Security Perception:
English School: Hobbes, Grotius and Kant

Perceptions of security threats, challenges, vulnerabilities, **risks depend** on **worldviews** & **mind-se**t of policy-maker.

Hobbes (1588-1679)   **Grotius (1583-1645)**   **Kant (1724-1804)**

Security perceptions depend on worldviews or traditions

❖ Hobbessian pessimist: *power* is the key category (narrow concept)

❖ Grotian pragmatist: *cooperation* is vital (wide security concept)

❖ Kantian optimist: *international law* and *human rights* are crucial

2.1. Widening of Security Concepts: Towards Environmental Security

4 trends in reconceptualisation of security since 1990:

- Widening (dimensions, sectors), Deepening (levels, actors)
- Sectorialisation (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/health & water sec.	**Cause & Victim**	Food/health & water sec.
Societal/Community				⬇⬆	
National	In Cold War, US since 2001: Shrinking		**Energy security**	⬇⬆	
Internat./Regional				⬇⬆	
Global/Planetary ⇒				**GEC**	

2.2. 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	Individ., mankind	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]

2.3. Ideal type worldviews on security and standpoints on environment

Worldview/Tradition on security (→) Standpoints on environmental issues (↓)	Machiavelli, Hobbes, Morgenthau, Waltz (pessimist, realist school)	Grotius, pragmatist *Cooperation is needed, matters*	Kant, neoliberal institutionalist (optimist) *International law matters & prevails (Democratic peace)*
Neomalthusian *Resource scarcity* (pessimist)	I George W. Bush-Administr.?	II ←	III ↙
Reformer, *Multilateral coope-ration solves chall.* (pragmatist)	IV	V UN system most EU states (my position)	VI
Cornucopian *Technological inge-nuity solves issues* (neoliberal optimist)	VII George W. Bush-Administration ?	VIII Bill J. Clinton Administration ?	IX Wilsonian liberal optimism

3.0. Global Environmental Change (GEC), Hazards and Security Concepts

- Hypothesis: Thinking on security changed
  - Global, regional contextual change since when?
  - Scientific revolution or new theoretical approaches?
- Do GEC & hazards pose security dangers, i.e. threats, challenges, vulnerability & risks?
- Which (human) security concept are we using?
  - Freedom from fear: Canadian concept (Human Security Network)
  - Freedom from want: Japanese concept (Human Security Commission)
  - Freedom to live in dignity: K. Annan´: In larger Freedom (2005)
  - Freedom from hazard impacts: Bogardi & Bauch (2005)
- AFES-PRESS Book Project & Hexagon Book Series: Global mental mapping of rethinking (reconceptualization) of security
  - Widening, deepening, shrinking, sectorialisation
  - Security dangers: threats, challenges, vulnerabilities & risks

3.1. Security and Survival Dilemma

What is a dilemma?

- "**Dilemma**": "**means two (*di*) assumptions or propositions (*lemma*)**". A "**dilemma is created where there are two propositions and the existence of ambiguity or uncertainty over which proposition is the best**".

- **1. in logic: An argument which presents an antagonist with a choice between equally unfavourable or disagreeable alternatives.**

- **2. any situation necessitating a choice between unpleasant alternatives;**

- **3. perplexing or awkward situation".**

Four linkage concepts for conceptual quartet:

- **Security dilemma**: peace & security of states (Kant, Hobbes, Herz, Jervis)
- **Sustainable development**: development & environment (Brundtland 1987)
- **Sustainable peace**: peace & development (UN & development NGOs, no scientific foundation)
- **Survival dilemma of individuals/humankind**: security & environment

3.2. Security vs. Survival dilemma?

Security dilemma:

Peace & security linkage
Referent: nation state

- A security dilemma exists "where the policy pursued by a state to achieve security proves to be an unsatisfactory one" or where due to such a dilemma security cannot be achieved and states were confronted "with a choice between two equal and undesirable alternatives".
- Collins (`95): 5 def. of this dilemma
  - decrease in the security of others;
  - decrease in the security of all;
  - uncertainty of intention;
  - no appropriate policies;
  - required insecurity.
- The first four relate to one another & form a coherent explanation of a traditional security dilemma.

Survival dilemma

Security & environment
Referent: human being

- What is the *dilemma* about & what are choices for whom?
- Whose *survival* is at stake?
  - humankind, state,
  - ethnic group, family, individual?
- What is the *referent* ?
  - international anarchy,
  - nation state,
  - society, ethnic/religious group,
  - clan, village, family, individual?
- What are the *reasons* that necessitate a choice of human eings between:
  - staying at home (die),
  - leaving the home (*fighting*?
- Is this Surv. D. socially or environmentally driven or both?

4. On Security and Environment Linkage: Survival Dilemma

Concept Evolution on Environment – Security Linkages

New concept for security & environment linkages: human- & nature-induced factors of **GEC as cause of insecurity**)

❖ **Grotian concept** on disappearance of bipolarity and **overcoming of Hobbesian fear** with the end of the Cold War and **widening security concept** with **increase of non-military soft security challenges, vulnerability and risks** that require prima-rily non-**military, economic, societal and environmental mitigation strategies**.

❖ **Root causes of GEC** could become "severe challenges for the survival of govern-ments", & **environmental conditions** for human life may be fundamentally chal-len-ged as a result of a complex process of incremental change caused by **soil ero-sion and desertification** leading to more frequent and intensive **droughts and water scarcity** & **famine** that **force people to migrate** what may lead to **violent conflicts**.

❖ **Severe droughts in the Sahel zone** in the 1960's and 1980's put the **survivability of this region** at risk and have contributed to several **failed states** (e.g. Somalia).

❖ **A complex interaction among environmental, societal and political factors occurred that resulted in several Sahel countries in violent conflicts**.

4.1. Causes & referents of a survival dilemma

From an anecdotal towards a scientific concept

What are the causes of this „survival dilemma"?

➢ **Global Environmental Change: nature & human induced factors**

➢ **Complex interaction between natural processes & human activity**

➢ **Human-induced hydro-meteorological natural hazards**

Who will be affected? Who is the referent of this dilemma?

➢ **Individual human being, family, village, clan, tribe, ethnic group (not: the State)**

➢ **Humankind: the human species (e.g. of climate change, desertification)**

➢ **Impact is the highest where environmental & societal vulnerability is high.**

What does a survival dilemma imply for the referent?

➢ **Dilemma: to leave home or to fight over scarce resources (soil, water, food).**

➢ **Environmentally-induced migrations, crises and conflicts may be an outcome!**

How can survival be achieved by mitigating the fatal outcomes of GEC?

➢ **Of the individual: by reducing societal (poverty) and environm. vulnerability.**

➢ **Of humankind: by active environmental mitigation & adaptation strategies.**

4.2. Human security perspectives on survival

- **Japanese PM Obuchi Keizo (1999):** human security: keyword to seizing all menaces that threaten the survival, daily life, and dignity of human beings and to strengthening the efforts to con-front these threats."

- Amartya Sen (2000 at Human Security Symp. in Tokyo):
  - Prospects of survival less favourable: public health, AIDs, malaria, TB;
  - Survival of civilians in civil wars, killings, sectarian genocide, refugees
  - Human security by alleviating & eliminating the lack of security in most extreme forms.
  - Human security perspective offers an effective approach to conflict & development
  - Human security is an action-oriented approach that focuses on the individual, protect people from danger, complements perspectives of human development & human rights.

- Amartya Sen (2002, Kolkata): Elements of the human security concept:
  1. clear focus on individual human lives (contrast with notion of "national security";
  2. appreciation of role of society & social arrangements in making human lives more secure in a constructive way;
  3. reasoned concentration on the downside risks of human lives, rather than on the overall expansion of effective freedom in general ("human development"); and
  4. chosen focus, again, on "downside" in emphasizing more elementary human rights.

- Amartya Sen: Women's empowerment appears has a strong influence in reducing the gender-bias in survival. ... The removal of survival disadvantages of women & young girls), reduction of child mortality, & moderating influences on fertility rates are basic issues in removing the "downside risks" that threaten life and dignity.

5. Models on Linkage of Cause & Impact: From the PSR to PEISOR Model

„Pressure-State-Response"
(PSR) of OECD (93, 97, 99): ⇨
 P: pressure;
 S. state of env.,
 R: policy response:

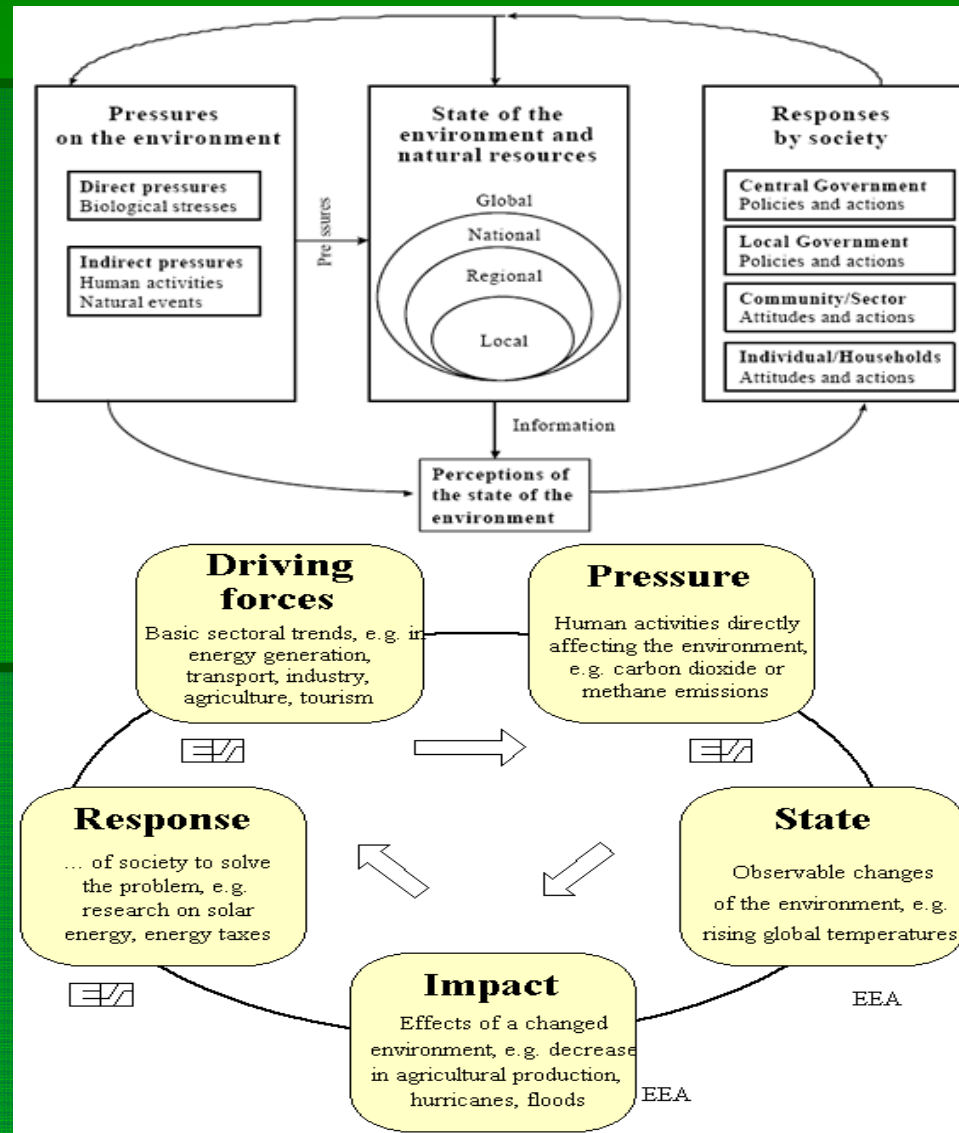UN-CSD. Driving Force-State-Response (DSR)
 D: Determinants of human activ:;
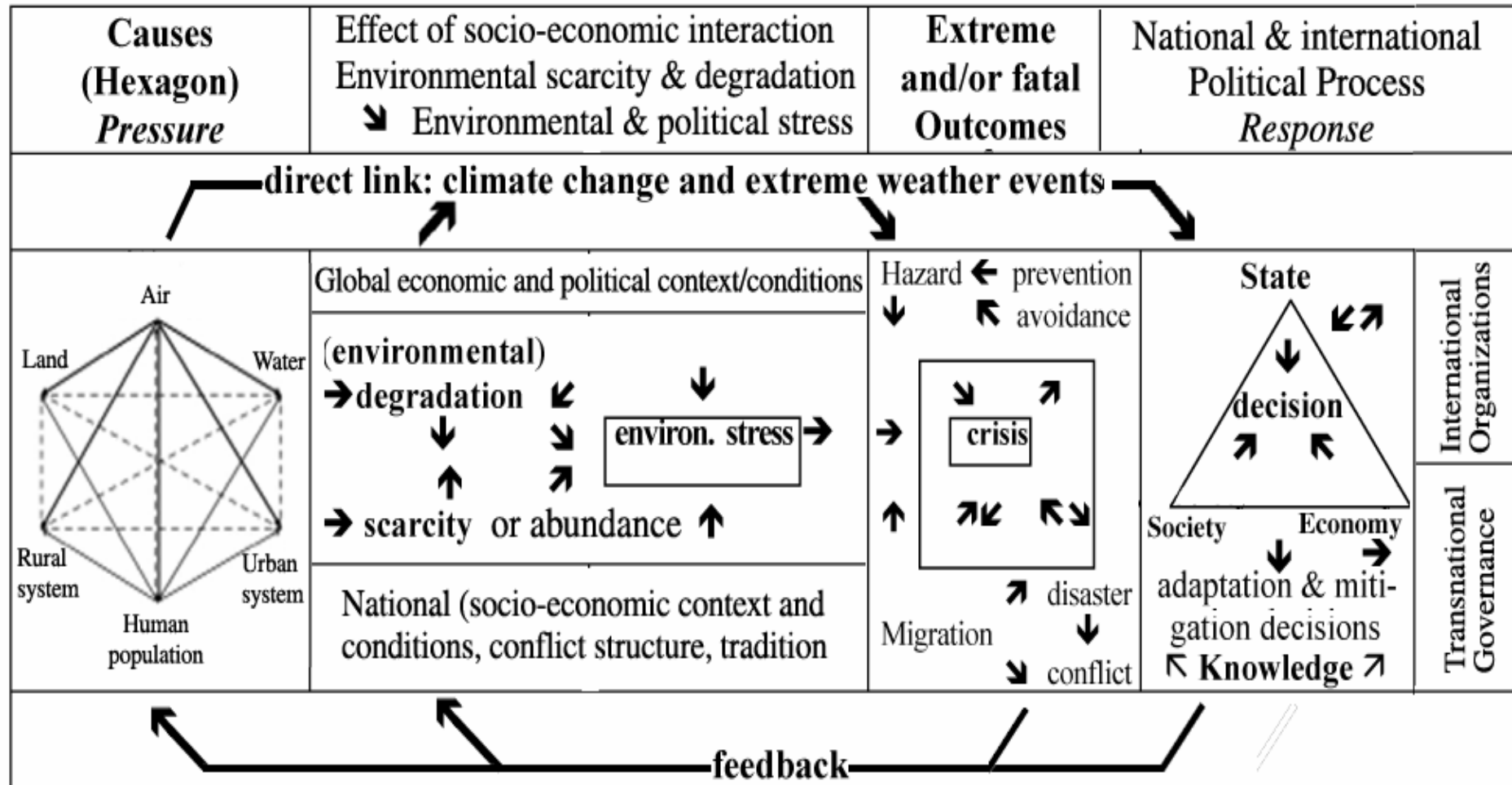 S: State of sustainable developm:;
 R: Responses;

EU-EEA: DPSIR-Model: ⇨
D: Driver, P: Pressure, S: State;
I: Impact; R: Response

Pressures on the environment
- Direct pressures / Biological stresses
- Indirect pressures / Human activities / Natural events

Pressures

State of the environment and natural resources
- Global
- National
- Regional
- Local

Responses by society
- Central Government / Policies and actions
- Local Government / Policies and actions
- Community/Sector / Attitudes and actions
- Individual/Households / Attitudes and actions

Information

Perceptions of the state of the environment

Driving forces
Basic sectoral trends, e.g. in energy generation, transport, industry, agriculture, tourism

Pressure
Human activities directly affecting the environment, e.g. carbon dioxide or methane emissions

Response
... of society to solve the problem, e.g. research on solar energy, energy taxes

State
Observable changes of the environment, e.g. rising global temperatures

Impact
Effects of a changed environment, e.g. decrease in agricultural production, hurricanes, floods

EEA

5.1. PEISOR Model: Global Environmental Change and Extreme/Fatal Outcomes

Causes (Hexagon) *Pressure*	Effect of socio-economic interaction Environmental scarcity & degradation ↘ Environmental & political stress	Extreme and/or fatal Outcomes	National & international Political Process *Response*

direct link: climate change and extreme weather events

Global economic and political context/conditions

(environmental)
→degradation ↙ ↓
↓ ↘ environ. stress →
↑ ↗
→ scarcity or abundance ↑

National (socio-economic context and conditions, conflict structure, tradition

Hazard ← prevention
↓ ↖ avoidance

crisis

disaster
Migration ↓
↘ conflict

State
↙↗
↓
decision
↗ ↖

Society   Economy
↓   →
adaptation & miti-gation decisions
↖ Knowledge ↗

International Organizations

Transnational Governance

feedback

P: **Causes** of GEC („pressure"): Survival hexagon:
E: **Effect:** environm. scarcity, degradation & stress influenced by national and global context
I: Extreme or fatal ourcome („**impact**"): hazards
S: **Societal Outcomes**: disaster, migration, crisis, conflict, state failure etc.
R: **Response:** state, society, economic sector, using traditional & modern knowledge: enhance resilience

5.2. Pressure: Six Causal Determinants: Survival Hexagon

Air
(climate change)
(nature and human-induced)

Land
(soil, ecosystem
degradation)

Water
(scarcity, degradation
floods)

Ecosphere
Human sphere

Rural system
(securing food
and fibure)

Urban system
(industries, services
pollution, health)

Human population
(human-induced)

→ direct impact of nature and human-induced "root cause": climate change on five factors

→ direct impact of human-induced "root cause": population on five factors

- – → complex interaction among four structural factors: land, water, urban and rural systems

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**
- **Exponential**
- **Chaotic, abrupt**

5.3. Effects: Environmental Scarcity, Degradation & Stress

Four Phases of Env. Sec, Research since 1983 - 2003

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**

Third Phase: Manifold Research without Integration (1995 - pres.)
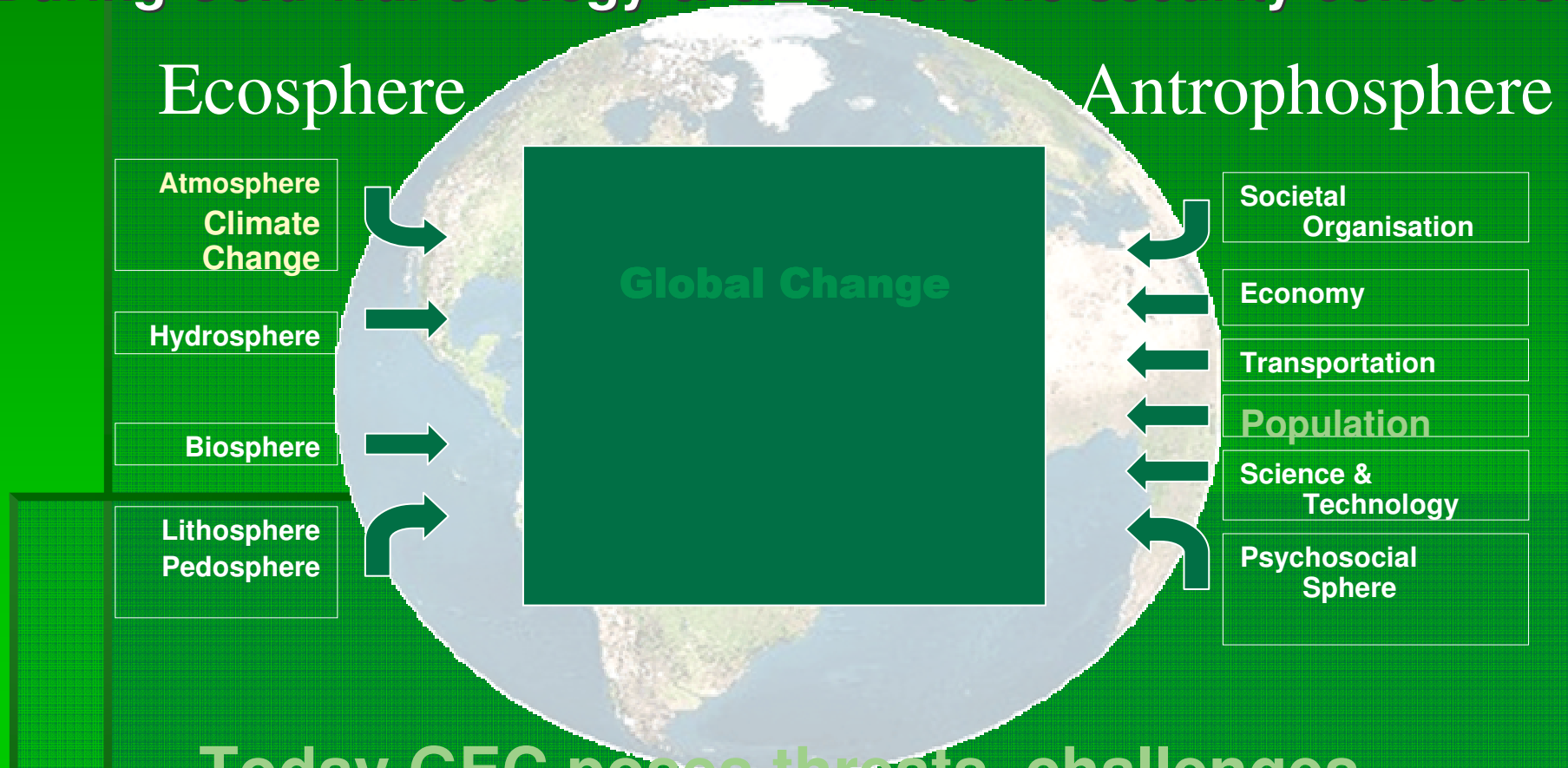
Sources of environ-
mental scarcity

Social Effects

Decrease in quality and quantity of renewable resources

Population growth

Unequal resource access

Increased environmental scarcity

Migration, expulsion

Decreased economic productivity

Weakened states

Ethnic conflicts

Coups d'état

Deprivation conflicts
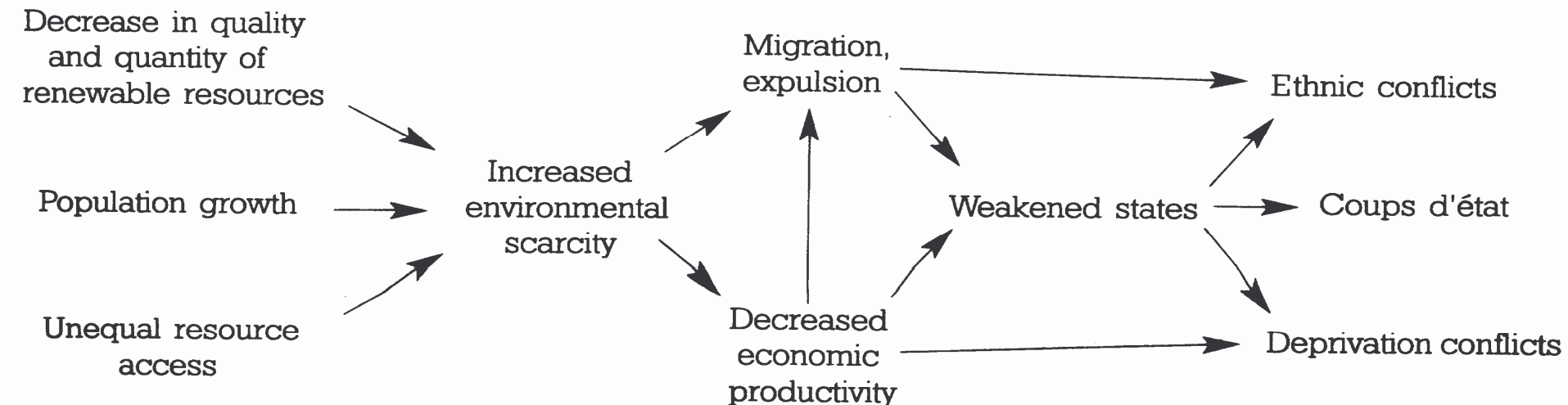
6. Hazards as Extreme Outcomes of Global Environmental Change

During Cold War ecology & GEC were no security concerns.

Ecosphere   Antrophosphere

Atmosphere Climate Change		Societal Organisation
Hydrosphere	Global Change	Economy
		Transportation
Biosphere		Population
		Science & Technology
Lithosphere Pedosphere		Psychosocial Sphere

Today GEC poses threats, challenges, vulnerabilities & risks for human security & survival.

6.1.Impact: Human-Induced Natural Hazards Drought, Famine and Societal Consequences

Hazard Disaster

Prevention Avoidance of Conflicts

Crisis

Migration ↔ Conflict
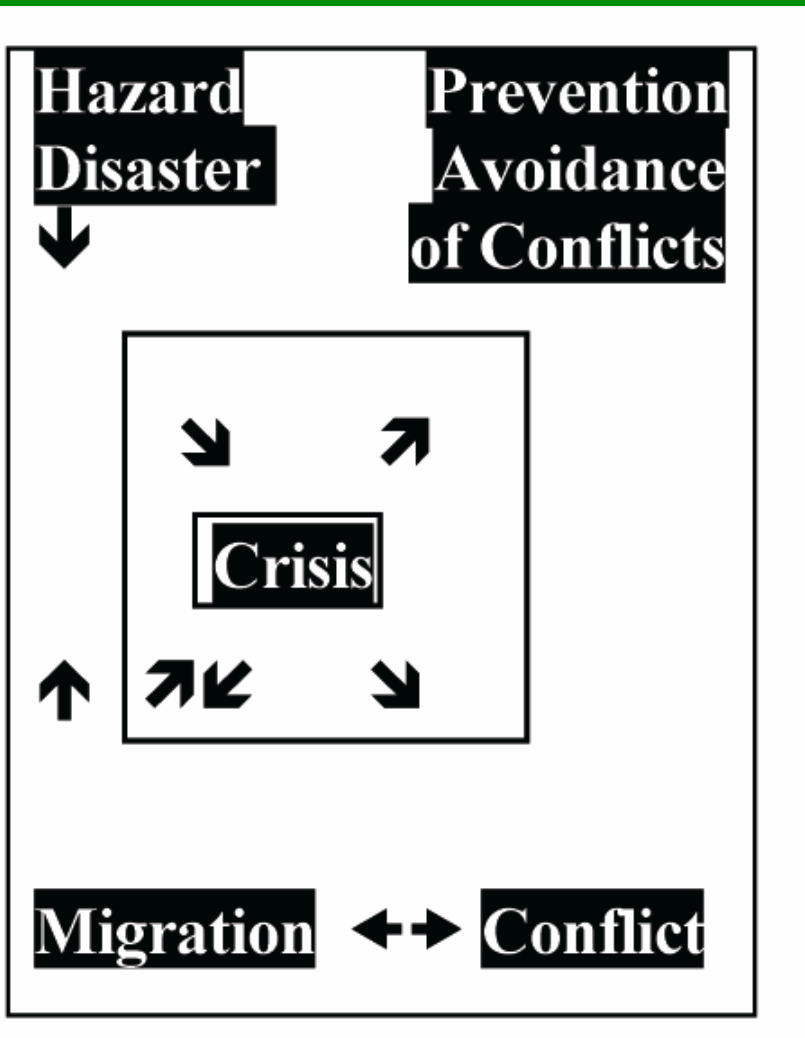
Much knowledge on these factors:

✓ **Drought, migration, crises, conflicts**

Lack of knowledge on linkages among extreme **or** fatal outcomes

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

Lack of knowledge on societal conse-quences: **migration, crises & conflicts**

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

What are indirect Societal Outcomes of:

▪ Human-induced hydro-meteorological natural hazards (Storms, floods, land-slides, drought) due to natural variability & increase due to climate change?

▪ For migration, societal crises and domestic and international conflicts?
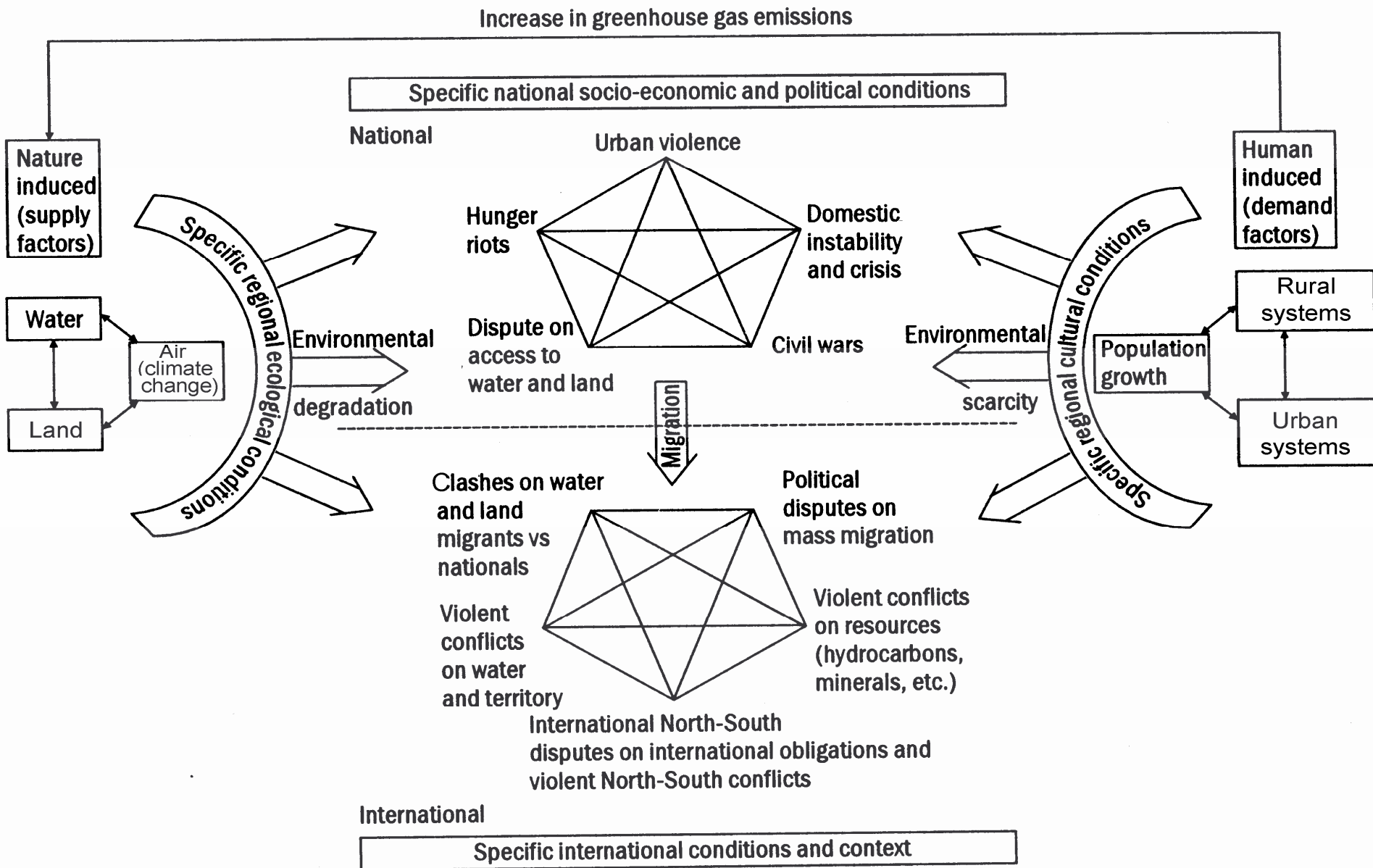
7. Four Pillars of Human Security

- **Human Security:** puts individuals, their environment and livelihood at the centre. The individual is regarded as most important and to protect his/her security, an analysis is employed that involves many interrelated variables such as economic, social, political, environmen-tal, technological factors.

Four Pillars of Human Security

- **"Freedom from fear"** by reducing the probability that hazards may pose a survival dilemma for most affec-ted people of extreme weather events (UNESCO, HSN), **Canadian approach:** Human Security Report (2005)

- **"Freedom from want"** by reducing societal vulnerabili-ty through poverty eradication programs (UNDP '94; 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 vulnerabi-lity & enhancing coping capabilities of societies confron-ted with natural & human-induced hazards (**UNU-EHS** 2004; Bogardi/Brauch 2005; Brauch 2005a, 2005b).

7.1. Freedom from Fear: Human Security Network: Canada, Chile & Costa Rica

- **Narrow:** pragmatic, conceptually precise,
- **Goal**: "to provide security that individuals can pursue their lives in peace"
- **Threats**: inter-state wars, intra-state conflicts, criminality, domestic violence, terrorism, small arms, inhuma-ne weapons, land-mines, "to provide security so individuals can pursue their lives in peace" (Krause 2004).

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 internatio-nal humanitarian and human rights law, human develop-ment, 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, light weapons, trans-national organised crime (Ottawa Convention on Anti-personnel Landmines)
- ➢ **Strong intern. institutions** that support & enforce above

7.2. Human Security Network Members

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

The Network has an interre-gional & multiple agenda, strong links to civil society & academia.

The Network emerged from landmines campaign at a Ministerial, Norway,1999.
Presidency: Thailand (2005-6)

Topics of Activities: Anti-personal Landmines, International Criminal Court, protection of children in armed conflict, control of small arms & light weapons, fight against transnational organized crime, human development, human rights education, HIV/AIDS, implementation of international humanitarian & human rights law, conflict prevention

7.3. HSN Medium Term Workplan 2005–2008

Areas of Cooperation

- **Effective multilateral institutions**
- **Human Rights**
- **Protection of civilians**
- **Small arms, light weapons, and landmines**
- **Women, Peace and Security**
- **HIV/AIDS**
- **Poverty and People-centred Development**
- **Emerging Issues**

Opportunities for action

- *1) Cooperation in the context of international fora and events*
- *2) Ministerial Meetings*
- *3) Cooperation in the implementation of key UN SC , GA, ECOSOC resolutions as well as human security elements in documents of key intern. conferences*
- *4) Cooperation in capitals, Geneva and New York*
- *5) Coordination through the mechanism of Troika*
- *6) Cooperation with civil society and academia*

7.4. Human Security Report

HUMAN SECURITY CENTRE

HUMAN SECURITY REPORT is inspired by the UN's *HUMAN DEVELOPMENT REPORT.* Focus on security trends.

HUMAN SECURITY REPORT draws on scholarly research, focuses on people rather than states, for non-specialists.

The *HUMAN SECURITY REPORT* does not deal with nuclear arms control or strategy issues associated with interstate conflict and the national security paradigm.

Report deals with **global & regional security trends rather than developments in specific countries**.

A comprehensive annual assessment of the incidence, severity, and consequences of political violence around the world, the *HUMAN SECURITY REPORT* provides trend data and analysis that is essential to evidence-based security policy.

http://www.humansecurityreport.info/index.php?option=content&task=view&id=28&Itemid=63
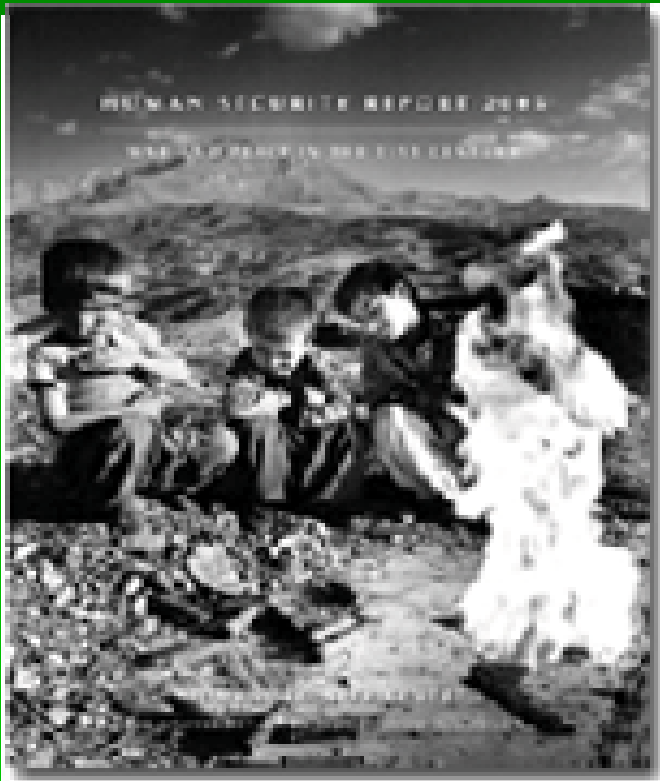
7.5. Freedom From Want: Human Security Commission: Human Security Now

- **Broad:** wider agenda, conceptually more convoluted

- **Goal:** reducing individual/societal vulnerabilities in the economic, health, environment, political, community, and food sphere. To 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, unemploy-ment, crime, social conflict, political repression, land degrada-tion, deforestation, emission of GHGs, environmental hazards, population growth, migration, terrorism, drug production & trafficking.

Photo by Osamu Honda 2003

7.6. Ogata & Sen (HSC): Human Security Now (2003)

Ogata/Sen: 2 Approaches: Protection & Empowernment

Protection:
- protection in violent conflict
- proliferation of arms
- protection and funds for post-conflict situations
- strengthening the rule of law
- developing norms and institutions to address insecurities

Empowernment:
- achieve UN Millenium Development Goals, poverty eradication encouraging fair trade and markets
- sustainable development
- universal access to basic health care
- universal education

- Protection and Empowerment are Mutually Reinforcing!
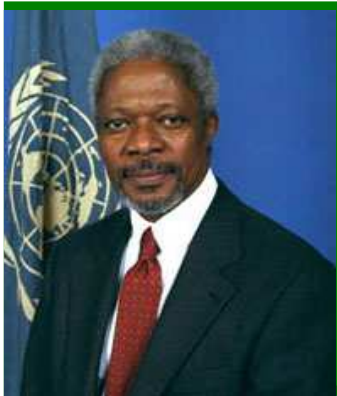
7.7. Freedom to Live in Dignity

Kofi Annan – need for a human centered approach to security. Human security can no longer be under-stood in military terms.

Must encompass economic development, social justice, environmental protection, democratisation, disarma-ment, & respect for human rights and the rule of law."

"embraces far more than the absence of violent conflict"

In Larger freedom: development, security and human rights (2005):

UN Charter preamble "We the peoples"

- **respect for fundamental human rights, establish conditions for justice & rule of law, "promote social progress, better standards of life in larger freedom".**

- **Development, security & human rights** reinforce each other. **Poverty & denial of human rights** may not "cause" civil war, **terrorism or organized crime**, all greatly increase the risk of instability and violence.

- No **development without security, no security without development**, we will not enjoy either **without respect for human rights**.

- **All human beings have the right to be treated with dignity and respect.**

- **Promotion of universal values of rule of law, human rights & democracy are ends in themselves, essential for a world of justice, opportunity & stability.**

- **No security agenda & drive for development will be successful unless based on human dignity.**

8. Fourth Pillar of HS: Freedom from Hazard Impacts

- **UNU-EHS**: Bogardi/Brauch (2005), Brauch (2005)
- **Goal:** reduce vulnerabilities & enhance the capacity building & coping capabilities of societies faced with natural & human hazards
- Threats/Hazards:
  - <u>Environmental:</u> 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)
  - <u>Societal</u>: 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
  - <u>**long term strategies**</u>: e.g. Kyoto, Montreal Protocol
  - <u>**adaptation measures**</u>: e.g. dams, switching to renewable energy
  - <u>**mitigation measures**</u>: restrict housing in hazard areas (coastal areas-flooding, mud slides), charging more for garbage disposal and energy usage, birth control measures
- **Find sustainable ways of development**

8.1. GECHS Definition of Human Security

- **GECHS:** **IHDP Proj.: Global Env. Change & Human Secur.**

- **GECHS arose from the nexus of the human dimensions of GEC and the reconceptualisation of security.**

- **According to the GECHS definition:**

  "Human security is achieved when and where individuals and communities have the options necessary to end, mitigate, or adapt to threats to their human, environmental, and social rights; actively participate in attaining these options; and have the capacity and freedom to exercise these options" (1999).

- **GECHS has focused primarily on the causes of GEC (*pressure*),**

- **Institute on the Environment & Human Security of UN University (UNU-EHS) focuses on the *response* to extreme outcomes:** floods & droughts aiming at **"freedom from hazard impacts"** **reducing vulnerability & en-hancing the coping capabilities of societies confronted by environ-mental and human induced hazards.**

8.2. Compilation of Human Security Threats, Challenges, Vulnerabilities, Risks

Dangers for Human Security Posed by	Human Security			
	Threats to	Challenges for	Vulnerabilities to	Risks for
Underdevelopment ('freedom of want')	- well- being, - health - life expectan-cy	- social safety nets - human development - food security	- economic crisis and shocks - communicable diseases	those most vulnerable (socially, economically) and exposed to underdevelopment, violence and hazards: - peasants, - poor - women, - children, - old people - indigenous - minorities.
Violence & Conflicts ('freedom from fear') Human rights violations (freedom to live in dignity)	- Human life and personal safety (from wars) - identity, values	- feeling secure in a community - human rights - democracy	- war lords, criminals - corrupt regime, ruler - human rights abuses, violations	
Hazards and disasters ('freedom from hazard impact')	- Livelihood - survival - settlements, urban slums	- sustainable development - food security	- exposed popul. - livelihoods, habitat - disease (cholera, dengue, malaria)	

8.3. 'Human Security' Policies & Measures for Coping with Environmental Threats for 'Ecosystems' and 'Sustainability'

Strategies & means for coping with	Threats of	Challenges for	Vulnerabilities of	Risks of
	Environmental Security (Ecosystems & Sustainability)			
Sustainable development policy goals	- Air (climate), soil, water	- agriculture and food security	- vulnerable people (old, children, women, indigenous groups)	
Environment policy (implementation of environmental treaties, regimes)	- Climate change, - soil erosion, - water scarcity and degradation	- economy - agriculture - tourism - health	- rural livelihood - urban habitat - transport & econ. infrastructure	- reducing exposure of people with low resilience
Early recognition (research, education, training, agenda-setting)	- Extreme weather events (storm, flood, drought)	- agriculture (shift in crops)	- city planning - building standards	- enhancing knowledge of these people
Early warning of hazards & disasters	- Hydro-meteorological (storms, floods, drought) and geophysical (earthquake, volcano, tsunami) hazards	- agriculture (specific crops) - public health	- vulnerability mapping of hazard pro-ne areas &housing	- enhancing training of these people
Effective disaster preparedness & rapid disaster response		- (inter)national organisations and resources	- vulnerability mapping of hazard prone areas and housing	- enhancing protection of these people

9. Hazard Impacts, Social Vulnerability & Survival Dilemma

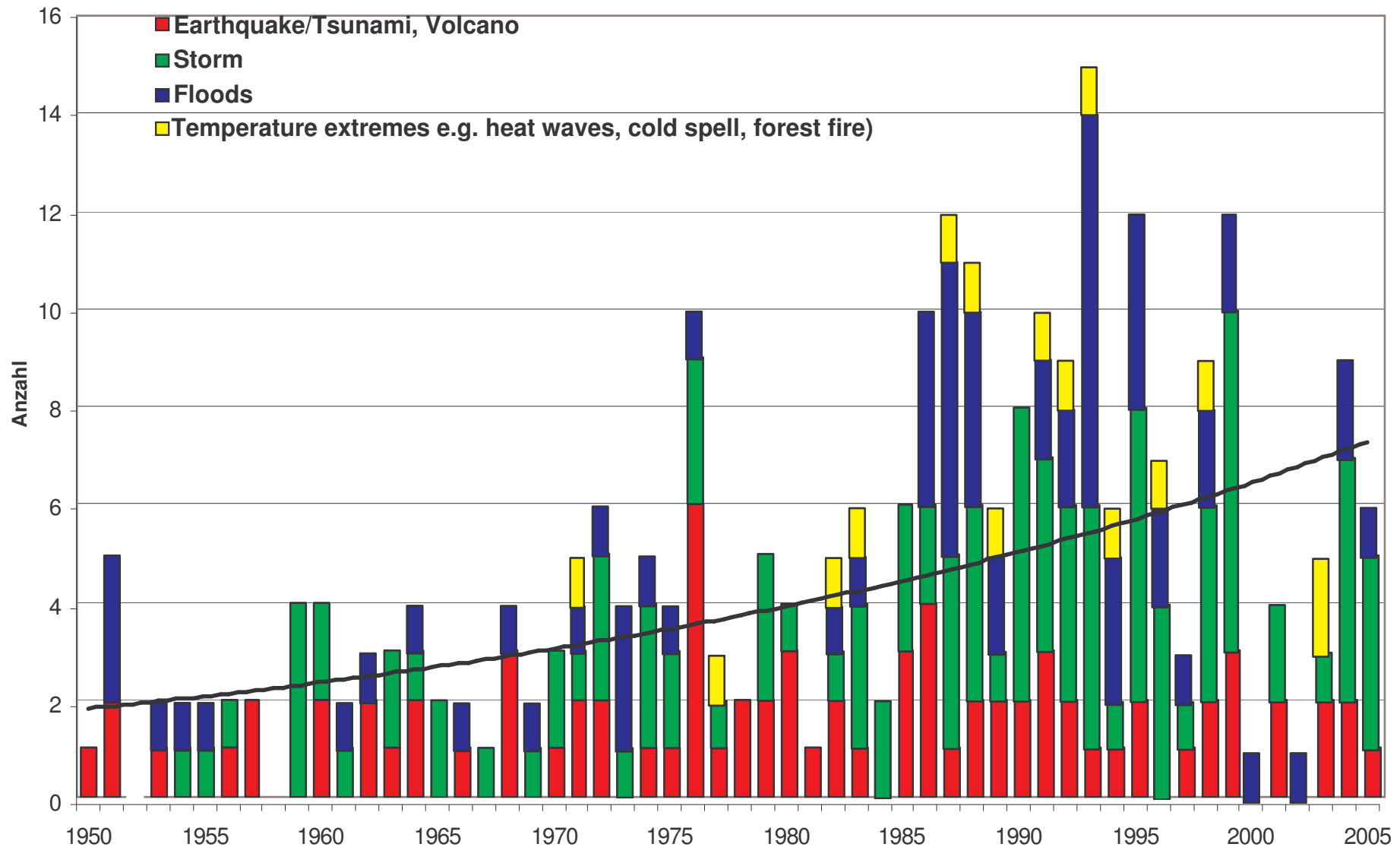## Global Change and Human Security
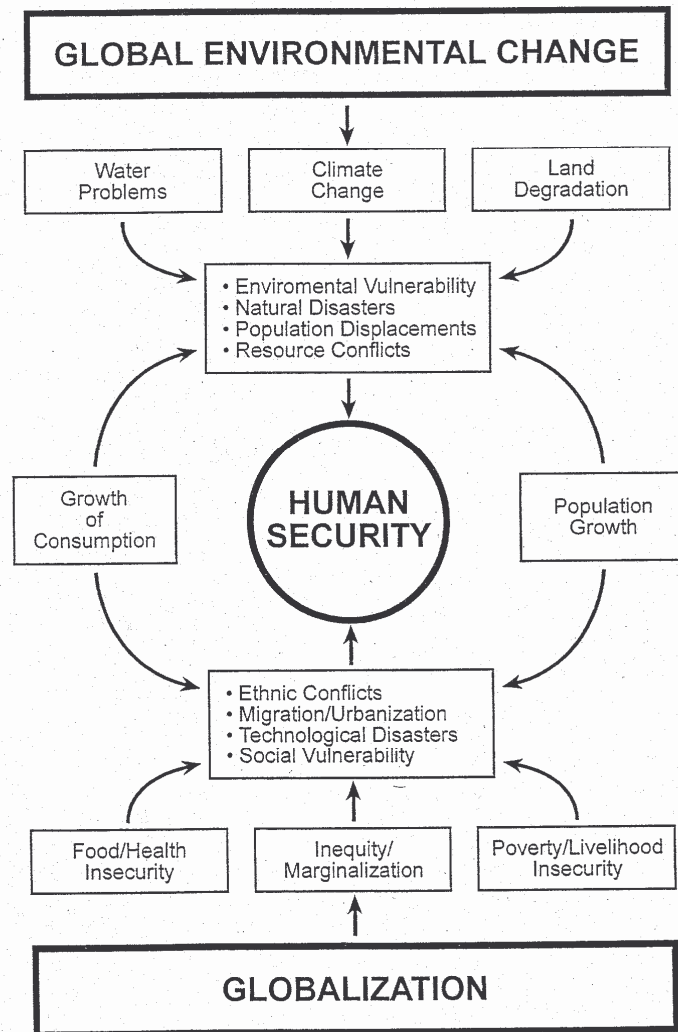
- **H.G. Bohle's concept of dual environmental and social vulnerability**
- **Ecosphere:** environmental vulnerability
- **Antrophosphere:** social vulnerability
- **Goal:** Reduce impact of natural hazards by reducing both vulnerabilities in coping with survival dilemma with the goal to achieve human security.
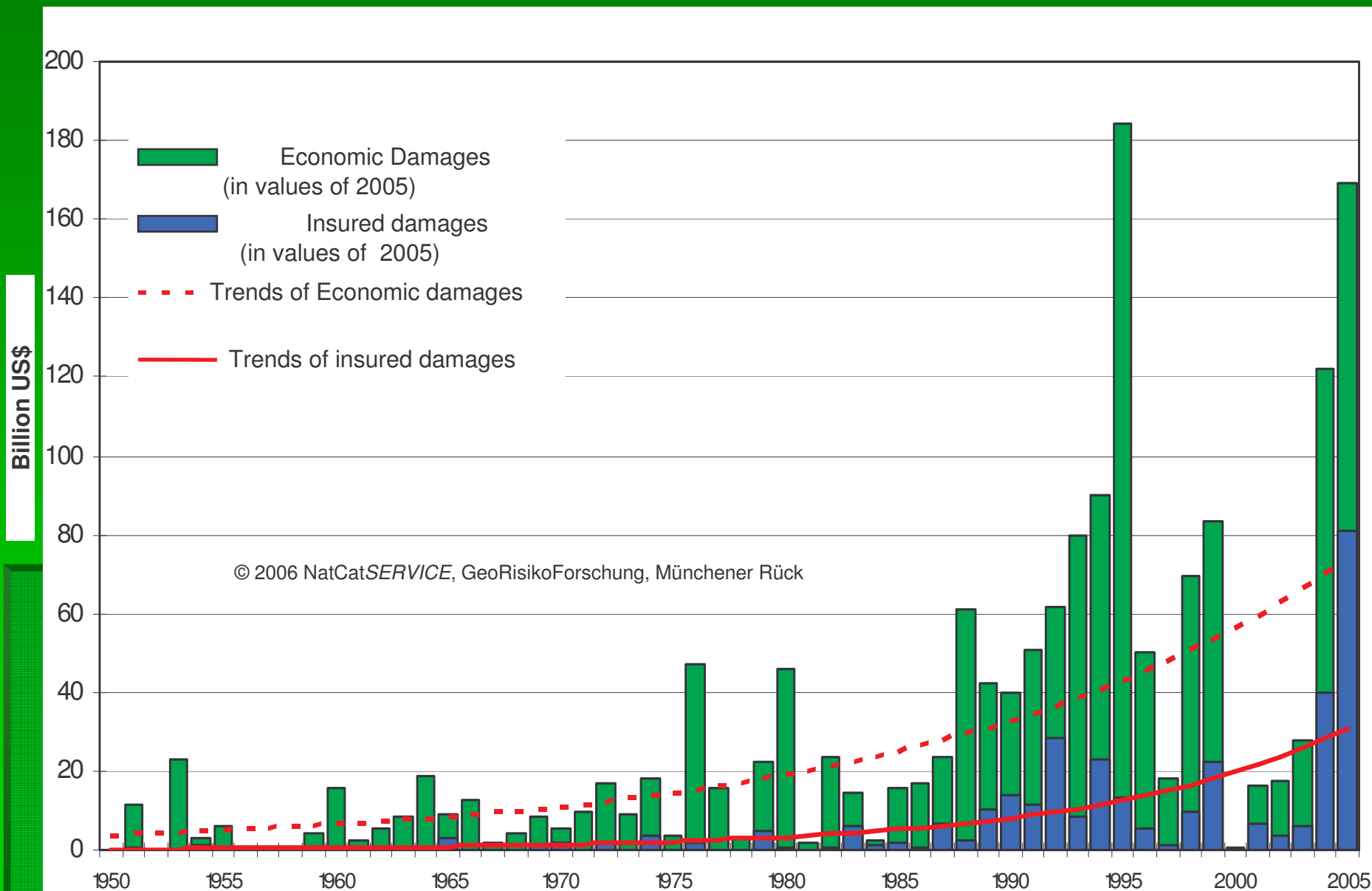
Hypotheses

- **Thesis 1:** Population growth, urbanisation & poverty will increase the societal vulnerability to hazards and disasters.
- **Thesis 2:** Extreme weather events will very likely in-crease hydro-meteorological hazards (droughts, flash floods and storms).
- **Thesis 3:** Environmental stress and hazards may trig-ger distress migration and low level conflict potentials within societies and among states.
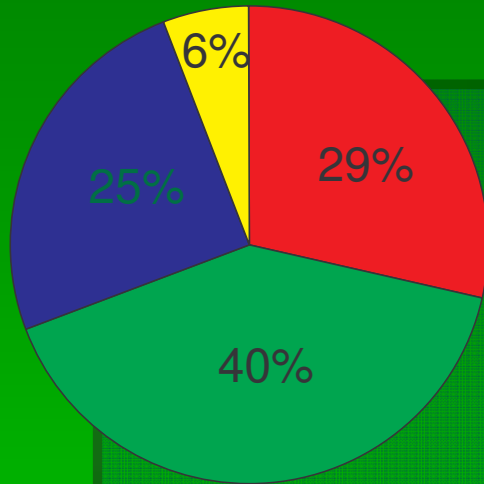
9.2. Major Natural Hazards (1950-2005), Economic and Insured Losses

Legend:
- Economic Damages (in values of 2005)
- Insured damages (in values of 2005)
- - - Trends of Economic damages
- —— Trends of insured damages

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Y-axis: Billion US$

9.3. Major Natural Hazards (1950-2005)

267 Events

29%
40%
25%
6%

Geological events

🟥 **Earthquake/Tsunami, Volcano**

Weather-related events

🟩 **Storm**
🟦 **Floods**
🟨 **Extreme temperatures**

1,75 Million Dead

2%
55%
36%
7%
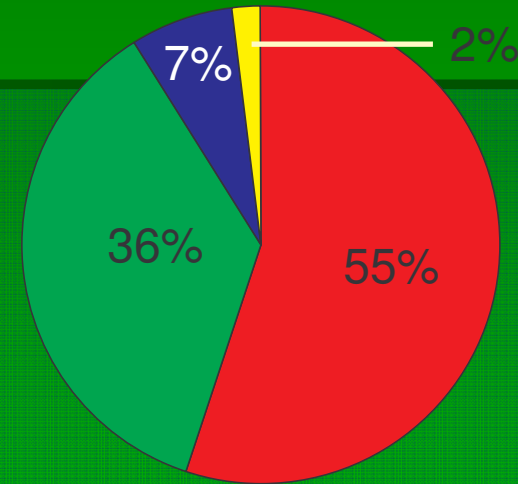
Economic damage: 1.400 billion US$

31%
38%
25%
6%
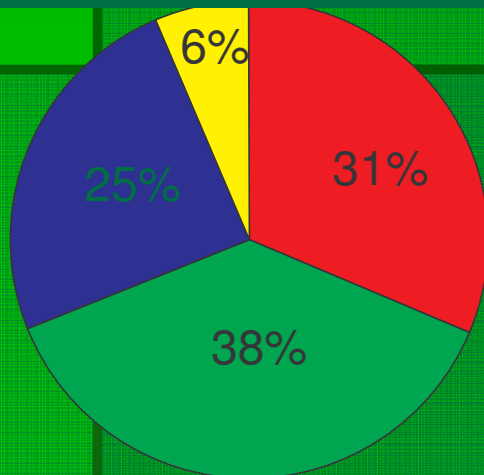
Insured damage: 340 billion US$

11%
79%
5%
5%

*in Werten von 2005

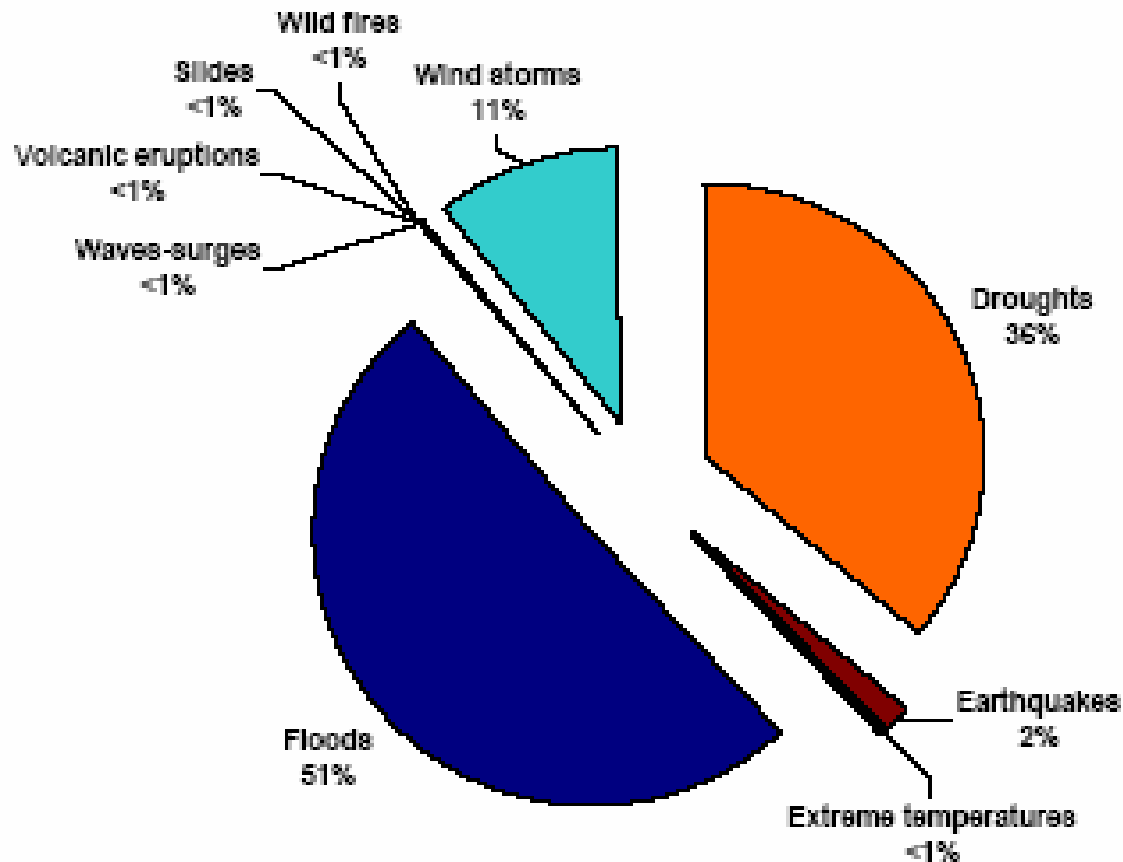# 9.4. Reported Death of Natural Hazards globally (1974-2003): 2.066.273 persons
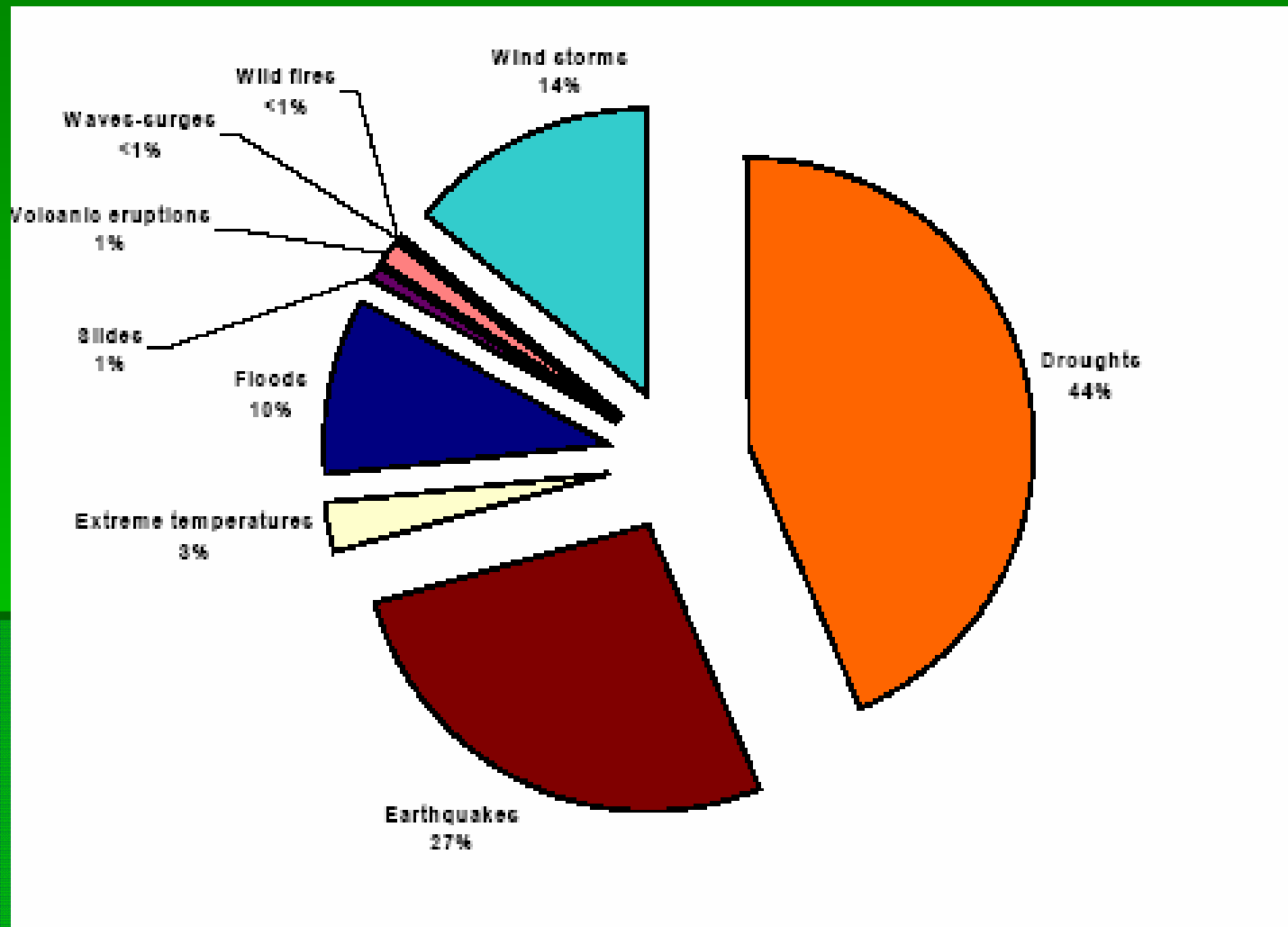
Source: Hoyois und Guha-Sapir (2004)

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

Wild fires <1%
Slides <1%
Volcanic eruptions <1%
Waves-surges <1%
Wind storms 11%
Droughts 36%
Floods 51%
Earthquakes 2%
Extreme temperatures <1%

(1) injured + homeless + affected

Source: Hoyois und Guha-Sapir (2004)

10. Policy Tools for Dealing with the Social Vulnerability to Hazards

- **Top-down** approaches: policies & measures: disaster preparedness & early warning systems (protection)
- **Bottom-up** approaches: build local resilience by empowerment of people & poverty eradication
- **For complex emergencies**: mainstreaming of early warning of hazards and conflicts
- **Proactive long-term** environmental security policies:
  - Adapt to & mitigate against climate change
  - Combat desertification
- **Human security strategy**: fear, want & hazards
- **Research needs**:
  - gender-specific data on victims (death, affected people)
  - Vulnerability mapping & indicators

10.1. Survival Strategies for Social Vulnerability & Survival Dilemma

- **Human security approach** puts the human being & humankind (not the state) into the centre
- **4th pillar: Freedom from hazard impacts:**
  - Address the long-term causes (climate related extreme weather events): proactive strategy for climate change
  - Address the short-term impacts: early warning, reduction of fatalities & damage (protection)
- **Reduce social vulnerability**
  - Poverty Eradication: Implementation of MDG
  - Build local coping capacity & resilience
- **Develop survival strategies:** combine top-down & bottom-up strategies
- **Cope with societal impacts of hazards** to prevent that they lead to disasters that may escalate into violence
- **Need for cooperation** & bridge-building between disaster specialists & peace & conflict research)