Security and Environment in the Mediterranean

Long-term Human and Environmental Security Challenges for the Eastern Mediterranean during the 21st Century

Woodrow Wilson International Center for Scholars
Environmental Change and Security Project
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Overview

- Beyond Kagan‘s Dichotomy: Mars vs. Venus: I am Grotian!
- Mindsets & Worldviews on Security: Towards Convergence
- The Human & Environmental Security and Peace Project
- Model of Global Environmental Change & Fatal Outcomes
- Environmental Security Challenges in the Mediterranean
- Environmental Challenges in the Eastern Mediterranean
- Human & Environmental Security Challenges for Egypt, Israel, Jordan and a future Palestinian State until 2100
- Towards a Fourth Phase of Environmental Security Studies
- Trilateral Environmental Security Initiatives in the MENA
- For a Euro-American Environmental Peace Initiative in the Gulf of Aqaba: Joint Long Term Assessment and Challenges and Development of Joint Coping Capacities

1. Beyond Kagan‘s Dichotomy: Mars vs. Venus: I am Grotian!

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.

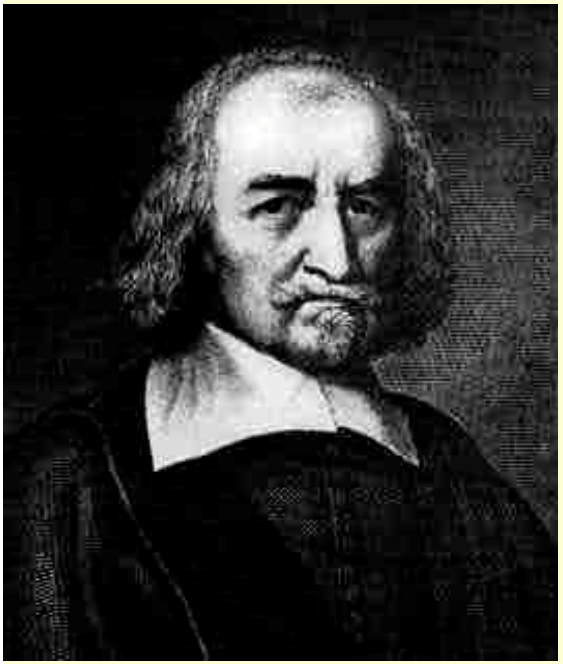
←Americans are from Mars

Europeans from Venus →

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

I am neither from Mars nor Venus but an admirer of the English School

1.1. 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**

1.2. Hobbesian vs. Kantian Perception & Agenda for the MENA Region

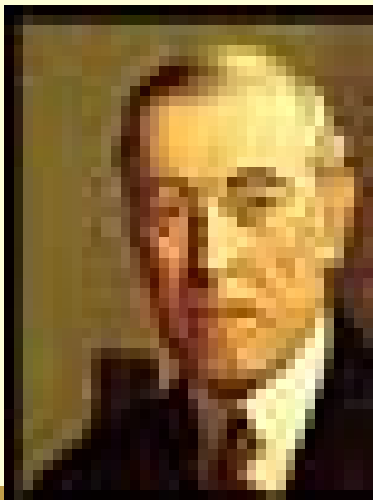
- **Hobbesian diagnosis**: New threats: „rogue states“, „axis of evil“ [Iraq, Iran, Libya, Syria, N. Korea] , weapons of mass destruction & terrorists
- **Recipe**: Military build-up, missile defence, use of military power & force to achieve aims, war on terror, preemption

Different world views: US & Europeans: diagnosis, recipe!

- **Kantian [Wilsonian] diagnosis**: Human rights violations, non-democratic regimes
- **Recipe**: Conditionalised economic aid, support for democratisation efforts & liberation [democracy imposed from outside

Hobbesian & Wilsonian symbiosis (neocons)

Both recipes have problems with the MENA [Middle East & North African region] region



1.3. Grotian Perspective: Basis for a New Transatlantic Consensus

- For Europeans modern Westphalian international order was built on Grotian principles of international law.
- International law and multilateral cooperation in international institutions matter (EU: compromise).
- We Europeans pointed to other challenges to survival of humankind, ignored by the 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)
- Karl Deutsch (1960s): Power means not having to learn! Kagan: Europeans lack military power – Advantage: Europeans must learn!
- Grotians: Wider problem recognition, anticipatory learning, adaptation & mitigation, multilateral cooperation for solution!
- Grotian view: Basis for a new transatlantic consensus?

2. Mind-sets & Worldviews on Security: Towards Convergence

- **Mind-set (Ken Booth):** have often distorted perception of new challenges: include ethnocentrism, realism, ideological fundamentalism, strategic reductionism
- **Booth:** Mind-sets freeze international relations into crude images, portray ist processes as mechanistic responses of power and characterise other nations as stereotypes.
- **Mind-sets have survived global turn of 1989/1990**
- **Worldview (English School):** intellectual tradition, macro-theory: Hobbes, Grotius & Kant as Weberian ideal type
- Global political change and in concepts of security:

  9 Nov. 1989: Fall of the Berlin Wall: wide security concept

  11 Sept. 2001: attack on New York: narrow security conc.

2.1. Widening of Security Concepts

Arnold Wolfers (1962) distinguished objective vs. subjective security

> **„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.“**

Table: Dimensions (Sectors) & Levels of a Wide Security Concept

Security dimension⇒ ⇓ Level of interaction	Mili-tary	Political	Economic	Environ-mental ⇓	Societal
Human individual ⇒				victim	
Societal/Community				⇓⇑	
National	Bush Administ. MENA region			⇓⇑	
International/Regional				⇓⇑	
Global/Planetary ⇒				GEC	

2.2. Environmental & Human Security

Table: Expanded Concepts of Security (© Bjørn Møller, 2003)

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	Mankind

Env. Security: Referent: Ecosystem; Value at risk is *sustainability.*

- **Major challenges**: ***global environmental change & humankind***,
- **Focus**: **Interactions between ecosystem & humankind**, impact of **global environm. change** on **environm. degradation**, of **increasing demand** on **environmental scarcity** & **environmental stress**.

Human security: Referent: individuals and humankind.

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

2.3. Human Security Network Members

NATO	EU	Third World
Canada		Chile Jordan Mali Thailand South Africa (observer)
Greece Nether-lands	Austria Ireland	
Norway	Slovenia Switzerl.	

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

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

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

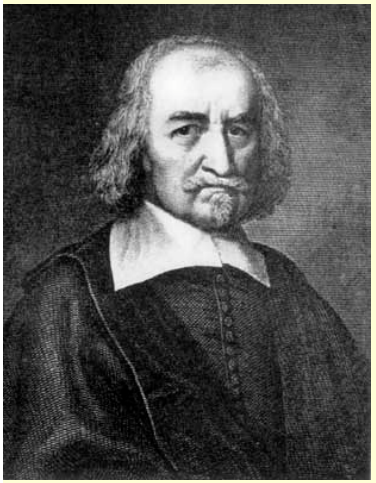
Conferences at Foreign Ministers level in Bergen, Norway (1999), in Lucerne, Switzerland (2000), Petra, Jordan (2001) Santiago de Chile (2002), Graz (2003), Bamako, Mali (May 2004).

2.4. Vision of the Human Security Network

- **A humane world where people can live in security & dignity, free from poverty and despair. ... In such a world, every individual would be guaranteed freedom from fear and freedom from want.... Building human security is essential to achieving this goal.**
- **In essence, human security means freedom from pervasive threats to people's rights, their safety or even their lives.**
- **Human security has become both a new measure of global security and a new agenda for global action. Safety is the hallmark of freedom from fear, while well-being is the target of freedom from want.**

Human Security Commission: Human Security Now: S.Ogata & A.Sen: „protection“ and „empowerment“.

2.5. Hobbesian vs. Grotian Perception & Agenda: Euro-Mediterranean



- **RAND: promoted a Hobbesian policy agenda on WMD & missile defence needs in 1990s!**
- **Mediterranean group of Northatlantic Assembly different perceptions on the South in1990s.**

- **Barcelona process (1995): European response to new challenge: increasing distress migration on the shores of Spain, France, Italy and Greece**
- **Response in three baskets: security, economic & cultural, environmental challenges and risks.**
- **But partnership with rogues is not possible!**

3. The Human & Environmental Security and Peace Project (HESP)

- **Synthesis of four approaches:**

  a) environmental security debate (environmental dimension)

  b) human security (human being: cause & victim of GEC)

  c) Grotian approach: multilateral, international law based

  d) proactive focus: conflict avoidance (structural factors)

- **4th Research Phase on environm.-security links**

- **AFES-PRESS contributions:**

  a) HEXAGON Series on Human & Environmental Security and Peace Project (HESP) with Springer Publishers (Berlin – NY - London - Tokyo)

  vol. 1: Environment & Security in the Mediterranean (2001-2003)

  vol. 2: Reconceptualisation of Security in 21st Century (2004-2006)

  vol. 3: Global Environmental Change and Env. Conflict Avoidance (?)

  vol. 4: Redefining Security Interests and Structures (2006-2008)

  b) Context: GMOSS contributing to GMES (2008 operational)

3.1. Towards a Fourth Phase of Research on Environmental Security

1. Conceptual Phase: Concept Environmental Security

- Inclusion of environmental factors in US national security agenda
- Ullmann (1983), Myers (1989), Mathews (1989)
- Brundtland-Commission (1987), Gorbachev (1987), NATO (1996-)

2. Empirical Phase: Case Studies: Scarcity - Conflict

- Toronto: T. Homer-Dixon: since 1991: 3 Projects
- Zürich/Bern: G. Bächler, K.Spillmann (3 volumes 1996,1997)

3. Phase: Manifold Research without Integration (1995-)

- Resource scarcity or abundance as a cause of conflict

4. Phase: Human & Environm. Security & Peace (HESP)

- ✓ My proposal: focus on linkages between global environm. change and fatal outcomes (hazards, migration, crises and conflicts).
- ✓ Brauch, ch. 2 & 51 of: *Security & Environment in the Mediterranean*

3.2. Goals of a fourth phase of research on human & environmental security & peace

4th phase of research on environmental security aim at:

- a **"people-centred" human security perspective** from the individual to the global level to develop **strategies for adaptation and mitigation** to **reduce** both the likelihood and the impact of and the **vulnerability to these outcomes by strengthening resilience .**
- The **normative orientation** at the dual policy goals of sustainable develop-ment and sustainable peace requires the scientific development of complex **knowledge, a societal and political problem awareness, anticipatory learning and "ingenuity" in the framework of a "culture of prevention".**
- **Practical purpose & policy relevance** of a 4th phase of research is to recognise **early-warning indicators**, to examine both the **environmental consequences of wars and the existing conflicts over scarce resources, to prevent that they escalate into violence** and to **develop longer-term priorities for European countries, for international organisations** to avoid **fatal environmental outcomes**, to contribute to **regional environmental good governance.**

3.3. Essentials for a 4th Phase of Research
on human & environmental security & peace (HESP)

4th phase of research on human & environmental security & peace (HESP) may aim at ten conceptual and policy goals:

- ***Orientation:*** Analyst is influenced by worldviews & eco-logical standpoints. An ***equity-oriented pragmatic Grotian*** perspective may be best suited to support multilateral environmental efforts in framework of **international organisations & regimes with the goal to avoid harmful and conflictual outcomes**.
- ***Causes*****:** Research should broaden scope & include both environmental degradation & scarcity and their impact on environmental stress. This requires a close interaction between social & natural sciences & a multi- & interdisciplinary approach.
- ***Policy Process*****:** Case studies should include respective policy processes, how the state & society have responded to challenges & outcomes, they should emphasise the role the knowledge factor (learning, capacity building) has played in de-veloping adaptive & mitigation strategies to reduce vulnerability & strengthen resilience.
- ***Outcomes*****:** The research should focus not only on environmental conflict but it should include disasters, distress migration and environmental refugees and the complex interactions among these outcomes.

3.4. Essentials for a 4th Phase of Research on HESP

- ***Regional Orientation***: A regional perspective both on causes, policy process & on outcomes is needed. This requires a regional resolution for natural science models & comparative social science case studies on the policy processes within the region.
- ***Spatial Approach***. The analysis of environmental security issues on a regional level requires a spatial approach. As neither the approaches of *globalisation* & *geopolitics* have included environmental factors & problems of environmental security, a new approach of a ***political geo-ecology*** has been suggested.
- ***Human Security Focus***: Referent for research & policy should be human beings, individual victims & communities of distress migration, disasters, crises & conflicts**.**
- ***Policy Goals on individual level*****:** Environmental security studies should aim at contributing to strategies for reducing the *impact* of outcomes of environmental stress, decreasing *vulnerability* & strengthening the coping capacities and *resilience*.
- ***Policy Goals on national & international level***: Strategies for coping with national & regional outcomes of env. stress by improving disaster response & integrating disaster reduction into national & local development planning. Resolution, prevention & avoidance of violent outcomes from env. stress should become a major policy goal.
- ***Sustainable Development & Sustainable Peace***: A **human security perspective to analysis of environmental security issues may aim at "sustainable peace".**

3.5. Next Project:
Reconceptualiising Security in the 21st Century

Reconceptualisation of Security in 21st Century (2004-06)

- **Major reference** book in **Hexagon Series (Springer-Verlag): Coeditors: Brauch – Grin – Mesjasz (AFES-PRESS) – Chourou (Mediter. partner), Liotta (US partner) & from Third World regions in Asia & Latin America**
- **AFES-PRESS contribution to EU-sponsored network of excellence on security: GMOSS: *Global Monitoring for Security and Stability* in the context of the 6th EU Research Framework Programme**

❖ **AFES-PRESS: is one of 24 GMOSS partners**

Redefining Security Interests (2006-2008)

- **Possibly second major reference book in the Hexagon Series to be discussed & developed by AFES-PRESS & FOI**

3.6. Questions for Reconceptualising Security: Facing Global Env. Change and Globalisation

- **Our goal: Time to assess & take stock of divergent reconceptualisations of security that have occurred since 1989.**
- What does security mean in different **cultures & religions** and has the understanding changed since 1989?
- What is the **spatial context**: is security de-spatialised or de-territorialised (OECD perspective) or re-spatialised?
- What are the **referents** of security in different concepts?
- How have **scientific disciplines** reconceptualised security?
- Have there been reconceptualisations of **security dimensions**?
- How has **global environmental change** and its often **fatal outcomes** been conceptualised in terms of security concepts?
- How has the **sectoral reconceptualisation** evolved since 1989?
- How have **environmental and human security** been (re)conceptualised in different world regions: convergence or divergence?

3.7. Reconceptualisation of Security in 21st Century

Facing the Challenges of Global Environm. Change & Globalisation

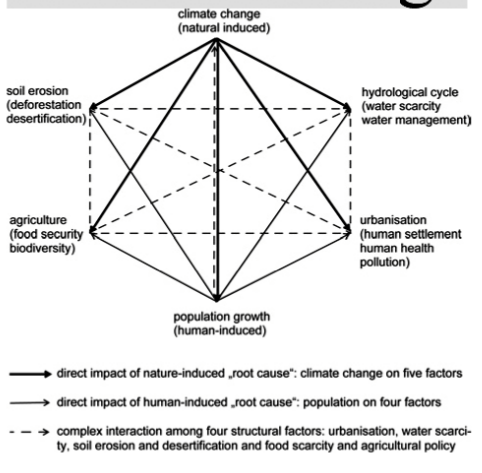
- **Contribution to 4th Phase of Research on Human & Environmental Security & Peace (HESP)**
- **Major reference book in the Springer HEXAGON Series**
- **Details:** http://www.afes-press.de/html/bk_book_of_year.html
- **Pot. Publisher:** Springer (Berlin-New York-London-Paris-Tokyo)
- **Content:** about 100 chapters, multidisciplinary (philosophy, economics, law, geosciences, political science & international relations)
- **Authors:** about 100 from all parts of the world
- **Papers:** peer-reviewed: recommendations, editors & reviewers
- **Audience:** global and multidisciplinary, with a strong representation of scholars from Asia, Africa and Latin America
- **Vision:** **Book-aid for Third World University Libraries**

3.8. Reconceptualisation of Security in 21st Century

Facing the Challenges of Global Enviroonm. Change & Globalisation

- I. Introduction: Theoretical Contexts: Conceptual Quartet of Peace, Security, Development and Environment & Reconceptualisations
- II. Cultural and Religious Contexts for Reconceptualisation of Security
- III. Spatial Context and Referents of Security Concepts
- IV. Reconceptualisation of Security in Scientific Disciplines
- V. Reconceptualising Dimensions of Security
- VI. Security Conceptualisation of Global Envir. Change & Fatal Effects
- VII. Sectoral Security Concepts Revisited for the 21st Century
- VIII. Global and Regional Environmental Security Revisited
- IX. Global & Reg. Human Security Approaches & Debates Revisited
- X. Conclusions: Reconceptualising Security for the 21st Century

4. 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**

5. Mediterranean space

3 continents, 3 religions, common cultural &d historical space, deep economic & political North/South divide

Area of tourism and of many unresolved conflicts

A region that is confronted with fundamental political, economic, societal and environmental challenges during the 21st Century

3 snapshots

Wide angel: whole Mediterranean

Normal lens: Eastern Mediterranean

Tele objective: Egypt, Israel, Jordan & Palestine

DLR

5.1. Eastern Mediterranean

Hans Günter Brauch, FU Berlin & AFES-PRESS
[http://www.afes-press.de] and [brauch@ afes-press.de]

Environment and Development in the Middle East

Part 1: Environmental Challenges to Security & Survival

Part 2: Development Opportunities: Addressing Non-Military Environmental Challenges by Functional Cooperation for Sustainability Water, Soil, Food and Energy Proposals for regional cooperation on wate energy and food for Gaza, the West Bank & Aqaba

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

Seminar at the Sheraton Amman Al Nabil Hotel & Towers, Amman, Jordan, 18 December 2003

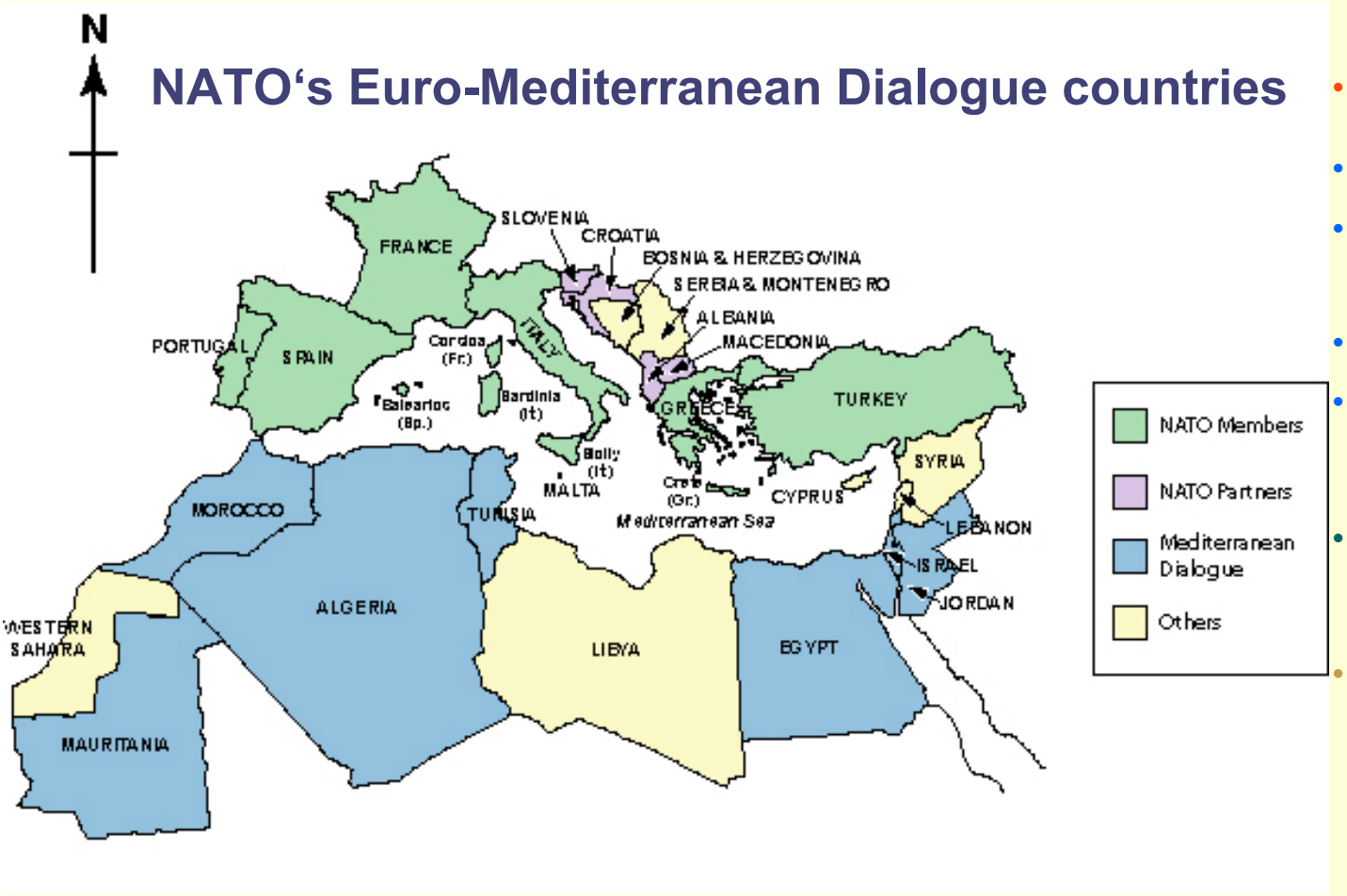
5.2. Israel and its Arab Neighbours

Sensitivity of ecological & social systems to climate change:

„There is clear evidence of potentially serious impacts throughout the Mediterranean region, with the most acute impacts being felt south of the socio-economic divide in Africa and the Near East.“

UNEP warned in 1990: "[it] is likely that the impact of climate change will first be felt in the Mediterranean water resource system."

5.4. Political Space: NATO‘s Med. Dialogue



- NATO: 26+7 (33)
- UN Ecosoc:
- UN-ECE (Europe incl. Israel);
- UN-ECA (Africa);
- UN-ESCWA, Arab Masreq countries
- UNEP- MAP (Athens)
- Med. Techn. Assistance Programme (METAP): EU, EIB, WB, & UNDP

5.5. Euro-Mediterranean partnership (EMP)

- Euro-Mediter. Partnership (EMP) or Barcelona process: 15 +12 (27 countries, Libya is an observer),
- EU Enlargement on 1 May 2004: 25+10 (35 countries)
- MEDA- Funding (2nd phase)
- EU-programme SMAP

2 meetings of Environment Ministers

- Nov. 1997: Helsinki
- July 2002: Athens

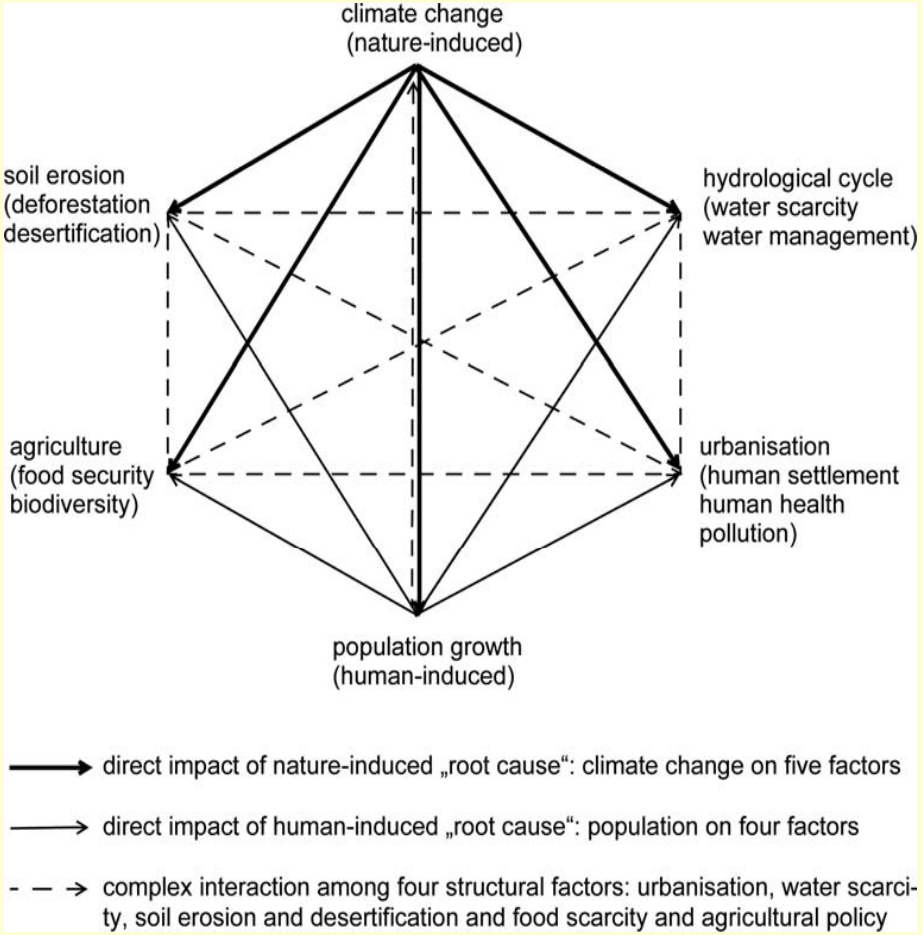
Council of Thessaloniki, June 2003: European Union Green Diplomacy (Network)

5.6. Environmental Security Challenges in the MENA Region in the 21st Century: Hobbessian vs. Grotian Perceptions

- Hobbessian: WMD, terrorism, energy security
- Grotian: Major challenge from South is not power but poverty, economic underdevelopment, environmental scarcity, degradation, stress & crisis.
- Kantian: human rights violation, undemocratic regime
- 3 perceptions: focus on different aspects of reality
- In South: Public perception of humiliation, Northern double standards, lack of participation and democracy.
- Focus on the environmental security dimension, i.e. on environmental challenges confronting the MENA during the 21st century (2010 - 2100).

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

Survival Hexagon: 6 factors



Environmental security in Mediterran. is affected by

Nature & human-induced

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

Human-induced factors

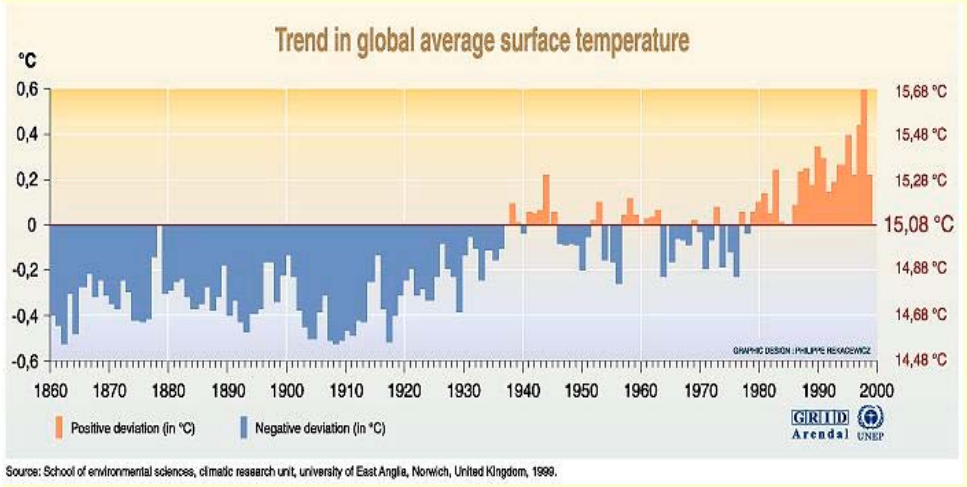
- Population growth
- Urbanisation
- Food & Agriculture

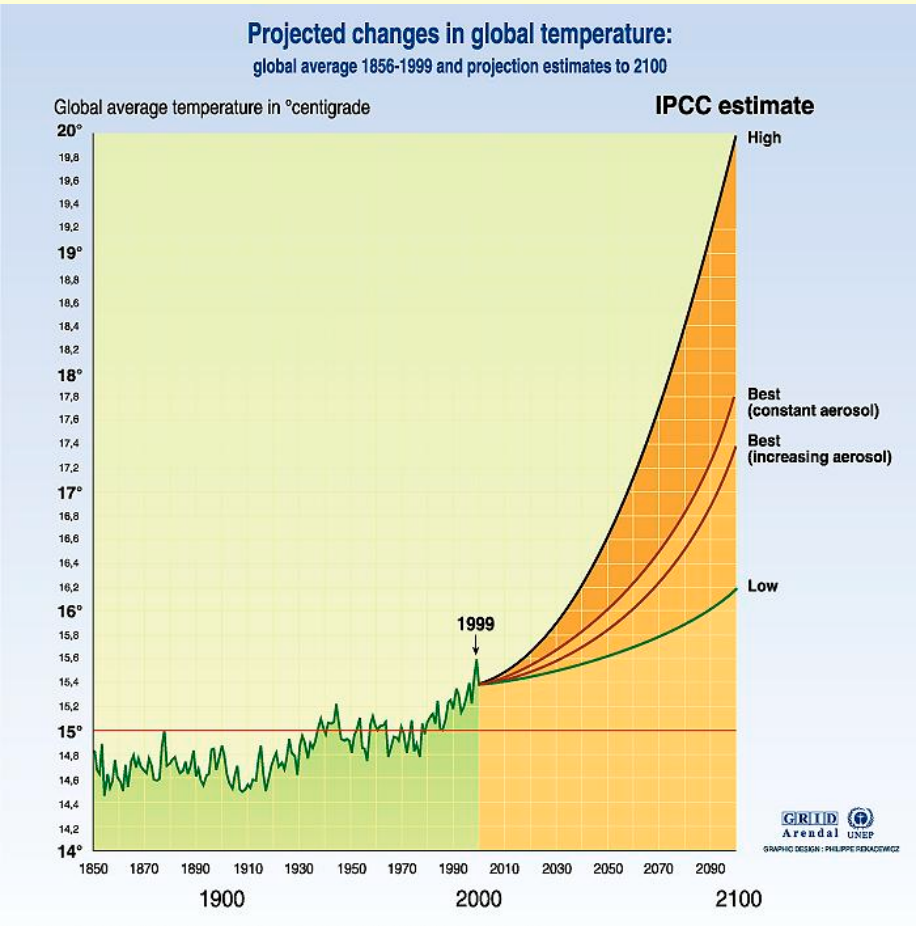
6.1. Global Climate Change: Temperature Increases & Sea Level Rise

2 Climate Change Impacts: Temperature & Sea level Rise

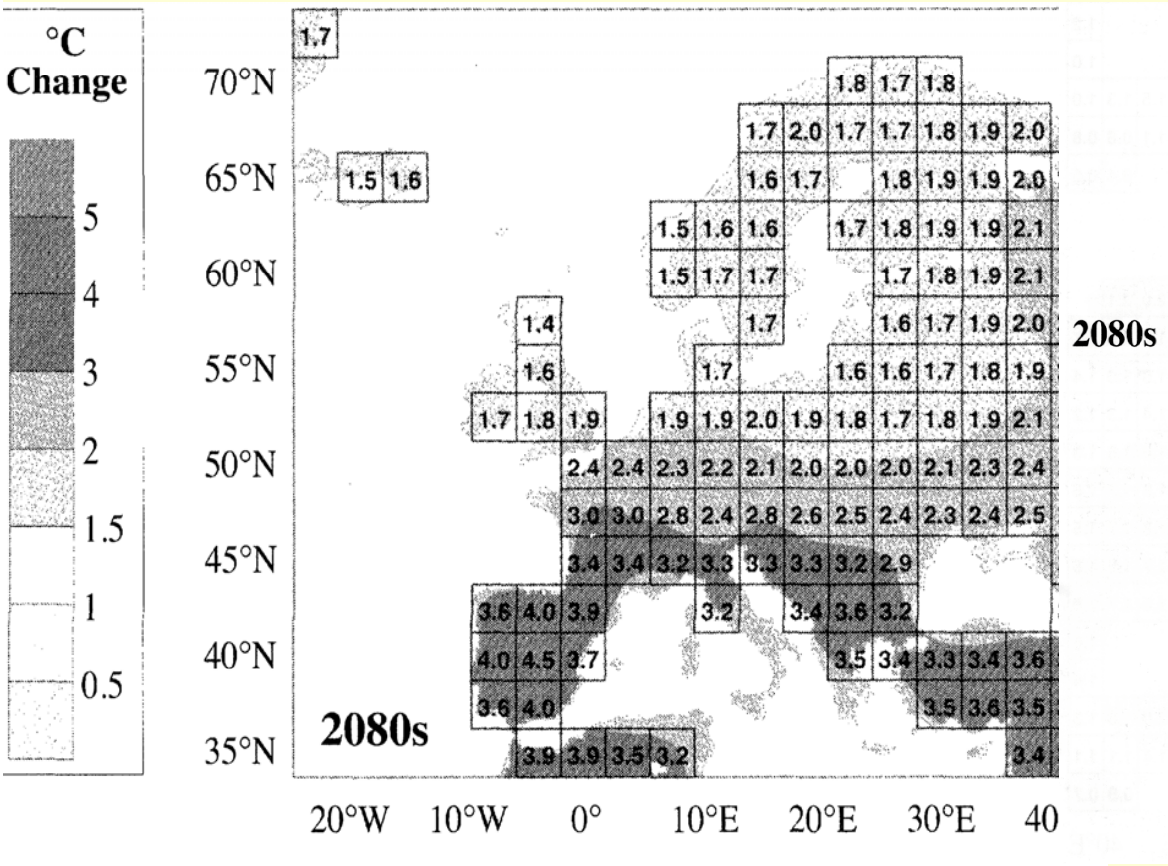
- **Global average temperature rise in 20th century: + 0.6°C**
- **Projected temperature rise: 1990-2100: +1.4 – 5. 8°C**

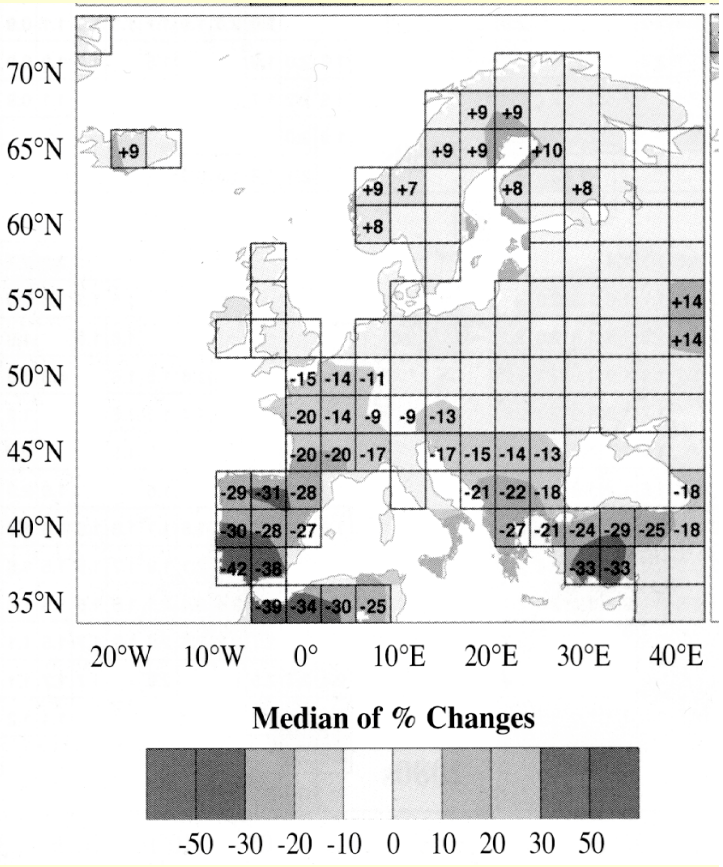
Sources: IPCC 1990, 1995, 2001





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

GRID Arendal UNEP IUCC

0 50 km

Global Climate Change:

Sea level rise: 1860-2100 IPCC, TAR, WG 2 (2001)

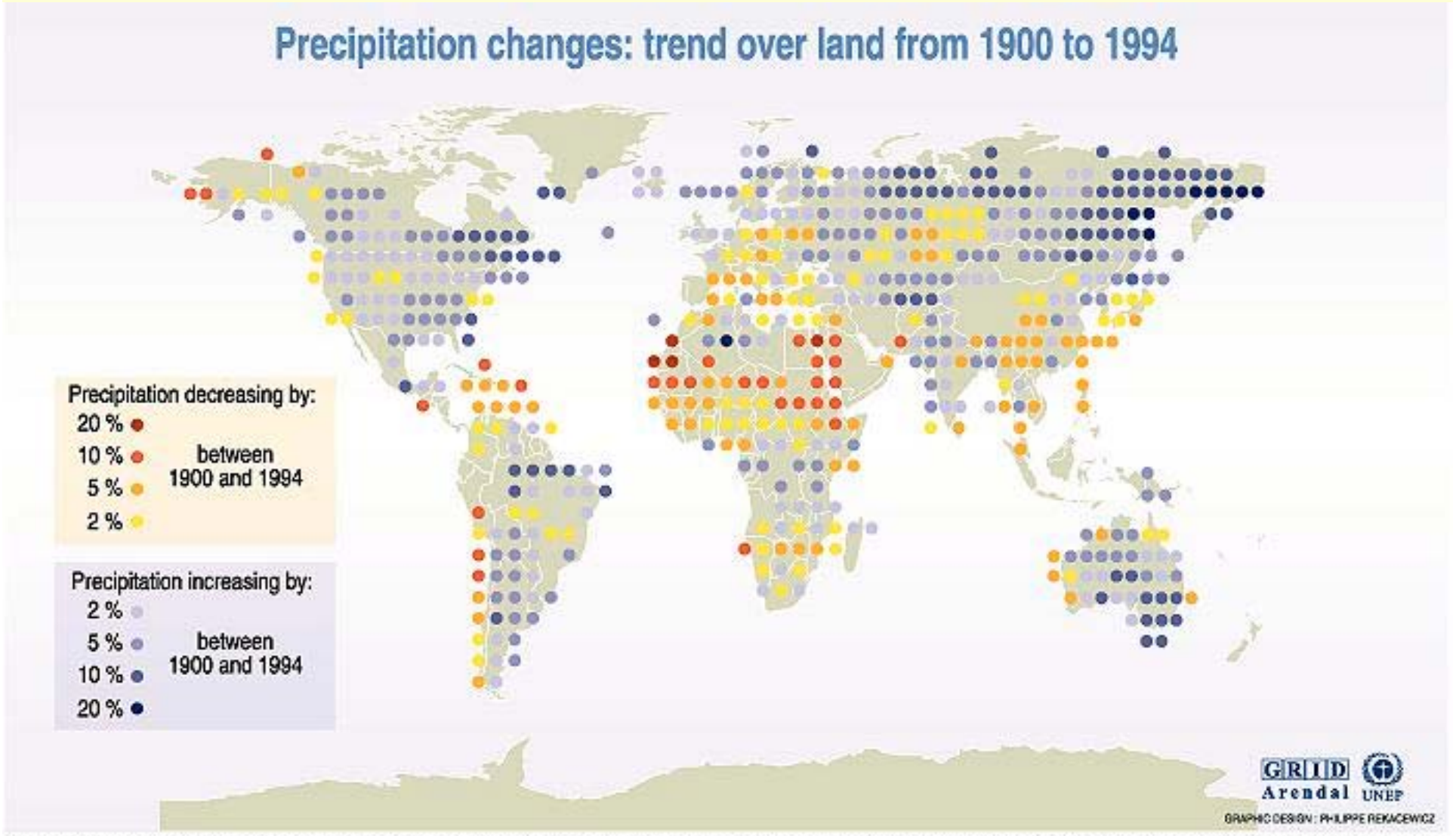
Sea level rise 1860-2000: 0.1 – 0.2 m;

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

Climate Change Impacts: Egypt:

- Nil Delta: 50cm, 2 mio. persons, 214.000 jobs
- Temperature Cairo 2000- 2060: + 4°C
- Self-sufficiency rate (SSR) for cereals: 1990-2060: decline from 60 to 10%
- Projected yield decline for wheat due to climate change: 2000 - 2050: -18%

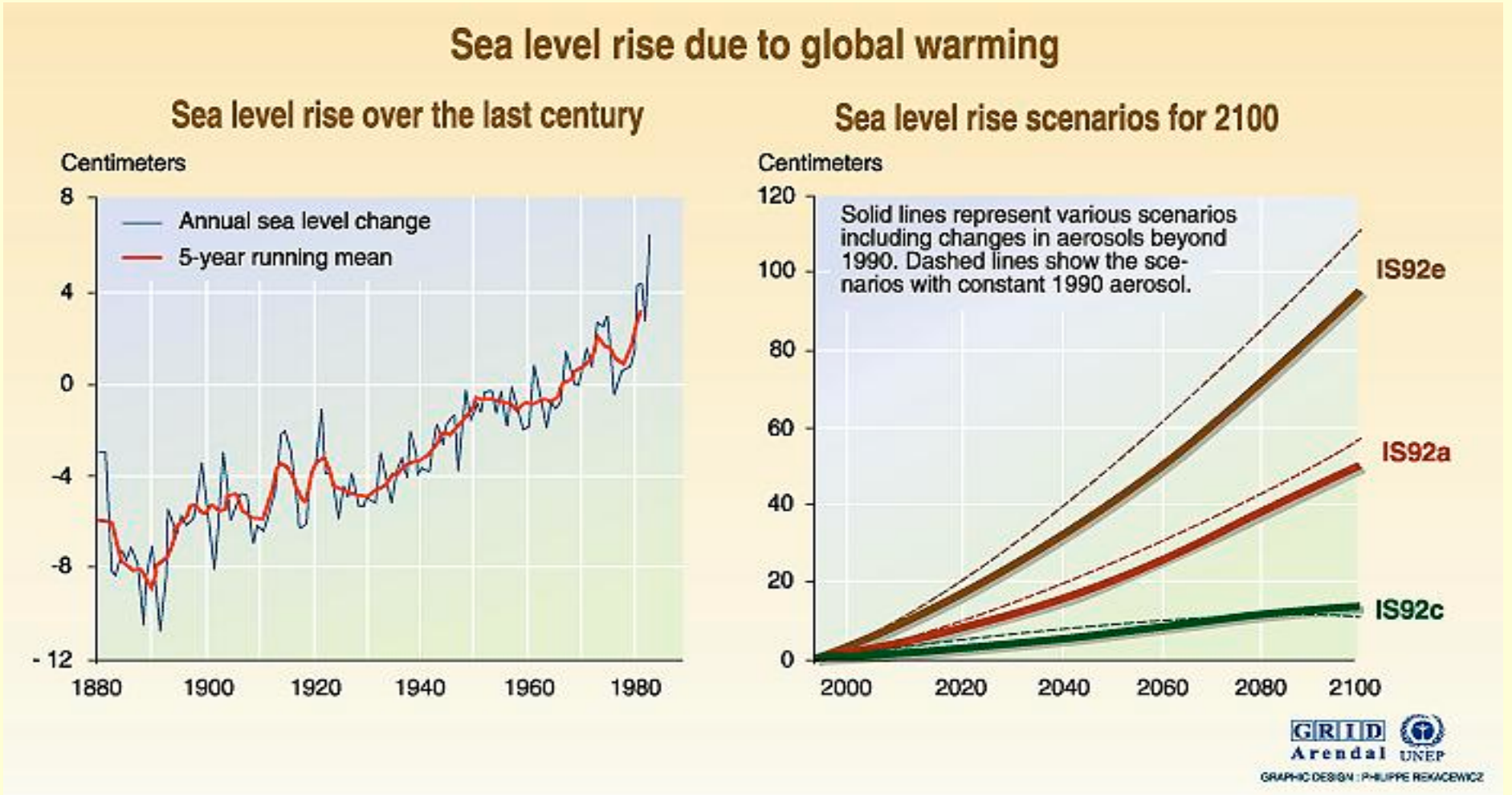
6.4. Climate Change Impacts on Precipitation



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)

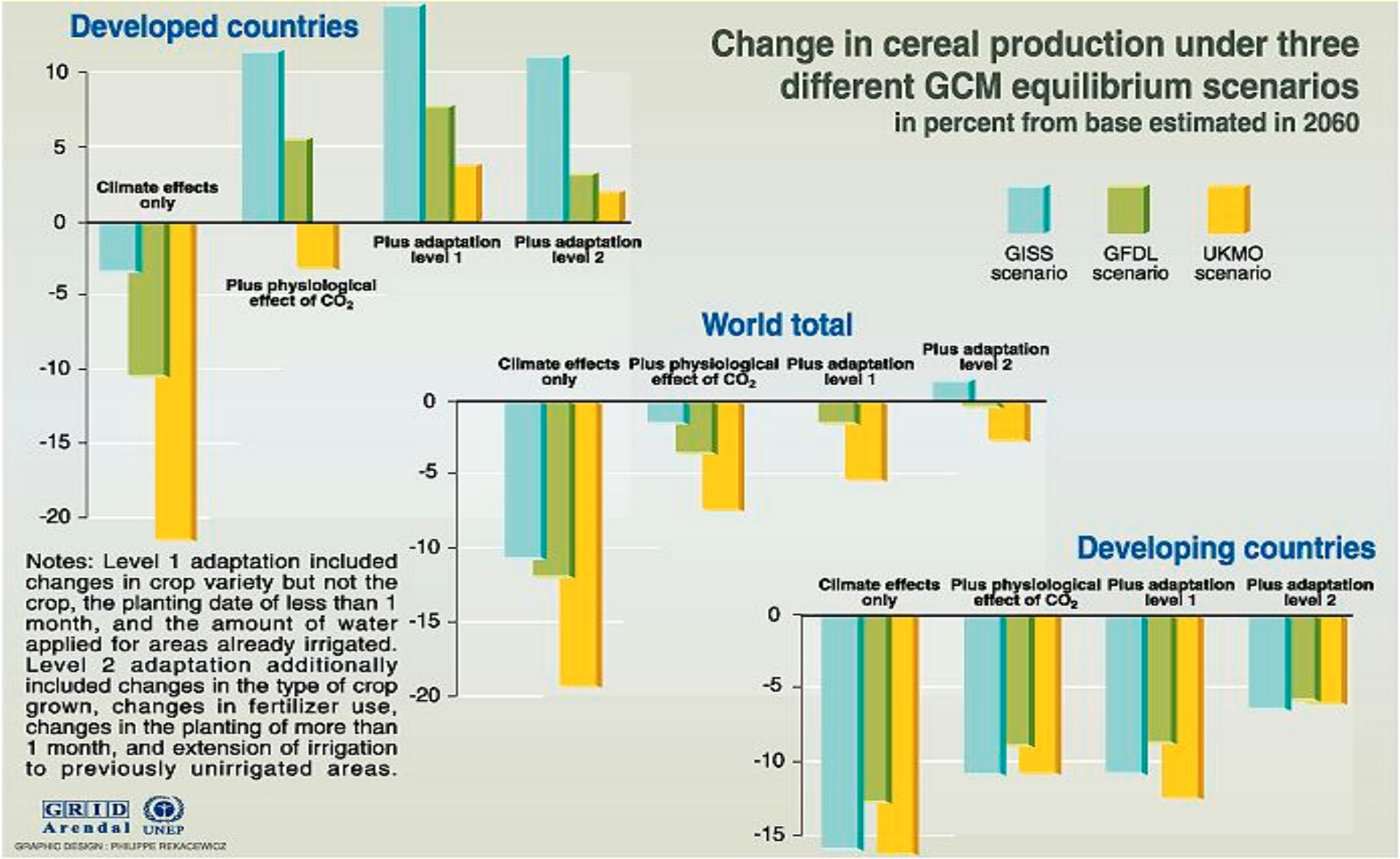
6.5.Global Climate Change: Sea level rise: 1860-2100

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**



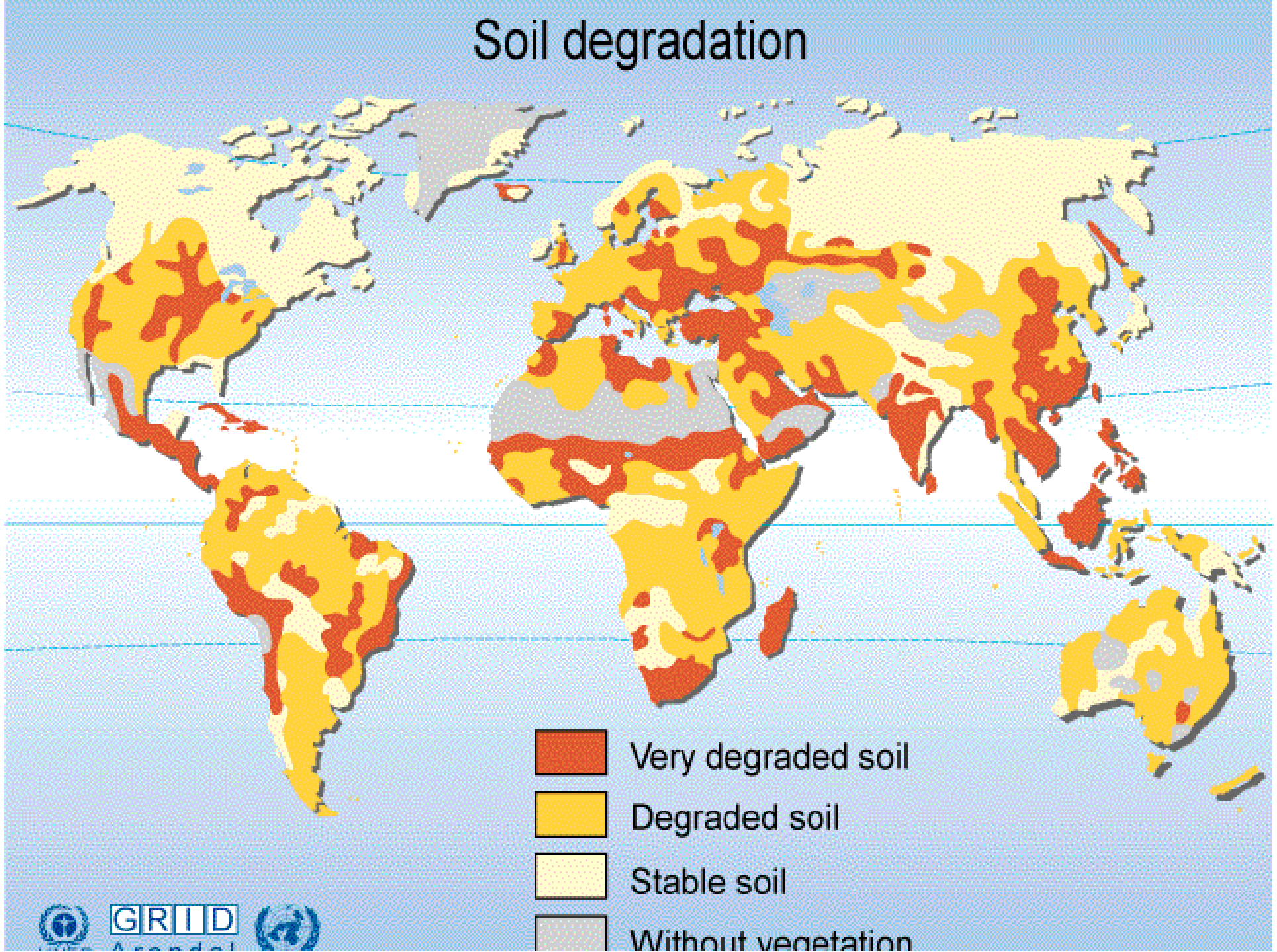
Source: Climate change 1995, The science of climate change, contribution of working group 1 to the second assessment report of the intergovernmental panel on climate change, UNEP and WMO, Cambridge university press, 1995; Sea level rise over the last century, adapted from Gornitz and Lebedeff, 1987.

6.6. Climate Change Impacts on Agriculture

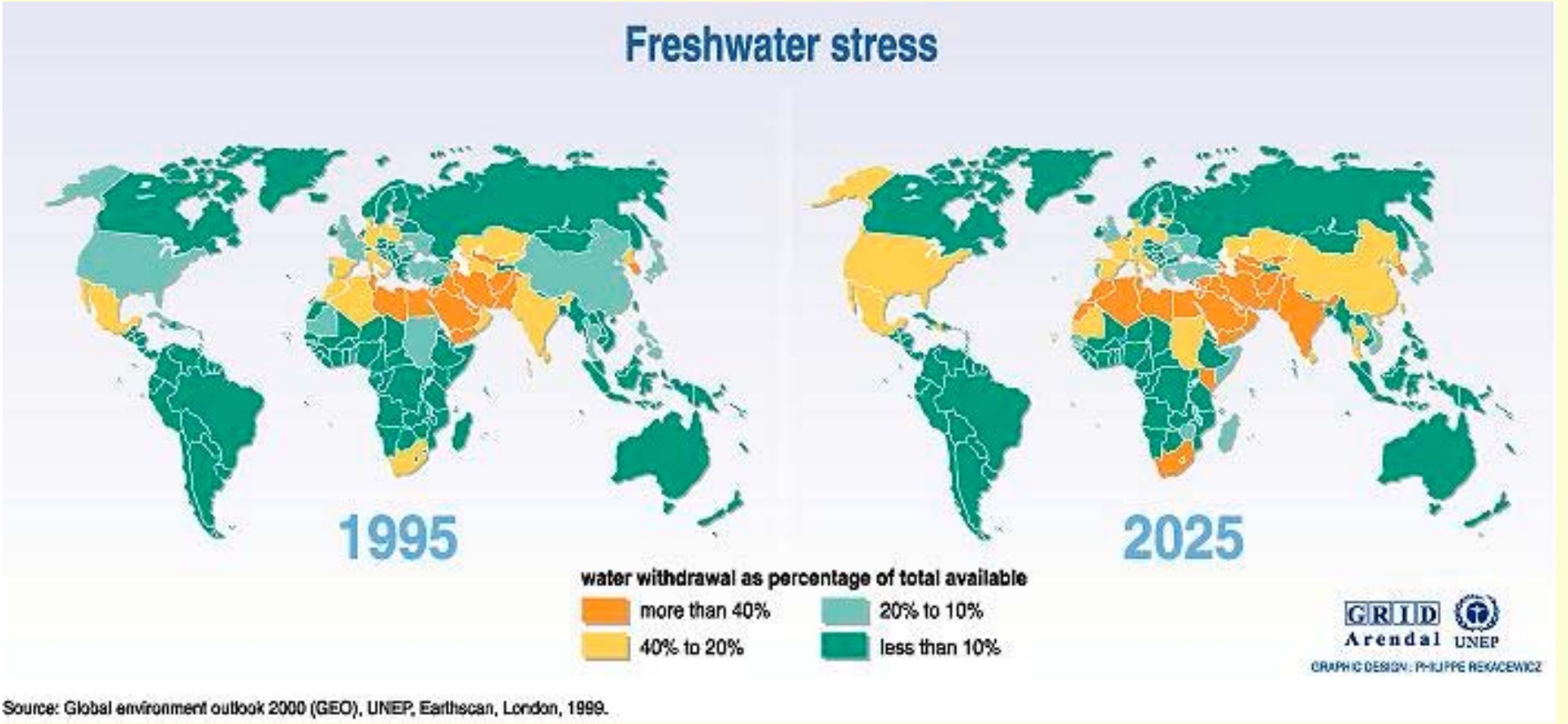


Source: Climate change 1995, Impacts, adaptations and mitigation of climate change: scientific-technical analyses, contribution of working group 2 to the second assessment report of the intergovernmental panel on climate change, UNEP and WMO, Cambridge press university, 1996.

Soil degradation



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



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

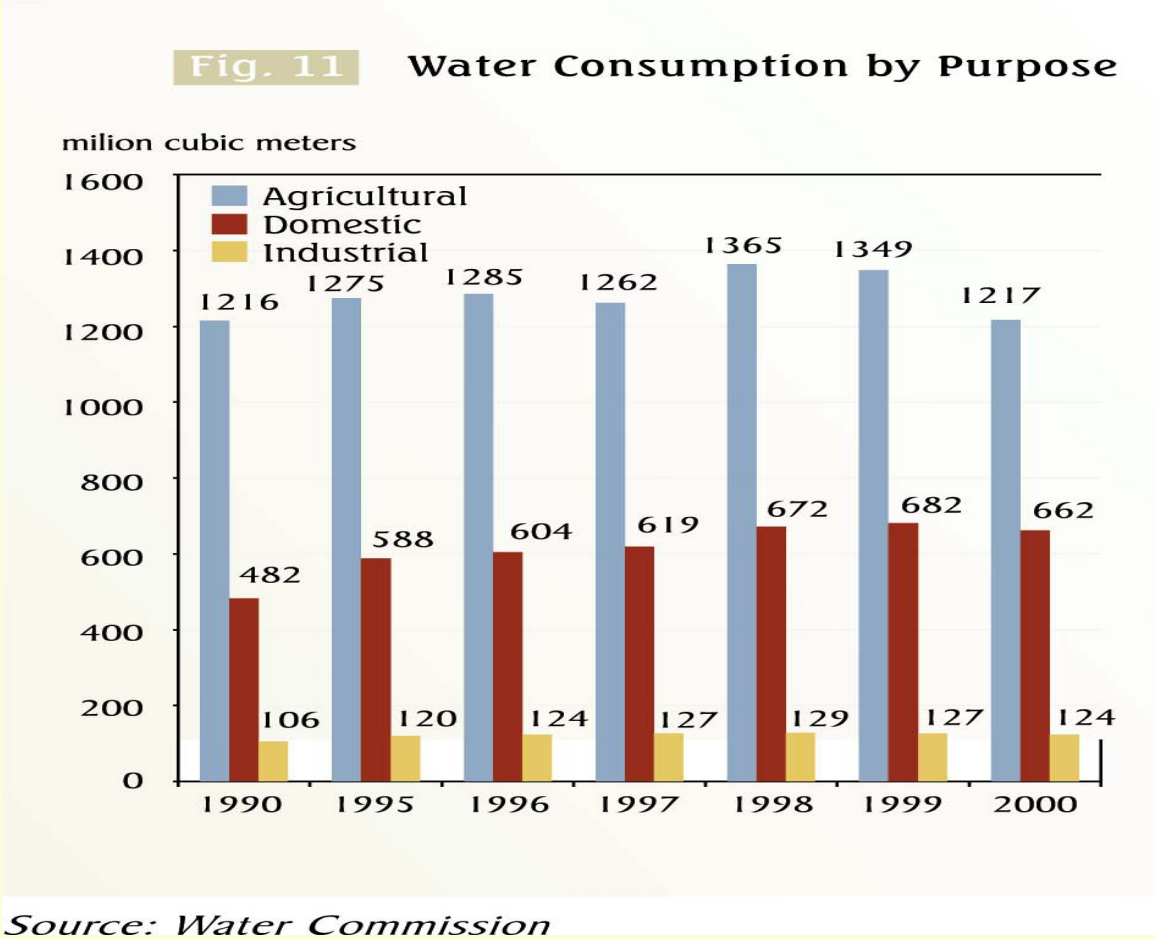
- The MENA Region has been and will remain the region with the highest water stress that will become even more severe due to population growth and climate change (temperature rise).

6.9. Water Scarcity in the Near or Middle East

- **FAO: of 21 c. water-scarcity, 12 are in NE**
- **11 MENA c. fresh water: 220 m3/cap. Jordan, 330 m3/cap. OPT, 2,000 m3/cap. Turkey,Syria.**
- ***K. Khosh-Chashm*: Most extreme water crisis is in Gaza (15 gallons, US: 800 gall. or 1: 53).**
- **Estimate: a drop of 50% in ann. cap. Renew. Water: 1995 and 2025 in MENA countries.**

Water	Israel	Jordan	West Bank
Supply	1987-1991 (million c.m)		
Normal	1,950	900	650
drought	1,600	700-750	450-550
Demand	Projected increase		
1987-91	2,100	800	125
2020	2,800	1,800	530
Source: Helena Lindblom 1995; Lowi 1992.			

6.10. Water Resources in Israel and in OPT

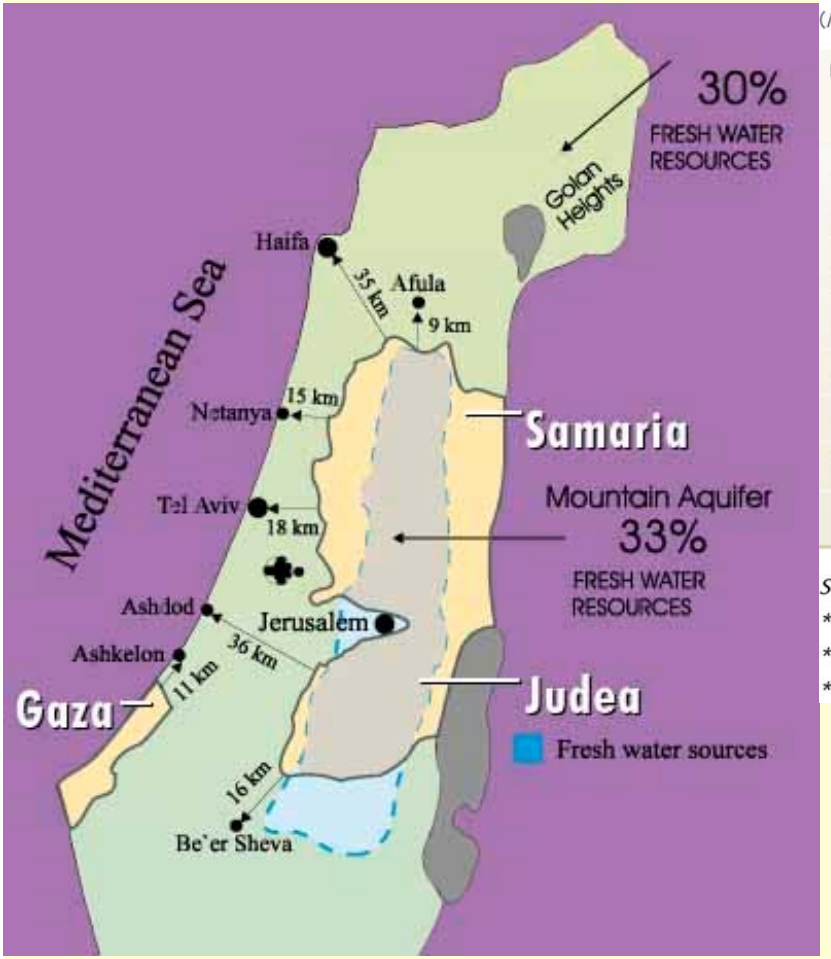


Source: Water Commission

Source: Environment in Israel 2002: 75

By 2004: desalination plants should produce at least 250 MCM/yr, Necessary to desa-linate at least 375 MCM in 2004,+20 MCM each yr

6.11. Environment of Israel 2002: Water



PUMPING, YIELD AND REPLENISHMENT OF ISRAEL'S WATER RESOURCES (MCM) (1999/2000)

BASIN	PUMPING TOTAL	PUMPING SALINE*	INFILTRATION	SPRINGS FLOW TOTAL	SPRINGS FLOW SALINE	YIELD	REPLENISHMENT	AVERAGE REPLENISHMENT
Coastal	542	20	128			542	278 **	304
Mountain	399	8	0	28	25	427	301	350
W. Galilee	91	10		24	6	115	173	205
Carmel	37	8		3	3	40	39	41
Kinneret		59		321	18	380	430	580
E. Mountain	149	14		187	125	336	314	367
Negev & Arava	88	59				88	55 ***	55***
TOTAL	1365	119	128	563	177	1928	1590	1902

Source: Hydrological Service, Water Commission

** Water with chloride concentrations exceeding 400 mg/l is defined as saline.*

*** Replenishment in the Coastal Aquifer includes irrigation return flows, leaks, etc. estimated at 59 MCM.*

**** Mostly a one-time reserve.*

Pumping, Yield & Replenishment of Israel's Water Re-Sources (1999/00)

Fresh & Marginal Water Consump-Tion in 2000 (mcm)

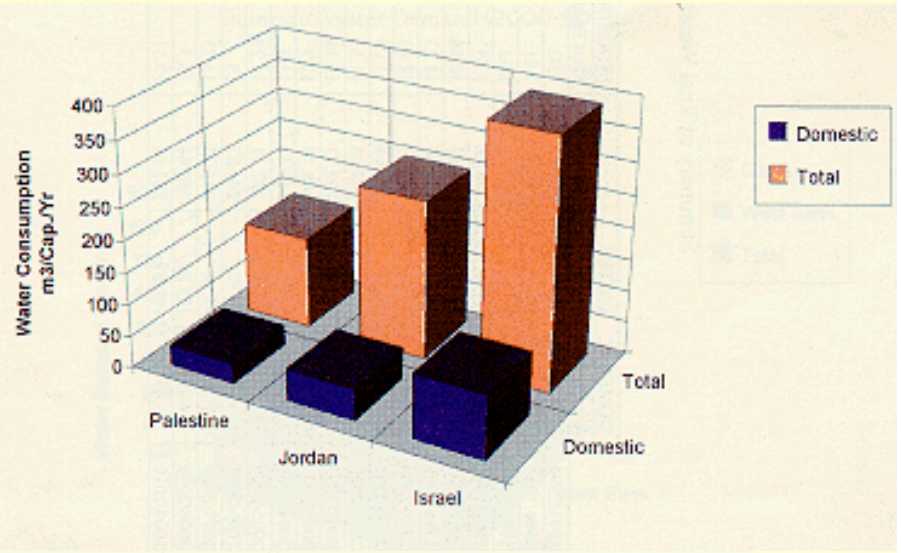
FRESH AND MARGINAL WATER CONSUMPTION IN 2000 (MCM)

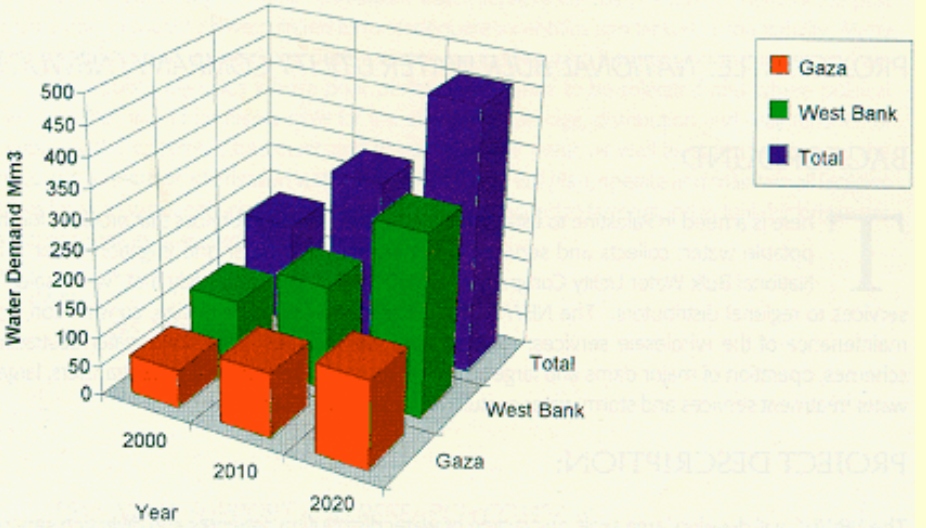
YEAR	FRESH WATER	MARGINAL WATER*	TOTAL
Agricultural	823	393	1216
Domestic	659	3	662
Industrial	90	34	124
Total Consumption	1573	430	2003

* Marginal water includes saline wells, floodwaters and effluents

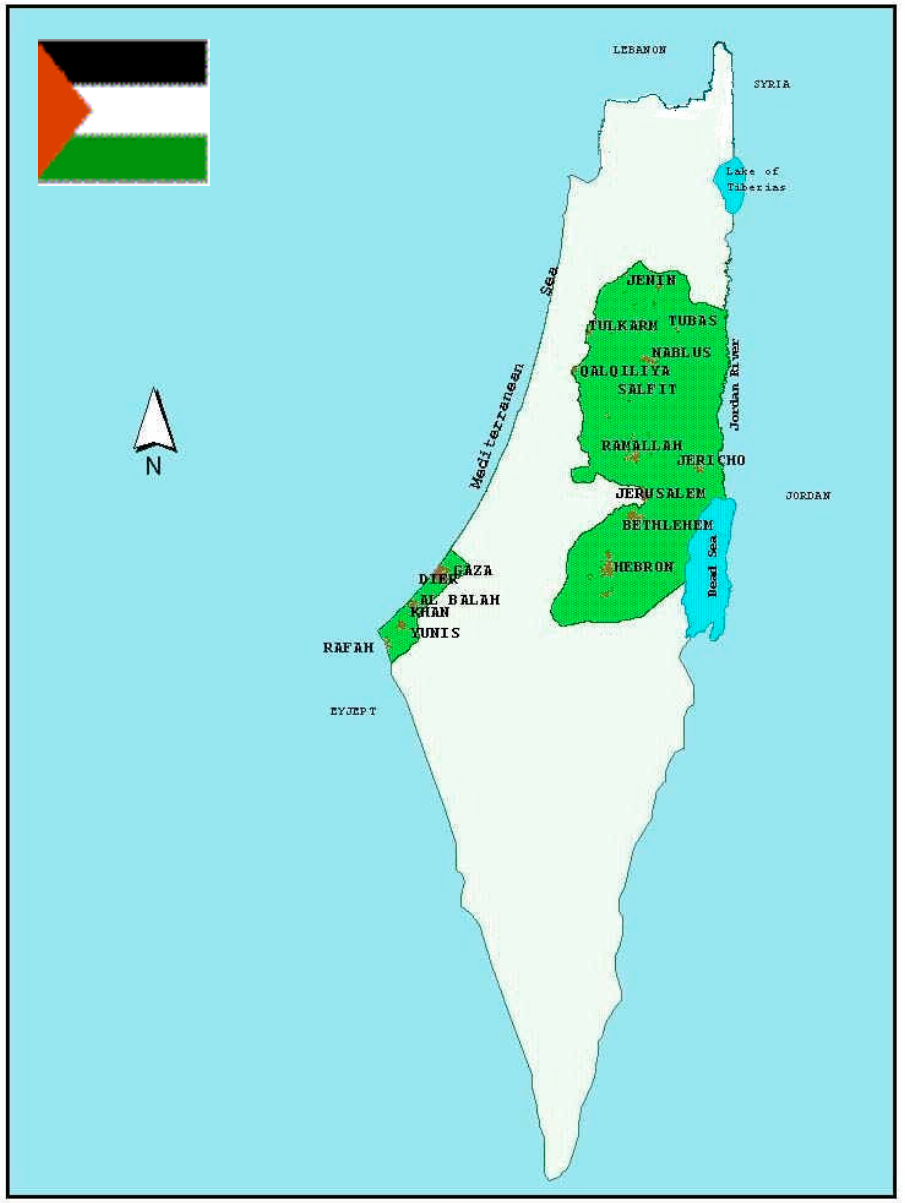
Source: Water Commission

6.12. Water Situation in Gaza





6.13. Water Scarcity in the Occupied Palestinian Terr



- **Major demand increase due to population growth**

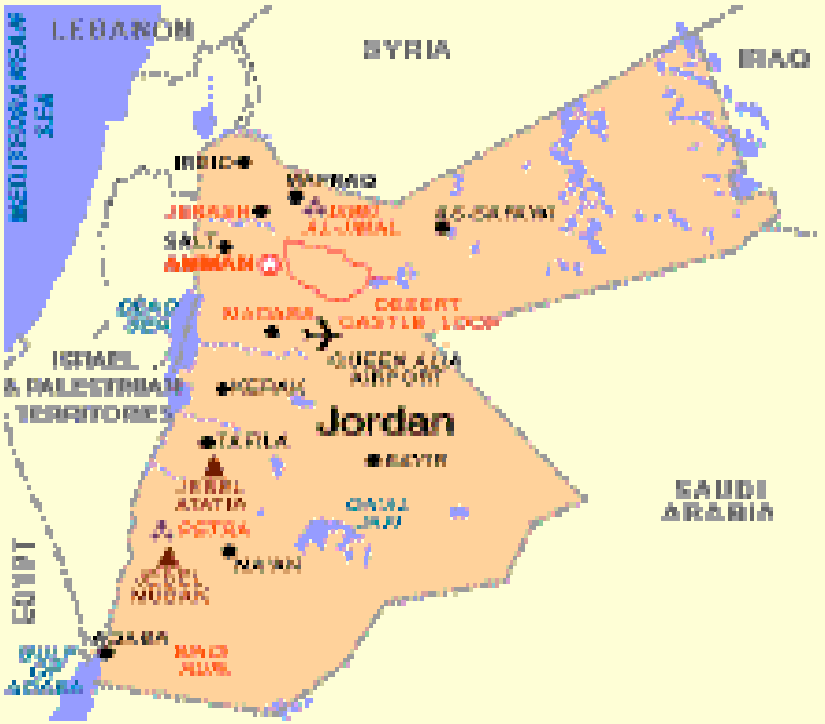
2000: 3.19; 2025: 7.15; 2050: 11.82

- **Decline in precipitation due to climate change?**

Water Dev./mio. m3/year
Source: UNEP Desk Study

	2000	2010	2020
Gaza Strip	114	228	285
Westbank	155	394	584
Desalination (Gaza only)	0	47	57

6.14. Water Demand Forecast: Jordan 1990-2025



Sources of Water Use in Jordan in 1997

Source	Munic	Ind.	Irrig	Live	Total
Surfac.	58.071	1.893	264.486	4.00	328.450
Ground	177.557	35.34	266.189	7.12	486.207
Waste	0.000	0.000	61.000	0.00	61.000
Total	**235.628**	**37.24**	**591.675**	11.12	**875.657**

Water situation in Jordan

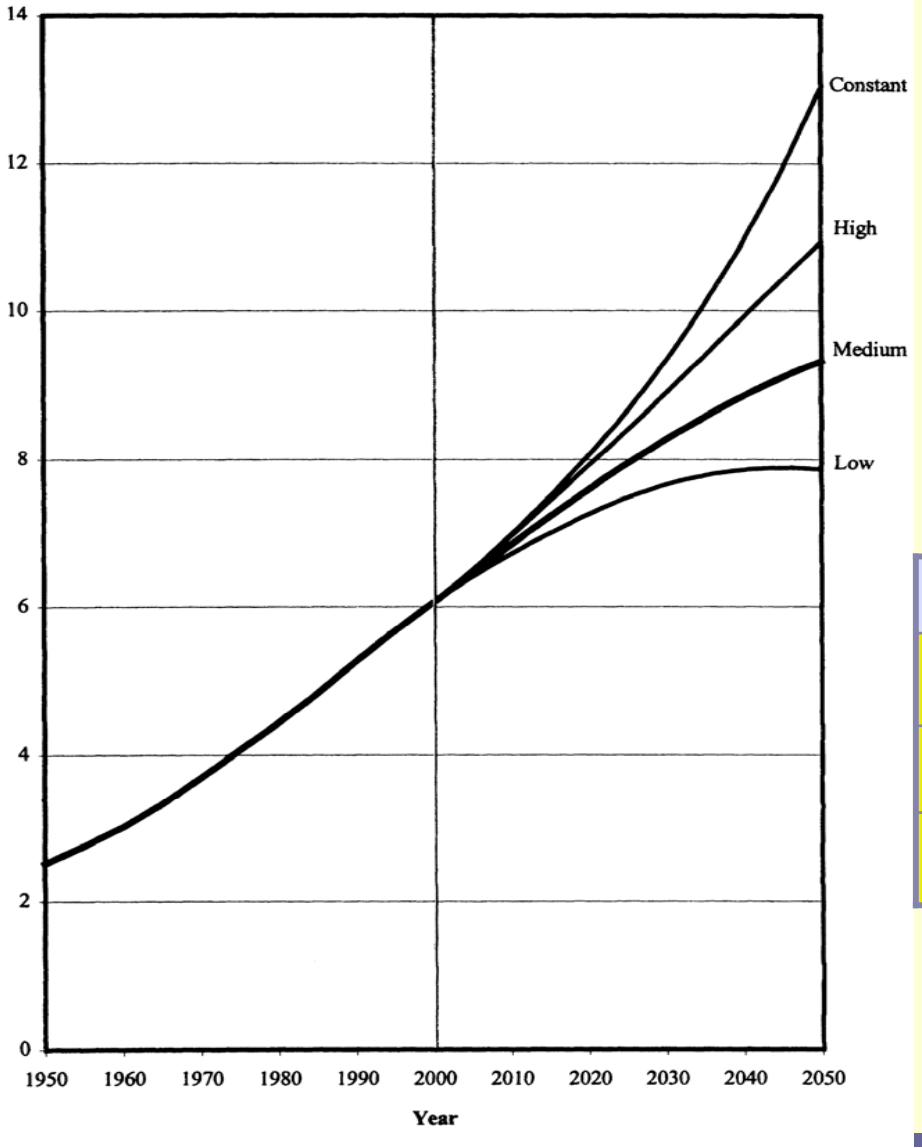
Year	Supply	Demand	Deficit (Mcm/y)
1995	882	1,104	222
2000	960	1,257	297
2005	1,169	1,407	238
2010	1,206	1,457	251
2015	1,225	1,550	325
2020	1,250	1,658	408

Source: **Semide: Water in Jordan**

Water resourc.: surface w. (Jordan), Groundwater, waste water (for irrig.),

Future solution: desalination

7. Demand Side: Purely Anthropogenic Factors for Eastern Mediterranean



- **Population growth:**

World Population, Medium Scenario 2000-2150 (UN, 1998 Rev.)

	2000	2050	2100	2150
Total	6,01	8,91	9,50	9,75

World Population in 2300. Highlights (UN, Dec. 2003), Med. Scenario ↓

	2000	2050	2100	2200	2300
World	6,071	8,919	9,064	8,499	8,972
Develop.	1,194	1,220	1,131	1,207	1,278
Less Dev.	4,877	7,699	7,933	7,291	7,694

- **Urbanisation:** will increase
- **Food & Agriculture:** Demand will grow due to population growth

7.1. Population Growth & Urbanisation in the Mediterranean Region (1850- 2050)

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

7.2. 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	29.3	62.6	89.5	142.9	173.8	144.5	84.3
10 + Libya	25.55	38.35	73.4	154.	232.3	342.7	413.2	339.9	180.9

Decline in Southern Europe, major population increase in MENA

7.3.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

7.4 Population Growth: Eastern Mediterranean

Table: UN World Population 2300 (Dec. 2003), in million

Source: UN Populations Division: Draft World Population in 2030.
Highlights According to the Med. Scen., 2000 to 2300, max. pop.& year
[http://www.un.org/esa/population/publications/longrange2/AnnexTablesB.pdf]

	2000	2050	2100	2200	2300	Year of max.pop.	Max. pop.
Jordan	5.035	10.154	10.664	9.659	10.077	2080	10.902
Israel	6.042	9.989	9.833	8.817	9.370	2070	10.290
OPT	3.191	11.114	14.932	12.856	13.484	2105	14.933
Lebanon	3.478	4.946	4.506	4.420	4.694	2055	4.951
Syria	16.56	34.174	35.012	31.530	33.413	2075	36.316
Turkey	68.28	97.759	90.323	87.452	91.593	2055	98.064
Egypt	67.78	127.407	131.819	117.85	124.715	2075	136.279

7.5. Urbanisation in 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

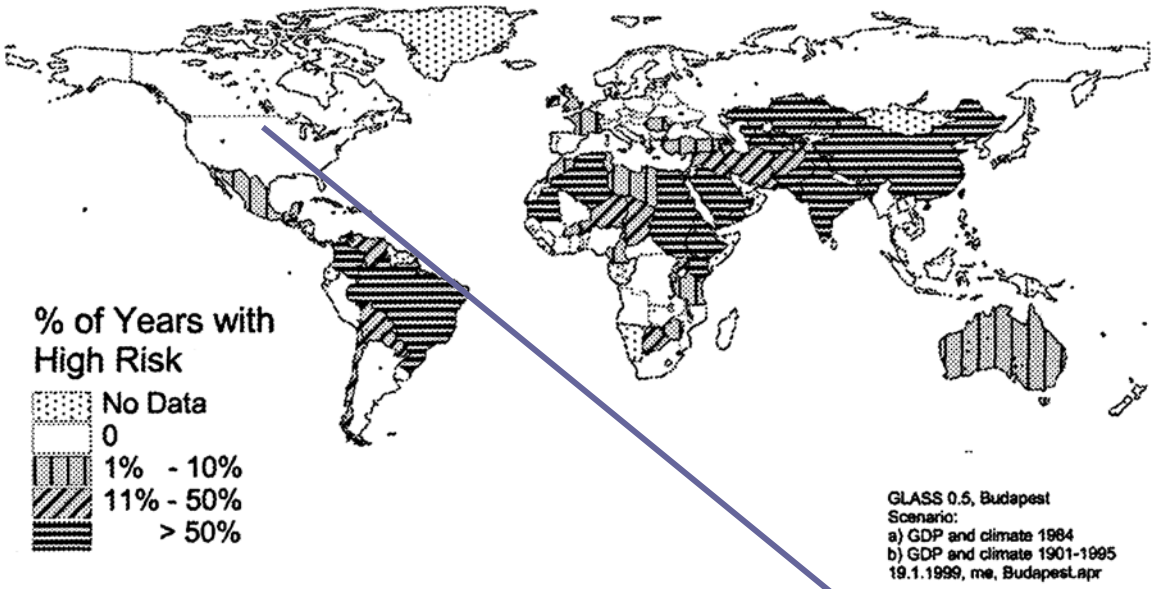


Figure 4. High Potential for Food Crisis 1901-1995.

← **High Potential for Food Crisis (1901-1995)**

Alcamo/Endejan 2002: 143

7.6. Food Crises

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

Alcamo/Endejan 2002-143

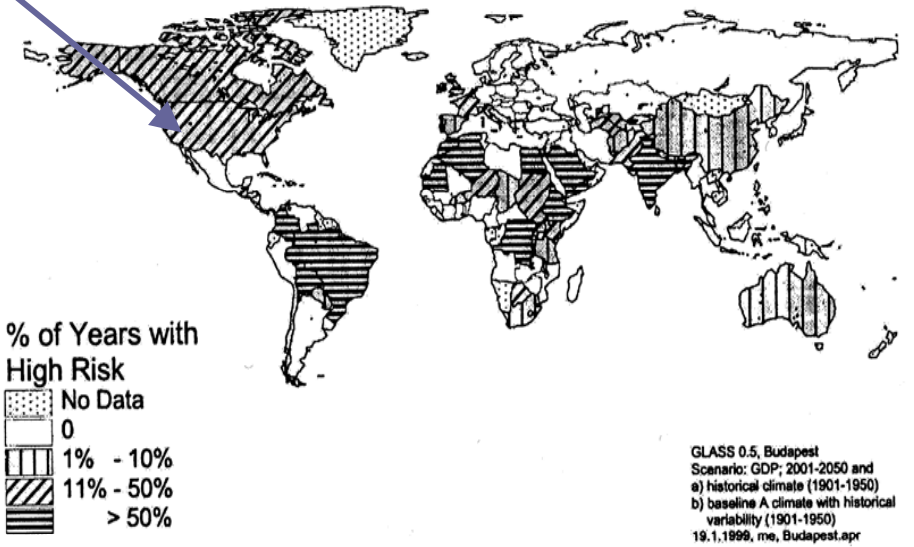
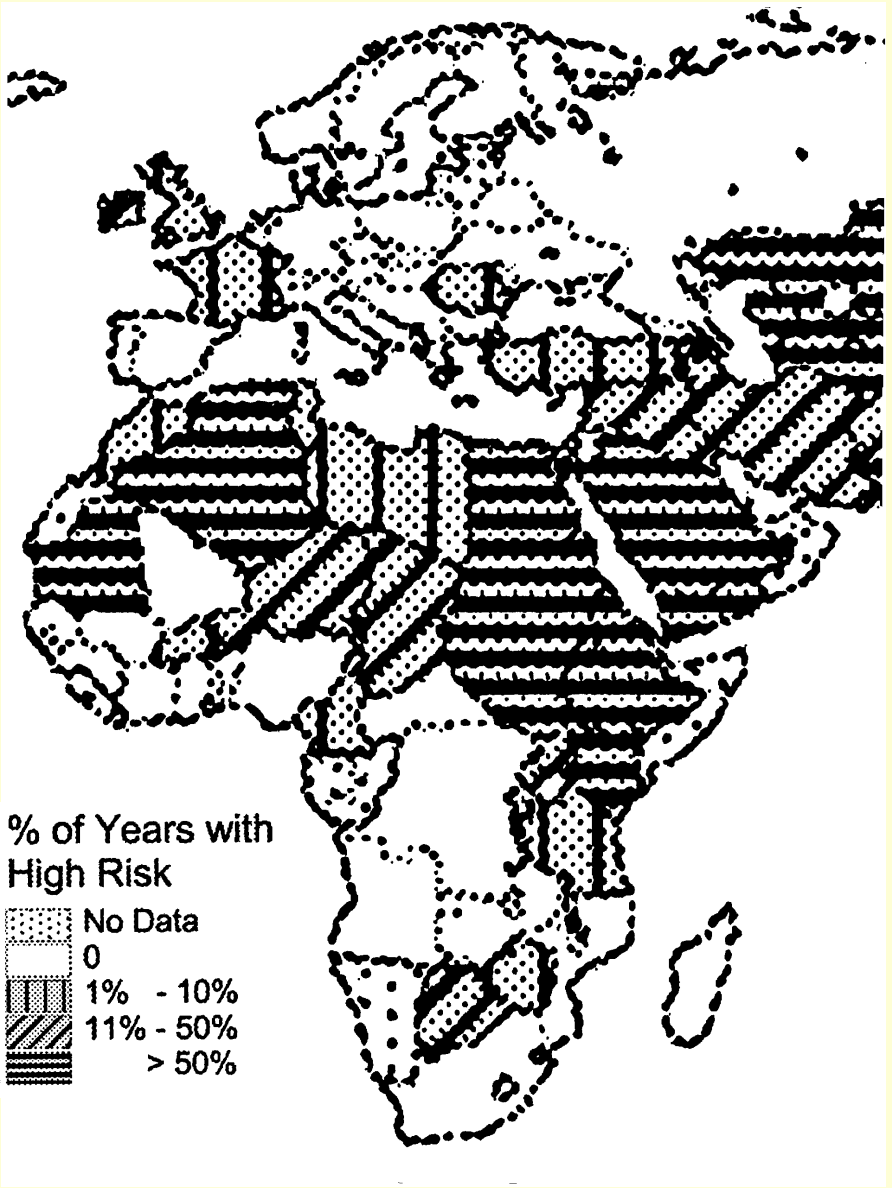


Figure 6. High Potential for Food Crisis 2001-2050 – with GDP Increase and Climate Change.

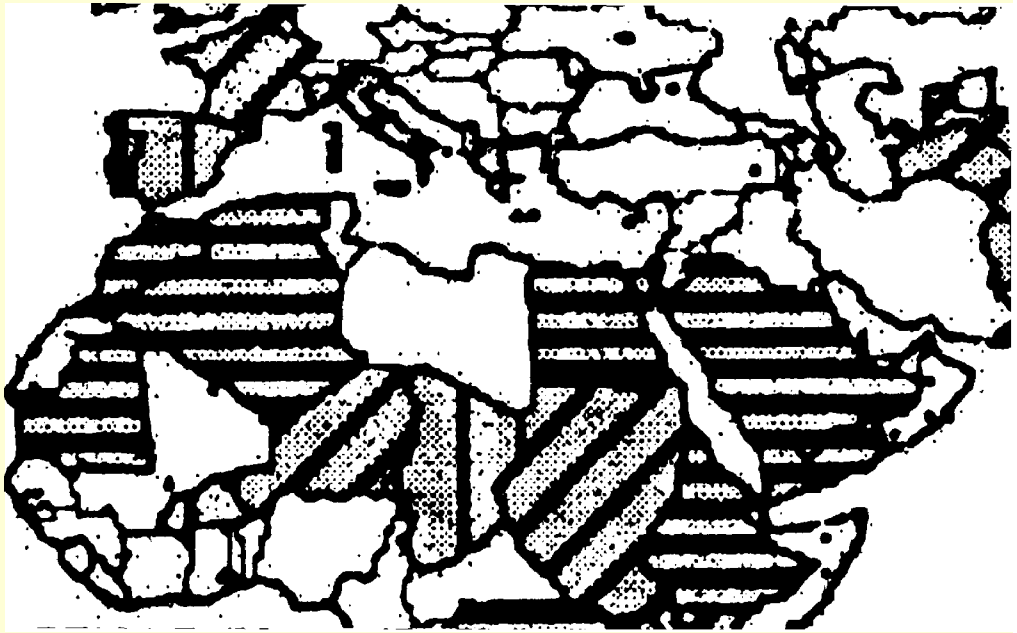
7.7 High Potential for Food Crisis 1990-2050



← Food Crisis: 1900-1995

Source:Alcamo/Endejan (2002)

High Potential for Food Crisis 2001-2050 with GDP Increase & Climate Change ↓

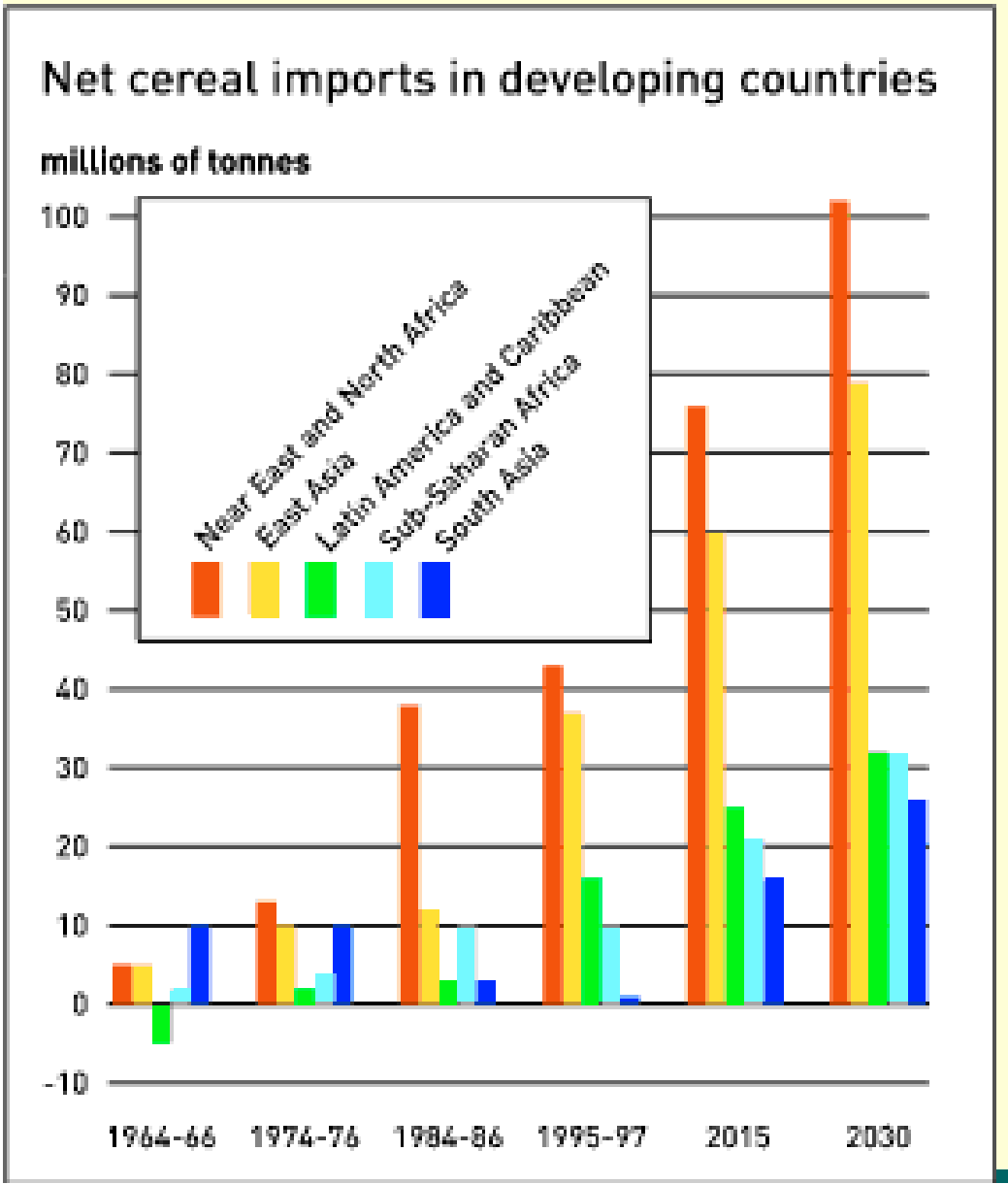


7.8. Food Security in the MENA Region

Table: Cereal balance for the MENA, all cereals (1964-2030).

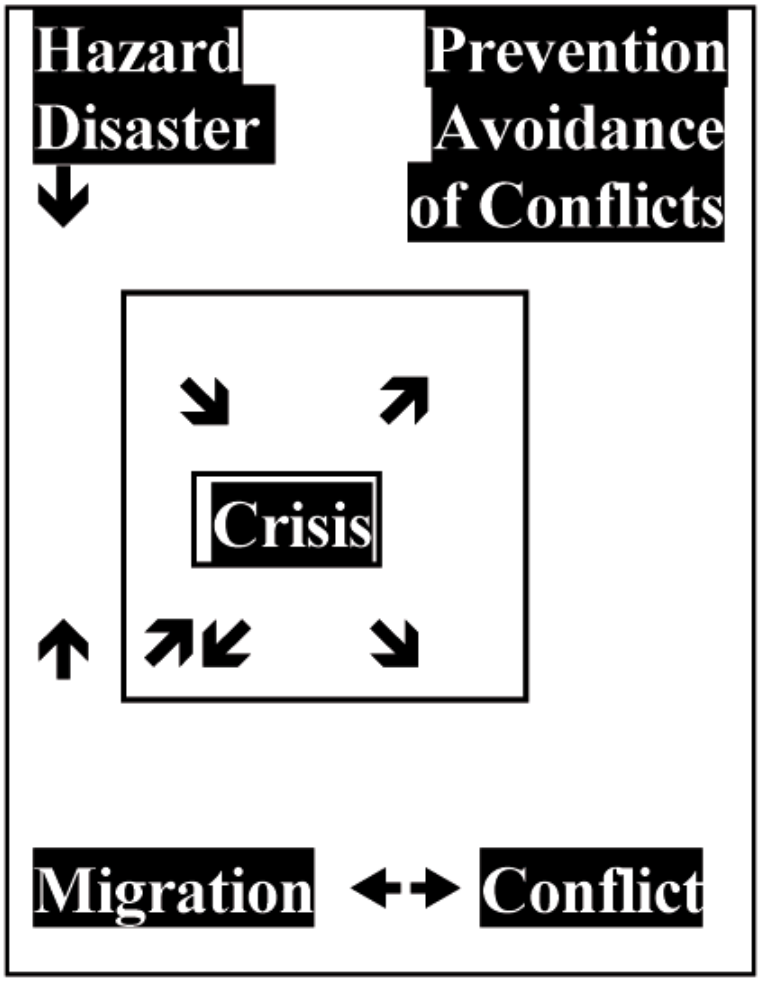
19	Demand				Pro-duc-tion	Net tra-de	Selfs uf-fic. rate %	Growth rates, % p.a			
	Per caput (kg)		Total (mio.tons)					Time 19... /20..	Dem and	Pro-duc-tion	Po-pula tion
	food	All uses	food	All uses							
64/66	174	292	28	47	40	- 5	86	67-97	3.6	2.4	2.7
74/76	190	307	40	64	55	- 13	85	77-97	3.1	2.7	2.7
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

7.9. FAO (2000) Increase in Cereal Imports



- **FAO: 4 March 2003, Rome**
  World's population will be better fed by 2030, **but hundreds of millions of people in 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 million in 2030.
- **The target of the World Food Summit (1996) to reduce the number of hungry by half by 2015, will not be met by 2030.**

8. 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

8.1. Analysis of 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

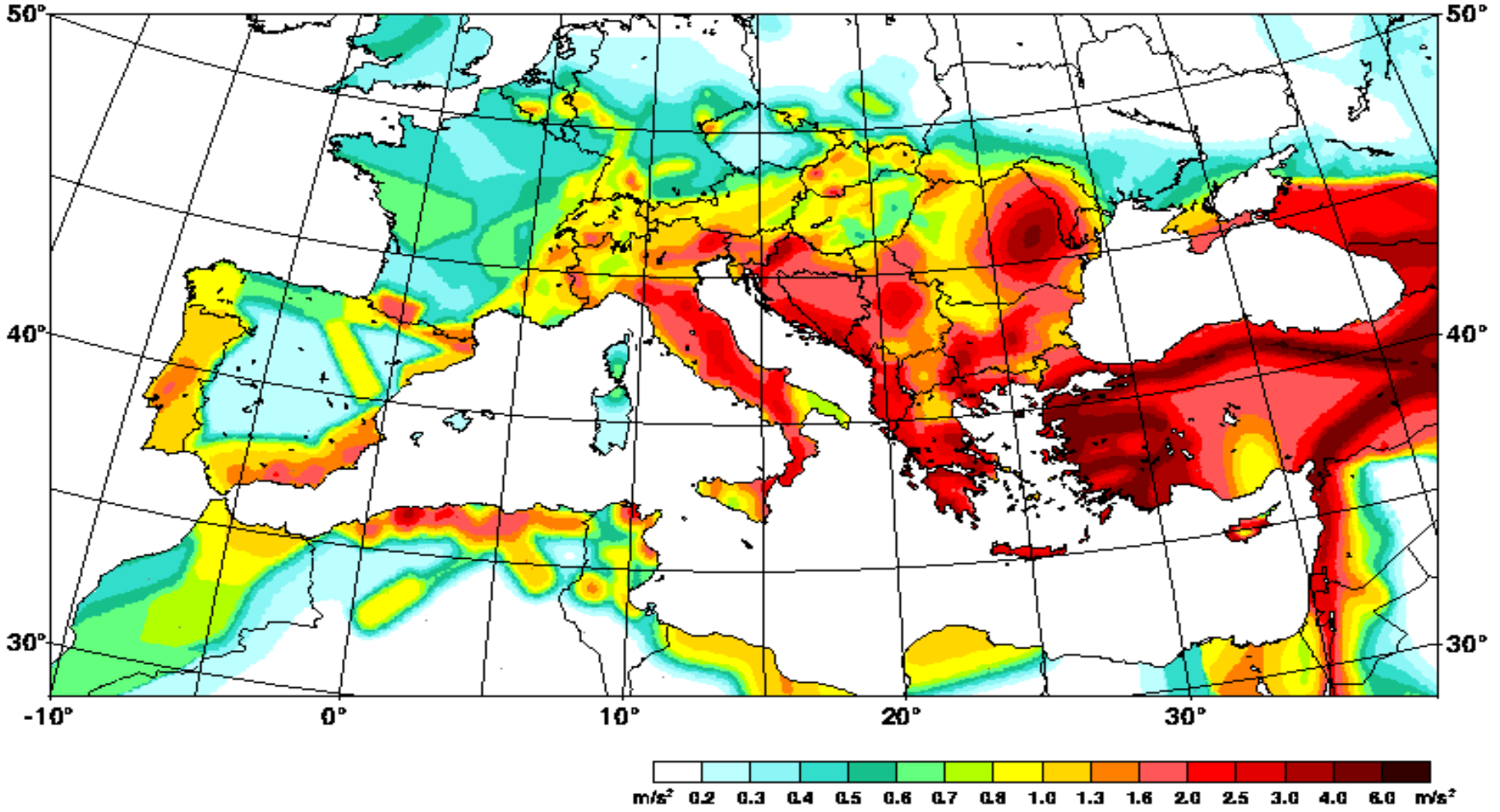
Source: CRED database: how representative are reported events?

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

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

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

8.2. Fatal Outcomes: Earthquakes in the Mediterranean Region



8.3. Fatalities of Disasters in Eastern Med.

Table: Fatalities of Natural Disasters (1975-2001)

	Total			Drought		Earthquakes		Floods		Storms	
	Ev	Killed	Affect (000)	Kill.	Aff. 000	Killed	Affect (000)	Kill.	Aff. 000	Kil	Aff.
Israel	11	31	2,029	-	-	-	-	11	1	3	410
Jordan	11	47	349,0	-	330	-	-	17	18,0	11	200
Leban.	4	45	105,6	-	-	-	-	-	1,5	25	104,
OPT	1	-	943	-	-	-	-	-	-	-	-
Syria	5	115	662,2	-	658	-	-	27	172	-	-
Turkey	63	27,375	2,580	-	-	26,087	2,377	450	92,2	31	3
East M.	95	27,613	3,700	0	988	26,087	2,377	505	112,9	70	104,
Total M.	485	43,728	22,15	0	10 m	35,74	35,74	4374	2,153	608	3,697

8.4. Vulnerabilities of Cities to Disasters

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.**

8.5. Vulnerability of Cities to Earthquakes

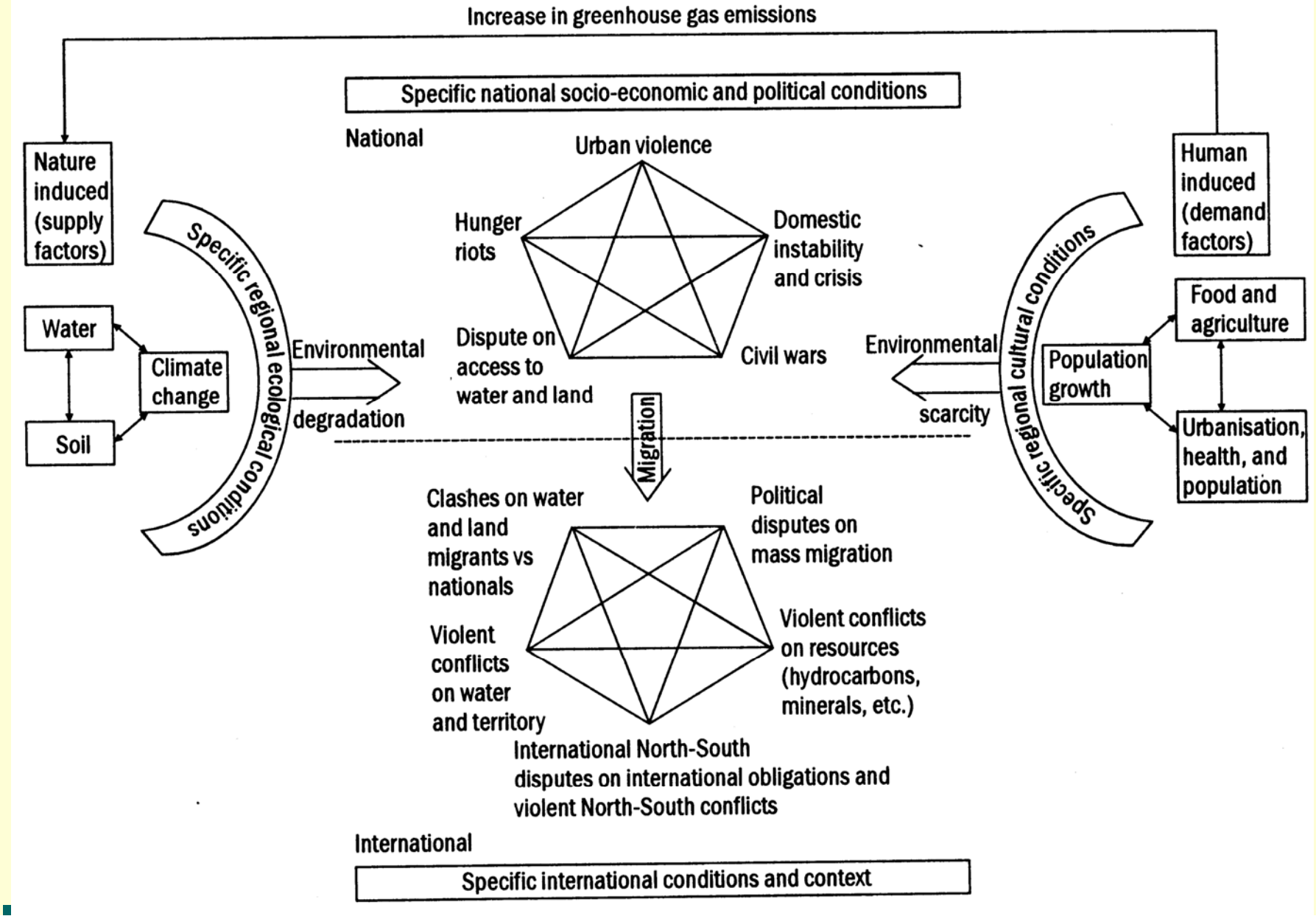
City	1950	1960	1975	1990	2000	2010	2015
Athens	1.8	2.2	2.7	3.0	3.1	3.1	3.1
Istanbul	1.08	1.74	3.60	6.54	9.45	11.84	12.49
Ankara	0.54	0.87	1.71	2.54	3.20	3.85	4.08
Izmir	0.48	0.66	1.05	1.74	2.41	3.01	3.20
Cairo	2.41	3.71	6.08	8.57	10.55	12.66	13.75
Alexandria	1.04	1.50	2.24	3.21	4.11	5.05	5.53
Tel-Aviv	0.42	0.74	1.21	1.80	2.18	2.52	2.63
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

8.6. Migration Trends in the Mediterranean

Table: Net migration rates in the Med. (Zlotnik, 2003:599)

Region	*1950-60*	*1960-70*	*1970-80*	*1980-90*	*1990-2000*
	Net number of migrants per year (thousands)				
Mediterran.	-2,765	-4,097	-2,127	-839	369
NW Mediter.	-1,521	-761	1,079	337	2,124
NE Mediter.	-823	-1,162	-71	-162	-888
East. Medit.	576	-406	-1,295	-506	921
South. Medit.	-997	-1,769	-1,840	-508	-1,788
	Net migration rate				
Mediterran.	-1.1	-1.4	-0.6	-0.2	0.1
NW Mediter.	-1.2	-0.5	0.7	0.2	1.3
NE Mediter.	-2.4	-3.1	-0.2	-0.4	-2.0
East. Medit.	1.7	-0.9	-2.3	-0.7	1.0

8.7. Types of conflicts



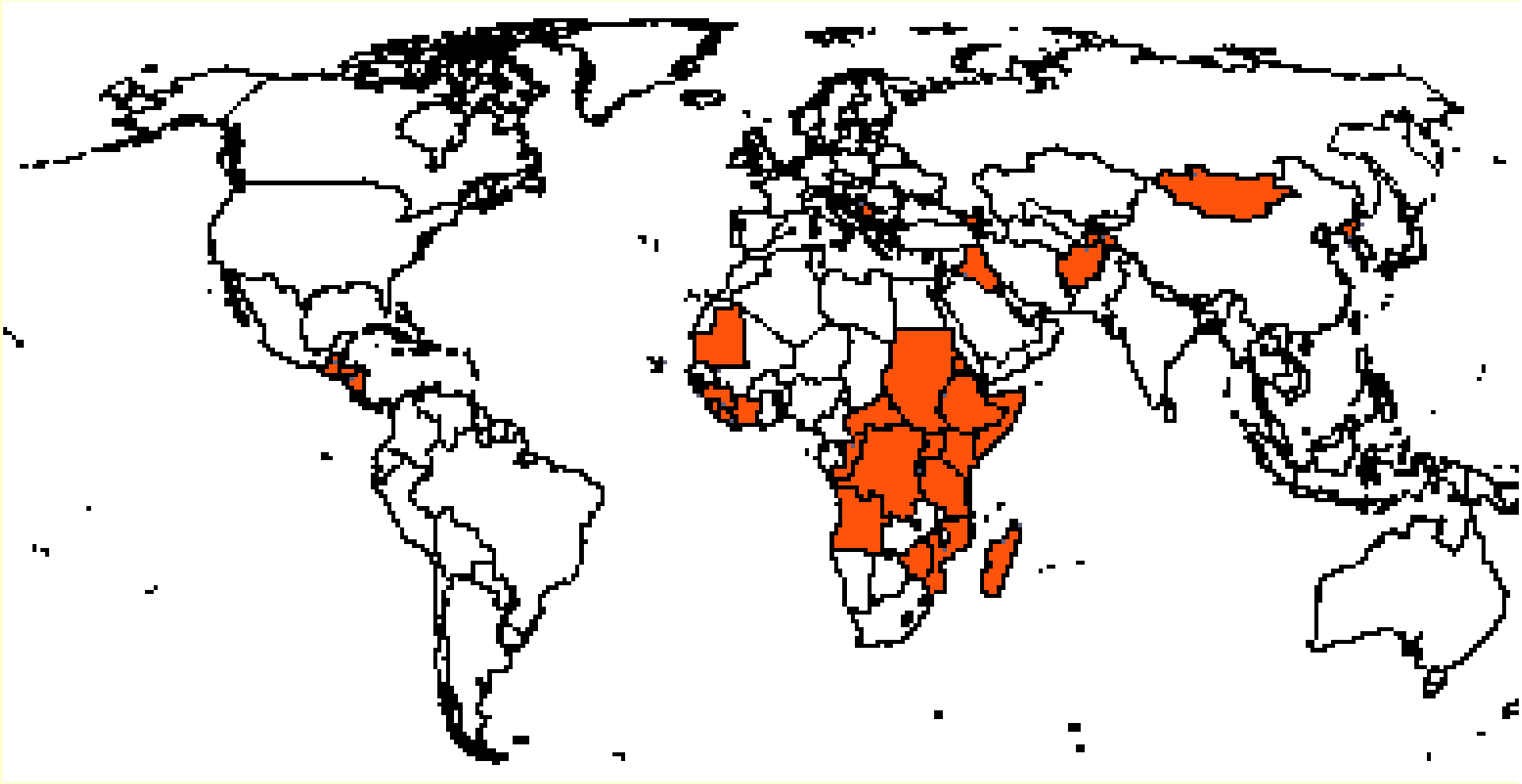
8.8. Diagnosis: Interactions among Outcomes

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	Con-flicts	Refu gees	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

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

Countries Experiencing Food Emergencies in October 2003



8.10. 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?

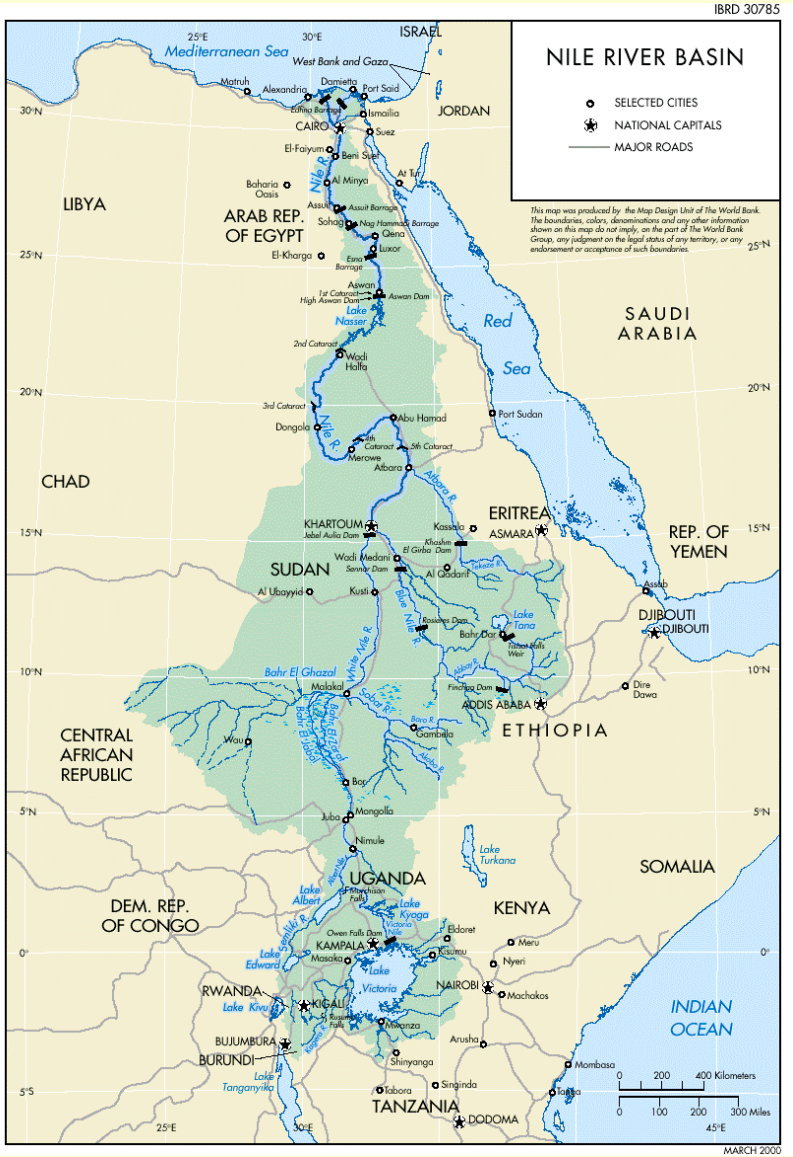
Illustrative cases on linkages:

- 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 of early warning of disasters and conflicts makes sense!

Linkages for 2 Cases: 4 Nile Basin countries and Bangladesh

8.11. Case of 4 vulnerable Nile basin countries



4 of 9 countries are in Nile Basin

High: drought, famine. migration, conflicts

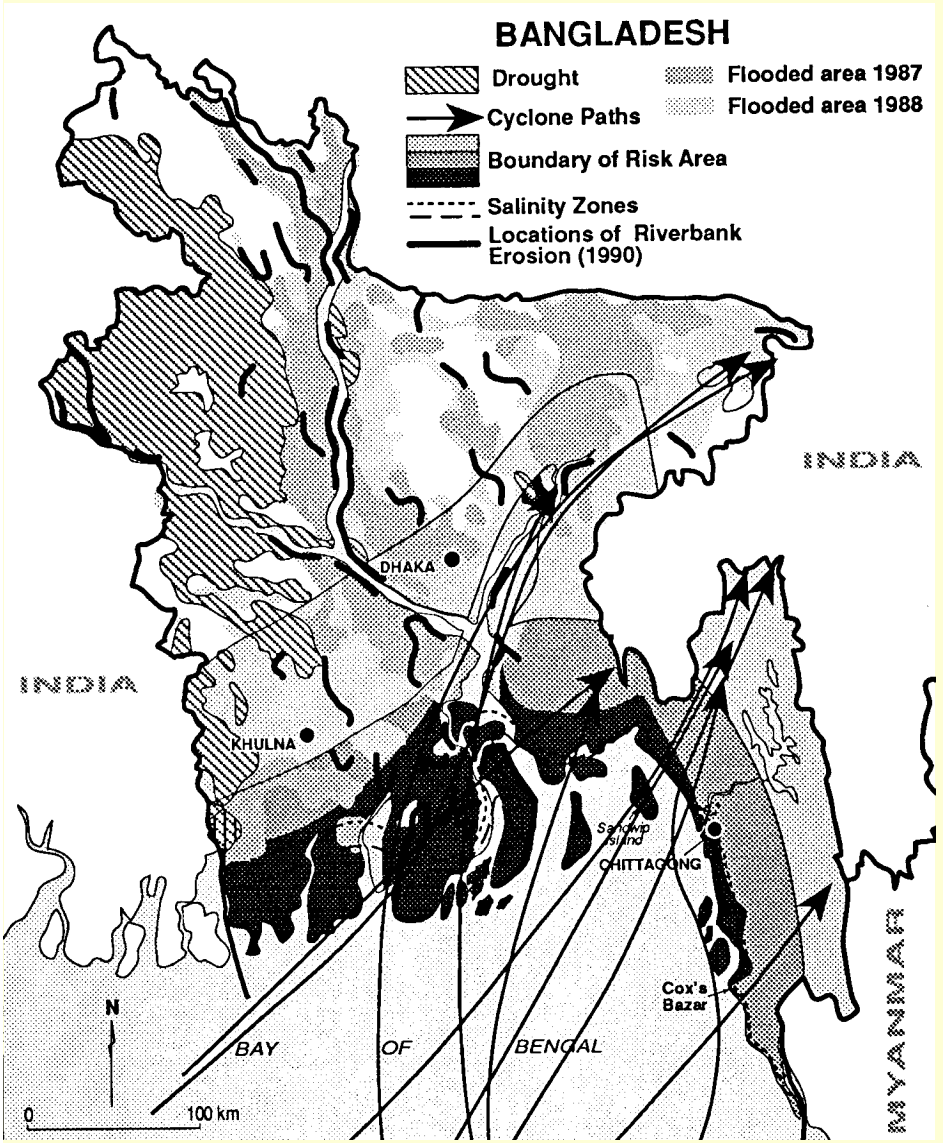
Today: major recipients of food aid.

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

8.12. 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

8.13. 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

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

- **Will these fatal outcomes of global environmental change and climate change lead to conflicts?**

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“ lead to 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.

8.15. 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	

9. Climate Change and Conflicts?

Hobbesian: http://halfgeek.net/weblog/special/gwreport/Pentagon.html

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

See my talk of 29 March 2004 at the Ebert-Foundation in Washington

- **Hobbesian diagnosis: P.Schwartz Doug Randall: An Abrupt Climate Change Scenario and Its Implications for US National Security, Oct 2003, for DoD, NA (worst case)**
- **EU: 2015: Conflicts within EU over food & water supply, 2025: EU nears collapse, 2027: increasing migration from Europe to Mediterranean countries: Algeria, Morocco, Egypt, Israel, 30% of Europeans are 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**
- **Grotian Diagnosis: H.G. Brauch: Climate Change, Environmental Stress and Conflicts, for German Fed. Min. of Environment (Nov. 2002)**
- **Focus: Interaction between Global Environmental Change and Fatal Outcomes, case studies: Mexico, Bangladesh, Egypt, Mediterranean**
- **Distress migration: from Nile Basin, across the Mediterranean, major human disasters, increase in hydro-meteorological hazards in the Mediterranean: storms, droughts, flash floods**

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

- **Both studies agree: climate change matters & has im-pacts that may result in conflicts in the 21st century**
- **Study assumes rapid change of the Gulf Stream (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 inevi-table, conflicts over energy resources. „Managing the military and political tension, occasional skirmishes, and threat of war will be a challenge.”**

9.2. 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 & to anticipate how & 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**.

9.3. Grotian Conclusions on Climate Change & Conflicts (Brauch BMU study)

- **Grotian: IPCC Assessments focus on interactions among 6 factors of Survival Hexagon): linkages between climate change impacts, environmental stress & conflict dimensions with hypotheses on climate change impacts:**
- a) **There is no mono-causal linkage between climate change and conflicts**.
- **b) do not pose military threat cannot be solved with military means.**
- **c) will contribute to environmental stress & become a potential cause of conflict constellations.**
- **d) may challenge the survival of human beings: challenge to human security.**
- **e) 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 regions.**
- **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 N-S 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.**

9.4. 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 coopera-tion EU and MENA countries (no long-term focus)
- NATO‘s Mediterranean Dialogue: important framework to involve American & Canadians (awareness, agenda-sett.)
- Human Security Network: agenda-setting for humanitarian challenges (Ireland & Netherlands: EU presidency in 2004)
- Grotian multilateralism could & 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 manage-ment.

10.1. 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 was 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.
- Proposal: CCMS Study: Climate Change & Conflicts

10.2. Grotian Goals & Return of Mars to Venus

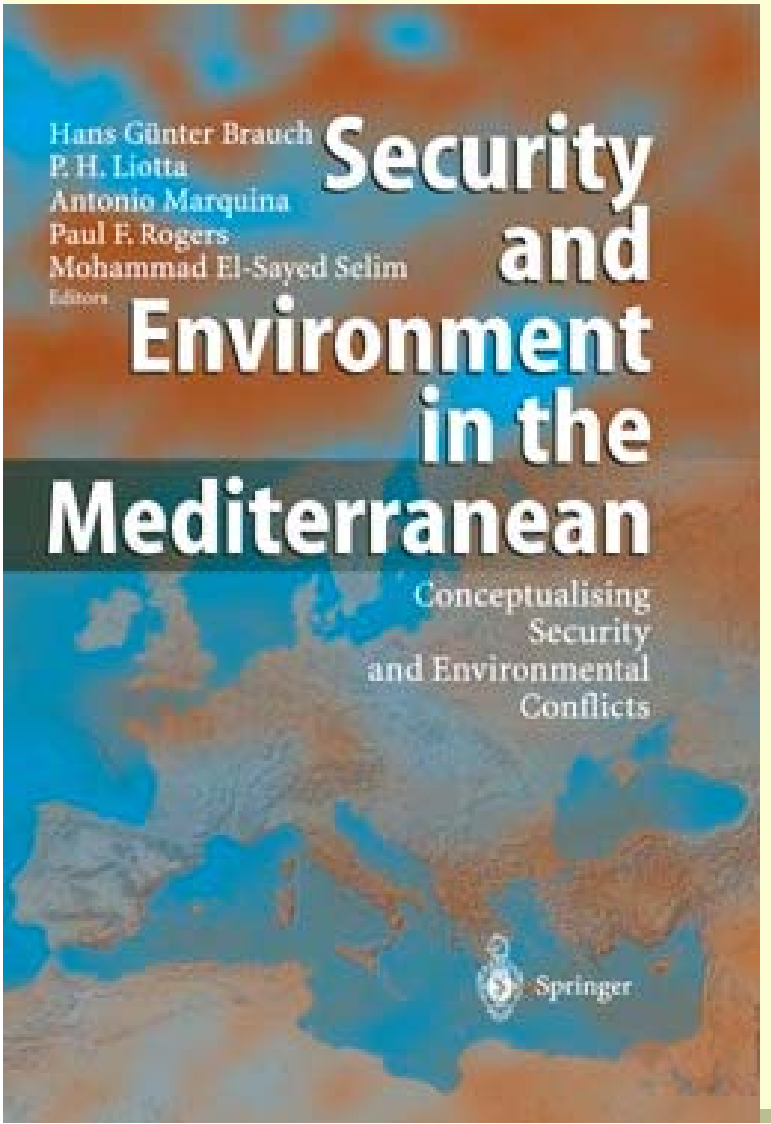
- In 21st century a Grotian worldview may again re-unite Mars & Venus.
- Both cannot enjoy life alone.
- Neither can survive without the other.
- Thus, both need each other!

Thank you for your attention!

Send your comments to:

Brauch@onlinehome.de

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)