Climate Change, Natural Disasters and Conflicts in the Mediterranean

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Problems and Prospects for Regional Cooperation in Mediterranean (MEDIN) and North Africa.

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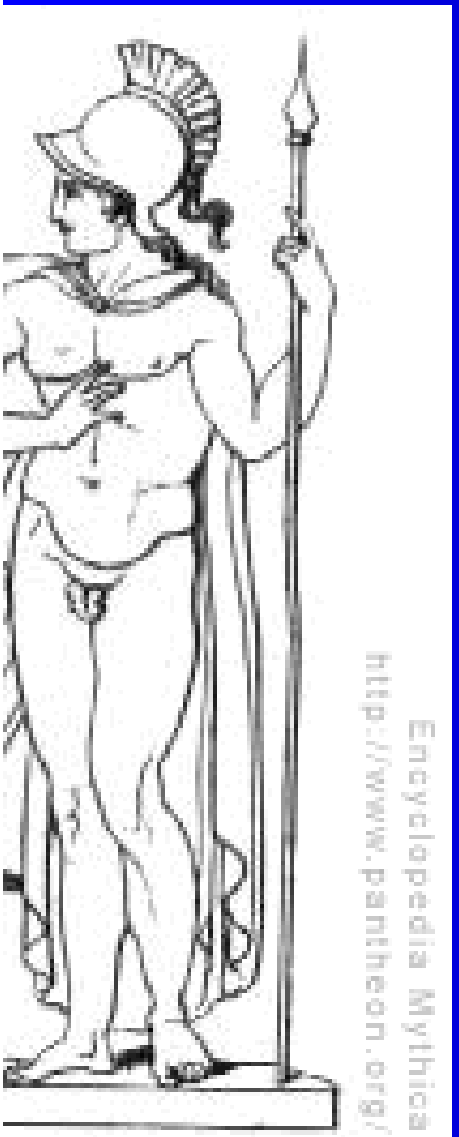
Climate Change, Natural Disasters and Conflicts in the Mediterranean

1. Greek & Roman Mythology: Mars vs. Venus (R. Kagan)
2. Philosophy: English School: Hobbes, Kant, Grotius
3. Hobbesian vs. Kantian Perception & Agenda for MENA Region
4. Grotian Perspective: Basis for a New Transatlantic Consensus?
5. Model: Global Challenges, Environmental Stress & Outcomes
6. Environmental Challenges for Mediterranean in the 21st Century
7. Interactions among Fatal Outcome: Drought, Famine & Conflict
8. Hobbesian Conclusions on Climate Change & Conflicts
9. Grotian Conclusions on Climate Change & Conflicts
10. Towards a Proactive: Environmental & Human Security Policy

1. 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

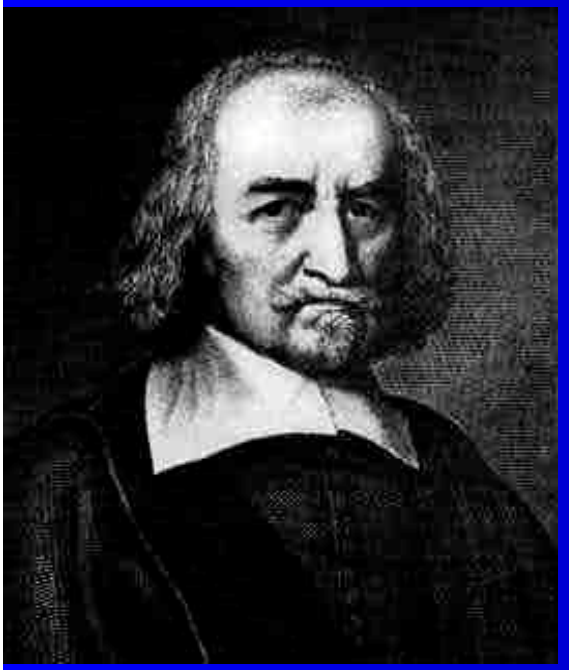
Americans exercise power in an
anarchic Hobbesian world where
defence depends on military might.

⇐Americans are from Mars

Europeans from Venus ⇒

***) Of Paradise and Power**
(New York: Alfred A. Knopf, 2003)
As a Grotian I disagree!

2. English School: Hobbes, Grotius & Kant



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

3. Hobbesian vs. Grotian Perception of Climate Change and Conflicts

❖**Hobbesian diagnosis: Peter Schwartz/Doug Randall:**

An Abrupt Climate Change Scenario and Its Impli-cations for US National Sccurity, Oct 2003, DoD, NA (worst case analysis)

- **EU: 2015: Conflicts within EU over food & water supply, 2025: EU nears collapse, 2027: increasing migration to Mediterran. countries: Algeria, Morocco, Egypt, and Israel, 30% of Europeans on the move**
- **US: European migration to US, 2020: DoD manages borders and refugees from Caribbean and Europe; 2025: Chinese – US naval forces in the Gulf on control of oil resources**
- **Source: <http://halfgeek.net/weblog/special/gwreport/Pentagon.html>**

❖**Grotian Diagnosis: Hans Günter Brauch:**

Climate Change, Environ-mental Stress and Conflicts, for Fed. Min. of Environment (Nov. 2002)

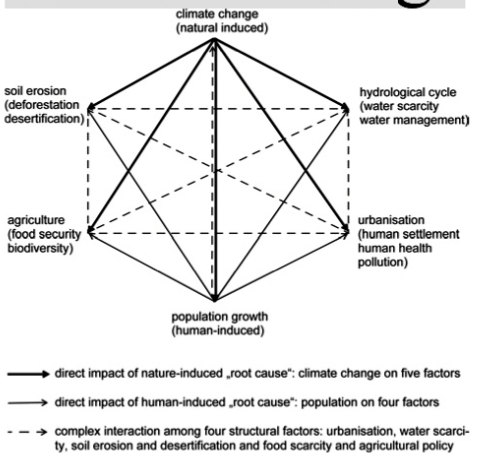
- **Focus: Interaction between Global Environmental Change and Fatal Outcomes, case studies: Mexico, Bangladesh, Egypt, Mediterranean**
- **Distress migration: from Nile Basin, across the Mediterranean, major human disasters, increase in hydro-meteorological hazards in the Mediterranean: severe storms. droughts, flashfloods**
- **Source: http://www.bmu.de/files/climges.pdf**

4. Grotian Perspective: Basis for a New Transatlantic Consensus?

- **For Europeans** modern Westphalian internat. order was built on Grotian principles of international law.
- International law and multilateral cooperation in international institutions matter (EU: compromise).
- **Europeans** pointed to other challenges to survival of humankind, ignored by Hobbesian mindset.

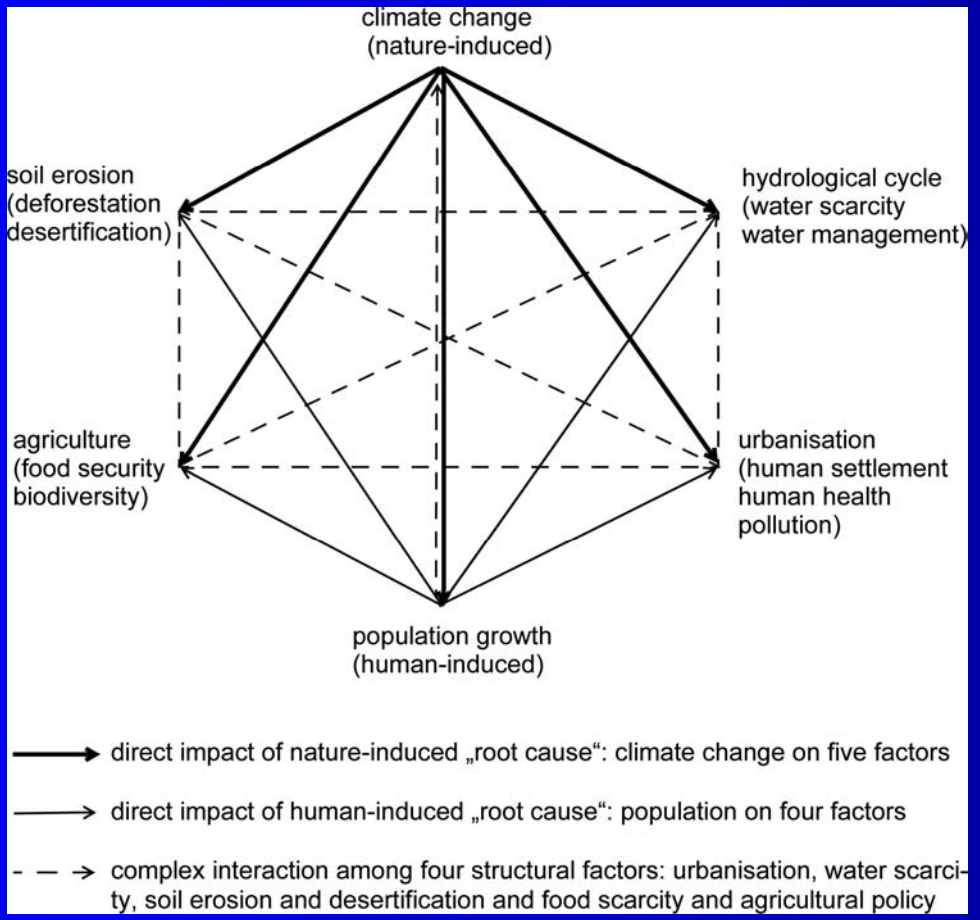
- **David King: PM Blair's science adviser**: „Climate change is the most severe problem we are facing today, more serious even than the threat of terrorism" (Independent, 9.1.2004)
- **Grotians: Wider problem recognition, anticipatory learning, adaptation & mitigation, multilateral cooperation for solution!**
- **Grotian view: Basis for a new transatlantic consensus?**
- **NATO: CCMS-Study: *Environment & Security in an Internat. Context* (DoD & German Environment Ministry, March 1999)**
- **NATO CCMS/ARW: *Desertification as a Security Issue* (2003).**

5. Model: Global Environmental Change, Environmental Stress & 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**

6. Environmental Challenges for the Mediterranean in the 21st Century : Survival Hexagon

Survival Hexagon: 6 key factors



Environmental security in Mediterran. is affected by

Nature & human-induced

- **Air:** Global climate change
- **Soil** degrad., desertification
- **Water** scarcity and hydrological cycle

Human-induced factors

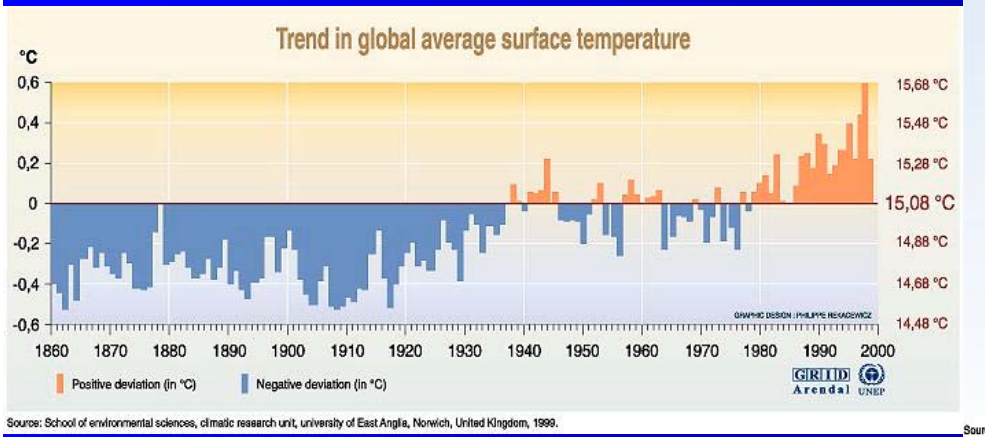
- Population growth
- Urbanisation
- Food & agriculture

6.1. Global Climate Change: Temperature Increases

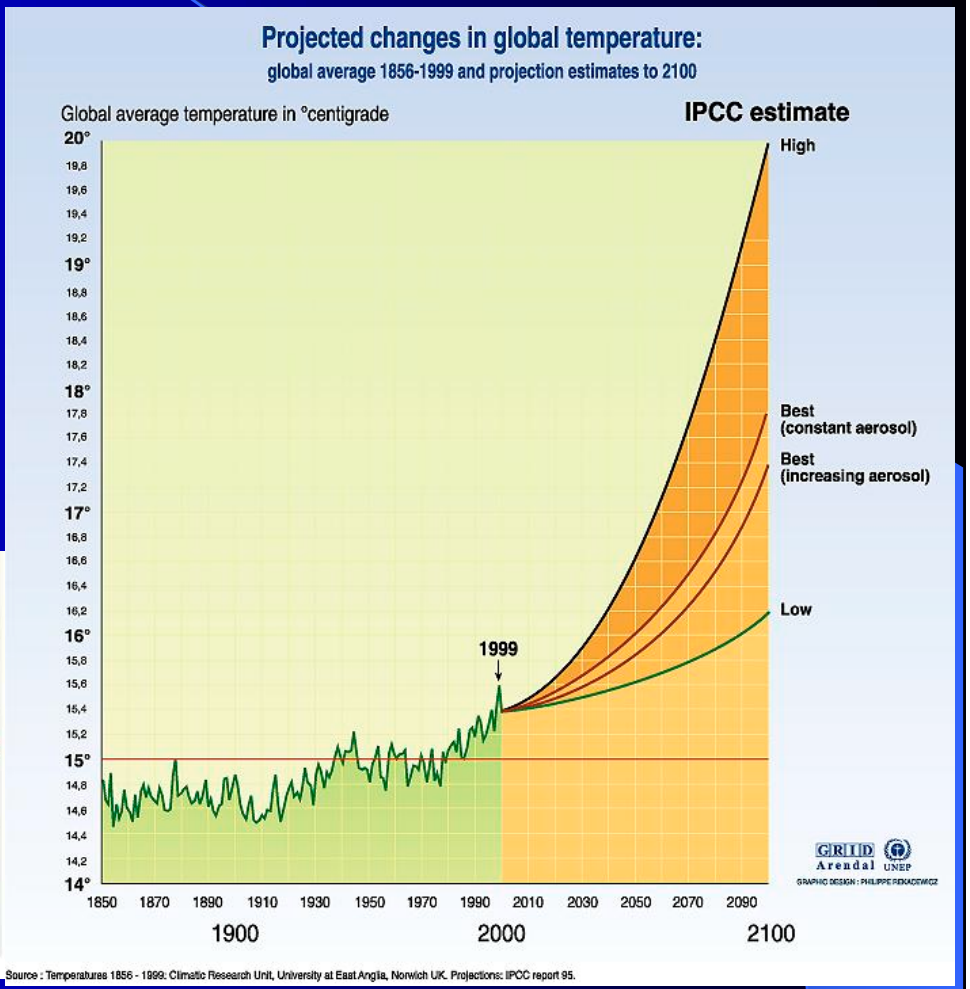
2 Climate Change Impacts: Temperature & Sea level Rise

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

Sources: IPCC 1990, 1995, 2001

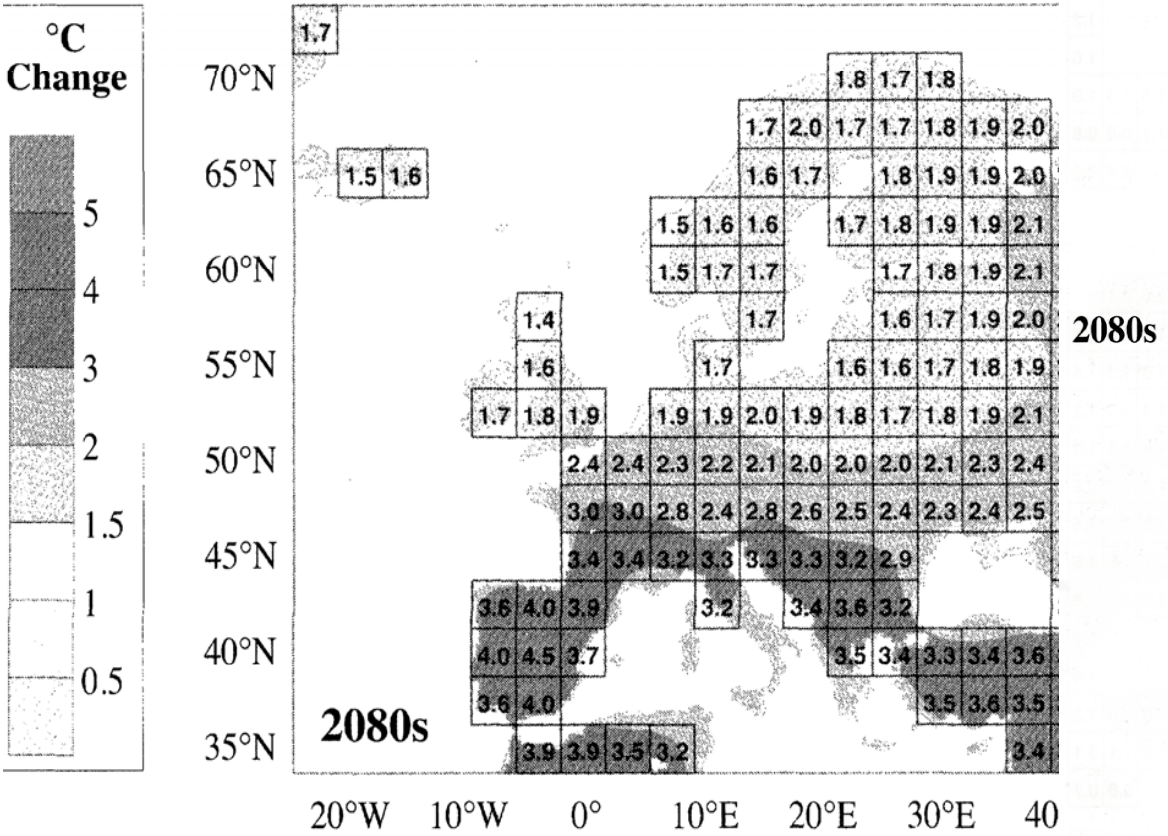


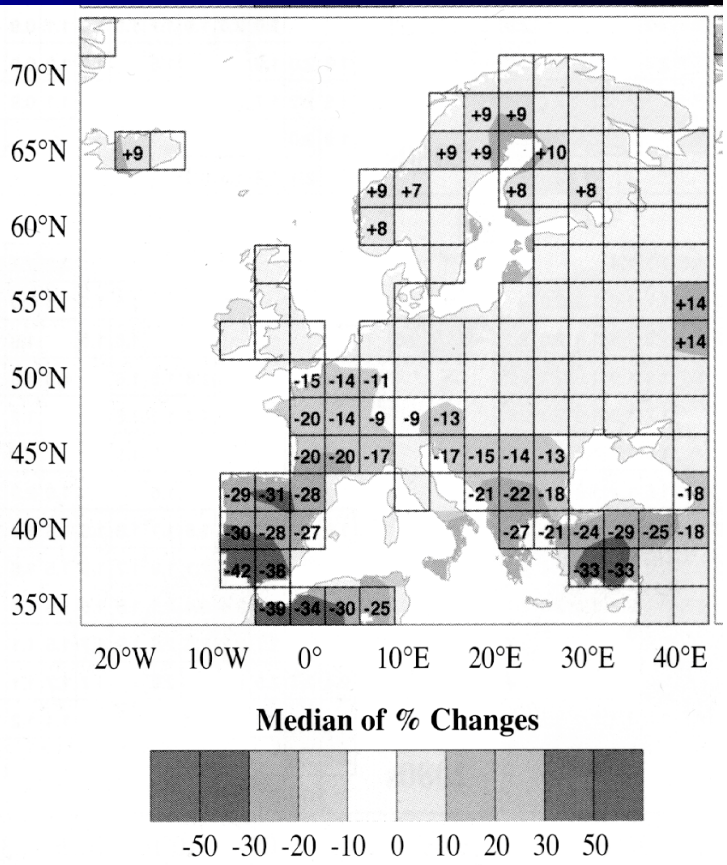
Source: School of environmental sciences, climatic research unit, university of East Anglia, Norwich, United Kingdom, 1999.



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

6.2. Climate Change Impacts in Mediterranean





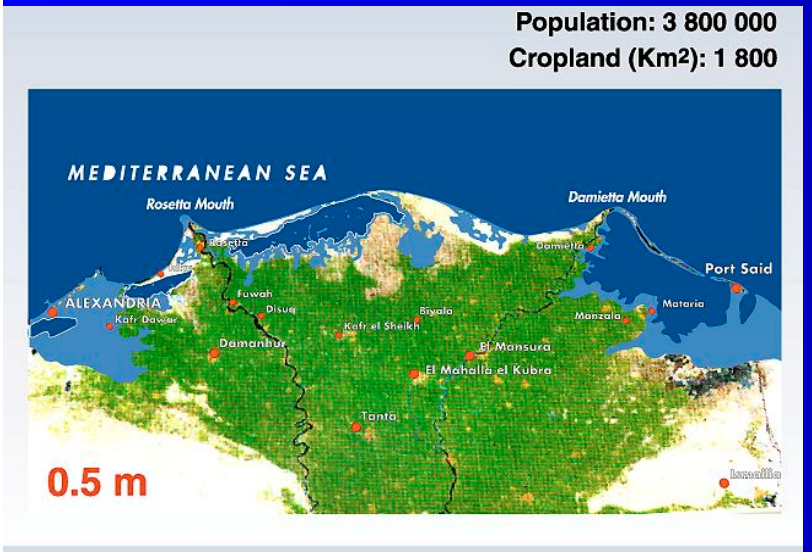
↑ Mean Temperature Change for Summer in 2080s (WG II, p. 651)

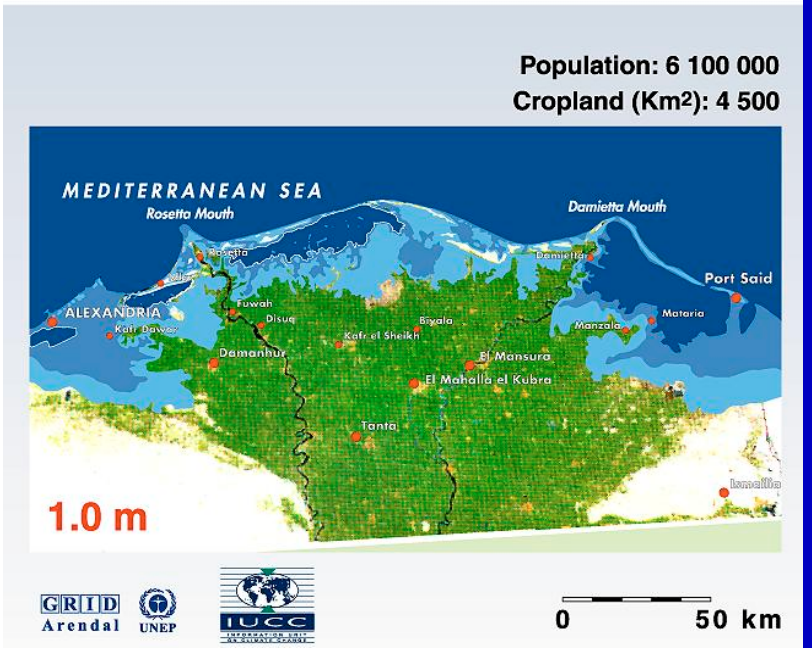
Mean Precipitation Change for Summer in 2080s (WG II, p. 652) ↑

Source: IPCC: Climate Change 2001, WG II: Impacts (p. 651-652)

No specific climate change models for South. & East. Mediterranean

6.3. Effects of Climate Change for Egypt & Nile Delta





Global Climate Change:

Sea level rise (SLR): 1860-2100

IPCC, TAR, WG 2 (2001):

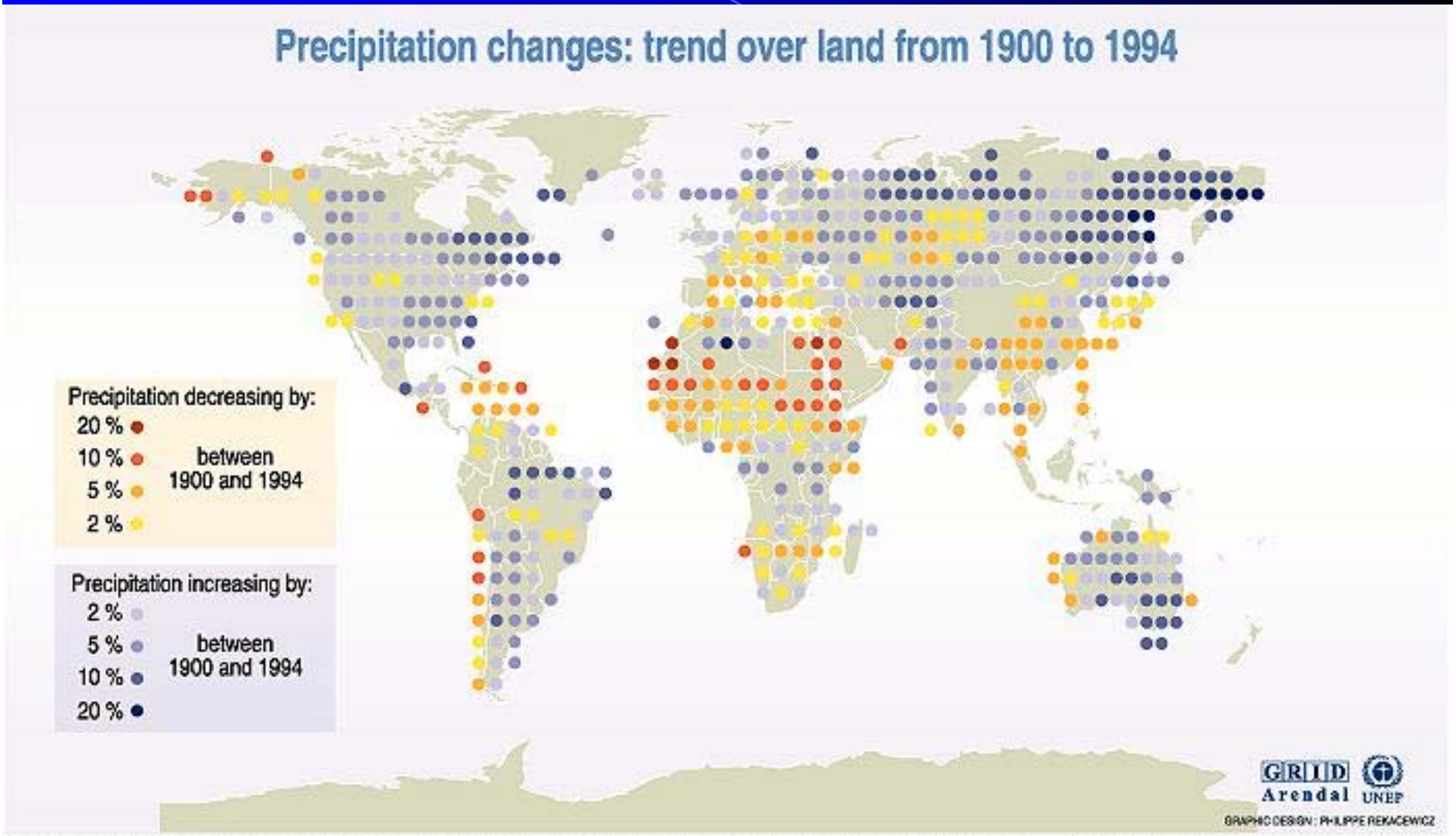
Sea level rise 1860-2000: 0.1 – 0.2 m;

Sea level rise: 1990-2100:+ 0.09-0,88 m

Climate Change Impacts: Egypt:

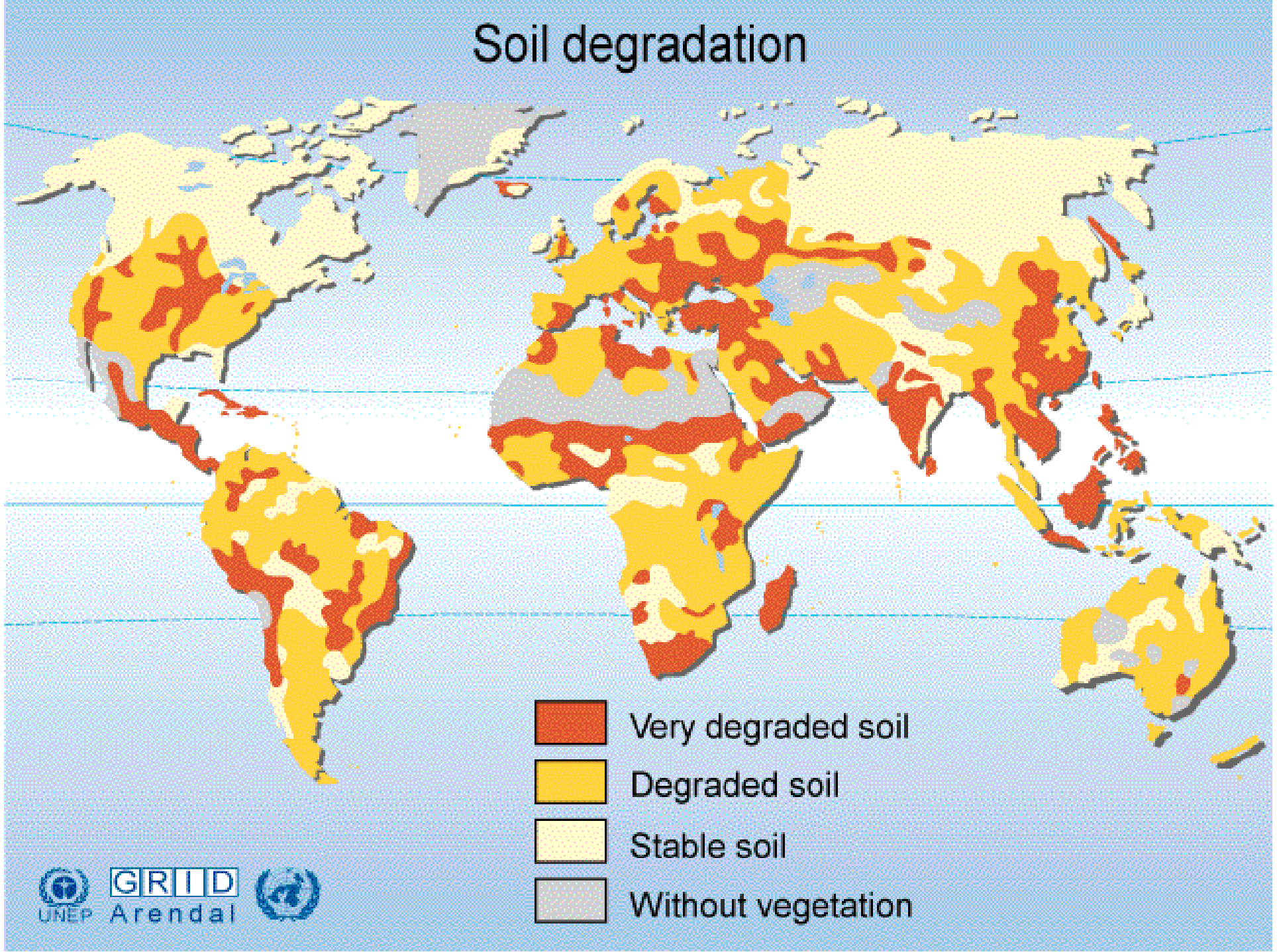
- Nil Delta: 50 cm SLR, 2 mio. persons, 214.000 jobs would be affected
- Temperature Cairo to 2060: + 4°C
- SSR (cereals): 1990-2060: 60 → 10%
- Yield decline for wheat: 2050: -18%

6.4. Climate Change Impacts on Precipitation



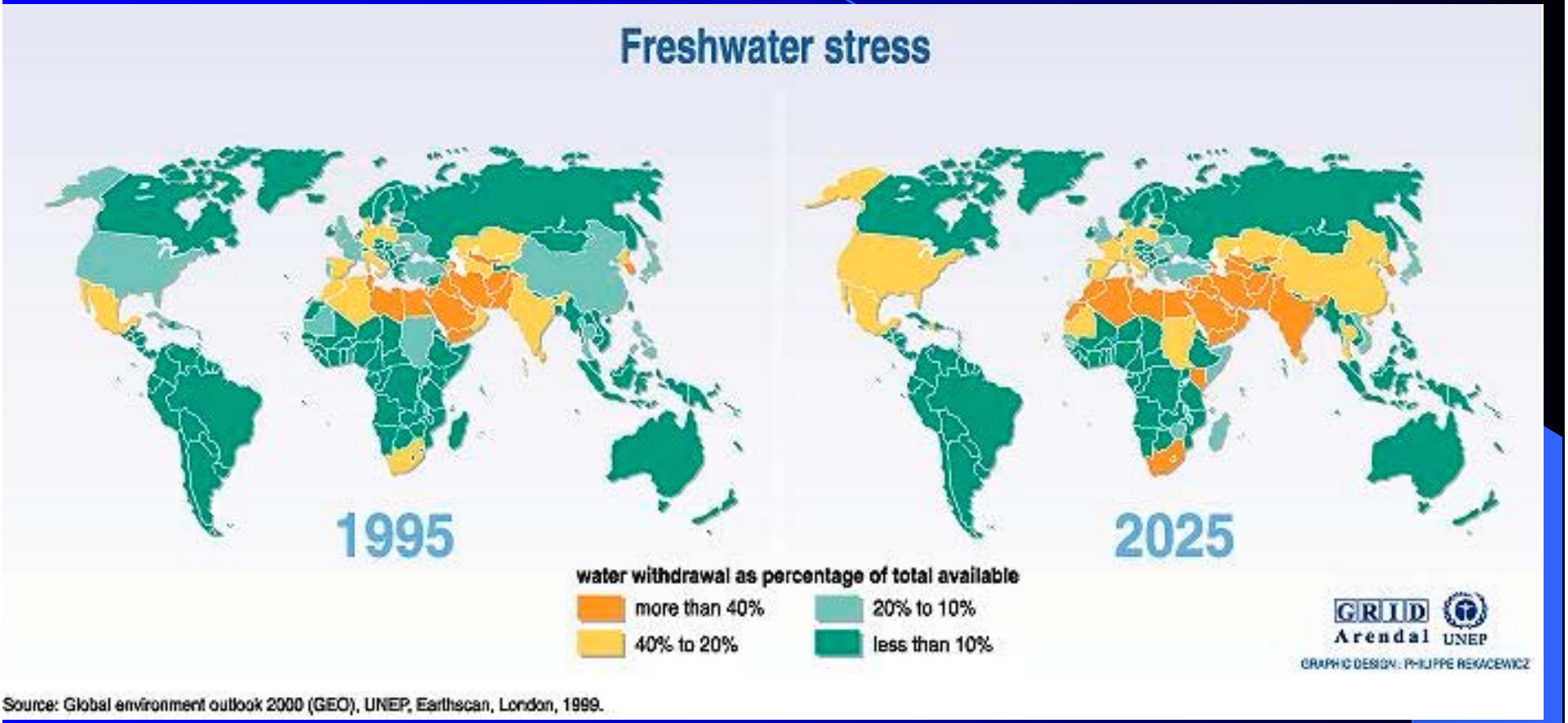
Sources: Climate change 1995, The science of climate change, contribution of working group 1 to the second assessment report of the intergovernmental panel on climate change, UNEP and WMO, Cambridge press university, 1996; Hulme et al., 1991 and 1994; Global Historical Climate Network (GHCN), Vose et al., 1995 and Eischeid et al., 1995)

Soil degradation



UNEP GRID Arendal

6.6. Global Fresh Water Stress, 1995-2025 (UNEP)



Source: Global environment outlook 2000 (GEO), UNEP, Earthscan, London, 1999.

- **The MENA Region has been and will remain the region with the highest water stress that will become even more severe due to population growth and climate change (temperature rise).**

6.7. Mediterranean Population Trends

	Real population change					Proj. med. var.		Changes	
	1850	1900	1950	1980	2000	2025	2050	1950-2050	2000-2050
S. Europe (F,G,I, S, P)	83.0	103.5	132.9	167.3	177.3	172.5	154.1	21.2	-23.2
EU Cand.	0.28	0.42	0.81	0.94	1.17	1.32	1.31	0.50	0.136
Balkans Yug.&Alb.	7.75	10.3	17.6		26.34	26.32	23.99	6.43	-2.35
North Africa	13.1	22.3	44.1	91.4	142.8	199.8	239.4	195.3	96,6
Eastern Mediterr.	12.45	16.05	29.25	62.6	89.5	142.9	173.8	144.5	84.3
10 + Libya	25.55	38.35	73.35	154.0	232.3	342.7	413.2	339.9	180.9

Decline in Southern Europe, major population increase in MENA region

6.8. Population Growth: Eastern Mediterranean

Table: UN Population Projection (Rev. 2000), mio.

Source: UN Populations Division: World Population Prospects. 2000 Rev.

	1850	1900	1950	2000	2025	2050	1950-2050	2000-2050
Jordan	0.25	0.3	1.24	4.91	7.19	11.71	10.47	6.80
Israel			1.26	6.04	8.49	10.07	8.81	4.03
OPT	0.35	0.5	1.01	3.19	7.15	11.82	10.82	8.63
Lebanon	0.35	0.5	1.44	3.50	4.58	5.02	3.58	1.52
Syria	1.5	1.75	3.50	16.19	27.41	36.35	32.85	20.16
Turkey	10.0	13.0	20.81	55.67	86.61	98,82	78.01	43.15
East. Med.	12.45	16.05	29.25	89.50	141.43	173.88	144.53	84.28
S. Europe	83.0	103.5	132.9	177.3		154.1	+21.2	-23.24

6.9. Urbanisation in the Eastern Mediterranean

Table: World Urbanization Prospects (Rev. 2001),%

Source: UN Populations Division: World Population Prospects (2002)

	1950	1960	1980	2000	2010	2020	2030
Jordan	35.9	50.9	60.2	78.7	80.1	82.2	84.4
Israel	64.6	77.0	88.6	91.6	93.0	93.9	94.6
Palestine	37.3	44.0	61.1	66.8	70.0	73.5	76.9
Lebanon	22.7	39.6	73.7	89.7	92.1	93.1	93.9
Syria	30.6	36.8	46.7	51.4	55.4	60.6	65.6
Turkey	21.3	29.7	43.8	65.8	69.9	73.7	77.0
West Asia	26.7	35.0	51.7	64.7	67.2	69.8	72.4
Asia	17.4	20.8	26.9	37.5	43.0	48.7	54.1

6.10. Population Growth & Urbanization in the Med. (1850- 2050)

Source: Brauch, talk at Wold Bank, 5 December 2002

http://www.proventionconsortium.org/files/conference_papers/brauch.pdf

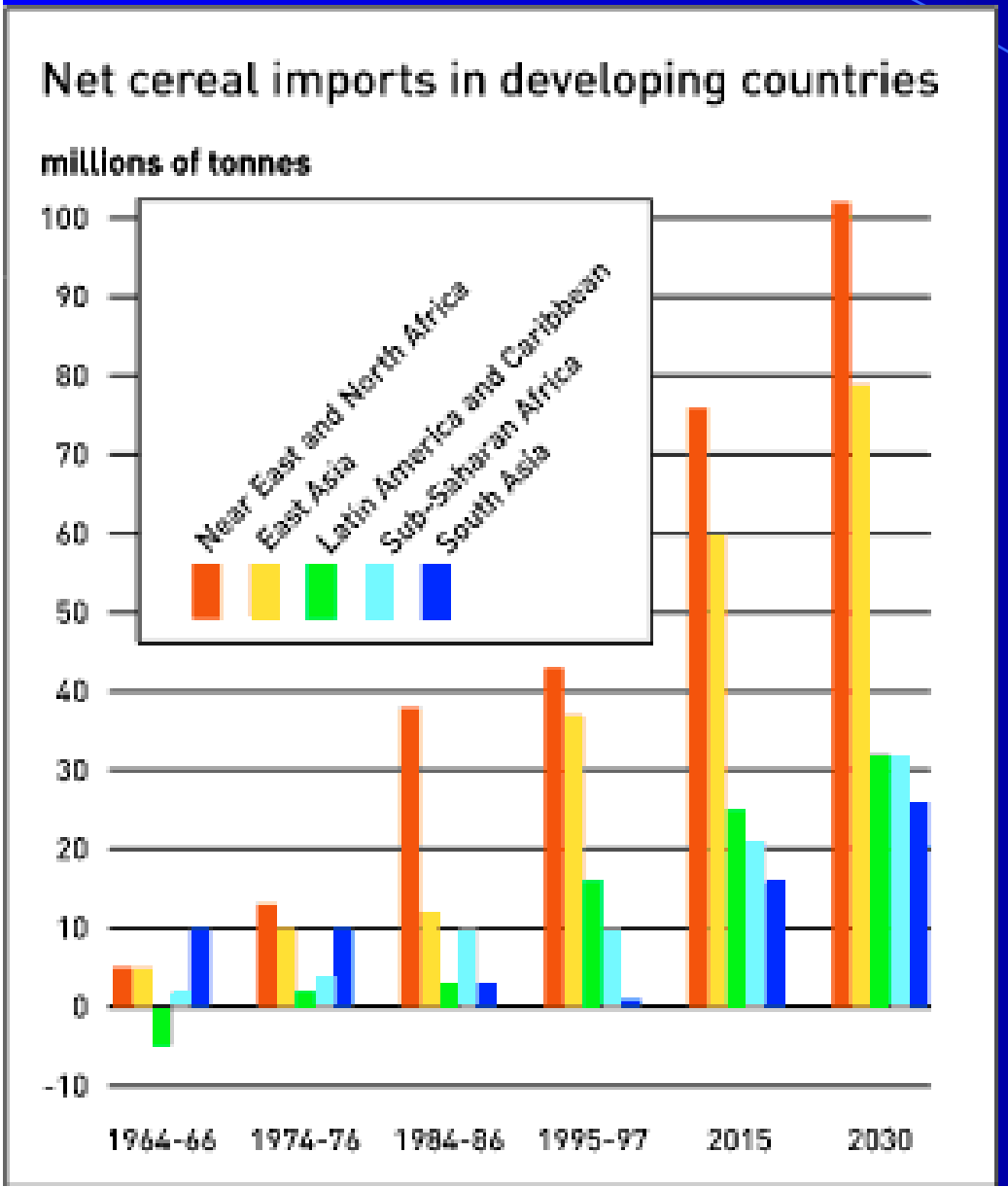
Trends in Population Growth (1850-2050) in million						
		1850	1900	1950	2000	2050
Southern Europe		83.0	103.5	132.9	177.3	154.1
North Africa		13.1	22.3	44.1	142.8	239.4
Eastern Med. & Turkey		12.45	16.05	29.2	89.5	173.9
Trends in Urbanization (1950-2030) in %, Growth of Urban Centres						
		1950	1980	2000	2010	2030
North Africa (5)		24.7	40.4	48.9	53.4	63.3
Western Asia(6)		26.7	51.7	64.7	67.2	72.4
	1950	1960	1975	1990	2000	2010	2015
Istanbul	1.08	1.74	3.60	6.54	8.96	10.72	11.36
Algiers	0.50	0.81	1.57	1.91	2.76	3.74	4.14

6.11. Food Security in the MENA Region

Table: Cereal balance for the MENA, all cereals (1964-2030). Source: FAO website (report 2000) and FAO book, March 2003

19	Demand				Pro-duc-tion	Net tra-de	Self-suf-fic. rate %	Growth rates, % p.a			
	Per caput (kg)		Total (mio.tons)					Time 19... /20..	Dem and	Pro-duc-tion	Po-pula tion
	food	All uses	food	All uses							
64/66	174	292	28	47	40	- 5	86	67-97	3.6	2.4	2.7
74/76	190	307	40	64	55	- 13	85	77-97	3.1	2.7	2.7
84/86	203	365	56	100	65	-38	65	87-97	2.1	2.0	2.4
95/97	208	357	75	129	84	-43	65	’95- 15	2.0	1.4	1.9
2015	209	359	108	186	110	-85	56	‘15- 30	1.5	1.2	1.4
2030	205	367	130	232	131	-116	54	‘95-‘30	1.8	1.3	1.7

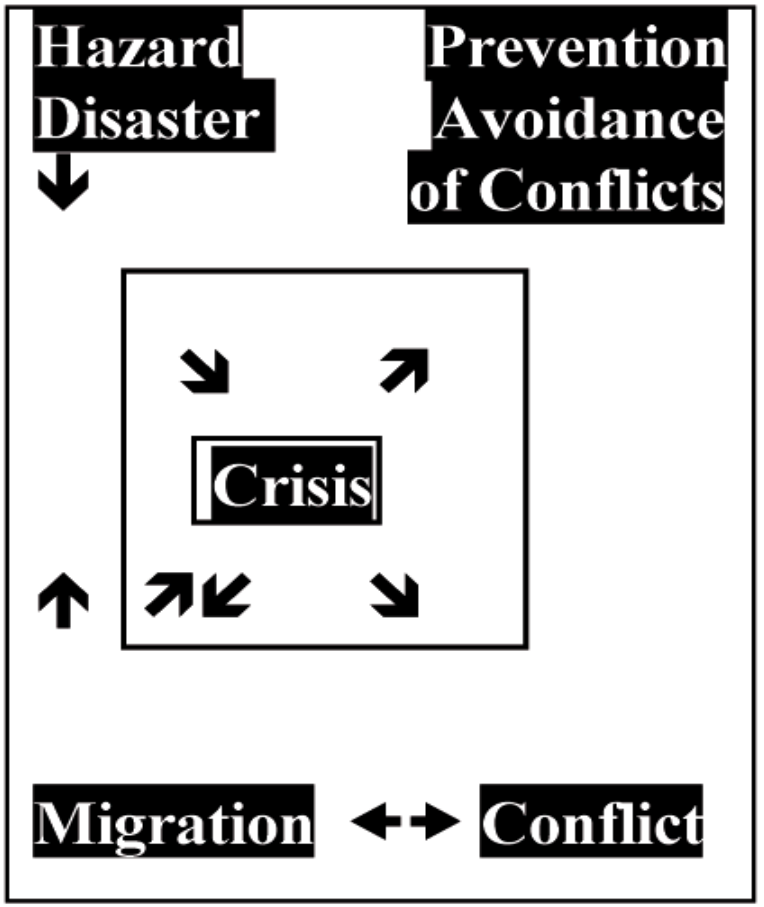
6.12. FAO (2000) Increase in Cereal Imports



- **Source: FAO, 4 March 2003, Rome** World's population will be better fed by 2030, **but hundreds of millions of people in developing countries will remain chronically hungry**.
- Parts of South Asia may be in a difficult position and **much of sub-Saharan Africa** will not be significantly better off than at present in the absence of concerted action by all concerned.
- Number of hungry people is expected to decline from 800 million today to 440 mill. 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. Interactions among Fatal Outcome: Linking Drought & Famine with Societal Consequences

Source: Brauch, Athens, June 2003, at: http://www.afes-press.de/html/download_hgb.html



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

7.1. Analysis of the Trends in Disasters in the Mediterranean

People reported killed & affected by natural disasters, 1975 – 2001

	Total		Earthquake		Flood		Storm	
	E	Killed	E	Killed	E	Killed	E	Killed
S.Europe	249	8,889	33	6,007	71	837	60	469
Balkans	50	562	11	187	12	108	0	0
W. Asia	95	27,613	23	26,087	24	505	8	70
N. Africa	82	6,606	10	3,452	38	2,924	6	69
Total	485	43,729	79	35,735	145	4,374	76	608

Source: CRED database: how representative are reported events?, see: Brauch, chap. 49, in: Brauch et al.: *Security and Environment*, 2003: 876f.

Role of Earthquakes more important than global trends (Munich Re)

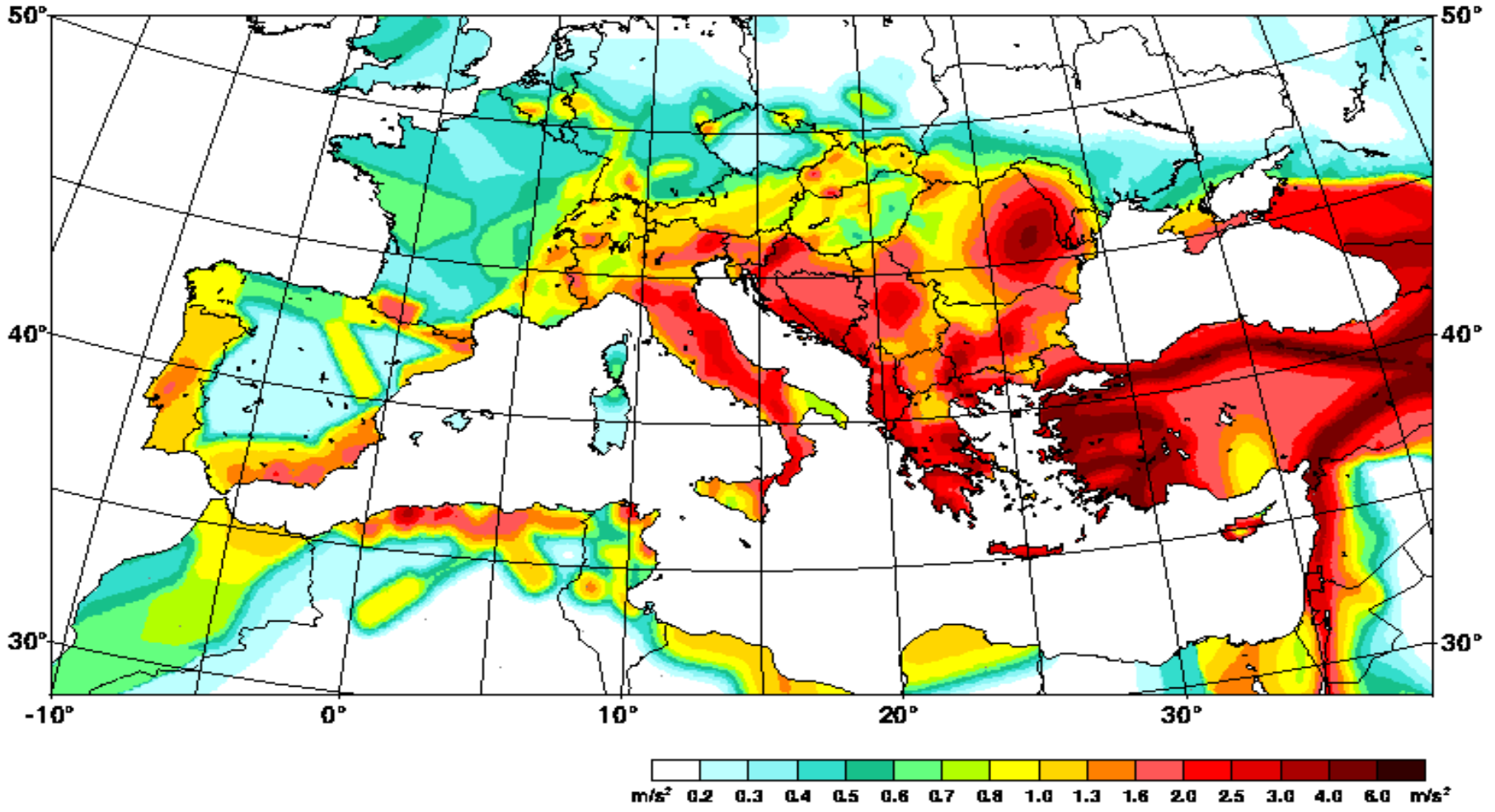
Fatalities of Earthquakes: ca. 50% in 1999 in Izmit (Turkey)

Floods: More envents & damages in S.Europe, more fatalities in N.A.

7.2. Rising Vulnerability to Disasters due to Urbanization in the Mediterranean & MENA

- **In 20th century: Rise in nat. disasters, fatalities, affected, losses fatalities differed in South European EU countries & in MENA.**
- **In 21st Century: IPCC (TAR): Rise in Extreme Weather Events**
- ■ **Increasing exposure to hydrometeorological hazards** (climate change) ➔ ***environmental vulnerability*** **of MENA cities & urbanization (population growth) & poverty ➔** ***social vulnerability***
- ■ **North-South cleavage in vulnerability to disasters increases**: **Impact** of extreme weather events will increase in Med. mega-cities.
- **Urban vulnerability** will rise ➔ population growth & urbanization
- **Dual vulnerability will rise in megacities without poverty eradication, disaster preparedness, improved urban building standards**.

7.3. Figure: Seismicity in Mediterranean Region



7.4. Hazards in Turkey 1900-2001

Source: Brauch, chap. 49, in: Brauch et al.: *Security and Environment*, 2003: 883.

Date	Event	Areas Affected	Deaths	Ec. Loss mio. US$
1268	Earthq.	Kilikia	60,000	
29.4.1903	Earthq.	Malazgirt	6,000	20
26.12.1939	Earthq.	Erzincan	32,740	25
26.11.1943	Earthq.	Tosya-Ladik	4,013	25
1.2.1944	Earthq.	Bolu-Gerede	3,959	35
19.8.1966	Earthq.	Varto	2,500	9
28.3.1970	Earthq.	Gediz	1,086	25
24.11.1976	Earthq.	Muradiye, Manisa, Caldiran	3,626	
30.10.1983	Earthq,	East Anatolia	1,346	750
13.3.1992	Earthq.	Erzincan	547	23.5
1.5.1995	Flash flood	East, Bitlis		30
8.-14.7.1995	Floods	Istanbul, Ankara, Trabzon	70	205
1.10.1995	Earthquake	Dinar area, Evciler, Afyon	94	50
3.-5.11.1995	Flash floods	Izmir, Karsiyaka, An-ta-l-ya	61	
6.-22.5.1998	Floods	North, South	27	2,000
27.6.1998	Earthq.	Southeast, Adana,	144	550
17.8.1999	Earthq.	Southwest, Izmit, Kocaeli	>17,200	12,000
12.11.1999	Earthq.	Northwest, Dücze, Adapazari	835	1,000
Dec. 2001	Storm, floods	Mereson, Izmir, Istanbul, Ankara	4	30

7.5. Vulnerability of Cities to Earthquakes

Source: D. Sari: chapter 48, in: Brauch et al.: *Security and Environment*, 2003: p. 845

City	1950	1960	1975	1990	2000	2010	2015
Athens	1.8	2.2	2.7	3.0	3.1	3.1	3.1
Istanbul	1.08	1.74	3.60	6.54	9.45	11.84	12.49
Ankara	0.54	0.87	1.71	2.54	3.20	3.85	4.08
Izmir	0.48	0.66	1.05	1.74	2.41	3.01	3.20
Cairo	2.41	3.71	6.08	8.57	10.55	12.66	13.75
Alexandria	1.04	1.50	2.24	3.21	4.11	5.05	5.53
Tel-Aviv	0.42	0.74	1.21	1.80	2.18	2.52	2.63
Gaza	1945: 0.072	??	0.414	??	? 0.800	??	??
Amman	0.09	0.22	0.50	0.96	1.43	1.97	2.21
Beirut	0.34	0.56	1.06	1.58	2.06	2.37	2.47
Damascus	0.37	0.58	1.12	1.80	2.34	3.07	3.50
Aleppo	0.32	0.48	0.88	1.54	2.17	2.92	3.31

7.6. Vulnerabilities of Cities to Disasters: Izmit & Algiers

Earthquake in Izmit, Turkey, 17 August 1999

- **Turkey 23 (of 63): earthquakes killed: 26,087, affected: 2,377,128**
- **Izmit: 17,200 died, 321,000 jobs, 600,000 homel., econ. loss (US$ 12bn)**
- **ISDR Report (2000) high vulnerability due to: population growth & urbanization; lack of existing building regulations, siting of industry**
- **Response: 2 WB loans: US$ 757 million; EIB facil.: € 450 million.**

Flash Flood in Algiers: November 2001

- **Algeria: 36 events, 4,124 fatalities, 1,154,355 affect.,**
  earthquakes: 2,881; floods: 1,201; affect.: earthquakes: 1,001,212
- **9-13 Nov. 2001**: Flash floods in Algiers: 921 deaths (IFRC 2002), and affect. 50,423, UNICEF: 10,000 families; econ. losses: US$ 300 mill.
- **High vulnerability → high fatalities** (population density, poor housing in flood-prone areas, admin. errors, lacking building standards, poor area Bab el Oued).
- **Response: WB loans: US$ 89 million; EIB loan: € 165 million.**

7.7. Extreme Weather Events in the 21st Century

Figure: IPCC, TAR 2001, WG II

Confidence in observed changes (latter half of the 20th century)	Changes in Phenomenon	Confidence in projected changes (during the 21st century)
Likely[7]	**Higher maximum temperatures and more hot days over nearly all land areas**	Very likely[7]
Very likely[7]	**Higher minimum temperatures, fewer cold days and frost days over nearly all land areas**	Very likely[7]
Very likely[7]	**Reduced diurnal temperature range over most land areas**	Very likely[7]
Likely[7], over many areas	**Increase of heat index[12] over land areas**	Very likely[7], over most areas
Likely[7], over many Northern Hemisphere mid- to high latitude land areas	**More intense precipitation events[b]**	Very likely[7], over many areas
Likely[7], in a few areas	**Increased summer continental drying and associated risk of drought**	Likely[7], over most mid-latitude continental interiors. (Lack of consistent projections in other areas)
Not observed in the few analyses available	**Increase in tropical cyclone peak wind intensities[c]**	Likely[7], over some areas
Insufficient data for assessment	**Increase in tropical cyclone mean and peak precipitation intensities[c]**	Likely[7], over some areas

7.8. Increase in Human Disasters and Conflicts Impacting on the Mediterranean

Hypotheses

- Thesis 1: Population growth, urbanisation & persistent high poverty will increase the societal vulnerability to hazards and disasters.
- Thesis 2: Extreme weather events will very likely increase an increase in hydro-meteorological hazards (droughts, flash floods and storms).
- Thesis 3: Environmental stress and hazards may trigger distress migration and low level conflict potentials within societies and among states.

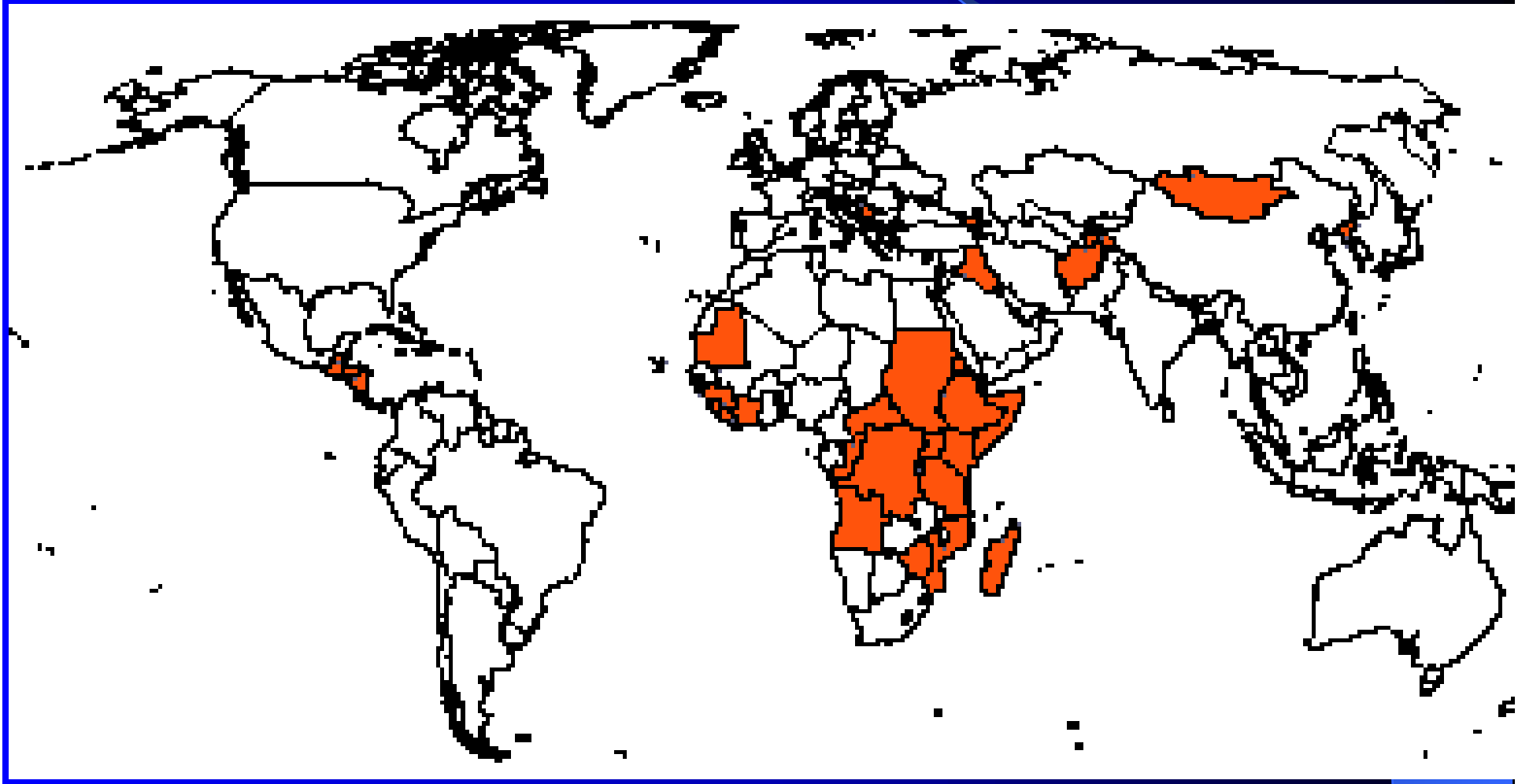
7.9. Diagnosis: Interactions among Outcomes

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

	Country Ranking		I		II		III		IV	
	Priority List of Humanitarian Needs	ODA Aver.	HDI	HPI	Natur disast	Conflicts	Refugees	IDP	Food need	Under 5
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

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

Countries Experiencing Food Emergencies in October 2003 (FAO)



7.11. Case of 4 vulnerable Nile basin countries

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

8. Hobbesian Conclusions on Climate Change & Conflicts (Schwartz/Randall: DoD-Study)

- **Both studies agree: climate change matters & has impacts that may result in conflicts in the 21st century**
- **DoD-Study:** assume rapid change of the Gulf Stream (reg. cooling)
- The report explores how such an abrupt climate change scenario could potentially de-stabilize the geo-political environment, leading to skirmishes, battles, and even war due to resource constraints such as:
  - Food shortages due to decreases in net global agricultural production
  - Decreased availability and quality of fresh water in key regions due to shifted precipitation patters, causing more frequent floods and droughts
  - Disrupted access to energy supplies due to extensive sea ice and storminess
- **Problem of military policy:** Nuclear proliferation is inevitable, conflicts over energy resources. „Managing the military and political tension, occasional skirmishes, and threat of war will be a challenge."

8.1. Hobbesian Policy Recommendations

This scenario poses new challenges for the United States, and suggests several steps to be taken:

- Improve predictive climate models to allow investigation of a wider range of scenarios and to anticipate how and where changes could occur
- Assemble comprehensive predictive models of potential impacts of abrupt climate change to improve projections of how climate could influence food, water & energy
- Create vulnerability metrics to anticipate which countries are most vulnerable to climate change and could contribute materially to an increasingly disorderly and potentially violent world.
- Identify no-regrets strategies such as enhancing capabilities for water management
- Rehearse adaptive responses
- Explore local implications
- Explore geo-engineering options that control the climate.

9. Grotian Conclusions on Climate Change & Conflicts (Brauch BMU Study)

- **Grotian: IPCC Assessments (global warming) focus at interactions among 6 factors of Survival Hexagon): linkages between climate change impacts, environmental stress & conflict dimensions with the following hypotheses on climate change impacts:**
- a) There is no mono-causal linkage between climate change and conflicts.
- b) do not pose military threat can not be solved with traditional mindsets nor by milit, means.
- c) will contribute to environmental stress & become a pot. cause of conflict constellations.
- d) may challenge the survival of human beings: challenge to human security.
- e) persuade or force human beings to leave their rural home (urbanisation, migrtation).
- f) pose challenges for countries effected by of sea level rise in delta areas but also by complex interactions of increasing temperature & declining precipitation in arid- & semi-arid regions.
- g) may contribute to an escalation of social, ethnic or religious tension that may erupt in violent temporal riots or result in a long-lasting domestic civil strife or civil war.
- h) in combination with disputes on scarce water resources may contribute to conflicts.
- i) may lead to North-South tensions on migration issues, admission of refugees in neighbouring or in industrialised countries and on domestic treatment of immigrant communities.
- j) posed by the impact of climate change requires bilateral or multilateral international cooperation, support for adaptive capabilities and a massive technology transfer.

9.1. Grotian Policy Recommendations

- The main thesis of this study is that cooperative climate *mitigation* strategies are needed that must be linked with policies to assist those countries that will be affected most by these effects.
- This requires policies that contain the manifold causes of insecurity and instability and that aim at a regional peace based on equity and strategies of sustainable development that may also be associated with the concept of a "sustainable peace".
- These policies should assist these countries to *adapt to* and to *cope with* these projected effects of extreme weather events and long-term climate change impacts

10. Towards a Proactive: Environmental and Human Security Policy

- EU Barcelona process: framework for manifold cooperation EU and all MENA countries (no long-term focus yet!)
- NATO‘s Mediterranean Dialogue: important framework to involve American & Canadians (awareness, agenda-setting)
- Human Security Network: agenda-setting for humanitarian challenges (Ireland & Netherlands: EU presidency in 2004)
- Grotian multilateralism could and should become the basis for a new transatlantic consensus based on a wide human and environmental security concept & agenda.
- Environmental challenges must be early recognised, this requires joint agenda-setting and anticipatory learning and pro-active countermeasures to enhance coping capacity!
- Pro-active initiatives cheaper than reactive crisis managem.

10.1. A Proposal for a Transatlantic NATO CCMS Study on Climate Change, Disasters & Conflicts

- Model: NATO CCMS-Study: Environment & Security in an International Conflict (1996-1999)
- German-American Initiative: supported by Finnish, Swedish, Foreign and Swiss Defence Ministry
- New NATO CCMS & US-EPA Initiative (Valencia): Desertification as a Security Issue: Dec. 2003
- Grotian Approach: a Middle Ground for a transatlantic compromise on new non-military environmental security challenges.

10.2. Grotian Goals & Return of Mars to Venus

- In 21st century a Grotian worldview may again reunite Mars & Venus.
- Both cannot enjoy life alone.
- Neither can survive without the other.
- Thus, both need each other!

Thank you for your attention!

Send your comments to:

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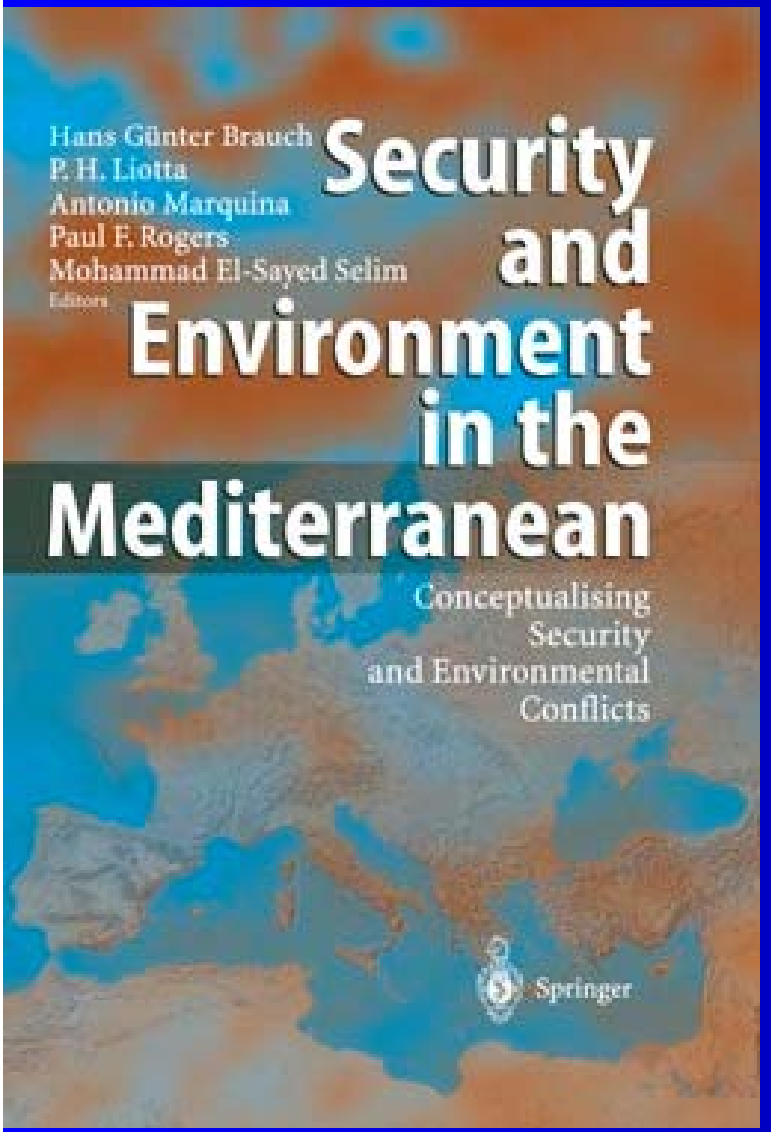
Sources
(http://www.afes-press.de/html/download_hgb.html)



- **Brauch: *Climate Change and Conflics* (Berlin: BMU 2002) (http://www.bmu.de/en/800/js/download/b_climges/)**
- **Brauch-Liotta-Marquina-Rogers-Selim (Eds.): *Security and Environment in the Mediterranean* (Berlin – New York – Paris – London -Milan: Springer 2003) (http://www.afes-press.de/ html/ bk_ book_of_year.html)**
- **Next workshop: The Hague,9-11 Sept. 2004: Reconceptualising Security in an Era of Globalisation (5th Paneuropean Conference on Int. Relations) (http://www.afes-press.de/html/the_hague.html)**