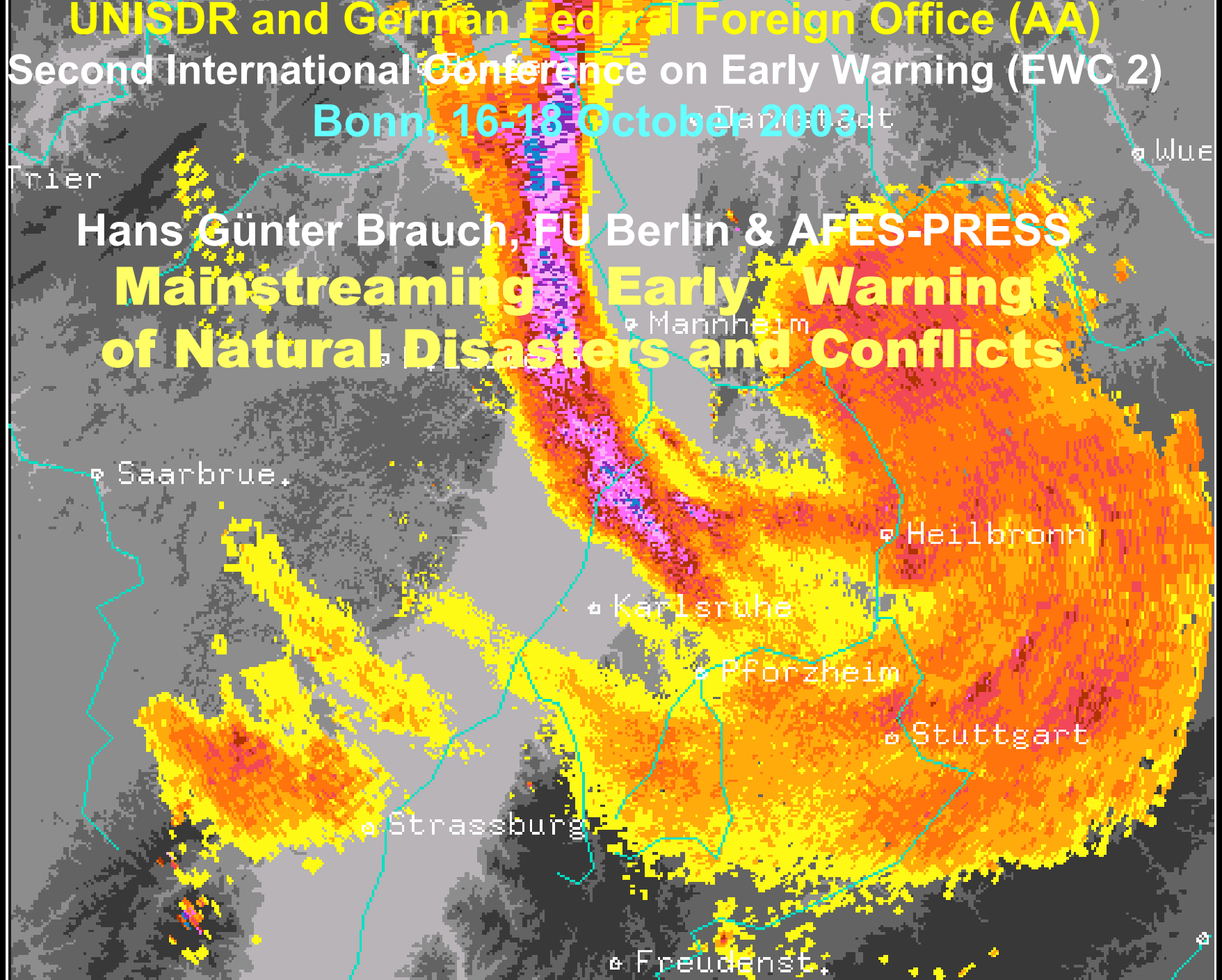


UNISDR and German Federal Foreign Office (AA)
Second International Conference on Early Warning (EWC 2)
Bonn, 16-18 October 2003

Hans Günter Brauch, FU Berlin & AFES-PRESS
Mainstreaming Early Warning
of Natural Disasters and Conflicts



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Early Warning (EWC 2): Section 13.1**

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Hans Günter Brauch, FU Berlin & AFES-PRESS
**Mainstreaming Early Warning
of Natural Disasters and Conflicts**

[<http://www.afes-press.de>] and [brauch@afes-press.de]

1. Introduction and Focus
 2. Model: Global Change, Environmental Stress & Fatal Outcomes
 3. Linking Natural Disasters with Societal Consequences
 4. Diagnosis of Fatal Outcomes: ECHO-Human Needs Index
 5. Basic Questions on Linkages
 6. Early Warning Efforts: Disasters & Conflicts
 7. Types and Goals of Early Warning Efforts
 8. Early Warning of Disasters and Conflicts in the EU
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 10. Mainstreaming 2 Early Warning Communities: Science & Policy
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 12. Humanitarian Challenges and Existing Early Warning Activities
 13. Early Warning Websites on Hazards
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 15. Proposals for Mainstreaming Early Warning on Hazards & Conflicts
- 



1. Introduction and Focus

- Dialogue between Climate Change & Disaster Reduction community
 - ❖ Conferences of June 2002 in **Berlin & The Hague** brought together the global environmental change and the disaster reduction communities
 - ❖ In **2003 UNISDR** launched a project on mainstreaming: **adaptation and mitigation measures** on Climate Change and Disaster Reduction
 - I suggest additional efforts to look for synergies of two early warning communities focusing on hazards & disasters and violent conflicts
 - **Disaster preparedness community (Fatal Outcomes)**
 - **Conflict prevention community (Violent Societal Consequences)**
 - I will link EU institutional efforts at two levels:
 - **Cardiff process**: early warning of disasters (DG Environment/ECHO)
 - **Göteborg process**: early warning for conflict prevention (DG Relex):
 - Role of earth-observation assets and the corresponding EU & ESA joint initiative: **Global Monitoring for Environment & Security (GMES)**
- 

2. Model: Global Environmental Change, Environmental Stress and Fatal Outcomes

**Causes
(Hexagon)**

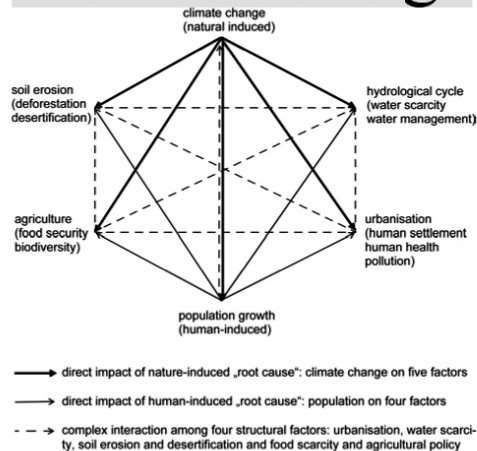
**Effect
(Interaction)**

**Environmen-
tal Stress**

**Probable
Outcomes**

↗ → → → → **Extreme Weather Events** → → → ↘

Climate change



environmental

→ **degradation**

(soil, water)

↓ ↑ →

→ **scarcity**

(water, food, housing)

global cond.



**Environ-
mental stress**



nation. cond.

disaster **conflict**
avoidance



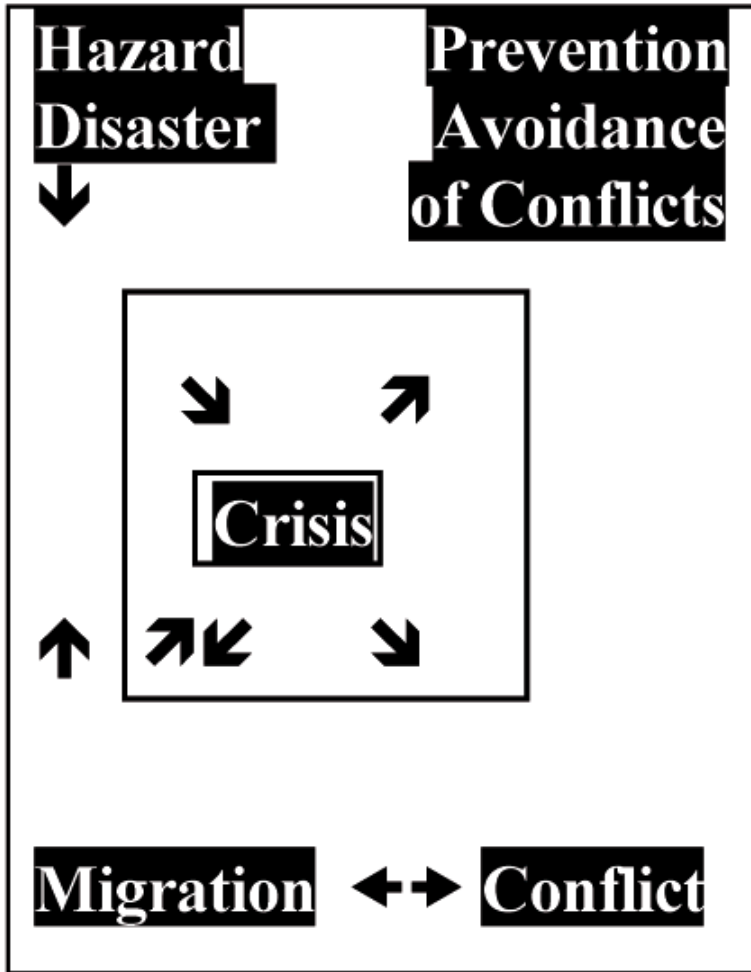
→ **Crisis**



migration

conflict

3. Fatal Outcomes: Linking Natural Disasters with Societal Consequences



Much knowledge on these factors:

✓ Hazards, migration, crises, conflicts

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

➤ Disasters & disaster-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

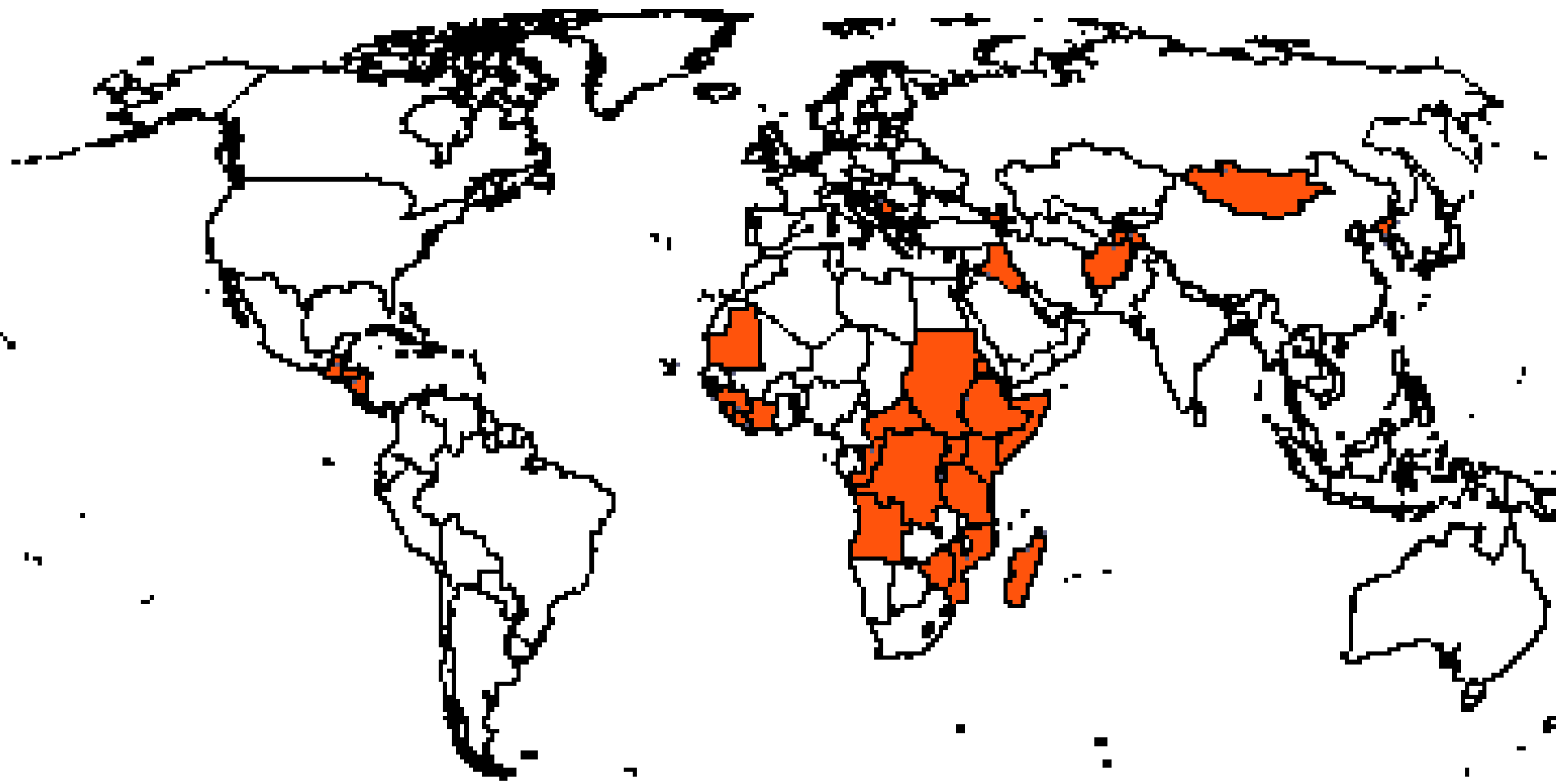
4. Diagnosis: Interactions among Outcomes

Decision Tool Based : ECHO-Human Needs Index (GINA, 2002)

	Country Ranking		I		II		III		IV	
			ODA Aver.	HDI	HPI	Natur disast	Con-flicts	Refu gees	IDP	Food need
1	Burundi (Nile Basin)	2,857	3	x	2	3	3	3	3	3
2	Somalia	2,833	x	x	3	3	2	3	3	3
3	Ethiopia (Nile Basin)	2,625	3	3	3	2	3	1	3	3
4	Sudan (Nile Basin)	2,625	3	2	3	3	3	3	2	2
5	Angola	2,571	3	x	1	3	2	3	3	3
6	Afghanistan	2,500	x	x	3	3	1	2	3	3
7	Liberia	2,500	x	x	1	3	3	2	3	3
8	Rwanda (Nile Basin)	2,500	3	3	2	3	3	0	3	3
9	Bangladesh	2,375	3	3	3	2	2	2	2	2

4.1. FAO: Global Information and Early Warning System on Food and Agriculture (GIEWS)

Countries Experiencing Food Emergencies in October 2003





5. Basic Questions on Linkages

Are there causal linkages among:

- ❖ natural hazards and violent societal consequences?
- ❖ natural hazards & disaster-induced migration?
- ❖ drought, food insecurity (famine), migration & conflicts?

Illustrative cases on linkages:

- **Lack of precipitation** > drought > bad harvests > famine > disaster-induced migration > clashes migrants/farmers > or hunger riots > police & armed forces restore order
- **Conflicts** > war refugees > famine > enhanced societal & environmental vulnerability to hazards and disasters (to drought, floods, earth quakes, volc. eruptions, epidemics)

If there are linkages, mainstreaming makes sense!

Linkages for 2 Cases: 4 Nile Basin countries and Bangladesh



5.1 Case of 4 vulnerable Nile basin countries

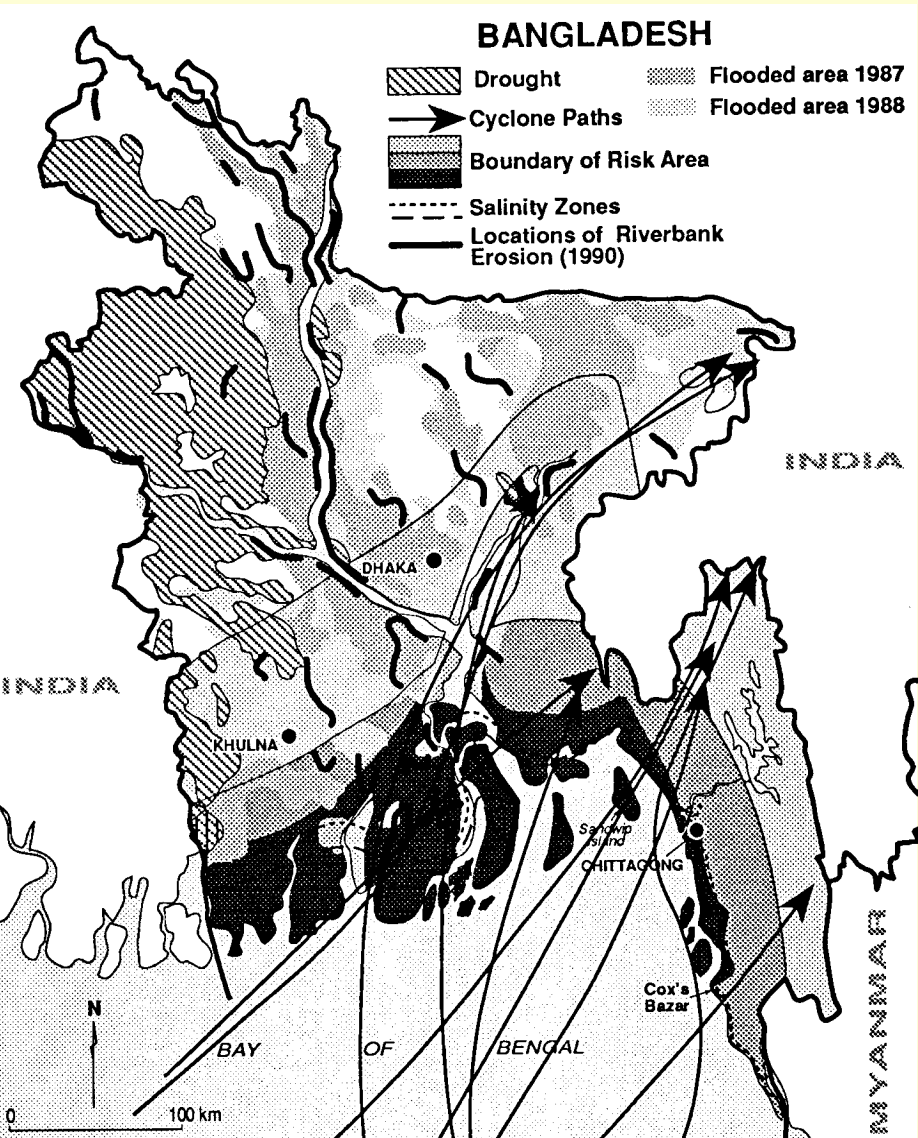
IBRD 30785



4 of 9 countries are in Nile Basin
High: drought, famine. migration, conflicts
Today: major recipients of food aid.
Early warning systems: GIEWS (FAO), FEWS (USAID) HEWS, IRIN. FEWER, FAST
Long-term indicator population growth

	1950	2000	2050	2000-50
Sudan	9,2	31,1	63,5	32,435
Ethiopia	18,4	62,9	186,5	123,544
Ruanda	2,1	7,6	18,5	10,914
Burundi	2,5	6,4	20,2	13,862
Sum (1-4)	32,2	108,0	288,7	180,755
Sum (1-9)	86,7	280,8	855,8	574,967

5.2 Case of Bangladesh: disaster & conflicts



Multiple hazards: floods, cyclones, droughts and sea-level rise.

- Since 1945: 1 million deaths
- Extreme weather forced people to migrate: IDPs & emigration
- Conflicts: migrants - tribal people in Chittagong Hills & in Assam

Long-term Warning Indicators

- ❖ 1 m SLR rise will inundate 17%
- ❖ Temp. Increase 2 - 5°C to 2100. ⇒ more severe droughts
- ❖ More intense cyclones & floods
- ❖ Health: water pathogens, Dengue

Population	1950	2000	2050
Bangladesh	29.0	137.4	265.4



6. Early Warning Efforts: Disasters & Conflicts

Level	of hazards and disasters	of crises and conflicts
Global	UN-ISDR, IATF 2 UNDP & UNEP	UN-SC, ORCI (1987-92), DPA, (HEWS), DPKO, OCHA; ECPS
Activity	EWC (1998), EWC2 (2003) Earth observation , hazard analysis, commun. technol.	SG: K. Annan Report 2002 UNHCR, IOM, UNICEF, FAO, WHO. World Bank
Regional (EU-15)	DG Environment Cardiff Process : integration of environment into other sectoral policies	DG Relex Göteborg Process : integration of conflict prevention into regional EU policies
EU-Main- streaming Tools	Thessaloniki European Council, June 2003 : Green Diplomacy Major Tool: Remote sensing in the framework of the EU-ESA initiative: Global Monitoring for Environment and Security	



7. Types and Goals of Early Warning Efforts

Threat	of hazards and disasters	of crises and conflicts
Types	Earthquake, volcanic eruption, tsunami, hurricane, flood, drought, fire, disease, epidemic	Social & economic, ethno-religious crisis, urban violence, disputes on access to water & food, hunger riots, civil wars, disputes on mass migration & scarce resources
Goal	J.C. Scott (1999): “to empower individuals and communities, threatened by natural or similar hazards, to act in sufficient time and in an appropriate manner so as to reduce the possibility of personal injury, loss of life and damage to property, or to fragile environments”	Swisspeace (FAST): “to recognize crucial political developments in the countries monitored in a timely manner, thus enabling decision makers to take measures to prevent violent escalation of conflicts or at least to attenuate their consequences. ... to provide a database [on] the political situation, conflict and cooperation ... to forecast ... developments.
Tool	Technical systems	Political procedures & processes



8. Early Warning of Disasters and Conflicts: Cardiff & Göteborg Processes in the EU


Cardiff Process: Disaster Prevention (DG Environment)

- **Disaster Response and Prevention: *Mitigation & adaptation efforts:***
Reduce “environmental” and “societal vulnerability” (key actors: DG Research, DG Environment, Civil Protection)

Göteborg Process: Conflict Prevention (DG Relex)

- **European Councils in Helsinki (1999), Feira (2000), Nice (2000), Göteborg (2001), Barcelona (2002), Thessaloniki (June 2003).**

European Diplomacy on Environment & Sustainable Dev.

- **Network of Foreign Ministry experts on environment & security**
 - **Policy level: „address the link between env. & security by ensuring that environmental factors are fully addressed in conflict prevention activities as well as in post-conflict reconstruction ... to identify priorities for more concerted action.“**
- 



9. A New Tool of the EU and ESA: Global Monitoring for Environment and Security

GMES: EU-ESA initiative: 1998-2003: discussion, 2004-2007: implementation, and after 2008: operational phase

GMES WG on Security (2002-03) reviewed EU policies of **conflict prevention & crisis management** & concluded that GMES could support

- Natural and technological risks in Europe
- Humanitarian aid and international cooperation
- Conflict prevention incl. monitoring of compliance with treaties

Organisations as potential users:

- ❖ Civil protection in Europe to manage natural and technological risks
- ❖ European institutions, internat. organis. NGOs in humanitarian and development aid, civilian crisis management outside Europe
- ❖ Council entities: civil and military crisis management operations.

Early Warning tasks: forecasting tools for natural disasters (river floods).

- ✓ Methodologies, alert tools for rapid onset disasters (storms, floods)
 - ✓ Contribution to **conflict prevention efforts**
- 



10. Mainstreaming Both Early Warning Communities in Science & Policy


Advantages of linking early warning: disasters & conflicts

- ❖ Successful early warning of hazards will also mitigate conflicts
- ❖ Successful early warning of conflicts will reduce vulner. to hazards

Need for three-fold mainstreaming of early warning efforts:

- Vertical:** global – regional – national – local, e.g. IDNDR, ISDR, with EU
- Horizontal:** disaster reduction and conflict prevention
 - Technical (**natural disasters**) vs. political (**conflicts**)
 - Impediments: knowledge gap on linkages between **fatal outcomes** of global environmental change and their **societal consequences**
 - **Learning from case studies** both success and failure
- Actors:** Political and scientific community: time- & theory-driven efforts

Who will benefit? Humanitarian organisations: **IFRC-RCS** et al.
and sponsors: **ECHO** (50% of humanitarian aid), **OCHA** et al.





11. Policy Conclusions & Recommendations

To mainstream both early warning activities we need:


- **systematic knowledge on interactions** among fatal outcomes and societal consequences.
- **analyses on the commonalities** of technical forecasts of hazards and political assessments of conflicts on policy processes of warning, analysis and policy responses by IGOs and governments.
- assessments on the **potential of remote sensing techniques and satellite systems** for dual early warning tasks: hazards & conflicts.
- comparable case studies on the (lack of) **integration of different technical early warning systems** (e.g. on crops, drought, migration, crises and conflicts in the Nile Basin, Sahel, Southern Africa).
- comparable case studies on (lack of) **cooperation of government agencies & IGO offices** on early warning for disaster reduction & response as well as conflict prevention & crisis management activities.
- comparable case studies on **success („best cases“)** & **failure** of early warning of natural disasters and of crises and conflicts.

This requires intensive discussions & systematic cooperation among both communities in science and politics.





12. Humanitarian Challenges and Existing Early Warning Activities

- **Peter Billing: EU: ECHO's early warning tools [EWC2 Talk]**
[on EC Humanitarian Office: http://europa.eu.int/comm/echo/index_en.htm]
 - **ECHO:** Annual budget +/- 500 mio € + reserve for NGOs, UN and Red Cross) in more than 50 countries (80% for conflicts; 20% for nat. disasters)
 - **Forward Planning Tools: GINA** (see 4 above) and “Classical” early warning: regular reporting from EC Delegations and ECHO's 60 field experts
 - **ECHO “crisis room”:** 7/7 permanence system, soph. communication techn.
 - **Internet applications** (ICONS, DMA, early detection of man-made crises)
 - **ISDR TASK FORCE WG 2: EARLY WARNING, Chair: UNEP**
[http://www.unisdr.org/task-force/eng/about_isdr/tf-working-groups2-eng.htm]
 - **WG focuses on the analysis of trends of hazards and early warnings to establish progress made and present gaps in this field. WG 2 anticipated the need for co-ordination with WG1 and noted that a wide range of information on Early Warning is available with the ISDR Secretariat.**
- 

13. Early Warning Websites on Hazards

- **Selected Websites for Early Warning of Natural Hazards:**
 - ❖ Inventory of Early Warning Systems: Initiative of ISDR-TF 2 [<http://database.unep.dkkv.org>]: no topical early warning information linking other early warning webpages in UN-system
 - ❖ ISDR-TF 2: [<http://www.unisdr.org/genwarning.htm>] documents and so far 6 links on DISASTER REDUCTION, no portal
 - ❖ ISDR: Reports of 1997, on different hydro-meteorol., geological et al. hazards [<http://www.unisdr.org/unisdr/warninghydro.htm>]
 - ❖ UNEP-NET: [<http://www.unep.net/>], search early warning, 1.11. 2003: list of 31 items on hazards, no topical early warning inform.
 - ❖ UNEP: [<http://www.unep.org/>], search early warning, 1.11.2003: lists more than 200 items on hazards within the UNEP webpages
 - ❖ UNEP-DEWA-GRID [<http://www.grid.unep.ch/activities/earlywarning/>]
 - ❖ GIEWS (FAO): Alerts [<http://www.fao.org/giews/english/alertes/sptoc.htm>] [<http://www.fao.org/WAICENT/faoinfo/economic/giews/english/giewse.htm>]
 - ❖ FEWS - Famine Early Warning Systems Network [<http://www.fews.net/>] USAID, NASA, USGS, topical information on drought and famine
 - ❖ Early Warning Systems [<http://www.esig.ucar.edu/warning/index.html>]

14. Early Warning Websites on Conflicts

Selected Websites for Early Warning of Conflicts:

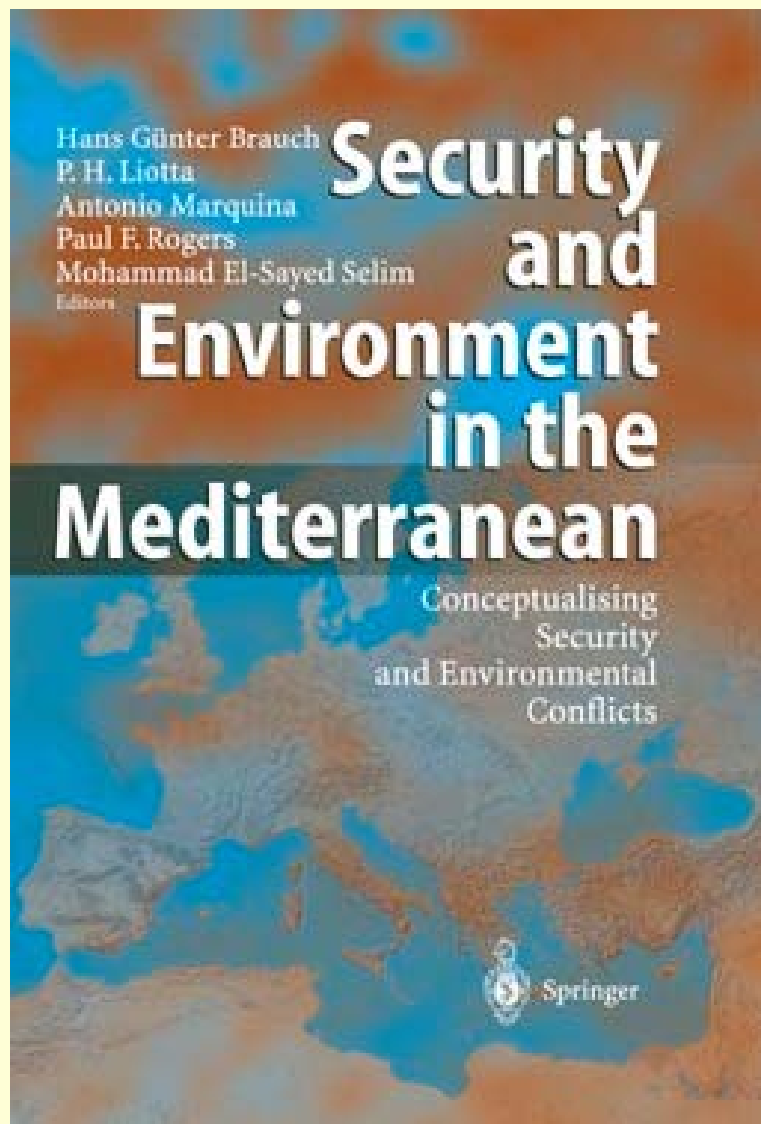
- ❖ GTZ: Crisis Prevention, Conflict Transformation and Peace-Building [<http://www.gtz.de/crisisprevention/english/links.htm>]
- ❖ ISN Early Warning [<http://www.isn.ethz.ch/linkslib/index.cfm?Parent=3206>]
- ❖ CEWS: Conflict Early Warning Systems [<http://www.usc.edu/dept/LAS/ir/cis/cews/cews.html>]
- ❖ EU Platform Conflict Prevention & Transformation [<http://www.euconflict.org/>]
- ❖ IFRC [<http://www.ifrc.org/>]
- ❖ SIPRI [<http://projects.sipri.se/conflictstudy/Krusenberg.html>]
- ❖ UN-OCHA IRIN News [<http://www.irinnews.org/>]
- ❖ UNDP Crisis Prevention & Reovery [<http://www.undp.org/erd/index.htm>]
- ❖ FEWER: Forum on Early Warning and Early Response [<http://www.fewer.org/>]
- ❖ FAST: Swisspeace [<http://www.swisspeace.org/fast/default.htm>]
- ❖ FAST International - Early Warning System: SIDA support [<http://www.sida.se/Sida/jsp/polopoly.jsp?d=2439>]
- ❖ Relief Web [<http://www.reliefweb.int/w/rwb.nsf>] and on natural Disasters [<http://www.reliefweb.int/w/rwb.nsf/vLND>]
- ❖ IRIN – UN Integrated Regional Information Network on sub-Saharan Africa, the Caucasus, and Central Asia [<http://www.aegis.com/news/irin/>]



15. Proposals for Mainstreaming Early Warning Activities: Hazards & Conflicts

- Many Existing Internet Websites for Early Warning on Hazards and Conflicts: but no Mainstreaming & Integration.
 - **1st Proposal: Joint Early Warning Internet Portal**
 - Add links to **UN** early warning activities on hazards & conflicts
 - Add links to **regional** early warning websites of IGOs, scientists
 - **2nd Proposal: Combined Early Warning Search Engine**
 - Add search engine that simultaneously search all linked webpages
 - Internal global EW system: ISDR, Provention Consortium, IFRC- RCS, Reliefweb with specified warnings for authorised access!
 - **3rd Proposal: Meeting of both Early Warning Communities**
 - Search for Synergies and Common Early Warning Concepts is needed.
 - Development of Integrated Early Warning Tools and Assessments
 - **4th Proposal: Research on Dual Early Warning Efforts**
 - Research on Linkages between Global Change and Fatal Outcomes!
 - Research on Linkages between (Natural) Disasters and Conflicts!
- 

Sources



- **BMU: *Climate Change and Conflicts* (2002) (http://www.bmu.de/en/800/js/download/b_climges/)**
- **Brauch-Liotta-Marquina-Rogers-Selim (Eds.): *Security and Environment in the Mediterranean* (Springer 2003) (http://www.afes-press.de/html/bk_book_of_year.html)**
- **On EU/ESA project GMES: (<http://www.gmes.info>)**
- **Brauch talk at 3rd GMES Forum on 6 June 2003 in Athens: Go to link at: (http://www.afes-press.de/html/download_hgb.html)**
- **Free download of other previous talks: (http://www.afes-press.de/html/download_hgb.html)**