Potential Societal Impacts of the Physical Effects of Climate Change

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Part 1: Opening Remarks (Morning)

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2. Natural Variability and Anthropogenic Climate Change
3. Earth/Human System & PEISOR Model
4. Global Physical Effects to Climate Change
5. Rethinking of Security and Climate Change
6. Regional Relevance for ASEAN Region
7. Potential Future Societal Impacts

Part 2: Policy Proposals in the ARF Context (Afternoon)

8. Improving Knowledge Base in SE Asia
9. Linkages of Global Climate Change & Security in SE Asia
10. Intensifying the Dialogue in ARF Context
1. EU-ASEAN Context (relevance)

- Nuremberg Declaration: EU-ASEAN Enhanced Partnership
- Joint Declaration of ASEAN-EU Commemorative Summit
- Plan of Action to Implement Nuremberg Declaration

1. Political and Security Cooperation
   - Deepen political dialogue and enhance regional cooperation
   - Deepen security cooperation (crisis management, conflict prev.)
   - Traditional and non-traditional security issues

2. Economic Cooperation

3. Cooperation on Energy Security, Climate Change
   - Environment/Climate change
   - Mainstreaming climate change into sustainable development policy

4. Socio-Cultural Cooperation
   - Disaster Management and Emergency Response
   - Science and Technology

5. Development Cooperation
1.1. Theme of the Talk

- **Physical Effects of Linear Climate Change**
  - Temperature increase: sectoral impacts: agriculture
  - Sea-level rise: coastal regions and deltas (Vietnam)
  - Precipitation change: more (storms) or less precipitation (drought)
  - Extreme Weather Events (cyclones, floods, drought, fires)

- **2 Possible Tipping Points of the Climate System**
  - Albedo Tibetan Plateau: Melting of Glaciers in Himalaya
  - Change in Indian Monsoon

- **Societal Impacts of Physical Effects of CC**
  - People’s Movement (Displacement, Urbanization, Migration)
  - Domestic Crises
  - Conflicts (domestic on scarce resources: water, soil & food)
  - Conflict Avoidance and Prevention of Climate Conflicts
2. From Holocene to Anthropocene: Natural variability - anthropogenic climate change

In Geology/geography: Holocene era of earth history since end of glacial period (10,000-12,000 years ago, Anthropocene, since industrial revolution (1784, J. Watt’s invention of steam engine: anthropogenic climate change: burning of coal, oil, gas ➔ GHG increase

Natural variability of climate vs. anthropogenic climate change
3. Earth/Human System & PEISOR Model

Stimulus response models: OECD, UNCSD, EEA

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Effect</th>
<th>Impact</th>
<th>Societal Outcome</th>
<th>(Policy) Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Causes of Global Environmental Change (GEC)</td>
<td>Socio-economic interaction, environmental scarcity, degradation and stress</td>
<td>Natural and human-induced hazards</td>
<td>Individual choice (survival dilemma), Societal response</td>
<td>National and international political process, state, societal and economic actors and knowledge</td>
</tr>
</tbody>
</table>

Direct natural link: climate change and extreme weather events

GLOBAL ECONOMIC AND POLITICAL CONTEXT AND CONDITIONS (security dilemma between states in the international system)

Water, Soil, Biodiversity, Climate Change, Population

EARTH SYSTEMS

HUMAN SYSTEMS

Socio-economic process

Degradation (soil, water, biodiversity)

Stress

Natural hydro-meteorological hazards

- storm (hurricane, cyclone)
- floods, land slides
- drought, forest fire
- heat wave

Natural and human-induced hazards

- accidents
- deliberate acts (terrorism)

Geophysical hazards

- earth quakes
- tsunami
- volcano eruption

Technological and human-induced hazards

- move (migrate)
- protest & fight (violence)

Individual/family/community choice (survival dilemma)

State

Decision

Society

Economy

Knowledge (traditional & modern Scientific/technological)

National and international political context and conditions

Socio-economic process (human forces and human systems)
3.1. **Pressure**: Earth & Human Systems

**Interaction within climate system:** 
- *Linear*, non-linear, *chaotic* (tipping points of the climate system): crossing of thresholds: 
  -- melting of glaciers in Himalaya, 
  -- Indian Monsoon

**Physical effects of climate change:**
- Temperature increase
- Sea-level rise
- Precipitation change
- Extreme weather events (hazards)
### 3.2. E: Effect & I: Impact

<table>
<thead>
<tr>
<th>Effect</th>
<th>Impact</th>
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<tbody>
<tr>
<td>Socio-economic interaction</td>
<td>Natural and human-induced hazards</td>
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<tr>
<td>Environmental scarcity</td>
<td></td>
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<tr>
<td>degradation and stress</td>
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</tbody>
</table>

**Direct natural link: climate change and extreme weather**

- **E:** Environmental security debate of 1990s
  - Toronto school
  - Swiss school (ENCOP):
    - Env. scarcity > degradation > environmental stress

- **I:** climate change -> extreme weather events
  - Hydrometeorological hazards
    - **Drought** (wind erosion)
    - Heat waves
    - Forest fires
    - Storms (cyclones)
    - Flash floods & landslides (wind & water erosion)
### 3.3. SO: Societal Outcomes

**Individual level (choice)**
- Human security perspective
- Survival dilemma of humans

**State/society level**
- Hunger, famine
- Migration to urban slums
- Rural-rural migration
- Transborder migration
  - Seasonal vs. permanent
- Crises: domestic
- Conflicts:
  - Peaceful protests
  - Violent clashes
- Complex emergencies
  - Hazards & conflicts

<table>
<thead>
<tr>
<th>Societal Outcome</th>
<th>(Policy) Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual choice</td>
<td>Survival dilemma</td>
</tr>
<tr>
<td>Societal response</td>
<td></td>
</tr>
</tbody>
</table>

**CAL CONTEXT AND CONDITIONS (tests in the international system)**

**Individual/family/community choice (survival dilemma)**
- stay at home & suffer
- move (migrate)
- protest & fight (violence)

**Migration**

- Conflict Avoidance Prevention Resolution
- Political process
- Crisis

**Societal response**
- massive migration (rapid urbanization rise)
- internal crisis
- violent conflict
- conflict avoidance, prevention, resolution

**State**

- Decision

**Society**
- Coping with GEC & environmental stress (adaptation & mitigation)

**Economy**

- Knowledge (traditional & modernScientific/technological)
4. Global Physical Effects to Climate Change

Climate Change Impacts: Temperature & Sea level Rise

- Global average temperature rise in 20\textsuperscript{th} century: \(+0.6^\circ C\) for Asia, 1970-2000 (1.0 \(^\circ\)C)
- Projected temperature rise:
  - TAR (1990-2100): \(+1.4-5.8^\circ C\)
  - AR4 (07): \(+1.1-6.4\) (1.8-4) \(^\circ\)C


Sea level Rise:

- 20\textsuperscript{th} cent.: \(+0.1-0.2\) metres
- TAR: 21st century: \(9-88\) cm
- AR4 (2000-2100): \(18-59\) cm

4.1. Global and Regional Change in Temperature (IPCC 2007, WG 1, AR4, p. 11)

[Map and graphs showing global and regional temperature changes from 1900 to 2000, with different regions highlighted and temperature anomaly data for various years.]
4.2. Anthropogenic Climate Change in the Anthropocene (1900-2100)

- **Three Regimes for Temperature Increase**
  - +2°C: certain: EU & G-8 Stabilization goal (Copenhagen COP 15)
  - +4°C: probable, without immediate Stabilization Measures
  - +6°C: possible (business as usual) (catastrophe scenario)
### 4.3. Projected Increase of Sea Level Rise (IPCC chair, Pachauri, 2008)

<table>
<thead>
<tr>
<th>Stabilization level (ppm CO₂-eq)</th>
<th>Global mean temp. increase (°C)</th>
<th>Year CO₂ needs to peak</th>
<th>Global sea level rise above pre-industrial from thermal expansion (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>445 – 490</td>
<td>2.0 – 2.4</td>
<td>2000 – 2015</td>
<td>0.4 – 1.4</td>
</tr>
<tr>
<td>490 – 535</td>
<td>2.4 – 2.8</td>
<td>2000 – 2020</td>
<td>0.5 – 1.7</td>
</tr>
<tr>
<td>535 – 590</td>
<td>2.8 – 3.2</td>
<td>2010 – 2030</td>
<td>0.6 – 1.9</td>
</tr>
<tr>
<td>590 – 710</td>
<td>3.2 – 4.0</td>
<td>2020 – 2060</td>
<td>0.6 – 2.4</td>
</tr>
</tbody>
</table>
4.4. Projections and model consistency of relative changes in runoff by end of 21st century

- High latitude increases
- Decreases over some dry regions
- Percentage changes uncertain in desert regions
- Changes less reliable in lower latitudes, e.g., monsoon regions
4.5. Tropical Cyclones: Threat to Megacities

Figure 6.4-1
Tropical cyclone threat to urban agglomerations.
Source: WBGU
Reported Death: 2,066,273 persons
Affected persons: 5,076,494,541 persons

5. Rethinking of Security and Climate Change

1st thesis: 3 reasons for security reconceptualization
- End of the Cold War (fall of Berlin Wall, 9 Nov. 1989) or 11 Sep. 2011: 3rd attack on USA (1812, 1941) with different consequences
- Globalization: New opportunities and threats:
  - New actors: of personal violence (9/11/2001) terrorist networks (hate)
  - New processes: free financial flows: global financial & economic crisis, triggered structural deprivation (greed)
- Main focus of my talk: Transition from the Holocene to the Anthropocene: climate change as a security danger & concern

2nd thesis: Since 1994 a major shift has occurred from state-centred to human security concepts! UNDP; CHS (2003)

Three trends in reconceptualisation of security since 1990:
- **Widening** (dimensions, sectors), including environmental security
- **Deepening** (levels, actors): from state to human security
- **Sectorialisation** (energy, food, health, water, soil, climate security),
5.1. New Security Concepts: Environmental & Human Security

Anthropocene (human-induced climate change)

- **Scientific recognition**: 19th century: Tyndall, Arrhenius & since 1970s
- **Political issue since Rio Earth Summit** (1992), UNFCCC, Kyoto Protocol (1997), Copenhagen Accord (2009), post KP regime (1212-2020)
- **Since 2000-2007**: security issue (securitization)

<table>
<thead>
<tr>
<th>Security dimension ⇒</th>
<th>Military</th>
<th>Political</th>
<th>Economic</th>
<th>Environmental ↓</th>
<th>Societal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Societal/Community</td>
<td></td>
<td></td>
<td></td>
<td>⇩⇨</td>
<td></td>
</tr>
<tr>
<td>National</td>
<td>Narrow: Cold War</td>
<td>Energy se.</td>
<td></td>
<td>⇩⇨</td>
<td>Food, health</td>
</tr>
<tr>
<td>International Regional</td>
<td></td>
<td>Water security</td>
<td></td>
<td>⇩⇨</td>
<td>Water security</td>
</tr>
<tr>
<td>Global/Planetary ⇒</td>
<td></td>
<td></td>
<td></td>
<td>GEC</td>
<td></td>
</tr>
</tbody>
</table>
5.2. Three Security Debates on Climate Change

- **Climate Change & International Security**
  - UN GA resolution of 2 June 2009
  - UN Secretary General Report of 11 September 2009

- **Climate Change & National Security** (primarily USA)
  - 2007 several reports
  - 2008: National Intelligence Council (CIA): World by 2025
  - 2009: NIC: scenario & conference reports (SE-Asia)

- **Climate Change & Human Security**
  - HSN: Greek Presidency (May 2008)
6. Regional Relevance for ASEAN Region

What are possible security impacts of 4 physical effects for ASEAN?
- Temperature
- Sea level rise
- Precipitation
- Natural hazards

What are likely conflict constellations?

What should be done jointly to avoid/prevent security threats for the region, 10 states, people and human beings?
6.1 Knowledge Base: CSIS & SE Asia

On physical effects
- National communications on climate change
- IPCC: Assessment of peer-reviewed scientific knowledge
  - IPCC Report on Regional Impacts of CC (1998): on Tropical Asia
    - Chapter 11: Human Health, Well-Being, and Security
    - Chapter 12: Human security
    - Chapter 21: Regional context (Cross-regional hotspots
    - chapter 24: Asia

On societal impacts: so far a research desideratum
- Discourse analysis: is not yet possible as it is too new
- Empirical case studies on the region:
- Causal analyses: totally lacking
- Policy driven: Scenario analyses on South East Asia
  - EU Commission (studies by Adelphio Consult)
  - USA: National Intelligence Council of CIA (2 studies)
### 6.2. National Communications on Climate Change of ASEAN countries

<table>
<thead>
<tr>
<th>Countries</th>
<th>First (1-4)</th>
<th>UN-SG R.</th>
<th>IPCC,2001</th>
<th>IPCC,2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brunei</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cambodia</td>
<td>8.10.2002</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>27.10.1999</td>
<td>CCIS, 2009</td>
<td>WGI &amp; II: There are only very general references on tropical Asia but none on ASEAN and its two subregions</td>
<td></td>
</tr>
<tr>
<td>Laos</td>
<td>2.11.2000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malaysia</td>
<td>22.8.2000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Myanmar</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Philippines</td>
<td>19.5.2000</td>
<td></td>
<td></td>
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<tr>
<td>Singapore</td>
<td>21.8.2000</td>
<td></td>
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<tr>
<td>Thailand</td>
<td>13.11.2000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vietnam</td>
<td>3.12.2003</td>
<td></td>
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</tbody>
</table>

- **North:** Mekong River countries: Myanmar, Thailand, Laos, Cambodia, Vietnam
- **South:** Malaysia, Singapore, Indonesia, Brunei, Philippines
6.3. Scenario Literature on SE Asia

On societal impacts (scenario analyses)

• **Up to 2050**: For EU Commission: Adelphi Consult (later today)

• **Up to 2030**: US-NIC: Battelle Memorial Institute (August 2009): assessment of peer-reviewed scientific literature, model runs
  – Projected Regional Climate Change
  – Impacts on Human and Natural Systems
  – Adaptive Capacity
  – Specific Adaptive Capacity

• **For US-NIC: Centra Technology Inc. (January 2010)**: focus on Geopolitical Implications (US national security perspective)
  – Social, political, economic challenges
  – Civil and key interest group responses
  – State responses
  – Regional implications
  – Overall foreign policy implications
6.4. Potential Societal Impacts of the Physical Effects of Climate Change

• Physical effects:
  – Sea-level Rise (Chad Briggs, Adelphi)
  – Temperature increase
  – Precipitation change
  – Extreme weather events

• Societal Impacts
  – Migration (Philippe Boncour, IOM)
  – Threats to human rights and human security (Prof. Sarmiento)
  – Domestic and International Crises
  – Domestic and International Conflicts (wars?)
  – Domestic and International Conflict Avoidance & Prevention
6.5. Knowledge Deficiencies

NIC: Southeast Asia and Pacific Islands: Impact of Climate Change 2030

- In physical science research
  - Inability of GCM to model regional climates
  - Uncertainties on changing monsoon activities due to nat. variability & anthrop. CC
  - Difficulty to predict precipitation on a country specific case
  - Lack of medium-term climate predictions

- In social science research:
  - Partial understanding of important factors affecting vulnerabilities, resilience and adaptive capability

- Important research factors are still unaccounted for
  - E.g. in carbon cycle modelling
  - Ecosystem research models

- Shortcomings of Social Models
  - Models to simulate consumption without focus on feasibility & implementation
  - Lack of knowledge on human motivations

- Conclusion: Research on CC in SEA: piecemeal, discipline, sector, political implications considered separately from physical effects.

- NIC proposes: integrated research into energy-economic-environmental-political conditions & possibilities

Adelphi: Knowledge needs:
- More research, interconnectedness of crises, risk management method
### 6.6. Population Change in SE Asia (1950-2050)
Source: UN Populations Division (2009)

<table>
<thead>
<tr>
<th>Countries</th>
<th>1950</th>
<th>2010</th>
<th>2030</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brunei</td>
<td>48,000</td>
<td>407,000</td>
<td>547,000</td>
<td>658,000</td>
</tr>
<tr>
<td>Cambodia</td>
<td>4,346,000</td>
<td>15,053,000</td>
<td>20,100,000</td>
<td>23,795,000</td>
</tr>
<tr>
<td>Indonesia</td>
<td>77,152,000</td>
<td>232,517,000</td>
<td>271,485,000</td>
<td>288,110,000</td>
</tr>
<tr>
<td>Laos</td>
<td>1,666,000</td>
<td>6,436,000</td>
<td>8,854,000</td>
<td>10,744,000</td>
</tr>
<tr>
<td>Malaysia</td>
<td>6,110,000</td>
<td>27,914,000</td>
<td>35,275,000</td>
<td>39,664,000</td>
</tr>
<tr>
<td>Myanmar</td>
<td>17,158,000</td>
<td>50,496,000</td>
<td>59,353,000</td>
<td>63,373,000</td>
</tr>
<tr>
<td>Philippines</td>
<td>19,996,000</td>
<td>93,617,000</td>
<td>124,384,000</td>
<td>146,156,000</td>
</tr>
<tr>
<td>Singapore</td>
<td>1,022,000</td>
<td>4,837,000</td>
<td>5,460,000</td>
<td>5,221,000</td>
</tr>
<tr>
<td>Thailand</td>
<td>20,607,000</td>
<td>68,139,000</td>
<td>73,462,000</td>
<td>73,361,000</td>
</tr>
<tr>
<td>Vietnam</td>
<td>27,367,000</td>
<td>89,0029,000</td>
<td>105,447,000</td>
<td>111,666,000</td>
</tr>
<tr>
<td>SE Asia</td>
<td>175,905,000</td>
<td>589,615,000</td>
<td>706,492,000</td>
<td>765,966,000</td>
</tr>
</tbody>
</table>

#### TAR (2001) Temperature Change (°C), p. 546

<table>
<thead>
<tr>
<th></th>
<th>2020s</th>
<th>2050s</th>
<th>2080s</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Annual</td>
<td>Winter</td>
<td>Summer</td>
</tr>
<tr>
<td>1.05</td>
<td>1.12</td>
<td>1.01</td>
<td>2.15</td>
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</table>

The values are below the averages for Asia & South Asia.

#### TAR (2001) Precipitation Change (%), p. 546

<table>
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<th></th>
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<th>2050s</th>
<th>2080s</th>
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<tbody>
<tr>
<td></td>
<td>Annual</td>
<td>Winter</td>
<td>Summer</td>
</tr>
<tr>
<td>2.4</td>
<td>1.7</td>
<td>2.1</td>
<td>4.6</td>
</tr>
</tbody>
</table>

The values are below the averages for Asia & South Asia.


<table>
<thead>
<tr>
<th></th>
<th>2010-2039</th>
<th>2040-2069</th>
<th>2070-2099</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Precipitation</td>
<td>Temperature</td>
<td>Precipitation</td>
</tr>
<tr>
<td>A1FI B1</td>
<td>A1FI B1</td>
<td>A1FI B1</td>
<td>A1FI B1</td>
</tr>
<tr>
<td>0.86</td>
<td>0.72</td>
<td>-1</td>
<td>1</td>
</tr>
</tbody>
</table>
Vietnam is the most vulnerable country to climate change due to sea-level rise in South East Asia. In South-East Asia food & fibre, biodiversity, coastal ecosystems, human health and land degradation are highly vulnerable to climate change while water resources and human settlements are moderately vulnerable.
6.9. Natural Disasters in Asia (EMDAT)

- SE Asia is not as highly affected by disasters than South & East Asia.
- But the ASEAN countries have been affected by many severe storms, floods but also by droughts & by a projected decline in crop yields.
6.12 Projections of Change in Crop Yield with Climate Change: 2020, 2050, 2080, unmitig.
7. Potential Future Societal Impacts

- **Types of likely societal impacts:** migration, crises & conflicts and as a result: increased human insecurity

- While **structural trends** (e.g. demography) can be **projected** and climate impacts can be modelled, as singular events both societal outcomes and political response cannot be predicted,

- Therefore **conflict constellations** may be constructed with some probability (Scientific Advisory Council on Global Change of the German Government [WBGU approach])

- **Pathways to conflict** may be assumed (Report of UN Secretary General, 11 September 2009)
7.1. WBGU-Study: Climate Hotspots: 4 Conflict Scenarios

4 conflict constellations

1. Climate-induced freshwater resources
2. Climate-induced decline in food production
3. Climate-induced increase in storm & flood disasters
4. Environmentally- & climate induced migration
7.2. Conflict Constellation Climate-induced Degradation of Freshwater Resources

Relevant for states in Mekong River, especially for Laos, Cambodia, Vietnam, Myanmar, Thailand

Boxes 1 – 6: Dimensions of influence with key factors

Central causal chain

Influence of key factors on the central causal chain
7.3. Conflict Constellation Climate-induced Decline in Food Production

![Diagram of conflict constellation]

- **Global climate change**
  - Regional production
    - Local environmental degradation
    - Agro-ecological conditions
    - Land resources and productivity
    - Soil and water management
    - Susceptibility to animal and plant diseases
    - Crop diversity
  - (Regional) environment
    - Climate
    - Soil and freshwater resources
    - Storms and food disasters
  - Competing regional demands and land-use needs
    - Food versus other agricultural products
    - Consumption patterns (meat versus plant-based products)
  - Demographic development
    - Population size, structure, and density
    - Migration
    - Urbanization/megacities
  - Social and community stability

- **Changes in (regional) food production:** Decline in production
  - Economic
    - Per-capita income
    - Economic structure
  - Infrastructure
    - Transport system
    - Agricultural research capacities
  - Global/external factors
    - Global agricultural production and agricultural market system
    - International energy markets
    - Multilateralism/unilateralism
    - International economic system

- **Changes in (regional) nutritional status:** Food crisis

- **Destabilization and conflict**

- **Violence**

Boxes 1–8: Dimensions of influence with key factors

- Central causal chain
- Influence of key factors on the central causal chain
7.4. Conflict Constellation Climate-induced Increase in Storm & Flood Disasters

Global climate change → Storm and flood disaster risks → Social stability → Conflicts in power vacuums → Conflicts while state functions are restored → Violence

Global climate change → Vulnerability
- Location of settlements and critical infrastructure
- Disaster preparedness
- Poverty
- Economic structure
- Educational level
- ... → Storm and flood disaster risks → Political stability and governance structures → Escalation of intrastate conflicts → Violence

Emergency relief across conflict fractures → De-escalation

Boxes 1–4: Dimensions of influence with key factors
Central causal chain → Influence of key factors on the central causal chain
7.5. Conflict constellation “Environmentally-induced migration”

- IOM (2007): Environmental migrants are persons or groups of persons who, for compelling reasons of sudden or progressive changes in the environment that adversely affect their lives or living conditions, are obliged to leave their habitual homes, or choose to do so, either temporarily or permanently, and who move either within their country or abroad.

7.6. Pathways to Conflicts and Conflict Constellations

Threat multipliers and threat minimizers: the five channels

- Climate Change
- Weak Adaptive Capacity
- Vulnerable
- Development
- Uncoordinated Coping
- Impacts
- Stateless
- Resource Scarcity or Resource Abundance

Possible Security Threats

- Community
- National
- Regional
- International

Sustainable Development

- Adaptation
- Economic Development
- Governance
- Capacity Building
- Mitigation
- Conflict Prevention

Source: United Nations Secretariat, based on submissions of Member States and relevant organizations.
7.7. Need for Scientific Research

• Discussion of four conflict constellations for SEA requires multidisciplinary interregional research

• Policy-driven consultancy reports: agenda-setting
  – NIC Study (also not peer-reviewed, offered an analysis of the peer-reviewed literature) and its impacts on US national security interests and strategies up to 2030 (DoD planning)
  – Adelphi study: more limited mandate & resource base
  – Both cannot be cited by the IPCC in its AR5 (due in 2014)

• Move from agenda-setting to scientific research
  – From guess work & speculation to multidisciplinary research
  – Policy decisions should be based on the best available knowledge that must still be developed within ASEAN and hopefully jointly together with the ASEAN Regional Forum to be reflected in the IPCC‘s AR 5
8. Improving the Knowledge Base in South East Asia: Voice to ASEAN

• 10 ASEAN countries are vulnerable to different physical effects of climate change

• Regional & national adaptation and mitigation plans require a better regional knowledge base on:
  – Specific physical effects of CC for all ASEAN countries;
  – Assessment of sectoral impacts (agriculture, health, habitat)
  – Analyses of case studies on linkages between environmental factors and climate change impacts for societal groups
  – A policy debate on strategies, policies and measures to avoid that possible conflict constellations will lead to violence

• Countries should support peer-reviewed scientific research that can be assessed by IPCC in its AR 5
9. Addressing Linkages of Global Climate Change and Security in SE Asia

- Four Schools or Approaches
  - Dramatizers: Climate war
  - Sceptics: lack of research
  - Scenario analyses
  - Empiricists
- Empirical analysis: needed
  - Qualitative case studies
  - Quantitative analyses
- Causal analysis: needed
  - Natural phenomena -> migration, crises, conflicts (violence)
- Discourse analysis: major focus
  - International, national, environmental (water, food, health), human security

Objects of Security Analysis (Securitization)
- Physical Effects: e.g. temp, rise
- Impacts: Sectors
- Societal Effects
  Whether they pose:
  - Objective Security Dangers
  - Subjective Security Concerns
9.1. Policy Response to Security Dangers posed by Global Change in SE Asia

- **How? Responsive vs. proactive action**
  - **Response:** cost of non-action (Stern Report)
  - **Proactive:** anticipatory knowledge, learning, action

- **What? Address Causes (Pressure)**
  - **Earth system:** environmental quartet
  - **Human:** productive/consumptive behaviour

- **Respond to Effects & Impacts**
  - Environmental stress
  - Climate-related natural hazards

- **Address Societal Outcomes & Policy Response**
  - Migration, Crises and Conflicts
10. Proposals for Intensifying the Dialogue in the ARF Framework

From agenda-setting to knowledge creation

- 5th IPCC Assessment Report (2014)
  - WG II: Chapter 24 on Asia
  - WG II: Chapter 12 on Human Security

Basis: peer-reviewed scientific knowledge on the region by scholars from the region (give ‘voice’)

- Joint EU-ASEAN Scientific Study Group (to report to ASEAN Regional Forum)
  - EU call 7th Framework Programme of Research
  - Climate Change & Security in ASEAN Countries
10.1. From Reactive to Proactive Action?

UN Framework Convention on Climate Change (1992) goal: stabilization by 2000
Kyoto Protocol (1997): goal: global reduction by 5.1%
Many countries missed target (USA: + 16.8% instead of -8.1% (KP), by 25%)
G-8 Commitment: -50% globally or by -80% by Annex-1 countries (including most OECD countries)
How to achieve these ambitious goals until 2050?
10.2. Copernican Revolution in Thinking
Fourth Sustainable and Green Revolution in Action

We face two alternative strategies & visions

- Hobbesian obsession & business as usual (1990-2010)
  - Many failed obligations and missed opportunities since Kyoto (1997)

- A revolution in thinking and action for sustainability
  - Action Goals: A fourth sustainable and green revolution
  - Strategy: Transition towards Sustainability
  - UNEP Strategy: Achim Steiner February 2009: New Green Deal

Transition to fourth peaceful revolution (Anthropocene)
- First Revolution: Agricultural: collectors to farmers
- Second Revolution: Industrial (1750)
- Third Revolution: Communication (after WW II)
- Fourth Revolution: Sustainable Green Revolution (2050)
10.3. New Peace & Security Agenda for the Anthropocene

For the transition to the Anthropocene Era of Earth History we need for the 21st century

– A Copernican Revolution in the thinking for sustainability
– A Fourth Sustainable Green Revolution
– A Strategy for a sustainability transition
– New Nonmilitary Environmental Security Agendas
– New realistic conceptual visions as guidelines for action

• Vision of a sustainability transition
• Vision of a decarbonization of the economy
• Vision of efficiency revolution
• Vision of an energetic imperative
10.4. Policy Vision & Perspective:
Towards Sustainable Peace & Fourth Green Revolution

• **Goal:** stabilization of temperature increase at 2°C in global average temperature by 2100:
  - -50% global reduction of GHG, or 80% for OECD countries
  - Requires **major transformation & decarbonization of economy**

• **Combination of sustainable development strategy & peace policy:** sustainable peace to prevent that GEC issues pose a threat to international peace.

• **Fundamental transformation of security is needed not a militarization of the environment!**

• **We are both the threat (burning of hydrocarbons) & we can jointly develop the solutions starting now**
  - Changes in production, energy efficiency, renewables
10.5. Need for Scientific Knowledge & Anticipatory Learning

- Launch a research project or network (to report to ASEAN Regional Forum and to EU)
  - **Financing:** EU call 7th Framework Programme of Research
  - **Focus:** Climate Change & Security in ASEAN Countries

- Enhance scientific visibility of scholars from ASEAN countries in IPCC‘s AR 5 (2014)

- **Deliverable:** peer-reviewed scientific handbook on climate change and security giving voice to scholars from natural & social sciences in ASEAN countries.

- Establish a joint EU-ASEAN policy working group on adaptation & mitigation measures for avoiding security impacts of regional climate change.
10.6. Readiness to Include ASEAN Book in Peer-reviewed Book Series

- We should move from scenario analyses by think tanks to ambitious theoretically-guided empirical research.
- So far there are few peer-reviewed scientific empirical studies from ASEAN scholars on climate change and security linkages.
- As editor of a peer-reviewed book series on Human, Environmental Security & Peace (HESP) published by Springer I would be delighted to give voice to ASEAN scholars in a handbook on
  - Environment, Climate Change and Regional, National and Human Security in South-East Asia: Analyses and Perspectives from ASEAN countries
- Such a volume should publish new & original research by scholars from ASEAN countries with the goal to become recognized by the fifth assessment report (2014).
Free Publications for Download at:
10.7. Hexagon Series: Volumes I-V


Global Environmental and Human Security Handbook for the Anthropocene (GEHSHA)
Thank you for your attention and patience.

Text for download at:  

Contact: <brauch@onlinehome.de>