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Ulrich Menzel (ed.)

**Water and International
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Summerschool Sept. 05-15, 2011**

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Technische
Universität
Braunschweig



EXCELLENCE CENTER FOR
DEVELOPMENT COOPERATION
SUSTAINABLE WATER MANAGEMENT



Summer School on Water and International Relations

Development, Conflict and Cooperation, International Political
Economy and the "Green State"

September 5 – September 15, 2011 / Braunschweig, Germany



funded by



Federal Ministry
for Economic Cooperation
and Development

DAAD

ex|ceed
The Center for
International
Cooperation in
Development

Foreword

From September 5 to September 15, 2011 the Institute of Social Sciences (ISS), Technical University of Braunschweig organized a Summer School on Water and International Relations, Development, Conflict and Cooperation, International Political Economy and the "Green State" with participants from 10 countries. The Summer School is part of the ongoing "Excellence Center for Development Cooperation" (EXCEED), dealing with Sustainable Water Management. EXCEED is organized by the Technical University of Braunschweig in Cooperation with the University of Guadalajara, Mexico, the Université de Ouagadougou, Burkina Faso, the Mu'tah University, Jordan and the Water Resources University, Hanoi, Vietnam. The whole program is funded by the German Academic Exchange Service.

The Summer School provided an introduction to the political, economic and social aspects of the topic "water". The course was organized in two parts. In the first week the lectures were theory-oriented and served as introductions to Development Policy, Peace Studies and Conflict Resolution, International Political Economy and the concept of the "Green State". The second week was policy-oriented. What are the Millennium Development Goals with respect to Water? How can the Trans boundary Freshwater Dispute Database be used in order to analyze cooperation and conflict concerning shared river basins? How can trans boundary water governance work? How can the lack of water in arid countries be substituted by the import of virtual water or the reuse of treated waste water?

The aim was to develop an understanding of major aspects of Development Politics, Peace and Conflict Studies, International Political Economy and the "Green State" in general. Specifically, to gain knowledge about the political, economic and social aspects of water, of water as a resource for development, a reason for conflict or cooperation in international relations, a good that can be traded internationally, and as a major topic for environmental policy; in how to use databases, how to read and analyze political documents, how to read and analyze trade statistics.

Topics were:

- water as a factor in development
- water as an issue in peace studies and conflict resolution
- water as an international traded good
- water/ climate as aspects of ecological modernization and the politics of the "Green State"

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Summerschool on Water and International Relations

September 5 – September 15, 2011

Prof. Dr. Ulrich Menzel
 Institute of Social Sciences
 Technical University of Braunschweig
 Bienroder Weg 97, Room No. BI 97.8, BI 97.6
 D-38106 Braunschweig

Schedule

| | | | | |
|----------------------------|---|---|---|--|
| Monday Sept. 5, 2011 | Arrival | | | |
| | 9.00-10.30 | 11.00-12.30 | 14.00-15.30 | 16.00-17.30 |
| Tuesday Sept. 6, 2011 | Introduction to Development Politics/Methodology | | | |
| | Bahadir Sustainable Water Management in Developing Countries: Aims and Scope Menzel General Introduction | Fürstenberg Research Methods in the Social Sciences | Menzel Introduction to Development Politics | Loges Protection between Peace and Development |
| | Welcome Party | | | |
| Wednesday Sept. 7, 2011 | Introduction to Peace Studies | | | |
| | Calließ Topography and Typology of War | Fürstenberg Data on Violent Conflicts | Sukopp Introduction to Intercultural Philosophy of Human Rights | Calließ/Loges How to Build Peace |

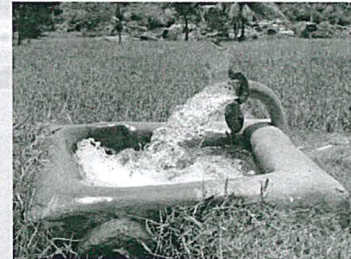
| | 9.00-10.30 | 11.00-12.30 | 14.00-15.30 | 16.00-17.30 |
|-----------------------------------|--|---|---|---|
| Thursday Sept. 8, 2011 | Introduction to International Political Economy | | | |
| | Heere Introduction to International Political Economy | Menzel Water Politics | Fürstenberg Water and Conflict | Heere Primary Resources in IPE: The Field of Water |
| Friday Sept. 9, 2011 | Introduction to the "Green State"/Ecological Modernization | | | |
| | Mangels-Voegt Sustainable Development as a Societal Guiding Principle | Karafyllis Environmental Ethics: A Short Overview | Karafyllis How Does Water Count in a Moral Sense? | All Participants Selection of Topics for the Poster Session |
| Saturday Sept. 10/2011 | Excursion to Wolfsburg (Phaeno/Volkswagen-City) | | | |
| Sunday Sept. 11, 2011 | Free time | | | |
| Monday Sept. 12, 2011 | Menzel The Transboundary Freshwater Dispute Database | Scott Water and the Millennium Development Goals | All Participants Preparation of Posters | All Participants Preparation of Posters |

| | 9.00-10.30 | 11.00-12.30 | 15.30-17.00 | 17.15-18.30 |
|-----------------------------|--|--|--|---|
| Tuesday Sept. 13, 2011 | All Participants Preparation of Posters | All Participants Preparation of Posters | Ribbe International and Transboundary Water Governance | Ribbe Euphrats and Tigris River Basin Ribbe Nile Basin: Water, Food and Energy Security: Water Conflicts and Status of Cooperation |
| | 9.00-10.30 | 11.00-12.30 | 14.00-17.30 | |
| Wednesday Sept. 14, 2011 | Abu Samhadaneh Transboundary Water Management in Western Part of Jordan | Dockhorn The Potential of Wastewater Reuse in Arid Regions | All Participants Preparation of Posters | |
| Thursday Sept. 15, 2011 | Plotting of Posters | | Presentation of Posters Discussion Evaluation | |
| | Farewell Dinner | | | |
| Friday Sept. 16, 2011 | Departure | | | |

Sustainable Water Management in Developing Countries

Aims and Scope

Prof. Dr. Müfit Bahadır - Chairman



**Summer School “Water and International Relations”
Braunschweig, September 2011**

Sustainable Water Management in Developing Countries

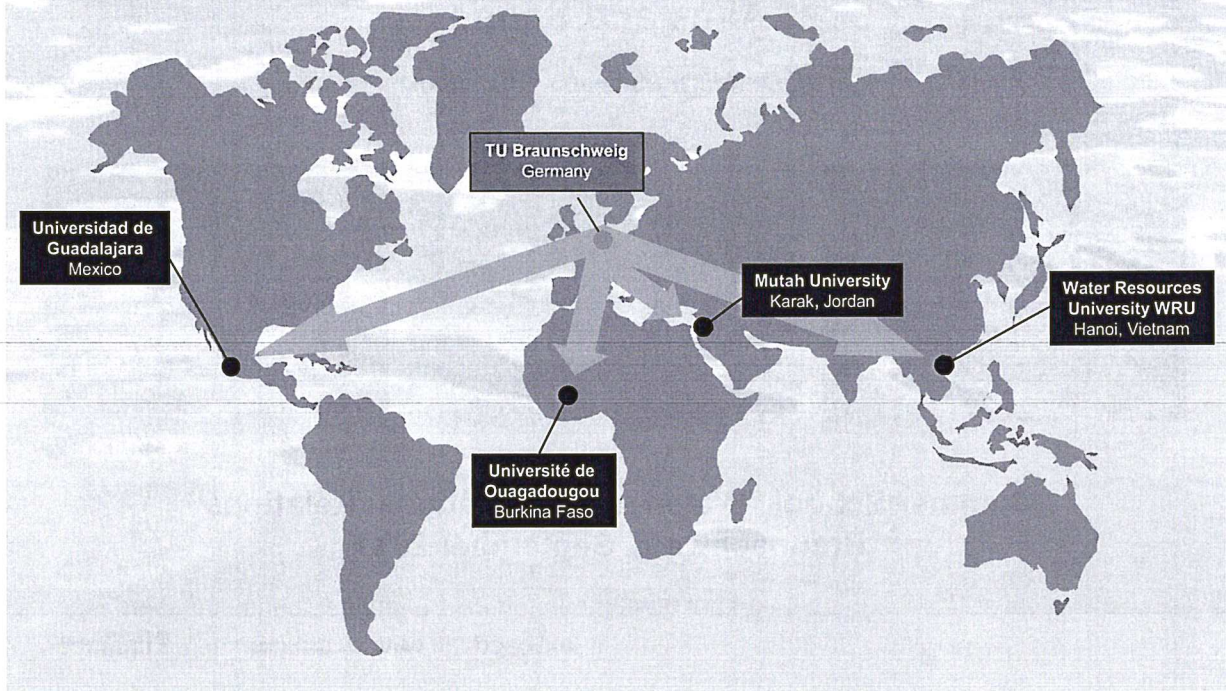
OBJECTIVES

- Capacity Building in DC and in GER on Sustainable Water Management
- Putting Sustainable Water Management on Political Agenda in DC and in GER
- Cooperation at eye level with DC on Millennium Development Goals

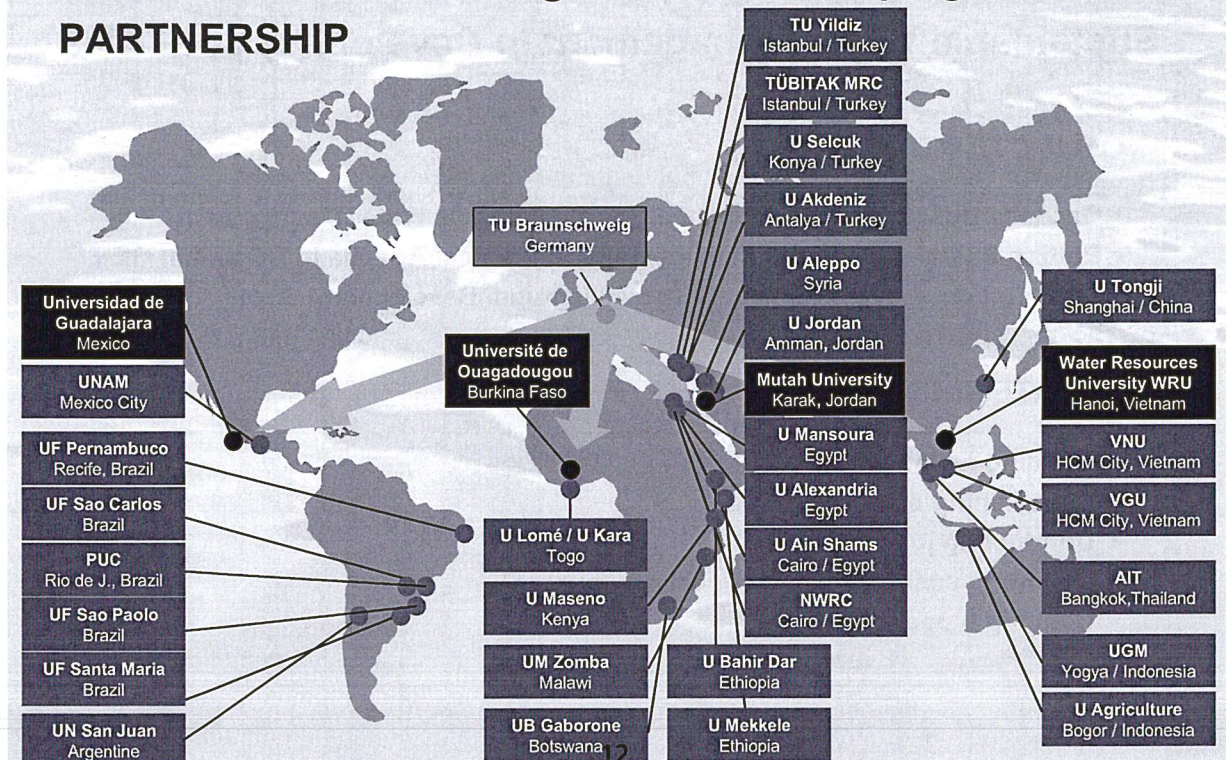
STRATEGIES

- Building a global network
- Establishing of study programs
- Conducting joint research
- Providing suitable further education courses
- Creating a pool of experts

Sustainable Water Management in Developing Countries PARTNERSHIP

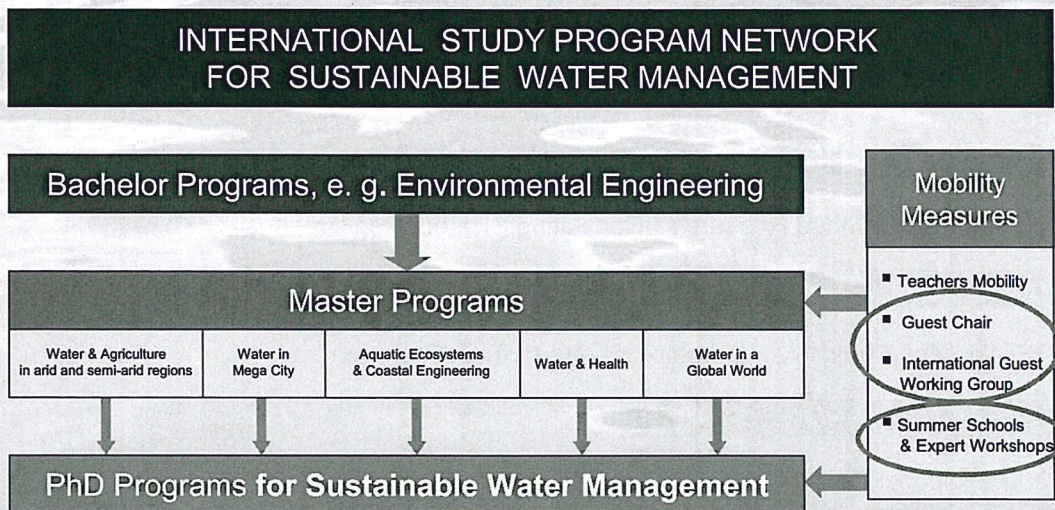


Sustainable Water Management in Developing Countries PARTNERSHIP



Sustainable Water Management in Developing Countries

Education



Sustainable Water Management in Developing Countries

Research

WATER AND AGRICULTURE IN ARID AND SEMIARID AREAS

- Integrated Water Management
- Modeling Methods
- Socio-economic Conditions

WATER IN URBAN ENVIRONMENT

- Sanitary Engineering
- Urban Water Supply
- Numeric Models
- Sanitation of Contaminated Sites

AQUATIC ECOSYSTEMS

- Climate Change
- Biodiversity
- Monitoring of Aquatic Ecosystems
- Micro Pollutants
- Floods and Droughts

WATER AND HEALTH

- Resources Protection
- Sewage Treatment
- Risk Perception and Assessment

WATER IN A GLOBAL WORLD

- Climate Change
- Distribution of Water Reserves
- Protection of Inland and Coastal Waters

Sustainable Water Management in Developing Countries

Horizontal Measures

KNOWLEDGE TRANSFER

- Guidance for Start Ups ▪ Coaching for Business Development
- Networking ▪ Support while Grant Application

TRAIN THE TRAINER

- Third Party Funded Research ▪ Consulting ▪ Patent Registrations

COOPERATION WITH THE INDUSTRY

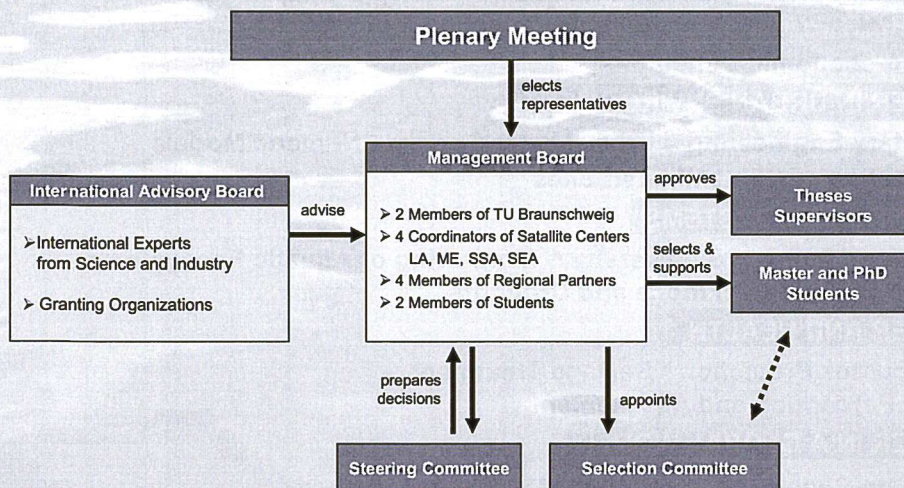
- Field Trips ▪ Industry Internships ▪ Long-term Cooperation

STRUCTURES AND NETWORKS

- International Career Service ▪ Scientific Conferences
- Training for Professionals ▪ Networking of Project Partners & Participants

Sustainable Water Management in Developing Countries

Management Structure



Water Science & Engineering

- Hydrology, Hydrogeology and Meteorology
- Oceanography
- Water Quality & Chemistry
- Floods & Droughts
- Coastal Engineering and Management
- Erosion & Sedimentation
- River & Coastal Morphology
- Salinization & Desalination
- Engineering of Water Projects

Biological Aspects of Water, Health & Nutrition

- Ecology & Ecosystem Dynamics
- Eco-hydrology
- Eco-hydraulics
- Ecosystem Degradation & Resilience
- Ecosystem Valuation
- Water & Health
- Water Diseases & Epidemiology
- Food & Nutrition

Environmental & Anthropogenic Chemical Aspects

- Chemistry of Water and Wastewater
- Chemistry of Wastewater Treatment
- Water Pollution Control
- Irrigation in Agriculture - *with Reclaimed Wastewater* -
- Soil Pollution Control
- Remediation of Polluted Sites

Socio-Economics, Management, Legal and International Aspects

- Development Studies
- Peace and Conflict Research
- International Water Policy - *Conflict vs. Development* -
- Climate Change and Adaptation
- Strategic Environmental Management
- Environmental Impact Assessment
- Basin Management on National and International Levels



Research Methods in the Social Sciences

Michael Fürstenberg, M.A. | Summer School on Water and International Relations

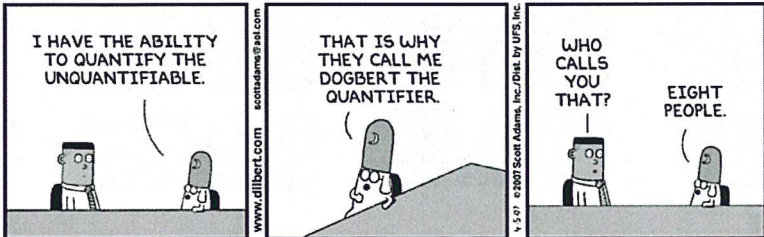
About me

Michael Fürstenberg, M.A.

m.fuerstenberg@tu-braunschweig.de

www.tu-braunschweig.de/ib/mitarbeiter/fuerstenberg

- Studied political science, history and sociology at the TU Braunschweig
- Since 2008 at the Institute of Social Sciences
- Main interests: Conflict Research, Quantitative Methods



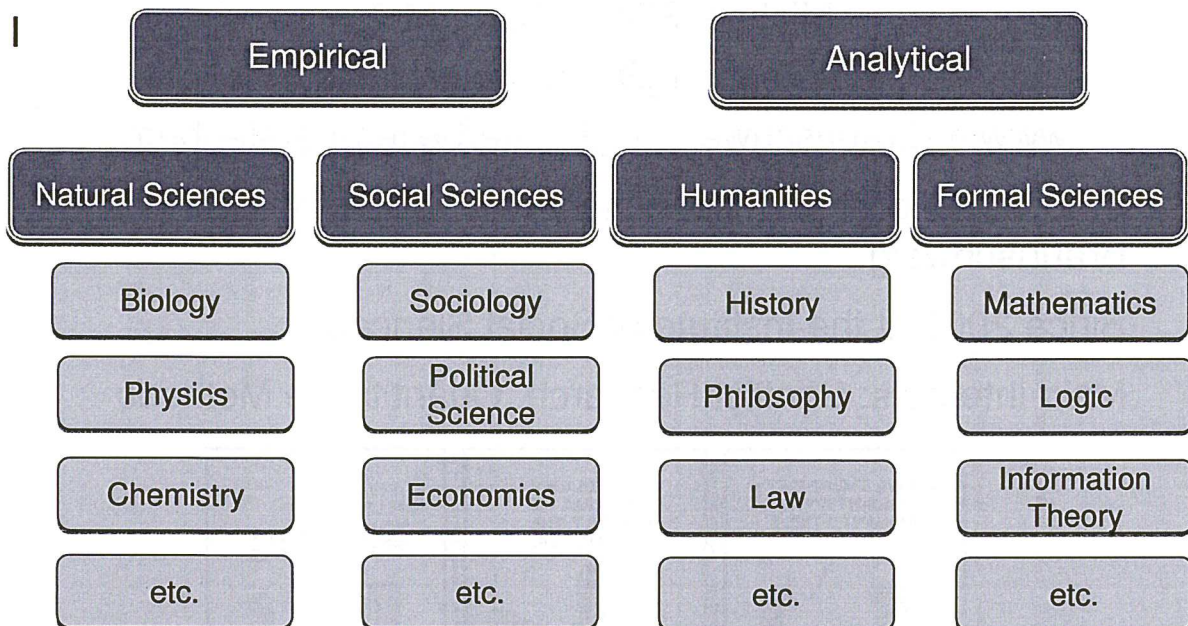
Purpose of this Lecture

Introduction to the fundamental principles of social science

Give you an idea about

- how social scientists think,
- the ways they see the world,
- and what they actually do

The Branches of Scholarship



The Empirical Sciences

Both natural and social sciences are empirical sciences

➔ refer to a „real world“, about which they want to make statements

- Natural Sciences are about the **natural**, i.e. material world
- Social sciences are about the **social** world, i.e. human behaviour and relationships

The Empirical Sciences

Both share the „building blocks“ in the philosophy of science:

- Ontology
- Epistemology
- Methodology
- Methods

Ontology

- Ontology is the theory of „being“
- Is concerned with assumptions about the nature of reality
- An individual's ontological position is their answer to the question: *What is the nature of reality to be investigated?*
- Foundationalism vs. Anti-foundationalism

Epistemology

- Epistemology is the theory of knowledge
- It is concerned with the possible ways and limits of gaining knowledge of reality, whatever it is understood to be
- *What and how can we know about the world?*

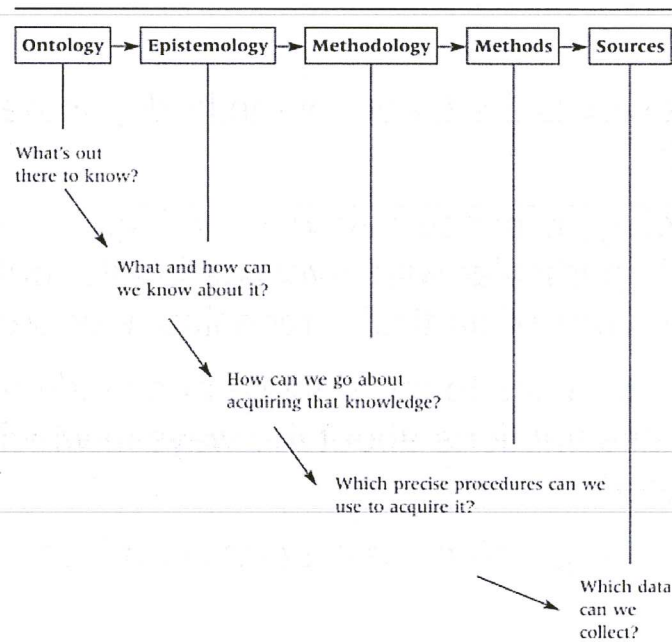
Methodology

- Methodology is the theory of methods, or the conduct of research
- Methodology is concerned with the logic of scientific inquiry; in particular with investigating the potentialities and limitations of particular techniques or procedures.
- The term pertains to the science and study of methods and the assumptions about the ways in which knowledge is produced.
- *How can we go about to acquire knowledge about the world?*

Methods

- Methods are the specific instruments, techniques or procedures of data analysis with which knowledge is gained
- This is often confused with the term “methodology”, but it is important to remember that it is *not* the same
- The method(s) chosen for a research project are inextricably linked to the research questions posed and to the sources of data collected
- The choice of a method is related to one’s ontological and epistemological position, but not determined by it

Overview



Source: Figure adapted from Hay, 2002, p. 64.

Philosophy of Science in the Natural Sciences

- What is „science“ to you? How is it conducted?

Philosophy of Science in the Natural Sciences

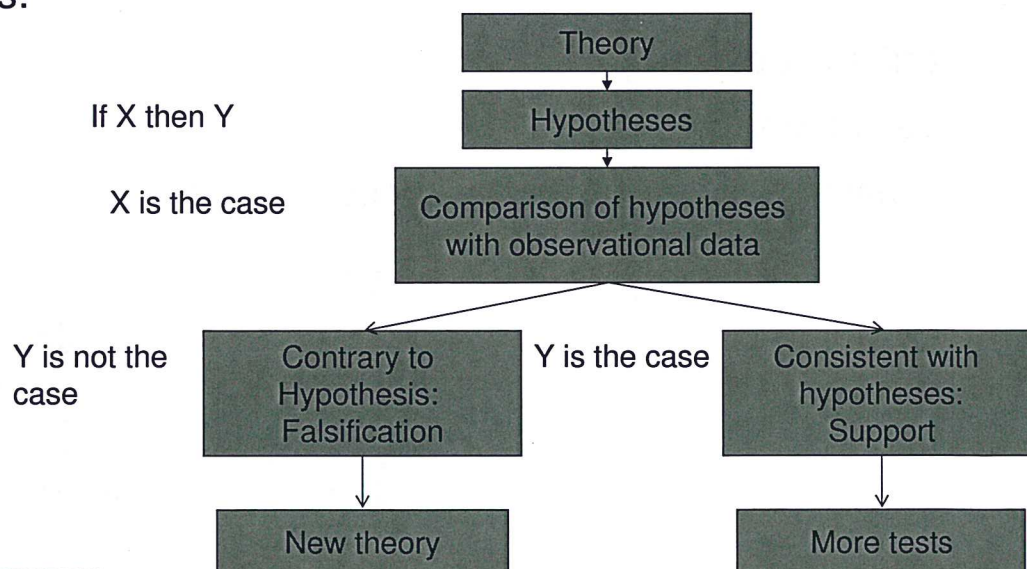
In the natural sciences, it is generally agreed upon the following:

| Ontology | Epistemology | Methodology | Methods |
|---|--|---|--|
| There is a real world 'out there' independent of us | We can know about this world through observation | The 'scientific method': Developing theories and see whether they concur with observations in nature | Preferably experiments under controlled conditions |

The result of scientific inquiry are universal, causal laws

Philosophy of Science in the Natural Sciences

More specific, scientific inquiry usually has the following steps:



Philosophy of Science in the Natural Sciences

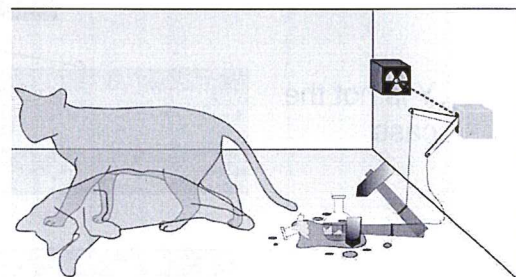
„**Data** provide the facts, or summary of reality, that **theories** attempt to explain. **Method** provides the analytic tools by which one evaluates the extent to which reality conforms to expectations of one's theories.”

(Bruce Bueno de Mesquita)

Philosophy of Science in the Natural Sciences

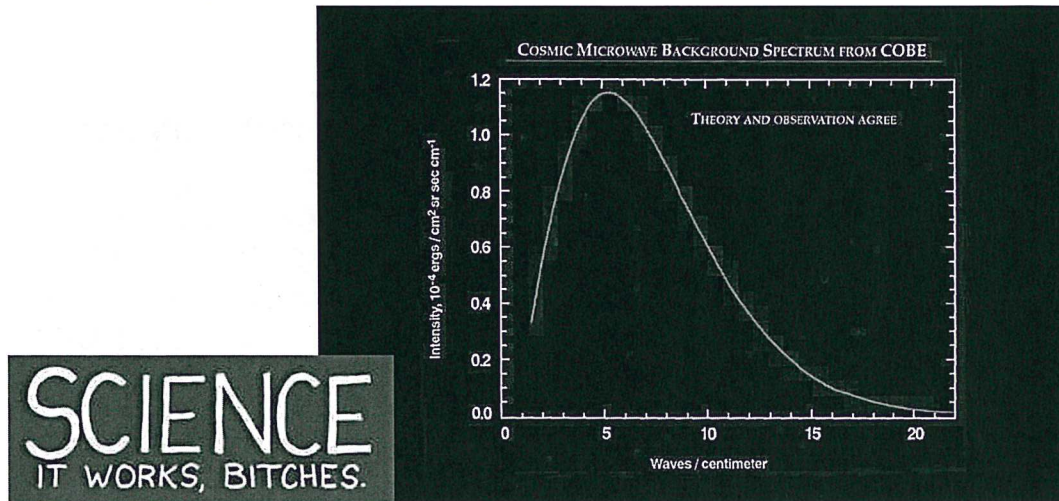
Even in natural sciences however, there are limits to what we can know

- Quantum uncertainty
- Chaos theory
- Information transfer limited by speed of light



Philosophy of Science in the Natural Sciences

This programme has been nevertheless with no doubt extraordinarily successful



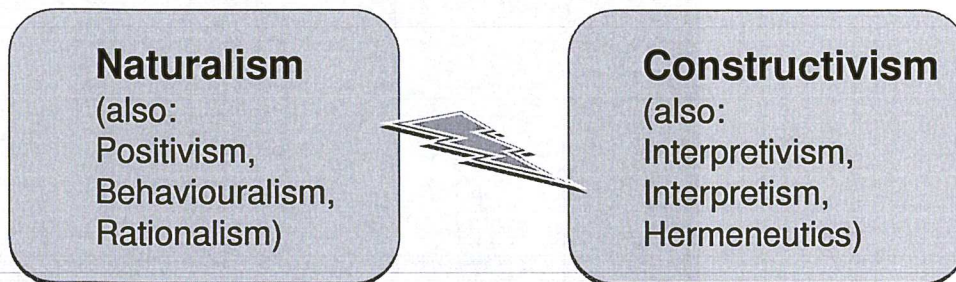
Philosophy of Science in the Social Sciences

In the social sciences however, science cannot work the exact same way, because its object is different (the social vs. the material world):

1. Objects under study are *human beings*, which think, self-reflect, can change their behaviour
2. Social phenomena don't exist independently of human agency
3. Many social phenomena are not directly observable
4. Social scientists are part of society and do not have a completely objective viewpoint on reality

Philosophy of Science in the Social Sciences

Social science is basically split in two paradigms in the question on how to deal with these problems



- Important: These are ideal types!
- End points on a continuum with positions between them
- Not entirely coherent (esp. Constructivism)

Naturalism

- At its core, naturalism tries to emulate the natural sciences as good as possible
- Consequently, it shares its ontological, epistemological and methodological foundations:
 - Foundational ontology: The (social) world exists independently from our knowledge of it
 - Epistemologically, this world is accessible through observation
 - The methodological way of acquiring knowledge, at best in the form of laws, is through empirical testing of theoretical predictions

Naturalism

- Naturalism doesn't deny that there are differences between the natural and the social world as objects of research.
- But it argues that these problems can be circumvented by adapting the scientific method to them
- By this, naturalism strives to generate reliable *explanations* of the social world

Naturalism

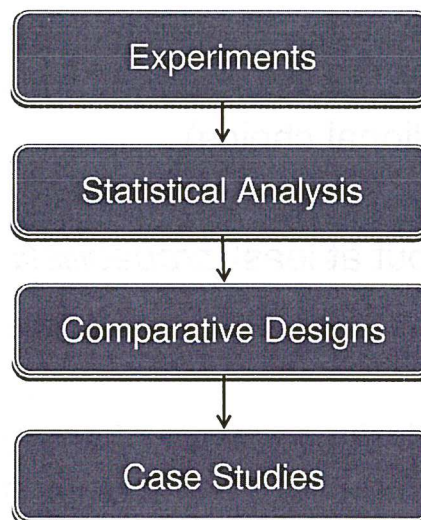
1. Objects under study are *human beings*, which think, self-reflect, can change their behaviour
 - Although human behaviour and relationships are not really calculable, it follows certain patterns that can be modeled (→ rational choice)
 - The unpredictability of humans allows not for *deterministic*, but at least *probabilistic* rules
2. Social phenomena don't exist independently of human agency
 - They still exist independently of an observers knowledge, and they are sufficiently stable to count as „as if“

Naturalism

3. Many social phenomena are not directly observable
 - One can find ways to link such structures to observable facts, so that the latter serve as a surrogate for the former (→ indicators)
4. Social scientists are part of society and do not have a completely objective viewpoint on reality
 - While it requires effort, one can strive to assume such a position through systematic research and the rigorous application of scientific standards like reliability, validity and objectivity/replicability

Naturalism

Following from this, there is a clear hierarchy of methods in naturalism that generally prefers quantitative designs



Constructivism

- Contrary to naturalism, constructivism rejects the notion that the social and natural sciences are broadly analogous
 - Instead, it insists that there are inherent and fundamental differences that make it impossible and futile to try to apply the scientific method to the social world
 - At its core is the belief that the social world is not „given“ but discursively *constructed* both by the human agents involved in it and the observer („double hermeneutics“)
- The social world exists as interpretations by the actors, which in turn are interpreted by the observer
- These interpretations are necessarily normative

Constructivism

Because of this, constructivism developed a fundamental different philosophical system of knowledge generation :

- Anti-foundational ontology: The (social) world is a human construct and exists only filtered through interpretation, which is context-dependent. Different observers see “different worlds”
- Consequently, epistemologically knowledge obtained by research is partial, situated (i.e. specific to particular situations and periods) and relative (i.e. related to the researcher’s world view and value system). Nevertheless, knowledge is not totally relative but grounded in intersubjective understandings
- The scientific methodology is not applicable, because there is no “true reality” that could be causally explained. Instead, constructivism aims at *understanding* the actors’ interpretations that construct reality

Constructivism

Instead of trying to define the special characteristics of the social world away, constructivists embrace them:

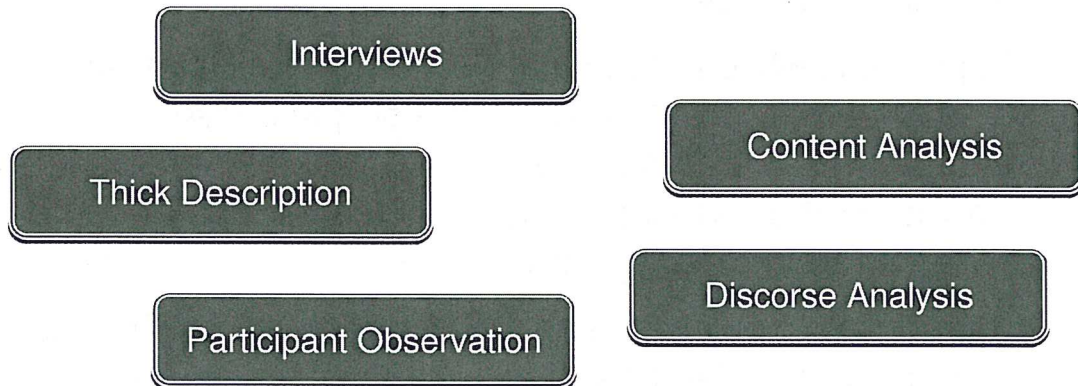
1. Objects under study are *human beings*, which think, self-reflect, can change their behaviour
 - No general model can capture and predict human behaviour – but we can *understand its motivation*
2. Social phenomena don't exist independently of human agency
 - As such, they are a product of interpretation and meaning that is attributed to them – to understand the world, we have to reconstruct the meanings that shape the social world

Constructivism

3. Many social phenomena are not directly observable
 - For constructivists, this is true for almost all social phenomena, because they look different from different angles. Nevertheless, we can know something about hidden structures by analyzing the meanings that actors ascribe to them
4. Social scientists are part of society and do not have a completely objective viewpoint on reality
 - Objectivity is impossible – constructivist researchers offer no true accounts but an interpretation, a „story“ of the world. They have to be transparent about the way they developed this.

Constructivism

As constructivism doesn't subscribe to standard scientific methodology, there is no hierarchy of methods. Instead, a plethora of methods is used with an emphasis on qualitative instruments, that stay close to the actors' own interpretations



Comparison

1.3.1 Characteristics of quantitative and qualitative research

| | Quantitative | | Qualitative |
|---|------------------------|-----|--------------------------|
| The role of theory in research | Deductive | ← → | Inductive |
| Epistemological orientation | Naturalist, positivist | ← → | Interpretive |
| Ontological orientation | Realist | ← → | Idealist, constructivist |
| Characteristics of research approaches | Objective | ← → | Subjective |
| | Impersonal | ← → | Personal |
| | Reductionist | ← → | Holistic |
| | Generalisation | ← → | Uniqueness |
| Types of data | Quantifiers | ← → | Describers |
| | Numbers | ← → | Words |

Conclusion

- In contrast to the natural sciences, there is no single “social science research methodology”
- Also the ideal-typical paradigms as described are largely incompatible, there are a lot of “in-betweens” and attempted bridges
- Especially, while ontological/epistemological positions tend to correlate with quantitative or qualitative approaches, this in no way deterministic. On the contrary, “mixed method”-designs and triangulation has become widespread in recent years
- Paradigms should be seen as “different lenses” that can shed light on different aspects of the social world

Conclusion

For example: To analyze the impact of water scarcity on development, it is both important to

- gain systematic knowledge about the distribution of water, development levels, general patterns of relationships between access to water and local development (quantitative surveys, analysis of statistical data),

and

- to know something about the perceptions and interpretations of people on the ground, e.g. what “water” means to them, what they consider as “development” etc. (qualitative interviews, observation, analysis of official documents)!

Prof. Dr. Ulrich Menzel

Introduction to Development Politics

Summer School on Water and International Relations
Sept. 5 - Sept. 15, 2011 — Technical University of Braunschweig

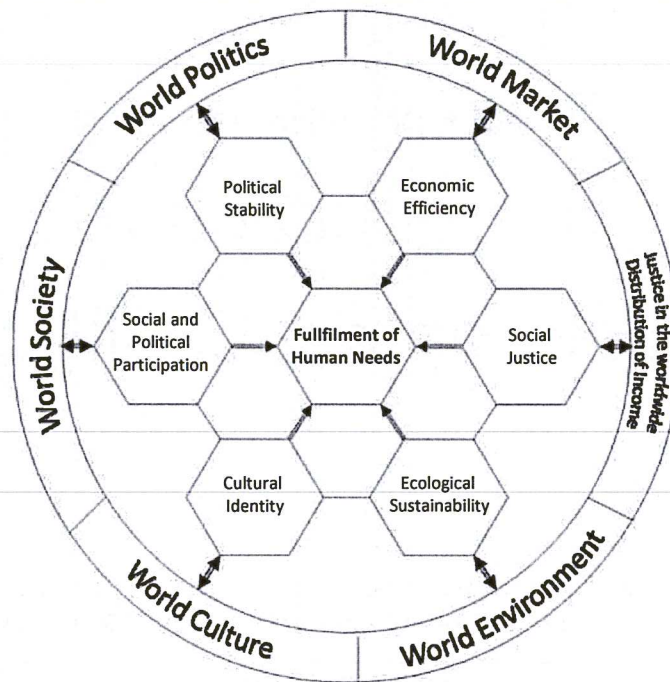
www-public.tu-bs.de:8080/~umenzel

www.ulrich-menzel.de

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1. What is development?
2. The changing understanding of development
3. Terms and images of development
4. Why development politics?
 - 4.1. East-West-Conflict (Realism)
 - 4.2. New World Order (Idealism)
 - 4.3. Decolonisation
5. Institutional take off
6. Phases of development politics
7. Farewell to the old development politics

1. What is development?



Prof. Dr. Ulrich Menzel
September 6, 2011

Introduction to Development Politics
Foil 3

2. The changing understanding of development

| | Paradigm | Understanding of Development |
|--------------------------|---------------------------------------|--|
| 16th - 18th Century | Mercantilism | Statebuilding Strengthening of State Power Wealth = Increase of Bullion available by Mining and Surplus in Foreign Trade |
| 18th Century (Sec. Half) | Physiocratics | Increase of Rents Evolution of Society Development of Agriculture |
| 19th Century | Liberalism | Wealth of Nations by Increase of Labor Productivity and International Division of Labor |
| | Neomercantilism | Catching-up Increase of the Productive Forces |
| | Neoliberalism Classical Sociology | Economic Growth Rationalisation and Division of Labor Social Differentiation |
| 1920ies | Marxism | Initial Socialist Accumulation Building up of Socialism |
| 1940ies | Keynesianism Development Economics | Economic Growth Import Substitution Industrialization (ISI) |

Prof. Dr. Ulrich Menzel
September 6, 2011

Introduction to Development Politics

2. The changing understanding of development

| | Paradigm | Understanding of Development |
|---------|-------------------------------|--|
| 1950ies | Modernisation Theory | Growth led by the State State Building Social Change Mental Change |
| 1960ies | Dependencia Theory | Autocentric Capital Accumulation Mass Consumer Goods Industrialisation |
| 1970ies | Alternative Human Development | Strengthening of Human Capacities Satisfaction of Basic Needs Sustainability |
| 1980ies | Renaissance of Neoliberalism | Economic Growth by Structural Adjustment and Export Orientation |
| 1990ies | Institutional Economics | Good Governance Institution Building |
| 2000ies | Renaissance of Keynesianism | "Bringing the State Back In" |

3. Terms and images of development

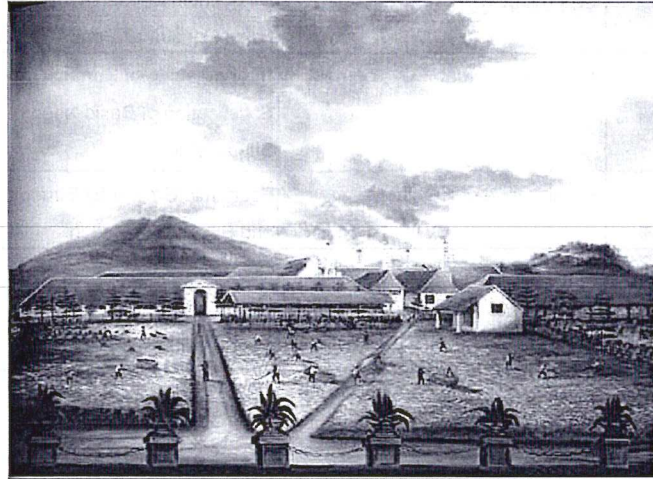
| | Developed Countries Today | Developing Countries Today |
|---------------------|---------------------------|-------------------------------|
| 15th - 18th Century | Occident Old World | Orient New World + "India" |



Spiridione Roma:
"The East Offering Her
Riches to Britannia",
1778

3. Terms and images of development

| | Developed Countries Today | Developing Countries Today |
|---------------------|----------------------------|--|
| 19th Century - 1945 | Colonial Powers Empires | Colonies Countries of the "torrid zone" |

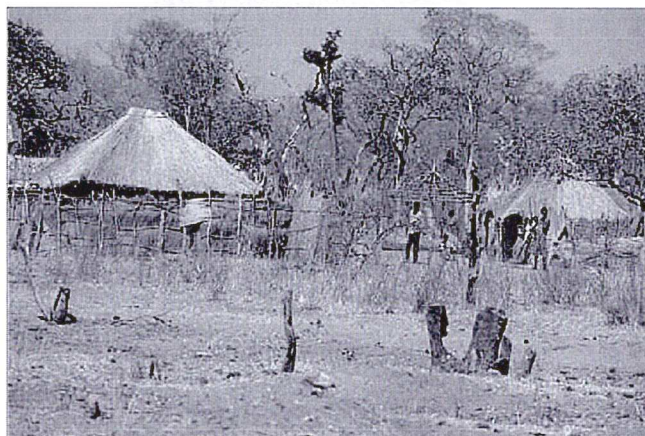


Prof. Dr. Ulrich Menzel
September 6, 2011

Introduction to Development Politics
Foil 7

3. Terms and images of development

| | Developed Countries Today | Developing Countries Today |
|-------------------|--|---|
| 1940ies - 1960ies | Industrial Countries Modern Societies | Developing Countries Backward Countries Traditional Societies |

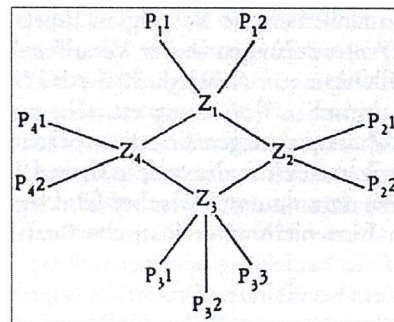
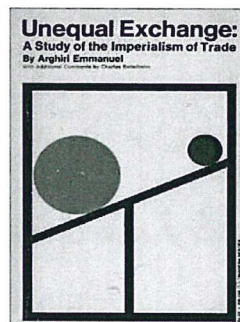


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September 6, 2011

Introduction to Development Politics
Foil 8

3. Terms and images of development

| | Developed Countries Today | Developing Countries Today |
|---------|--|--|
| 1970ies | First World North Center Metropolises | Third World South Periphery Satellites Underdeveloped Countries Dependent Countries |



3. Terms and images of development

| | Developed Countries Today | Developing Countries Today |
|---------|---------------------------|--|
| 1980ies | Old Industrial Countries | Newly Industrializing Countries (NIC's) Oil Exporting Countries Less Developed Countries (LDC's) Least Developed Countries (LLDC's) |



3. Terms and images of development

| | Developed Countries Today | Developing Countries Today |
|----------------------|---------------------------|--|
| 1990ies - 2000ies | Postindustrial Societies | Fourth World Weak States Failed States |



4. Why development politics?

4.1. East-West-Conflict (Realism)

- Truman-Doctrin (March 12, 1947)



- Inauguration Adress of Harry S. Truman
(January 20, 1949)

→ "Point Four": Development Aid



4. Why development politics?

The Inauguration Adress of Harry S. Truman (January 20, 1949)
- Excerpt to "Point Four" -

In the coming years, our program for peace and freedom will emphasize four major courses of action.

First, we will continue to give unfaltering support to the United Nations and related agencies, and we will continue to search for ways to strengthen their authority and increase their effectiveness. We believe that the United Nations will be strengthened by the new nations which are being formed in lands now advancing toward self-government under democratic principles.

Second, we will continue our programs for world economic recovery. This means, first of all, that we must keep our full weight behind the European recovery program. We are confident [of] the success of this major venture in world recovery. We believe that our partners in this effort will achieve the status of self-supporting nations once again. In addition, we must carry out our plans for reducing the barriers to world trade and increasing its volume. Economic recovery and peace itself depend on increased world trade.



4. Why development politics?

The Inauguration Adress of Harry S. Truman (January 20, 1949)
- Excerpt to "Point Four" -

Third, we will strengthen freedom-loving nations against the dangers of aggression. We are working out with a number of countries a joint agreement designed to strengthen the security of the North Atlantic area. Such an agreement would take the form of a collective defense arrangement within the terms of the United Nations Charter. We have already established such a defense pact for the Western Hemisphere by the treaty of Rio de Janeiro.

The primary purpose of these agreements is to provide unmistakable proof of the joint determination of the free countries to resist armed attack from any quarter. Every country participating in these arrangements must contribute all it can to the common defense. If we make it sufficiently clear, in advance, that any armed attack affecting our national security would be met with overwhelming force, the armed attack might never occur.

I hope soon to send to the Senate a treaty respecting the North Atlantic security plan. In addition, we will provide military advice and equipment to free nations which will cooperate with us in the maintenance of peace and security.

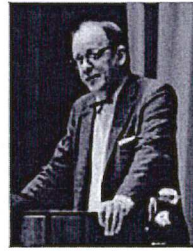
Fourth, we must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of **underdeveloped areas**. More than half the people of the world are living in conditions approaching misery. Their food is inadequate. They are victims of disease. Their economic life is primitive and stagnant. Their poverty is a handicap and a threat both to them and to more prosperous areas.



4. Why development politics?

- Establishment of CENIS at MIT (1951/52)

→ Containment of Communism



Max F. Millikan



Walt W. Rostow

- „A Proposal: Key to an Effective Foreign Policy“ und „Foreign Aid: Next Phase“ in „Foreign Affairs“ (1957)

→ Development Politics as part of Containment

4. Why development politics?

ORIGINS OF THE CENTER

PROJECT TROY

The MIT Center for International Studies was founded in 1952 as a direct result of the Cold War struggle between the United States and the Soviet Union.

Max F. Millikan, a young MIT economist, urged the scientific faculty he assembled at the Center to become "social science and research" in the use of research to help policymakers better understand and respond to international events, and to further the cause of the social sciences at MIT.

During Millikan's long tenure (1952-1989), the Center's sociological, economic, anthropological, political, scientific, and historical studies of commercial systems and movements, the economic and political development of developing countries, and communication systems in both East and West. They published influential articles and more than 100 books, and cooperated in the teaching of the social sciences at MIT—including the founding in 1963 of the Department of Political Science around a core of CIS faculty.

And while the Center has shined light through the decades, as dictated by world events, its primary focus in research in the national interest, has remained constant.

Funding

Max F. Millikan

Walt W. Rostow

Ithiel de Sola Pool

CIS RESEARCH PROGRAMS

International Communication

Economic and Political Development

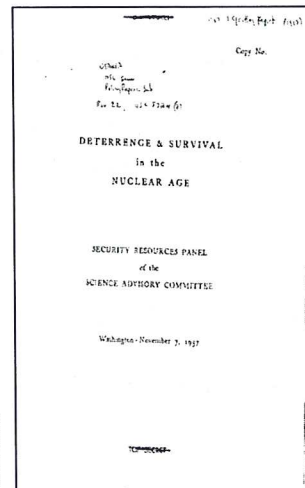
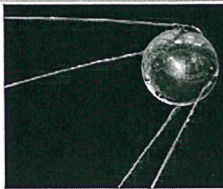
Communist Studies

VOA

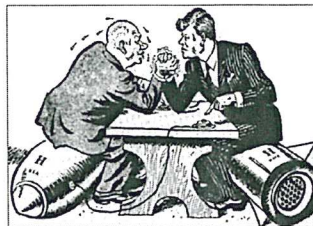
http://web.mit.edu/cis/www_highlights.html

4. Why development politics?

- “Sputnik-Schock“ (1957)



- “Missile Gap“ (End of 1950ies)



- Cuba-Crisis (1963)

4. Why development politics?

4.2. New World Order after 1945 (Idealism)

- Franklin D. Roosevelt: “Four Freedoms“ (January 6, 1941)



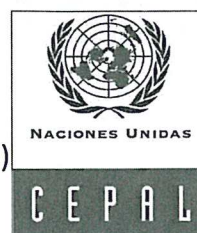
- Atlantic-Charter (August 14, 1941)



- UN-Charter (June 16, 1945)



- Foundation of CEPAL (February 25, 1948)



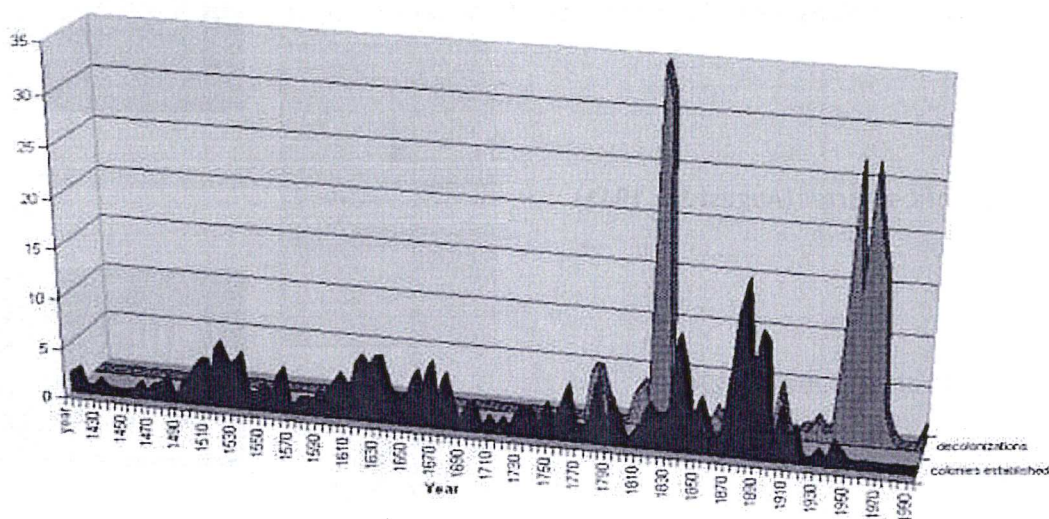
4. Why development politics?

4.3. Decolonisation

- First Wave: Independence of the USA and Latin America (end 18th/19th Century)
- Second Wave: Decolonisation in Asia: India, Pakistan, Indonesia, Korea, full sovereignty of China after 1945
- Third Wave: Decolonisation in Africa (1950ies/1960ies)
- Fourth Wave: Small and Island States (1970ies/1980ies)
- Fifth Wave: Former Republics of the Soviet Union (after 1990)

4. Why development politics?

The Waves of Decolonisation

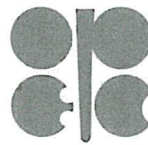


blue: new colonies
red: decolonisation

4. Why development politics?

Political Differentiation of former colonies:

- Members of the Western Bloc (Latin America)
- Members of the Eastern Bloc (China, North Korea, Vietnam, Cuba etc.)
- Non-aligned Countries (Third World)
 - Bandung-Conference (1955)
 - Foundation of OPEC (1960)
 - Conference of Belgrad (1961)



4. Why development politics?

4.3. Decolonisation

- Non-aligned Countries (Third World)
 - ...
 - Foundation of UNCTAD (1964)
 - Group of 77 (1967)
 - UNCTAD II in New Delhi (1968)
 - UNCTAD III in Santiago de Chile (1972)
 - First Oil Crisis (1973)
 - 29th General Assembly of the UN ("New International Economic Order") (1974)
 - Chinese "Theory of the Three Worlds" (1974)
 - UNCTAD IV in Nairobi (1976)
 - Second Oil Crisis (1978/79)
 - Cancún Summit (1981) (= End of the North-South-Dialogue)



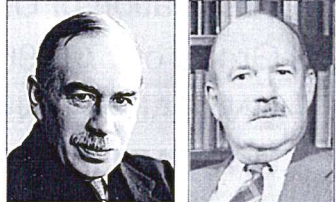
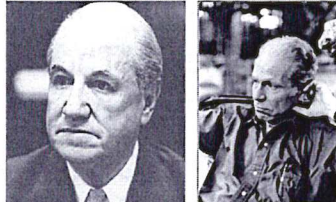
5. Institutional take off

Foundations of Development Organisations (1961-1965):





- USAID
 - Alliance for Progress
 - DAC of OECD
 - BMZ
- (1961)
- UNCTAD (1964)
 - UNDP (1965)



6. Phases of development politics

| | Decades | Paradigms |
|---------|-----------------|--|
| 1940ies | Formation Phase | Keynesianism, Dualism Theory, Growth Theory, Structural Functionalism  |
| 1950ies | Pioneer Phase | Development Economics, Modernisation Theory, Terms of Trade-Debate  |





6. Phases of development politics

| | Decades | Paradigms |
|---------|---------------------------|--|
| 1960ies | First Development Decade | <p>Long Term Development Plans, Import Substitution Industrialisation, "Green Revolution", "Growth first, Redistribution later", "Industrialisation first, Democratisation later", Development Politics as Containment</p>   |
| 1970ies | Second Development Decade | <p>Dependencia Theory, New International Economic Order, Basic Needs, Appropriate Technologies, "Redistribution with Growth", "Limits of Growth"</p>   |

Prof. Dr. Ulrich Menzel
September 6, 2011

Introduction to Development Politics
Foil 25

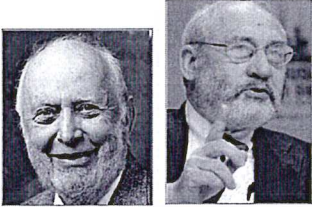
6. Phases of development politics

| | Decades | Paradigms |
|---------|--------------------------|--|
| 1980ies | Third Development Decade | <p>Neoliberalism, Structural Adjustment, Development by Trade, Sustainable Development, Global Governance</p>   |
| 1990ies | "Lost Decade" | <p>Washington Consensus, Social Development, Human Rights, Humanitarian Intervention, Good Governance, Political Conditions for Development Aid, "Clah of Civilisations"</p>   |

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September 6, 2011

Introduction to Development Politics
Foil 26

6. Phases of development politics

| | Decades | Paradigms |
|---------|---------------|---|
| 2000ies | Crisis Decade | Institution-Building, New Institutional Economics, Merger of Conflict Resolution and Development Politics, Development Politics as containment against "New Threats"  |

7. Farewell to the old development politics

- The End of the East-West-Conflict
- Development and/or Wealth in the South
 - Gulf States
 - NIC's in East- and Southeast-Asia
- New Competition from Asia
- Weak States and Humanitarian Intervention
- New Threats from the South ("Rogue States", Terrorism, Organized Crime, Proliferation of Weapons of Mass Destruction, Migration, Global Shadow Economy)
- Military Intervention by Political Reasons and Merger of Development Aid, Disaster Aid, Humanitarian Intervention, Military Intervention



Protection Between Peace and Development

Bastian Loges

Summer School on Water and International Relations, Braunschweig,
September 5-15, 2011

Purpose of this Presentation

Introduction to “Protection” as a (legal) concept and as political practice in international relations

Give you an idea

- ➔ What protection is and why it is needed
- ➔ whose (legal) responsibility it is to protect people
- ➔ which instruments to protect civilians are used in the field



Outline of this Presentation

- I. Introduction to Protection
- II. Protection from a Legal Perspective
- III. Protection as a Concept
- IV. Protection in Practice



Introduction: What is Protection?

“Protection is fundamentally about people. At its simplest, it is the challenge of helping people affected by conflict to stay safe” (Bonwick 2006: 271).

Protection encompasses “all activities aimed at ensuring full respect for the rights of the individual in accordance with the letter and the spirit of the relevant bodies of law, i.e. human rights law, international humanitarian law, and refugee law. Human rights and humanitarian organizations must conduct these activities in an impartial manner (not on the basis of race, national or ethnic origin, language or gender)” (Giossi Caverzasio 2001).



Introduction

When do protection needs arise?

When is the safety of people at risk?

When do people suffer harm?

What do you think?

Introduction: When do Protection Needs Arise?

Protection needs arise in a variety of situations like:

- (1) Armed conflict
- (2) Post-conflict situations
- (3) Natural disasters
- (4) Famine
- (5) Protracted social conflict

Introduction: What Violations and Deprivations take place?

Violations and deprivations that cause protection needs

- Deliberate killing, wounding, displacement, destitution and disappearance.
 - Sexual violence and rape.
 - Torture and inhuman or degrading treatment.
 - Dispossession of assets by theft and destruction.
 - The misappropriation of land and violations of land rights.
 - Deliberate discrimination and deprivation in health, education, property rights, access to water and economic opportunity.
 - Violence and exploitation within the affected community.
 - Forced recruitment of children, prostitution, sexual exploitation and trafficking (including by peacekeepers and humanitarian staff), abduction and slavery.
- Forced or accidental family separation.
 - Arbitrary restrictions on movement, including forced return, punitive curfews or roadblocks which prevent access to fields, markets, jobs, family, friends and social services.
 - Thirst, hunger, disease and reproductive health crises caused by the deliberate destruction of services or the denial of livelihoods.
 - Restrictions on political participation, freedom of association and religious freedom.
 - The loss or theft of personal documentation that gives proof of identity, ownership and citizen's rights. Attacks against civilians and the spreading of landmines.

Introduction: What is Protective Action?

- Prioritise people's personal safety, dignity and integrity
- Recognise people at risk as key actors in their own protection
- Engage the legal responsibilities of authorities and individuals
- Help key government and civil society actors to build a positive and long-term protection environment for all
- Work in a complementary fashion on responsive, remedial and environmentbuilding activities
- Avoid increasing the risk to endangered populations by misconceived or badly implemented activities

(Slim/Bonwick 2005: 47).

Introduction: What is Protective Action?

Protective Action is concerned with a person's

a) Safety: “Effective protection helps people to stay safe”
(Slim/Bonwick 2005: 30)

b) Dignity: “If people lose a sense of themselves as free and valuable human beings, they are close to losing everything” (Slim/Bonwick 2005: 32)

c) Integrity: “The notion of integrity affirms that people need protecting in their wholeness” (Slim/Bonwick 2005: 32).

Protective Action is rights-based and aims at empowerment.



Protection from a Legal Perspective

Who is responsible?

Who should be responsible?

What do you think?



Protection from a Legal Perspective: Who is Responsible?

Slim and Boswick (2005: 35f.) distinguish three different actors with specific responsibilities:

- a) State responsibilities
- b) Mandated and specialized agencies
- c) Non-mandated agencies

These mandates and responsibilities result from various legal sources



Protection from a Legal Perspective: IHL

Geneva Conventions (from 1864 onwards)

- Protection of humanity
- Prohibition of superfluous injury and unnecessary suffering

International Humanitarian Law is often named the laws of war or the law of armed conflict (*ius in bello*)

- “IHL requires all parties to a conflict to balance military necessity inherent in armed conflicts with humanitarian principles that aim to protect the basic human interest in freedom from suffering” (Griffin/Cali 2010: 245).



Protection from a Legal Perspective: UN Charter

“We the peoples of the United Nations determined

- to save succeeding generations from the scourge of war, which twice in our lifetime has brought untold sorrow to mankind, and
- to reaffirm faith in fundamental human rights, in the dignity and worth of the human person, in the equal rights of men and women and of nations large and small, and
- to establish conditions under which justice and respect for the obligations arising from treaties and other sources of international law can be maintained, and
- to promote social progress and better standards of life in larger freedom,

Protection from a Legal Perspective: UN Charter

and for these ends

- to practice tolerance and live together in peace with one another as good neighbours, and
 - to unite our strength to maintain international peace and security, and
 - to ensure, by the acceptance of principles and the institution of methods, that armed force shall not be used, save in the common interest, and
 - to employ international machinery for the promotion of the economic and social advancement of all peoples,
- have resolved to combine our efforts to accomplish these aims”**

(Preamble of the Charter)

Protection from a Legal Perspective: Human Rights

“International Human Rights Law is a system of international treaties and principles that aim to protect and promote the rights of the individuals from state interference and state negligence” (Cali 2010: 282).

- Universal Declaration of Human Rights (1948)
- International Covenant on Civil and Political Rights/International Covenant on Social, Economic and Cultural Rights (1966)
- Convention against Torture (1984)
- Genocide Convention (1948)



Protection from a Legal Perspective: Recent Developments

a) Human Security (UNDP 1994)

Free from Want ↔ Free from Fear

b) International Criminal Court (Statute of Rome 1998)

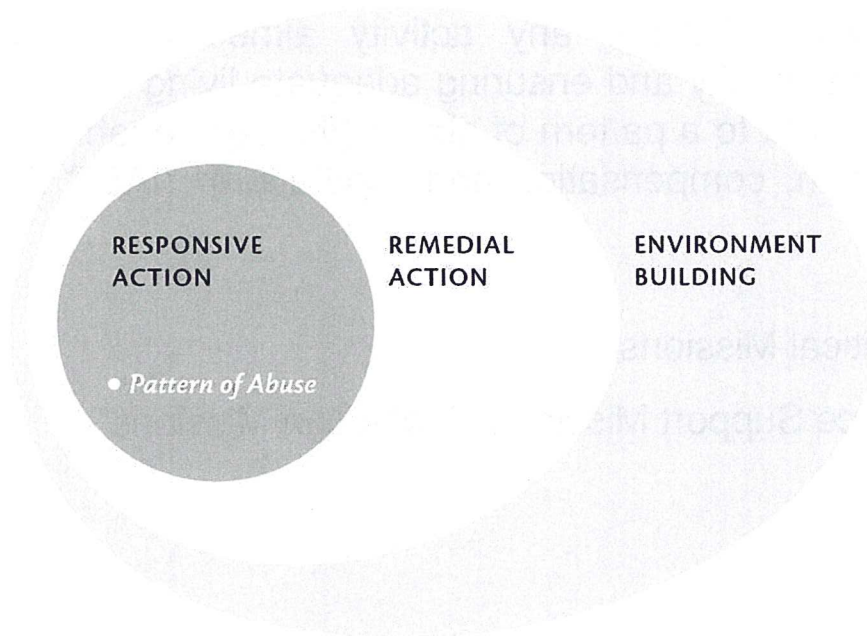
c) Responsibility to Protect (ICISS 2001)

„State sovereignty implies responsibility, and the primary responsibility for the protection of its people lies with the state itself.“ BUT:

„Where a population is suffering serious harm [...] and the state in question is unwilling or unable to halt or avert it, the principle of non-intervention yields to the international responsibility to protect“



Protection as a Concept: The Protection Egg



Protection as a Concept: What is Responsive Action?

„**Responsive Action:** any activity undertaken in connection with an emerging or established pattern of abuse and aimed at preventing its recurrence, putting a stop to it, and/or alleviating its immediate effects“ (IASC 2002: 14).

- ➔ Peace Support Missions (Peacekeeping; Peacemaking; Peace Enforcement)
- ➔ Emergency Relief
- ➔ Humanitarian Assistance

Protection as a Concept: What is Remedial Action?

“**Remedial Action:** any activity aimed at restoring people’s dignity and ensuring adequate living conditions subsequent to a pattern of abuse (through rehabilitation, restitution, compensation and reparation)” (IASC 2002: 14).

→ Political Missions

→ Peace Support Missions/„Protection Missions“

Protection as a Concept: What is Environment Building?

„**Environment Building:** any activity aimed at creating and/or consolidating an environment – political, social, cultural, institutional, economic and legal – conducive to full respect for the rights of the individual” (IASC 2002: 15).

→ Development Cooperation

→ Political Missions

Protection as a Concept: Toolbox



Protection as a Concept: Toolbox and Authorities



Protection in Practice: Humanitarianism

| Humanity | Neutrality | Impartiality | Operational independence |
|---|--|---|--|
| Human suffering must be addressed wherever it is found. The purpose of humanitarian action is to protect life and health and ensure respect for human beings. | Humanitarian actors must not take sides in hostilities or engage in controversies of a political, racial, religious or ideological nature. | Humanitarian action must be carried out on the basis of need alone, giving priority to the most urgent cases of distress and making no distinctions on the basis of nationality, race, gender, religious belief, class or political opinions. | Humanitarian action must be autonomous from the political, economic, military or other objectives that any actor may hold with regard to areas where humanitarian action is being implemented. |

Protection in Practice: From Humanitarianism to Clusters

Coordination as the main problem to the efficiency of humanitarian aid

Inter-Agency Standing Committee as a first step

Shortcomings of aid in Darfur led to a new discussion

Introduction of the cluster approach in 2006

The cluster approach shall ensure sufficient global capacity, predictable leadership and partnerships, strengthen accountability and improve coordination!

Protection in Practice: The Cluster Approach

Figure 2: Cluster responsibilities

| | |
|--|---|
| Global cluster lead role | Accountability |
| <ul style="list-style-type: none"> Standards and policy setting Building response capacity Establishing and maintaining surge capacity Operational support | Accountable to the ERC at the global level* |
| Country cluster lead role | Accountability |
| <ul style="list-style-type: none"> Inclusion of humanitarian partners Establishment of coordination mechanisms Ensuring predictable action for needs assessment and identification of gaps Agreeing response strategies Applying standards Monitoring and reporting Advocacy and resource mobilisation Provider of last resort | Accountable to the HC at the country level* |

Note: * Apart from IFRC, which has not agreed to be accountable to the UN.

Source: IASC (2006b).

Graves/Wheeler/Martin 2007: 3.

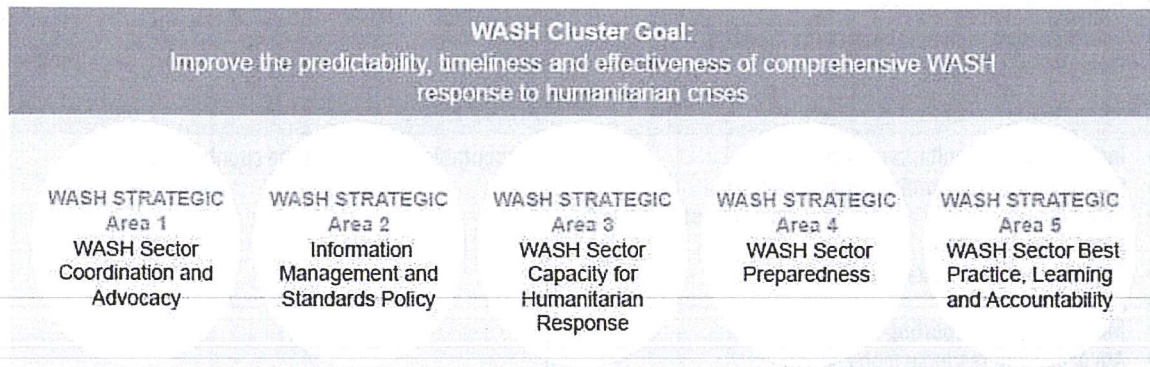


Protection in Practice: The Cluster Approach

| Global Cluster | Lead Organization |
|----------------------------|--------------------------|
| Food Security | FAO/WFP |
| Camp Management | UNHCR/IOM |
| Early Recovery | UNDP |
| Education | UNICEF/Save the Children |
| Emergency Shelter | UNHCR/IFRC |
| Emergency Communication | OCHA/WFP/UNICEF |
| Health | WHO |
| Logistics | WFP |
| Nutrition | UNICEF |
| Protection | UNHCR |
| Water, Sanitation, Hygiene | UNICEF |



Protection in Practice: The WASH Cluster



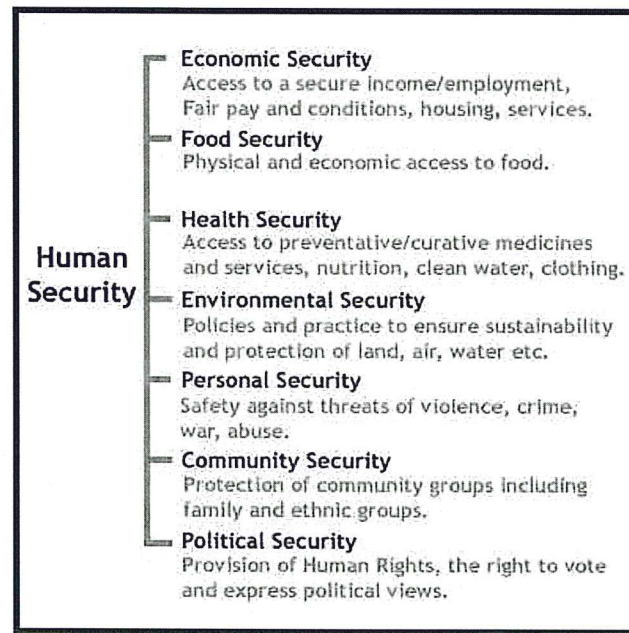
Conclusion

What are your thoughts on protection as a concept or a practice?

Do you think that the cluster approach has potential to provide protection?

Is there anything more to discuss within the area of protection?

Norm Research in Comparison



Literature

Sue Graves/Victoria Wheeler/Ellen Martin: Lost in Translation, Managing Coordination and Leadership in the Humanitarian System, HPG Policy Brief 27, 2007.

Hugo Slim/Andrew Bonwick: Protection, An ALNAP Guide for Humanitarian Agencies, London 2005.



Topography and Typology of War

Jörg Calließ, September 6, 2011



Introduction to Peace Studies



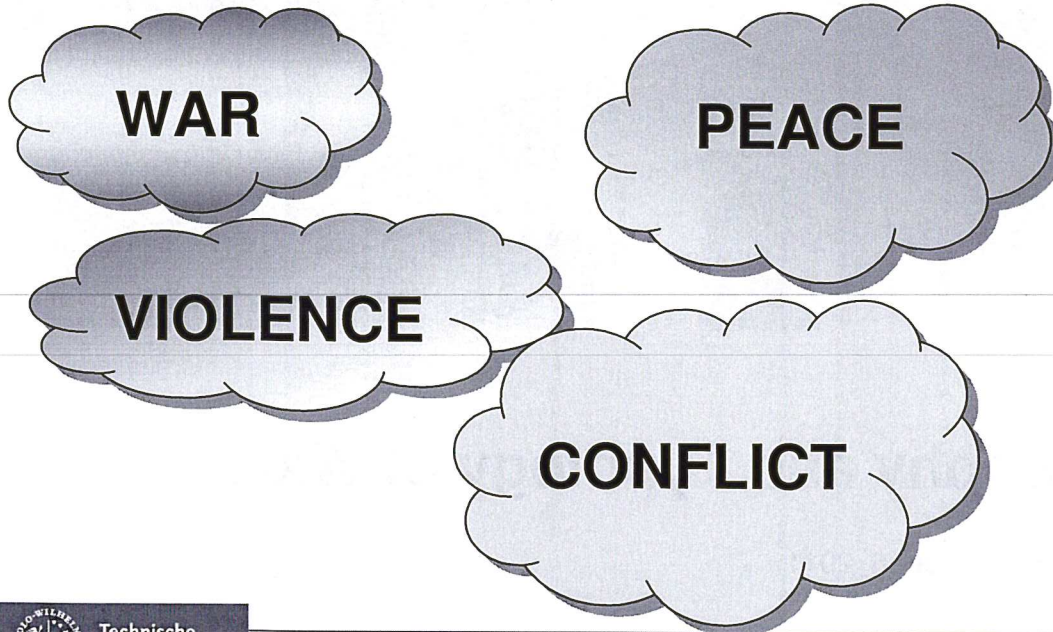
Peace and conflict studies is

- a social science field that identifies and analyses the structural mechanisms attending social conflicts with a view towards understanding and promoting those processes which lead to a more desirable human condition.
- an interdisciplinary effort that aims at the prevention, de-escalation, and solution of conflicts by peaceful means, thereby seeking 'victory' for all parties involved in the conflict.

Disciplines involved may include political science, jurisprudence, economics, psychology, sociology, international relations, history, geography, anthropology, religious studies, and gender studies, as well as a variety of others.

Subjects of Peace Studies

Subjects of peace and conflict studies are



Conflict

Differences, disagreements, contradictions, tensions, and conflicts are not problems by themselves.

They are specific and characteristic of societies

and – very important –

they are essential for the growth, development, and transformation of collectives, communities, nations, cultures – for all kinds of human groups.



If people cross the threshold of violence to enforce their interests and to resolve a conflict just in their own favor, conflicts can become destructive and cause a great deal of suffering.

Typically, violence becomes the cause of more violence and there is a strong tendency to escalate.

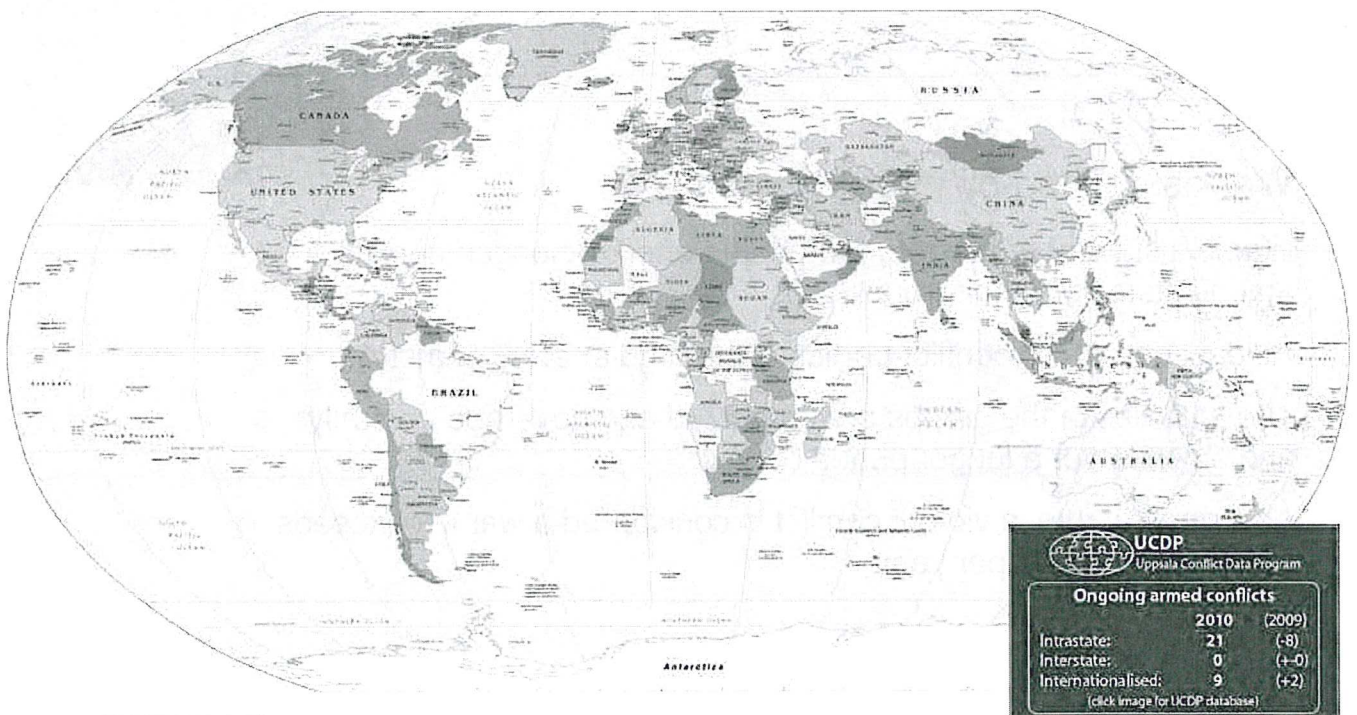
Topography of Violent Conflict and War



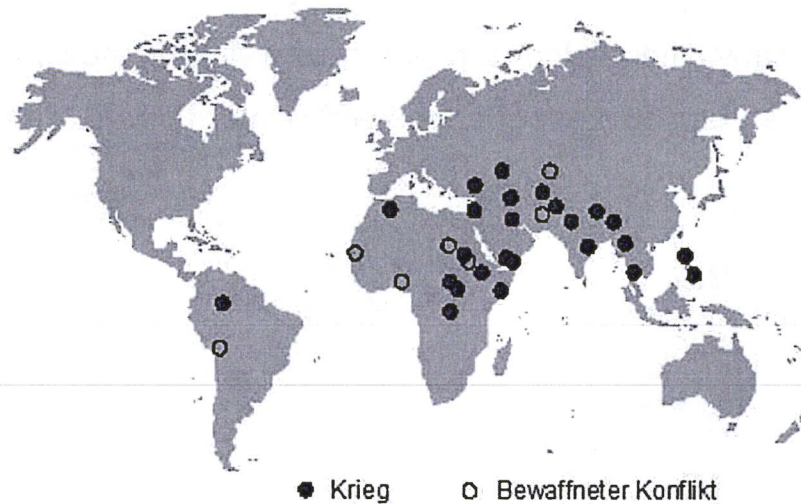
War takes many different forms in history as well as in the contemporary era.
Do you have your own experiences with violent conflict and war?



Topography of Violent Conflict and War



Topography of Violent Conflict and War



AKUF: Wars and Violent Conflicts 2010

Definition of War



War as defined by international law

War is a state of organized, armed and often prolonged conflict among states or other groups.

At least one of the conflict-parties is the regular army of a state.

The activities of the groups are organized and governed centrally and extend over a longer period of time.

As a general rule, a violent conflict is considered a war if it exceeds 1000 battle deaths per year.

Definition of Armed Conflict



Department of Peace and
Conflict Research
www.pcr.uu.se

“An **armed conflict** is a contested incompatibility which concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths.”



Jörg Calließ, September 6, 2011 | Topography and Typology of War | page 9

Definition of Armed Conflict

The separate elements of the definition are operationalised as follows:

- **Use of armed force:** use of arms in order to promote the parties' general position in the conflict, resulting in deaths.
Arms: any material means, e.g. manufactured weapons but also sticks, stones, fire, water, etc.
- **25 deaths:** a minimum of 25 battle-related deaths per year and per incompatibility.
- **Party:** a government of a state or any opposition organisation or alliance of opposition organisations.
 - **Government:** the party controlling the capital of a state.
 - **Opposition organisation:** any non-governmental group of people having announced a name for their group and using armed force.
- **State:** a state is
 - an internationally recognized sovereign government controlling a specified territory, or
 - an internationally unrecognised government controlling a specified territory whose sovereignty is not disputed by another internationally recognised sovereign government previously controlling the same territory.
- Incompatibility concerning government and/or territory the incompatibility, as stated by the parties, must concern government and/or territory.
 - **Incompatibility:** the stated generally incompatible positions.
 - **Incompatibility concerning government:** incompatibility concerning type of political system, the replacement of the central government or the change of its composition.
 - **Incompatibility concerning territory:** incompatibility concerning the status of a territory, e.g. the change of the state in control of a certain territory, secession or autonomy.



Jörg Calließ, September 6, 2011 | Topography and Typology of War | page 10

Types of Warfare

“War is more than a true chameleon that slightly adapts its characteristics to the given case.”

(Carl von Clausewitz 1832)

Remember just some manifestations of war:

- Peloponnesian War
- Crusades
- Thirty Years' War
- Franco-German War
- First World War
- Cold War (East-West-Conflict)
- Vietnam War
- Chechnya
- Northern Ireland
- Afghanistan



Types of Warfare

“War is more than a true chameleon that slightly adapts its characteristics to the given case.”

(Carl von Clausewitz 1832)

**There are several ways to systematize the various manifestations of war:
with reference to**

- conflict purpose
- conflict intensity
- conflict matter
- belligerent parties
- conflict combatants
- warfare type (complexion - character – profile)



Types of Warfare

“War is more than a true chameleon that slightly adapts its characteristics to the given case.”
(Carl von Clausewitz 1832)

Three Typologies of War with Regard to the Purpose:

- state-building war
- separation war
- state-collapse war
- de-nationalisation war
- liberation war
- independence war
- civil war
- war for supremacy
- war for hegemony
- war for territory
- war for colonies
- war for resources
- war in the name of religion
- war in the name of ideology
- war in the name of revolution
- war in the name of equality
- war in the name of justice
- war in the name of ethnicity
- war in the name of nationalism
- war in the name of racism
- war in the name of human rights
- war in the name of democracy



Types of Warfare

Typology of War with Regard to Conflict Intensity:

| Conflict intensities | | | | |
|----------------------|-----------------|--------------------|-------------------|---|
| State of violence | Intensity group | Level of Intensity | Name of Intensity | Definition |
| Non-violent | Low | 1 | Latent conflict | A positional difference over definable values of national meaning is considered to be a latent conflict if demands are articulated by one of the parties and perceived by the other as such. |
| | | 2 | Manifest conflict | A manifest conflict includes the use of measures that are located in the stage preliminary to violent force. This includes for example verbal pressure, threatening explicitly with violence, or the imposition of economic sanctions. |
| | Medium | 3 | Crisis | A crisis is a tense situation in which at least one of the parties uses violent force in sporadic incidents. |
| Violent | High | 4 | Severe crisis | A conflict is considered to be a severe crisis if violent force is used repeatedly in an organized way. |
| | | 5 | War | A war is a violent conflict in which violent force is used with a certain continuity in an organized and systematic way. The conflict parties exercise extensive measures, depending on the situation. The extent of destruction is massive and of long duration. |

HIIK-Conflict Barometer



Types of Warfare

Two Typologies of War (COW Project)

Traditional typology

I. International wars

- A. Inter-state wars
- B. Extra-systemic wars
 - (1) Colonial
 - (2) Imperial

II. Civil war

Expanded typology

I. Inter-state wars (war type 1)

II. Extra-state wars

- A. Colonial--conflict with colony (war type 2)
- B. Imperial--state vs. nonstate (war type 3)

III. Intra-state wars

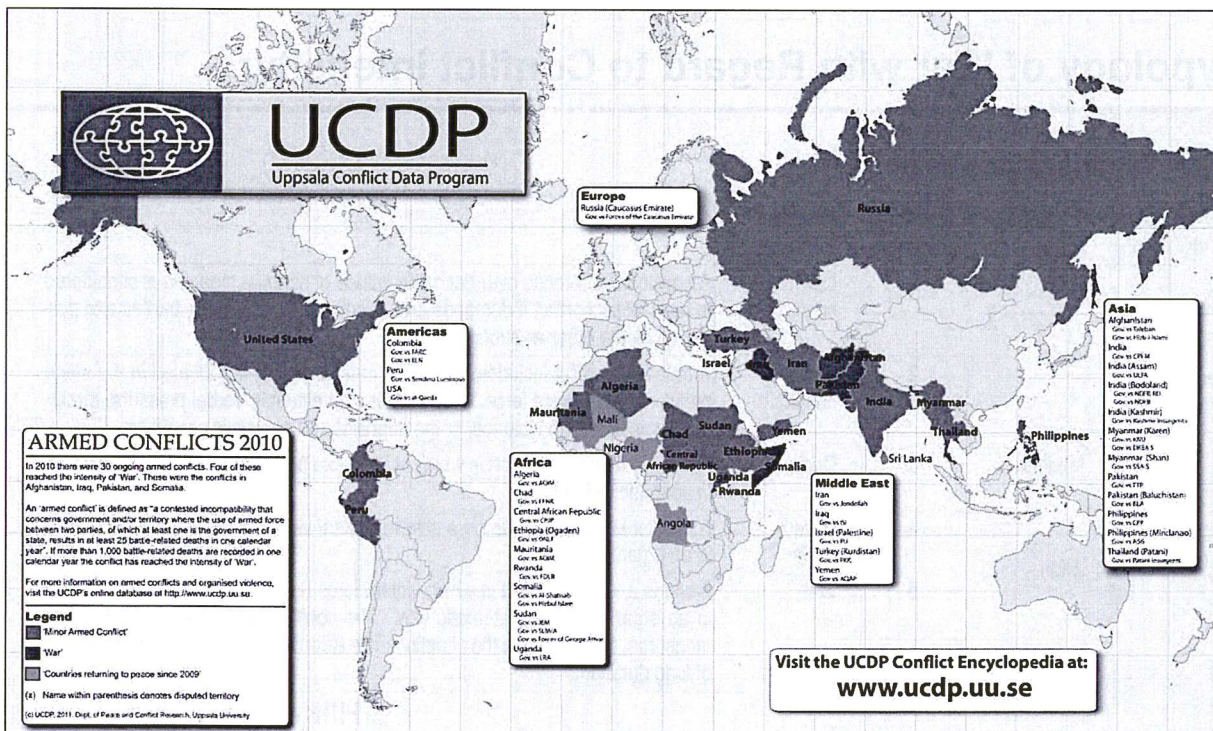
- A. Civil wars
 - 1. for central control (war type 4)
 - 2. over local issues (war type 5)
- B. Regional internal (war type 6)
- C. Intercommunal (war type 7)

IV. Non-state wars (or sub-state wars)

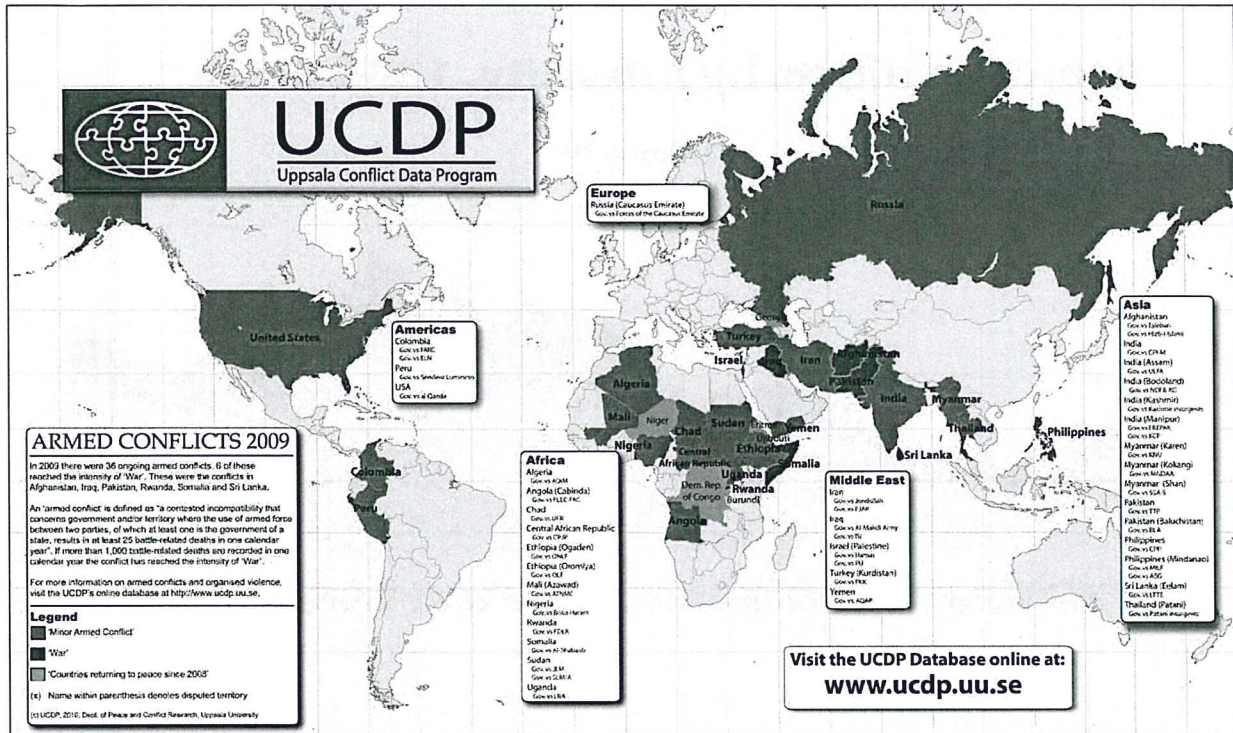
- A. In nonstate territory (war type 8)
- B. Across state borders (war type 9)



Topography of Violent Conflicts and Warfare

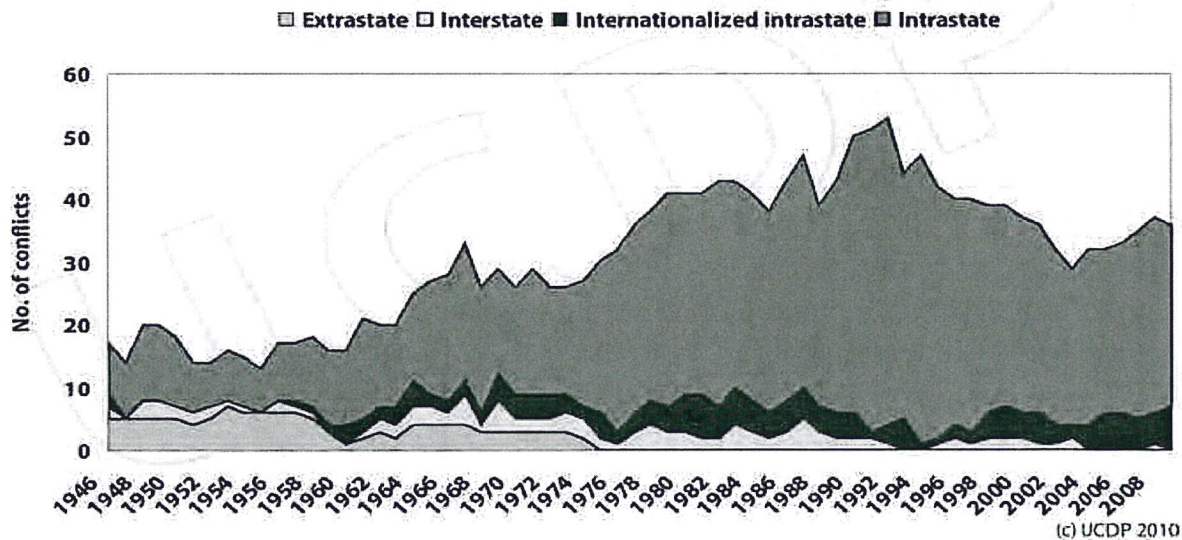


Topography of Violent Conflicts and Warfare

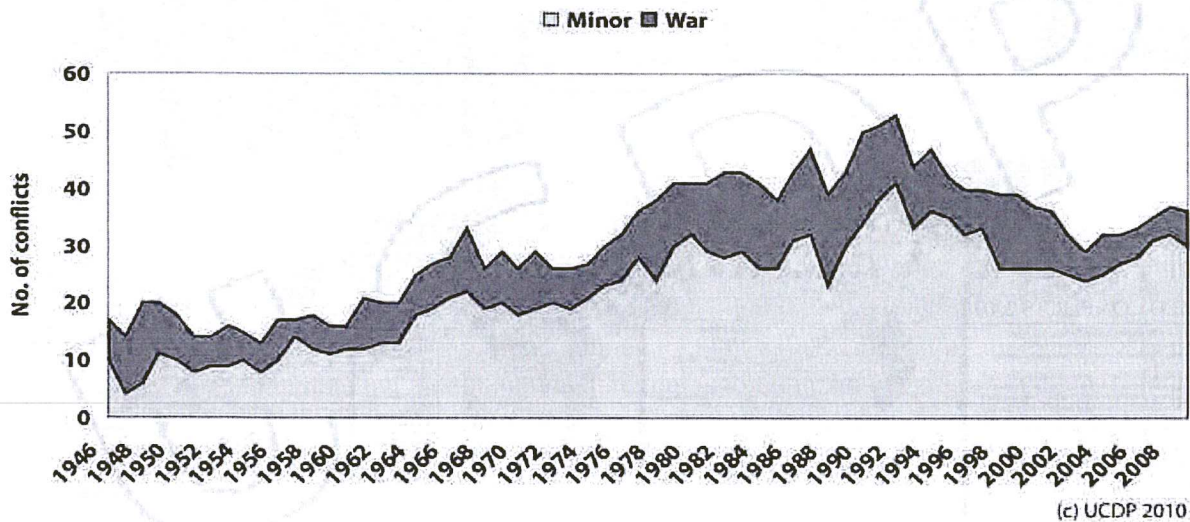


Violent Conflicts and Warfare since 1945

Armed conflicts by Type, 1946-2009



Armed conflicts by Intensity, 1946-2009



Causes of War

What are possible causes of war ?

Every war has its own history and its own roots.

Every war has a multitude of causes.

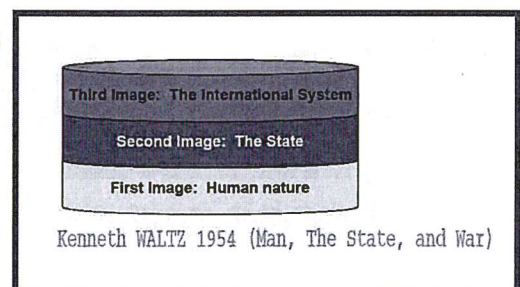
It is necessary to distinguish

- long-term causes
- short-term causes
- inducement
- trigger

Every war has a variety of causes.

It is important to identify causes on different levels

- micro-level (individual person)
- meso-level (society and state)
- macro-level (international system)



Causes of War

What are possible causes of war ?

1. Causes of war on the micro-level (human nature)

Are people basically good? Is human nature flawed?

- brutishness and stupidity, passion, pride and egoism
- intolerance, misunderstanding and prejudice
- perception and misperception
- fear and aggressive drive structure
- inclination towards violence
- personal pauperization
- greed

Causes of War

What are possible causes of war ?

2. Causes of war on the meso-level (structure of society and state)

- autocratic or despotic regime
- lack of participation
- insufficient rule of law
- inequitable distribution of socio-economic goods and values
- discrepancies, inconsistencies and inequalities within society
 - between religious or ethnical sections of the population
 - between classes
 - between tribes or clans
 - between generations
 - between regions
- social disintegration, lack of ligatures, and interdependencies
- lack of rules and procedures for peaceful conflict-management

Causes of War

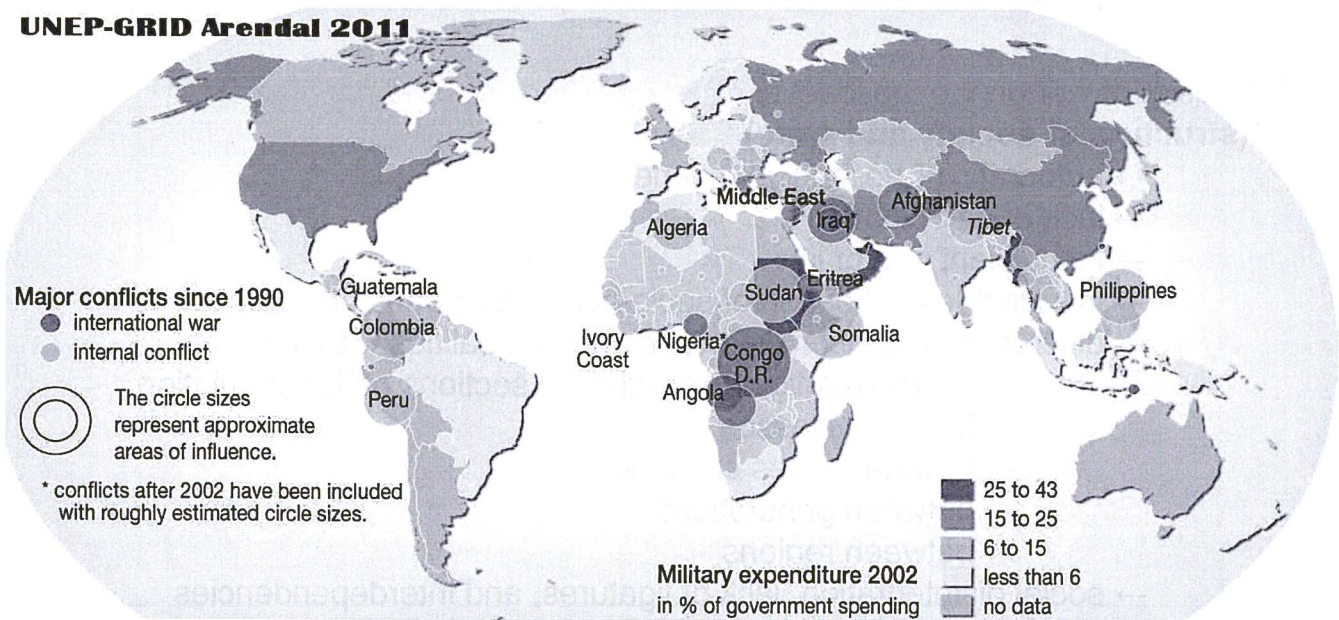
What are possible causes of war ?

3. Causes of war on the macro-level (international system)

- anarchy of the international state system
- structural violence
- disparities and asymmetric distribution of power and influence
- disparities and asymmetric distribution of prosperity and wealth
- rivalries between states
- competition for power
- clash of cultures
- striving for hegemony
- need for resources
- claim for territory
- requirement of security and stability
- enforcement of human rights and democracy

Violent Conflicts and Wars Nowadays

UNEP-GRID Arendal 2011



Violent Conflicts and Wars Nowadays

What is typical for violent conflicts and wars today ?

Most wars are fought not between but within states.

- ▶ weak states
- ▶ fragile states
- ▶ collapsing states

Most wars tend to cross borders and to expand into the whole region.

- ▶ interference of foreign armed groups
- ▶ migration and refugee movements
- ▶ arms trade
- ▶ organized crime (raw materials, commodities, drugs)
- ▶ trafficking in human beings



Violent Conflicts and Wars Nowadays

What is typical for violent conflicts and wars today ?

Asymmetric constellation between the belligerent parties

Heterogeneous constellation of violent actors

- ▶ regular army of the state
- ▶ regular army from neighboring states
- ▶ armed troops of rebels, insurgents, liberation movements, warlords
- ▶ mercenary and private security services

Involvement of the civilian population

Unleashed brutality and cruelty

Great number of casualties

Driving role of greed

Emergence of war economies

Flourishing markets of violence



Violent Conflicts and Wars Nowadays

What is typical for violent conflicts and wars today ?

- High risk of escalation
- Interdependencies between violence and organized crime
- Destruction and devastation of infrastructure and culture
- Obstruction of all kinds of development work
- Blurring line between war and peace
- Structural difficulties to ending violence



Is there a Bridge from War to Peace?

- Every war has its own history, own causes, and own reality.
- Peace-building needs thorough analysis and diagnoses!



**Different diagnoses
lead to
radically different policy solutions!**





Data on Violent Conflicts

Michael Fürstenberg, M.A. | Summer School on Water and International Relations

Purpose of this Lecture

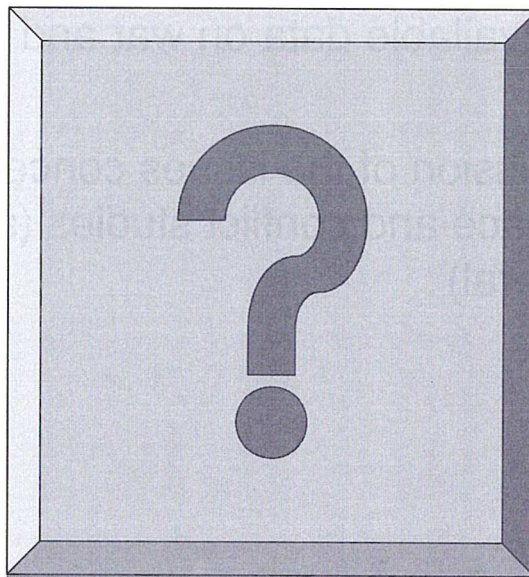
- Overview over available data on war and violent conflict
- Exemplary discussion of the issues concerning data generation in peace and conflict studies (and the social sciences in general)

Structure

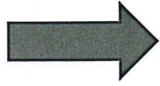
This session is structured around four questions:

- Why do we need data on violent conflicts?
- What data on violent conflict exists?
- How is this data generated?
- What does this data tell us?

Why do we need data on violent conflicts?



Why do we need data on violent conflicts?



- Discern trends and patterns
- Basis for comparisons
- Explaining wars by correlating them with other data
- Guide policy action

What data on violent conflict exists?

Generally: A great deal!

<http://www.paulhensel.org/dataconf.html>

In particular, five projects/institutions are mentionable:

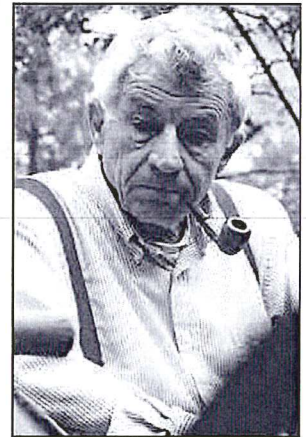
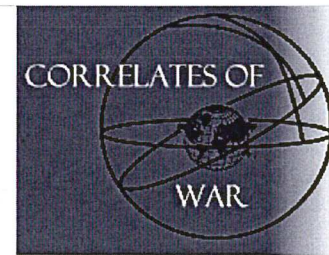
- Correlates of War Project (COW)
- Uppsala Conflict Data Programm (UCDP)/Peace Research Institute, Oslo (PRIO)
- Heidelberg Institute for International Conflict Research (HIK)
- Consolidated List of Wars (FU Berlin)

What data on violent conflict exists?

The Correlates of War Project

<http://www.correlatesofwar.org/>

- Started in 1963 by J. David Singer at the University of Michigan
- First of its kind
- Strong theoretical background in realism
- Data since 1816



What data on violent conflict exists?

Uppsala Conflict Data Program

<http://www.pcr.uu.se/research/ucdp/>



- Established in the mid-80s
- Collaboration with the Peace Research Institute, Oslo (PRIO)
- Background in conflict resolution
- Wide variety of datasets on different aspects of violence
- Yearly reports in Journal of Peace Research



What data on violent conflict exists?

Heidelberg Institute for International Conflict Research
(KOSIMO/CONIS)

<http://hiik.de/en/index.html>



- Outgrown of a limited research project at the University of Heidelberg in 1991
- Now a non-profit organization
- Yearly report in the Conflict-Barometer

What data on violent conflict exists?

Consolidated List of Wars

[http://www.polsoz.fu-berlin.de/polwiss/forschung/international/frieden/forschung/projekte/laufende Projekte/colow/index.html](http://www.polsoz.fu-berlin.de/polwiss/forschung/international/frieden/forschung/projekte/laufende_Projekte/colow/index.html)

- Project of Prof. Sven Chojnacki
- Sporadic since 2006
- Loosely integrated into Research Cluster „Governance in areas of Limited Statehood“ the FU Berlin



What data on violent conflict exists?

Several different dimensions of violent conflicts are covered:

- Intensity: From minor armed conflict to full-scale wars (usually distinguished by casualties/(battle-)deaths)
- Actors involved: States, rebel organizations, militias etc. (→ interstate-war, intrastate (civil) war, extrastate war, sub-state/non-state/communal war)
- Type of violence: Armed conflict, one-sided violence, [political terror, terrorism, genocide]

What data on violent conflict exists?

Collected also on different levels of aggregation:

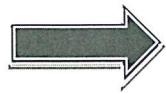
- Country-level
- Conflict-level (dyadic/modaic)
- Actor-level

Usually per year.

How is this data generated?

How do we measure (count) “violent conflict” resp. “war”?

- Conflict is a very complex social phenomenon with a wide variety (“every war is different”)



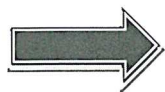
So ist actually quite difficult

What is the starting point when we want to count/sort something?

How is this data generated?

How do we measure (count) “violent conflict” resp. “war”?

- Armed conflict is a very complex social phenomenon with a wide variety (“every war is different”), that overlaps into other social phenomena, esp. crime



So ist actually quite difficult

What is the starting point when we want to count/sort something?



We need clear-cut definitions on *what* to count (and *what not!*)

How is this data generated?

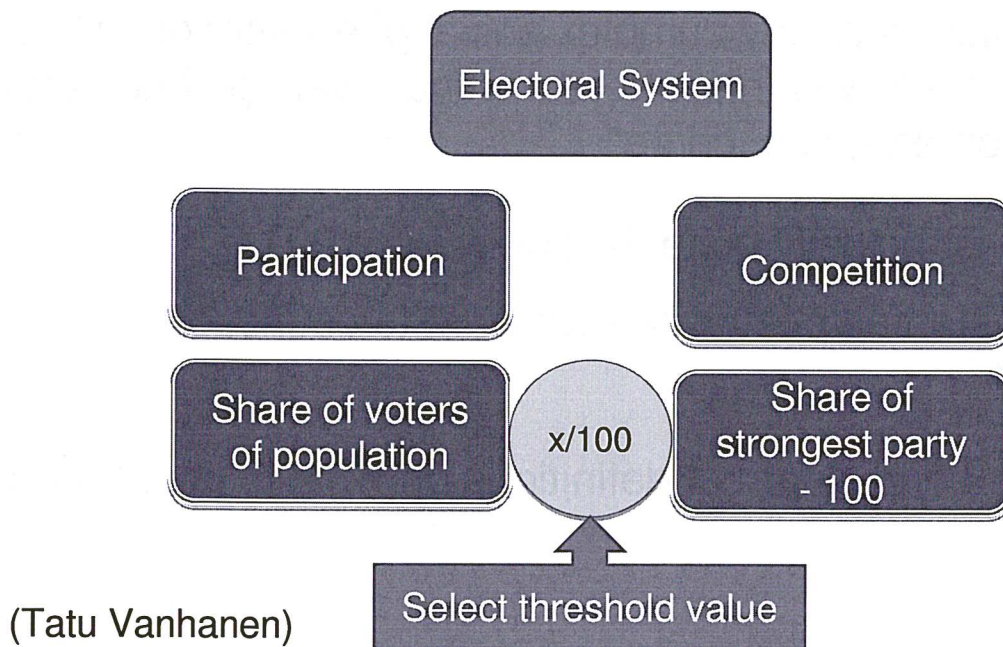
Group Work!

- Form four groups
- In each group, discuss what you think is necessary for violence to be counted as “war”
- Work out the elements/criteria of your definition and illustrate them (and their connections) graphically
- Explain your reasoning to the “class” (short!)

About 20 minutes

How is this data generated?

Example: A (simple) definition of democracy



How is this data generated?

Example: Definition of UCDP:

An **armed conflict** is a contested incompatibility which concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths.

How is this data generated?

Definition of UCDP:

The separate elements of the definition are operationalised as follows:

- (1) **Use of armed force:** use of arms in order to promote the parties' general position in the conflict, resulting in deaths. **Arms:** any material means, e.g. manufactured weapons but also sticks, stones, fire, water, etc.
- (2) **25 deaths:** a minimum of 25 battle-related deaths per year and per incompatibility.
- (3) **Party:** a government of a state or any opposition organisation or alliance of opposition organisations.
 - (3.1) **Government:** the party controlling the capital of the state.
 - (3.2) **Opposition organisation:** any non-governmental group of people having announced a name for their group and using armed force.

How is this data generated?

Definition of UCDP:

(4) **State:** a state is

(4.1) an internationally recognized sovereign government controlling a specified territory, or

(4.2) an internationally unrecognised government controlling a specified territory whose sovereignty is not disputed by another internationally recognised sovereign government previously controlling the same territory.

(5) Incompatibility concerning government and/or territory the incompatibility, as stated by the parties, must concern government and/or territory.

(5.1) **Incompatibility:** the stated generally incompatible positions.

(5.2) **Incompatibility concerning government:** incompatibility concerning type of political system, the replacement of the central government or the change of its composition.

(5.3) **Incompatibility concerning territory:** incompatibility concerning the status of a territory, e.g. the change of the state in control of a certain territory (interstate conflict), secession or autonomy (intrastate conflict).

How is this data generated?

And that's not all...

<http://www.pcr.uu.se/research/ucdp/definitions/>

How is this data generated?

Example 2: KOSIMO

Conflict definition

We define conflicts as the clashing of interests (positional differences) over national values of some duration and magnitude between at least two parties (organized groups, states, groups of states, organizations) that are determined to pursue their interests and achieve their goals.

Conflict items

- Territory
- Secession
- Decolonization
- Autonomy
- System/ideology
- National power
- Regional predominance
- International power
- Resources
- Others

How is this data generated?

Example 2: KOSIMO

Conflict intensities

| State of violence | Intensity group | Level of intensity | Name of intensity | Definition |
|-------------------|-----------------|--------------------|-------------------|---|
| Non-violent | Low | 1 | Latent conflict | A positional difference over definable values of national meaning is considered to be a latent conflict if demands are articulated by one of the parties and perceived by the other as such. |
| | | 2 | Manifest conflict | A manifest conflict includes the use of measures that are located in the stage preliminary to violent force. This includes for example verbal pressure, threatening explicitly with violence, or the imposition of economic sanctions. |
| Violent | Medium | 3 | Crisis | A crisis is a tense situation in which at least one of the parties uses violent force in sporadic incidents. |
| | High | 4 | Severe crisis | A conflict is considered to be a severe crisis if violent force is used repeatedly in an organized way. |
| | | 5 | War | A war is a violent conflict in which violent force is used with a certain continuity in an organized and systematic way. The conflict parties exercise extensive measures, depending on the situation. The extent of destruction is massive and of long duration. |

What are the differences?

How is this data generated?

How are these theoretical definitions translated to data?

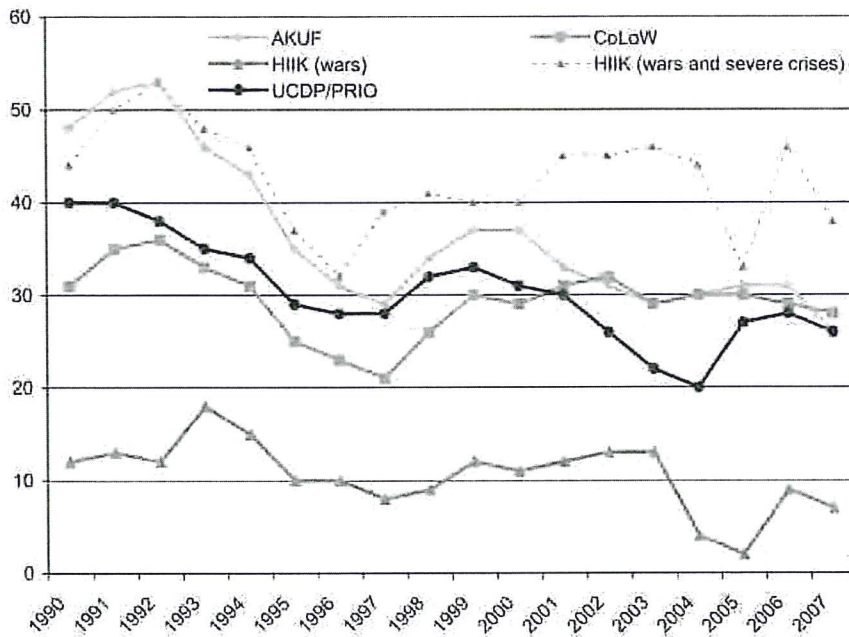
- (Usually): Manual coding
- Based on newspaper/-agencies' reports, official statements, NGO-reports etc. → difficult to rely on, so results are probably biased and have to be based sometimes on „educated guesses“
- The less precise the coding rules (= definitions/operationalizations), the more subjective the outcome!

What does this data tell us?

- As should have become clear, how much conflict we see depends largely on the definitions/measurement techniques used!
- There can be many “worlds of violence”

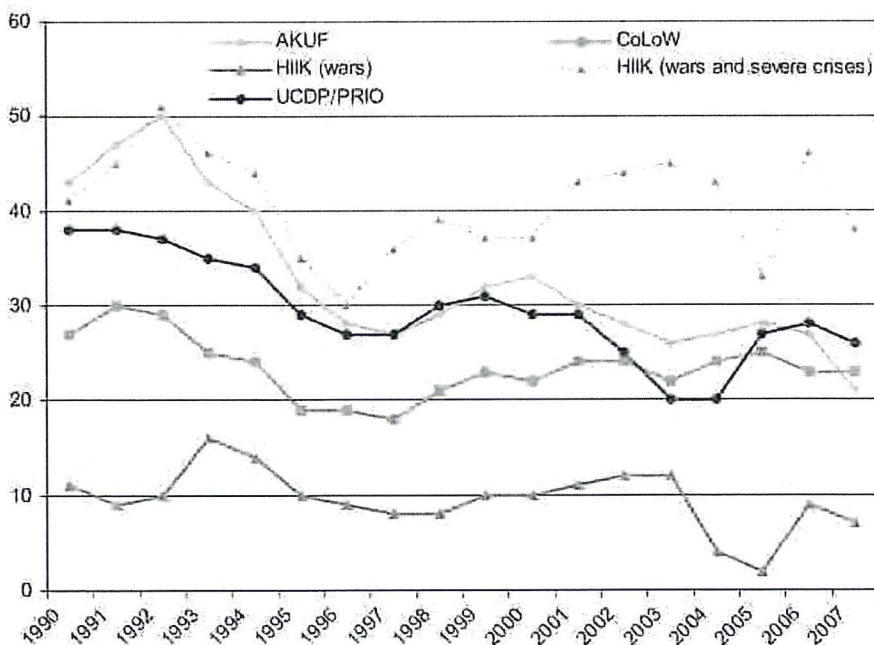
What does this data tell us?

Figure 2: Yearly number of ongoing wars by data project, 1990-2007



What does this data tell us?

Figure 3: Yearly number of ongoing intra-state wars by data project, 1990-2007



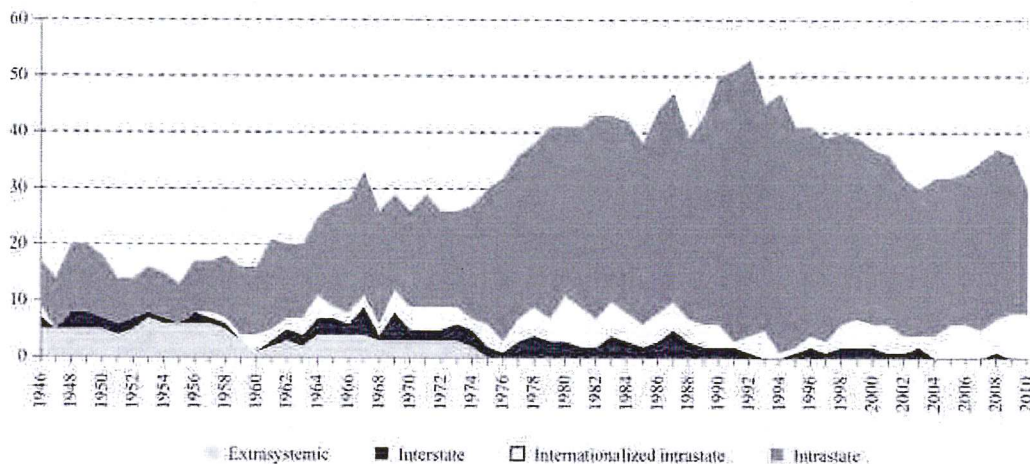
What does this data tell us?

Table 1: Comparison of war types by total war-years (ongoing) and total number of onsets

| | AKUF | | CoLoW | | HIIK | | UCDP/PRIO | |
|--------------------------------|------------|-----------|------------|-----------|------------|--------------------|------------|-----------|
| | ongoing | onset | ongoing | onset | ongoing | onset ¹ | ongoing | onset |
| Inter-state | 30 | 8 | 6 | 4 | 18 | missing | 17 | 3 |
| Intra-state ² | 591 | 60 | 422 | 38 | 172 | missing | 530 | 15 |
| Anti-regime | 301 | 31 | 309 | 28 | - | - | - | - |
| Secessionist | 290 | 29 | 113 | 10 | - | - | - | - |
| Internationalized ³ | - | - | - | - | - | - | 56 | 6 |
| Extra-state/ Decolonization | 2 | 0 | 10 | 3 | - | - | 0 | 0 |
| Sub-state | - | - | 91 | 13 | - | - | - | - |
| Miscellaneous | 33 | 5 | - | - | - | - | - | - |
| Total | 656 | 73 | 529 | 58 | 190 | - | 547 | 18 |

What does this data tell us?

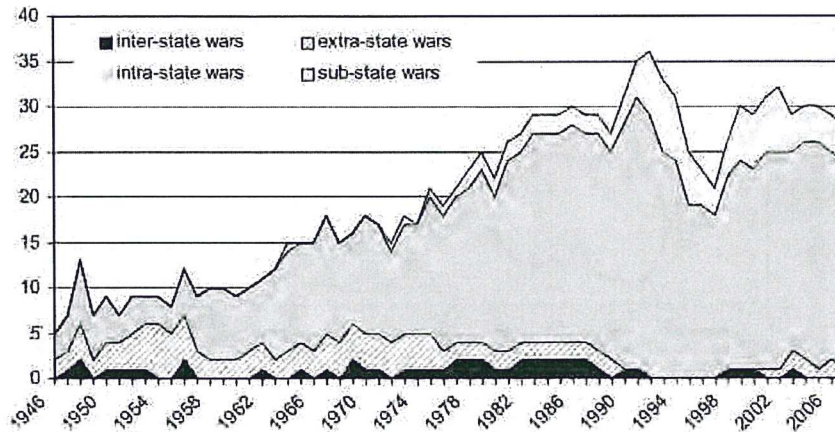
- Nevertheless, at least the broad trends are pointing in the same direction: There are fewer wars and they become less deadly



What does this data tell us?

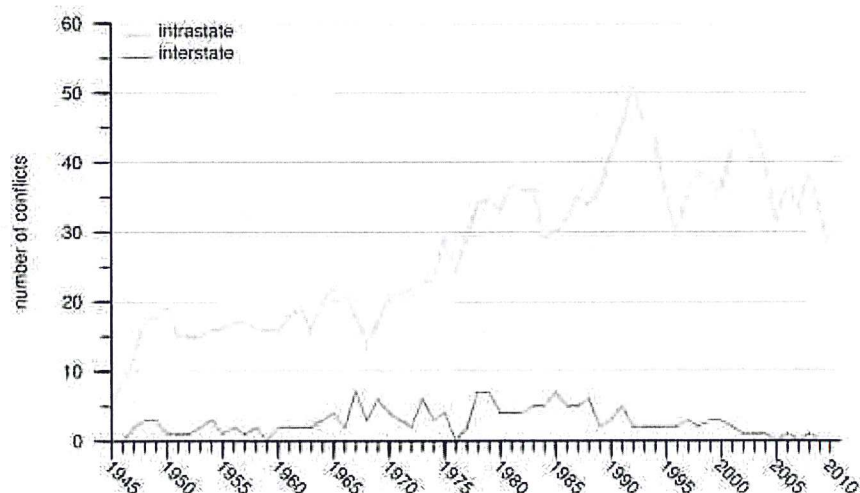
- Nevertheless, at least the broad trends are pointing in the same direction: There are fewer wars and they become less deadly

Figure 1: Yearly number of ongoing wars by type, 1946-2007



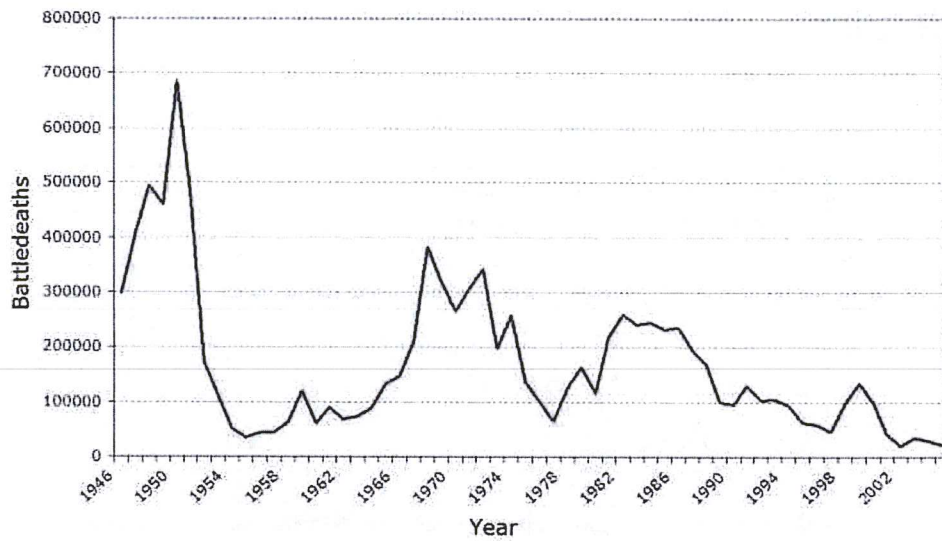
What does this data tell us?

- Nevertheless, at least the broad trends are pointing in the same direction: There are fewer wars and they become less deadly



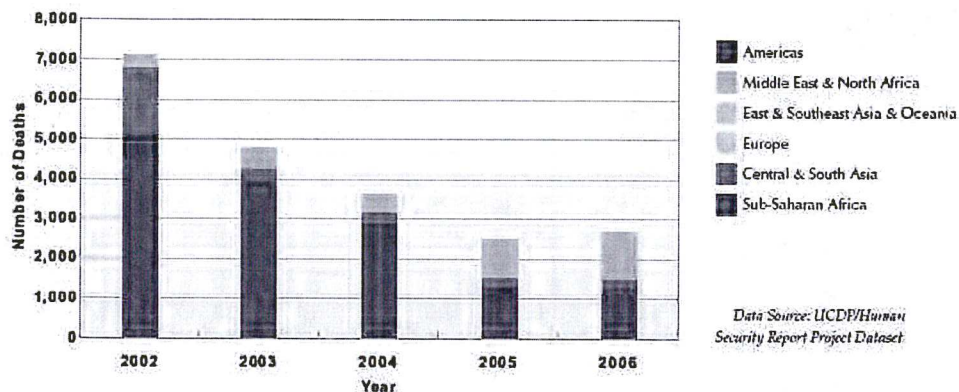
What does this data tell us?

Battledeaths by year (1946-2005)



What does this data tell us?

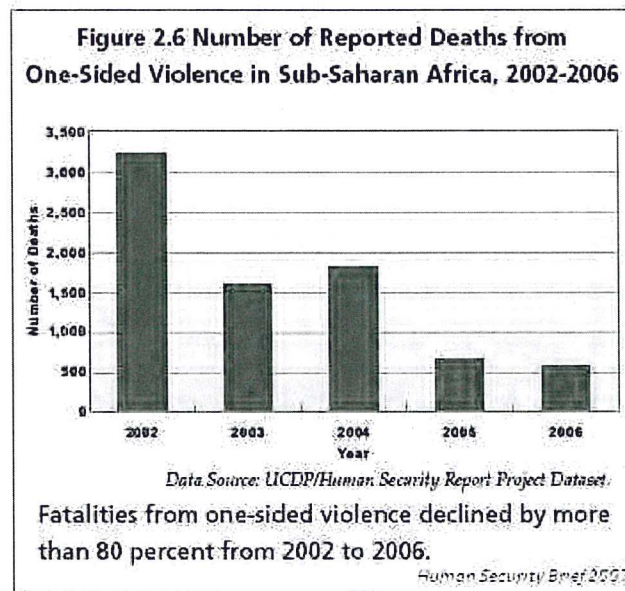
Figure 3.6 Reported Battle-Deaths from Non-State Armed Conflicts, 2002-2006



The overall decline in deaths from non-state conflicts has been driven by lower death tolls in sub-Saharan Africa, Central and South Asia, and the Americas.

Human Security Brief 2007

What does this data tell us?



Problems

- Although we have an idea about “how much” violent conflict there is in the world, we don’t know what actually is going on in them!
- Actual fighting is not distributed equally across space and time (within a given year)
- Current trend in conflict research therefore: Opening the “black box” of (mostly civil) war by disaggregating it into specific events

<http://www.polsoz.fu-berlin.de/polwiss/forschung/international/frieden/forschung/diagramme/index.html>

<http://www.acleddata.com/>

Introduction to Intercultural Philosophy of Human Rights

Thomas Sukopp, PhD

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*(Braunschweig Institute of Technology,
Philosophy Department)*

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Topics

- ▶ 1. Premises of Intercultural Philosophy
- ▶ 2. What are Human Rights?
- ▶ 3. Arguments against Universalism from an intercultural perspective
- ▶ 4. The Right to Water as a Human Right
- ▶ 5. The Right to water from an intercultural perspective

1 Premises of Intercultural Philosophy

- ▶ „Philosophy—that is, the activity in which we engage when we do philosophy—is first a cross-cultural universal and then Greek, Indian, Chinese, and so on, and not the other way round.“
- ▶ „There is no pure own culture just as there is no pure other culture. The same is true for philosophy. The ramifications of cultures are intricate and can be traced back into the past almost endlessly.“
- ▶ „Philosophy is undoubtedly born in particular cultures and thus is local in character, but it is not exhausted in any one of its manifold local manifestations. [...] There is no doubt about the cultural embeddedness of philosophy, but this embeddedness does not mean the loss of the universalistic application of the generic concept of philosophy.“
- ▶ IP needs various polylogues.

2 What are Human rights?

Universal Declaration of Human Rights, Preamble: “Whereas recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world ...”

- a) closely related to dignity
- b) universal
- c) equal
- d) inalienable
- e) categorical
- f) independent from cultural differences

3. Arguments against Universalism from an intercultural perspective

a) Cultural Relativism

Formal Explication: If A (e.g. "practice", see below) as B (e.g. "appropriate", see below) is related (and valued) to culture C, than A will be relative to C.

| | | | | |
|------|--|----|--|-------------------|
| A(n) | Practice action norm (ethical or juridical) maxim tradition ideological point of view (German: Weltanschauung) | is | adequate costumary demanded guiding action valuable prevalent | in relation to C. |
|------|--|----|--|-------------------|

3. Arguments against Universalism from an intercultural perspective

b) Taking the thesis: Universalism is true. Which strategy is sound? (anthropological basis, human capabilities approach, Kantian rationality, human dignity, natural laws?)

c) Universalists disagree: The case of Human Rights

d) Universalistic assumptions are problematic: a) Rationalistic prejudices; b) hedonistic fallacies and c) anthropological assumptions

e) Relativism is a fact: 1. Different cultural influences on ethical positions; 2. Relativism can be distilled from taking a simple look on different cultures, e.g. music, art, architecture etc. Relativism is (partly) justified: Can we really generate universal norms independent from social, cultural, religious effects

4. The Right to water as a Human Right

a) *Rights to water as a Human Right: Facts*

- July 28th 2010: 122 countries formally acknowledged the "right to water" in the General Assembly of UN resolution
- Since the 1970ies: A right to water can be recognised in Human Rights conventions
- Art. 25, Universal Declaration of Human Rights (1948): "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing ..."
- Water is a basic food
- About 1.000.000.000 to 1.200.000.000 people: no access to safe drinking water
- (- About 2.600.000.000 people: no access to basic sanitation)
- Water is essential for everyone's life
- Water pollution, distribution of water and the quality and quantity of water sources lead to severe problems

4. The Right to water as a Human Right

A *From "Subordinated Rights to Water to a Unified, Primary Human Right" (Bluemel 2005)*

- Water is more than an (ordinary) economic good
- Right to Water is not recognized directly by any universal declarations of Human Rights
- How can this right be characterized?
 1. As subordinate right (necessary to achieve primary human rights codified in universal declarations of Human Rights)
 2. Subordinate and necessary to "achieve primary economic and socio-cultural rights recognized directly by an agreement, such as the International Covenant on Economic, Social, and Cultural Rights." (Bluemel 2004)
 3. As an independent Human Right

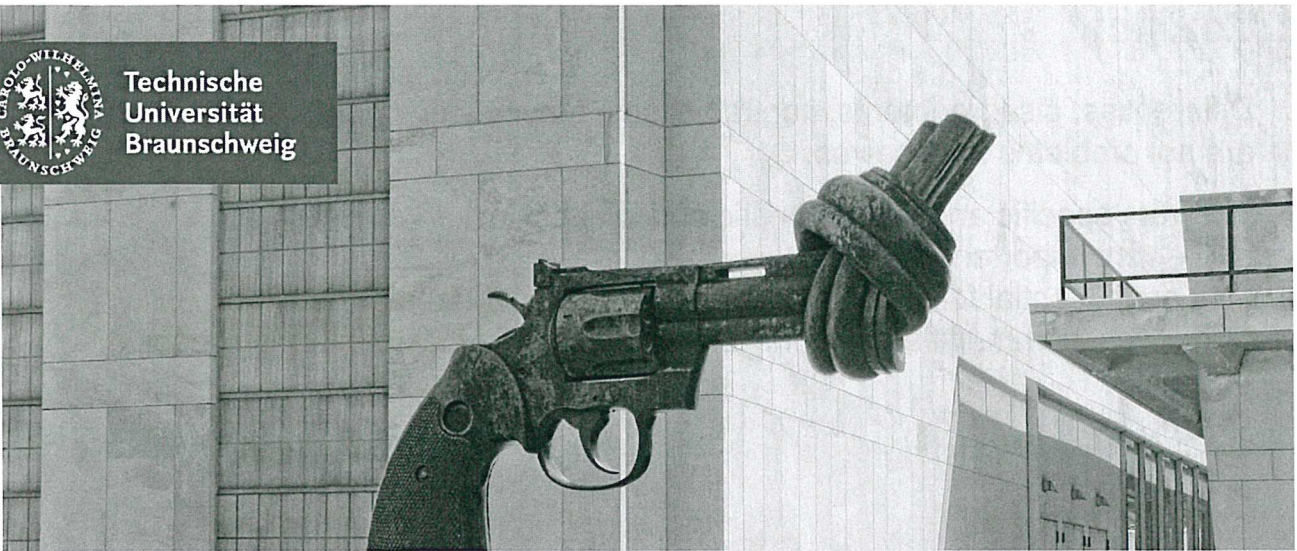
4. The Right to water as a Human Right

B The Meaning of a Human Right to Water

- If we claim to recognize the right to water as an "independent human right", we do so only because its important role in the realization of other human rights.
- State obligations (if one agrees that the right to water is a human right)
 1. fresh water as a legal entitlement (no more service provides on charitable basis or commodity)
 2. "achieving basic and improved levels of access should be accelerated."
 3. "The 'last served' are better targeted and therefore inequalities decreased;"
 4. "communities and vulnerable groups will be empowered to take part in decision-making processes." (Bluemel 2004)
 5. UN human rights system will monitor the progress of State Parties in realizing the right to water

5. The Right to Water from an intercultural perspective: Theses

- A) Water is an cross- and transculturally accepted basic food essential for everyone
- B) Every human being has liberal rights such as rights to be protected against crime, arbitrary punishment and any kind of violence, e.g. concerning physical integrity or the right to participate in public life. (Without Water these human rights are obsolete.)
- C) We all have basic interests: *food*, shelter, sexual activity, having the opportunity to participate in public life.
- D) Basic anthropological facts: a) core of common interests derived from biological facts and the facts that we have reason/basic emotions and self-models
- E) Access to Water as one presupposition for a „good life“



How to Build Peace

Jörg Calließ, September 6, 2011



Subjects of Peace Studies

Subjects of peace and conflict studies are



Conflict

Differences, disagreements, contradictions, tensions and conflicts are not problems themselves.

They are specific and characteristic of societies and – very important – they are essential for the growth, development and transformation of collectives, communities, nations, cultures – for all kinds of human groups.



If people cross the threshold of violence to enforce their interests and to resolve a conflict just in their own favor, conflicts can become destructive and cause a great deal of suffering.

Typically violence becomes the cause of more violence and there is a strong tendency to escalate.



Conflict and Violence



Dynamics in the Course of a Conflict (Idealized Modeling)

Calließ 2009



Conflict and Violence



When conflicts cross the threshold of violence, the costs and the difficulty of managing it increase significantly!

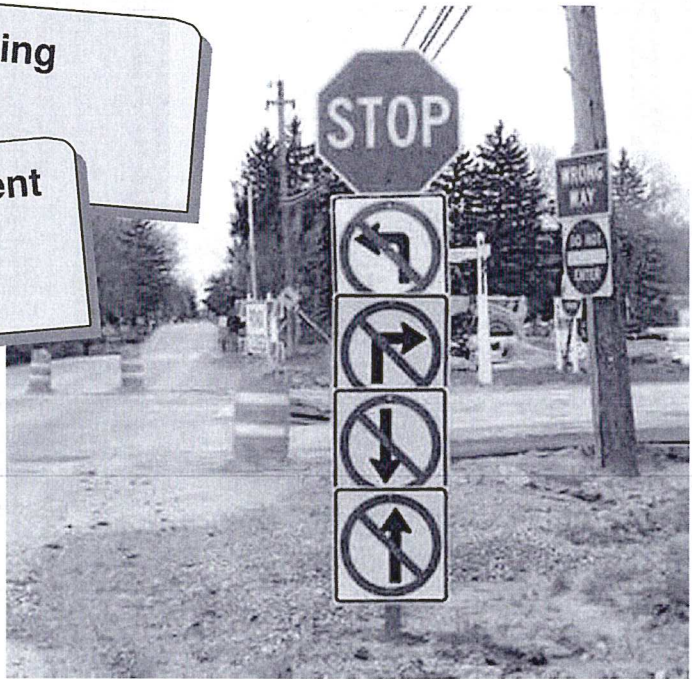
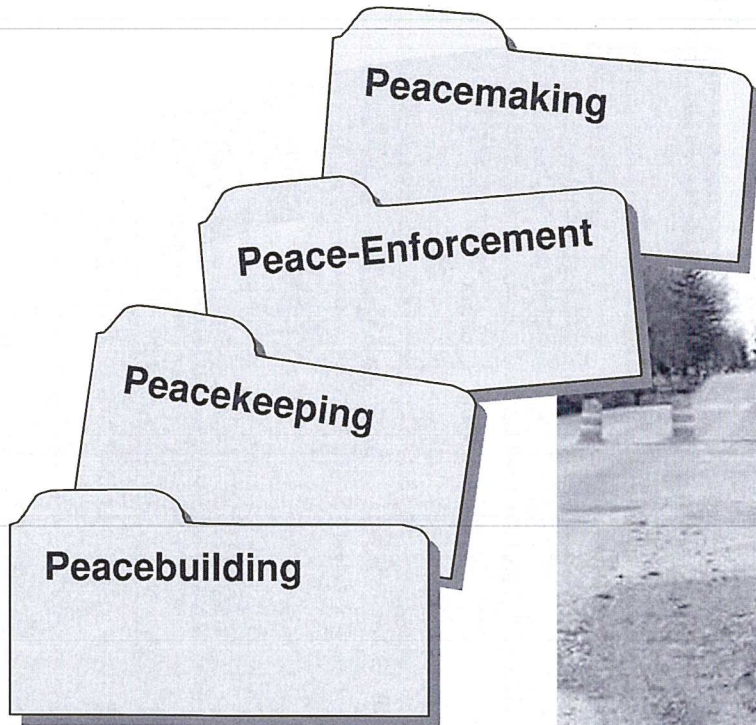


Conflict and Violence

NO WAY OUT ?



Four Responses



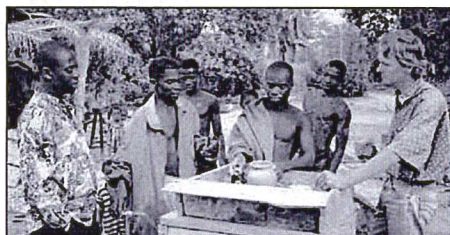
Peacebuilding

Peacebuilding

The overall aim is to transform conflicts constructively and to create a sustainable peace environment.

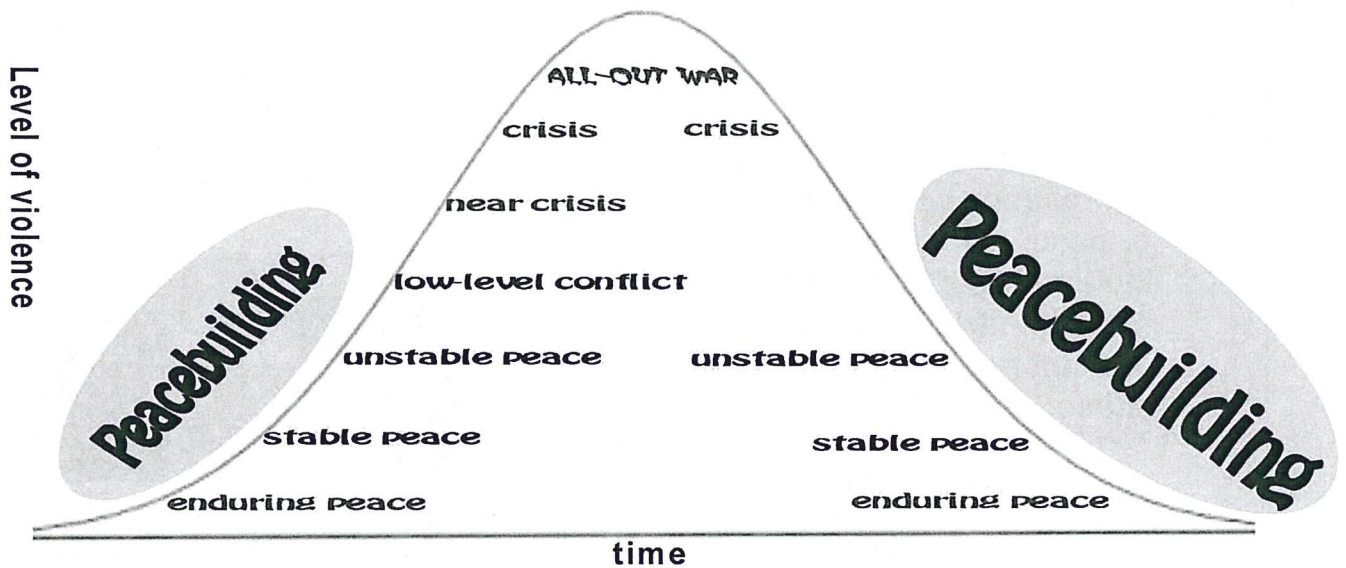
Transforming a conflict goes beyond the efforts to confine, to de-escalate and to terminate violence

Approaches, measures, and interventions needed for prevention, mitigation or termination of violent conflict



Approaches, processes, and stages needed for transformation toward more sustainable, peaceful relationships, governance modes and structures

Peacebuilding



Course of Conflict and Peacebuilding

CallieB 2009



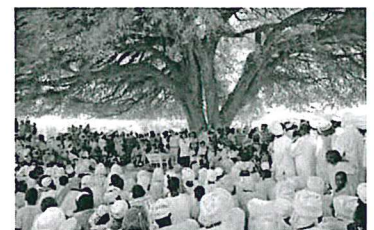
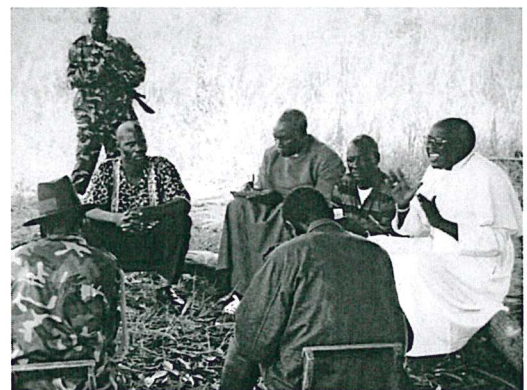
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Peacemaking

Peacemaking

The overall aim is to confine, to de-escalate and to terminate violence. Facilitation of peace between warring parties by negotiations, mediation, conciliation.



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Peacekeeping

Peacekeeping

The overall aim is to achieve compliance with cease-fires or peace agreements. Multinational forces assist host countries to navigate the difficult path from conflict to peace

Basic principles:

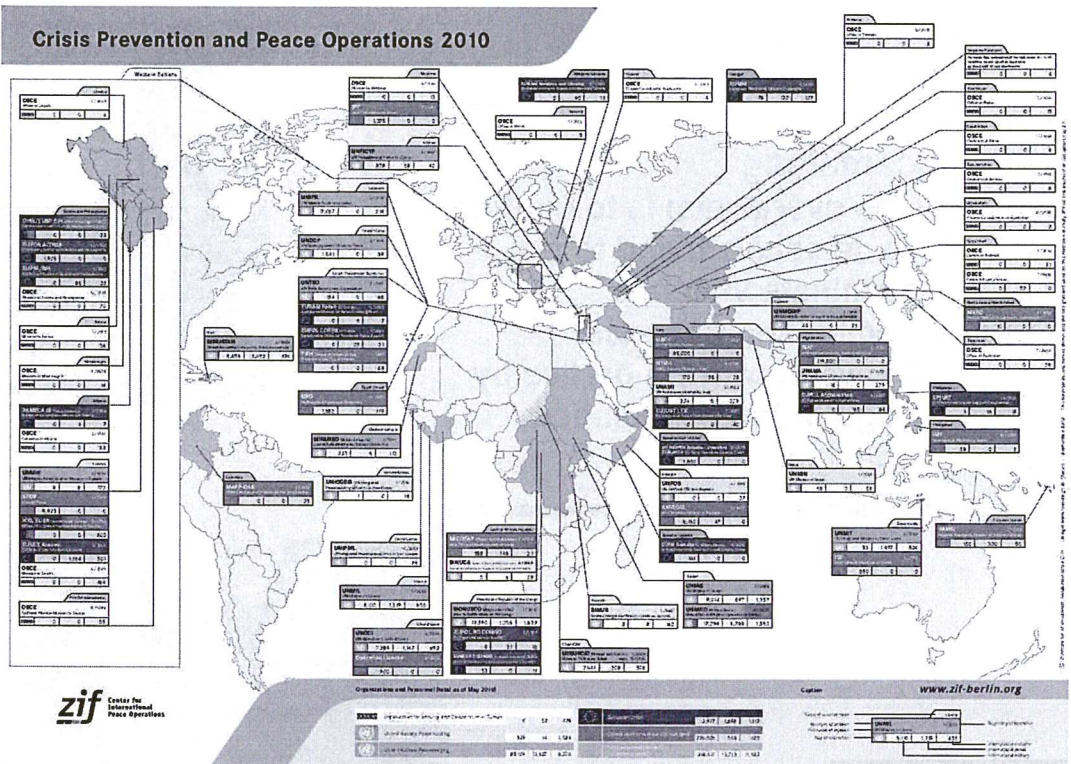
- Consent of the parties;
- Impartiality;
- Non-use of force except in self-defence and defence of the mandate.



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Peacekeeping

Crisis Prevention and Peace Operations 2010



Jörg Calließ, September 6, 2011 | How to build peace | page 12

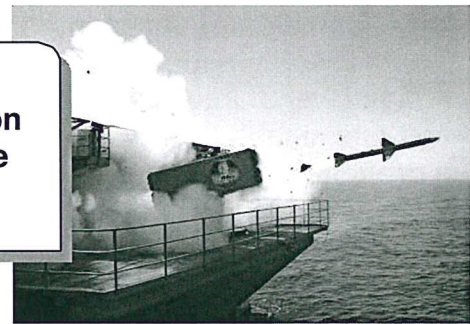
Peace-Enforcement

Peace-Enforcement

The overall aim is to bring conflicting parties to negotiations. Peace-enforcement entails the physical interposition of armed forces to separate ongoing combatants to create a cease-fire that does not yet exist.

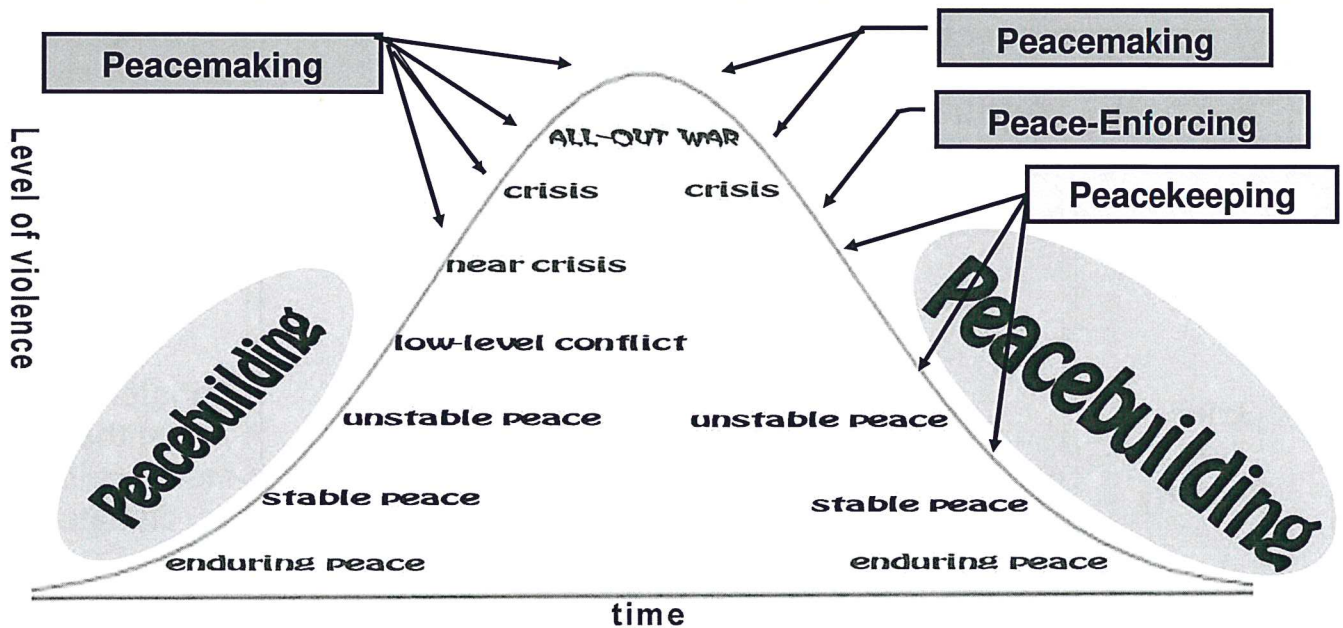


Military or civil means of coercion legitimized by the United Nations



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Influencing the course of the conflict



Course of Conflict and Peacebuilding

Calließ 2009

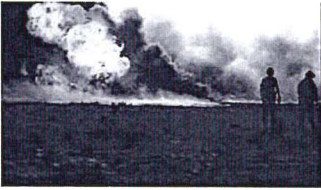


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Building Sustainable Peace

The overall aim of peacebuilding is

- to transform conflicts constructively and
- to create a sustainable peace environment.



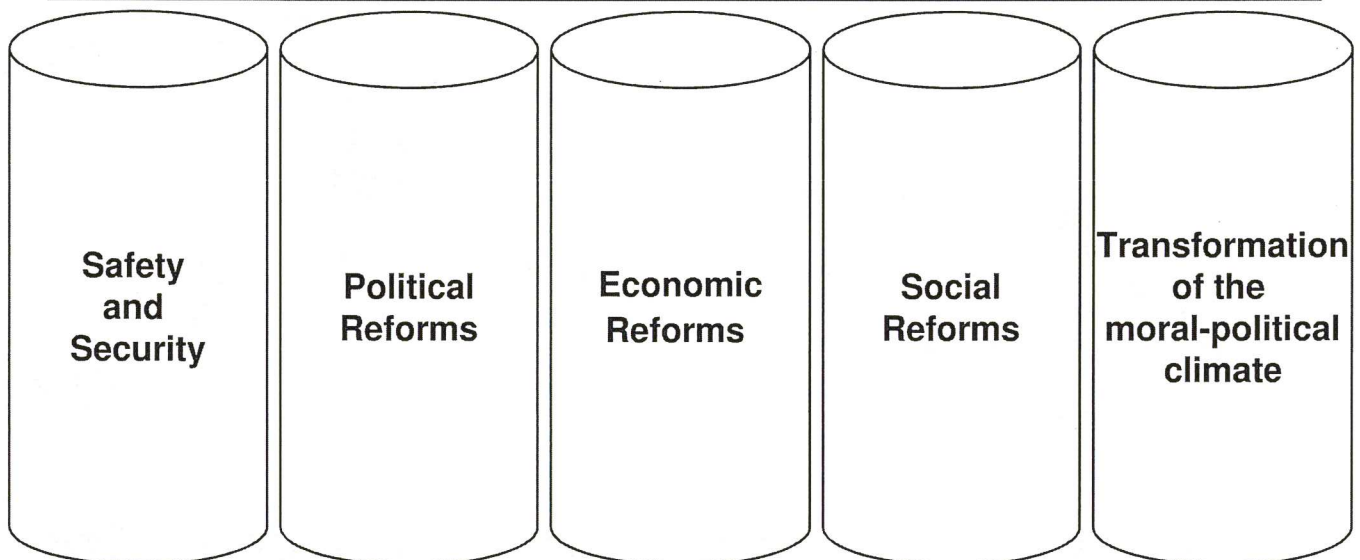
The term **SUSTAINABLE PEACE** refers to a situation characterized by

- ▶ the absence of physical violence,
- ▶ the elimination of unacceptable political, social, economic and cultural forms of discrimination
- ▶ a high level of internal and external legitimacy or support
- ▶ self-sustainability and
- ▶ a propensity to enhance the constructive transformation of conflicts

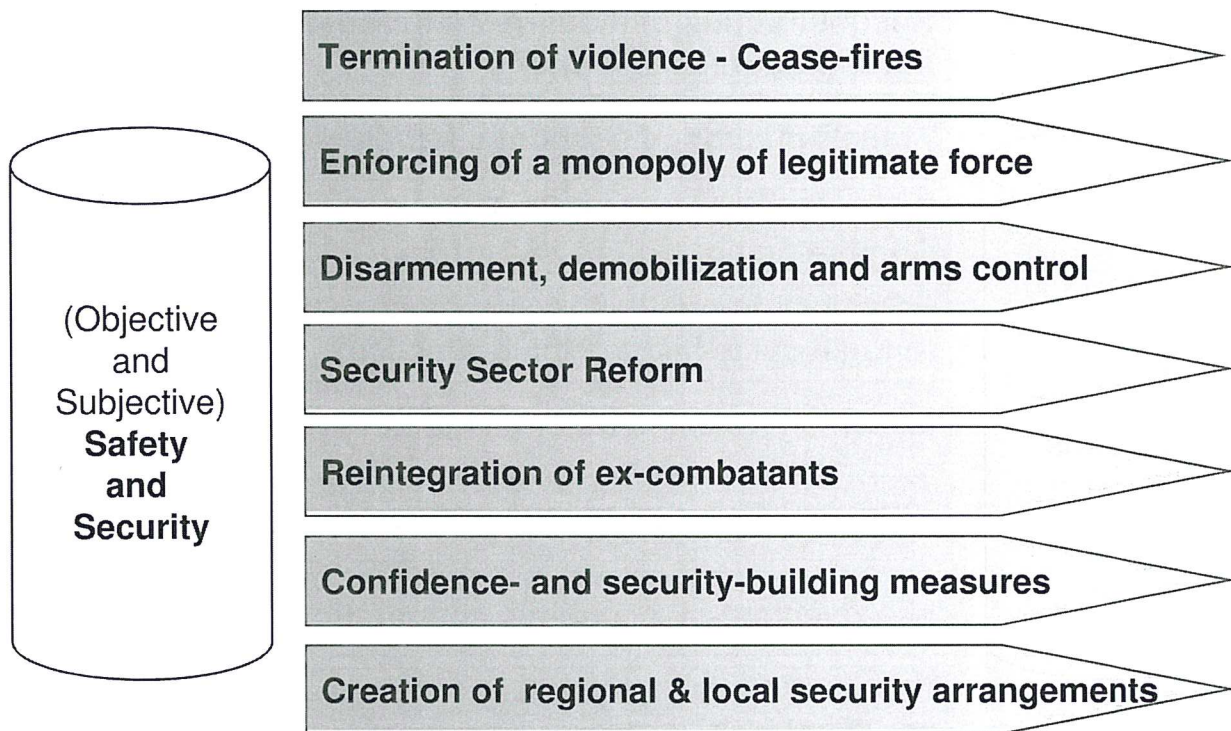
Luc Reychler (2000)

Building Sustainable Peace

Essential requirements for the creation of sustainable peace



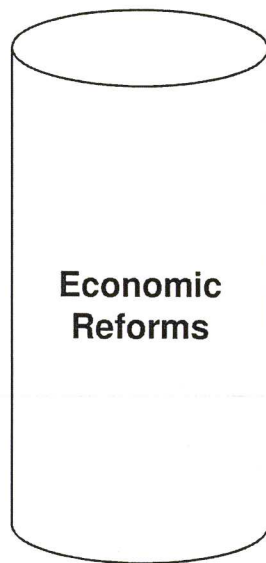
Multidimensional Peace-Building



Multidimensional Peace-Building



Multidimensional Peace-Building



Reconstruction of industry and production, infrastructure and markets

Transformation of economic structures

Degradation of sinecures and pensions economy
Combating corruption and crime

Establishing public financial management tools
(budget cycle and planning process)

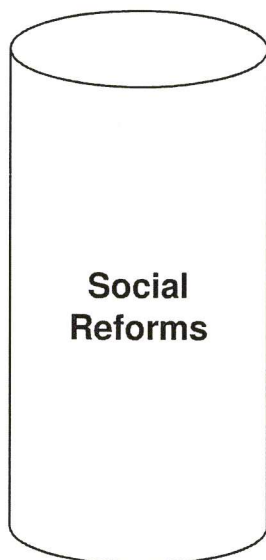
Building a free and efficient market system

Education and training of managers

Improvement of economic cooperation

Repatriation or resettlement of refugees
and displaced people

Multidimensional Peace-Building



Ensuring the provision of public health

Expanding and improving education

Combating poverty

Ensuring social protection and job creation

Upgrading gender equality

Promoting equity of public resource use

Building human resources

Multidimensional Peace-Building

Transformation of the moral-political culture

Transitional Justice

Reconciliation and re-establishing normal relations between belligerents

Reintegration of ex-combatants, refugees and displaced people

Building independent media and training journalist

Peace education

Developing rules and procedures for peaceful dealing with conflicts

Training in conflict management and resolution



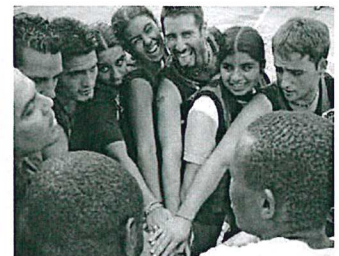
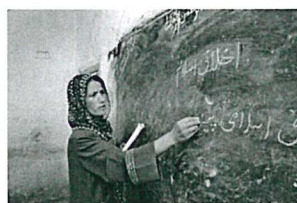
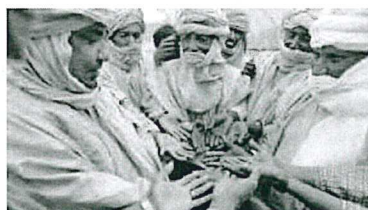
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Protagonists in Process of Peacebuilding



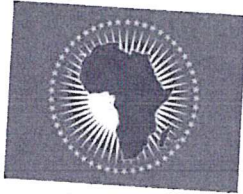
The leadership and the people of the country themselves need to be the owners of the peacebuilding process!



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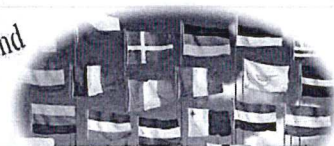
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Protagonists in Processes of Peacebuilding



International support is thoroughly needed!

Therefore the international community is very much engaged in all parts of the world, where people are faced by insecurity and instability, violence, crises or wars.



Governments and governmental organisations of various states



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International Engagement in Peacebuilding-Processes



International engagement will not by itself put an end to violence, insecurity, and instability.

International actors can affect outcomes in peacebuilding processes in both positive and negative ways.

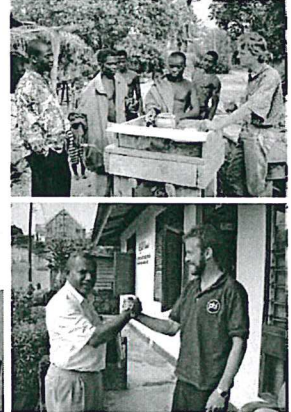


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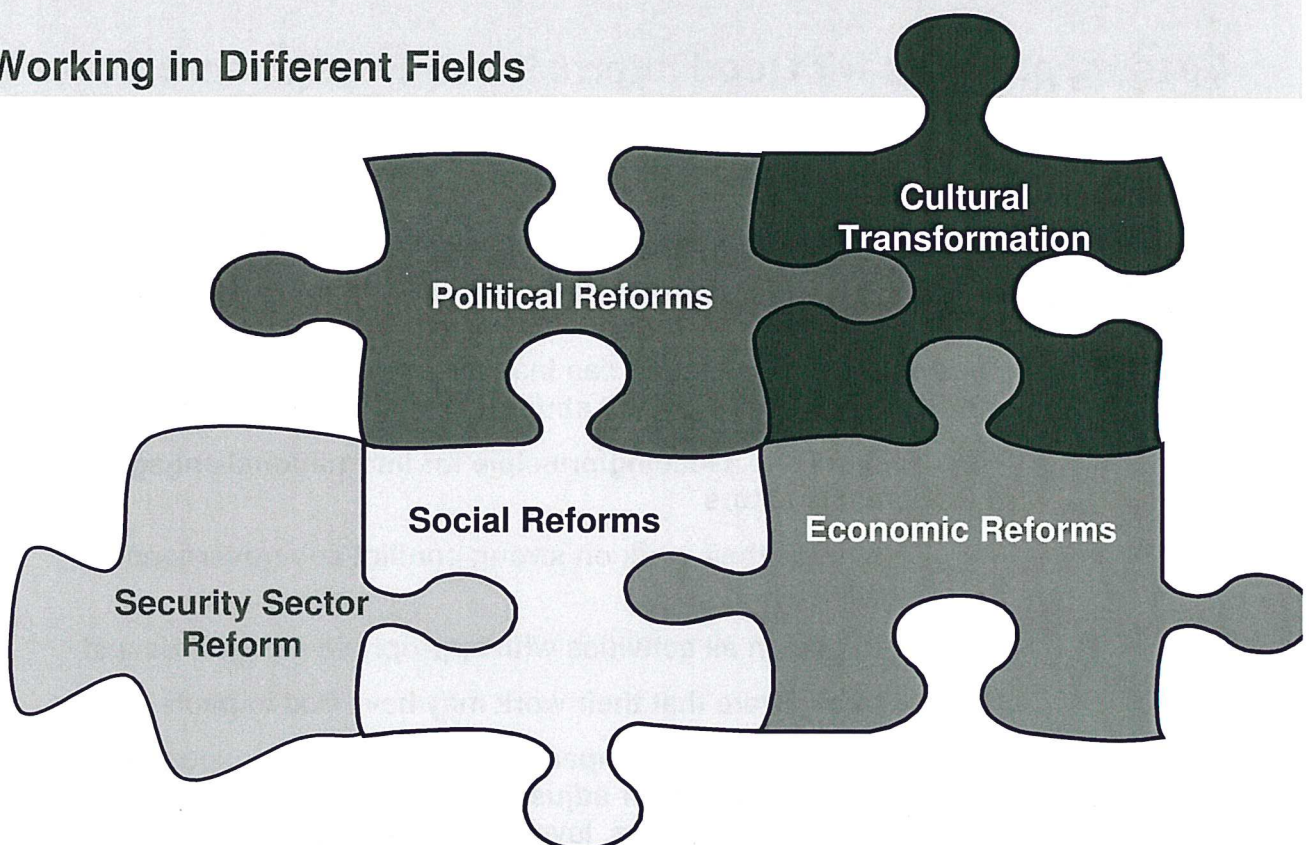
Good International Engagement in Peacebuilding-Processes

Successful intervention depends on

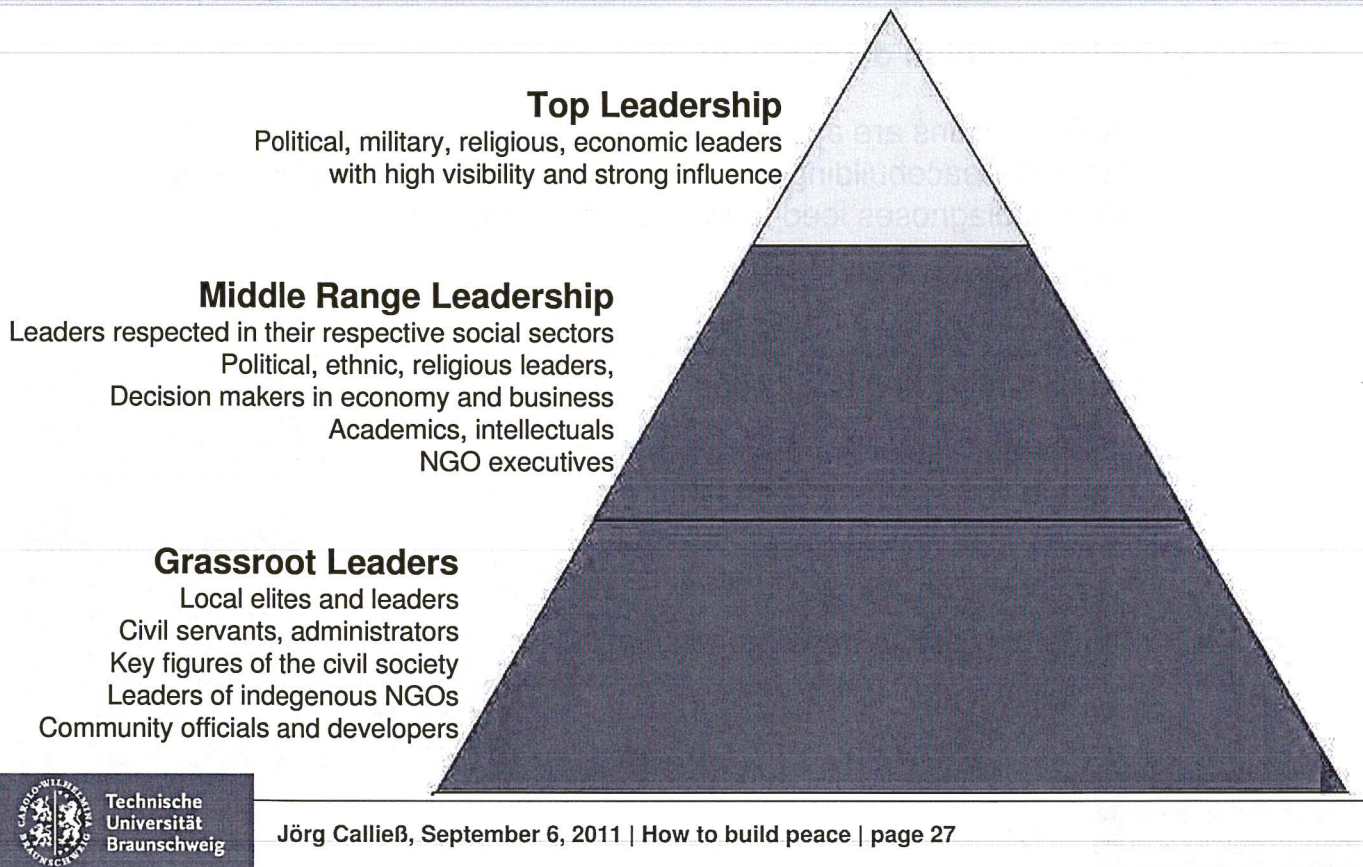
- ▶ whether actions are appropriate to the conflict sources and stages. (Effective peacebuilding needs thorough analysis and diagnoses! Different diagnoses lead to radically different policy solutions!)
- ▶ whether actors have sensitivity for the cultural and social context.
- ▶ whether actors select appropriate partners and are able to evolve a trusting and cooperative partnership,
- ▶ whether both actors and partners have a common vision of a peaceful future and can develop a coherent peace plan and design an effective implementation of the plan.
- ▶ whether the actors have professional skills and the willingness to apply „lessons learned“



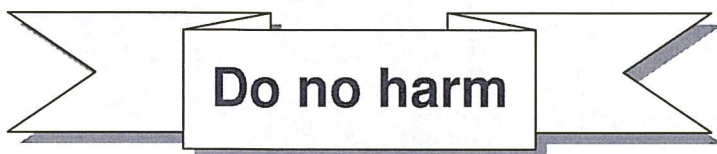
Working in Different Fields



Working on Different Levels



Leading principle for Good International Engagement



International intervention can inadvertently create societal division and worsen corruption and abuse, even discord and violence.

„Do no harm!“ is a leading principle for international engagement that commits actors

- to base their work on strong conflict and governance analysis,
- to design all activities with appropriate safeguards and
- to be aware that their work may have bad impacts
- to perceive such impacts attentively and to respond with careful reversal or adjustment of their support modalities, levels, and instruments.

Is there a Bridge from War to Peace?

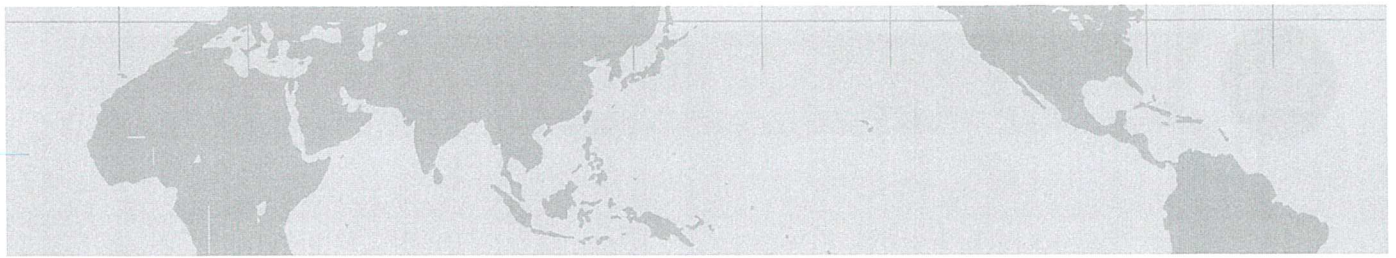


Essential for the building of a sustainable peace is the establishment of a series of peace-enhancing structures in all areas and on all levels of state and society.

Equally important is the comprehensive interconnection of all the efforts that are directed towards sustainable peace.

Farben der TU Braunschweig

| | | | | | | | | | | |
|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|--|-----------------------|------------------------|-------------------------|-------------------------|-------------------------|
| R 190 G 30 B 60 | | | | | | R 8 G 8 B 8 | R 95 G 95 B 95 | R 150 G 150 B 150 | R 192 G 192 B 192 | R 221 G 221 B 221 |
| R 255 G 205 B 0 | R 255 G 220 B 77 | R 255 G 230 B 127 | R 255 G 240 B 178 | R 255 G 245 B 204 | | R 198 G 238 B 0 | R 215 G 243 B 77 | R 226 G 246 B 127 | R 238 G 250 B 178 | R 244 G 252 B 204 |
| R 250 G 110 B 0 | R 252 G 154 B 77 | R 252 G 182 B 127 | R 253 G 211 B 178 | R 254 G 226 B 204 | | R 137 G 164 B 0 | R 173 G 191 B 77 | R 196 G 209 B 127 | R 219 G 228 B 178 | R 231 G 237 B 204 |
| R 176 G 0 B 70 | R 192 G 51 B 107 | R 215 G 127 B 162 | R 235 G 191 B 209 | R 243 G 217 B 227 | | R 0 G 113 B 86 | R 77 G 156 B 137 | R 140 G 191 B 179 | R 191 G 219 B 213 | R 218 G 234 B 231 |
| R 124 G 205 B 230 | R 164 G 220 B 238 | R 189 G 230 B 242 | R 215 G 240 B 247 | R 229 G 245 B 250 | | R 204 G 0 B 153 | R 222 G 89 B 189 | R 235 G 153 B 214 | R 245 G 204 B 235 | R 250 G 229 B 245 |
| R 0 G 128 B 180 | R 77 G 166 B 203 | R 140 G 198 B 221 | R 191 G 223 B 236 | R 217 G 236 B 244 | | R 118 G 0 B 118 | R 152 G 64 B 152 | R 186 G 127 B 186 | R 214 G 178 B 214 | R 235 G 217 B 235 |
| R 0 G 83 B 116 | R 64 G 126 B 151 | R 140 G 177 B 192 | R 191 G 212 B 220 | R 217 G 229 B 234 | | R 118 G 0 B 84 | R 156 G 77 B 136 | R 193 G 140 B 178 | R 221 G 191 B 212 | R 235 G 217 B 230 |



Introduction to International Political Economy (IPE)

Summerschool on Water and International Relations

Gerald Heere, M.A.

Institute of Social Sciences, University of Braunschweig



I) What is IPE?

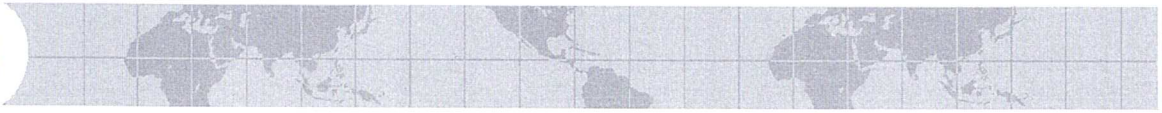
II) Welfare as a goal of politics

III) Liberal theory about global markets

IV) Markets in IPE

V) What can International Politics do?

VI) Different Governance Modes in IPE



I) What is IPE?

II) Welfare as a goal of politics

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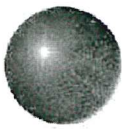
V) What can International Politics do?

VI) Different Governance Modes in IPE



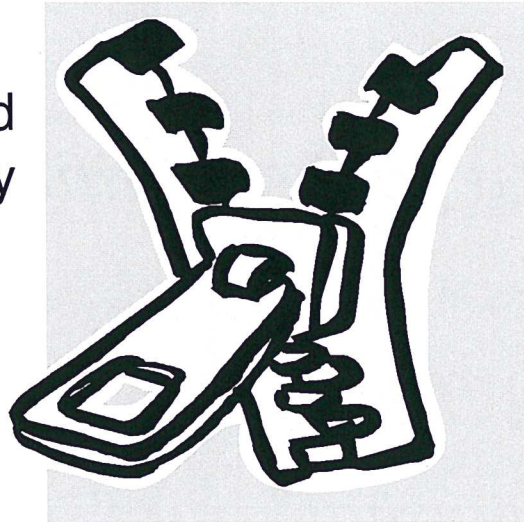
Definition IPE

- ⊕ “International Political Economy (IPE) is a discipline that deals with the international economic relations and the policy upon it.” (Menzel 2004; transl. GH)
- ⊕ “Theories of International Political Economy (IPE) cope with the interactions between politics and the economy in the international sphere.” (Schirm 2007; transl. GH)
- ⊕ “Core element of IPE-theories are causal statements about the impact of political decisions and structures onto economic developments and vice versa.” (Schirm 2007; transl. GH)



Linkage of fields in IPE

World
Economy



International
Relations (Politics)

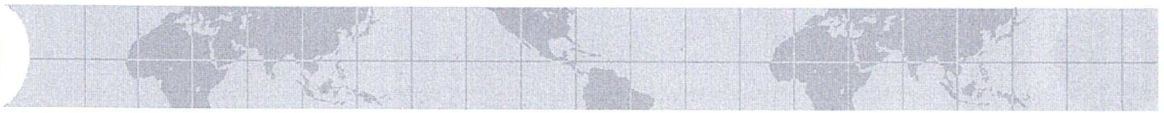
International
Political
Economy



Range of topics in IPE

⊕ IPE copes with...

- ▣ the progress and character of globalization;
 - ▣ the development of international trade and production;
 - ▣ mechanisms, dynamics and political regulation of international markets;
 - ▣ the processes of socio-economic development, dependence and underdevelopment (or north-south-relations);
 - ▣ international regimes and institutions (e.g. WTO, IMF, Worldbank, G20);
 - ▣ the role of important national actors (e.g. USA, China)
 - ▣ the influence of non-state actors (e.g. TNC'S, expert-networks, NGO's)
 - ▣ processes of regional integration (e.g. EU, NAFTA, MERCOSUR).
- (Bieling 2007, transl. GH)



I) What is IPE?

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What means „Welfare“?

✦ **Synonyms:**

- ✦ satisfaction of basic needs
- ✦ material well-being
- ✦ quality of life
- ✦ ...

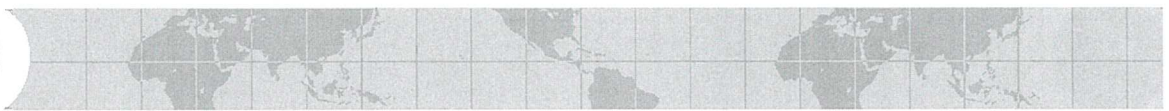
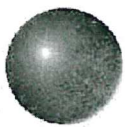
✦ **Aspects:**

- ✦ Income
- ✦ Health
- ✦ Cultural achievements
- ✦ Environmental quality
- ✦ ...



National policies to promote welfare

- Good conditions for the economy
- Stable national institutions for reliable economic activities (e.g. rule of law, effective judicial system, antitrust division...)
- Social insurance, social balance, basic needs promotion, redistribution; ecological protection measures
- International cooperation: e.g. treaties
- Incorporation into the international division of labor
- Isolation measures: e.g. tariffs, non-tariff trade barriers, import restrictions ...



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Question:

- ⊕ Why do we need an international economy for the national welfare?



Welfare dilemma

- ⊕ “If all actors try to raise their share of the ‘world economic cake’ unilaterally, some of them will have success at short term, but at long term, the cake will shrink” (Rittberger et al. 2010, transl. GH)
 - ⊞ National isolation and trade-barriers do not pay off (in most cases)!
- ⊕ A „Wealth of Nations“ is possible via cooperation
- ⊕ Welfare is not a relative but an absolute good! (Smith, Ricardo)

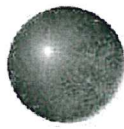
(* More critical economic theories exist, this focus on liberal theory is only to show my general point)



Ricardo-Theorem

(workload in hrs per one good without specialization)

| | Portugal | England | sum |
|-------|----------|---------|-----|
| wine | 80 | 120 | 200 |
| cloth | 90 | 100 | 190 |
| sum | 170 | 220 | 390 |



Ricardo-Theorem

(workload in hrs for the doubled amount of the good after international specialization)

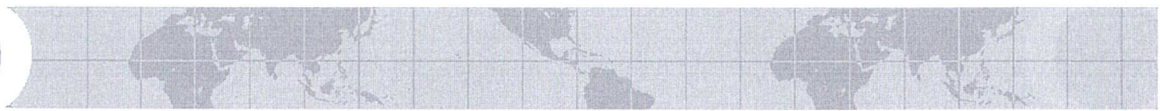
| | Portugal | England | sum |
|-------|------------|------------|------------|
| wine | 80 160 | 120 0 | 200 160 |
| cloth | 90 0 | 100 200 | 190 200 |
| sum | 170 160 | 220 200 | 390 360 |

Upper left = workload before international specialization



Ricardo ff.: Recommendations

- ⊕ Specialization onto economic sectors with international advantages at factors of production
 - ⊠ land (= natural capital; that includes water and the products that base on water)
 - ⊠ labor
 - ⊠ capital
 - ⊠ human capital
- ⊕ Freetrade of all the other goods & services
⇒ Incorporation into the international division of labor



Specialization

| Product | produced in states with advantages at following factors of production |
|---|---|
| ● commodities | ● land (natural-capital) |
| ● intermediate-products; light-industry | ● labor (low wages) |
| ● high-tech industry | ● capital |
| ● R&D | ● human capital |
| ● (mobile) services | ● labor (low wages) |
| ● (immobile) services | ● <i>mobile labor (low wages)</i> |



I) What is IPE?

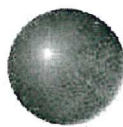
II) Welfare as a goal of politics

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Markets in IPE

⊕ Goods

⊕ Services

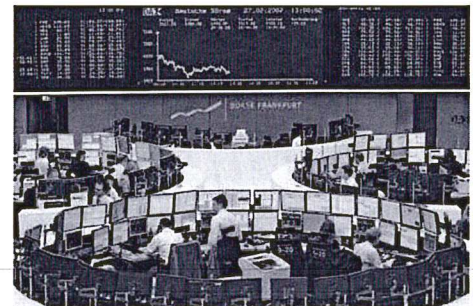
⊕ International Trade

⊕ Financial Markets



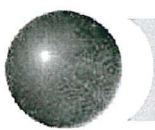
Financial Markets

- Foreign currency market for international payment transactions
- Credit market (or primary stock market) to provide capital for investments
- Market for capital investments



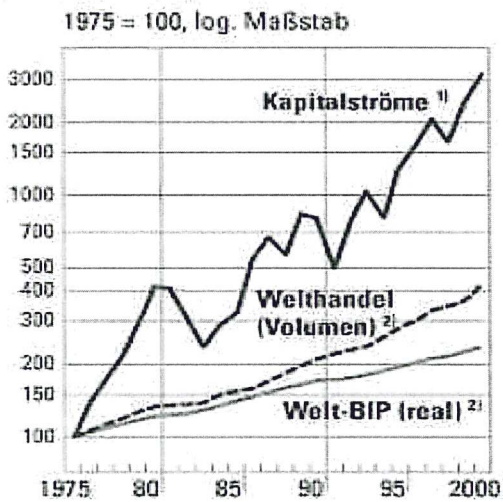
Tasks of Financial Markets

- Transaction instrument of „real“ economy
 - Goal: Financing of investments
 - Model: bringing together persons with ideas and persons with capital; the profit of the investment pays out for the interest.
 - „Positive-sum-game“! (Schulmeister 2009)
- Speculation instrument
 - Goal: produce a profit through the exchange of different „kinds of money“ (currencies, shares, bonds etc.)
 - Long term speculation can be a „positive-sum-game“!
 - Short term speculation is a „zero-sum-game“!



Trade vs. Financial Markets

Internationaler Kapitalverkehr,
Welthandel und Produktion



(Logarithmic scale!)

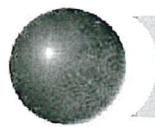
International capital transactions
(sum of international FDI)

World trade (volume-index)

World GNP (real)

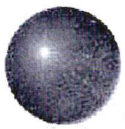
1. Summe aus inländischen Kapitalanlagen im Ausland und ausländischen Kapitalanlagen im Inland; alle Länder.
2. Indizes gebildet aus Veränderungsrate.

Quelle: IWF, Deutsche Bundesbank



Growth of trade and financial transactions

- Why does trade grow?
 - ☒ Advantages of Specialization
 - ☒ Efficient use of factors of production
 - ☒ Cost-reduction (wages, taxes, subsidies, environmental regulations etc.)
 - ☒ Jump the tariff and bypass exchange-rate fluctuations
 - ☒ Lower transport costs, opening up new markets
 - ☒ Utilization of scale effects
 - ☒ Background: real economy
- Why do financial transactions grow more?
 - ☒ Liberalization of financial markets in 1970s
 - ☒ Unregulated off-shore markets arise
 - ☒ New market actors come into existence
 - ☒ New (risky) financial instruments emerge
 - ☒ More speculation, rising volume, higher profits
 - ☒ Background: predominantly no real economy



Consequences of liberal (financial) markets

⊕ Positive consequences

- ⊞ Higher profits possible
- ⊞ Better usage of capital as factor of production
- ⊞ Prerequisite for investment and economic growth

⊕ Negative consequences

- ⊞ Capital often flows to investments with high profit expectation – and not where its needed
- ⊞ Instability due to very short-termed profit expectation
- ⊞ Financial markets decoupled from real economy
- ⊞ Financial and economic crisis



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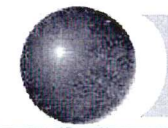
From traditional Government to modern Governance

- ⊕ Traditional: National government governs in a sovereign nation state as ultimate authority and solves its internal problems
- ⊕ Due to globalization and interdependence sovereignty and territoriality are under stress
- ⊕ National politics are no longer effective in every respect, states cannot reach all goals alone
- ⊕ That's why governing has to globalize
- ⊕ Because of the lack of an ultimate authority at international level horizontal Governance takes the place of vertical Government. (Brozus/Zürn 2003)

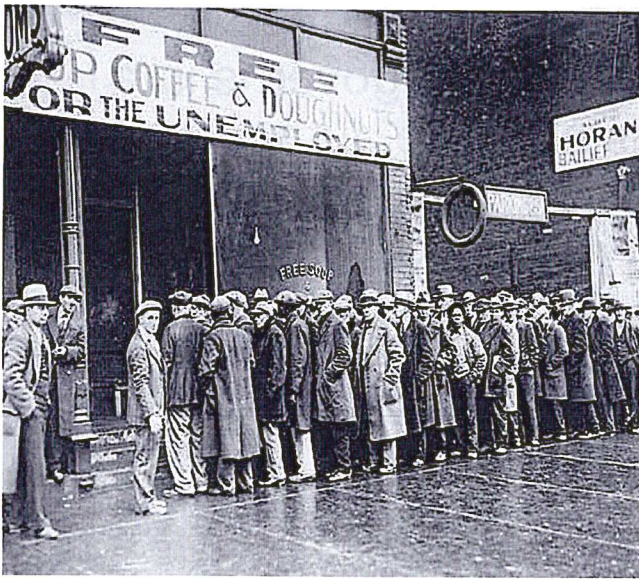


Reasons for internat. pol. cooperation

- ⊕ Provisions to promote the effective operation of the (world) market („effectivation“)
 - ⊞ Reasons for ineffective operation of (world) market are mostly national policies
 - ⊞ Provisions are e.g. multilateral treaties to reduce trade barriers
- ⊕ Provisions to correct market failures („regulation“)
 - ⊞ Market failure = disincentive of the market to the disadvantage of collective wealth
 - ⊞ Address e.g. underproduction or overconsumption of collective goods, social exclusion, opportunity of fraud because of shortcomings in the law etc.



Case I: World-Economic-Crisis 1929ff.

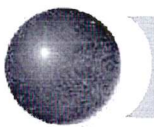


⊕ Problem: „beggar thy neighbor“-policy as answer

- ❑ Artificial devaluation of currencies
- ❑ Protectionist policies (Sterling-Block, Yen-Block, Smoot-Hawley-Tarrif (US))

⇒ Crisis worsened

⇒ Reason: world market worked ineffectively because of national self-help policies; „Effectivation“ as solution

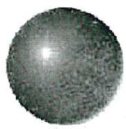


Case I: World-Economic-Crisis 1929ff.

⊕ Political answer „Effectivation“ (after 2nd World War):

- ❑ Trade liberalization via GATT agreement
 - Reduction of tarriffs
 - Most favored nation & national treatment principles
 - Reciprocity, transparency...
 - Later founding of WTO
- ❑ Fixed exchange rates in Bretton Woods agreement (-1971)
 - Politically Fixed exchange rates
 - Dollar-Gold exchange guarantee, US-\$ as reserve currency
 - Founding of IMF
 - National capital controls, few capital flows
 - No risky speculation, not crisis-prone

⇒ liberal world economy via ¹³⁰ strict financial system



Case II: Contemporary financial crisis

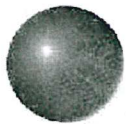
⊕ Examples:

- ⊞ Debt crisis in Latin-Amerika (1980s)
- ⊞ East-/Southeast-Asia, Russia (1997/98)
- ⊞ Brasil (1999)
- ⊞ Dotcom-Bubble (2000)
- ⊞ Turkey, Indonesia, Argentina (2001)
- ⊞ Housing-Bubble/Financial market crisis (2007ff.)

⊕ Expansion:

- ⊞ Developing Countries → Emerging Countries →
Developed Countries

⇒ Reason: market failure; „Regulation“ as solution



Case II: Contemporary financial crisis

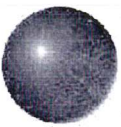
⊕ Political answer „Regulation“

- ⊞ Founding of Financial Stability Board
- ⊞ International standards for national regulation
 - Supervision standards
 - Sound manager compensation
 - Risk management
 - Oversight over investment agencies
 - ...
- ⊞ Basel III rule for capital requirements of banks
- ⊞ Founding of European Stability Mechanism
- ⊞ ...



More examples for political cooperation

- Provisions to correct market failures („regulation“)
 - Global work and social standards set by ILO
 - Global reduction of emissions, e.g. carbondioxide by Kyoto-Protocoll
 - Preferential agreements for primary good producers
 - Regulation of financial markets by soft law and international agreements
- Provisions to promote the effective operation of the (world) market („effectivation“):
 - Reduction of non-tariff trade-barriers or subsidies by GATT/WTO-agreement
 - Introduction of a Common European Currency
 - Regional water-treaties to promote water-cooperation and small-scale specialization



I) What is IPE?

II) Welfare as a goal of politics

III) Liberal theory about global markets

IV) Markets in IPE

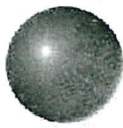
V) What can International Politics do?

VI) Different Governance Modes in IPE

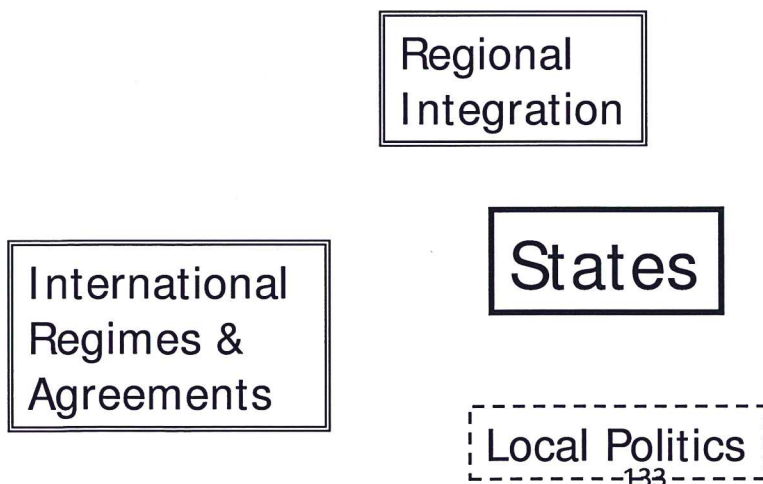


Governance Modes in IPE

- ⊕ International Anarchy/Market
- ⊕ International Hegemony/Unilateralism
- ⊕ **Multilateralism/Global Economic Governance**
 - ▣ Definition: The multilateral, rule based management of the world economy by private and state actors “ (Schirm 2007, transl. GH)



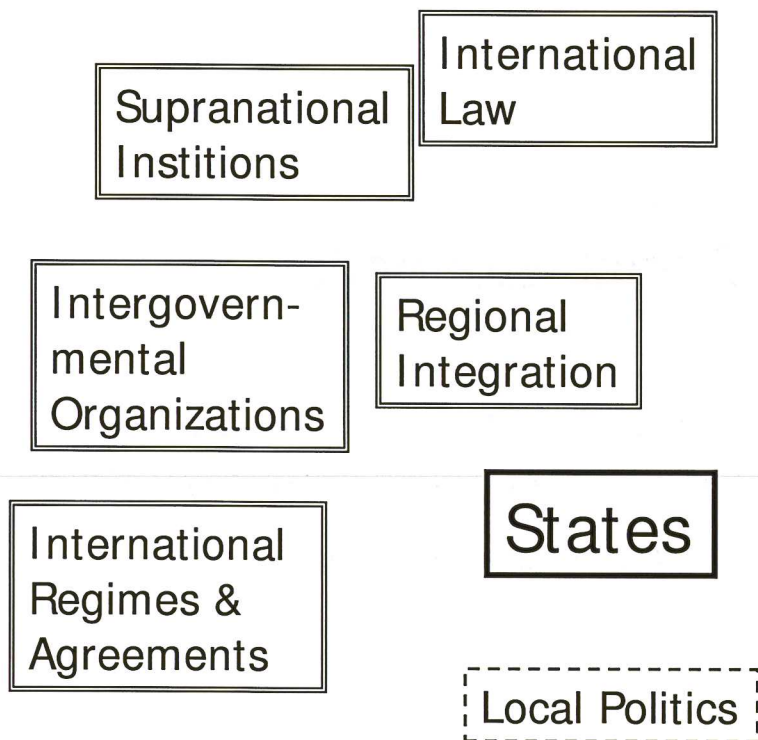
Global Governance „Architecture“



(Messner/Nuscheler 1997; expanded by GH)



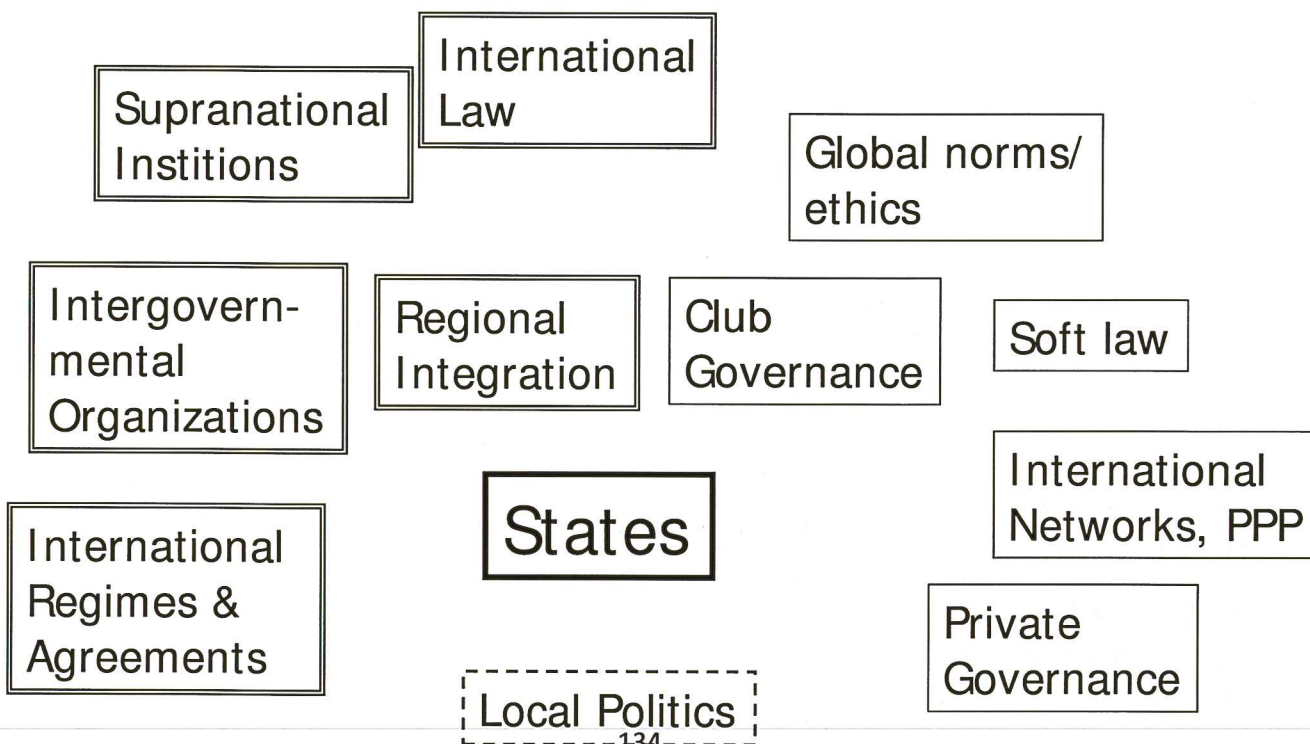
Global Governance „Architecture“



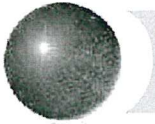
(Messner/Nuscheler 1997; expanded by GH)



Global Governance „Architecture“

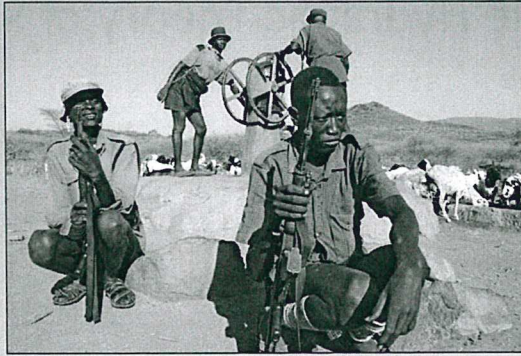


(Messner/Nuscheler 1997; expanded by GH)



Global Governance „Architecture“





Prof. Dr. Ulrich Menzel

Water Politics

Summer School on Water and International Relations
Sept. 5 - Sept. 15, 2011 — Technical University of Braunschweig

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www.ulrich-menzel.de

Contents

- 1) The Hydraulic Theory of Society
- 2) What is Water Politics (Hydropolitics) today?
- 3) Public Goods and Water
- 4) Water as Classical Case for Distribution Conflicts
- 5) Alternatives to the Classical Approach (Redistribution)

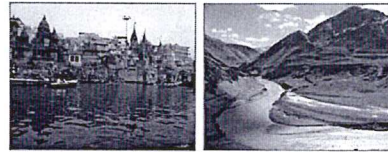
1. The Hydraulic Theory of Society

Early State Building and Formation of Society started in River Valleys

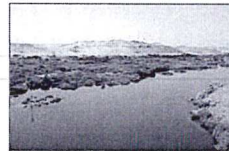
Yellow River (China)



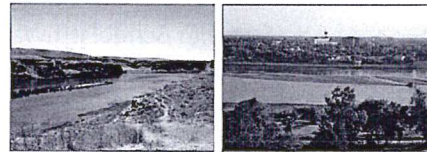
Ganges, Indus (India, Pakistan)



Nile (Egypt)



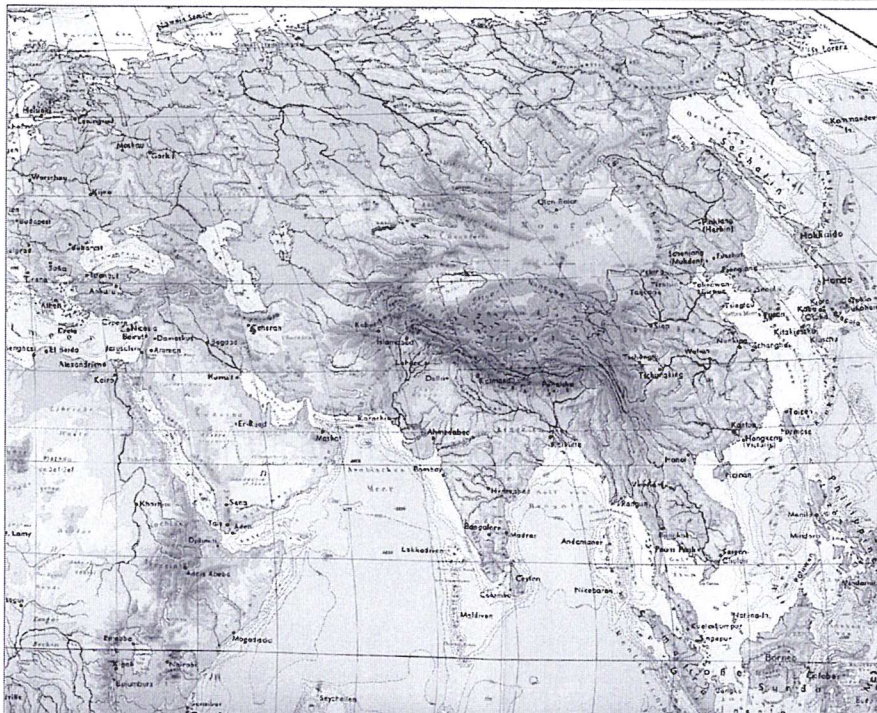
Euphrates/ Tigris (Iraq)



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September 8, 2011

Water Politics
Foil 3

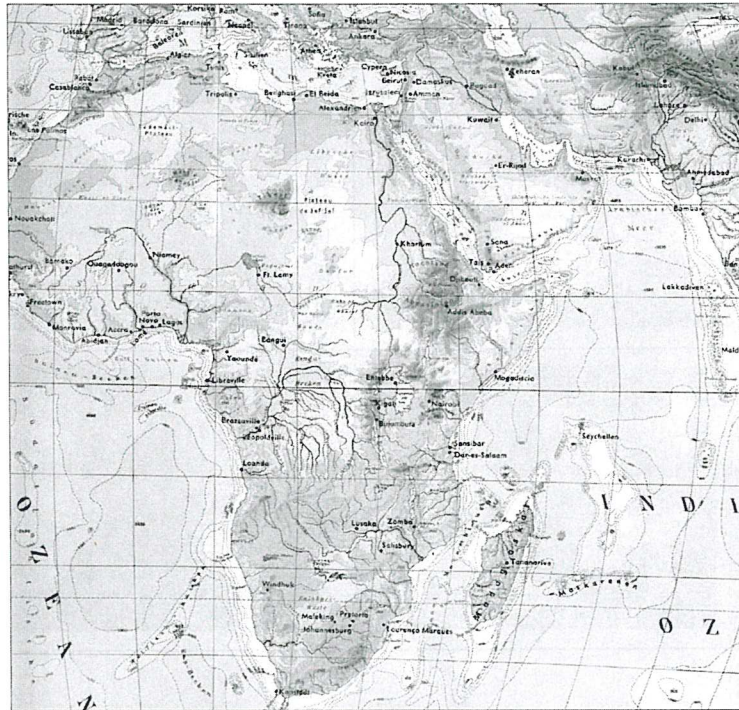
1. The Hydraulic Theory of Society



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Water Politics
Foil 4

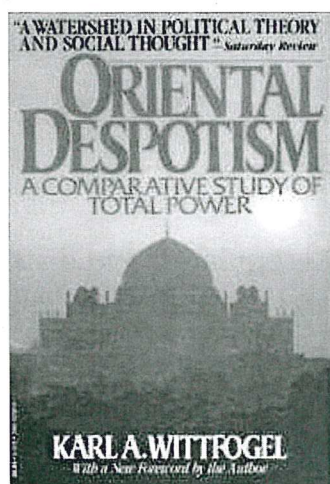
1. The Hydraulic Theory of Society



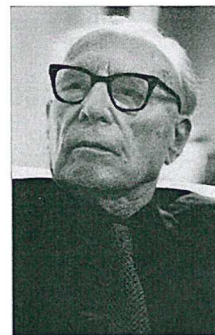
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Water Politics
Foil 5

1. The Hydraulic Theory of Society



1981
(reprint of 1957)

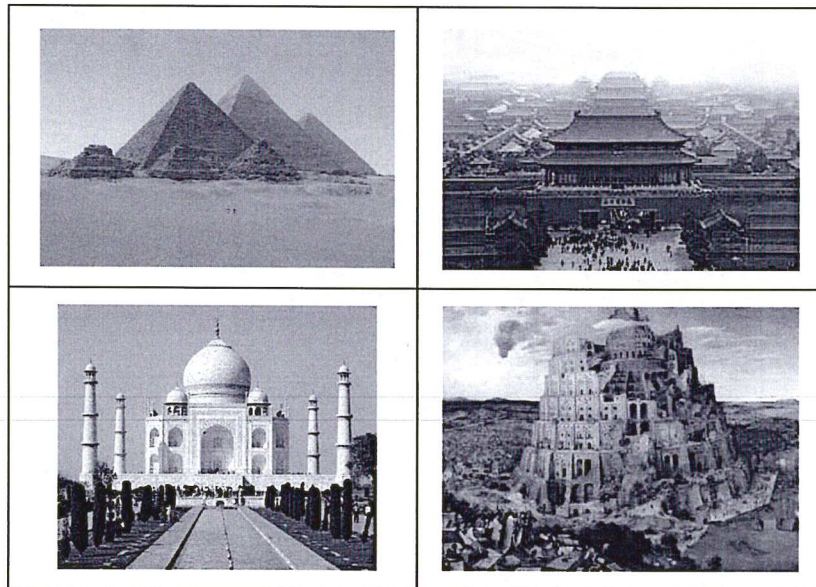


Karl A. Wittfogel
(1896-1988)

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Water Politics
Foil 6

1. The Hydraulic Theory of Society



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Water Politics
Foil 7

1. The Hydraulic Theory of Society

The high fertility of the soil in River valleys is the basis for high population growth

Artificial irrigation is the basis of agriculture

The available amount of water has to be regulated and distributed in the course of seasons by dikes, dams, reservoirs, canals, ditches, ponds etc.

To manage these tasks a bureaucracy is necessary

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Water Politics
Foil 8

1. The Hydraulic Theory of Society

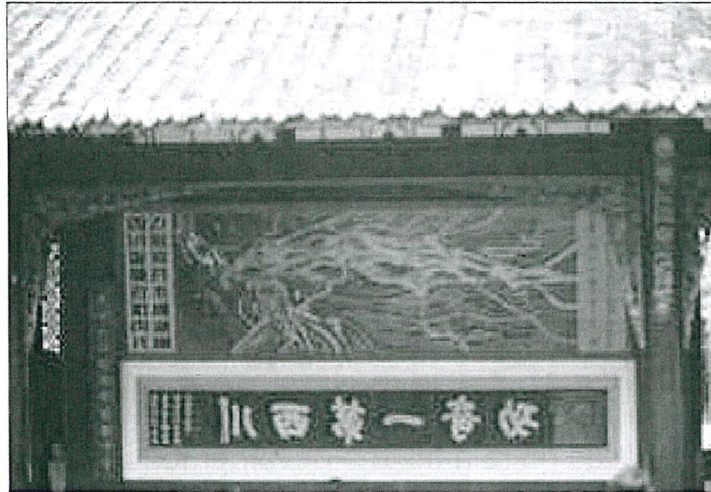


Foto Menzel

Wasserteiler von Daqiangyen

1. The Hydraulic Theory of Society

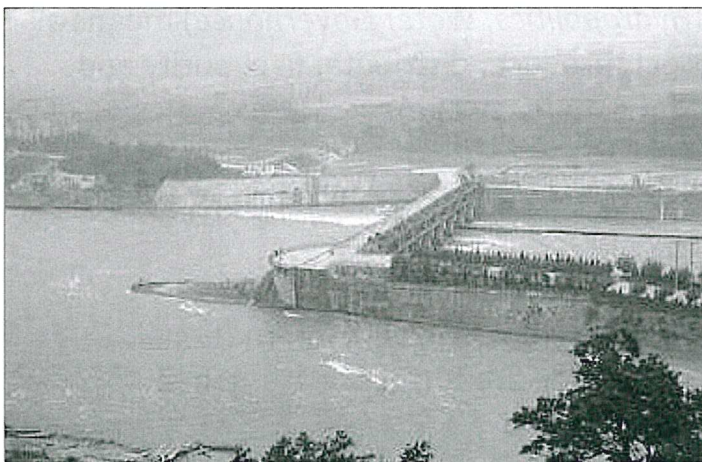


Foto Menzel

Wasserteiler von Daqiangyen



Foto Menzel

1. The Hydraulic Theory of Society

The water management on the village level promotes collectivism (opening of the dike means, all fields are flooded on the same day, planting and harvesting has to be coordinated)

The surplus produced by agriculture based on artificial irrigation is used to feed the pillars of the oriental state based in the capital (bureaucracy, military) and to finance the luxury consumption of the princes, mandarins and clergy and their prestigious buildings (palasts, temples, tombs)

If agriculture is based on rainfall, the development of state and society is completely different

Feudalism and later Capitalism instead of a Bureaucratic Society is the result

2. What is Water Politics (Hydropolitics) today?

The term *Water politics (Hydropolitics, Water Governance)* means all forms of regulation to collect, produce, distribute, use, purify and reuse fresh water and waste water (sewage).

Possible instruments are laws, ordinances, treaties, prices, subsidies, science and technology.

As far as a transboundary dimension is involved, international agreements and international trade are further instruments.

2. What is Water Politics (Hydropolitics) today?

Water politics can be part of

- development politics
- agricultural politics
- social politics
- economics
- environmental politics
- international politics

2. What is Water Politics (Hydropolitics) today?

Problems are different from country to country

- depending on the abundance or lack of water
- depending on artificial irrigation or irrigation by rain fall in agriculture
- depending on the factor, if agriculture, industry, households or tourism is the major consumer of water
- depending if the water available comes from internal resources or transboundary river basins or artifiers

3. Public Goods and Water

Public (or collective) goods are defined by Nonrivalry and Nonexclusion

| | | | |
|------------------|-----|-------------------|------------------|
| | | Rivalry | |
| | | yes | no |
| Exclusion | yes | ① private good | ② club good |
| | no | ③ common good | ④ public good |

3. Public Goods and Water

- ① Water as a *private good* is regulated by the market (cost and price of water and waste water)
collection, production, distribution, purification of water is organised by private actors
- ② Water as a *club good* is regulated by membership to a village, tribe etc.
collection etc. is organised by custom
- ③ Water as a *common good* is not regulated
everybody is free to collect etc. water
problem: tragedy of the commons! (Hardin, Garrett: *The Tragedy of the Commons*.
Science, 162 (1968), p. 1243-1248)
- ④ Water as a *public good* is regulated by law
collection etc. is organised by the state

Which alternative is given depends on the type of society, the level of development, the lack or abundance of water

4. Water as Classical Case for Distribution conflicts

Distribution conflicts with respect to water are the result of rivalry between users or exclusion of users

In case of nonrivalry or nonexclusion the probability of conflicts is less

Distribution conflicts *within societies* between

- farmers, villages, tribes
- large landowners vs. farmers
- agriculture, industry, households, tourism

Distribution conflicts *between states* in case of

- transboundary river systems
- of transboundary aquifers

4. Water as Classical Case for Distribution conflicts

The classical approach to overcome conflicts is redistribution of water

- a) by force
- b) by money
- c) by agreement

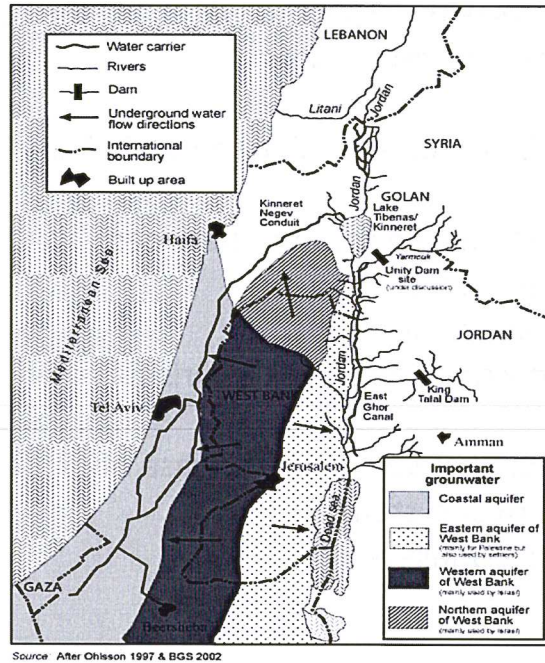
The use of force is a question of power

The use of money is a question of wealth

The use of agreement is a question of good will and sanctions in case of violation of agreements

4. Water as Classical Case for Distribution conflicts

The Jordan Basin and its tributaries, major aquifers, the riparians and water transfer system



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Water Politics
Foil 19

5. Alternatives to the Classical Approach (Redistribution)

- 1) producing of additional water by technical or economic means
- 2) water saving
- 3) efficient use of water
- 4) trade of virtual water
- 5) reuse of waste water

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Water Politics
Foil 20

5. Alternatives to the Classical Approach (Redistribution)

1) producing of additional water by technical or economic means



- drilling of wells



- collecting of rain by cisterns

- storing of flood water (wadi)



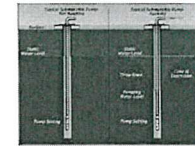
- pumping of fossil water from aquifers

- desalination of water



- importation of fresh water via pipelines, tankers, tubes, bottles

- vaccination of clouds



5. Alternatives to the Classical Approach (Redistribution)

1) producing of additional water by technical or economic means

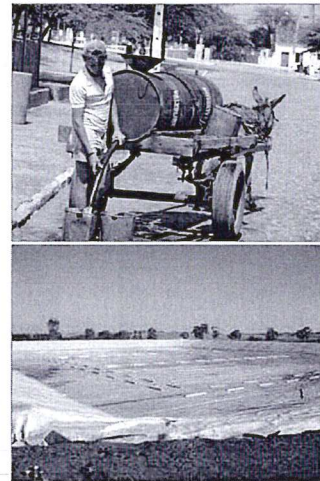
2) water saving

5. Alternatives to the Classical Approach (Redistribution)

2) water saving



- via prices
- repair of pipes etc.
- reducing evaporation
- etc.



5. Alternatives to the Classical Approach (Redistribution)

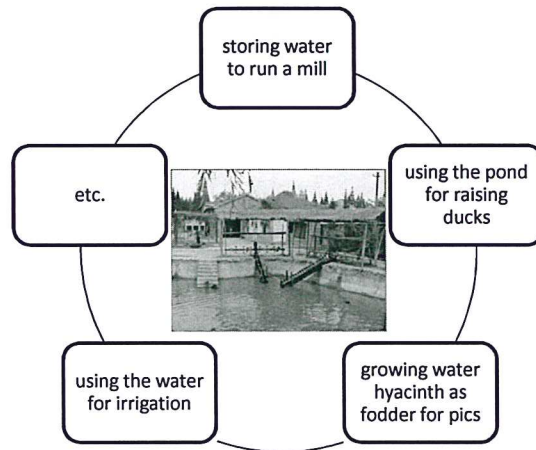
- 1) producing of additional water by technical or economic means
- 2) saving of water
- 3) efficient use of water

5. Alternatives to the Classical Approach (Redistribution)

3) efficient use of water



- trickle irrigation/ drip irrigation/ microirrigation
- Multiple use of water



5. Alternatives to the Classical Approach (Redistribution)

- 1) producing of additional water by technical or economic means
- 2) water saving
- 3) efficient use of water
- 4) trade of virtual water

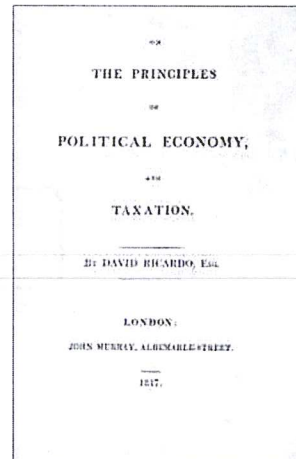
5. Alternatives to the Classical Approach (Redistribution)

4) trade of virtual water

The Modell of Comparative Advantages by David Ricardo



David Ricardo (1772-1823)



1817

5. Alternatives to the Classical Approach (Redistribution)

Comparative advantage (absolute)

amount of necessary labour (hours) **before** specialisation

| | Portugal | England | sum |
|-------|----------|---------|-----|
| wine | 80 | 120 | 200 |
| cloth | 100 | 90 | 190 |
| sum | 180 | 210 | 390 |

5. Alternatives to the Classical Approach (Redistribution)

Comparative advantage (absolute)
amount of necessary labour (hours) **after** specialisation

| | Portugal | England | sum |
|-------|--------------|--------------|--------------|
| wine | (80) 160 | (120) 0 | (200) 160 |
| cloth | (100) 0 | (90) 180 | (190) 180 |
| sum | (180) 160 | (210) 180 | (390) 340 |

values in brackets = division of labour **before** specialisation

5. Alternatives to the Classical Approach (Redistribution)

Comparative advantage (relative)
amount of necessary labour (hours) **before** specialisation

| | Portugal | England | sum |
|-------|----------|---------|-----|
| wine | 80 | 120 | 200 |
| cloth | 90 | 100 | 190 |
| sum | 170 | 220 | 390 |

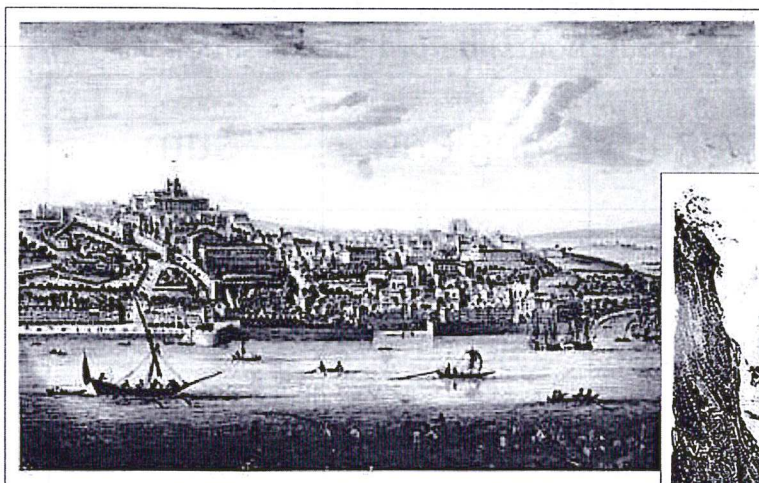
5. Alternatives to the Classical Approach (Redistribution)

Comparative advantage (relative)
amount of necessary labour (hours) **after** specialisation

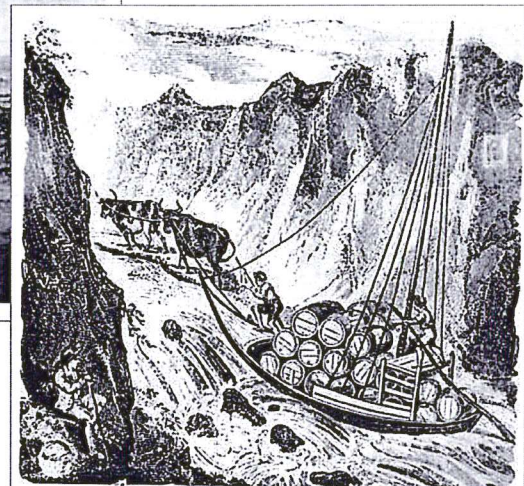
| | Portugal | England | sum |
|-------|---------------------|---------------------|---------------------|
| wine | (80) 160 | (120) 0 | (200) 160 |
| cloth | (90) 0 | (100) 200 | (190) 200 |
| sum | (170) 160 | (220) 200 | (390) 360 |

values in brackets = division of labour **before** specialisation

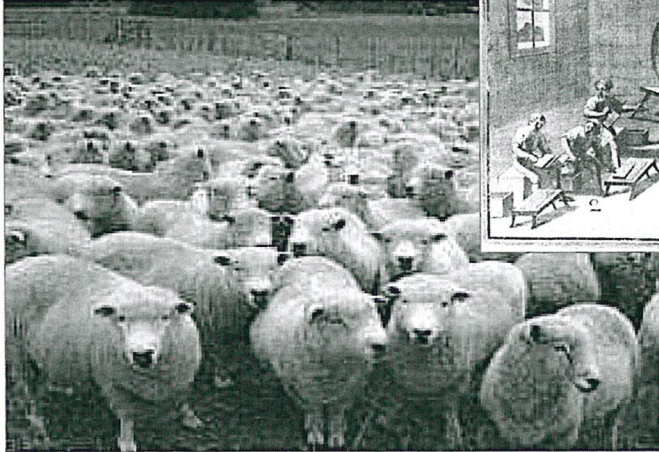
Portugal – wine industry



View of Oporto
and
Transport of wine on the Douro around 1780



England – woolen industry



Woolen mill around 1750

5. Alternatives to the Classical Approach (Redistribution)

4) trade of virtual water

- England is a rainy country

good conditions for pasture and raising sheeps
specialisation in woolen goods (cloth)

- Portugal is a sunny country

good conditions for growing rapes (deep roots)
specialisation in wine (Portwine)

5. Alternatives to the Classical Approach (Redistribution)

- 1) producing of additional water by technical or economic means
- 2) water saving
- 3) efficient use of water
- 4) trade of virtual water
- 5) reuse of waste water

5. Alternatives to the Classical Approach (Redistribution)

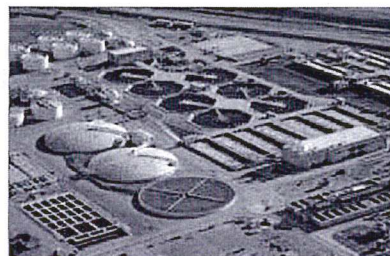
- 5) reuse of waste water

Waste water and reclaimed waste water as a public good

- big sewage treatment plant

Advantage: good quality of water
 good for the environment

Disadvantage: high price for water and waste water
 ambitious technical and management knowledge
 is necessary (→ Hydraulic Society)



5. Alternatives to the Classical Approach (Redistribution)

5) reuse of waste water

Waste water and reclaimed waste water as a private or club good

- Small sewage treatment plants

Advantage: low costs
easy to handle, no sophisticated
technical knowledge necessary
low managerial effort



Disadvantage: quality of reclaimed water is poor (no drinking water)
use of reclaimed waste water is limited to irrigation,
toilet flush, cooling in industry, irrigation of green spaces,
sport grounds etc.
low acceptance by consumers by reasons of quality

5. Alternatives to the Classical Approach (Redistribution)

Alternatives to the redistribution of water can offer contributions to

- development in arid zones
- conflict resolution in case of redistribution conflicts
- solve environmental problems



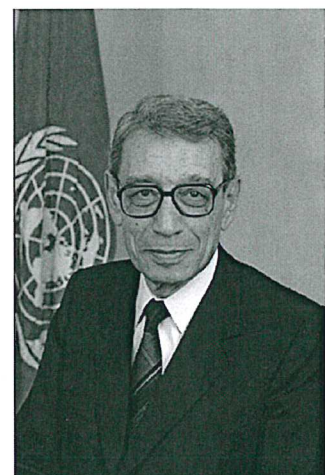
Water and Conflict

Michael Fürstenberg, M.A. | Summer School on Water and International Relations

The future seems bleak...

- "The next war in the Middle East will be fought over water, not politics" (1985)
- "Water will be more important than oil this century" (2003)

Former United Nations Secretary General
Boutros Boutros Ghali



The future seams bleak...

WATER WARS

by Joyce R. Starr

The Middle East water crisis is a strategic orphan that no country or international body seems ready to adopt. Despite irrefutable evidence that the region is approaching dangerous water shortages and contamination, Western leaders have so far failed to treat the issue as a strategic priority. Yet when the current Persian Gulf war ends, the water crisis could erupt. This intensifying security issue requires sustained policy actions as well as new bureaucratic and consultative structures.

As early as the mid-1980s, U.S. government intelligence services estimated that there were at least 10 places in the world where war could break out over dwindling shared water—the majority in the Middle East. Jordan, Israel, Cyprus, Malta, and the countries of the Arabian Peninsula are sliding into the perilous zone where all available fresh surface and groundwater supplies will be fully utilized.

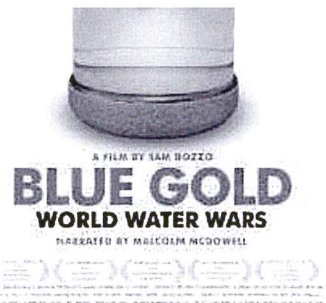
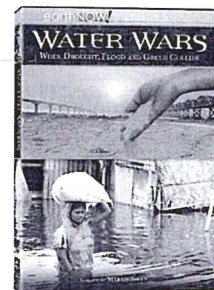
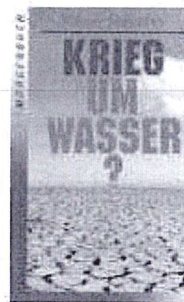
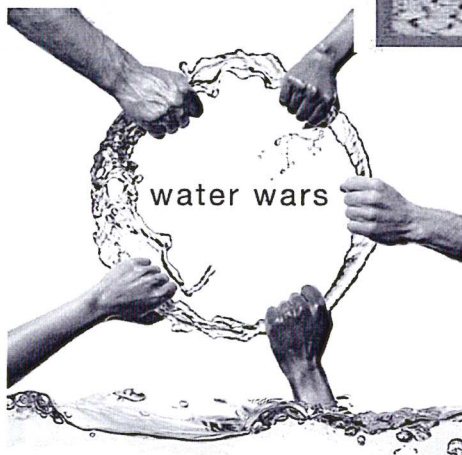
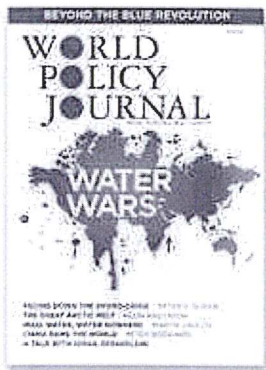
Foreign Policy No. 82, 1991



06.09. 2011 | Michael Fürstenberg, M.A. | Summer School on Water and International Relations| Seite 3



The future seams bleak...



06.09. 2011 | Michael Fürstenberg, M.A. | Summer School on Water and International Relations| Seite 4



Structure

1. How scarce is water?


2. How can water scarcity lead to (violent/armed) conflict?

→ analytical framework

3. Is there any actual evidence of „water conflicts“?

How scarce is water?

- From a political economy point of view, conflict is a result of an imbalance between supply and demand
- Resource scarcity implies that competition about a scarce good is a zero-sum game
- Regarding conflicts over water, only the available finite amount is important for systematic analysis (disregarding rainfall, evapotranspiration)

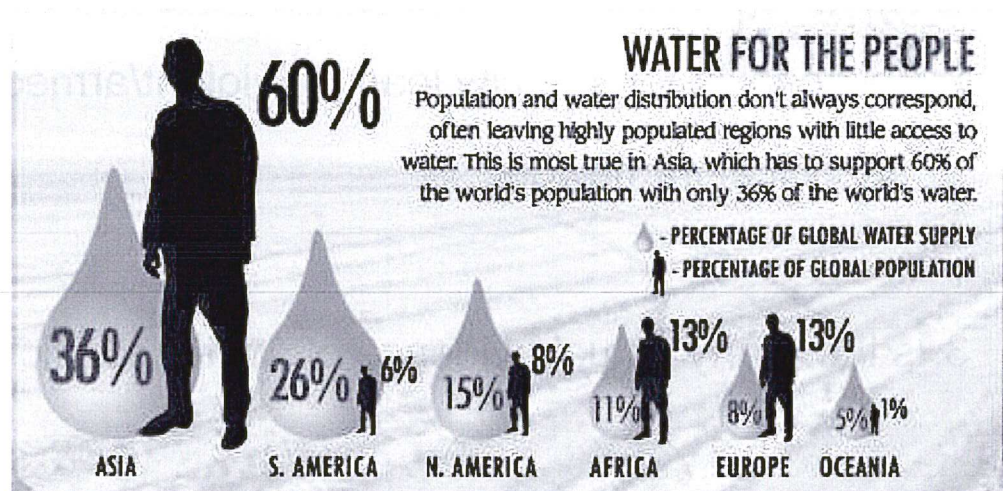
ity refers to available runoff, i.e. renewable flow replenishing rivers, lakes, groundwaters from which water for human use is taken

How scarce is water?

Total global annual runoff: About 40.700 km³

But:

- Unevenly distributed



How scarce is water?

Total global annual runoff: About 40.700 km³

But:

- Unevenly distributed
- Large part of runoff is geographically inaccessible
- Water must be available in a reliable manner (minimum river flow, groundwater, dams)

Accessible, permanently available flow: About 12.500 km³

How scarce is water?

Usage of water?

- Withdrawals for human activities in general
- Consumption, i.e. withdrawals of water which cannot be reused (agriculture, pollution)
- In-stream purposes (transportation, maintain wetlands etc.)

Total human use of water is about 55% of available runoff

How scarce is water?

Usage of water?

- Agriculture based on irrigation: ca. 65-70% (from which are ca. 65% consumption)
- Industry: ca. 20-25% (ca. 10% consumption)
- Household use: ca. 5-10% (ca. 17% consumption)
- Consumption through evaporation losses: ca. 5%

How scarce is water?

How to deal with scarcity from a policy point of view?

1. Increase supply

- Desalination, new dams, river projects etc.: Potential not very great (about 10% increase max)
- Water reuse/increased efficiency

| Water needs of humans, | l/day |
|------------------------|-------------|
| Drinking Water | 2-5 |
| Household Use | 25-100 |
| Food and Biomass | 1.000-6.000 |

How scarce is water?

How to deal with scarcity from a policy point of view?

1. Increase supply

- Desalination, new dams, river projects etc.: Potential not very great (about 10% increase max)
- Water reuse/increased efficiency: Substituting water-intensive food-production with imports

How scarce is water?

How to deal with scarcity from a policy point of view?

1. Increase supply

- Desalination, new dams, river projects etc.: Potential not very great (about 10% increase max)
- Water reuse/increased efficiency: Substituting water-intensive food-production with imports

2. Manage demand

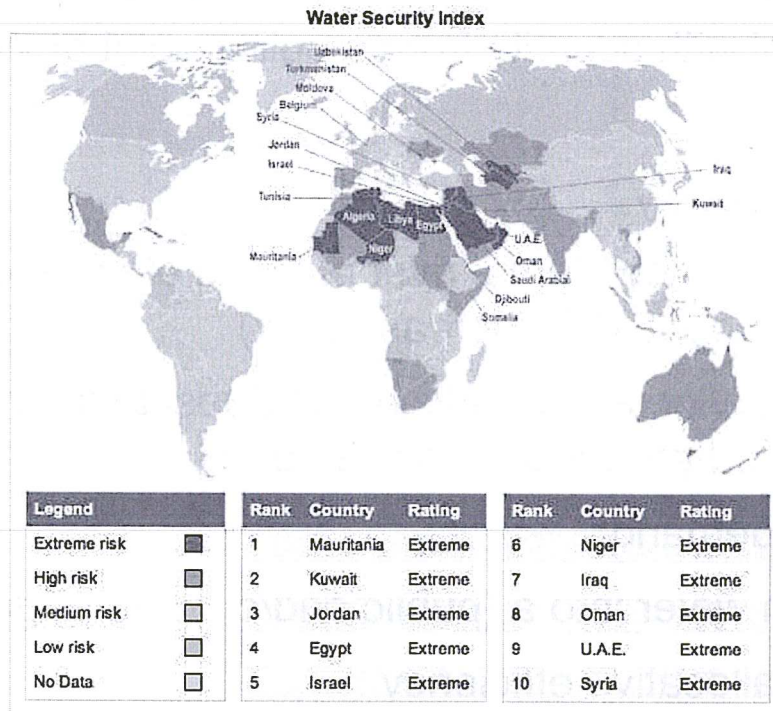
- Transform water into a (public and/or private) good
- Enhance allocative efficiency

How scarce is water?

The emerging consensus

1. Because of its unequal distribution and the limits on access-increase, growing regional/local scarcity cannot be addressed by conventional supply-enhancement
2. Agricultural production is limited by available freshwater, so water scarcity effectively becomes food-scarcity
3. Water scarcity is not an absolute, but relative to its economic use. It consequently becomes a driving force for major economic and social change

How scarce is water?



© Maplecroft, 2011

How can water scarcity lead to (violent/armed) conflict?

An analytical framework

Two ways to deal with scarcity:

- Increase supply
- Manage demand

Two levels of potential violent conflict

- Between countries (inter-state)
- Within countries (intra-state)

How can water scarcity lead to (violent/armed) conflict?

An analytical framework

| | Increase Supply | Manage Demand |
|------------|-----------------|---------------|
| Interstate | 1 | 2 |
| Intrastate | 3 | 4 |

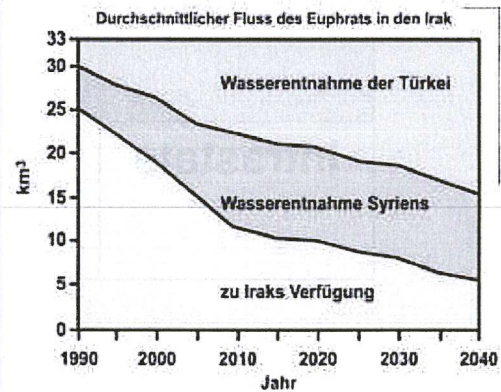
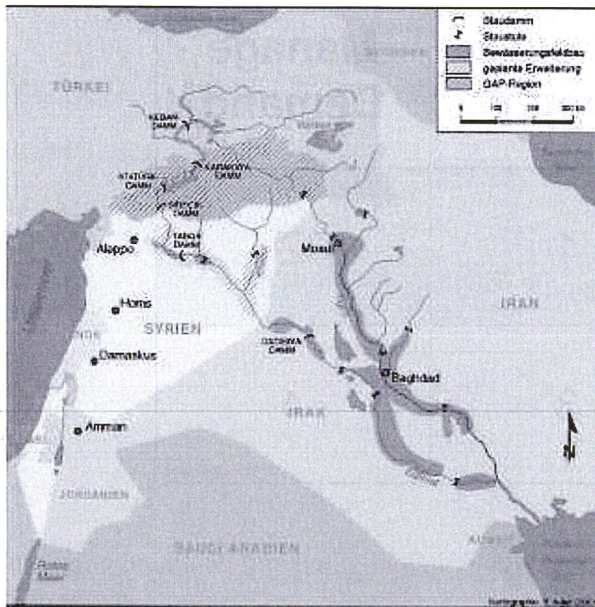
How can water scarcity lead to (violent/armed) conflict?

Scarcity and International Conflict

- International conflict are solely about an increase of supply (1) for a given country to the disadvantage of another – demand management conventionally doesn't affect interstate relations (2)
- Conflicts between upstream and downstream countries
- States could attempt to use military means in order to enforce a higher share of a common water resource

How can water scarcity lead to (violent/armed) conflict?

Scarcity and International Conflict

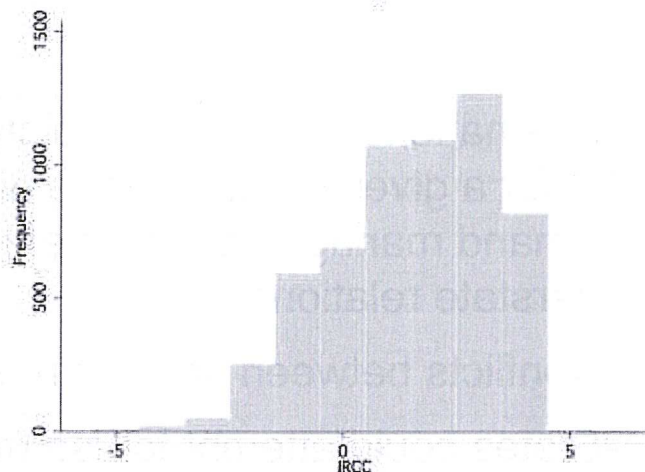


How can water scarcity lead to (violent/armed) conflict?

Scarcity and International Conflict

Events in Basin-Dyad-Years
(262 international river basins,
1997 to 2007, total)

Data: Kalbhenn/Bernauer 2011

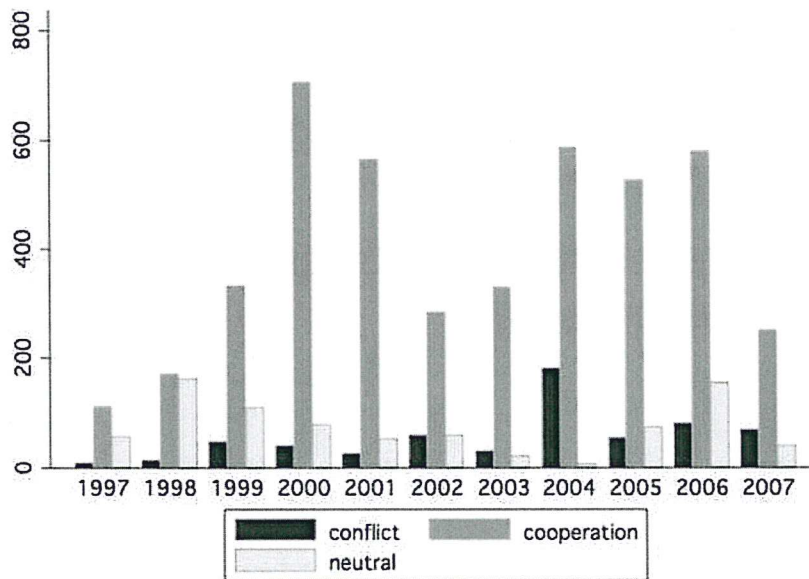


| | |
|----|---|
| -5 | any violent acts (that do not yet constitute a war) |
| -6 | Violent conflict, formal declaration of war |
| 4 | alliance ratification of freshwater treaty |
| 5 | official support signing of freshwater treaty |

http://www.ib.ethz.ch/docs/currentpapers/IRCC_Datapaper_Main_copy.pdf

How can water scarcity lead to (violent/armed) conflict?

Scarcity and International Conflict



How can water scarcity lead to (violent/armed) conflict?

Scarcity and International Conflict

All in all, there is almost no evidence for military conflict over water

- War is an incredible wasteful way of acquiring resources, because of its high costs (in resources!)
- Benefits from increased supply (the potential of which is not very high) in general are outweighed by the costs

How can water scarcity lead to (violent/armed) conflict?

Scarcity and Civil Conflict

Internal conflict can stem from two sources

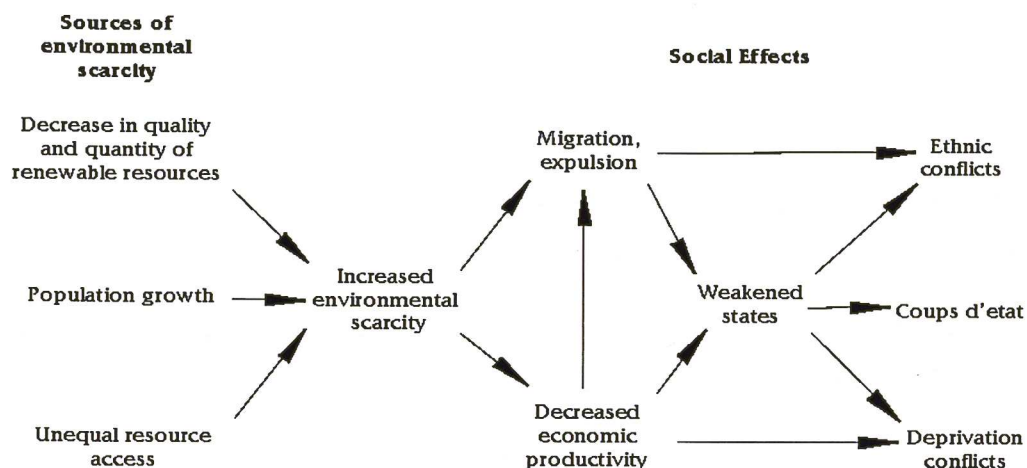
- Violence as a result of different groups trying to increase their supply of water (3)
- Violence as a result of societal stress resulting from water demand management (4)

How can water scarcity lead to (violent/armed) conflict?

Scarcity and Civil Conflict

(3)

Figure 2: Some Sources and Consequences of Environmental Scarcity



How can water scarcity lead to (violent/armed) conflict?

Scarcity and Civil Conflict

(3)

1. Decrease of resources makes *resource pie smaller*
2. Population growth makes the *slices of the pie (per capita allotment)* smaller
3. Inequality leaves *most slices in the hands of the powerful*

→ (Potential violent) conflict both on local and national levels, when the disadvantaged organize and rebel

How can water scarcity lead to (violent/armed) conflict?

The general impression left by this new wave of research is that direct links are few and weak; causal pathways are complex and contingent on a host of additional factors:

- Raleigh & Urdal (2007: 689): “demographic and environmental variables only have a very moderate effect on the risk of civil conflict”
- Barnett & Adger (2007: 644): “It is important to stress that climate change will not undermine human security or increase the risk of violent conflict in isolation from other important social factors.”
- Hendrix & Glaser (2007: 711): “the Neo-Malthusian expectation of a decreasing resource base may miss more theoretically interesting mechanisms leading to conflict in resource-scarce environments.”

Political Geography: Special Issue on Climate
Change and Conflict

*Edited by Ragnbild Nordås and Nils Petter Gleditsch
Volume 26, Issue 6, August 2007.*

How can water scarcity lead to (violent/armed) conflict?

While competition over water can be a source of societal conflict, civil war is a complex social phenomenon that is dependent on two necessary factors:

1. Willingness: A motivation to fight (water could be such a motivation)

2. Opportunity: The ability to actually organize an armed force

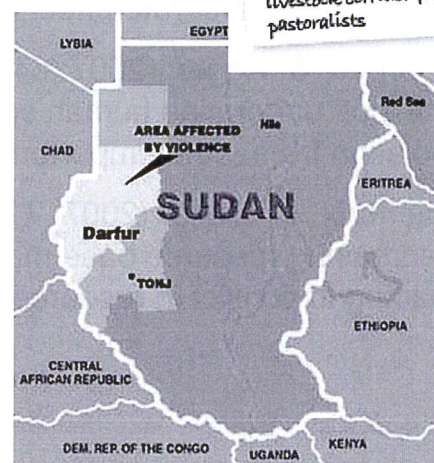
- Collective action problem

- Dependent on state weakness or favorable conditions (terrain, border-crossing etc.)

→ (water) poverty as such is not sufficient

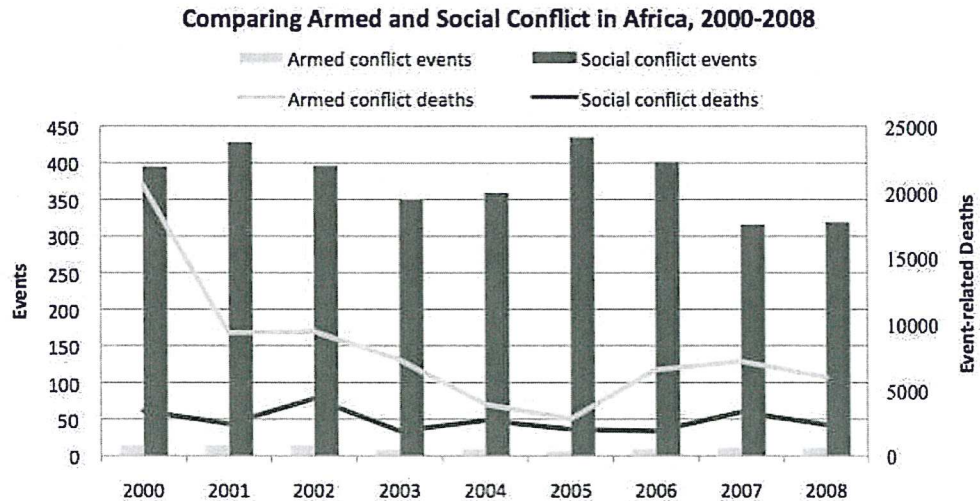
How can water scarcity lead to (violent/armed) conflict?

- Even when water may be a factor in armed conflict, it is very difficult to disentangle it from other social and political factors



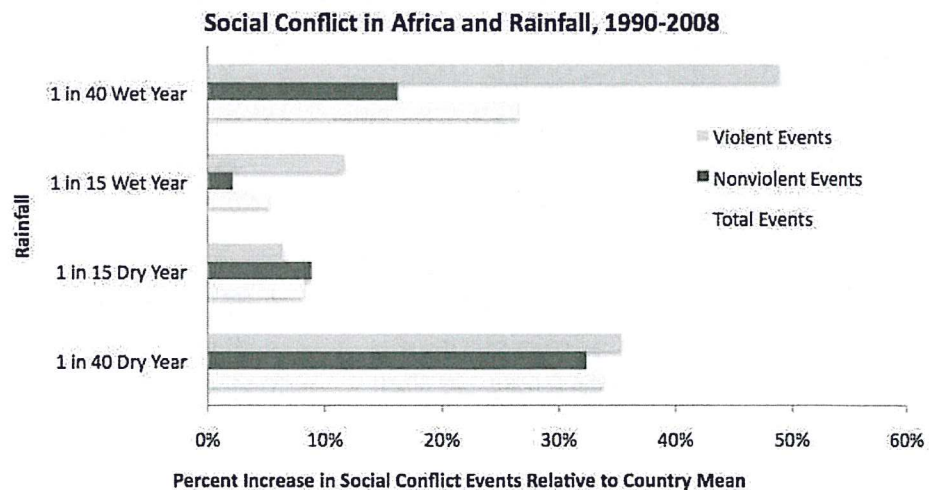
How can water scarcity lead to (violent/armed) conflict?

- Water issues possibly play a role in violence below the threshold of armed conflict, but there is very limited data on that



How can water scarcity lead to (violent/armed) conflict?

- Water issues possibly play a role in violence below the threshold of armed conflict, but there is very limited data on that



How can water scarcity lead to (violent/armed) conflict?

Scarcity and Civil Conflict

(4)

Policy options for managing demand:

- Manage competing water demands from different groups in society → equitable distribution
- Efforts to achieve greater end-use efficiency
- Facilitate socio-economic change to achieve greater allocative efficiency

How can water scarcity lead to (violent/armed) conflict?

Scarcity and Civil Conflict

(4)

| Tools | Equitable Distribution | End-use Efficiency | Allocative Efficiency |
|----------------|---------------------------------------|--|--|
| Administrative | Recommended but not necessarily best | Clumsy, but necessary | Tough decisions, difficult to implement; possibly resistance |
| Market-based | Needs administrative measures as well | Difficulties in setting price; private-profit over human needs | “Markets can be cruel decision-makers” |

Ohlsson 1999: 231

How can water scarcity lead to (violent/armed) conflict?

Scarcity and Civil Conflict

(4)

So violent conflict could be induced by the very measures adopted in order to manage scarcity!

- „Second-order-conflicts“
- Depends on the *ability of a society to adapt* to (radical) change and the *ability of the government* to effectively manage these changes

→ *social resources*

How can water scarcity lead to (violent/armed) conflict?

Scarcity and Civil Conflict

(4)

Social resources also follow the logic of supply and demand:

- Need of *supply of adaptive capacity*

in order to meet

- *demand of social resources* induced by water scarcity - management

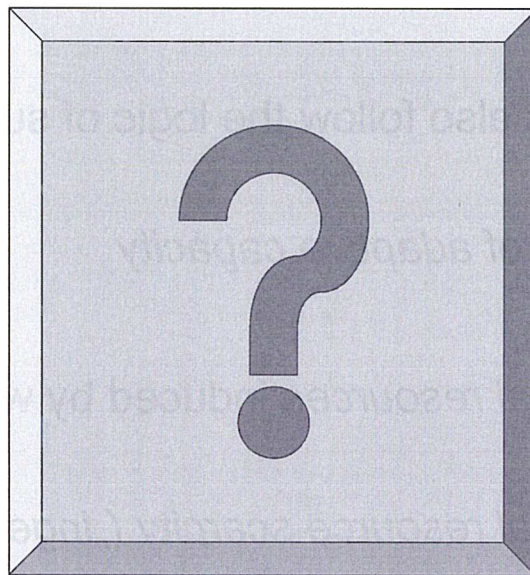
→ Potential *social resource scarcity* („*ingenuity gap*“), esp. in weak states

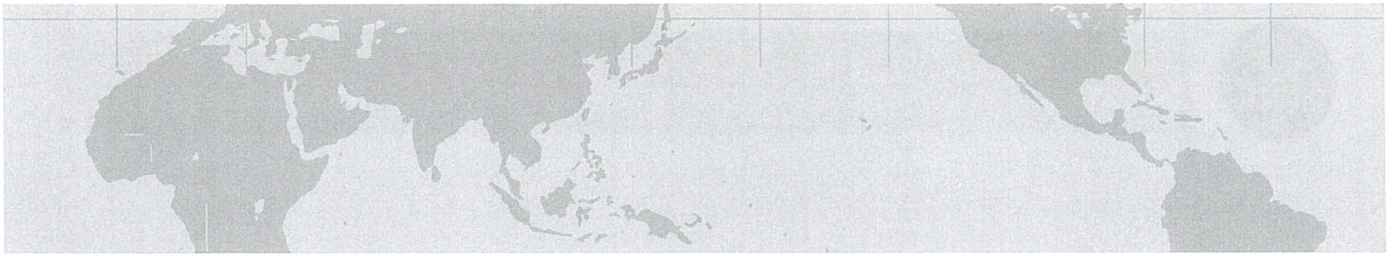
Conclusion

- Water scarcity rather a risk for internal conflicts than for full-scale „water wars“ between countries
- Violence directly caused by competition over water probably low-scale (riots, demonstrations, local fights)
- Large-scale societal change induced by a necessity to adapt to water shortages could lead to larger-scale violent conflicts – but this is very hard to track and intertwined with other socio-economic issues

➔ Water may be one (triggering/structural) factor among many, but it can also be a factor for cooperation and socio-economic development

What do you think? Are those conflicts „water wars“?





Primary Resources in IPE – The Field of Water

Summerschool on Water and International Relations

Gerald Heere M.A.

Institute of Social Sciences, University of Braunschweig



I) Overview/Examples

II) Water in IPE: case-studies

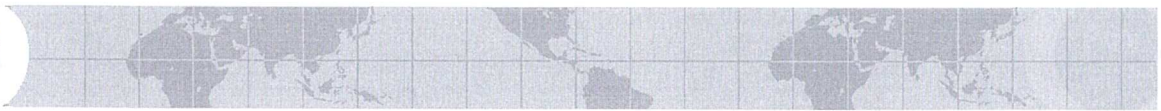
III) Assessment scheme



I) Overview/Examples

II) Water in IPE: case-studies

III) Assessment scheme




Primary Resources as policy field in IPE

- ⊕ Very brief overview of few important cases
 - ⊞ Terms-of-Trade-Debate (60s)
 - ⊞ G77 demand for international rules on commodities (70s)
 - ⊞ Price increase on agricultural commodities (late 2000s)
- ⊕ Main focus: Water as source of regional cooperation
 - ⊞ Assessment of Agreements



Terms-of-Trade Debate (1960s)

- Raul Prebisch/Hans W. Singer
- Analysis of the Terms-of-Trade (Relation of the price-index for import goods to the price index of export goods)
 - Result: The price of finished (industrial) products rises faster than the price of raw materials or intermediate products
 - ❖ „You have to produce constantly more coffee to buy the same machine every year“
 - The international trade (specialization, division of labor) is less profitable for producers of primary goods than for producers of industrial goods.
 - External factors are the reason for underdevelopment
 - ❖ Development of industrial countries is based on the underdevelopment of developing countries
- Claim: Decoupling from world market and industrialization instead of importing industrial products



Terms of Trade

Progress to the disadvantage of developing countries

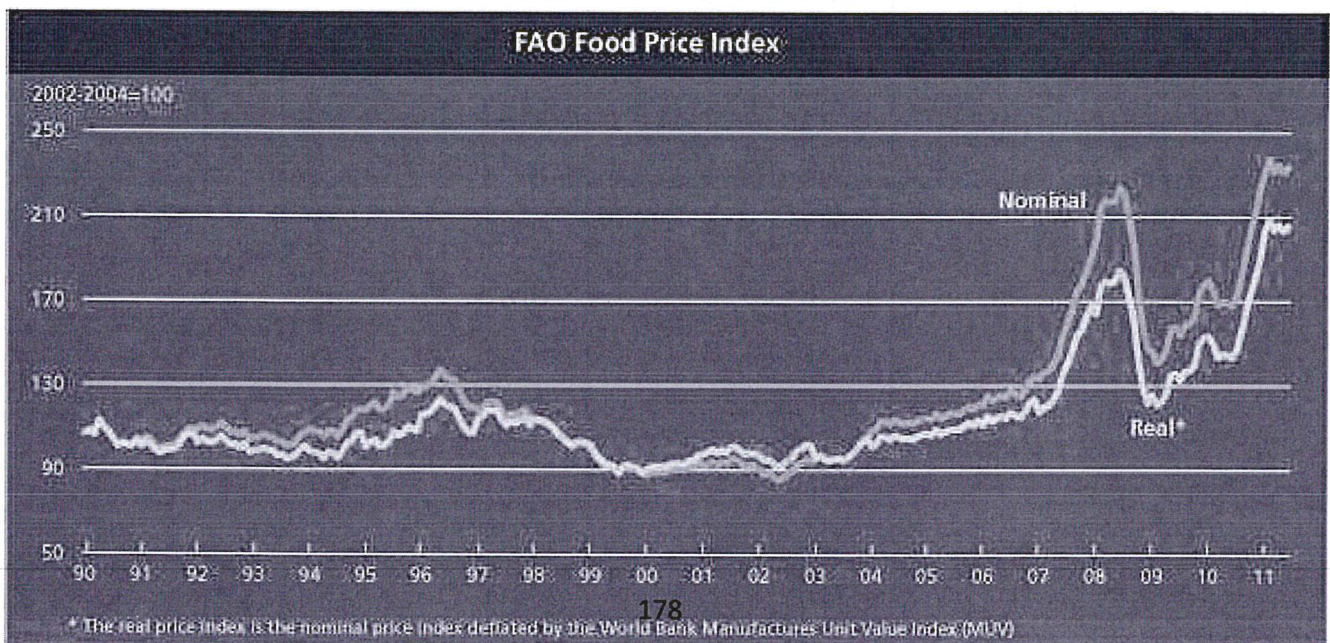
| Years | Amount of industrial products for X raw materials |
|------------------------------|---|
| 1876-1880 | 100 |
| 1881-1885 | 102,4 |
| 1886-1890 | 96,3 |
| 1891-1895 | 90,1 |
| 1896-1900 | 87,1 |
| 1901-1905 | 84,6 |
| 1906-1910 | 85,8 |
| 1911-1913 | 85,8 |
| 1921-1925 | 67,3 |
| 1926-1930 | 73,3 |
| 1931-1935 | 62,0 |
| 1936-1938 <small>177</small> | 64,1 |

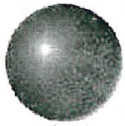
G77 demand for international rules

- Claim „New International Economic Order“ by UNCTAD III (1972)
 - International integrated resource program to achieve stable prices for raw materials
 - Setting up international associations for primary commodities (like OPEC)
 - National politics can regulate transnational corporations or even nationalize foreign property on their territory
- “Declaration for the Establishment of a New International Economic Order” was adopted by UN-General Assembly in 1974
 - But these norms became only of rhetorical and political value

Price increase on agricultural commodities

- Analysis: Fundamental rise in agricultural commodity prices in late 2000's





Price increase on agricultural commodities

● Possible causes:

- ❑ Economic growth in developing and emerging countries
- ❑ Bioenergy rivalry and higher energy prices
- ❑ Extreme weather occurrences
- ❑ Rising world population and diet-change
- ❑ Lower value of US-\$
- ❑ Subsidies in industrial countries for primary commodities
- ❑ Speculation on derivative markets

● Political reaction

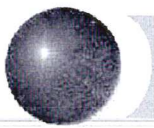
- ❑ National self-help-measures: Tax reduction, export restrictions, consumer subsidies
- ❑ Regional measures: e.g. self-commitment of member states of the African Union to invest 10% of GDP into agriculture (2008)
- ❑ Global: Initiatives of FAO, IMF, Worldbank – no persuasive solution



I) Overview/Examples

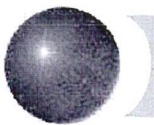
II) Water in IPE: case-studies

III) Assessment scheme



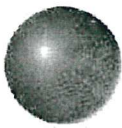
More examples for political cooperation

- ⊕ Provisions to correct market failures („regulation“)
 - ⊞ Global work and social standards set by ILO
 - ⊞ Global reduction of emissions, e.g. carbondioxide by Kyoto-Protocoll
 - ⊞ Preferential agreements for primary good producers
 - ⊞ Regulation of financial markets by soft law and international agreements
- ⊕ Provisions to promote the effective operation of the (world) market („effectivation“):
 - ⊞ Reduction of non-tariff trade-barriers or subsidies by GATT/WTO-agreement
 - ⊞ Introduction of a Common European Currency
 - ⊞ Regional water-treaties to promote water-cooperation and small-scale specialization



Analysis of water cases

- ⊕ Formation of four groups
- ⊕ Four cases of water-cooperation-agreements
 - ⊞ Read the agreement
 - ⊞ Discuss the agreement
 - ⊞ Make a scheme: Whats the deal?
 - ⊞ Assess the agreement with the following set of criteria
 - ⊞ 30 minutes! Short presentation afterwards
- ⊕ Treaties/ Agreements
 - ⊞ India-Bangladesh on Ganges
 - ⊞ Syria-Lebanon on Al Kaber Al Janoubi
 - ⊞ Kazakhstan-Uzbekistan-Kyrgyz Rep. on Syr Darya
 - ⊞ Nepal-India on Mahakali River



I) Overview/Examples

II) Water in IPE: case-studies

III) Assessment scheme



Global Governance „Architecture“



(Heere 2011)

Global Economic Governance assessment scheme

| Quality of GEG | Inclusiveness | Obligation | Precision | Delegation | | |
|--|-------------------------------|-------------------------------------|---------------------------------|---------------------------------------|---|--------------------------------|
| | | | | Rule making | Dispute resolution | Rule enforcement |
| - (Abbott et al. 2000, Zangl/Zürn 2004) | Unilateral | Nonlegal norm | Vague principle | Non formal/customary | No | No |
| | Bilateral | Recommendations | | political negotiations | Political bargaining | Self-control |
| | Multilateral with few actors | Self-commitment | Principle with explanations | Institutionalized negotiations | Nonbinding arbitration | Monitoring with name and shame |
| | Multilateral with many actors | Political treaty/agreement | | | Institutionalized bargaining | By the parties |
| + | Multilateral with all actors | Binding rules/treaties (jus cogens) | Precise, highly elaborated rule | Independent supranational institution | Binding arbitration Independent courts | Independent sanction organ |

Sustainable Development as a societal Guiding Principle

How can sustainability be realized?
- An integrative approach -



Technische Universität Braunschweig | International Summer School on Water and International Relations – Development, Conflict and Cooperation, International Political Economy and the 'Green State' |
Speaker: Dr. Birgit Mangela-Voegt, Katja Lamich | 09.09.2011



Outline

1. The sustainable development debate
2. The three pillars approach
 - 2.1 Environmental dimension
 - 2.2 Economic dimension
 - 2.3 Social Dimension
3. Central controversies of the sustainability debate
4. Integrated sustainability concept of the HGF
5. Governance of sustainability
6. Discussion
7. Conclusion

1. The sustainable development debate

When did it start?

- ▶ 1972: First United Nations Conference on the Human Environment (UNCHE) in Stockholm
→ beginning of international environmental policy
- ▶ 1987: Definition of Sustainable Development in the report “Our common future“, also known as Brundtland Report:

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

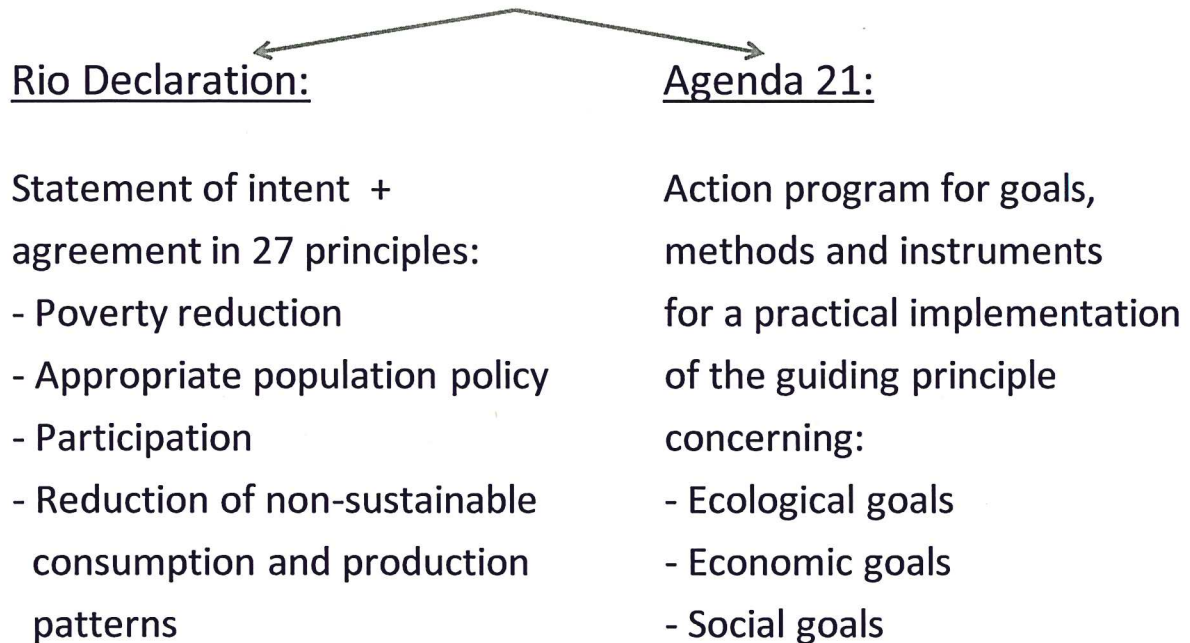
(Brundtland Report, 1987: 49)

1. The sustainable development debate

- ▶ Three basic principles for realizing sustainability (Brundtland Report):
 1. Equity (inter- and intragenerational)
 2. Global perspective
 3. Inclusion of and connection between environmental and developmental aspects
- ▶ 1992: United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro
→ Rio Declaration, Agenda 21

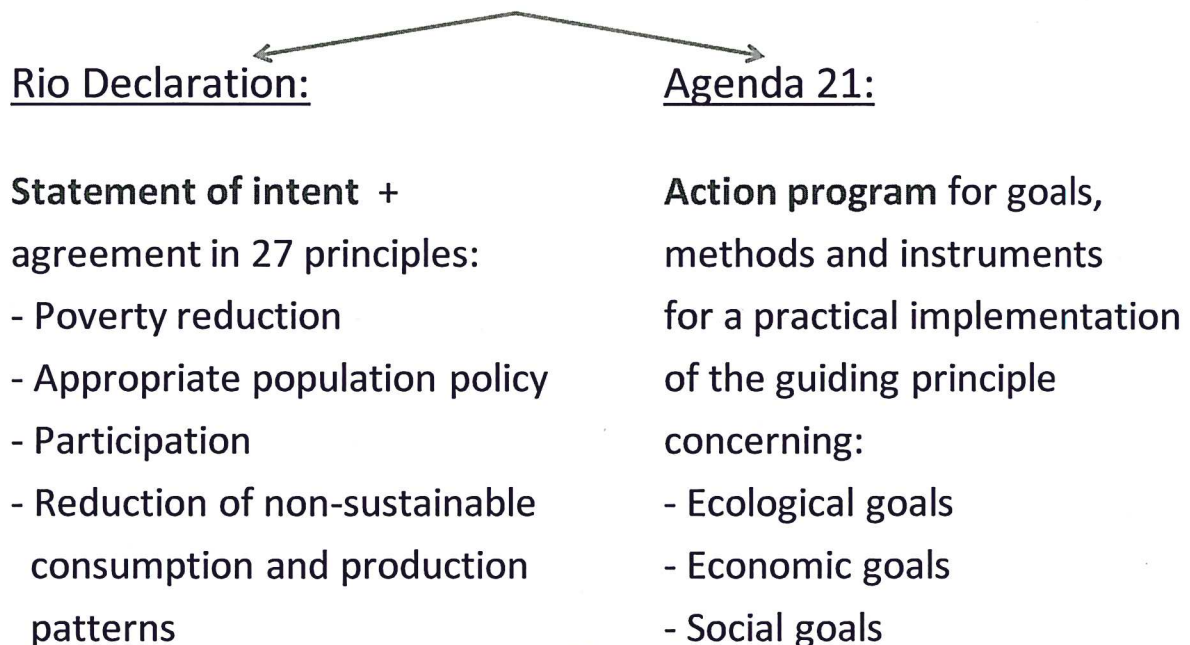
1. The sustainable development debate

Sustainable Development as a guiding principle defined by:

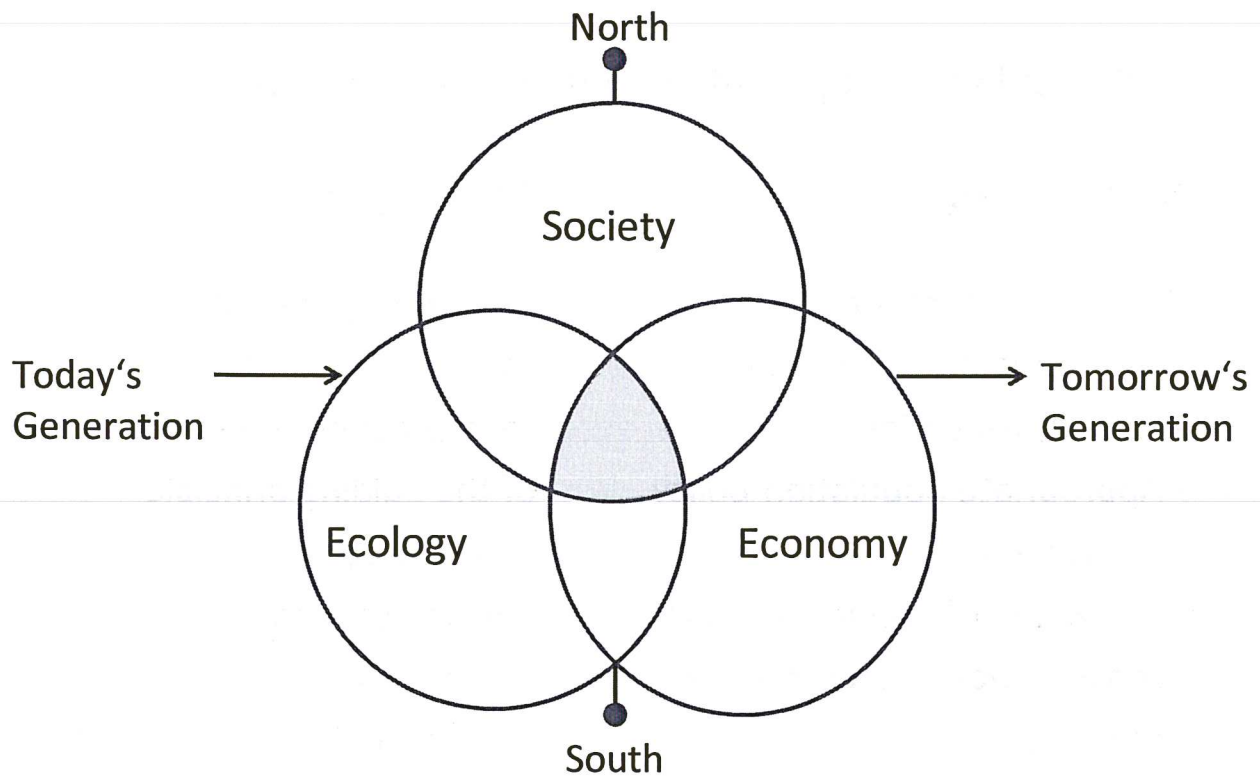


1. The sustainable development debate

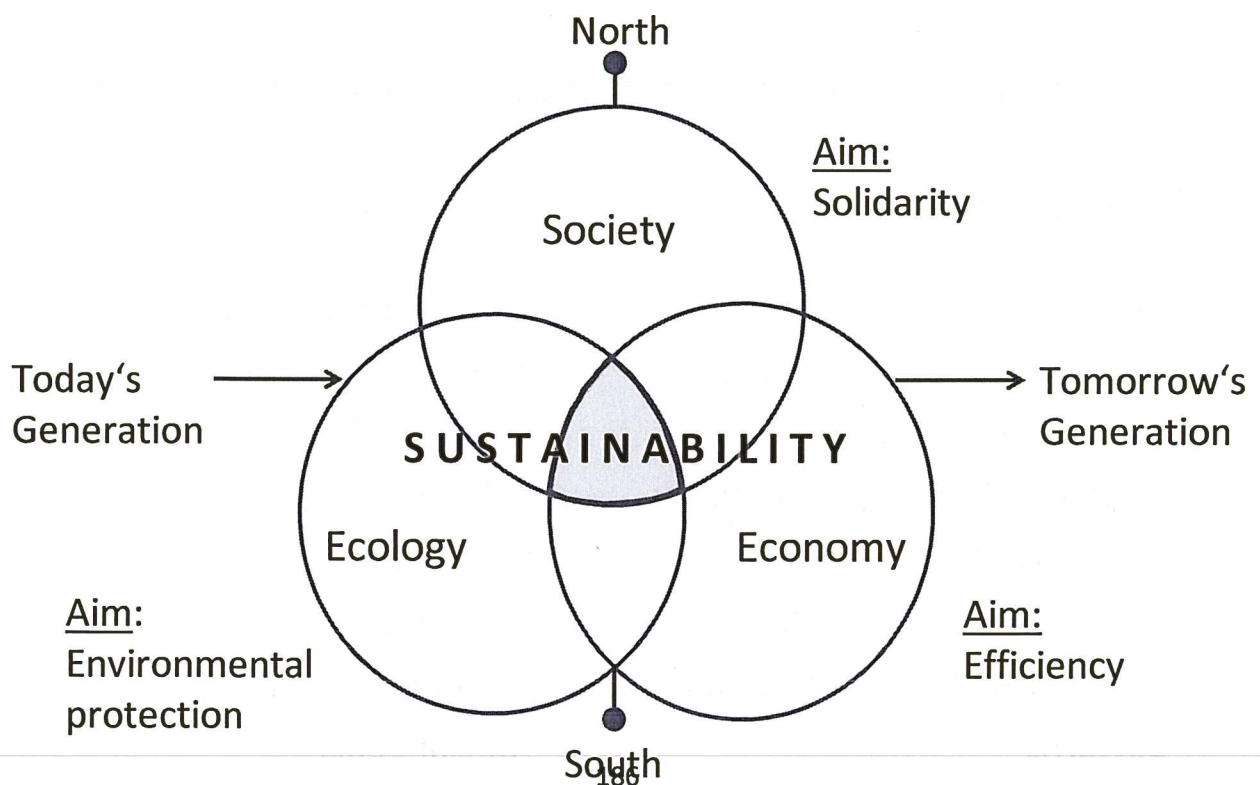
Sustainable Development as a guiding principle defined by:



2. The three pillars approach



2. The three pillars approach



2.1 Ecological dimension

- ▶ Nature as a living space (cultural, aesthetic function etc.)
- ▶ Humans as an active influence → impact on the entire environment

- ▶ Goal: Maintain nature and the environment for future generations (via protection of species, climate protection etc.)

- ▶ Question: Where are the limits of endurance?

2.1 Ecological dimension

- ▶ For the answer, these key issues are important:
 - Ecological stability
 - Carrying capacity
 - Vulnerability
 - Resilience (inner strength, self-healing powers)

- ▶ Environmental management rules → problem: translating deficits

- ▶ Actors: Environmental associations, NGOs, government

2.2 Economic dimension

- ▶ Economic system as a part of the social system
- ▶ Function: Production of goods and services → welfare
- ▶ Goal: Permanent, sustainable basis for employment and prosperity
- ▶ Economy is reliant on the use of materials and energy
- ▶ Question: To which extent is a disconnection of economic consumption and environmental damage possible?
- ▶ Therefor: Analysis of the economic process

2.2 Economic dimension

- ▶ Allocation: Of scarce resources to intended uses, Question: How? → according to the principle of efficiency
- ▶ Distribution: Of goods to individuals + groups, Question: For whom? → according to distributional issues

| <u>Neoclassical Theory :</u> | <u>Ecological Economics:</u> |
|--|--|
| <ul style="list-style-type: none"> – Guiding principle: Welfare must not decrease – Substitutability of types of capital (weak sustainability) | <ul style="list-style-type: none"> – Guiding principle: The conservation of natural capital – Natural and physical capital are not substitutable (strong sustainability) |

2.2 Economic dimension

▶ Actors:

Households (consumers)
Companies (producers)
States

2.3 Social dimension

- ▶ Individual versus society as a system
- ▶ Goal: A long-term sustainable, livable society and social peace
- ▶ Question: How can social relationships be made more equitable?

- ▶ Equitable/fair distribution of primary social goods:

Individual goods:

Life, health, housing,
clothing, basic food supplies,
elementary political rights₁₈₉

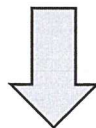
Social resources:

Tolerance, solidarity,
common good, sense of
justice and legal sense

2.3 Social dimension

- ▶ Characteristics of social structures and processes:
 - Bipolarity (society versus individual issues)
 - Normativity
 - Reflexivity
 - Analytical complexity, no causal relationship

- ▶ Actors: Individuals, employees, employers, state



- ▶ These three dimensions are probably not enough to reflect the complexity of current societies

- ▶ Therefore some researchers prefer to include an additional dimension:

The cultural dimension:

People's attitudes and lifestyles – their sense of ownership – creativity – knowledge – diversity – the reactions of national and local leaders to scientific and governance policy advice

3. Central controversies of the sustainability debate

PROBLEM: Term is frequently used, differently and loses its meaning

Controversies:

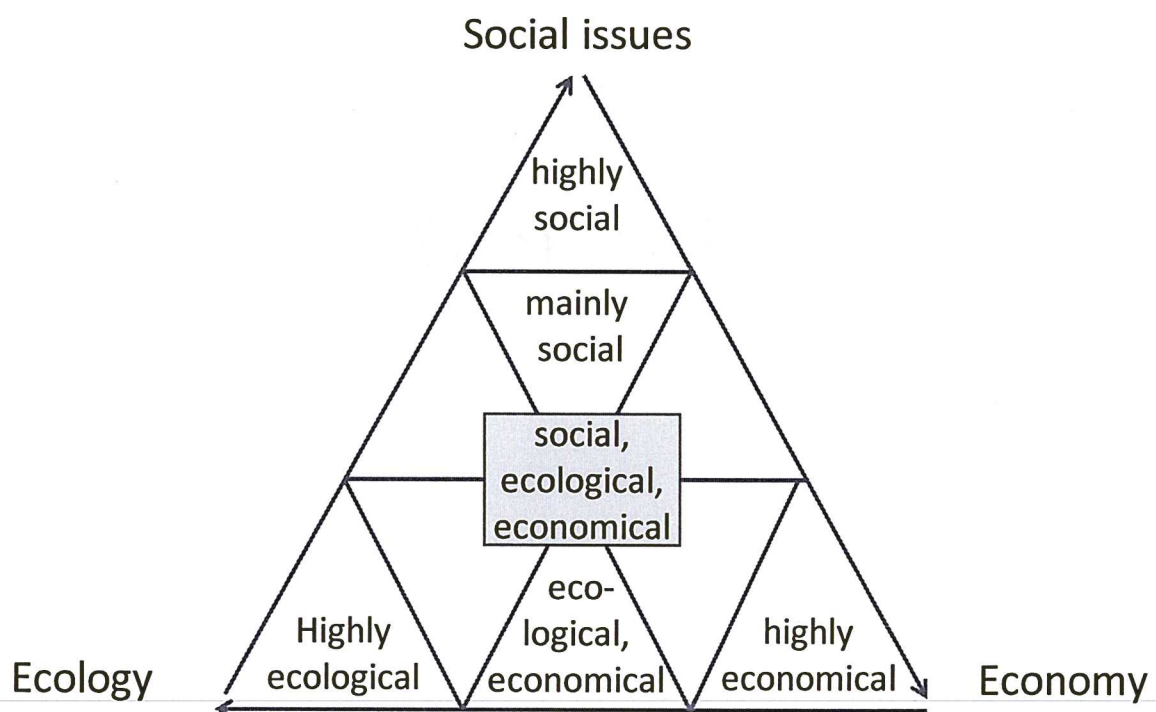
- ▶ Different weights of the dimensions → weak versus strong sustainability
- ▶ Development and implementation of guiding principles
- ▶ Relationship between the components of sustainability and development → stability versus change
- ▶ Operationalization of the principle of justice

Solution?

4. Integrated concept of sustainability of HGF

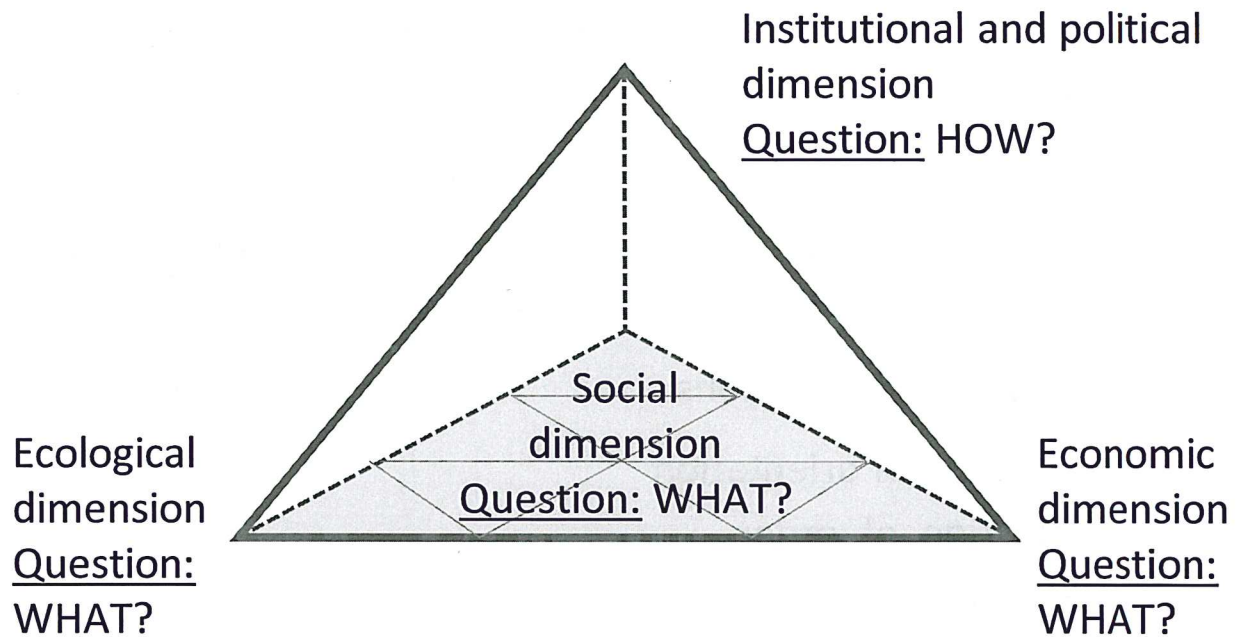
- ▶ HGF: Helmholtz-Gemeinschaft deutscher Forschungszentren - Association of 17 German research centers
- ▶ Integrative → Integration (integrare (lat.) – to reconstruct sth.)
- ▶ Further development of previous approaches
- ▶ NEW: a closed concept
- ▶ No representation by pillars or dimensions anymore
- ▶ Systematization of sustainability-related aspects is possible

4.1 The integrative sustainability triangle



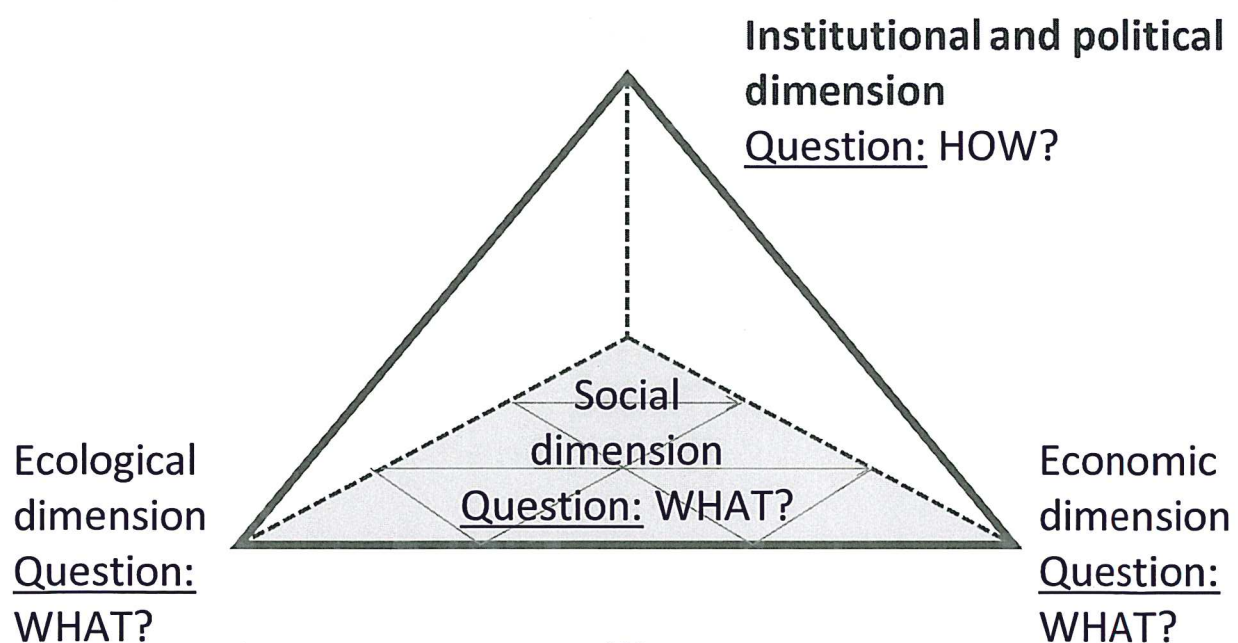
4.1 The integrative sustainability triangle

Addition of a fourth dimension:



4.1 The integrative sustainability triangle

Addition of a fourth dimension:

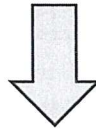


4.2 Institutional and political dimension

- ▶ Conciliatory link between individuals and society
 - ▶ Permanent involvement of social values, norms and habits
 - ▶ Goal: Realization of options for action, regulation
 - ▶ Question: How can we control and regulate individual and collective behavior in the long term?
-
- ▶ Functions of institutions:
 - Function of orientation
 - Function of order
 - Function of creating meaning

4.2 Institutional and political dimension

- ▶ Actors:
State, intergovernmental organizations



So how is control / governance possible?

4. Integrated concept of sustainability of HGF

1. Designation of constitutive elements of sustainability

- Intra- and intergenerational justice
- Globality
- Anthropocentric perspective

2. Definition of targets

3. Definition of:

- Substantial WHAT-rules (= minimum standards)
- Instrumental HOW-rules (= way to achieve these minimum standards)

4. Creation of indicators

GOALS

W
H
A
T
-
R
U
L
E
S

| 1. Securing human existence | 2. Preserving social productive potential | 3. Preserving the feasibility of development and action |
|---|--|---|
| Protection of human health | Sustainable use of renewable energies | Equal opportunities (education, occupation etc.) |
| Guarantee of basic services | Sustainable use of non-renewable resources | Participation in decision-making processes |
| Independently securing one's livelihood | Sustainable use of environment as a sink | Preservation of cultural heritage and diversity |
| Equitable distribution of environmental usage opportunities | Avoiding unreasonable technical risks | Preservation of the cultural function of nature |
| Balancing extreme income and asset differentials | Sustainable development of real, human and knowledge capital | Conservation of social resources |

(Kopfmüller/Brandl/Jörissen et al., 2001: 172)

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(Kopfmüller/Brandl/Jörissen et al., 2001: 172)

GOALS

WHAT - RULES

| 1. Securing human existence | 2. Preserving social productive potential | 3. Preserving the feasibility of development and action |
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(Kopfmüller/Brandl/Jörissen et al., 2001: 172)



4. Integrated concept of sustainability of HGF

HOW-rules:

- ▶ Internalization of environmental and social costs
- ▶ Appropriate discounting
- ▶ Limitation of indebtedness
- ▶ Fair global economic conditions
- ▶ Promotion of international cooperation
- ▶ Resonance capability of the society
- ▶ Reflexivity
- ▶ Ability to control/governance
- ▶ Self-organization
- ▶ Balance of power

4. Integrated concept of sustainability of HGF

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- ▶ **Balance of power**

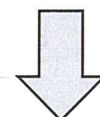
4. Integrated concept of sustainability of HGF

Sustainability indicators:

They fulfill academic, functional, user-related and practical requirements

Examples of indicators: "Self-organization" and "balance of power":

- ▶ Number of NGOs + their representation in decision-making
- ▶ Financial budget of the NGOs
- ▶ Proportion of active population
- ▶ Number of mediation processes + round tables
- ▶ Number of Local Agenda 21 processes



5. Governance of sustainability

- ▶ Vigor and power of rules are different
- ▶ Depending on actors, decision-making procedures, modes
→ cooperative versus hierarchic
- ▶ Inclusion of different topics in the debate
- ▶ Indicators for orientation only, no determination →
otherwise no governance

6. Discussion

- ▶ Is the concept of sustainability in your home countries implemented?
- ▶ In which cases is the concept in your home countries implemented?
- ▶ Which possibilities and which problems are connected with the concept?
- ▶ Are the problems country-specific or can they be generalized?

6. Discussion

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 - ▶ In which cases is the concept in your home countries implemented?
 - ▶ Which possibilities and which problems are connected with the concept?
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-

6. Discussion

- ▶ Is the measurement of the integrated concept really practical or is it maybe too complex?
 - ▶ Should a cultural dimension be included? Which effect would a fifth dimension have on the debate in general and which effect would it have on the integrated concept of the HGF?
-

7. Conclusion

Problems of implementation:

- ▶ Normativity requires different understandings of definitions, goals and implementations
- ▶ Different modes and forms of the discourse
- ▶ Sustainability doesn't have the same importance for different countries
- ▶ No determination of indicators, only orientation → "soft power"

7. Conclusion

How is sustainability realizable and how can it be implemented?

- ▶ No use of pillars or dimensions
- ▶ Equal consideration of all aspects
- ▶ Reference point globality
- ▶ With a principle of justice
- ▶ Based on rules and indicators
- ▶ Through self-understanding and learning
- ▶ As a new (theoretical and worldwide) model of society
(Rogall, 2003: 27)
- ▶ Through governance

Thank you for your attention and for
the informative discussion!

List of literature

- ▶ Bayley, Anne/Strange, Tracey (2008): Sustainable development: Linking economy, society, environment. OECD Publishing 2008.
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- ▶ Rogall, Holger (2003): Akteure der nachhaltigen Entwicklung. Ökom Verlag, München 2003.

Prof. Dr. Ulrich Menzel

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<http://www.transboundarywaters.orst.edu/database/>

Summer School on Water and International Relations
Sept. 5 - Sept. 15, 2011 — Technical University of Braunschweig

www-public.tu-bs.de:8080/~umenzel

www.ulrich-menzel.de

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Oregon State UNIVERSITY
College of Science

PROGRAM IN WATER CONFLICT MANAGEMENT AND TRANSFORMATION
www.transboundarywaters.orst.edu

INSTITUTE FOR WATER AND WATERSHEDS

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The Program in Water Conflict Management and Transformation (PWCMT)

The program is aimed at supporting water conflict prevention and resolution in Oregon, across the United States and internationally through a four-fold approach:

- (1) The Certificate in Water Conflict Management and Transformation;
- (2) The Transboundary Freshwater Dispute Database;
- (3) The Universities Partnership for Transboundary Waters; and
- (4) Collaborative Facilitations and Skills-Building Workshops.

[News Releases](#)

This Program is being designed to fill the niche as a broader, more integrative approach that explicitly integrates human, policy, and scientific dimensions of water resources within the framework of governance and sustainability, and focuses training and research on all facets of water conflict transformation. The PWCMT serves as a training, resource and information hub for students, citizens, officials, and business leaders in Oregon, across the United States and internationally, facilitating dialogue on critical water issues across diverse values and perspectives.

Learn more about the Program in Water Conflict Management and Transformation.

Collaborating Partners

Oregon State UNIVERSITY Department of Geosciences

CARNEGIE CORPORATION OF NEW YORK

NACSE

IWMI International Water Management Institute

UNESCO

PCIP

USGS science for a changing world

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The TFDD is comprised of six databases

TABULAR

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| WATER | MIDDLE EAST | COLLECTION |
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The life's work of Dr. Thomas Naft

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Annotated Bibliographies - Coming soon!
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SPATIAL

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Atlas of International Freshwater Agreements:
Contains an historical overview of international river basin management, a detailed listing of more than 400 international freshwater

Prof. Dr. Ulrich Menzel
September 12, 2011

The Transboundary Freshwater Dispute Database
Foil 3

The Transboundary Freshwater Dispute Database

The TFDD comprises several datasets regarding transboundary freshwater resources:

- Spatial data of the about **270 international basins** of the world (International River Basin Register & Transboundary Freshwater Spatial Database)
- Full-text database of nearly **450 international, freshwater-related agreements**, covering the years 1820 to 2007 (International Freshwater Treaties Database)
- Dataset of approximately **6400 international water events** (cooperation and conflict) from 1948 to 2008 (International Water Event Database) and rated by the Water Event Intensity Scale
- Case study and bibliographical databases

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The Transboundary Freshwater Dispute Database
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The Transboundary Freshwater Dispute Database

- Transboundary Freshwater Spatial Database -

Spatial data of the about **270 international basins** in Africa, Asia, Europe, North America, South America (not yet completed)

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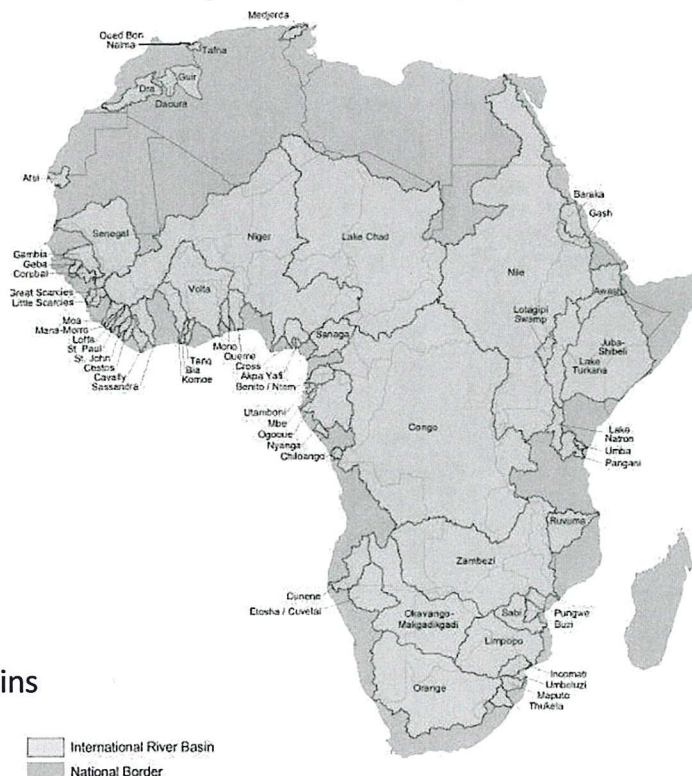
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The Transboundary Freshwater Dispute Database
 Foil 5

The Transboundary Freshwater Dispute Database

- Transboundary Freshwater Spatial Database -



Research Unit:
 International Basins

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The Transboundary Freshwater Dispute Database
 Foil 6

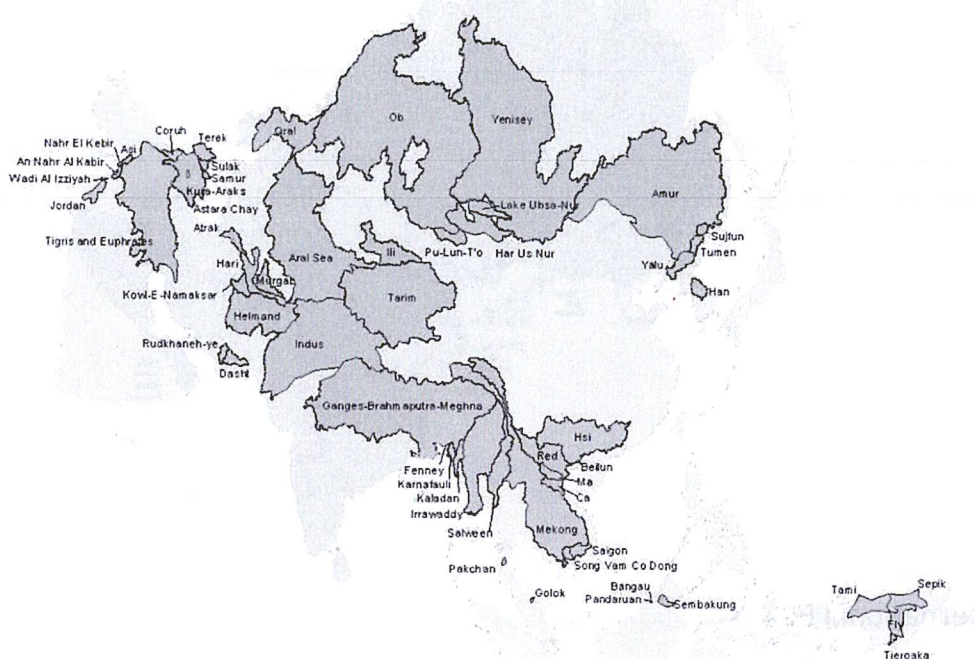
The Transboundary Freshwater Dispute Database

- Africa: International River Basin register -

| Basin Name | Total area of basin (sq. km) | Country name | Area of country in basin (sq. km) | Percent area of country in basin (%) |
|-------------|------------------------------|-------------------|-----------------------------------|--------------------------------------|
| Akpa | 4,900 | Cameroon | 3,000 | 61.65 |
| | | Nigeria | 1,900 | 38.17 |
| Atui | 32,600 | Mauritania | 20,500 | 62.91 |
| | | Western Sahara | 11,200 | 34.24 |
| Awash | 154,900 | Ethiopia | 143,700 | 92.74 |
| | | Djibouti | 11,000 | 7.09 |
| | | Somalia | 300 | 0.16 |
| Baraka | 66,200 | Eritrea | 41,500 | 62.57 |
| | | Sudan | 24,800 | 37.43 |
| Benito/Ntem | 45,100 | Cameroon | 18,900 | 41.87 |
| | | Equatorial Guinea | 15,400 | 34.11 |
| | | Gabon | 10,800 | 23.86 |
| Bia | 11,100 | Ghana | 6,400 | 57.58 |
| | | Ivory Coast | 4,500 | 40.28 |

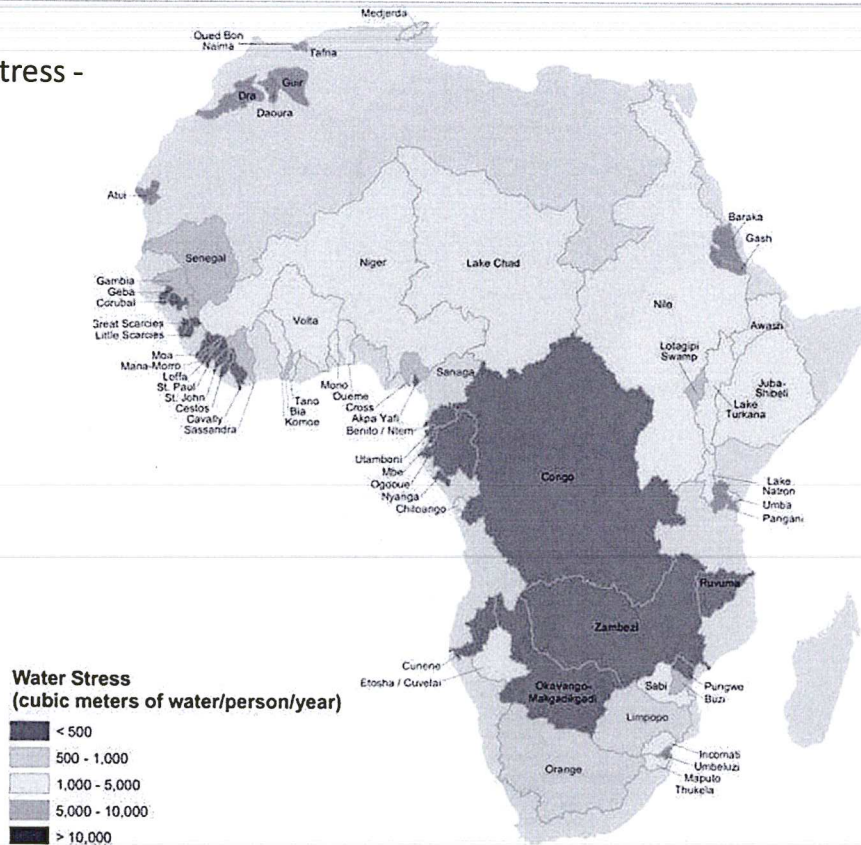
The Transboundary Freshwater Dispute Database

- International River Basins -



The Transboundary Freshwater Dispute Database

- Water Stress -



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The Transboundary Freshwater Dispute Database
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The Transboundary Freshwater Dispute Database

- International Freshwater Treaties Database -

Full-text database of nearly **450 international, freshwater-related agreements**, covering the years 1820 to 2007

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The Transboundary Freshwater Dispute Database

International Freshwater Treaties Database – A selection of treaties

| Date | Name | Signatories | Issue Area | Treaty Basin |
|------------|---|---|---|---|
| 1820-03-28 | Treaty of Limits Between France and the Netherlands concluded at Courtray | France, Netherlands | Border issues | Lys, Semoy, Meuse |
| 1994-09-16 | Agreement between the governments of the Republic of Angola, the Republic of Botswana, and the Republic of Namibia on the establishment of a permanent Okavango River Basin Water Commission (OKACOM) | Angola, Botswana, Namibia | Water quantity | Okavango |
| 1994-09-20 | Agreement between Lebanon and Syria on the distribution of water of Al-Asi River rising in Lebanon | Lebanon, Syria | Water quantity | Orontes, Al-Asi |
| 1994-10-26 | Treaty of peace between the state of Israel and the Hashemite Kingdom of Jordan, done at Arava/Araba crossing point | Israel, Jordan, Lebanon, Syria | Water quantity | Araba/Arava groundwater, Yarmuk, Jordan |
| 1995-04-05 | Agreement on the cooperation for the sustainable development of the Mekong River Basin | Cambodia (Kampuchea), Laos, P.D. Republic of, Thailand, Vietnam | Water quantity, Flood control/relief | Mekong |
| 1996-02-12 | Treaty between His Majesty's government of Nepal and the government of India concerning the integrated development of the Mahakali River including Sarada Barrage, Tanakpur Barrage, and Pancheshwar Project | India, Nepal | Water quantity, Hydro-power/Hydro-electricity, Flood control/relief | Mahakali |
| 1996-12-12 | Treaty between the government of the Republic of India and the government of the People's Republic of Bangladesh on sharing of the Ganga/Ganges waters at Farakka | Bangladesh, India | Water quantity | Ganges |
| 1997-05-06 | Complementary settlement to the agreement of cooperation between the government of the Eastern Republic of Uruguay and the government of the Federal Republic of Brazil for the use of natural resources and the development of the Cuareim river basin | Brazil, Uruguay | Water quantity | Cuareim |

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The Transboundary Freshwater Dispute Database

Example: Bilateral agreement, Act No. 15 concerning the division of the water of Al-Asi River (Orontes) between the Syrian Arab Republic and the Lebanese Republic

| |
|---|
| Treaty Basin: Al-Asi,Orontes |
| Date: September 20, 1994 |
| Signatories: Lebanon,Syria |
| Parties: Bilateral |
| Principal Issue Area: Water Quantity |
| Allocations: Annual Lebanese share is 80 mcm when amount of water in Lebanon is 400 mcm or greater. When the annual quantity of water is <400 mcm, the year will be considered a rainless year and the Lebanese share will be reduced by 20%. |
| Non-water Linkages: Not Available |
| Monitoring: Yes |
| Enforcement: No |
| Conflict Resolution: Not Available |
| Additional Comments: The parties consider the water of the Orontes river that originate in Lebanon as being of common interest. |

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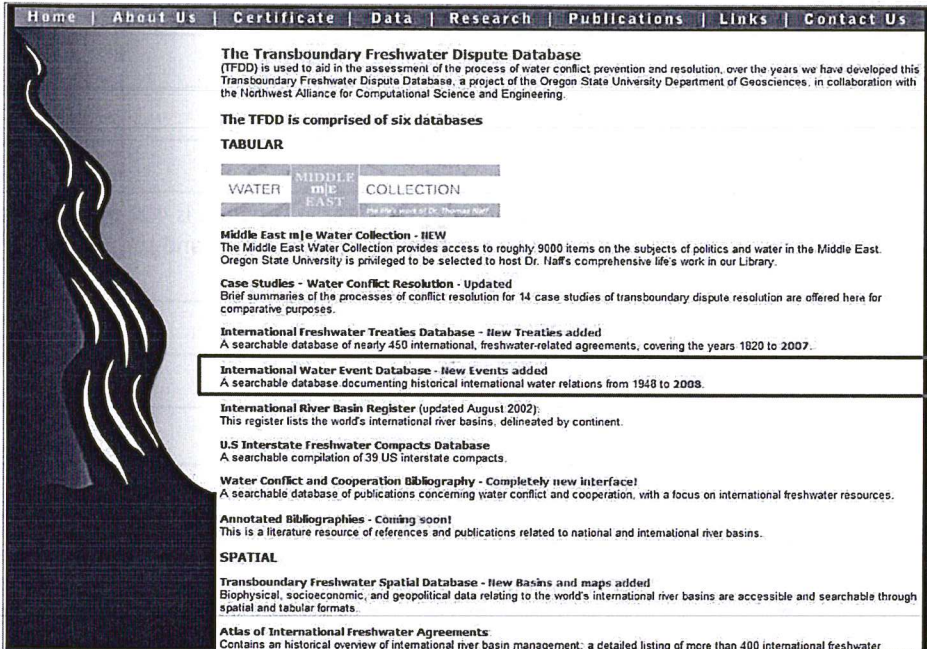
- Overview of International Freshwater Treaties -

- approx 450 treaties, acknowledgements and institutions (concerning the non-navigational uses of international watercourses)
- Covering only 50% of international basins
- First overview (from Wolf/Hamner 1998 based on 145 Treaties):
 - 86% are bilateral, only 14% multilateral
 - 39% about hydropower
 - 37% about the distribution of water
 - 54% with monitoring-measures
 - 30% with financial compensation
 - ...

The Transboundary Freshwater Dispute Database

- International Water Event Database -

Dataset of approximately **6400 international water events** (cooperation and conflict) from 1948 to 2008 and **rated by the Water Event Intensity Scale**



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- Basins-at-Risk Water Event Intensity Scale (BAR-Scale) -

- 
- 7 **Formal Declaration of War** (*for water-related reasons*)
 - 6 **Extensive War Acts** causing deaths, dislocation or high strategic cost (*for water-related reasons*)
 - 5 **Small scale military acts** (*for water-related reasons*)
 - 4 **Political-military hostile actions** (*for water-related reasons*)
 - 3 **Diplomatic-economic hostile actions** (*for water-related reasons, e.g. unilateral construction of water projects against another country's protests; reducing flow of water to another country, abrogation of a water agreement*)
 - 2 **Strong verbal expressions displaying hostility in interaction - official interactions only** (*for water-related reasons*)
 - 1 **Mild verbal expressions displaying discord in interaction - both unofficial and official, including diplomatic notes of protest** (*for water-related reasons*)

The Transboundary Freshwater Dispute Database

- Basins-at-Risk Water Event Intensity Scale (BAR-Scale) -

- 
- 0 **Neutral or non-significant acts for the inter-nation situation**
 - 1 **Minor official exchanges, talks or policy expressions--mild verbal support** (*water-related*)
 - 2 **Official verbal support of goals, values, or regime** (*water-related*)
 - 3 **Cultural or scientific agreement or support - non-strategic Agreements to set up cooperative working groups** (*water-related*)
 - 4 **Non-military economic, technological or industrial agreement, legal, cooperative actions between nations that are not treaties** (*water-related, e.g. cooperative projects for watershed management, irrigation, poverty-alleviation*)
 - 5 **Military economic or strategic support** (*water-related*)
 - 6 **Major strategic alliance - regional or international** (*water-related, e.g. Major International Freshwater Treaty*)
 - 7 **Voluntary unification into one nation**

The Transboundary Freshwater Dispute Database

Water Events - Example: Euphrates/Tigris-Basin-Events 1998-1999

| Countries | BAR-Scale | Issue Type | Date | Event Summary |
|-------------------|-----------|--|-------------|---|
| Iraq-Syria | 3.0 | water use | Jun 22 1998 | Iraqi irrigation Minister al-Ahmad said negotiations between Iraq & Syria on using Euphrates water, which springs from Turkey territory & passes through Syria before entering the Arab Gulf, are continuing.... |
| Syria-Turkey | -1.0 | water issue (from other issues --> quantity & quality) | Jul 2 1998 | Doors for dialogue were opened to normalize relations between Turkey & Syria with a visit of 'Umran, Syria undersecretary of the Foreign Ministry, but no course was opened for Cem, Turkey Foreign Minister (visit to Damascus). 'Umran identified the PKK as ... |
| Syria-Turkey | -1.0 | water sharing | Aug 16 1998 | Syria Foreign Minister Shara said in order to resume negotiation with Israel, these should re-start from where they left off. In an interview with Lebanon tv network Sunday on the water problem with Turkey, Shara said the main problem lies in the fact that... |
| Iraq-Syria-Turkey | -3.0 | water sharing | Oct 4 1998 | Negotiations reached a deadlock because major points of disagreement - including Kurdistan Workers' Party, sharing Euphrates & Tigris water, & Turkey-Israel military alliance - remained without answers by either side... |
| Syria-Turkey | -1.0 | water committees | Oct 6 1998 | Syria Embassy in Ankara has said that escalation of tension between Turkey & Syria is caused by Turkey-Israel military cooperation, which it claims is a military pact, & by Turkey's boycott of negotiation committee on water & other issues... |
| Syria-Turkey | -1.0 | water issue | Oct 6 1998 | Virtue Party leader Kutan said that developments concerning Syria have constituted hottest issue on Turkey's agenda lately, adding: Syria has been extending moral & logistic support to Workers Party of Kurd. (PKK) terrorism for 14 years... |
| Syria-Turkey | 1.0 | water allocation | Apr 3 1999 | Turkey President Demirel expressed hope that Turkey will emerge stable from 4/18 elections. Replying to reporters' questions in Qatar on whether talks will be held with Syria on water issue, Demirel said Turkey is always open to negotiations... |
| Jordan-Turkey | 1.0 | water supply | Jul 15 1999 | Turkey Ambassador to Jordan, Topur, said he doesn't expect the issue of supplying Jordan with water from Turkey to come under discussion during present visit by President Demirel. However, he voiced Turkey's readiness to pursue dialogue on the subject... |
| Syria-Turkey | 1.0 | water | Jul 17 1999 | Turkey Foreign Minister Cem was careful to reassure Arab states that relations between Turkey & Israel will not be at their expense. On Turkey-Syria relations, Cem noted that these relations have witnessed tangible improvements... |
| Iraq-Turkey | 2.0 | water sharing | Nov 8 1999 | Iraq has asked Turkey to grant it a proper share of water from the Degla & Euphrates Rivers... |

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September 12, 2011

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Water and the Millennium Development Goals

**EXCEED Summer School on Water and International
Relations**

**Alastair J. Scott, M.A.
12th September 2011**

0. Introduction

- 1. Guide to the Goals**
- 2. Where's the Leak?**
- 3. Water in the Works
=> Group Task**
- 4. Points of Progress**

1. Guide to the Goals

Background / Genesis

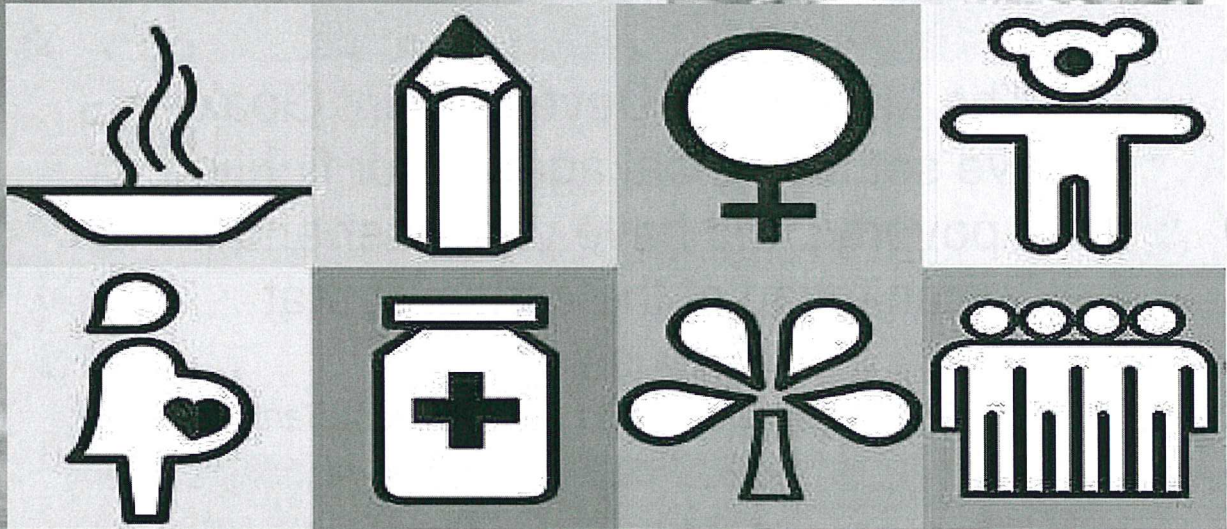
- Millennium Summit and Declaration (NYC, 2000)
- “Road Map” -> Kofi Annan, September 2001
 - 8 Goals to be met by 2015
 - 21 Targets
 - 60 Indicators

1. Guide to the Goals

Meaning / Impact

- New Millennium marked with New Development
- First such wide consensus with concrete targets
- Change from “input” to “output” orientation
- Led to measurability in development
- Powerful tool for agenda setting
 - MDG Reports
 - MDG +5/+10 Conferences
 - Public awareness

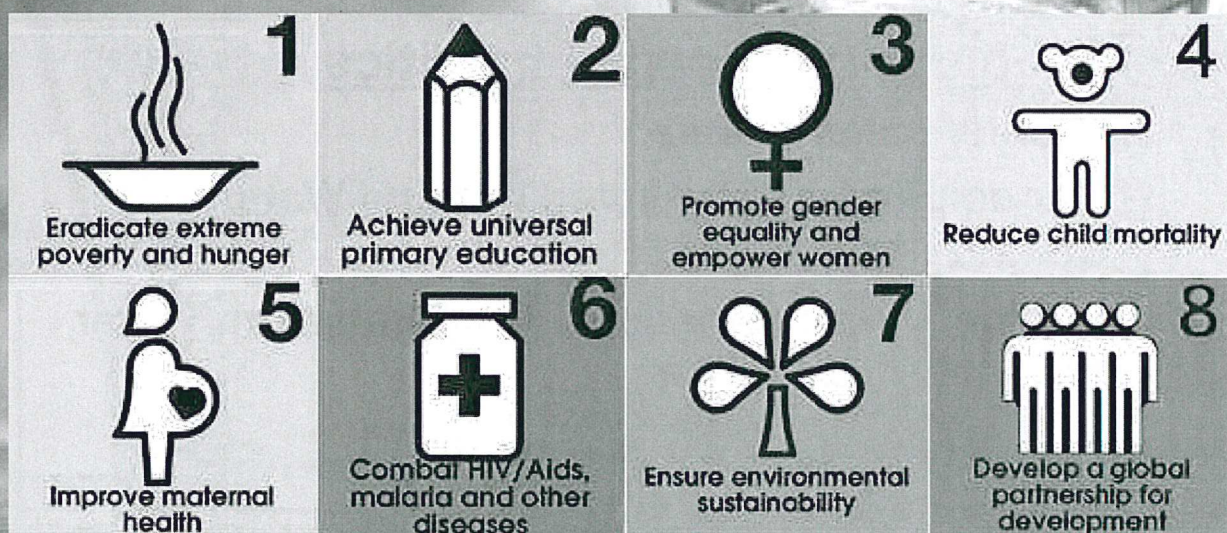
1. Guide to the Goals



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Water and the MDGs

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Slide 5

1. Guide to the Goals



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2. Where's the Leak?

“The Millennium Development Goals have set the global agenda for fighting poverty, and have put water and sanitation at the center of that discussion.”

K.E. Seetharam, Asian Development Bank, 2006

1. Eradicate poverty
2. Improve maternal health

3. Combat HIV/AIDS, malaria and other diseases

4. Ensure environmental sustainability

5. Develop a global partnership for development

6. Reduce mortality

7. 8

8. 8

2. Where's the Leak?

Low profile in development politics

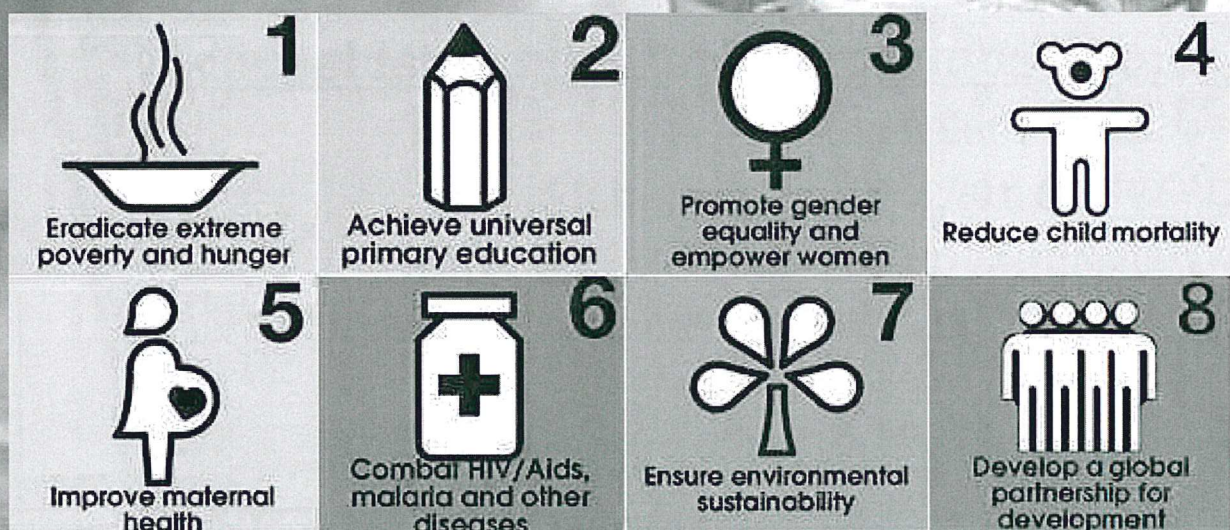
- UN Conferences to date:
 - Mar del Plata 1977: United Nations Water Conference
 - Dublin 1992: International Conference on Water and the Environment

2. Where's the Leak?

Poorly represented in UN System

- Lack of single responsible organisation for water issues
- Multitude of water-related UN organisations:
 - UNDP, UNEP, UNICEF, UNESCO, WHO, etc.

2. Where's the Leak?



2. Where's the Leak?

Poorly represented in UN System

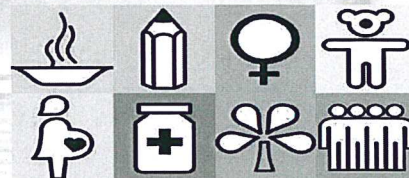
- Lack of single responsible organisation for water issues
- Multitude of water-related UN organisations:
 - UNDP, UNEP, UNICEF, UNESCO, WHO, etc.
- Global water politics mainly NGO-driven:
 - Global Water Partnership (1996)
 - World Water Council (1996)
 - Stockholm International Water Institute (1997)

2. Where's the Leak?

Overshadowed by Environmental Issues

- ICWE 1992, Dublin
- WSSD 1992, Rio -> Agenda 21
- Millennium Summit 2000, New York

3. Water in the Works



Goal 7: Ensure environmental sustainability

Target 7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources

Target 7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss

Target 7.C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation

Target 7.D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers

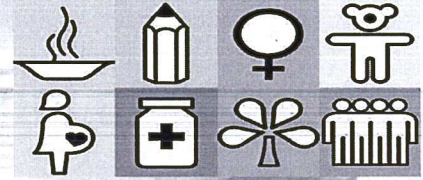
3. Water in the Works



Impact of MDG Water Targets

- **Massive public and political awareness of lack of access to water and sanitation**
- **Increase in Water Conferences / Forums**
- **Creation of:**
 - **International Decade for Action: “Water for Life” (2005-2015)**
 - **International Year of Sanitation (2008)**
 - **World Water Day, World Toilet Day**

3. Water in the Works



Target 7.C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation

7.9 Proportion of population using an improved sanitation facility



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Group Task

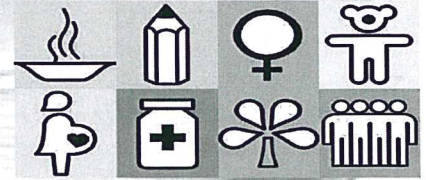
Using the articles provided (and your own ideas), prepare a short presentation on the relevance of water to your MDG



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3. Water in the Works



Goal 1: Eradicate extreme poverty and hunger

Goal 2: Achieve universal primary education

Goal 3: Promote gender equality and empower women

Goal 4: Reduce child mortality

Goal 5: Improve maternal health

Goal 6: Combat HIV/AIDS, malaria and other diseases

Goal 7: Ensure environmental sustainability

Goal 8: Develop a global partnership for development

4. Points of Progress

5. Questions?

Thanks for your attention and participation!

Alastair J. Scott, M.A.
Water and the MDGs

12th September 2011
Slide 19



Summer School *TUBS*

Lecture 1: “International and Transboundary Water Governance”

September 2011 | Lars Ribbe

Content

- Challenges of Transboundary River Basins
- International Institutions
- International Water Law



Issues of Concern: Major Problems (I)

Water Availability vs. Demand

- Upper vs. lower riparian populations
- Conflict over international allocation of water resources



Major Problems II

River development and regulation

(dams, land reclamation, irrigation)

- Human alteration of hydrograph
- Upstream measures influence downstream floods
- Navigation
- Ecological impacts (fisheries)



Major Problems III

Water Quality impacts

- Treatment costs
- Health impacts
- Ecological impacts (fisheries)
- Economic impacts (irrigation, industrial production)



Classification of International issues of water legislation and administration

- **UN body** provides guidelines and conventions (Ramsar, biodiversity, Kyoto, desertification, transboundary water management)
- **Global institutions** related to water resources management evolved: GWP, WWC, World Water Forum, Stockholm water week....
- **Multinational or Bilateral agreements:** examples of EU and Mekong river basin



International Networks and Institutions in the Water sector

- Global Water Partnership, **GWP** (IBRD, UNDP, SIDA...), IWRM toolbox, support implementation of IWRM principles.
- CapNet (Capacity Building Network on IWRM)
- World Water Council, **WWC**, organizes World Water Forum (2003 Kyoto, 2006 Mexico, 2009 Istanbul, 2012 Marseille...)
- International Water Association, **IWA**, dominated by private industry
- International Water Resources Association, **IWRA**, focus on research and education, organizes World Water Congress 2003 Madrid, 2005 New Delhi, 2008 Montpellier, 2011 Recife



The role of the UN

Almost each UN organization has some program on water:

- UNDP: GEF, GWP...
- UNEP: GEF, GIWA, GEMS,
- FAO: Desertification, Water Conservation and use in agriculture, Dialogue on Water, Food and Environment
- UNESCO: IHP, WWAP
- WHO: Water, Sanitation and Health program
- WMO, Hydrology and Water Resources Program
- ...and many more

For details see word document "UN_WaterRoles"

Germans Contribution to international water development

The five Bonn Keys 2001:

The Bonn Keys illustrate the core message of the Bonn Recommendations for Action. The five statements, which are also laid down in the recommendations, are:

A safe water supply is of fundamental importance for the poor.

New, innovative partnerships can improve water supply.



Decentralisation is crucial; national policies meet local needs.

Cooperation between the various users of water and harmonisation with nature is of central importance – for transboundary water bodies as well.

Strong and better political frameworks under the responsibility of governments are vital.



2011 Bonn Conference „The Water-Energy-Food Security Nexus“

- <http://www.water-energy-food.org/>

Preparatory conference for Rio +20

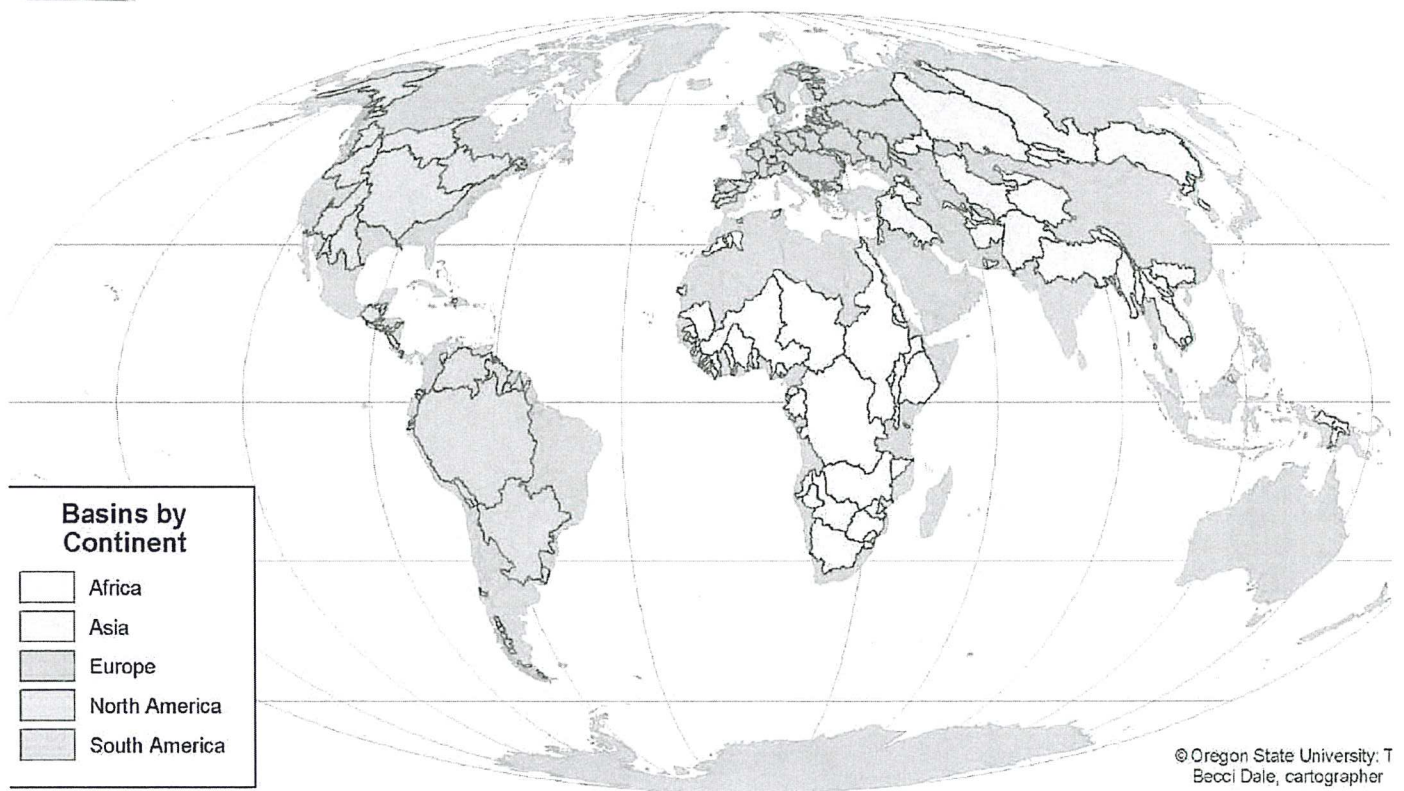
- <http://www.uncsd2012.org/rio20/>

United Nations Conference on Sustainable Development

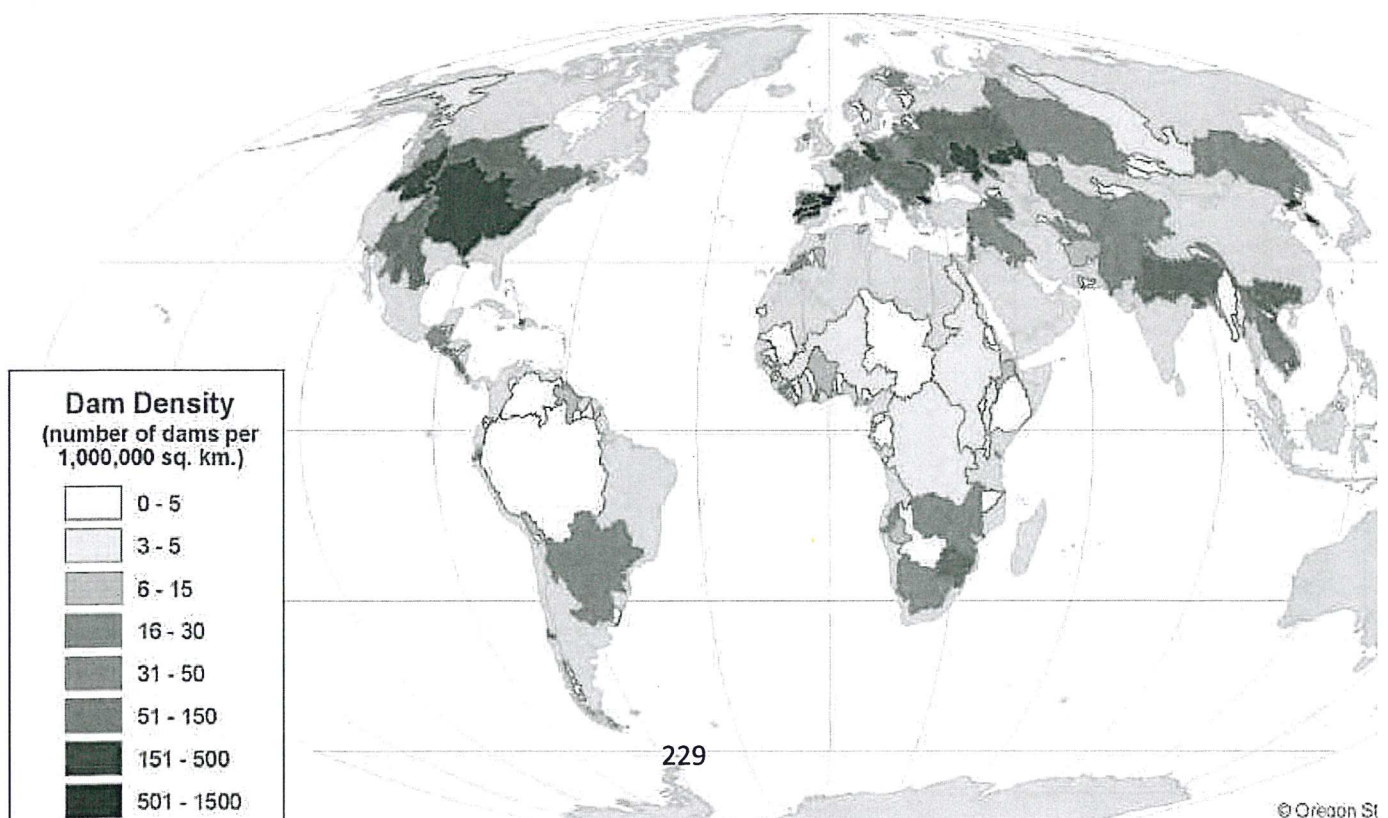


Scope and Relevance of Shared Watersheds

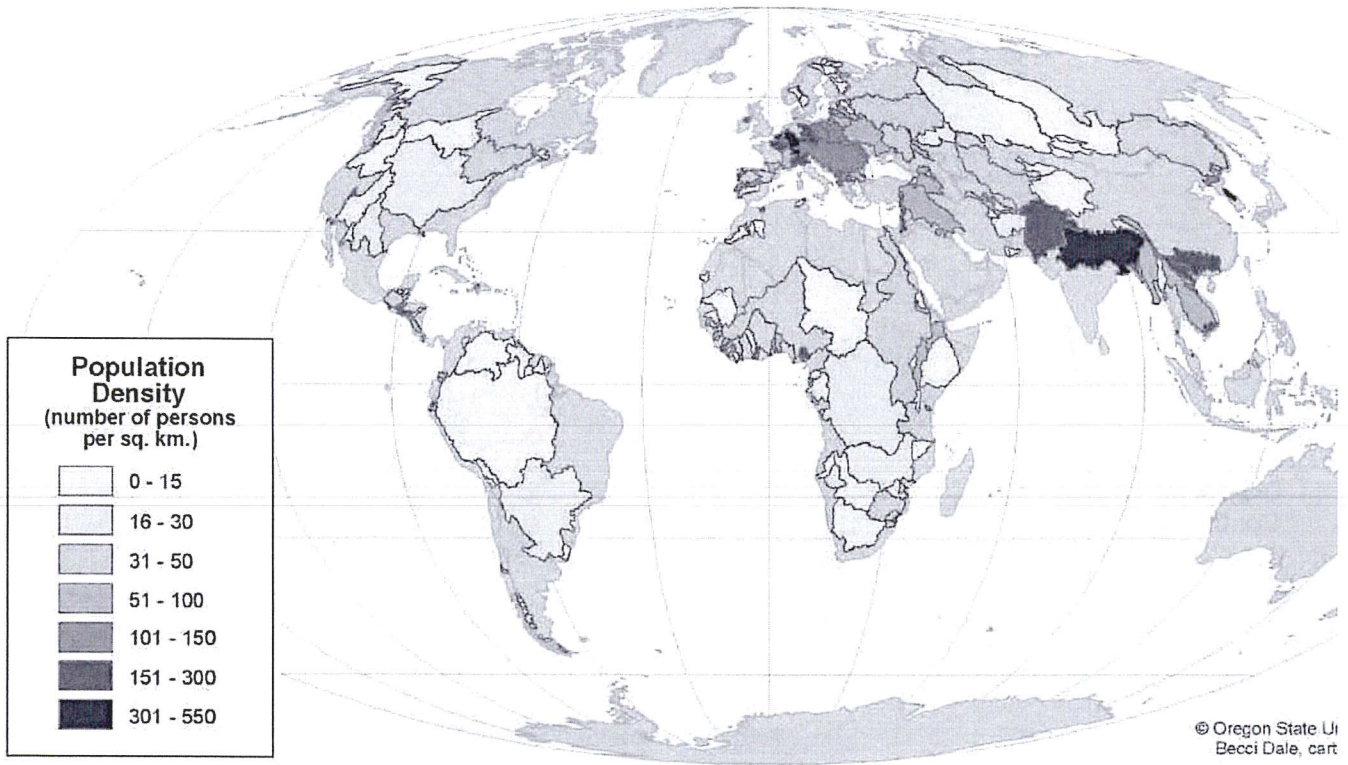
- Worldwide: 263 transboundary watersheds
- They represent
 - 40 % of world population,
 - 50 % of land area and
 - 60 % of runoff
- World Atlas of International freshwater agreements (Aaron Wolf, Oregon State university)



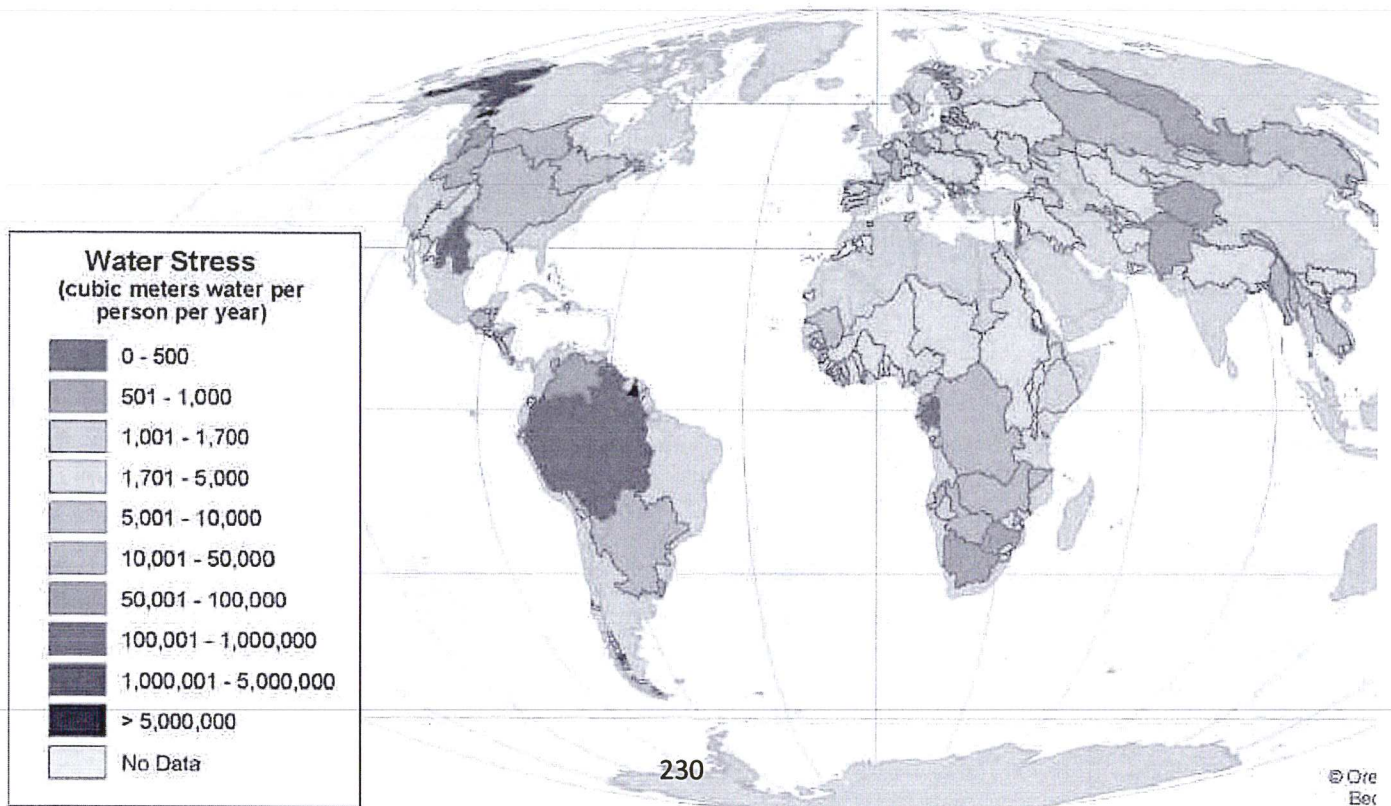
Dam Density per International River Basin

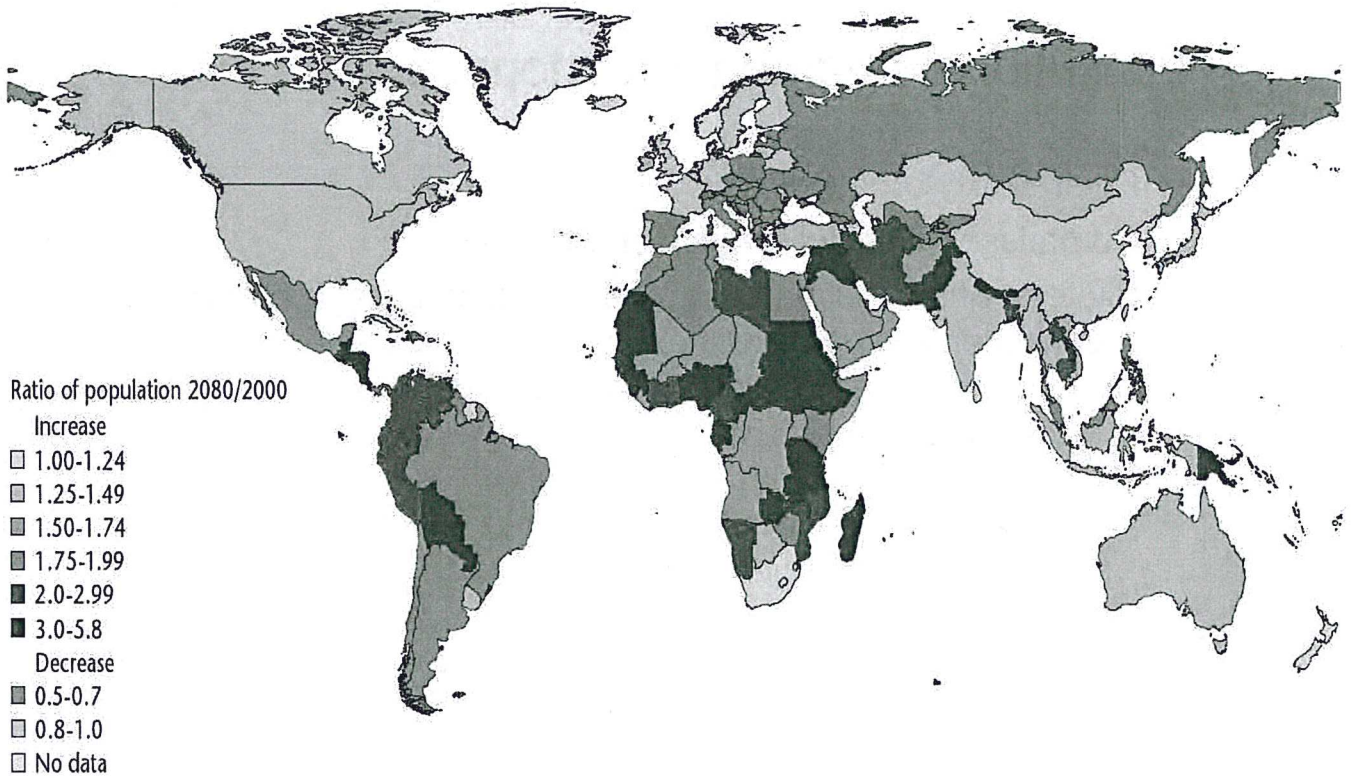


Population Density per International River Basin

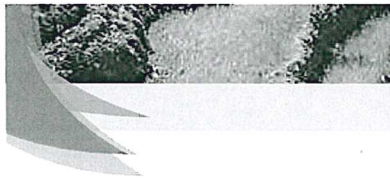


Water Stress per International River Basin

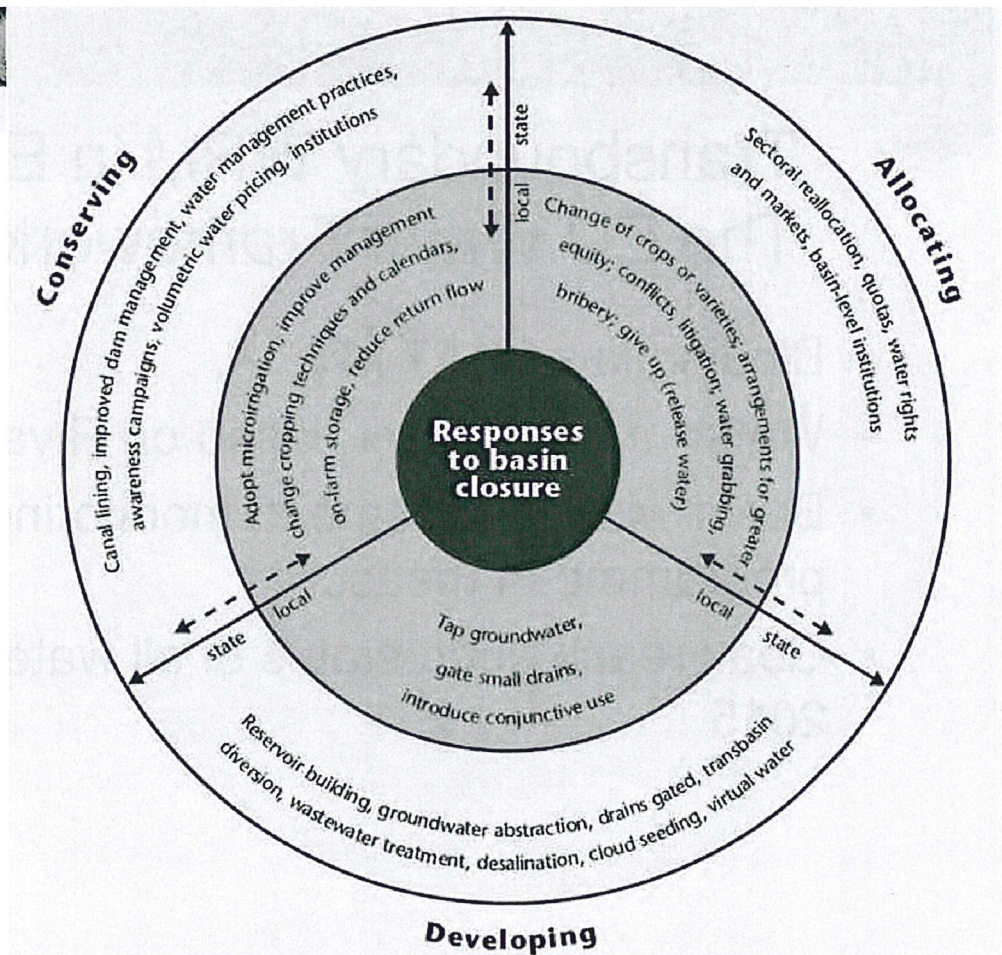




Source: Lutz, Sanderson, and Scherbov 2008.



Responses to water stress?





Institutional and Legal responses

- River Basin Organisations
- Commissions/Task Forces/Committees
- Bilateral and multilateral agreements (compare:International Freshwater Treaties Database :
<http://www.transboundarywaters.orst.edu/database/interfreshreatdata.html>)
- **International Water Law**



Transboundary WRM in Europe: The EU Water Framework Directive

- Binding law for 27 MS
- Water management based on River Basins
- Basin-wide assessment, monitoring and programme of measures
- Goal: reach good status of all water bodies by 2015



International water law

- A) navigational uses (started early 19th century)
- B) non-navigational uses (first approach by ILA in 1956)



International Law and conventions from Helsinki to Berlin

- Helsinki rules (ILA – International Law Association, 1966)
- Ramsar Convention on Wetlands (1971)
- UN Convention to Combat Desertification (1994, ratified 1996; UNCCD, Bonn)
- UN-ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992)
- UN Convention on the Law of the Non-navigational Uses of International Watercourses (1997)
- Berlin Rules on Water Resources Law (ILA, 2004)



International law principles

- Reciprocity
 - Good neighborliness
 - Cooperation
 - Peaceful settlement of disputes
-
- territorial sovereignty;
permanent sovereignty
over natural resources

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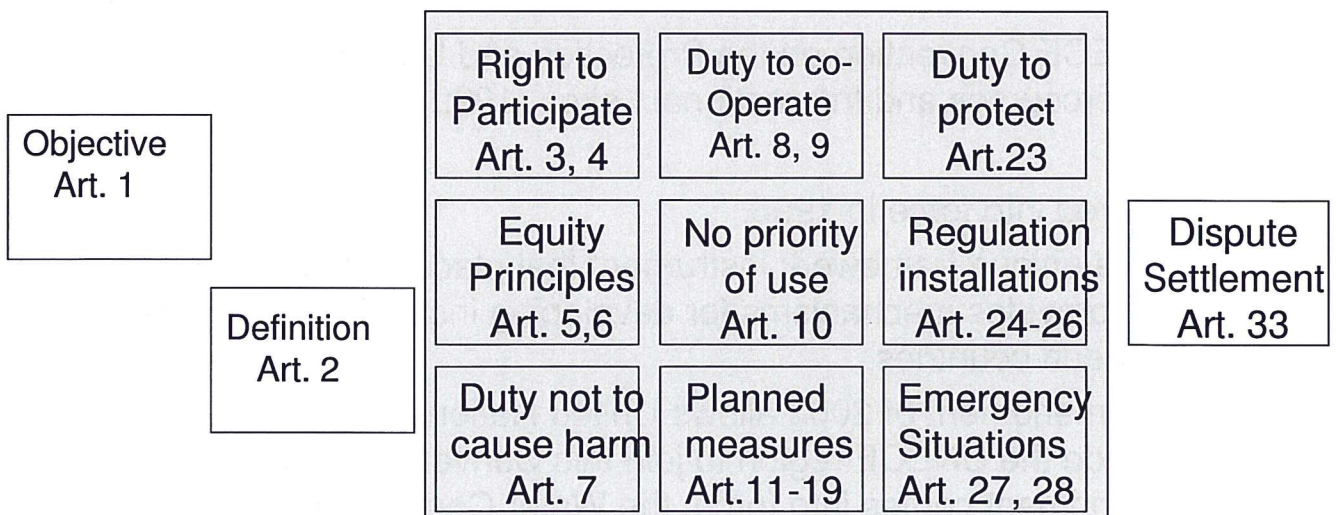
Environmental & Resource Use Principles

- Prevention
- Precaution
- Best available technology not entailing excessive costs (BATNEEC)
- Polluter Pays principle
- Cost-effectiveness

Basic principles of UN convention 1997

- Obligation not to cause significant harm to other basin states,
- equitable and reasonable utilization
- Conjunctive management / integrated management of water resources /sustainable water use
- Information exchange
- Need for consultation and negotiation / prior notification
- Establishing water allocation rules
- Establishing water quality standards
- Establish conflict resolution methods (settlement of disputes)
- (Polluter pays principle)

UN Law on The Non-Navigable Uses of International Watercourses 1997



UN convention on non-navigational uses of international watercourses

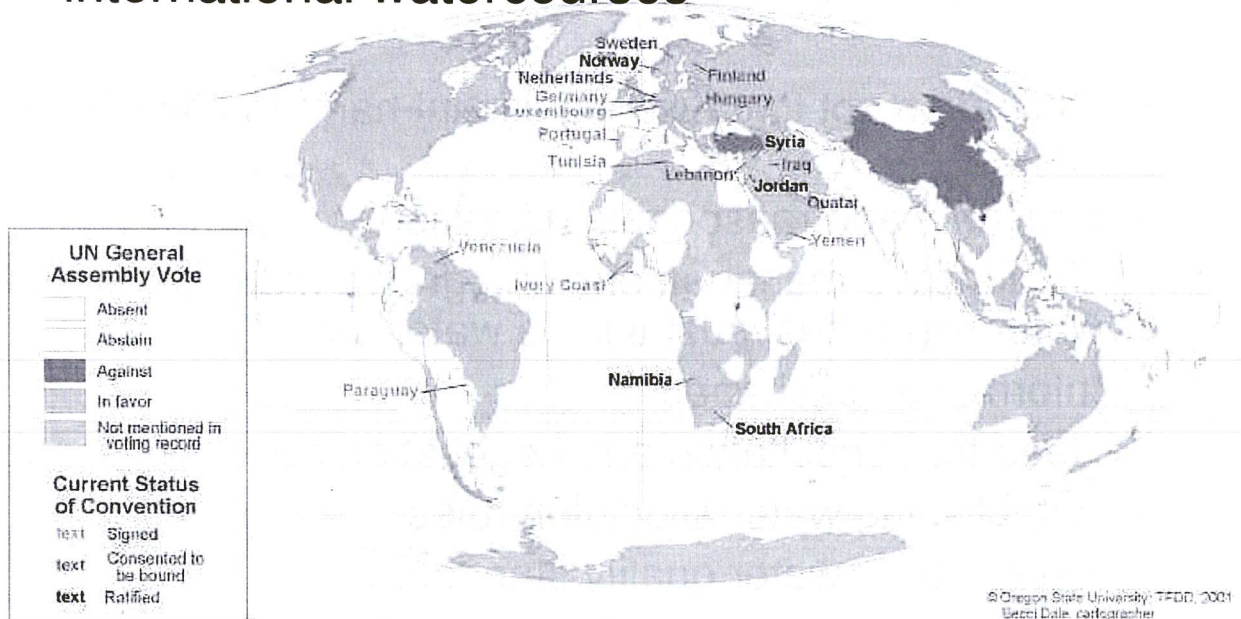
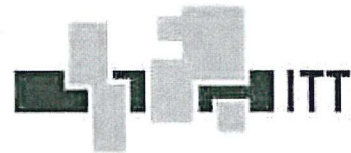
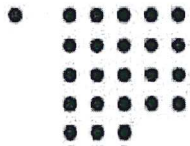


Figure 3. On 21 May 1997, the United Nations General Assembly adopted the United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses by 103 votes in favor, 3 against and 27 abstentions. To bring the document into force, 35 instruments of ratification, acceptance, approval, or accession are necessary. To date, only 12 countries have ratified or consented to be bound (acceptance, approval or accession) by the agreement. Data sources: UN General Assembly Vote, United Nations (1997), Current Status of Convention, United Nations (2002).

UNECE Convention of 1992

- UN-ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992)
- entered into force in 1996.
- It is a unique framework instrument that places much emphasis on and provides mechanisms for developing institutional cooperation between countries.
- An amendment of 2003 allows United Nations Member States outside the UNECE region to join this Convention. When this amendment comes into force, the Water Convention will increase its importance beyond a regional framework document.
- It was adopted by 36 countries (EU, Russia etc)



Summer School
Water and International Relations
Technical University Braunschweig

Euphrates and Tigris River Basin

Prof. Dr. Lars Ribbe (Director of ITT)
ABM Firoz

13/09/2011, TU Braunschweig

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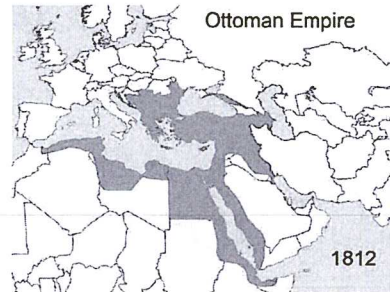
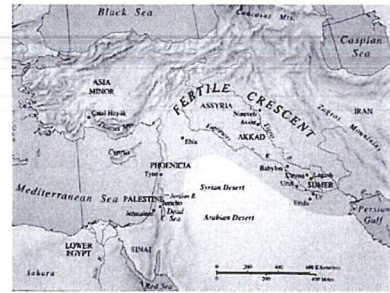
Content

- **Euphrates and Tigris Basin (Water and Environment)**
- **Water Demand and Security**
- **Water related development**
- **Water utilization**
- **Agreement and Conflicts**
- **The Geopolitical Settings**
- **Opportunity for cooperation**



History of ET Basin

- E-T served as a cradel for many civilization.e.g. „The Land between two rivers“- Mesoptomian Civilization (10000 BC)
- The fall of Ottoman Empire : a new transboundary basin in Middle East
- Establishment of present political boundary in 1920 (with establishment of the state Syria, Iraq and Turkey)
- Development of natural resources emerged: after the second world war
- Construction of large dams and consumptive uses for irrigation, making once abundant water a scarce commodity.

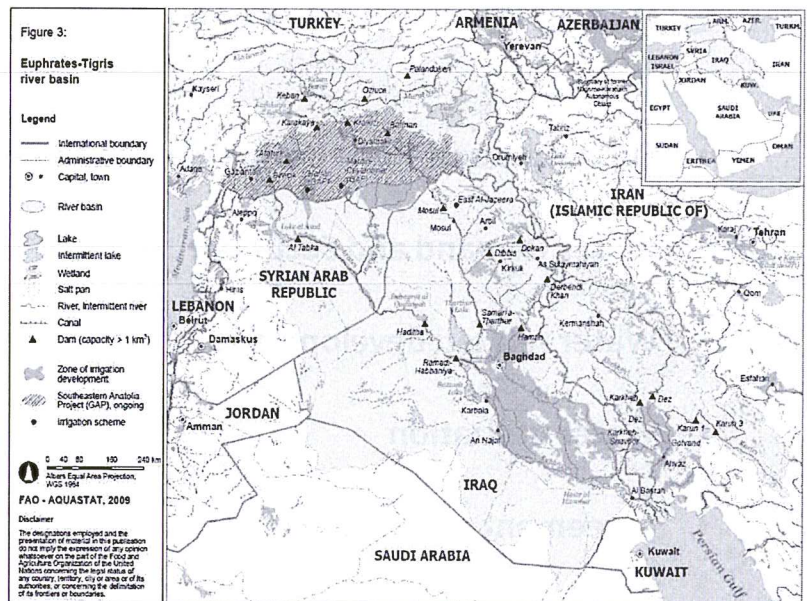


Basic Facts

- 5 Riperain States
- 0.87 million km²
- 13% of Middle East
- 66 million of Population

| Country | Area km ² | % of Basin | % of Country |
|--------------|----------------------|------------|--------------|
| Iraq | 407 880 | 46.4 | 93.1 |
| Turkey | 192 190 | 21.8 | 24.5 |
| Iran | 166 240 | 18.9 | 9.5 |
| Syria | 96 420 | 11.0 | 52.1 |
| Saudi Arabia | 16 840 | 1.9 | 0.8 |
| Jordan | 220 | 0.03 | 0.2 |

Source: AQUASTAT Survey 2008



- ET basin largley fed from snow precipitation over the upland of north and eastern Turkey, Iraq and Iran

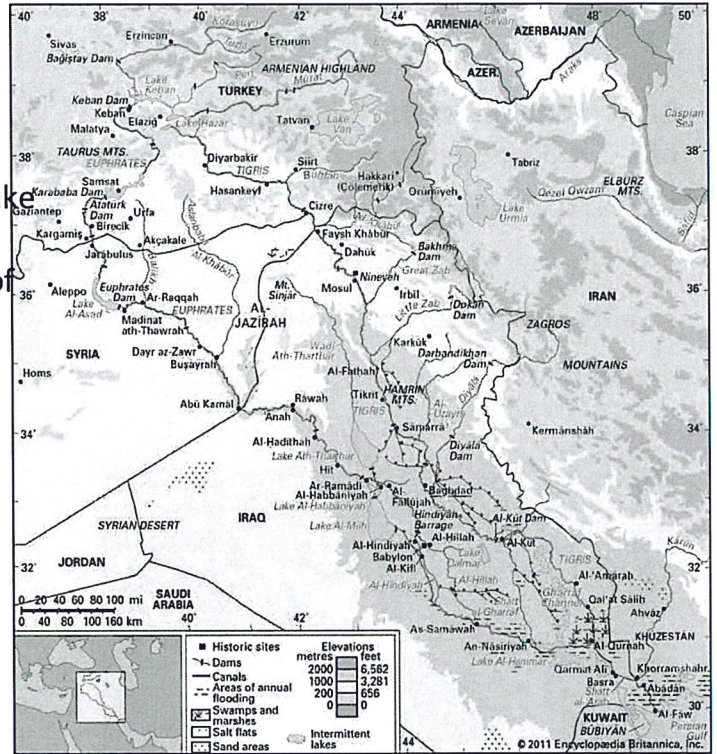
River Description

Euphrates:

- 3000 km Long
- Originated in Mount Ararat (4500 m), near lake Van, Turkey
- 88-98% runoff is produced in the highlands of southeastern Turkey

Tigris:

- 1850 km Long
- Originated near Lake Hazar (at 1150 m elv), in eastern Turkey.
- significantly augmented by several rivers in Iraq
- 32-50 % runoff is produced in the Turkey



After confluence at the city of Al Qurnah in Iraq, the Euphrates and the Tigris form the Shatt al-Arab river, emptying into the Persian Gulf.

Euphrates and Tigris Basin

Fig- Average annual flow of ET River

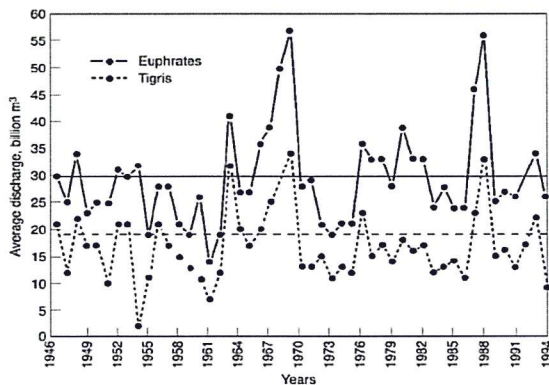


Table- Contribution to the riparian states to the ET basin (Km³/Yr)

| Country | Euphrates | Tigris | Total |
|--------------|-------------|-------------|-------------|
| Turkey | 33.1 | 27.2 | 60.3 |
| Syria | 0.5 | - | 0.5 |
| Iraq | - | 20.7 | 20.7 |
| Iran | - | 3.0 | 3.0 |
| Total | 33.6 | 50.9 | 84.5 |

The subwatershed of ET river basin

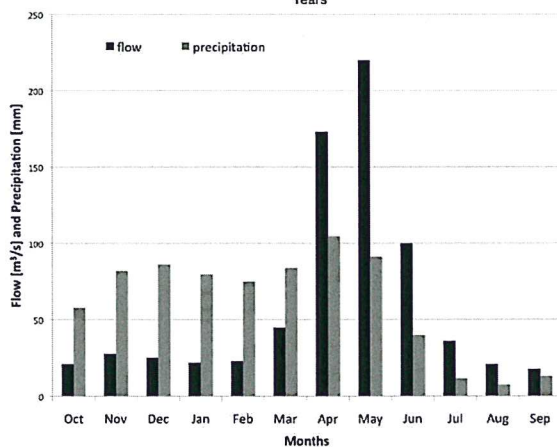
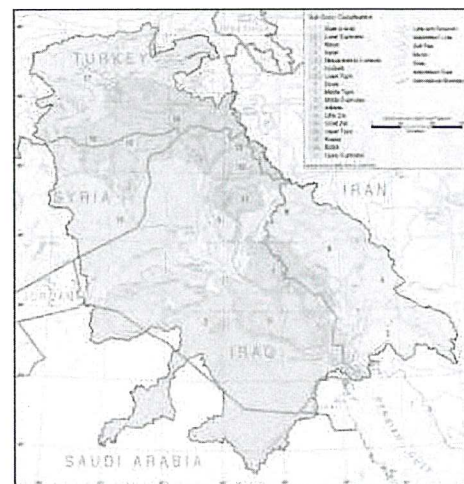
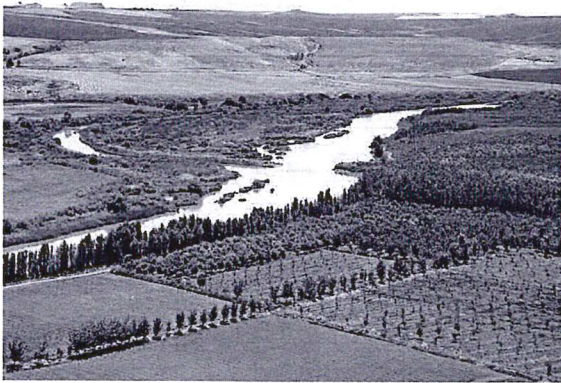
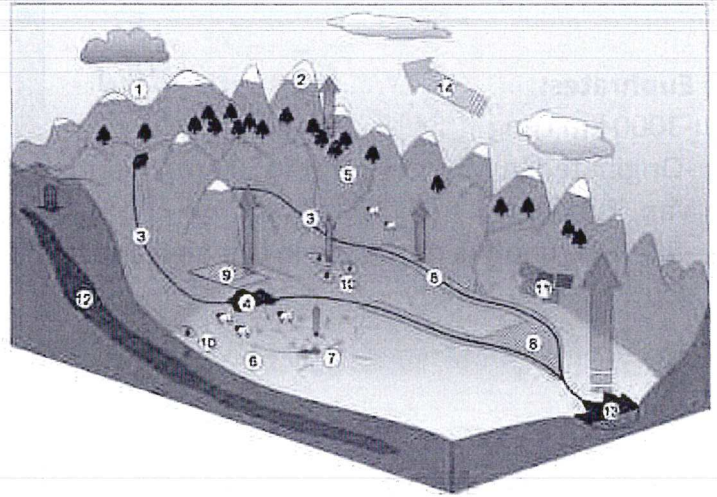


Fig- Distribution of long-term averaged Euphrates flow (black) and precipitation (gray) for a location in SE Turkey

Hydrologic System of ET

Basic elements of the hydrologic system of E-T is divided into into 3 broad classes :

1. Areas that contribute to river (2,5 and 4)
2. draw water from river (9& 10)
3. Neither draw from nor contribute to the river (6 & 7)



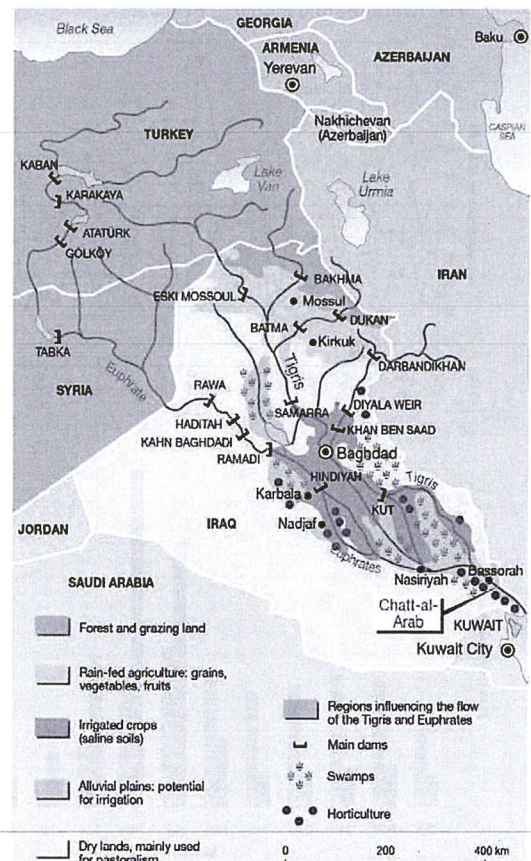
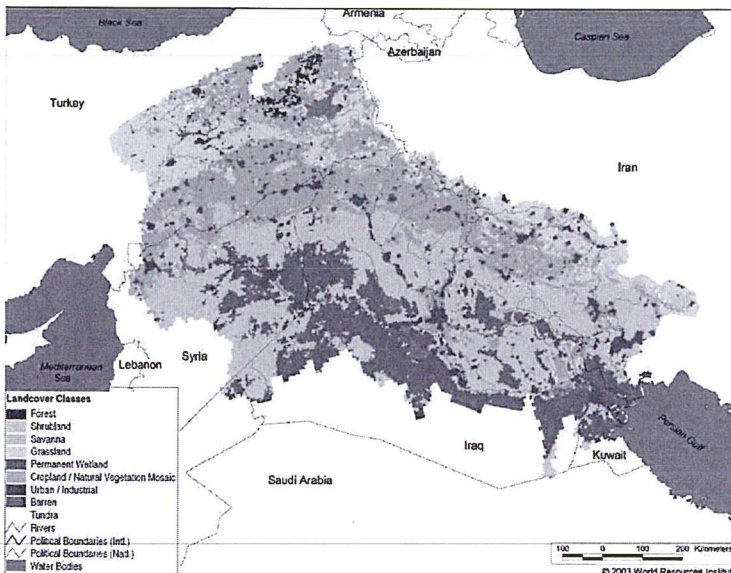
Tigris River At Diyarbakir, courtesy-Bjørn Christian Tørrissen

Schematic of the basic elements of the Euphrates-Tigris catchment hydrologic system. 1. Mountain induced precipitation; 2. High elevation snow storage; 3. River network; 4. Reservoirs; 5. Landscapes that drain into the rivers; 6. Landscapes that do not drain into the rivers; 7. Depressions and transient lakes; 8. Flood plain irrigation; 9. Irrigated districts; 10. Well-fed agriculture; 11. Rain-fed agriculture; 12. Ground water; 13. Water-body source regions (Persian Gulf); and 14. Atmospheric transport of water vapor.

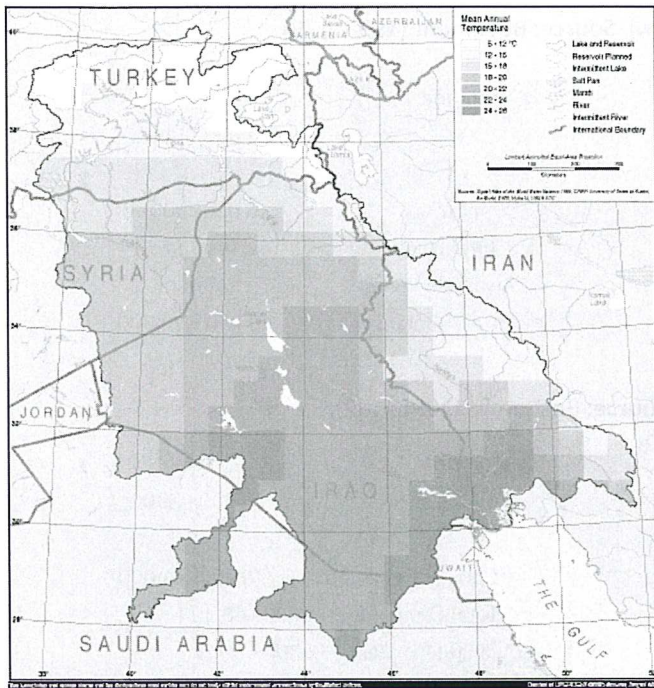
Euphrates and Tigris Basin

Landcover classification

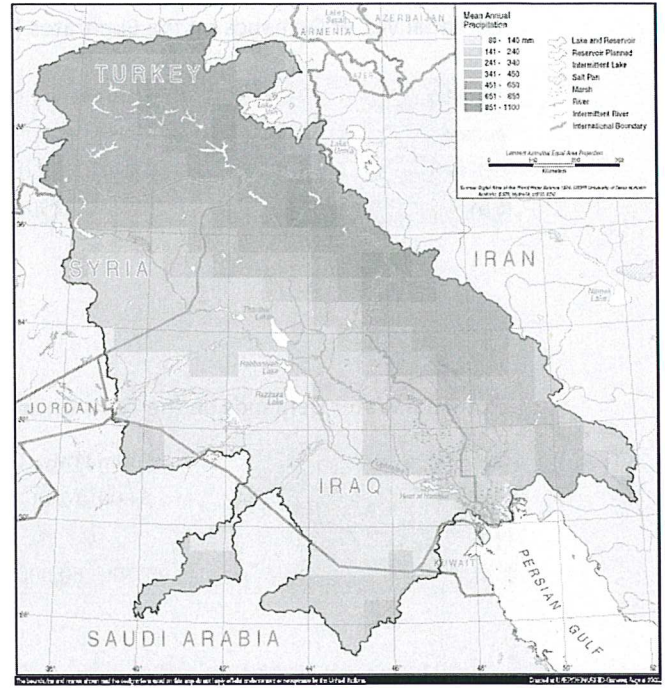
- Grass land, Savanna, shrub – 47.7%
- Cropland- 25.4%
- Irrigated cropland- 9.1%
- Urban area: 6.2%
- Wetland- 2.9%
- Forest cover- 1.2%



Climatic features of the ET Basin



Mean Annual Temperature (°C)



Annual Precipitation (mm)

Water demand and Security

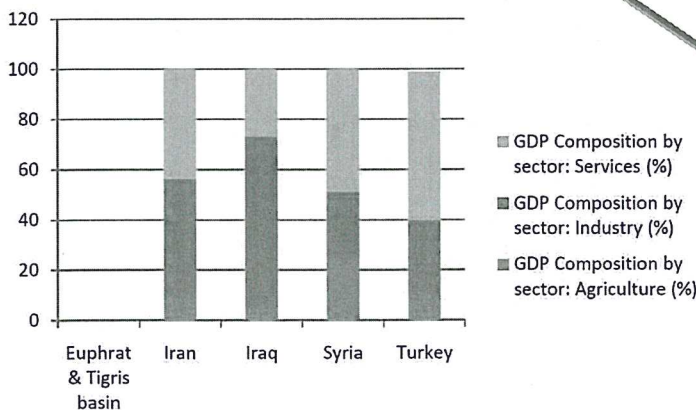
Water Use

Country renewable water resource

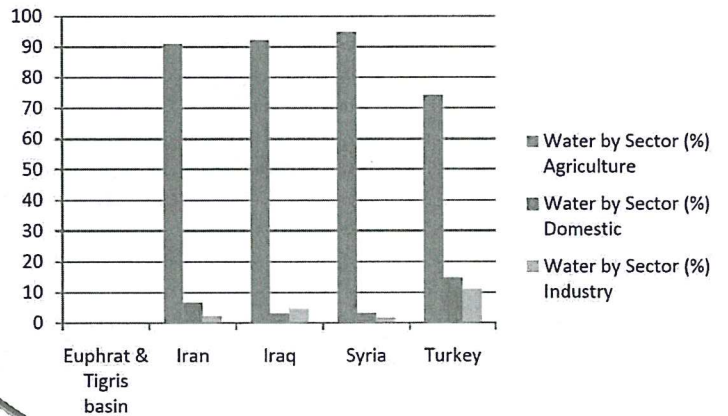
| Country | Water resources bcm/yr | m ³ /capita/year |
|---------|---------------------------|-----------------------------|
| Iraq | 75.42 | 2920 |
| Turkey | 229.30 | 2950 |
| Syria | 26.26 | 1440 |

(UN/WWAP, 2006)

GDP composition by sector for the countries sharing the Euphrates and Tigris Rivers. (CIA, 2008)



Water use by sector in the countries sharing the Euphrates and Tigris Rivers. (CIA, 2008)



Water Quantities Per Capita (m³ /yr/capita)

| Country | 1996 | 2020 |
|--------------------|--------|-------|
| Water rich country | 10,000 | 8,000 |
| Iraq | 2920 | 950 |
| Turkey | 2950 | 980 |
| Syria | 1440 | 780 |

Water stress is considered to be below 1700 m³/capita/year (Falkenmark, 1998)

Potential Water demand

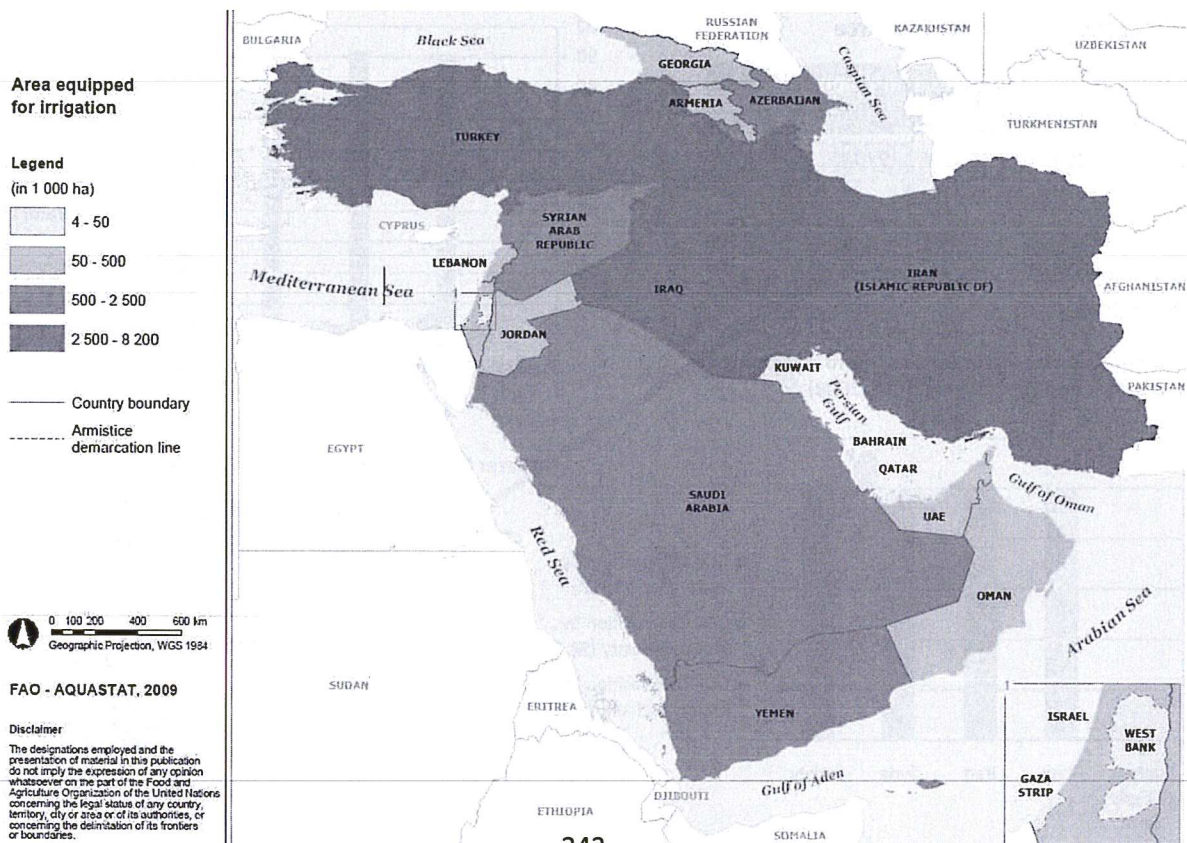
Potential Water Demands on the Euphrates (mcm). Source: Beaumont (1998: 179)

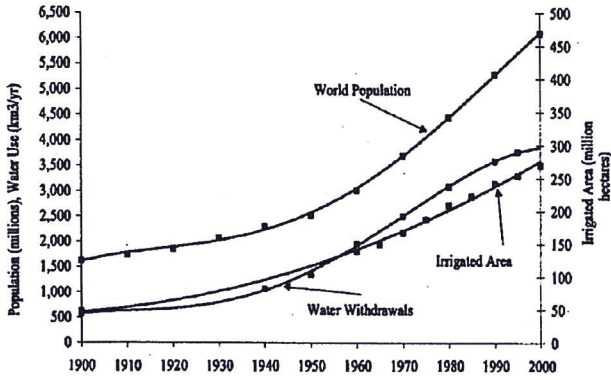
| Country | Irrigation Water Use | Evaporation | Total |
|------------------------|----------------------|-------------|-------------------|
| Turkey | 10.830 - 13.000 | 1.100 | 12.000 - 14.000 |
| Syria | 4.750 - 12.500 | 630 | 5.400 - 12.600 |
| Iraq | 24.400 - 27.500 | 600 | 25.000 - 28.100 |
| Total Demand | | | 42.300 - 54.800 |
| Available Water | | | 31.800 |
| Balance | | | -10.500 - -23.000 |

Potential Water Demands on the Tigris (mcm). Source: Beaumont (1998: 182).

| Country | Irrigation Water Use | Evaporation | Total |
|------------------------|----------------------|-------------|-------------------|
| Turkey | 5.600 - 6.700 | 630 | 6.200 - 7.300 |
| Syria | 0 | 0 | 0 |
| Iraq | 37.200 - 60.000 | 1.00 | 38.200 - 61.000 |
| Total Demand | | | 44.400 - 68.300 |
| Available Water | | | 52.700 |
| Balance | | | + 8.200 to 15.700 |

Map Showing the intensity of irrigation area with in ET basin



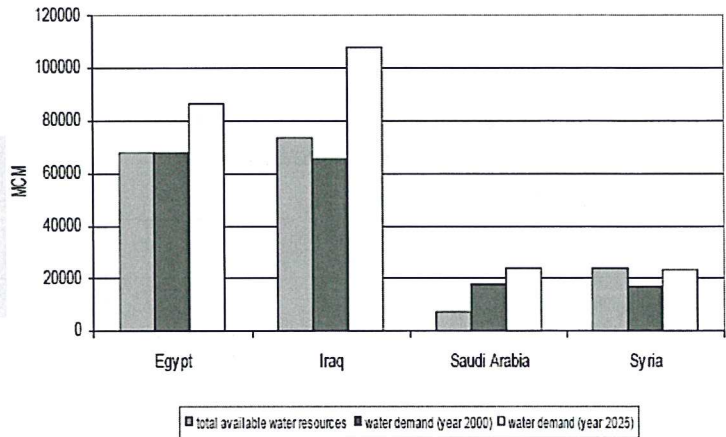


Population pressure, Technologies and expansion of irrigation activities increase the amount of water withdraw

Fig- global water withdrawl and irrigation development

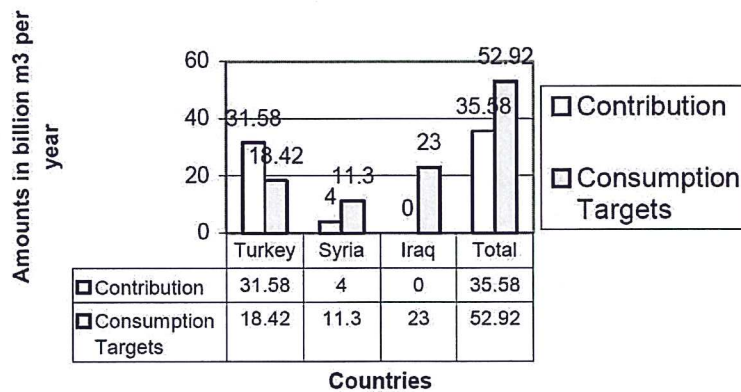
Future increasing water demand could lead to serious conflict among the riparian states due to deficit of water resources.

Available Water Resources vs. Demand



Unrealistic Existing Demands

Water Potential of the Euphrates River and the Consumption Targets of the Riparian States



Water demand and Security

Water Balance of ET Basin

Precipitation 500- 600 mm per annum

Runoff in Taurus and Zargos mountain ~3500 m³/s

Water discharge in Shatt-al-Arab is 1450 m³/s at Persian Gulf

Loss of river water in the basin is 2050 m³ /s or 60% of total runoff

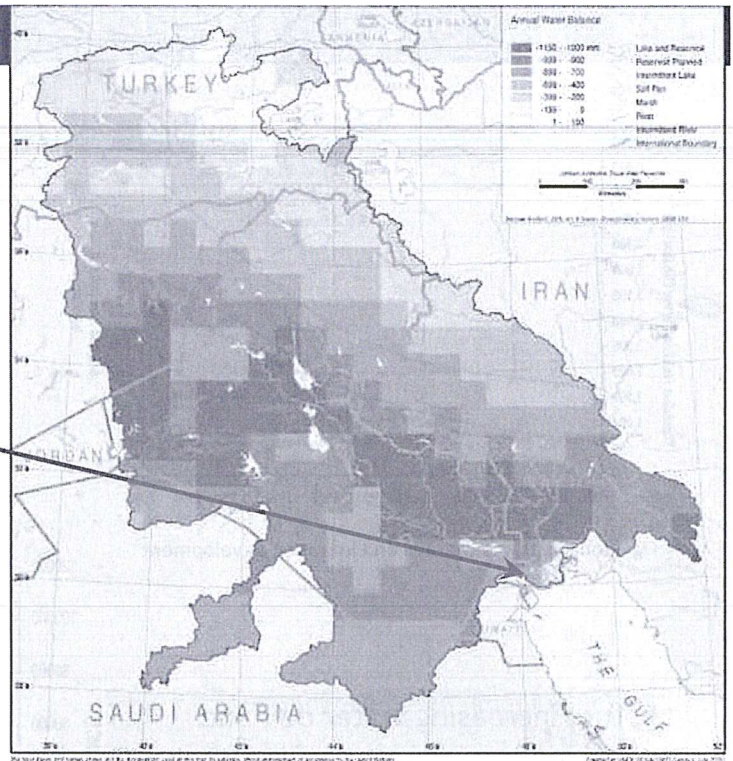


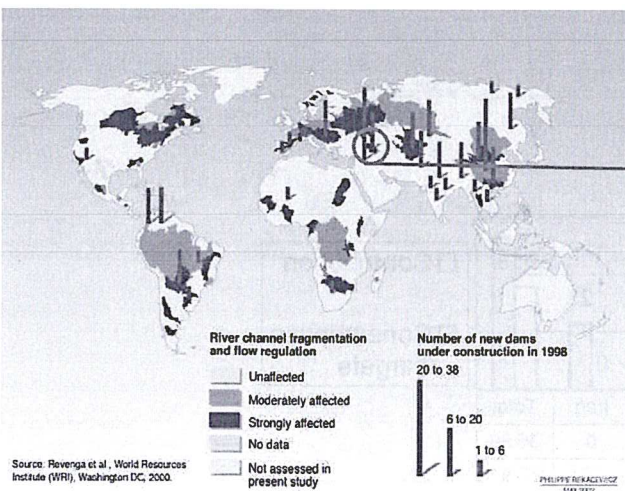
Table: Water balance components of the Euphrates, Tigris, and Shatt al-Arab in the period before runoff regulation (the top number is in mm, the bottom number is in Km³)

| River | Basin area, thousand km ² | Precipitation | Runoff at the mouth | Evaporation |
|---|--------------------------------------|---------------|---------------------|-------------|
| Euphrates, Hit gauging station | 264 | 410 108 | 110 29.0 | 300 79 |
| Tigris, Baghdad gauging station | 166 | 650 108 | 256 42.5 | 394 65.5 |
| Shatt al-Arab (Euphrates, Tigris, and Karun rivers) | 750 | 382 286 | 61 46.0 | 321 240 |

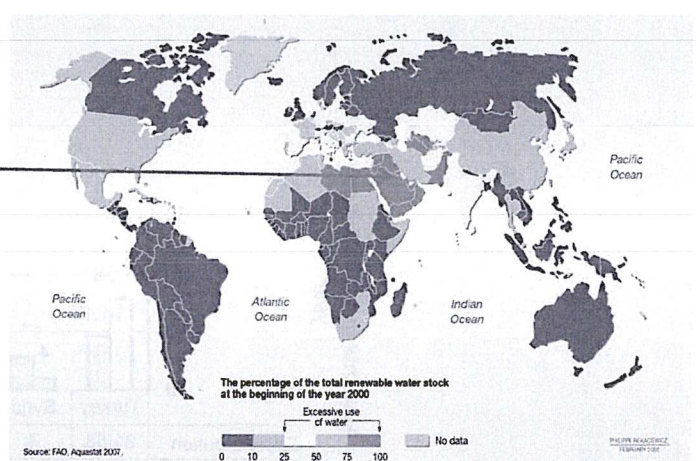
Water related development

Water Related development in the Basin

World wide Development of hydro schemes



Excessive withdrawal of renewable water resources

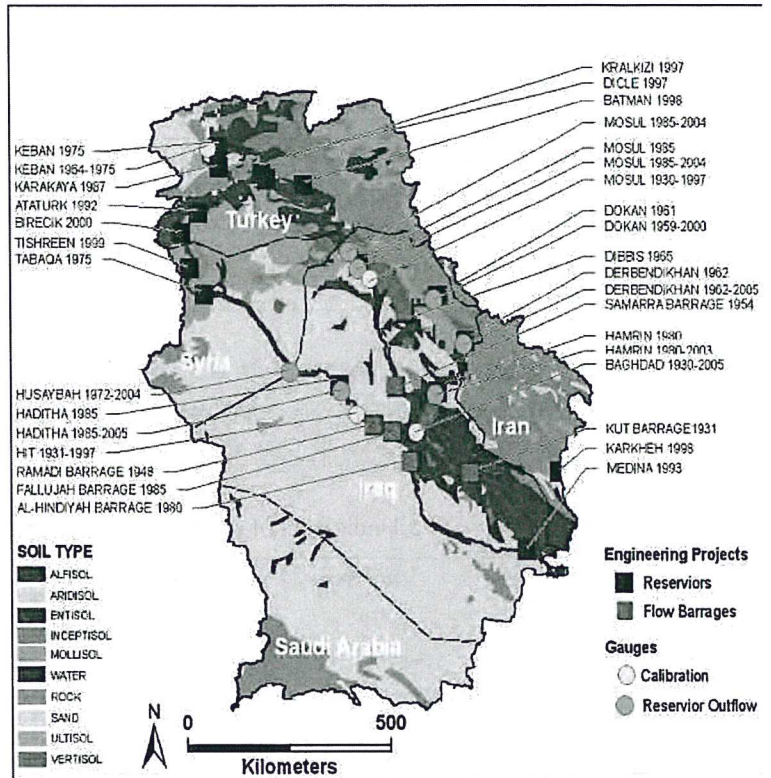


Turkey is carrying out a US\$32 billion water development scheme called the Grand Anatolia Project (GAP), which involves construction of several dams in its underdeveloped south-east, for irrigation and to generate hydro electric power (HEP).

Development of Hydroschemes

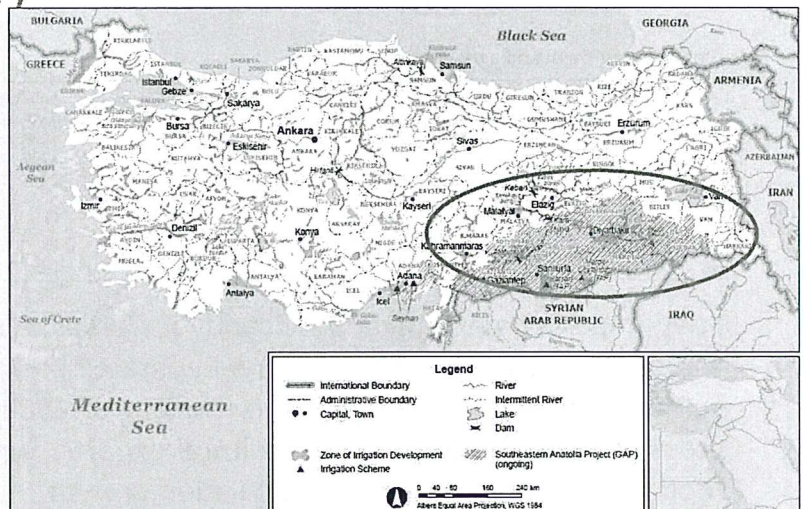
- The dependable total natural runoff of ET is 45.3 Km³. and Agriculture water demand in 1970 was 60 Km³. create a deficit of water shortages of ca. 15 Km³ and has been increasing since.
- This lead, large scale hydroscheme and construction of dams, reservoirs.
- Iraq first developed engineering project in the basin- Al Hindiya and Ramadi-Habbaniya dams on the Euphrates were constructed in 1914 and in 1951 respectively,

| Country | No of dams | capacity (Million m ³) |
|---------|------------|------------------------------------|
| Turkey | 34 | 99 598 |
| Iraq | 7 | 110 300 |
| Syria | 1 | 11 200 |
| Iran | 14 | 15 832 |
| Total | 56 | 236 930 |



Southeastern Anatolia Project (GAP)

- In 1977, Turkey announced to implement Southeastern Anatolia Project (GAP)
- It includes 13 major projects, 7 are in Euphrates and 6 in Tigris river basin.
- After full development, GAP will includes 22 dams and 19 hydropower project.
- Total Irrigation capacity of almost 1.82 million ha.



On the other Side

Syrian Arab Republic and Iraq fear that the project will lead to reduced river flows and leave little water for use in their countries' agricultural and energy projects.

Social and economic implications of water scarcity

Selected social indicators of the ET basin countries

| Country | Life expectancy (years) (1990) | Infant mortality per 1,000 live births (1990-5) | Average adult illiteracy (%) (1991) | Annual population growth (%) (1995-2000) |
|---------|--------------------------------|---|-------------------------------------|--|
| Turkey | 67 | 62 | 19 | 1.63 |
| Syria | 66 | 39 | 36 | 3.45 |
| Iraq | 63 | 56 | 40 | 3.23 |
| Iran | 63 | 40 | 46 | 2.62 |

The economic problems of the four partners to the Tigris-Euphrates are very large, partly because of their rapid population growth and their reliance on agriculture

Selected economical indicators of the ET basin countries

| Country | Real GDP per capita | GNP per capita | Average GNP growth rate | Percentage of labour in agriculture | Agriculture as % of GDP | Total debt as % of GNP |
|---------|---------------------|----------------|-------------------------|-------------------------------------|-------------------------|------------------------|
| | 1985-8 \$ | 1990 \$ | 1965-90 % | 1985-8 % | 1990 % | 1990 % |
| Turkey | 3,900 | 1,630 | 2.6 | 45.3 | 18 | 46.1 |
| Syria | 4,460 | 1,000 | 2.9 | 24.9 | 28 | 118.1 |
| Iraq | 3,510 | 3,020 | n.d. | 12.5 | n.d. | n.d. |
| Iran | 3,560 | 2,490 | 0.1 | 36.4 | 21 | 7.6 |

Source: World Bank 1992; World Resources Institute 1992-3; Human Development Report 1992



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in the Tropics and Subtropics



Social and economic implications of water scarcity

Population growth and agricultural productivity

| Country | Cereal imports (thousands of metric tons), 1990 | Food aid in cereals (thousands of metric tons), 1989-90 | Food aid (million \$) 1989-90 | Food imports as percentage share of merchandise imports, 1990 |
|---------|---|---|-------------------------------|---|
| Turkey | 3,177 | 13 | 0 | 7 |
| Syria | 2,091 | 22 | 4.0 | 17 |
| Iraq | 2,834 | n.d. | n.d. | 15 |
| Iran | 6,250 | 22 | n.d. | 12 |

Food imports have grown significantly in Turkey, a country which, unlike the other co-riparians to the Tigris-Euphrates basin, is classified as self-sufficient in food production. The drought of 1988-9 and the failure of crops led to a reduction in agricultural exports. Syria has to increase its food import because of rapid population growth

Food and agricultural product export and import in the Tigris-Euphrates basin

| | Total population | | Average annual population growth (%) | | Average annual growth rate in agriculture (%) | Average index of food production per capita (1979-81 = 100) |
|--------|------------------|------|--------------------------------------|-----------|---|---|
| | 1990 | 2000 | 1980-7 | 1990-2000 | 1980-90 | 1988-90 |
| Turkey | 55.9 | 67 | 2.3 | 1.8 | 3.0 | 97 |
| Syria | 12.5 | 18 | 3.6 | 3.6 | -0.6 | 80 |
| Iraq | 15.6 | 26 | 3.6 | 3.4 | n.d. | 92 |
| Iran | 54.6 | 69 | 3.0 | 2.3 | 4.0 | 104 |

Source: World Bank 1992; World Resources Institute 1992-3; Human Development Report 1992



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Potential for food security with in ET Basin

Turkey

Southeastern part of Turkey has favourable topography for irrigation, but less precipitation. GAP will increase the irrigaiton area around 1.7 million ha at southeastern Antolia

Syria

Syria's options for agricultural expansion are very limited and its dependence on food import will increase.

Iraq

there are major limitations to the potential water available to Iraq and the serious environmental restrictions which affect Iraq's agricultural sector. About 26 per cent of the land of Iraq is classified as potentially useful agricultural land, and, of this, 30–40 per cent (4– 5.45 million ha) is currently being cultivated. Therefore irrigation schemes might help to uplift the countries economy.

Source: World Bank 1992; World Resources Institute 1992–3; Human Development Report 1992



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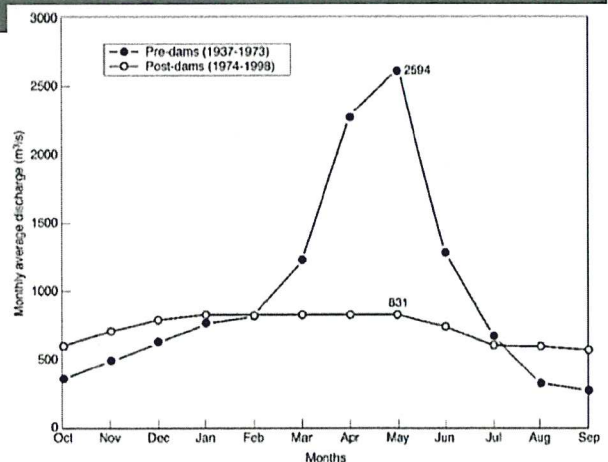


Problem related water utilization

Reduction of future water flow

The anticipated and declared demands of the riparian countires and the development of different hydrological schemes altered the hydroloigical flow of the ET basin.

- Water is already becoming a scarce commodity, as the 1999–2001 drought has proven.
- Increase demand of irrigation and dam construction reduce the general flow of the river



Comparison of the flow regimes for the Euphrates river at Hit-Husbia, Iraq (UNEP, 2001)

water runoff in the Euphrates and Tigris during the pre and post dam construction

| Period | Characteristic | Points along the Euphrates | | Points along the Tigris | | |
|-------------|-------------------------------|----------------------------|--|-------------------------|------------------------------------|--------------------------------------|
| | | Hit gauging station | downstream of Al Hindiya gauging station | Baghdad | upstream of Al Kut gauging station | downstream of Al Kut gauging station |
| Before 1990 | Q_{av} , m ³ /s | 869 | 597 | 1078 | 1147 | 945 |
| | W , km ³ /year | 27.4 | 18.8 | 34.0 | 36.2 | 29.8 |
| | Q_{max} , m ³ /s | 7510 | 3690 | 7640 | 9206 | 8700 |
| | Q_{min} , m ³ /s | 55 | 3 | 43 | 70 | 0 |
| After 1990 | Q_{av} , m ³ /s | 356 | 338 | 666 | 578 | 368 |
| | W , km ³ /year | 11.2 | 10.7 | 21.0 | 18.2 | 11.6 |
| | Q_{max} , m ³ /s | 2514 | 827 | 1825 | 1577 | 1321 |
| | Q_{min} , m ³ /s | 58 | 60 | 155 | 140 | 60 |

Source: New Eden Master Plan for Integrated Water Resources Management in the Marshlands

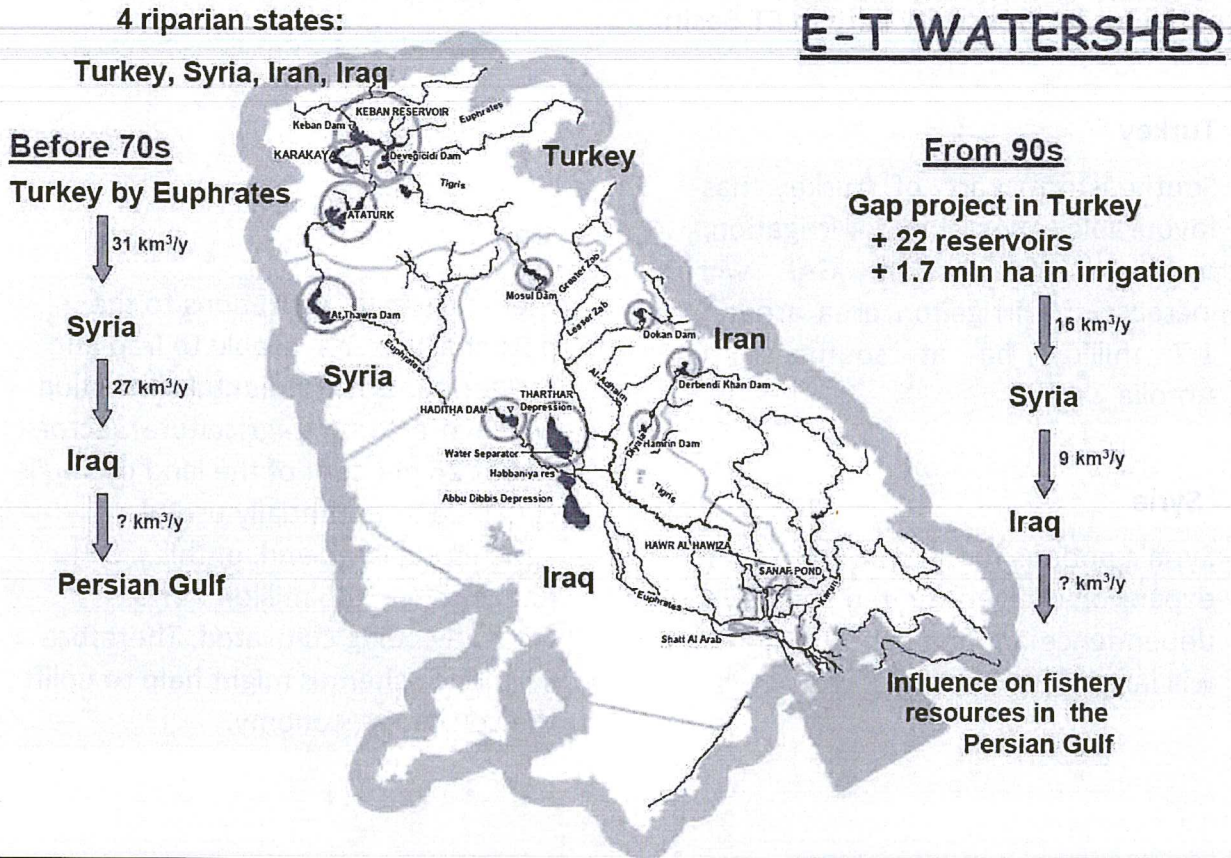


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Problem related water utilization



Problem related water utilization

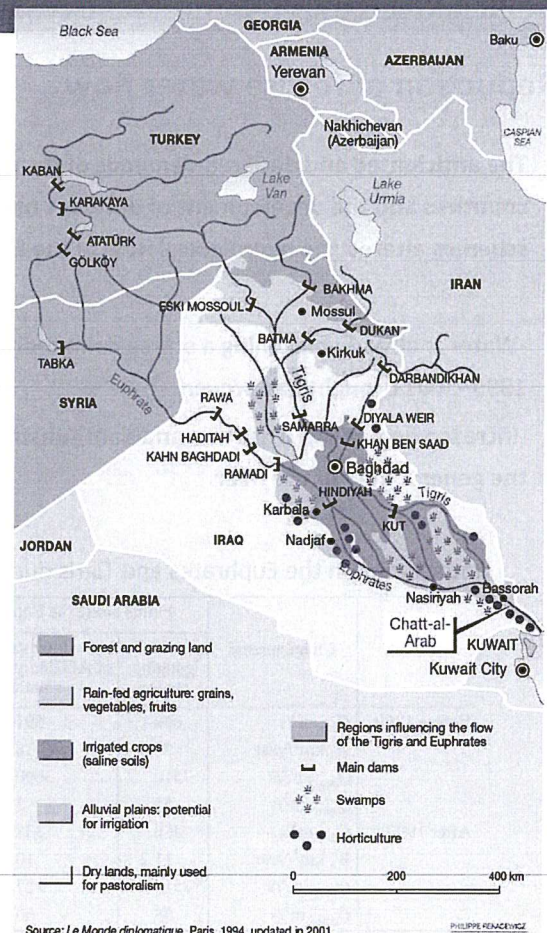
Water way modification

Common waterway modifications, such as the construction of dams and irrigation channels, inter-basin connections and water transfers, can impact on

- the hydrology of freshwater systems
- disconnect rivers from floodplains and wetlands,
- and decrease water velocity in riverine systems.

Resulting impact would be:

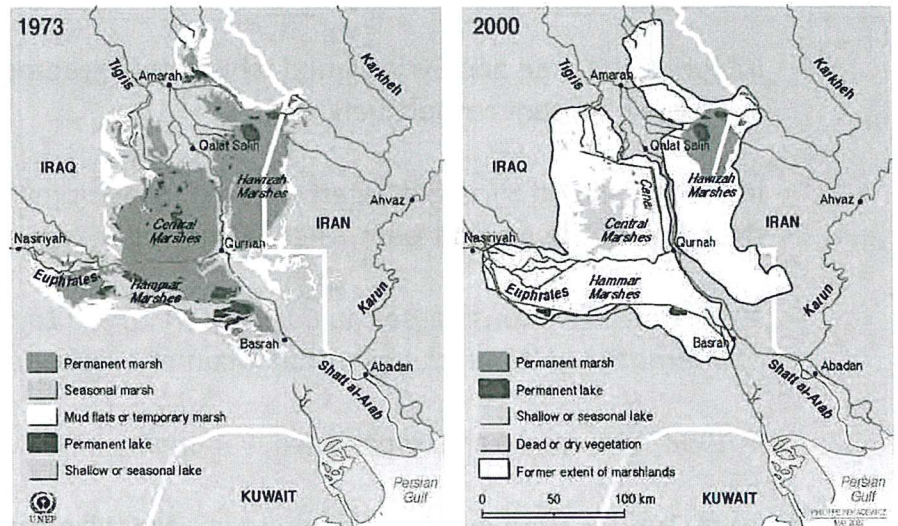
- affect the seasonal flow and sediment transport of rivers downstream,
- impacting on fish migrations and changing the composition of riparian ecosystems.
- leading to an unquantifiable loss in freshwater biodiversity and inland fishery resources



Destruction of Marshland

- Poor irrigation practice
- 30% of land has been damaged by salinisation
- In Shatt-al-Arab, - earlier political decision to drain the marshland in combination of over use of water reduced water flow of the marshland
- Serious problem with the water availability and water quality

From Wetlands to Dry Lands
The Destruction of the Mesopotamian Marshlands



Note: These two maps are sourced from satellite images and maps originally created by Hassan Partow, GRID-Genève.
Source: Hassan Partow, *The Mesopotamian Marshlands: Demise of an Ecosystem*, United Nations Environment Programme (UNEP), Division of Early Warning and Assessment (DEWA), 2001.

This graphic illustrates the decline in the area's marshlands by comparing the locations of its marshlands and lakes in 1973 and in 2000.

Agreement and Conflicts

Timeline of ET Basin

- Until 1970, no water usage conflicts evolved in ET basin,
- Beginning of 1970s, conflict situation arises when Turkey & Syria began to develop water projects.
- In 1930, French Turkish protocol emerged to coordinate any plans to utilize Euphratese water between two countries Turkey and Iraq, this lead to Friendship agreement in 1946, where Turkey not only obliged to report Iraq for any plans but also allow Iraq to build Dam on Turkey's territory.
- In 1974, the first crisis began between Iraq and Syria due to several factors:
 - Driest year, starting to fill the water for Dams (Turkey and Syria).
 - Severe water shortage of Iraq.

However, due to immense political pressure, Syria released 200 mil. m³ water.
- In 1980, Joint Technical Committee (JTC) for Regional Waters was established by three riparian countries (Iraq, Turkey and Syria). For the first time, this evolved into an active organization which deals with all the water issues among the riparian states.
- The next agreement took place in 1987, when Turkey agreed to increase the flow of Euphrates from 450 to 500 m³/s- a quantity equal to 15.7 billion m³

- In April 1990, Iraq and Syria signed a bilateral agreement for sharing Euphrates water at 58 & 42 percent respectively.
- In 1990, Iraq and Syria get together to oppose Turkey's cutoff of the Euphrates during the filling of the Ataturk Dam. They boycott companies involved in the GAP project.
- 1997, United Nations passes its *Convention on the Law of the Non-Navigational Uses of International Watercourses*. The document is not recognized by Turkey.
- In 1998, Syria and Iraq almost go to war again over the water in the Euphrates River
- 2008, Turkey, Syria and Iraq decide to initiate talks and establish a water institute to work toward the solution of water-related problems among the three.

The Geopolitical Setting

The Geopolitical Setting in ET Basin

- As in the Nile, the relationships are not only determined by water issues but also other sources of tension and even conflicts among the riparian states, e.g.
 - Syria and Turkey have several areas of tension which exacerbate their conflicts over Euphrates
 - First, Old conflict over Hatai-Alexandretta-Iskanderun region which France handed over to Turkey in 1939 for entering second world war on the Allies side.
 - Second concern is the insurgent Kurdish minority.
 - Another problem with Turkey, criticizing Syria for its support of anti Turkish Armenian and Kurdish activities. Syria being upset by Turkey's membership in the Baghdad Alliance.
 - However, the present agreement over water allocation of the Tigris-Euphrates will probably lead the riparian to a certain degree of conflict, though not to war.

The Peace Pipeline Project

In mid 1980s, Turkish Prime Minister offered a "Peace Pipeline" project to Middle East countries that would transport water from two western Turkish rivers, the Seyhan and Ceyhan, southward to Syria, Jordan, Saudi Arabia, and the other Gulf states.

The Peace Pipeline would provide 8 to 9 million people with up to 400 liters of water per person per day

The project, however, has not been so warmly received by several states in the region, partly because of its high estimated cost of \$21 billion and of the projected length of time (ten years) needed for the operation of the pipeline

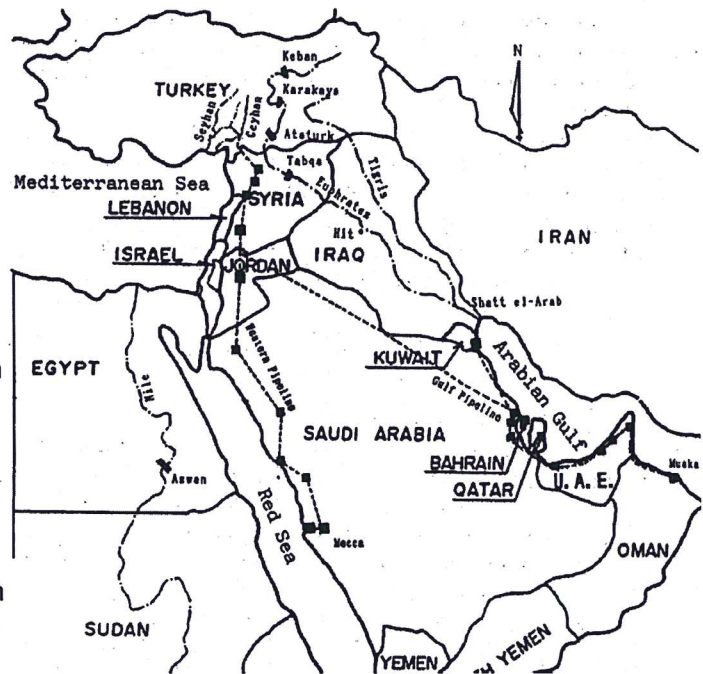


Fig- The Peace Pipe Line Project

The Geopolitical Setting

Principles of water sharing

An equitable sharing of the Euphrates- Tigris water should be founded on the principle of hydrology and climate, economic and social need and population dependent on water.

-Iraq has low potential for irrigation production and low productivity, thus waste of water.

-Turkey had enormous efforts to achieve self sufficiency for food production

-Syria on the other hand has highest per capita GNP, but less on the food production.

| Principles for allocation | Turkey | Syria | Iraq | Iran | |
|------------------------------------|--|---|--|--|-----------|
| Country shares in are of ET (%) | Euphrates | 28% | 17% | 40% | |
| | Tigris | 12% | >1% | 54% | 34% |
| Country contribution to river | Euphrates | 88-98% | 2-12% | | |
| | Tigris | 100% | | | |
| | Tigris tributaries | 70% | | 8-9% | 21% |
| Climate | Large amount of precipitation, no desert | Only 10% of area has more than 500 mm | Arid climate over about 70% area | Mostly arid and semi-arid climate | |
| Utilization pattern | Past | None | None | Historical right | None |
| | Present | 1.8 billion m ³ | 4.47-5.9 billion m ³ | 13-15 billion m ³ | Local use |
| Social & economic need | Income (USD) | 1630 | 1000 | 3020 | 2490 |
| | Pop Growth | 1.63 | 3.45 | 3.23 | 2.62 |
| | Agri. Growth | 3.3 | -1.1 | 5.37 | - |
| | Life expectancy | 67 | 66 | 63 | 63 |
| | Infant mortality | 62 | 39 | 56 | 40 |
| Economic and social evaluation | Middle income economy lower middle income, medium level of needs | Middle income economy, lower middle income, higher level of needs | Upper middle income economy, high needs in Tigris, Medium needs in Euphrates | Upper middle income economy, low needs | |
| Level of dependence on agriculture | Food production | 97% | 80% | 92% | 104% |
| | Index in Ag. In GDP | 18% | 28% | 18% | 21% |
| Treaties and legal agreement | French-Turkish protocol 1930, 1946 agreement with Iraq | | 1946 Friendship agreement with Turkey | | |

The possibilities for a conflict over the precious water of ET basin. Three factors may exacerbate or prevent crisis!

- There is a general failure to implement water and agricultural development projects by all riparians. Because of Iraq war and needed for larger investment will development- thus flow of Euphrates remain unhampered
- A key crisis would be the storage capability, and Turkey and Syria may tempted to use water as a weapon against Iraq.
- The riparian may make a reasonable change in their demand and priorities for ET rivers. Which reducing/preventing the danger of conflicts-

Relative ranking of the ET riparians according to Helsinki Rules

| Country | Turkey | Syria | Iraq | Iran | |
|-----------------------------|-------------------|-------|------|------|---|
| Share in drainage basin | 2 | 4 | 1 | 3 | |
| Countr's water contribution | 1 | 4 | 3 | 2 | |
| Climate | 4 | 2 | 1 | 3 | |
| Patterns of Utilization | Past | 4 | 2 | 1 | 3 |
| | Present | 3 | 2 | 1 | 4 |
| Social Indicators | L.Ex | 1 | 2 | 3 | 3 |
| | Inf. Mor | 1 | 4 | 2 | 3 |
| Economic Indicators | Per capita income | 3 | 4 | 1 | 2 |
| | Total debt | 3 | 1 | 2 | 4 |
| | Total population | 1 | 4 | 3 | 2 |
| | Annual pop growth | 4 | 1 | 2 | 3 |
| | Cereals imports | 2 | 4 | 3 | 1 |
| Food production per capita | 2 | 4 | 3 | 1 | |

The Opportunity for cooperation

Opportunity for Cooperation

- The optimum plan for the basin as a whole?
- The water of ET can be utilized taking into account seasonal and yearly variations in flow due to flood and droughts
- Water transfers between rivers and between reservoirs of the same river
- Conjunctive use of interconnected water and energy systems can be utilized
- Water augmenting techniques, reuse of return water can be utilized and practised
- Demand management plans can be developed for municipal and irrigation water supplies, especially for possible drought periods.
- Cooperative action may facilitate the achievement of environmental sustainability.
- Financing of joint and national projects from various international sources may be easier and more attractive.

Thank you

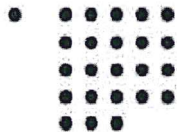
Contact Information:

Lars Ribbe: lars.ribbe@fh-koeln.de

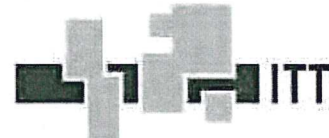


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**Nile Basin:
Water, Food and Energy Security
Water Conflicts and status of Cooperation**

Outlines

1. Nile Basin
2. Demand and Security
3. Potentials and Opportunities
4. Agreements and Conflicts
5. Cooperation

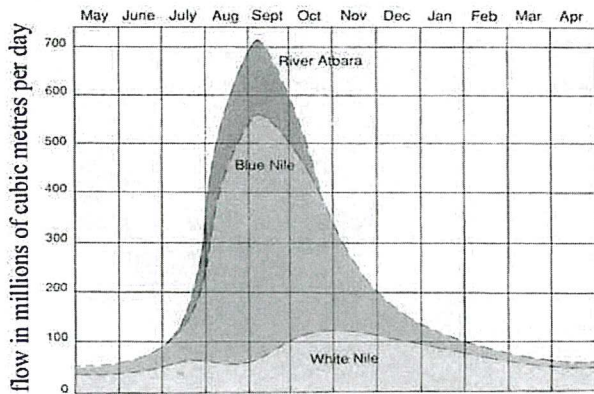


1. NILE BASIN

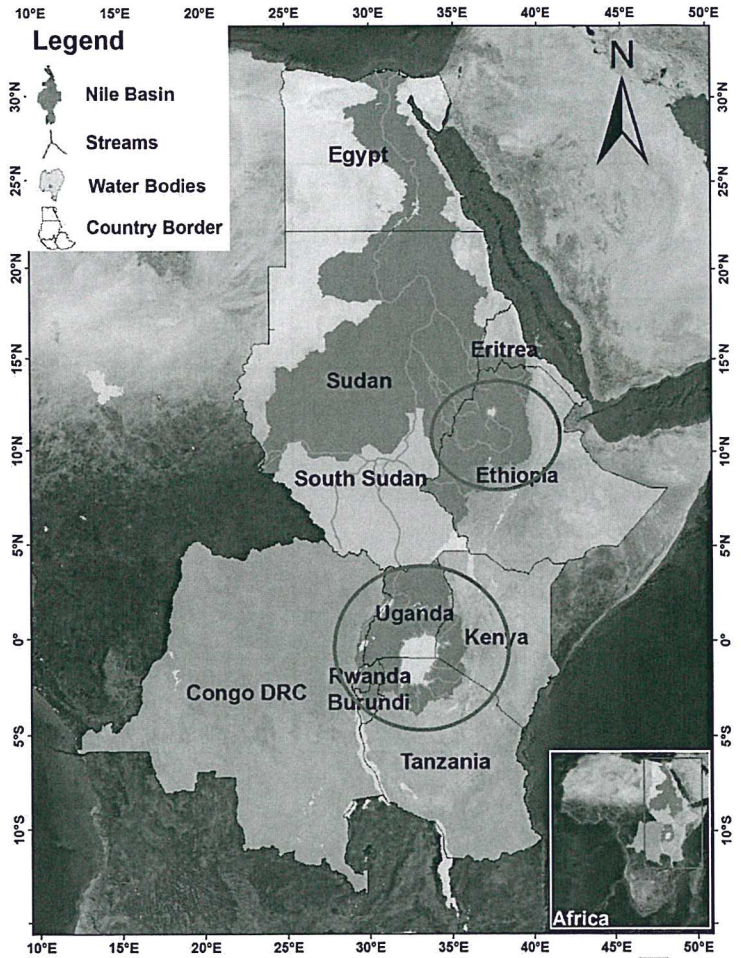
Nile Basin

Basic Facts

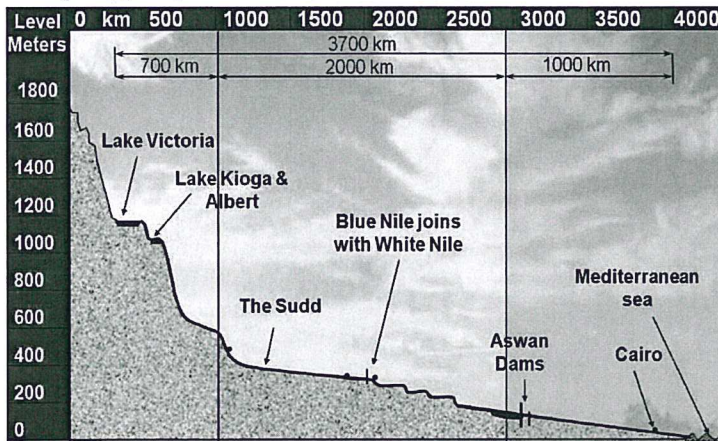
- 11 Riparians,
- 250 million people,
- 3 million km² (10 % of Africa),
- Past of poverty and conflicts.
- Two main sub-basins :



- White Nile, Equatorial Lake (15%) and,
- Blue Nile, Ethiopian highlands (70%).



Nile Basin ... Topographic



- Three Topographic Zones:

1. Lake Plateau

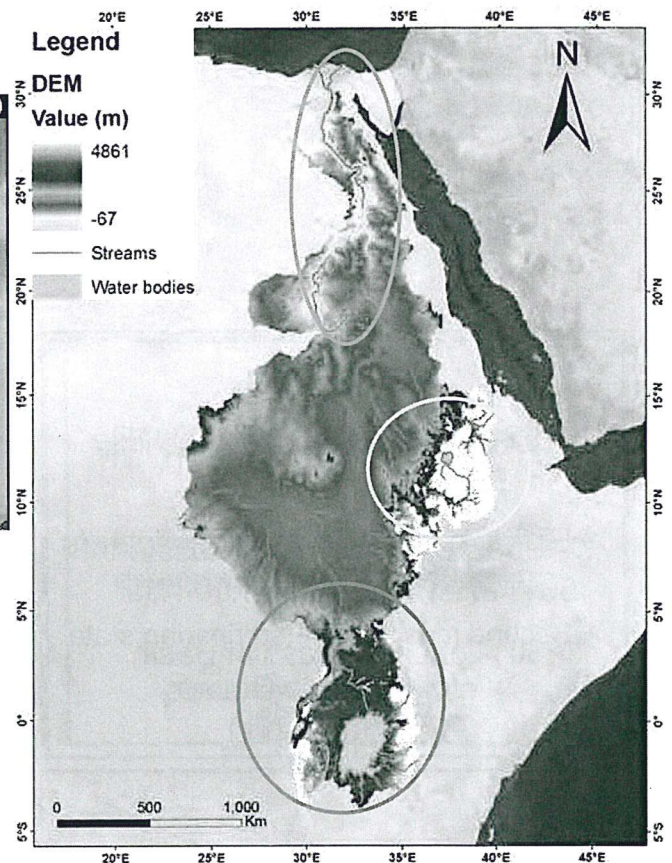
Peaks 4,300 (m), slope gently.

2. Ethiopian Plateau

peaks 3,500 (m)

3. North Sudan and Egypt

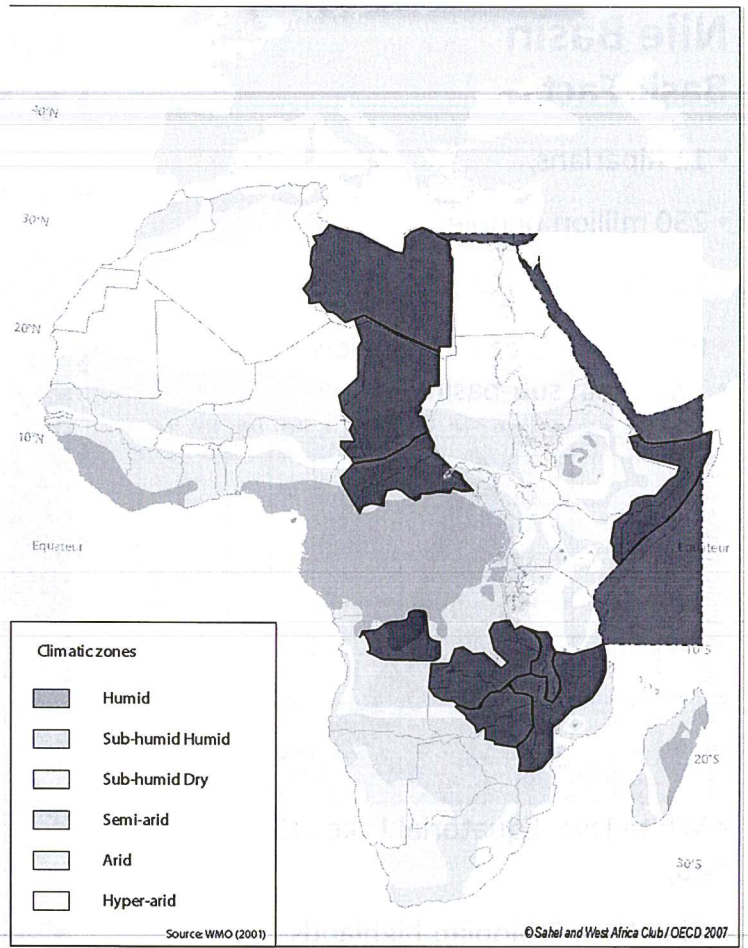
Plain area < 400 (m)



Nile Basin ...

Climatic zones

| Climatic Zone | Annual Rainfall (mm) | Wet period (months) |
|---------------|----------------------|---------------------|
| Desert | less than 100 | 0-1 |
| Arid | 100-400 | 1-3 |
| Semi-arid | 400-600 | 3-4 |
| Sub - humid | 600-1200 | 4-6 |
| Humid | more than 1500 | 9-12 |

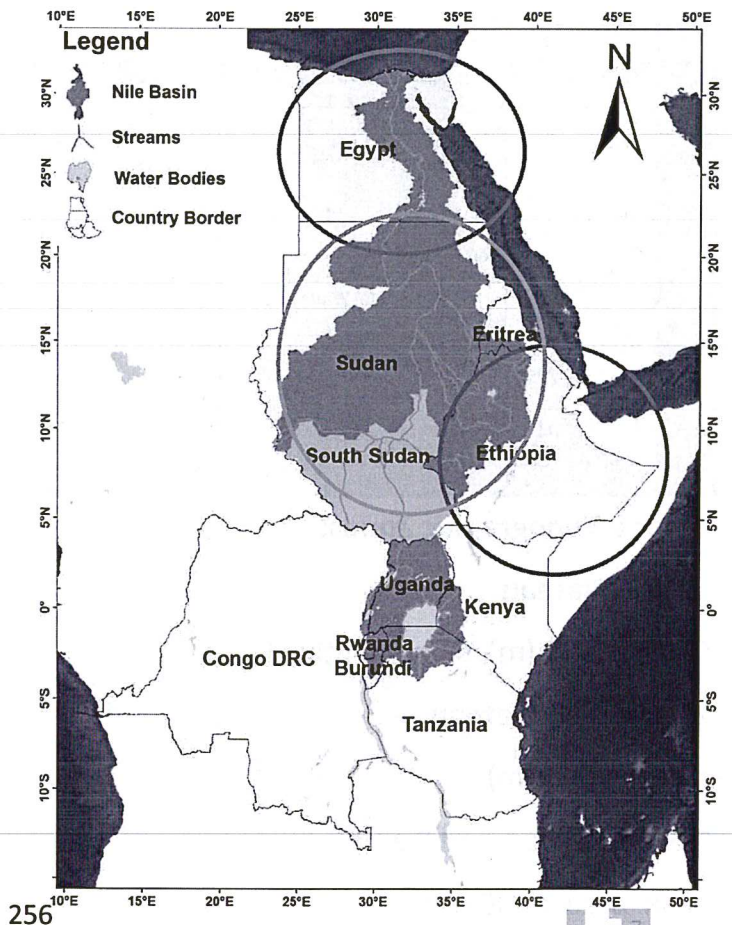


Nile Basin ...

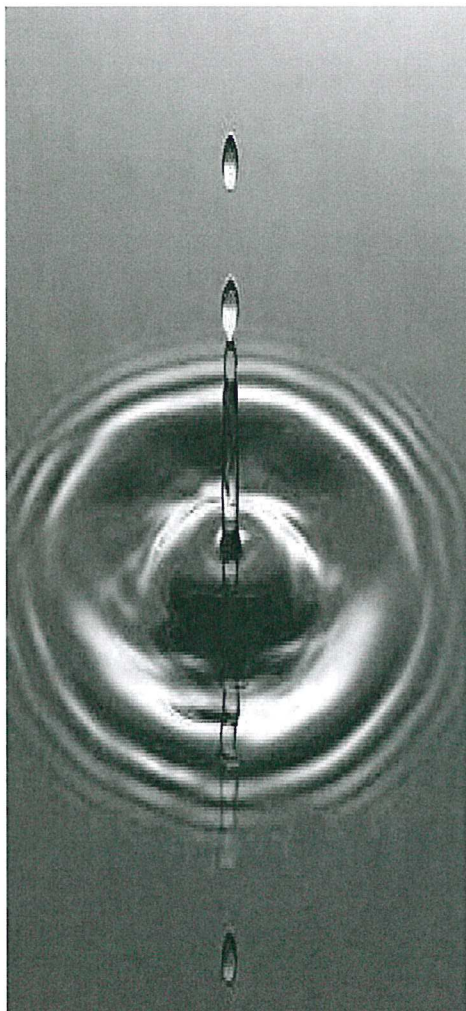
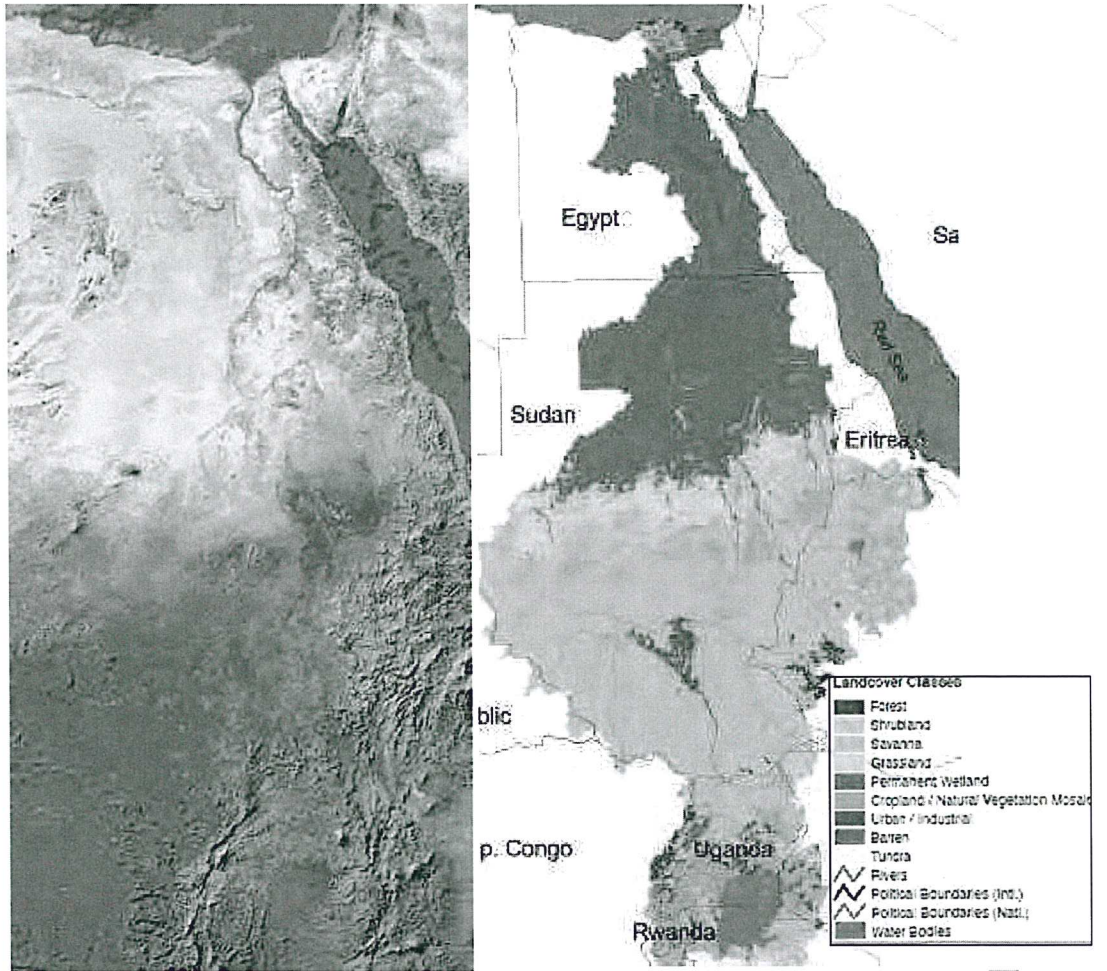
Issues on the Nile

Egypt

- 96% of population live in Nile Basin
- 95% of population live in Nile Delta Basin
- Agriculture sector
- Highest dam holds in Nile right of Sudan Swamps
- Evap loss of 50% of all water in Nile reserves
- Second most populated riparian state
- 60% of Land Mass in Basin
- Water Stress Country
- South Sudan (700 m³/cap/yr)



Nile Basin ... Land-use

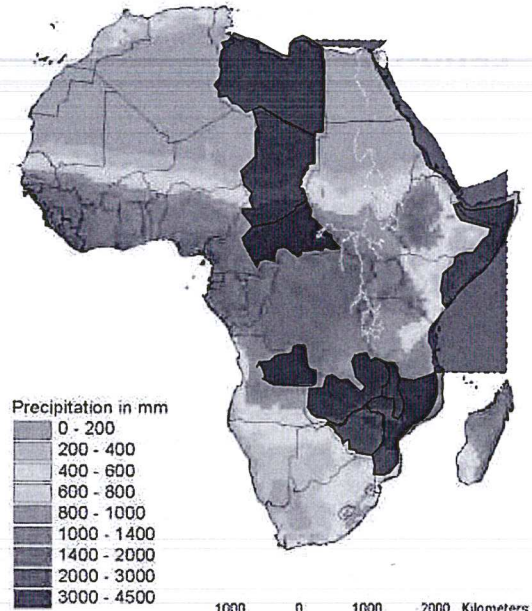


2. Demand and Security

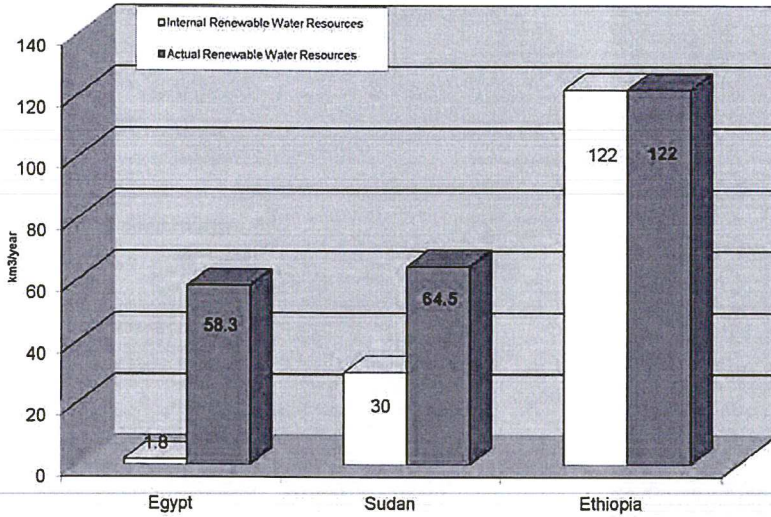
Water Resources

| Country | mm |
|-------------------|------------|
| Burundi | 1 110 |
| Rwanda | 1 105 |
| Tanzania | 1 015 |
| Kenya | 1 260 |
| Zaire | 1 245 |
| Uganda | 1 140 |
| Ethiopia | 1 125 |
| Eritrea | 520 |
| Sudan | 500 |
| Egypt | 15 |
| Nile basin | 615 |

Source: FAO 1997



Source FAO Aquastat Africa averaged over a 30 year period from 1961 to 1990

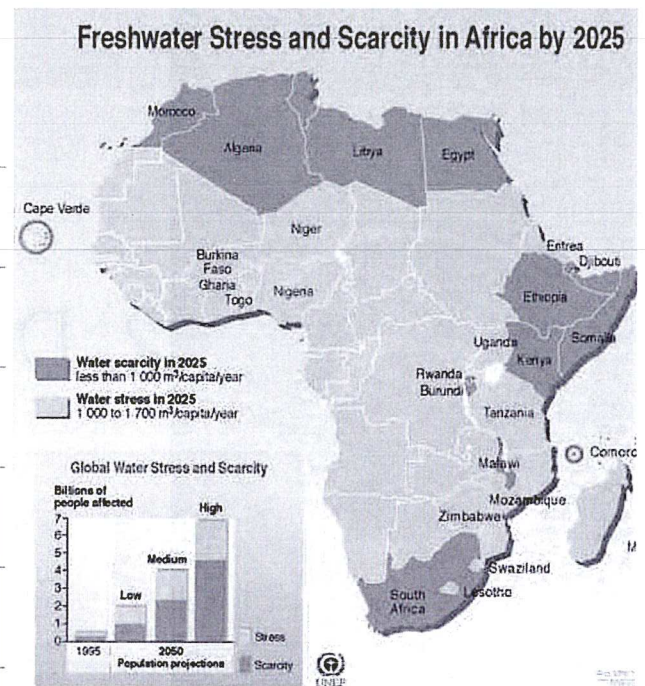
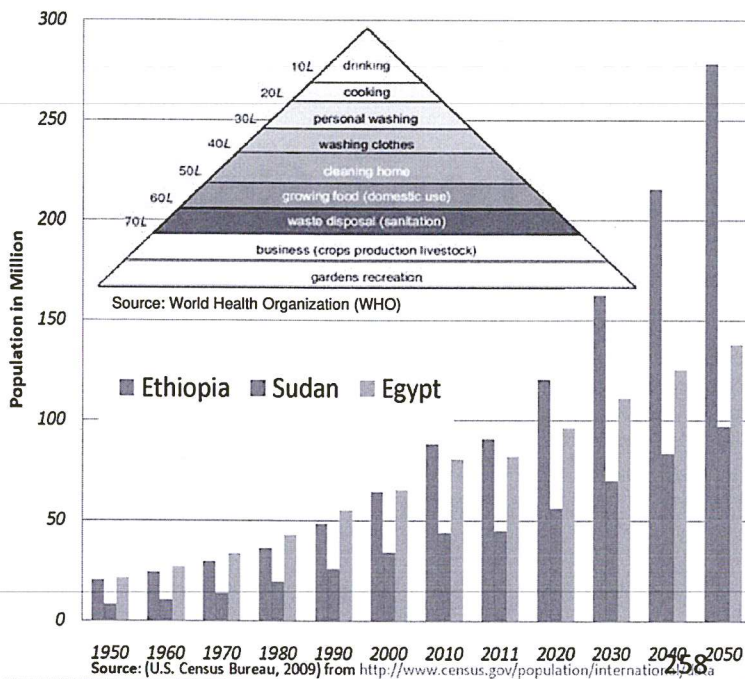


Source: World Resources Institute, 2003. http://earthtrends.wri.org/country_profiles/index.php?theme=2



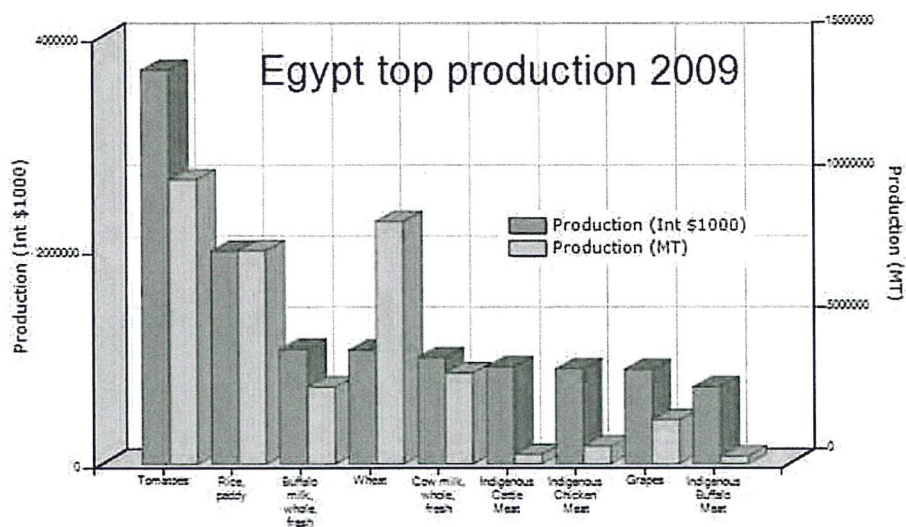
Population and Domestic Water need

- Increasing Water needs for domestic use .
 - Water Stress countries already as Egypt
- 900m³/C/year (Mohamed, et al., 2009).

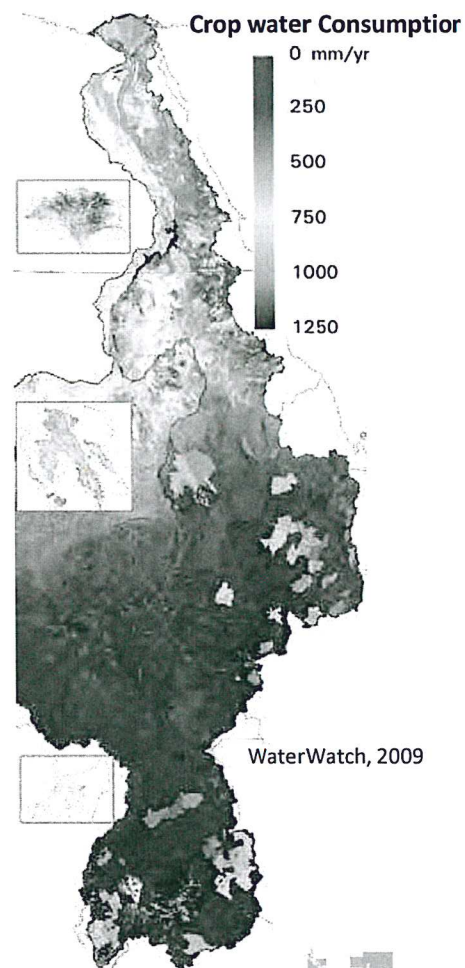


Irrigation and Food security

The net diversion from the Nile water resources to irrigated land is 7250 m³/ha/yr or 48 billion m³/yr (WaterWatch, 2009).



Source: FAOSTAT <http://faostat.fao.org/site/339/default.aspx>



Water use summary per country

| Country | Year | Total Freshwater Withdrawal (km ³ /yr) | Per Capita Withdrawal (m ³ /p/yr) | Domestic Use (%) | Industrial Use (%) | Agricultural Use (%) | 2005 Population (millions) |
|----------|------|---|--|------------------|--------------------|----------------------|----------------------------|
| Egypt | 2000 | 68.30 | 923 | 8 | 6 | 86 | 74.03 |
| Ethiopia | 2002 | 5.56 | 72 | 6 | 0 | 94 | 77.43 |
| Sudan | 2000 | 37.32 | 1,030 | 3 | 1 | 97 | 36.23 |

FAO (2003) Review of World Water Resources by Country, FAO Water Reports 23, FAO: Rome.

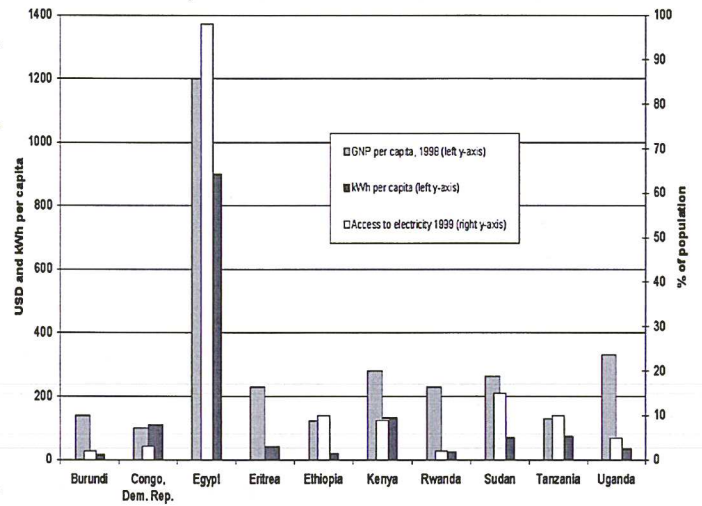


Power demand and economic indicator

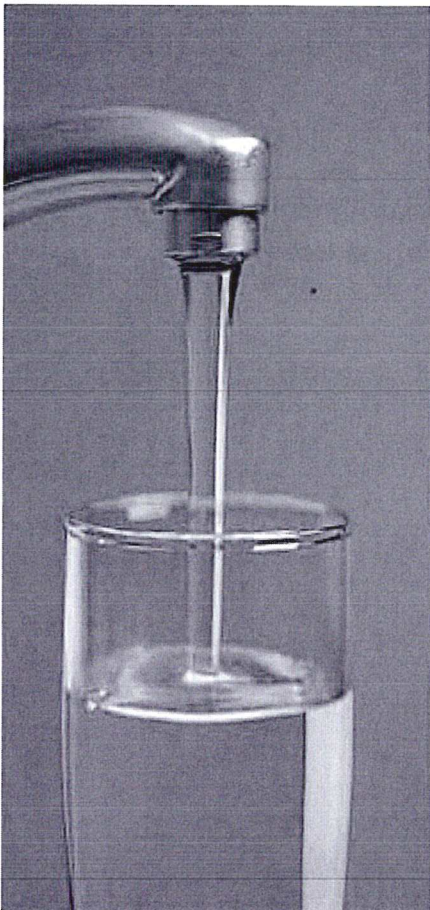
Demand Forecasts for 2005 through 2020

| Country | Forecast 2005 (GWh) | Avg. incr. 2005 (%) | Forecast 2010 (GWh) | Forecast 2015 (GWh) | Forecast 2020 (GWh) | Avg. incr. 2020 (%) |
|-----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Burundi | 156 | 6.0 | 195 | 253 | 335 | 5.0 |
| Congo, Dem. Rep. East | 331 | 16.0 | 405 | 653 | 917 | 8.7 |
| Egypt | 86,333 | 8.5 | 109,000 | 145,000 | 191,220 | 5.7 |
| Eritrea | 251 | 6.7 | 320 | 407 | 518 | 4.9 |
| Ethiopia | 2,011 | 7.5 | 2,640 | 3,367 | 4,285 | 5.3 |
| Kenya | 5,724 | 7.6 | 7,747 | 10,435 | 14,007 | 5.3 |
| Rwanda | 234 | 10.0 | 314 | 420 | 562 | 6.5 |
| Sudan | 4,246 | 18.8 | 6,417 | 9,550 | 14,212 | 10.2 |
| Tanzania | 4,346 | 14.2 | 5,709 | 7,384 | 9,442 | 7.1 |
| Uganda | 1,975 | 14.3 | 3,003 | 4,134 | 5,559 | 8.3 |
| Total | 105,607 | | 135,750 | 181,603 | 241,057 | |

Key Economic Indicators of Nile Basin Countries

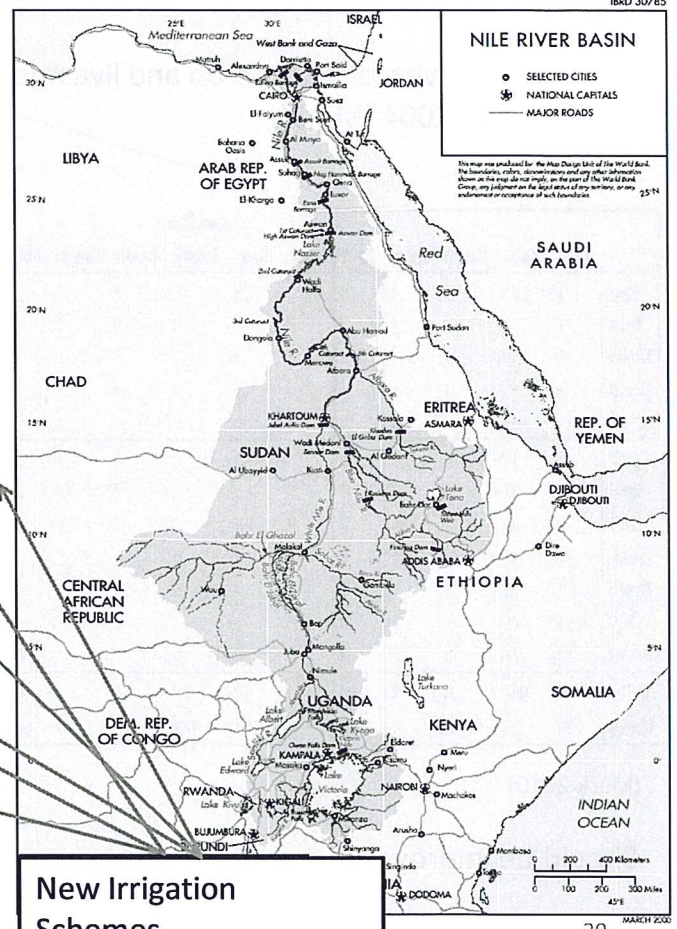
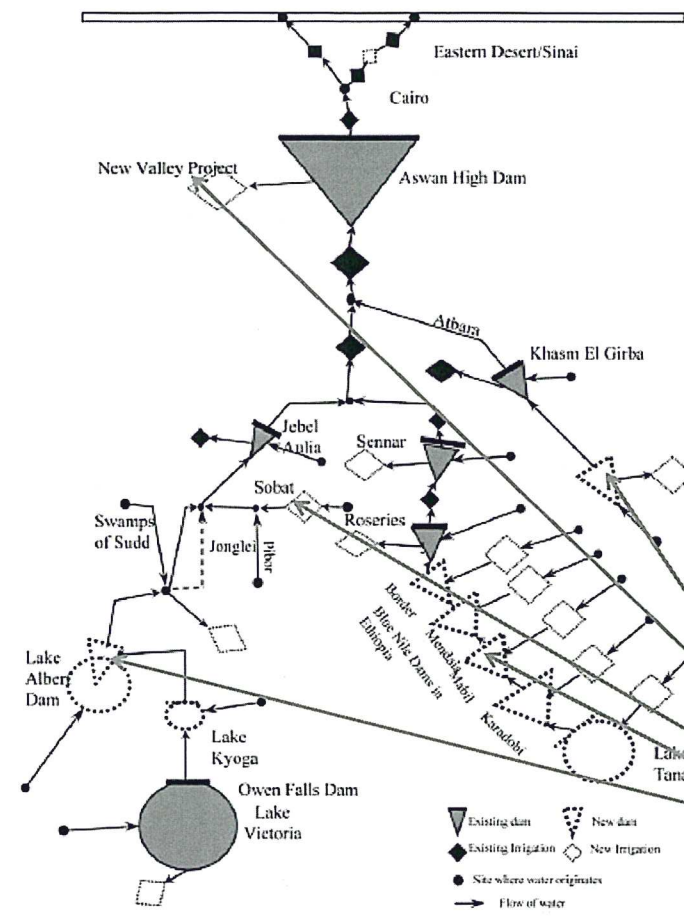


World Bank, 2004

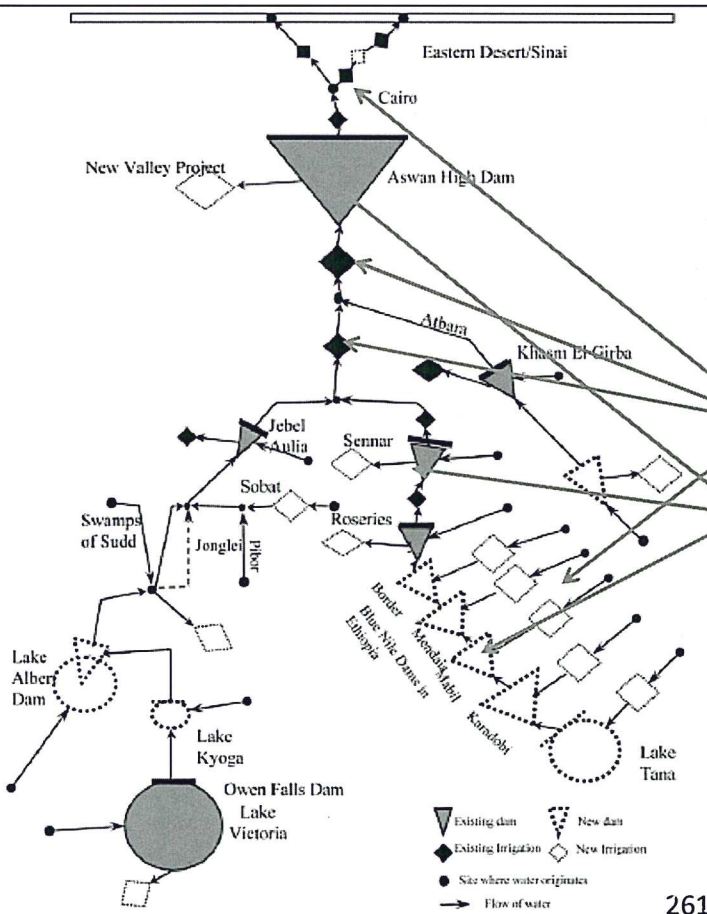


3. Potentials and Opportunities

New Irrigation and Hydropower



New Value of Water



“The value of Water”

A common denominator guiding allocation across the river basin

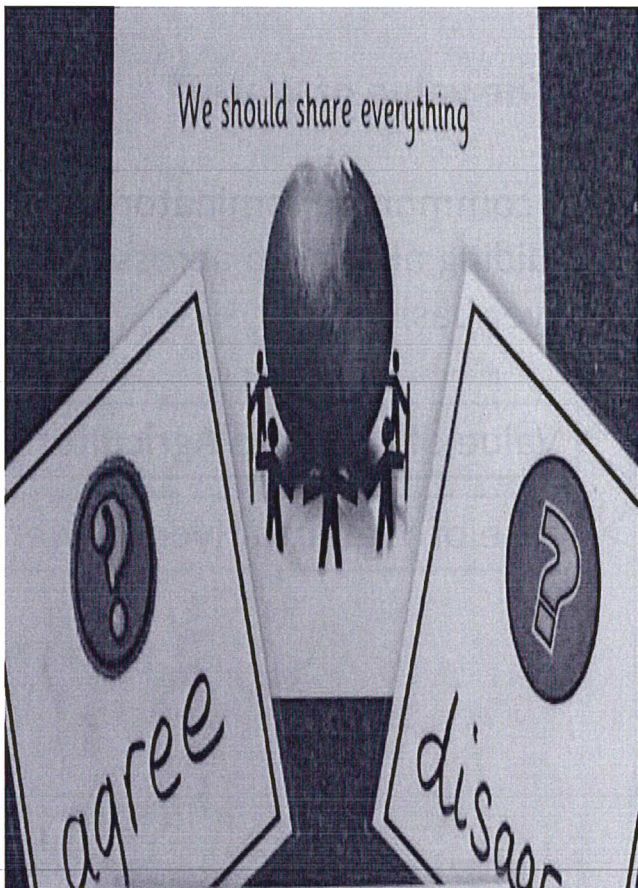
Virtual Water

Average annual virtual water crop and livestock 'trade', between Nile Basin states and globally, 1998–2004 (Mm3).

| | | Imports From | | | | | | | | | | | | | | | | |
|------------|------------|--------------|--------|----------|---------|--------|--------|-------|----------|--------|---------|-----|-------|-------|--------|----------|---------|--------|
| | | Egypt | Sudan | Ethiopia | Eritrea | East N | Uganda | Kenya | Tanzania | Rwanda | Burundi | DRC | South | Egypt | Sudan | Ethiopia | Eritrea | East N |
| Imports By | Egypt | 0 | 109.55 | 2 | 0 | 112 | 0 | 258 | 19 | 0 | 0 | 0 | 0 | 0 | 109.55 | 2 | 0 | 112 |
| | Sudan | 4 | 0.00 | 0 | 0 | 4 | 78 | 100 | 1 | 0 | 1 | 1 | 1 | 4 | 0.00 | 0 | 0 | 4 |
| | Ethiopia | 0 | 0.00 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0 | 0 | 0 |
| | Eritrea | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0 | 0 | 0 |
| | East Nile | 4 | 109.55 | 2 | 0 | 116 | 79 | 385 | 21 | 0 | 1 | 1 | 1 | 4 | 109.55 | 2 | 0 | 116 |
| | Uganda | 2 | 1.05 | 0 | 0 | 3 | 0 | 26 | 12 | 0 | 0 | 0 | 2 | 2 | 1.05 | 0 | 0 | 3 |
| | Kenya | 43 | 29.53 | 6 | 0 | 78 | 55 | 0 | 52 | 0 | 0 | 0 | 12 | 43 | 29.53 | 6 | 0 | 78 |
| | Tanzania | 3 | 0.00 | 1 | 0 | 5 | 15 | 15 | 0 | 0 | 0 | 0 | 0 | 3 | 0.00 | 1 | 0 | 5 |
| | Rwanda | 0 | 0.02 | 1 | 0 | 1 | 14 | 7 | 25 | 0 | 1 | 0 | 0 | 0 | 0.02 | 1 | 0 | 1 |
| | Burundi | 0 | 0.00 | 0 | 0 | 0 | 7 | 0 | 22 | 1 | 0 | 0 | 0 | 0 | 0.00 | 0 | 0 | 0 |
| | DRC | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0 | 0 | 0 |
| | South Nile | 48 | 39.61 | 8 | 0 | 86 | 91 | 49 | 111 | 1 | 1 | 15 | 15 | 48 | 39.61 | 8 | 0 | 86 |
| | NBTOT | 52 | 140.16 | 10 | 0 | 202 | 169 | 407 | 132 | 1 | 2 | 15 | 26 | 52 | 140.16 | 10 | 0 | 202 |
| | Globally | 1 062 | 3 155 | 1 081 | 34 | 5 332 | 2 503 | 2 914 | 1 888 | 301 | 318 | 667 | 8 591 | 1 062 | 3 155 | 1 081 | 34 | 5 332 |

(Mark 2010)

Should be improved!!



4. Agreements and Conflicts

Irrigation Potentiality

| | Irrigation potential | irrigated |
|----------|----------------------|---------------------|
| | ha x10 ⁶ | ha x10 ⁶ |
| Egypt | 4.4 | 3.1 |
| Sudan | 2.8 | 1.9 |
| Ethiopia | 2.2 | 0.03 |

FAO 1997

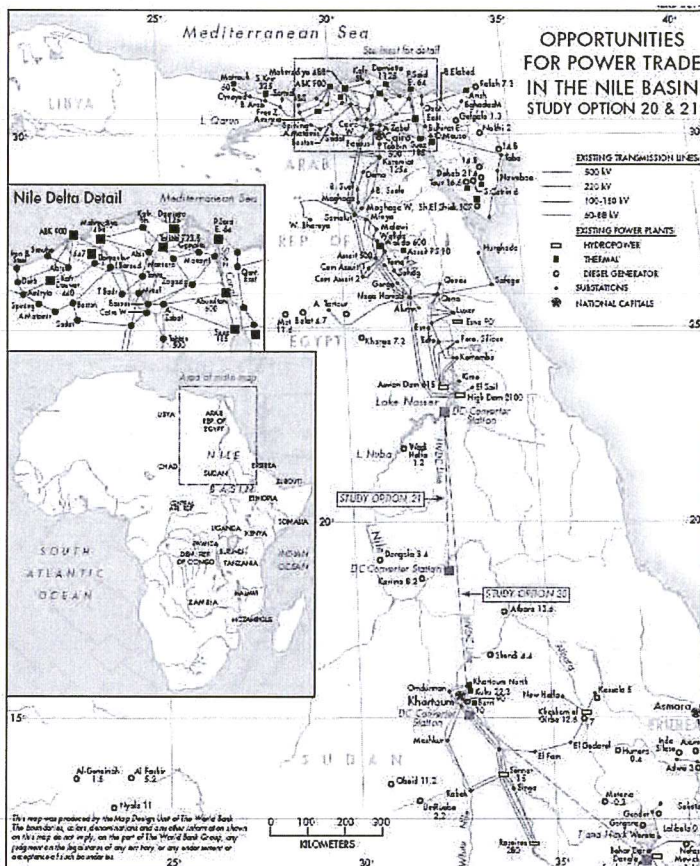
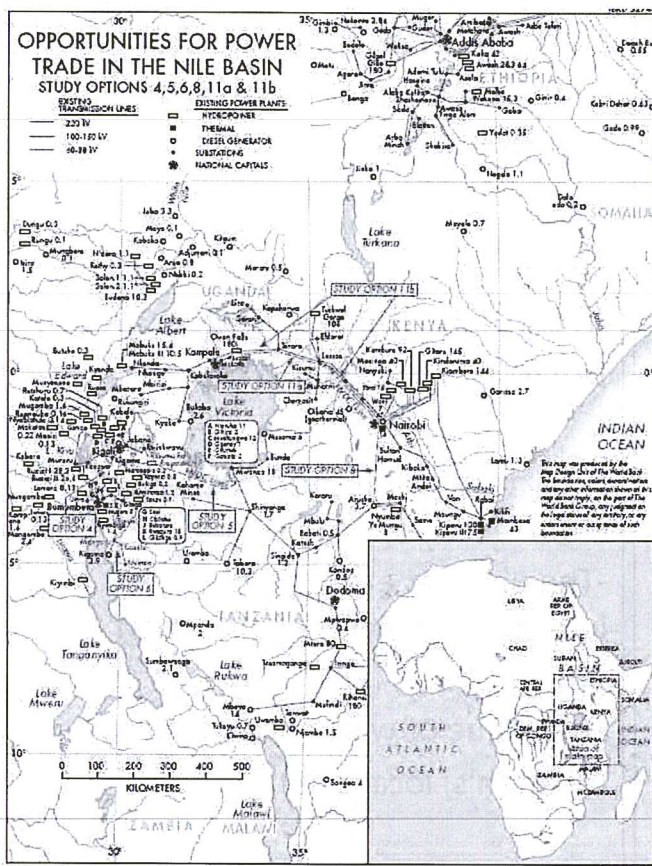


Drip irrigation

- Using new irrigation techniques
- Improved rainfed agriculture
- Regional food markets



Hydropower Potential



Past agreements

- **1902 :**

Treaty between Great Britain and Ethiopia (prohibited Ethiopia to divert Nile water)

- **1929:**

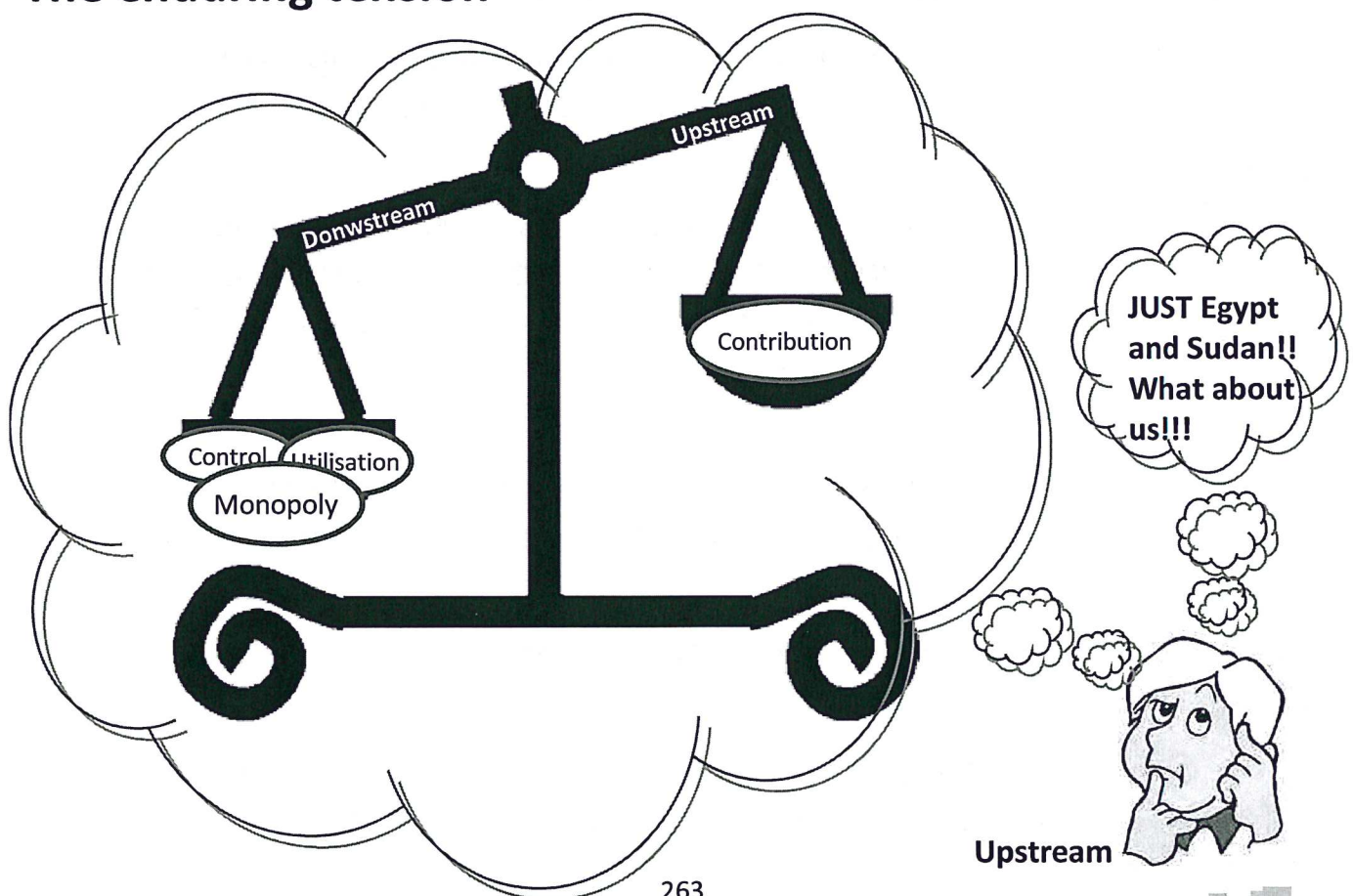
Treaty between Egypt and Sudan (Great Britain): 48 BCM/year to Egypt, 4 BCM/year to Sudan.

- **1959:**

Treaty between Egypt and Sudan after Sudan's independence (1956) and Aswan Dam planning (1952): 55.5 BCM/year for Egypt, 18 BCM/year for Sudan, 10 BCM/year for seepage and evaporation.



The enduring tension



Therefore

- **New Treaty 2010:**

signed by Uganda, Kenya, Ethiopia, Rwanda, and Tanzania (Without Egypt and Sudan). The treaty increased the share of Nile water of these countries for irrigation and hydropower projects.

- “Disputed Nile agreement signed. Four African countries have signed a new treaty on the equitable sharing of the Nile waters despite strong opposition from Egypt and Sudan who have the major share of the river waters”

(Al Jazeera, May 15, 2010)

- “Egypt’s share of the Nile’s water is a historic right that Egypt has defended throughout its history”

- "Egypt reserves the right to take whatever course it sees suitable to safeguard its share,"

(Mohammed Allam, Minister of Water Resources and Irrigation, Egypt April 18, 2010)

- “Ethiopia has agreed to postpone ratification of a treaty on sharing Nile River water until a new Egyptian government takes office to join the negotiations” (VOA, May 02, 2011)



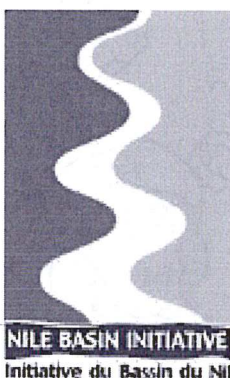
Current cooperation in the Nile basin

1990
TECCONILE, CIDA

↓
Nile-COM

↓
Nile-TAC

↓
Nile-SEC



- Established in 1999 to promote **cooperation** between all the Nile riparians (transitional)

- Goal: “Achieve sustainable socioeconomic development through the **equitable utilisation** of, and benefit from, the common Nile Basin water resources”

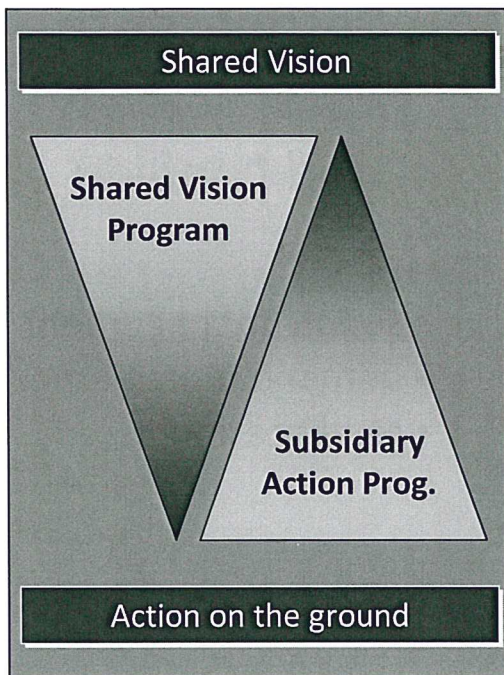
- *Modus operandi*: create **enabling environment** for the implementation of cooperative projects

- Strong support by international donors

- “NBI is a transitional arrangement until a permanent framework will be in place”



Strategic Action Program for the Nile Basin



(1) Basin-wide projects –

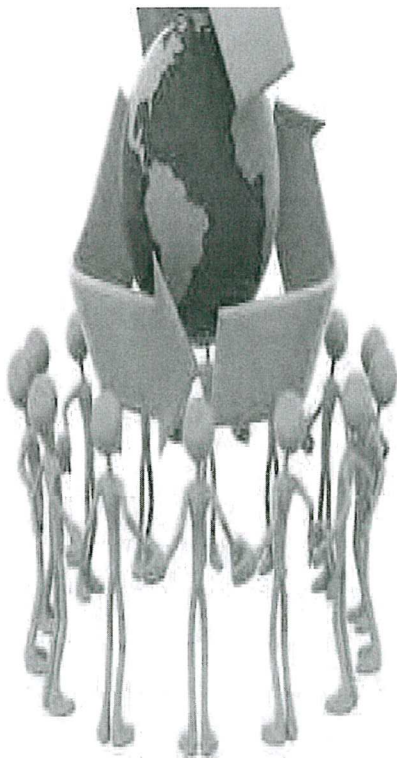
The Shared Vision Program

The SVP is to help create an enabling environment for action on the ground

(2) Sub-basin projects –

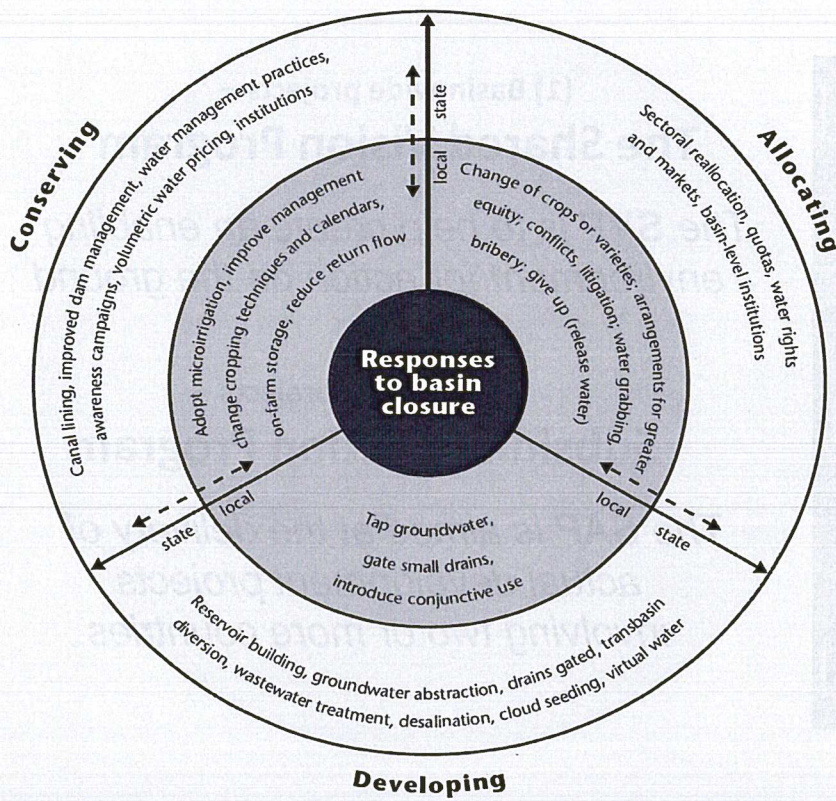
Subsidiary Action Program

The SAP is aimed at the delivery of actual development projects involving two or more countries



5. Cooperation Potentials

Understanding



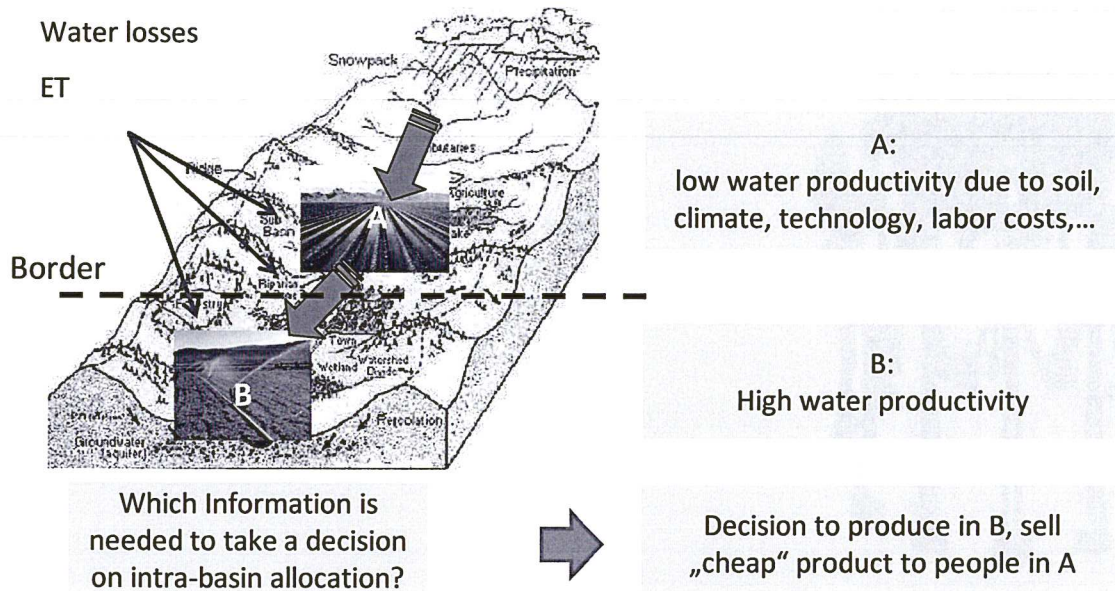
Responses to water scarcity and conflict:

- supply management
- demand management
- re-allocation

Source: Based on Comprehensive Assessment of Water Management in Agriculture 2007.



Water allocation within a basin: a simple example



Benefit sharing

General Concept

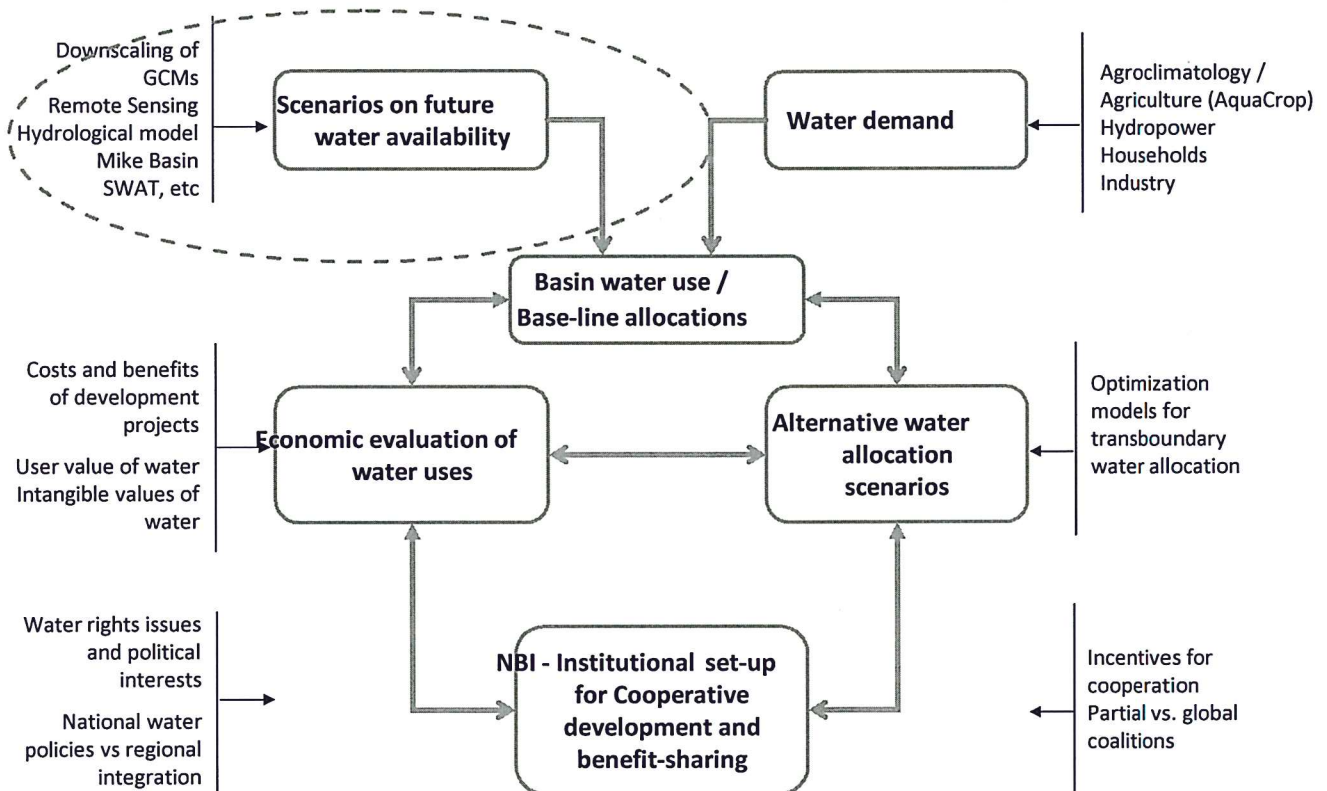
- share the benefits resulting from the development of the water resources in order to satisfy the needs of the concerned populations

Transboundary benefit sharing:

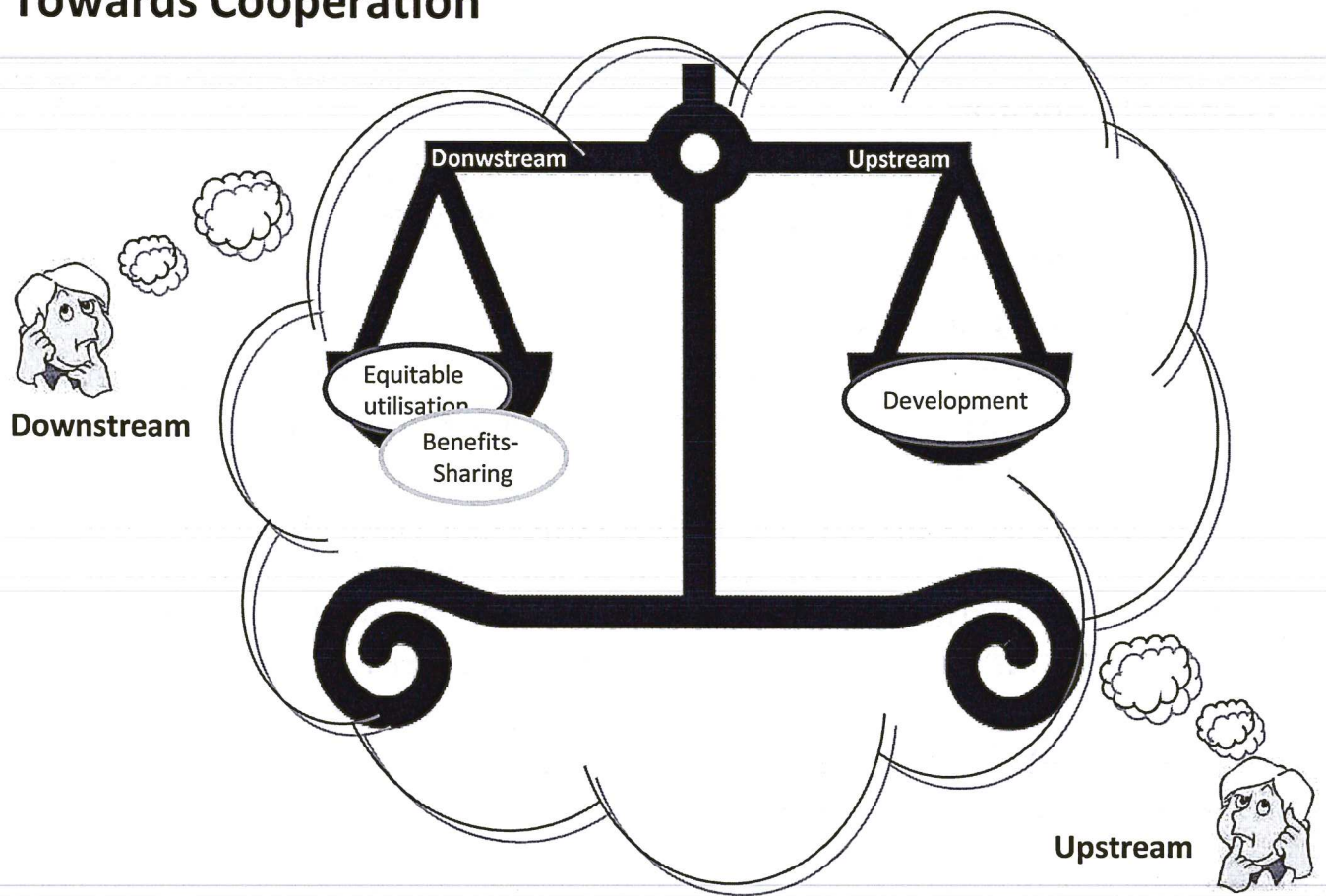
- A common management of water resources generates net benefits compared to the unilateral development of the water resources.
- The concept is about the cooperation of riparian states for the use, protection, or joint development of shared water bodies (transboundary rivers, lakes and aquifers), whereby the riparian states focus on the benefits from water cooperation and the win-win options instead of a potentially conflicting water sharing
- Non-cooperation = economic losses



Research Approach



Towards Cooperation



Thank you for your attention

Contact Information:

Prof. Lars Ribbe: lars.ribbe@fh-koeln.de

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Transboundary Water Management in The Western Part of Jordan

Presented at
Summer School on Water and International
Relations

By
Khaled Abusamhadaneh

*Technical University of Braunschweig
5-15 Sep 2011 Braunschweig, Germany*

What is The Transboundary Water?

- A transboundary water is defined as:
Any water resource shared between two or more countries.
- Approximately 40% of the world's population lives in river and lake basins that comprise two or more countries.
- Over 90 % of world's population lives in countries that share basins.
- About 50% of the Earth's land surface covered by about 263 transboundary lake and river basins.
- Over 60% of global freshwater flow is a shared water.
- About 2 billion people worldwide depend on groundwater, which includes approximately 300 transboundary aquifer systems.

The most influential factors in international waters management

Why you have to be strong?

The most influential factors in international waters management.

1. The state's Power.
2. Geographical location.
3. The important of the water resource.
4. The volume of the water resource.
5. The third partner.

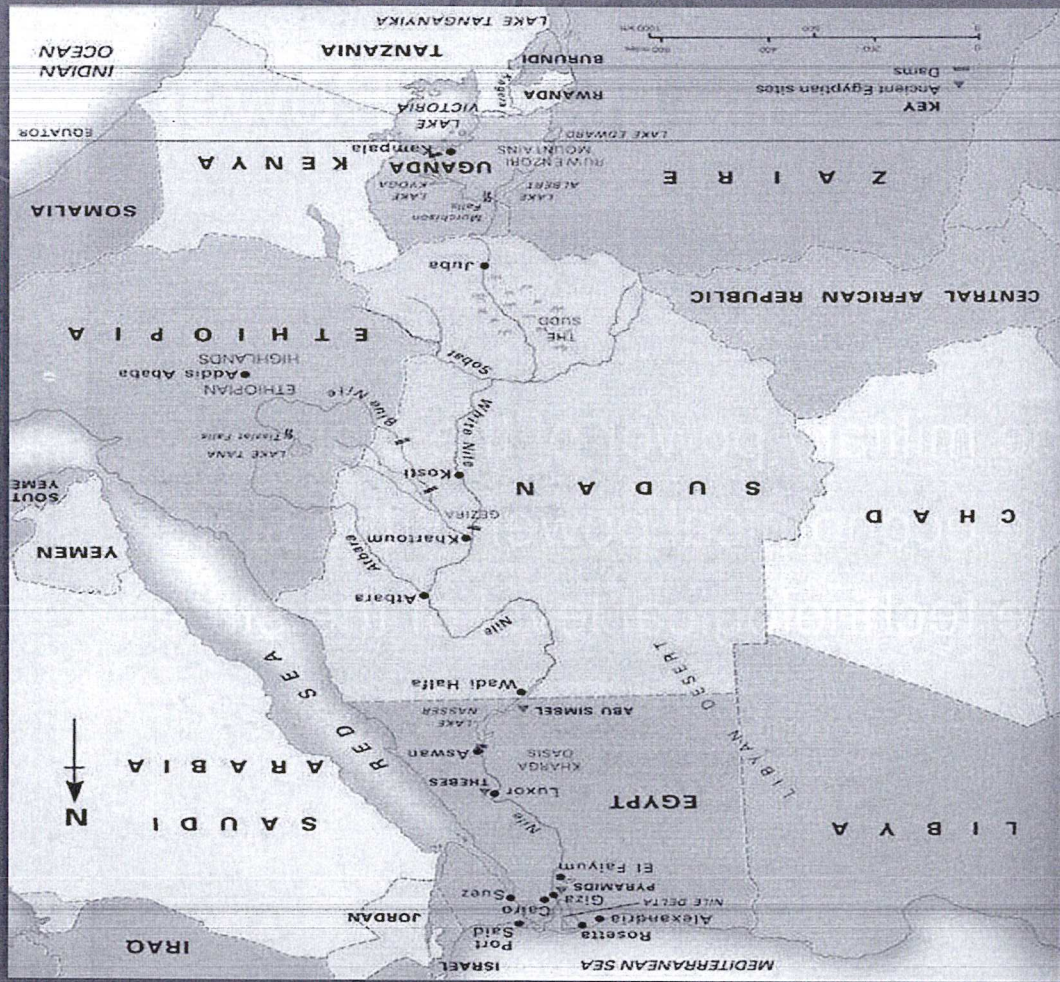
1. The state's Power.

- The military power of the state.
- The economical power of the state .
- The technological level of the state .

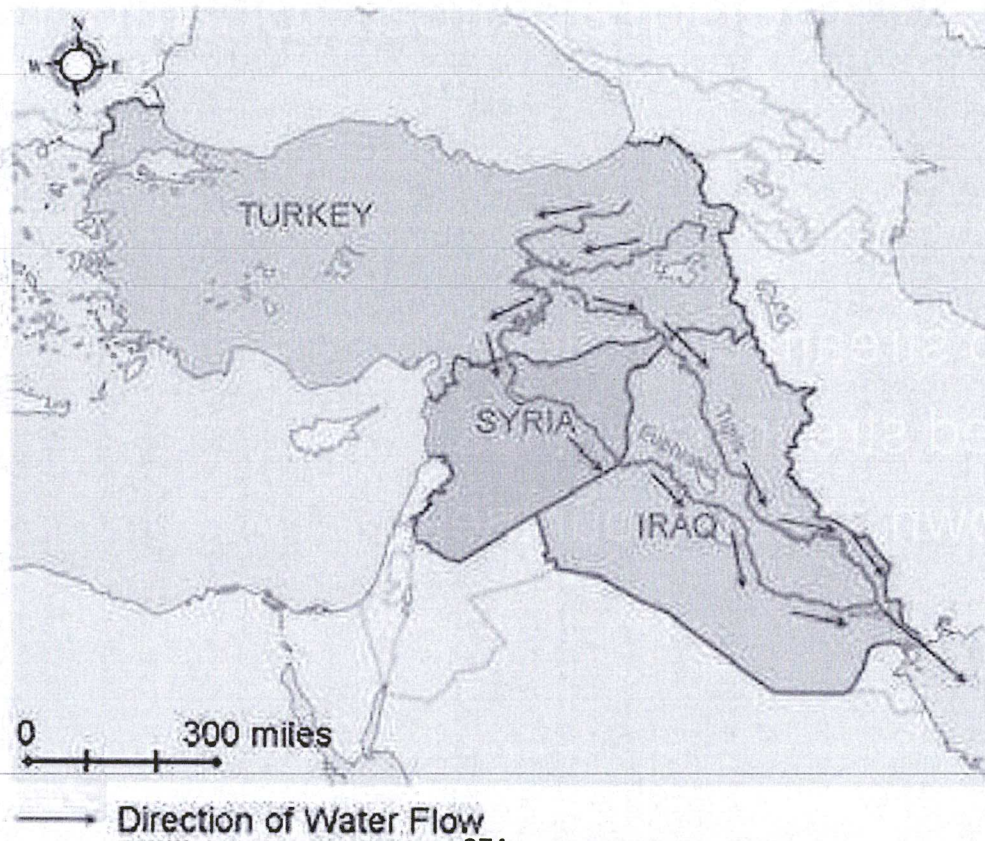
These three elements are related.
Every basin has a dominant state.

2. Geographical location.

- Up stream countries.
- Med stream countries.
- Down stream countries.



The Tigris and Euphrates in Turkey, Syria, and Iraq



3. The important of the water resource.

- Very important source.
- Important source.
- Unimportant Source.

relative relationship.

how much this resource contributes in country's water needs?

(river) & (rival) always rivers are surrounding by rivals

The dependence of source

- Egypt is the only country that is depend on Nile river by 97% for water resource and hydropower.
- Sudan depends on Nile river by 77% for water resource.
- For the State of Jordan, It (was) supplied about 75% of its water needs by the Jordan River (Tall, p.171).
- Israel depends on Jordan River by about 60% of It's water needs.
- Yarmouk River water formed 24% of Syrian's water needs.
- Without mentions Palestine and Lebanon.

- Turkey's dominance of the headwaters of two of the Middle East's most important rivers produces great anxiety downstream about Ankara's ambitious.

4. The volume of the water resource.

- Big source.
- Medium source.
- Small source.

Uncontrollable.

5. Third Partner

- International Power.
- International or regional economic power.
- State with special offer.

The Peace Pipeline Project was first aired by Prime Minister Turgut Ozal in 1986.

Transboundary Water Management in The Western Part of Jordan Region overview

*Why Transboundary Water Management is very
important in Jordan?*

Why other countries are interested?

Why our regain is Important?

The water is the key of war or peace

Jordan

- Jordan is located in arid to semi arid part of the world where water resources are limited and scares.
- Water resources is highly dependent on rainfall which varies in quantity, intensity and distribution from year to year.
- About 40% of its resources are shared with neighboring countries, Israel and Syria.
- It is considered as one of the four most water stressed countries in the world where the per capita share of water is less than 150 m³/capita/year for all purposes.

The Water Resources in Jordan 2010

| Source | Quantity (MCM/Year) |
|--|---------------------|
| Renewable Groundwater | 275 |
| Surface Water | 505 |
| Total Renewable resources | 780 |
| Non Renewable Groundwater | 125* |
| Total Renewable & Nonrenewable Resources | 905 |
| The actual available resources | (843) |
| Total demand | 1496 |
| The defecate | 653- |

*Only 63 mcm/y used from this resource.
The defecate reach to 83% of renewable resources.
The defecate reach to 77% of available resources.

Main Transboundary Water Resources in Jordan

- Jordan River.
- Yarmouk River.
- Wadi Araba aquifer.
- Disi aquifer.

Jordan River.

The historical discharge of JR in the Dead sea where about 1400 MCM\y including about 470 MCM\Y from Yarmouk River.

Jordan - Yarmouk Rivers & Johnston Plan

(A comprehensive plan was drawn up by U.S. Special Ambassador Eric Johnston in 1953, for regional development of the Jordan River system. The hope was that it would reduce regional conflicts by promoting cooperation and economic stability.)

According to Johnston plan:

- Jordan's share of Jordan River water will be not less than 470 MCM\Y.
- Jordan's share of Yarmouk River water will be about 300 MCM\Y.
- The total Jordan's share of Yarmouk&Jordan Rivers will be about 770 MCM\Y.

Upper Jordan River

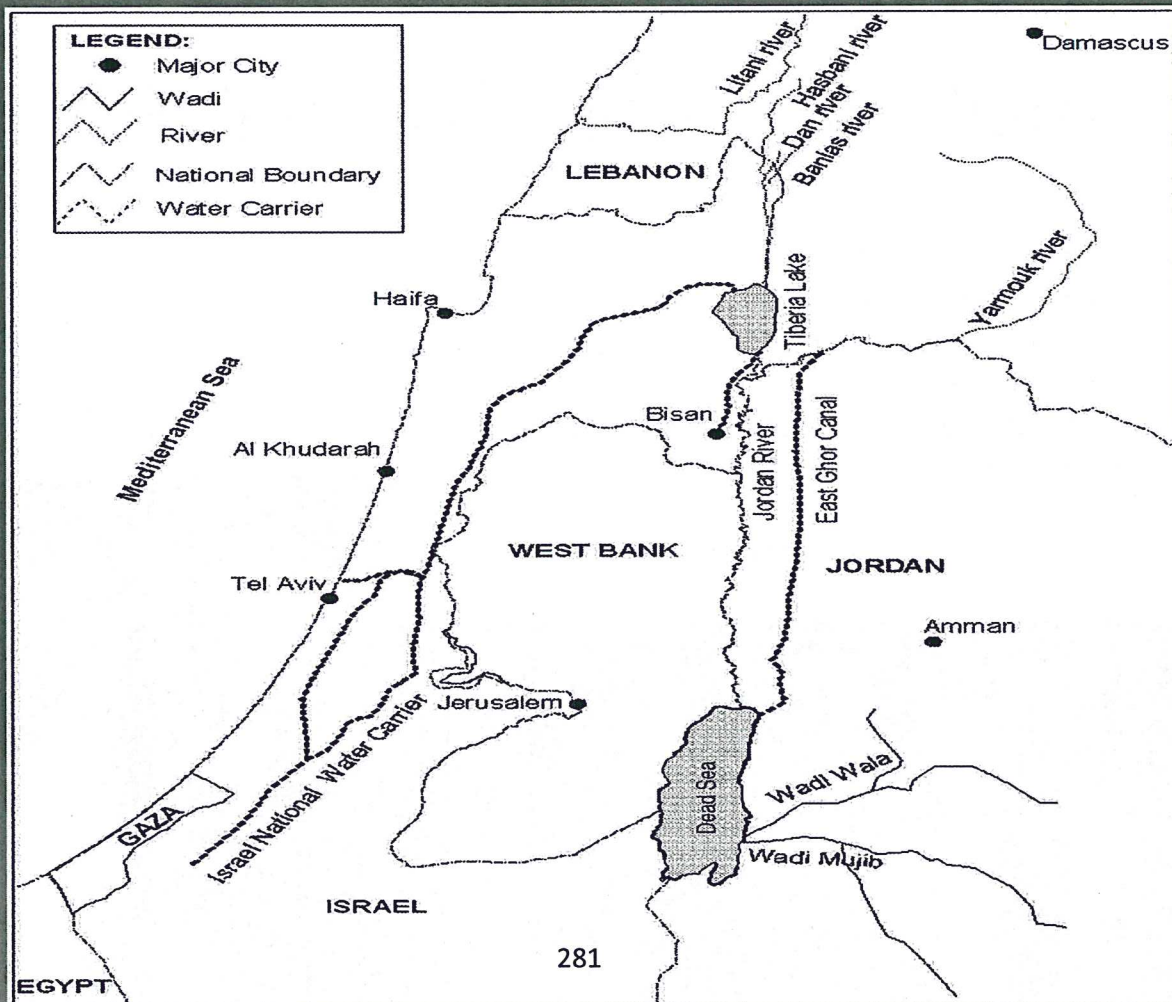
- Israel diverted upper Jordan river water by (INWC) out of the river basin to the south desert.
- Controlled all the rest water resources between lake of Tiberias and dead sea.
- Jordan's share of the river is about 60 mcm\y, comparing to 470 mcm\y according Johnston plan.

Yarmouk River

According to the Johnston plan, The Syrians will be entitled to take 90 MCM from the Yarmouk River.

In reality, they are currently consuming more than 200 MCM from the Yarmouk River.

- About 44 dams were built on the Yarmouk River tributaries.
- More than 3,500 artesian wells was drilled in the river basin. which increases Syrian's uses of YR to about 300 mcm/y, harming Jordan badly.



What happened?



Israel's share on Yarmouk River

- Article 6: Water resources.
- Water from the Yarmouk River
- A. Summer period - 15th May to 15th October of each year. Israel got 12 mcm and Jordan got the rest of the flow.
- B. Winter period - 16th October to 14th May of each year. Israel got 13 mcm and Jordan got the rest of the flow .

- In addition to this amounts Israel has built a number

of dams on YR tributaries, and established many water harvesting projects in Yarmouk catchment area with about 75 mcm/y, this water is from Jordan share also.



The current situation

- Jordan's historical rights of water from the Jordan River basin is the 470 mcm\y.
- 300mcm\y from the Yarmouk River.
- The total rights

- Syria seized on the Yarmouk River in full.
- Unit Dam became empty due to lack of water. (It's designed with 112mcm capacity).

- Israel took over almost the entire Jordan River.

The current situation 2010

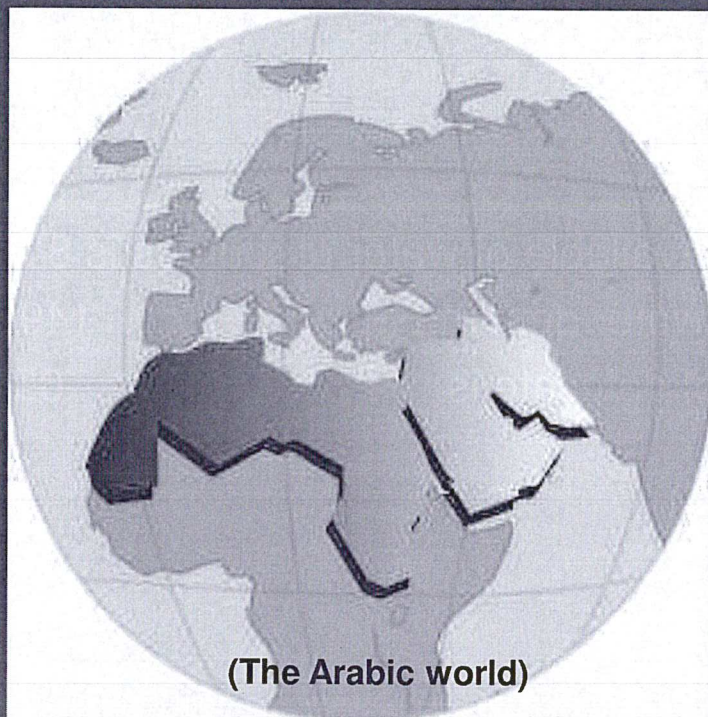
- The total available of water resources is 843 mcm\y.
- The total water demand 1496 mcm\y.
- The actual defecate is 653 mcm\y.

The current situation 2010

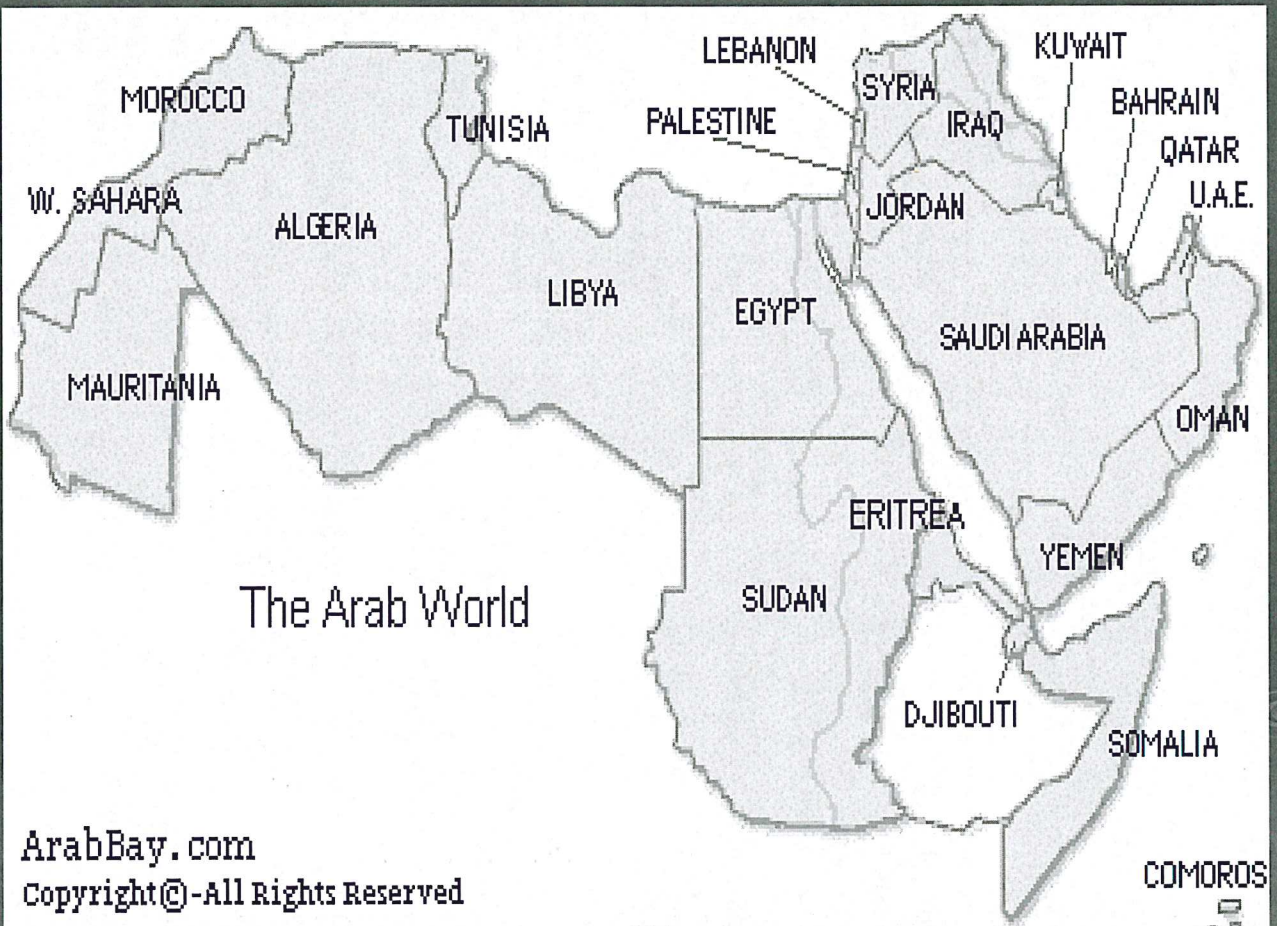
The climate change

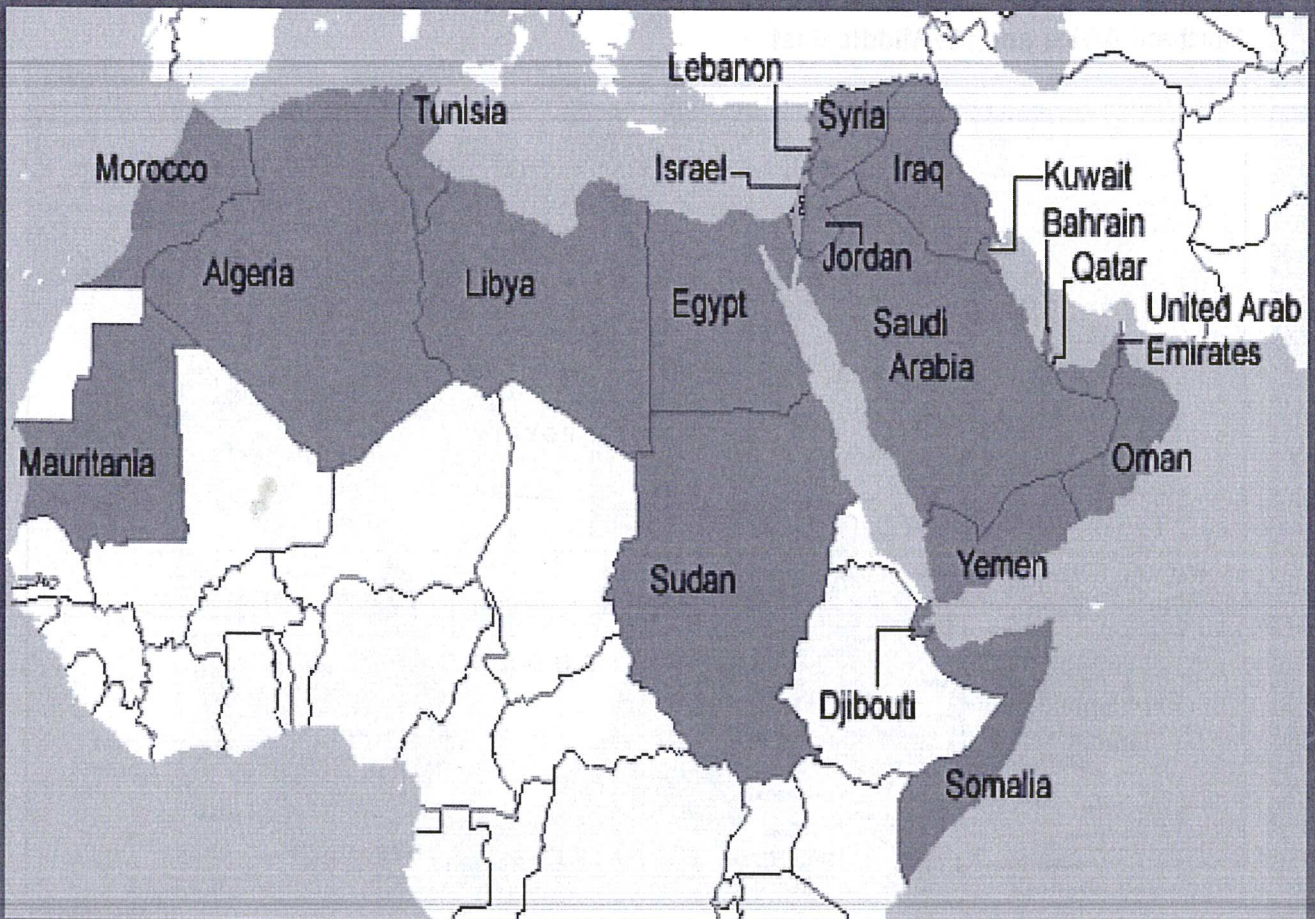
- Jordan already a victim of global warming.
- The year 2010 was the hottest year Jordan has ever witnessed, during which temperatures remained above their annual average and rainfall was lower.
- JMD figures indicate that 35 per cent of the rainy season has been achieved in the north, where rainfall average ranges between 400-580mm, while in the central region 17-20 per cent of the season has been achieved and 10-15 per cent in the south.

The Middle East and North Africa



Northern Africa and the Middle East





- The Middle East and North Africa are blessed with c. 65% of worldwide oil reserves and a good 45% of global natural gas reserves.
- The Arab world is rich in natural resources such as uranium, phosphates, potash, iron, copper.
- Also It's enjoy sunny areas which can provide large areas of the world by renewable energy

Ground Transboundary Water Resources in Jordan

- Wadi Araba aquifers = 12.9 MCM\Y
- Disi aquifer = 63.8 MCM\Y

67.7 MCM\Y

The safe yield of Wadi Araba aquifers is 9 MCM\Y

The safe yield of Disi aquifer 125 MCM\Y

The total water resources in Jordan at 2010

The total available water resources is about 933 MCM\Y.* (2010)

The total water demand is about 1496 MCM\Y.*

The total renewable water resources is about 732 MCM\Y.*

Renewable GWR=275mcm\y+Surface WR=457mcm\y.*

The deficit is 563- MCM.*

The actual deficit is 563+210= 773 MCM\Y.*

* Jordan's Water Strategy 2008-2022 ➤

How long does Jordan's water system can withstand ?

Violence in Arjan village due to shortage of water.

18 | 8 | 2011



Environmental Ethics: a short overview

Definition

Environmental Ethics (Ethics of Nature) is the area of applied ethics that discusses, reflects and reasons on normative measures (values, rules, norms, criteria) for dealing with non-human natural entities in a responsible way. Environmental Ethics is the base of reasoning for, e.g., the following fields of action within society: environmental protection, animal protection, nature protection, animal rights, sustainability issues.

Three main areas of environmental ethics

1. **Resource Ethics:** How do we legitimize the responsible management of scarce and deployable resources and environmental media (water, soil, air, climate, etc.)?
2. **Animal Ethics:** How do we legitimize the responsible treatment of animals, particularly those which can suffer from pain?
3. **Ethics of Nature Protection (= Ethics of Nature):** How do we legitimize the responsible treatment with ‚collective biotic entities‘, for example: populations, species, ecosystems?

Positions

1. Anthropocentrism

- (Greek: *anthropos* = human being): animals, plants, etc. have no **intrinsic value** (value of their own). They are targets of protection only if they are useful for the human being, e.g. as resource, as source of aesthetic delight, as source of recreation/sports. The human being regards himself/herself as top of ‘nature’s ladder’ because he/she has **rationality** and the ability to reason. This super-position justifies his/her dominance and power over other forms of nature. Anthropocentrism mostly goes along with individualism but can also be applied on “humanity” as such. – All classic Western philosophers are anthropocentrists (e.g. Francis Bacon, René Descartes, Immanuel Kant) which is founded in **dualism** (body/soul; body/spirit; body/brain).
- A dominant critique of anthropocentrism in Western countries derives from **ecofeminism**. Proponents argue, that anthropocentrism is mainly sketched as androcentrism (Greek: *andros*=man [sex]). It is man who things that he is superior to not only animals, but also women and rules all of nature by his idea that he is superior.
- Note: Nature protection does not necessarily mean nature **conservation!**

2. Pathocentrism

- (Greek: *pathos* = suffering, pain). Pathocentrism is based on the assumption that all life is of the same origin and thus related. As a consequence, all living beings have the capacity to experience pain. In Christian tradition, this leads back to an ‘ethics of compassion’. Immanuel Kant: When we observe the pain of suffering animals, we realize that it is wrong to torture animals (pedagogical animal rights-argument). **Anthropocentrism** here relates back to **anthropomorphism** (e.g. interpreting the animal as if it was human).

3. Holism

- The whole is more than the sum of its parts (→ normative „surplus“).
- Contrary to individualistic approaches, particularly anthropocentrism.

a) Biocentrism

- Albert Schweitzer: **reverence for life** („Ehrfurcht vor dem Leben“: All life wants to live, like me); Paul Taylor (1986): All living has intrinsic value, a **will of life**. Living beings have own interests and strive for their own good.
- Note: Biocentrism can be either individualistic or holistic. Ecosystems and non-living nature are excluded (water!).

b) Ecocentrism

- Aldo Leopold's *Land Ethics* (1949): the land/ecosystem forms a **community** as if it was an organism or living being. It is **self-regulating**. (See also: James Lovelock: Gaia-hypothesis)
- People should not conquer the land but protect it for the sake of themselves.
- But: Why should the **whole** be preferable to the interests of the **individual** entities??

c) Deep Ecology (Norwegian philosopher Arne Naess, 1912-2009)

- "deep" because it persists in asking deeper questions concerning "why" and "how" and thus is concerned with the fundamental philosophical questions about the impacts of human life as one part of the **ecosphere**, rather than with a narrow view of **ecology** as a branch of biological science.

Note: Most holistic positions have been concerned with **wilderness and its preservation**. By contrast, relatively little attention has been paid to the **built environment**, although this is the one in which most people spend most of their time.

Intercultural Perspectives

- The „reverence for life“ (biocentrism) is less strong in Asian cultures, but because of reincarnation (to live again after death in form of an animal or a plant) there is a moral anchor in Buddhism.
- Anthropocentrism is strong in the monotheistic religions (Islam, Judaism, Christianity). However, all three holy books state rules to protect nature, particularly plants and animals.
- Ecocentrism allies well, e.g., with Shintoism (Japan)

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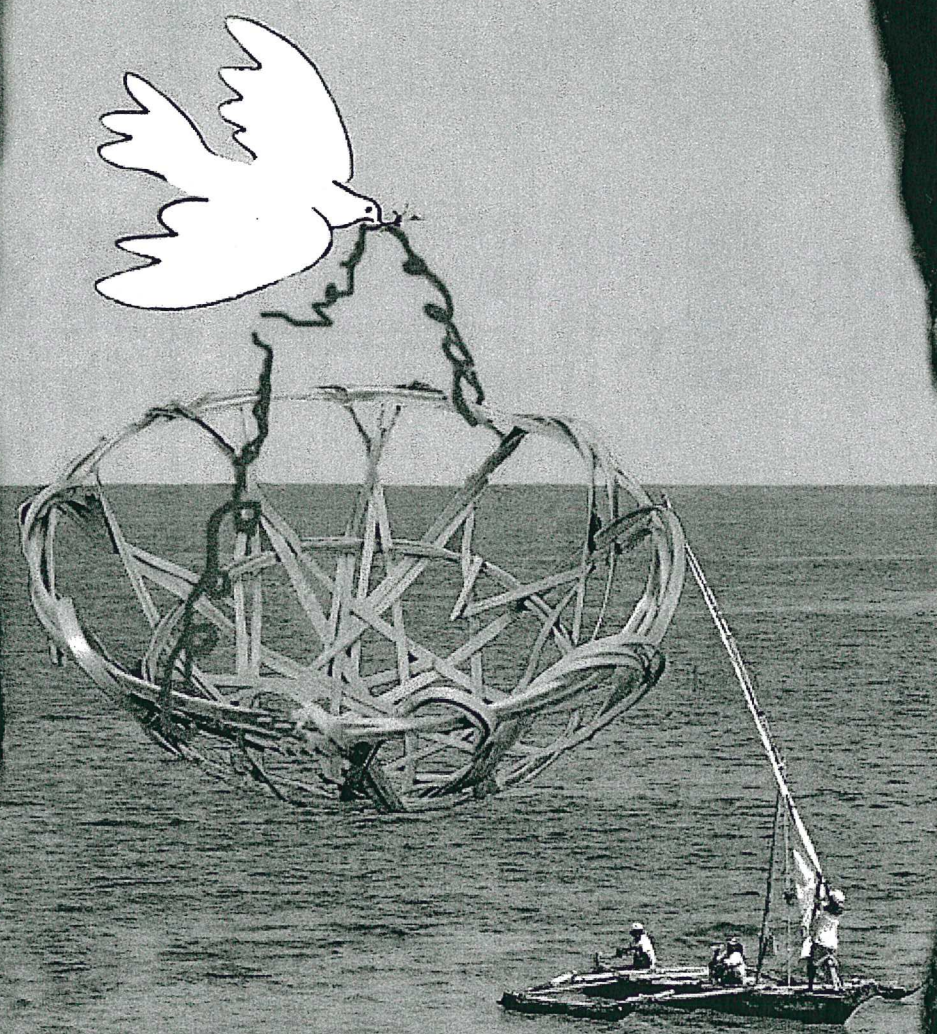
Prof. Dr. Nicole Karafyllis, TU Braunschweig, Seminar für Philosophie, Bienroder Weg 80,
D-38106 Braunschweig, Germany; n.karafyllis@tu-bs.de

PEACE

GAIN

BEAR

THE WEIGHT OF... ?



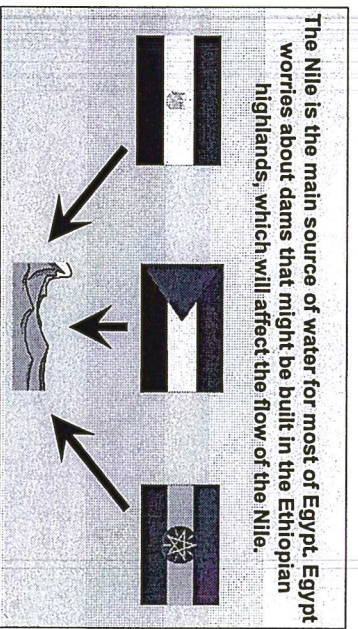
WHERE ARE WE SAILING TO?
 & WITH WHOM?

Summer School on
 Water and International Relations
 SEP 2011, TU Braunschweig, Germany

Conflicts resolution of Egypt Water

1 Background

- The main cause of Nile conflicts is related to fact the eleven Nile Basin nations — are collectively among the world's poorest and least developed.
- Population growth in Egypt, Sudan (North & South) and Ethiopia is threatening conflict along the world's longest river, The Nile, Ethiopia is pressing for a greater share of the Blue Nile's water but that would affect downstream Egypt.

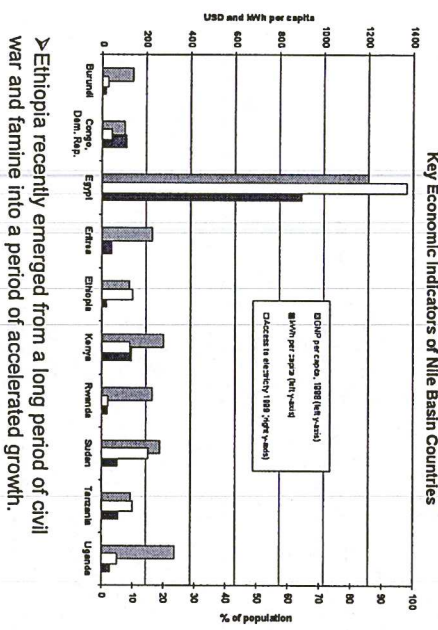


- Egypt is expected to be added to the list of water scarce countries by the year 2025.
- In 1979 the Egyptian president (Anwar Sadat) said Egypt will never go to war, except to protect its water.
- The United Nation Secretary General Boutros Boutros-Ghali has warned bluntly that the next war in the area will be over water.
- The amount of water available per person in cubic metres. (m³)

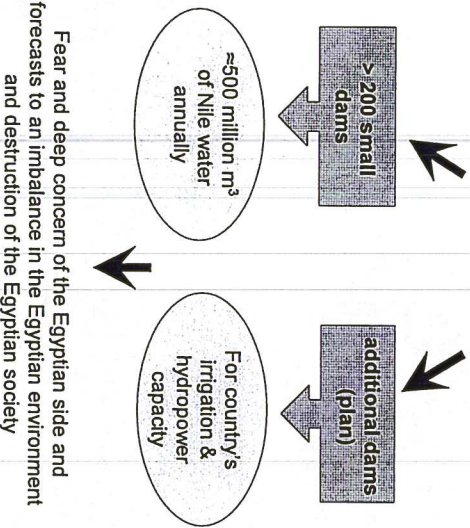
| Country | 1955 | 1990 | 2025 |
|----------|--------|-------|-------|
| Egypt | 2,561 | 1,123 | 630 |
| Sudan | 11,899 | 4,792 | 1,993 |
| Ethiopia | ??? | 2,207 | 842 |

2 Current situation

➤ Today, Egypt is regarded as the most moderate and helpful of all Middle Eastern nations. But it is as ready as any other country to use force to protect its vital resources.



➤ Ethiopia recently emerged from a long period of civil war and famine into a period of accelerated growth.



3 Prospective Strategies

- More Negotiations and Cooperation Towards Nile Basin United State
- Sustainable water management system
- Alternative water resources



4 Conclusion

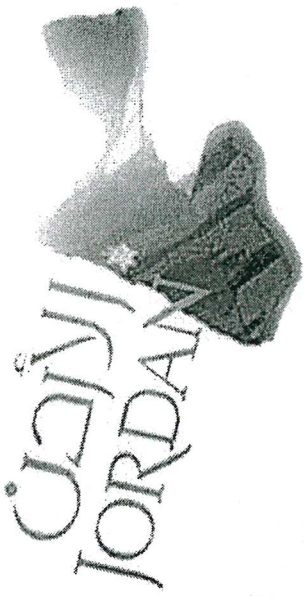
- 1- Historically Egypt early had hydraulic civilization based on Nile water
- 2- Negotiation, Consultation, and prior notification ...base lines for peace and cooperation.
- 3- Working more towards Cooperative development of water resources and water management (Non-cooperation = economic losses)
- 4- Putting in considerations Political frameworks.

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Assistant Prof. Dr. Zeinab Sh. AbouElnaga
Faculty of Science, Mansoura University





A Mind Map of the Water Situation in Jordan

"Our Water situation forms a strategic challenge that cannot be ignored. We have to balance between drinking water needs and industrial and irrigation water requirements. Drinking water remains the most essential and the high priority issue."
 H.M. King Abdullah II, November 7, 1999

In 2007, the deficit between total water supply and demand was 638 million cubic meters (MCM)

- There are three water resources in Jordan
1. Surface Water "Precipitation, Rivers, Lakes, and Dams" 39.3%
 2. Ground Water 47. 2%
 3. Treated water 13.4%

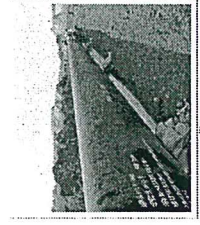
- Jordan situated in the Middle East, in the south-western part of Asia
- Jordan has a population of about 6.407 million
- The total area of the kingdom is about 89200 (Km2)

Jordan's Water Strategy / Water for LIFE: 2008-2022

Jordan is the third poorest country in water resources

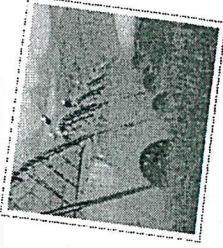
Groundwater Management Policy

Addresses the management of ground water resource including development, protection, management, and reducing abstractions for each renewable aquifer to the sustainable rate (i.e., safe yield).



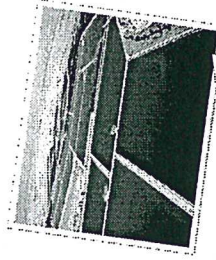
Irrigation water Policy

Addresses irrigation water including agricultural use, resource management, technology transfer, water quality, and efficiency, but does not address or extend to irrigated agriculture.



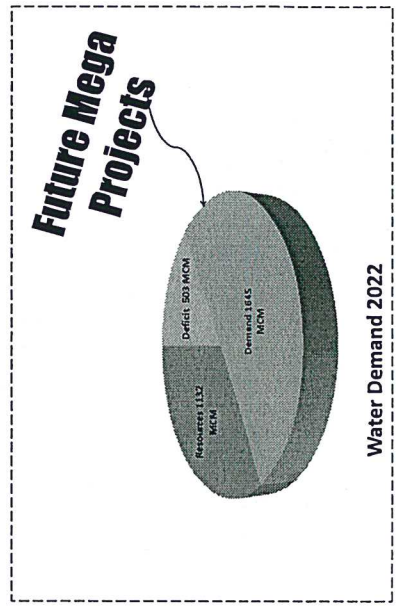
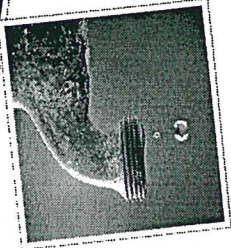
Wastewater Management Policy

Addresses the management of wastewater as a water resource including development, management, collection and treatment, reuse, and standards & regulations.



Water Utility Policy

Attempts to address 10 major issues relating to both water utility services as well as the basic authorities, responsibilities, and direction of Jordan's water agencies.



Future Mega Projects

The Shire-Zambezi Waterway Project: Where did It Go Wrong?

Dr. Timothy Biswick – University of Malawi

1. Introduction

The Shire-Zambezi Waterway project aims at the construction of a world inland free port that will provide a direct waterway transport system between Nsanje in southern Malawi and the port of Chinde at the mouth of Zambezi river in Mozambique, about 238 km away. A multilateral memorandum of understanding was signed by Malawi, Zambia and Mozambique in 2006 to kick-start the project. However, the project implementation has stalled. This paper looks at the agreements guiding the project implementation and discusses the reasons for the problems encountered and possible solutions.

2. The Zambezi River Basin

| | |
|-------------------|----------------|
| Zambia (41.6) | Tanzania (2.0) |
| Angola (18.4) | Botswana (1.4) |
| Zimbabwe (15.6) | Namibia (1.2) |
| Mozambique (11.8) | DRC (0.10) |
| Malawi (8.0) | |

(Numbers in brackets show the % of the basin in each country)

3. The Shire-Zambezi Waterway

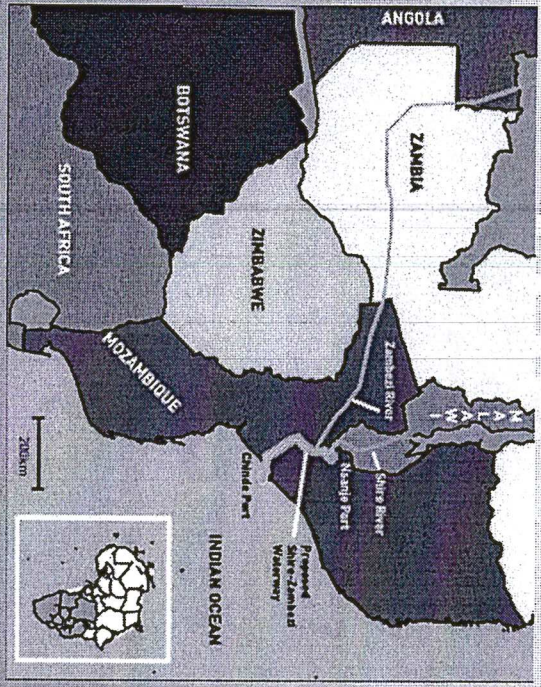
- 311 km (13%) in Malawi and 237 km in Mozambique
- Previously used by early missionaries and the Mozambique gov't until after the start of civil war in 1970s
- \$6 billion budget to be raised by member states
- expected to have a minimum life span of 50 years
- Malawi and Zambia expected to be the major beneficiaries.
- To reduce export/import costs by 60%
- Malawi junior partner economically & geographically in the project.
- Mozambique currently developing a railway network from western provinces across Malawi to the coast. Economically waterway project not attractive

5. Conclusions

The issue should be referred back to the interministerial committee of the 3 countries (as provided for in the memorandum of understanding) so that the spirit and the letter of the guiding agreements and all other regional and international protocols on transboundary water resources are respected by all parties

6. References

- http://www.transboundarywaters.orst.edu/publications/register/tables/IRB_africa.html
- http://www.malawitighdcommission.co.uk/Shire_Zambezi_Waterway.htm
- <http://www.trademarksa.org/node/2306>



Problems

- Lack of trust and honesty between the partners
- Skewed nature of the opportunities accruing from the project and presence of competing interests
- Lack of political will to respect international agreements (Mw Govt)

4. Chronology of Events

- **2006:** Pre-feasibility study indicates that the Shire and Zambezi rivers are navigable but recommends further studies on economic viability and environmental impact
 - **2007:** Memorandum of understanding signed by Malawi, Zambia and Mozambique
 - **2008:** Under pressure from Malawi, the 3 governments hire a Zimbabwean company ZARICO to carry out a viability study - Company fails to undertake study
 - **2009-2010:** Malawi tries on 3 occasions to send barges up the Shire-Zambezi rivers without authorisation from Mozambique (aimed at showing that feasibility study not necessary) – barges detained
 - **Oct 2010:** Malawi Govt officially 'opens' the project at Nsanje in a ceremony attended by the presidents of Zambia and Zimbabwe. The Mozambique gov't sends a low level official to the ceremony
- Project has now stalled!!!**

7. Acknowledgments

The author would like to thank Excellence Centres for Exchange and Development (EXCEED) for giving him the opportunity to attend the Summer School and the Federal Ministry for Economic Cooperation and Development and DAAD for funding.

XAYABURI DAM

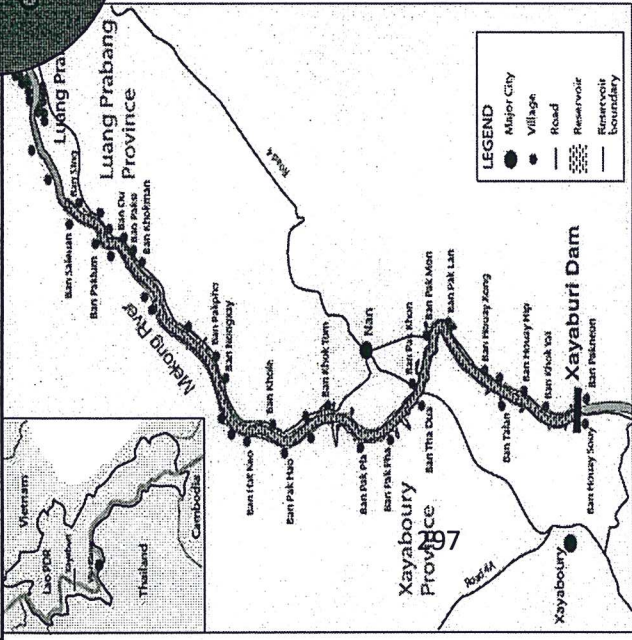
TRANSBOUNDARY IMPACTS

Location

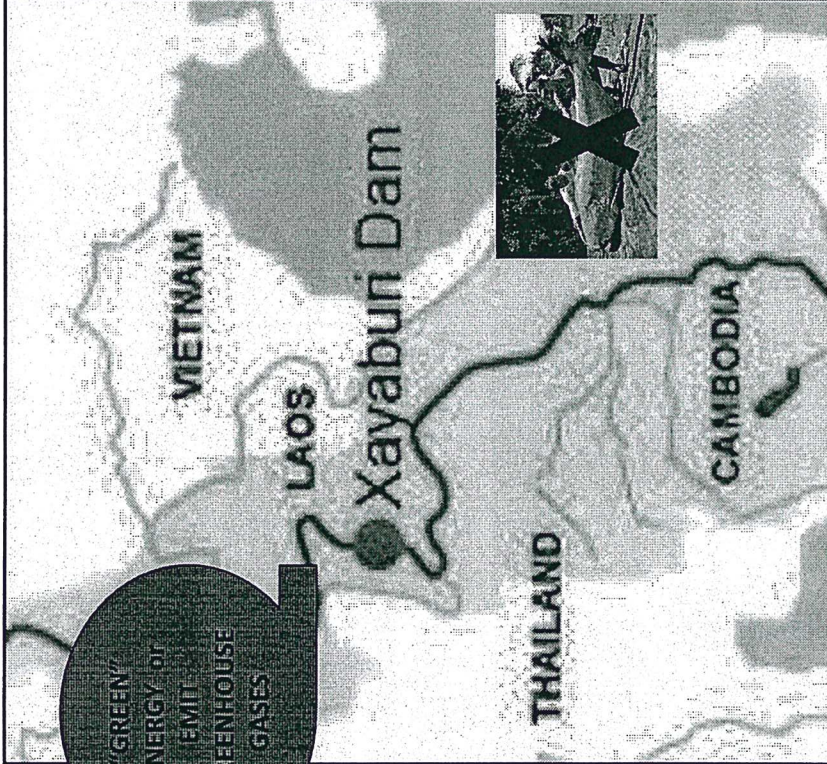
Country Laos - Status: Proposed
 Opening date 2019 (expected)
 Construction cost \$3.5 billion

Reservoir

Capacity 0.225 km³ (182,000 acre-ft)
 Catchment area 272,000 km² (105,000 sq mi)
 Surface area 49 km² (19 sq mi)



"GREEN" ENERGY OR EMIT GREENHOUSE GASES?



THIS WAY OF LIFE IS NOW THREATENED

The Mekong River, downstream of the proposed Xayaburi Dam (Thailand Deetes)

Environmental Impacts of Dams:

physical and biological ways:

- downstream ecosystems and landscape sediment
- lower groundwater tables along a river reduces habitat for FISH - INVERTEBRATES
- threat to aquatic biodiversity - fisheries productivity
- 41 fish species risk of extinction
- resettle over 2,100 people and directly affect over 202,000 people



CANDAMMING THE MEKONG: POWER & BETTER LIFE TO LAOS?

Vendors pack up the day at 07:00 crossing upstream

★ Vietnam has suggested delaying decision-making on the dam, citing its negative impact on many countries

Fish four-fifths of the average Cambodian's protein intake, and millions of people rely on the Mekong for their livelihoods



transboundary impacts and knowledge gaps that require both further study - public consultation unilaterally (violation of international law, its commitments under the 1995 Mekong Agreement) robbing the future of millions of people in the region (livelihood and food security)

→ MRC recommends to be deferred for 10 years report of strategic environment assessment, 10/2010

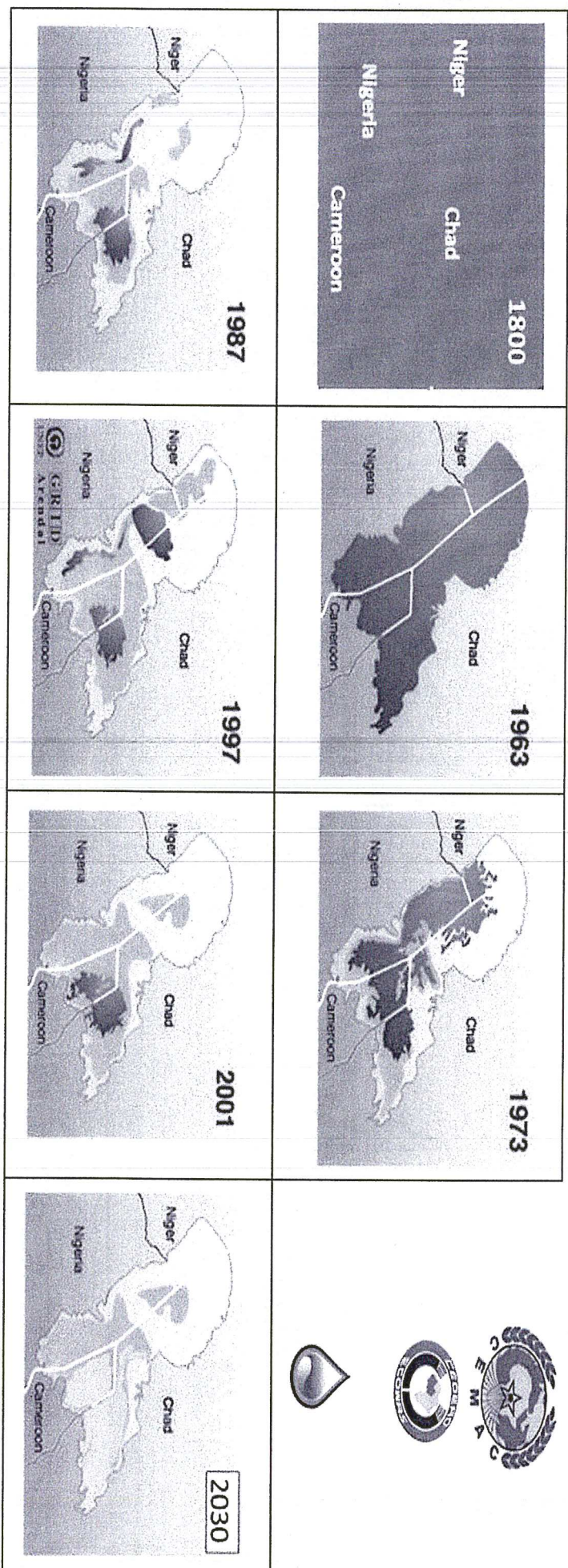
→ International Rivers calls for seeking better energy solution

Acknowledgment:
 Summer School on Water and International Relations Development, Conflict and Cooperation, International Political Economy and the "Green State"
 September 5-15, 2011 - Braunschweig, Germany
 Supported by Technische Universität Braunschweig
 Excellence center for Development-Sustainable-Water Management

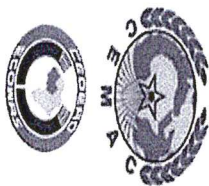
Dynamics of disappearance of an endorheic lake: The case of Lake Chad in the Central African Sub Region

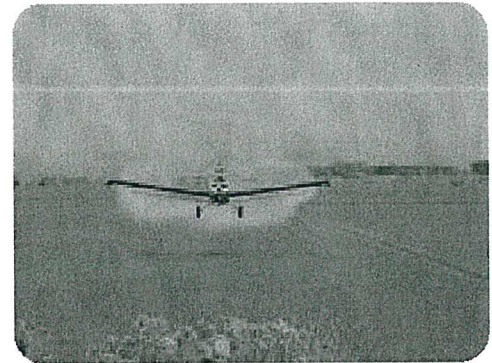
Ajeagah Gideon A, PhD
 P.O Box 812, Laboratory of General Biology, Faculty of Science, The University of Yaounde 1, Cameroon,
 Email: ajeagahg@yahoo.com

Introduction: Lake Chad which spreads through the countries of Chad, Niger, Nigeria, Niger and Cameroon was considered in 1823 as one of the largest lakes in the world, that is located on the southern fringe of the Sahara desert. An increased demand for grazing, fishing, water adduction, agriculture, tourism and the devastating ecological effect of climate change and desertification has put this lake on the list of lakes to disappear in the 21st century. The size of Lake Chad greatly varies seasonally with the flooding of the wetlands areas. The water level is variable as it is influenced by the rainfall fluctuation both seasonally and annually. The lake size was five times its present size (20,000 km²) several thousand year ago, while the drought years in the 1970's made the northern half of the lake (Northern Basin) completely dry and turned the Southern Basin into a densely vegetated area with scattered swamps and open pools. The drying landscape of this bio-ecologically active region is a world debacle.



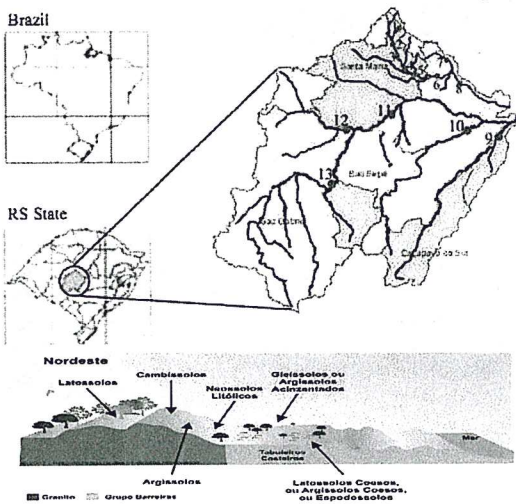
Recommendations: The inflow of water from some neighbouring river basins such as the Oubangui-Chari into the lake Chad will greatly revive economic activity and bring more socio-economic and political joy to tens of millions of people who rely on this lake for survival. This will also be a basis for rolling back the Sahara desert, which is speedily gaining grounds on the South of the Sahara. This is a calling for regional organisations (CIBC, CEMAC, ECOWAS), global partners (AU, UN) to save this shrinking limnic ecosystem and Africa from losing it's pride.
References: NASA Goddard Space Flight Centre, ILEC, IUNC, LCRI, National Geographic's, Geophysical research, BBC, New Scientist, 2011, Lake Chad-Oubangui inter-river basin transfer.





Production about 13 million tons/year

Greater use of pesticides



Monitoring of rivers

Environmental contamination

Table 1 - Comparison of VPM (maximum allowed) of pesticides in Brazil and in different international normatizações drinking water.

| Pesticides analyzed | Maximum allowed (mg L ⁻¹) | | | |
|---------------------|---------------------------------------|------------------------|------------------|--|
| | CONAMA ² | MS Brasil ¹ | EPA ³ | CE ⁴ |
| Herbicide | | | | |
| Imazethapir | --- | --- | --- | Potability: 0,1 µg L ⁻¹ (individual pesticide) ou 0,5 µg L ⁻¹ (Σ of pesticides including their metabolites) |
| Imazapique | --- | --- | --- | |
| Bispiribaque sódio | --- | --- | --- | |
| Bentazona | --- | 0,3 | --- | |
| Clomazone | --- | --- | --- | |
| Propanil | --- | 0,002 | --- | |
| Glifosato | 0,280 | 0,5 | 0,7 | |
| Quinclorac | --- | --- | --- | |
| Metsulfuron-methyl | --- | --- | --- | |
| 2,4-D | 0,030 | 0,03 | 0,07 | |
| Inseticide | | | | |
| Carbofurano | --- | --- | 0,04 | Equal |
| Fipronil | --- | --- | --- | |
| Cipermetrina | --- | --- | --- | |
| Lambda-cialotrina | --- | --- | --- | |
| Fungicide | | | | |
| Azoxistrobina | --- | --- | --- | Equal |
| Difeconazole | --- | --- | --- | |
| Trifloxistrobina | --- | --- | --- | |

Current situation is:

- There is presence of pesticides in the rivers of RS, coming from rice paddies by up to 3000x higher than allowed;
- These wastes can affect metabolism parameters of fish and other non-target organisms;
- Effect in humans is not known.

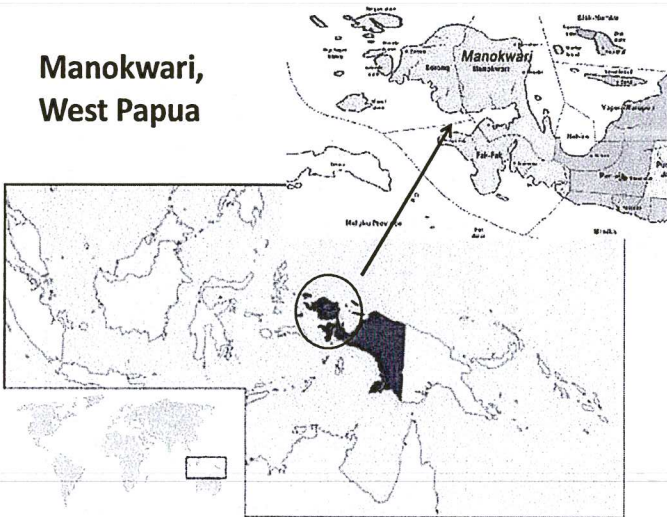


Problems with legislation!!!!

How we produce food without contaminating the water we drink?

Water management in Manokwari, West Papua, Indonesia

Manokwari, West Papua



Source: Bakosurtanal (2009)

Geographical condition

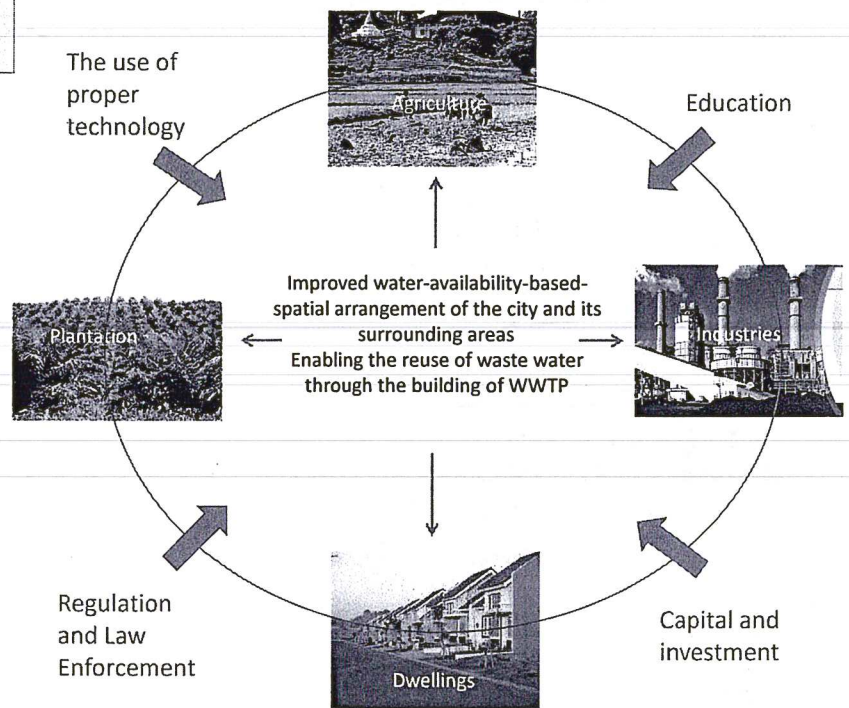
- Papua Barat is the newest province in Indonesia, located in the eastern part of Indonesia. It has an area of 115,363.50 km² and population of 743,860 (BPS, 2009).
- The central east-west mountain range dominates the geography of the island. Various other smaller mountain ranges occur both north and west of the central ranges.
- Relatively steep slopes in the mountains and valleys, posing a potential for landslide and flooding.
- One regency of West Papua is Manokwari, which is capital of the province.



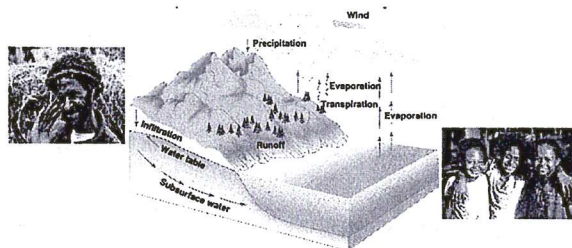
Water: Current Condition:

- Water is treated as club good, private good and common good.
- There is an unevenness in the water distribution due to the difference of land height.
- Lower ground such as coastal areas have enough fresh water supply. Easy water access is also obtained if people live near spring water or streams/ rivers
- Meanwhile, people living in higher ground have less access to fresh water due to the depth of ground water from the surface → wells are difficult to drill as the cost is very high.

Possible solutions



Like water related problems in other areas, interdisciplinary approach is needed to solve the problems in West Papua. Therefore, the Government needs to sit together with all relevant stakeholders to maintain sustainable water management.



Source: <http://www.colorado.edu>

References

Bakosurtanal. (2009). *Atlas Administrasi*. National Survey and Mapping Agency of Indonesia: <http://www.bakosurtanal.go.id/bakosurtanal/atlas-administrasi/>

BPS. (2009). *National Statistic Bureau of Indonesia*. from Statistic by Subject: <http://irjabar.bps.go.id/?no=428&pilih=tabel1>

Righting the Wrongs in Basin Management Approach (Volta Basin)

Amos Nkpeebo (BSc. Development Planning)

Introduction

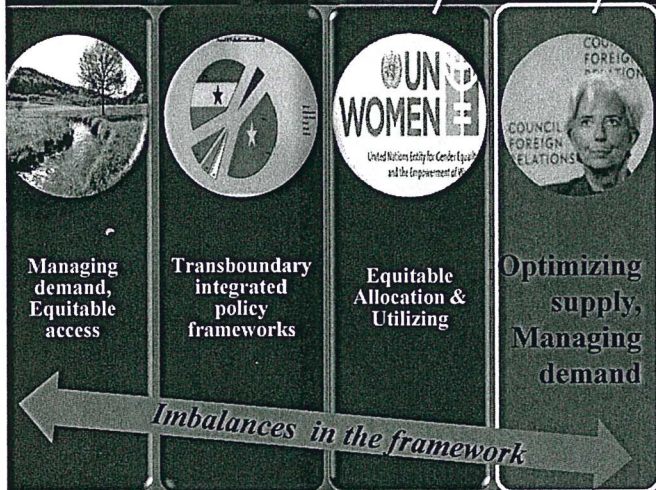
The Dublin Principles and UNCED 1992 =>

- Precautionary principle: Fresh water is a finite and vulnerable
- Participatory principle: Water development and management should be participatory
- Gender Role: Women play a central part in the provision, management and safeguarding of water
- Economic Principle: Water has an economic value and should be recognized as an economic good

Following UNCED, 1992: The Ghanaian Water Resources Commission (WRC) to transform the national water resources into economic goods, making water resources allocation. In Burkina Faso the Direction General de l'Eau (DGE) was created, with corresponding objectives.

Integrated Water Resource Management (IWRM)

Precautionary principle; Participation principle; Role of Women; Economic Principle



Inbalances in the framework

Where are the leaks

Weak Institutional Integration --> Although institutional structure is established, integration, both laterally and vertically has not been taken place correctly

Capacity building programs have blunt cutting edge --> sector-based database

Poor environmental consciousness --> local cooperation is less self sustaining.

Resource- Poverty Nexus --> Conflicting land uses

Conclusion
Basin management approach is the the most efficient for harmonizing environmental, economic and social goals of development. Its application however, depends mostly on the macro and micro environmental factors of a given catchment area.

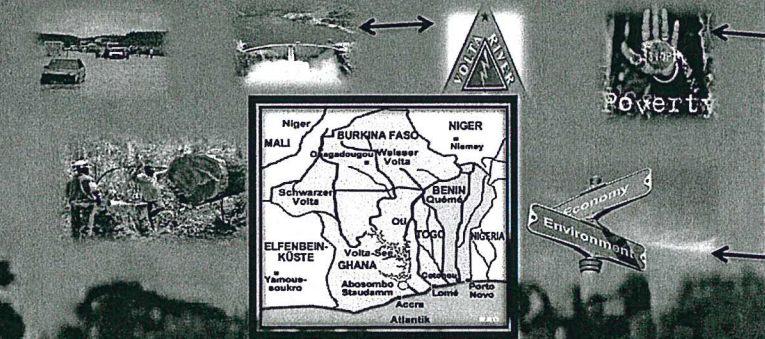
ES: De Giesen N.V., Andreini M., Edig A.V., Vlek P. (2001). Competition for Water Resources of the Volta Basin. Center for Development Research, Bonn University, Alter-Flex-Strasse 3, D-53113 Bonn, Germany

GLOWA Volta (2010). The Volta Basin Water Allocation System (VB-WAS)

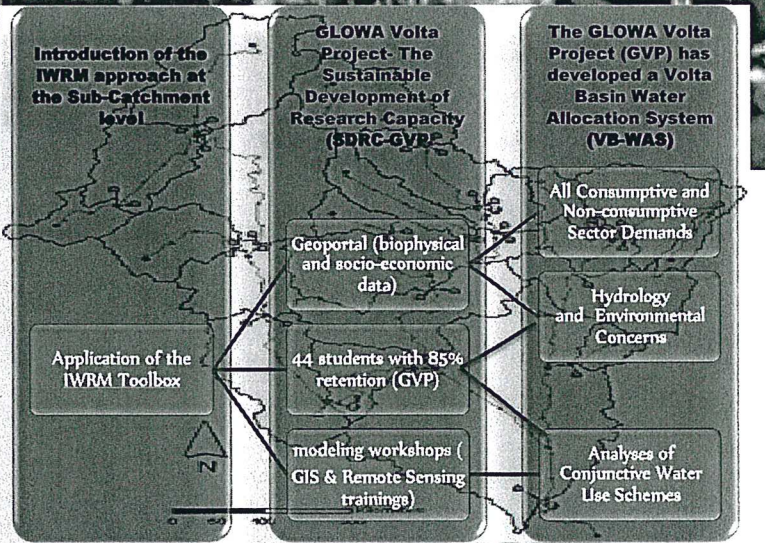
vanhuys C., Jung G., Kasei R., Liebe J. (2009). The Volta Basin Water Allocation System:

The basin is currently facing a situation in which customary and 'modern' natural resources management institutions exist simultaneously with divergent management objectives. Also growing competition in the demand for water among sectors and also between states.

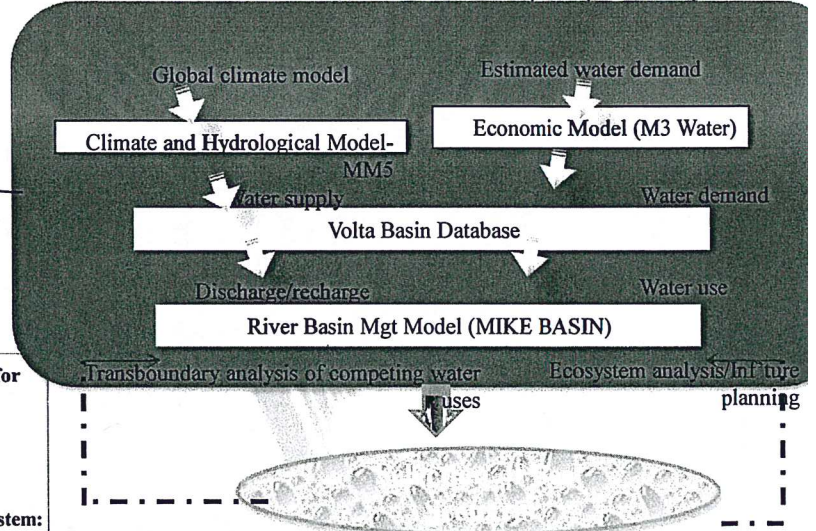
Conflicts in the basin (Sector Tensions):



Intervention in Volta Basin (VBA)



Volta Basin Water Allocation System (VB-WAS)



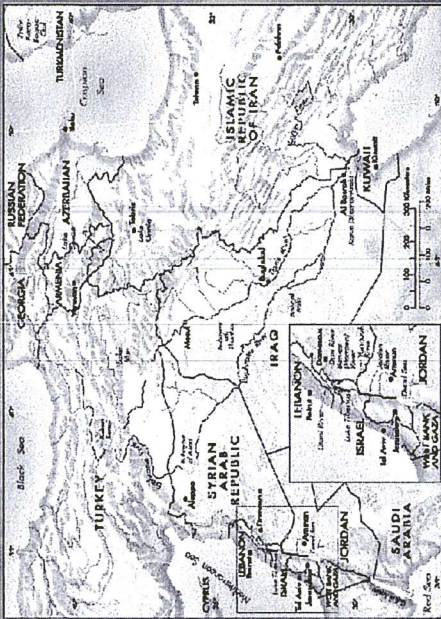
www.adv-geosci.net/21/57/2009/

THE POLITICS – WATER RELATIONSHIP: THE CASE OF TURKEY-SYRIA



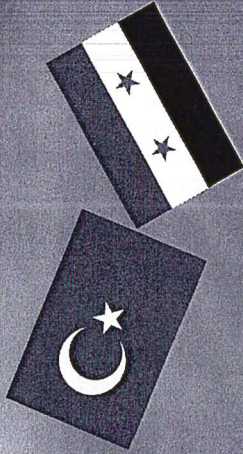
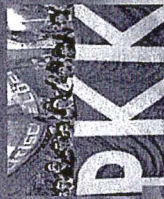
KURDISH QUESTION (PKK - KURDISH WORKERS PARTY)

- *Kurdish population mainly lives in Turkey, Iran, Iraq and Syria
- *Terrorist organization PKK caused the death of more than 30,000 people
- *Syria has been applying discriminatory policies against its Kurdish population and does not support an independent Kurdish state in the region.
- *Syrian citizenship and due rights is not provided to thousands of Kurds living in Syria.
- *Syria encouraged PKK expansion in Turkey. Hosted the head of the organization, Ocalan in Damascus until 1998.



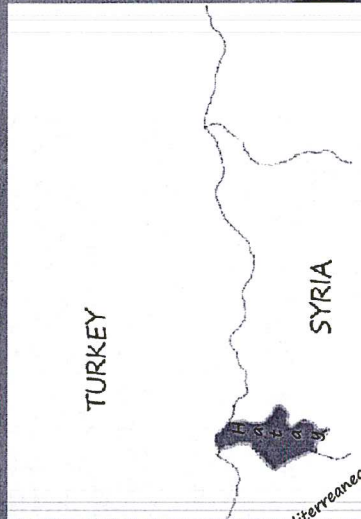
WATER DISPUTE

- Euphrates and Tigris emerged as an issue after 1960s
- Turkey and Syria embarked on damming for energy and irrigation purposes
- In 1983 Turkey's giant irrigation project started (Turkish acronym GAP)
- This project contains 22 dams and 19 hydroelectric power plants
- Turkey has the position of upstream country
- Syria's agriculture depends on Euphrates river basin
- Syria and Iraq claim that GAP contaminated waters of the rivers
- Turkey states that dams regulate the water flow and prevent floods
- Syria demands 400m³/s water
- According to the 1987 protocol Turkey used to provide 500m³/s
- After leaving of the head of the PKK Ocalan from Syria, Turkey raised this amount up to 900m³/s in 1998
- Orontes river originates from the Syria
- Syria complains about Turkey's water policies about Euphrates and Tigris but acts completely different regarding the Orontes river.
- Bilateral relations have improved since 1998
- GAP Project which is regarded as a reason for dispute by Syria and Iraq will be an opportunity for a regional cooperation.



SYRIAN CLAIMS ON HATAY PROVINCE

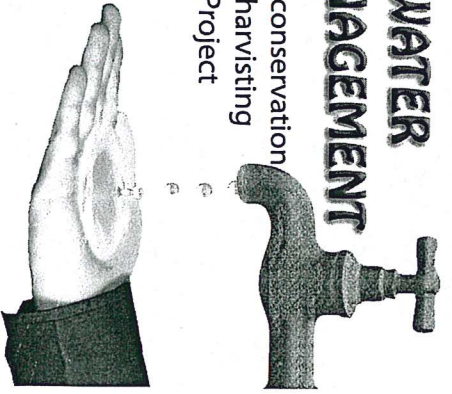
- *The union of Hatay Sancak with Turkey in 1939.
- The Syrian side never accepted the legitimacy of this union. Its view was that Hatay was "stolen territory". In the official maps of Syria shows Hatay as part of the country.
- *Orontes (Asi) river originates from Lebanon, passes Syria and flows into the sea in Turkey's Hatay province.
- Syria believes is most from the river and does not use it efficiently.
- *Amount of water reaching Turkey from Orontes especially reduces in summer.



References: "Turkey Country Report", Prepared for the 9th World Water Forum, Republic of Turkey, March 2009, World Water Council, www.worldwaterforum.org, www.researchgate.net/publication/228141143_Syria-to-resign-its-territorial-claims-over-the-Mulha-Benli-Atuniskil-Orontes-Tur, "From Distant Neighbors to Partners? Changing Syrian-Turkish Relations", Security Dialogue, Vol. 39, 2006, pp. 229-248, Seth Wiles, "Battling the Lion of Damascus: Syria's Democratic Opposition and the Assad Regime", Foreign Affairs, No. 69, May 2000

WATER MANAGEMENT

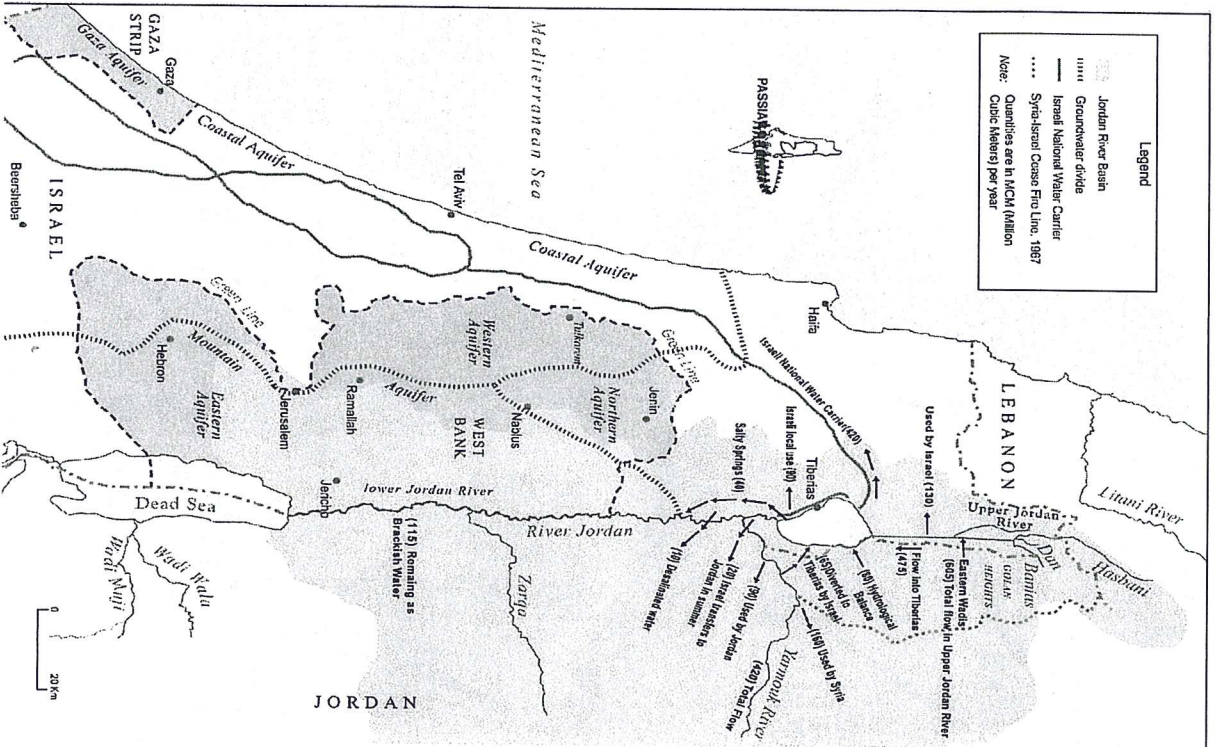
Water conservation
Water harvesting
Mega Project



Jordan River

Jordan is the meaning of the rapid flow of water by the ancient Greek language. The Stems for the river come from three sources are all outside Jordan, Lebanon, Israel, and Syria. Now the river is suffering from several pollution sources and the high level of salinity, due to the conversion sewage from Israel side, in addition to the low level of flow; nowadays water in the river is not suitable for domestic uses and even for industrial or agricultural uses.

Transboundary water "Jordan Rivers"

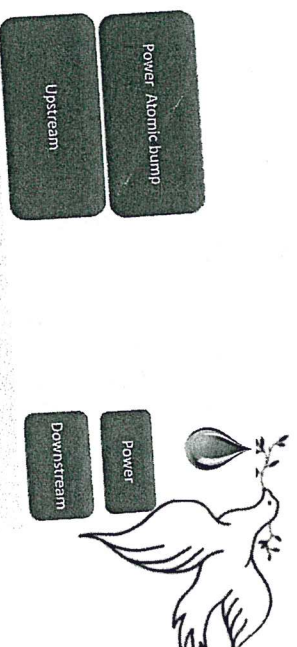


Mohammad Qtaisat, Khaled Abusamhadaneh



Israel

Jordan



References:

- Haddadin, Mumtaz (2006) - Water Resources in Jordan
- World Bank

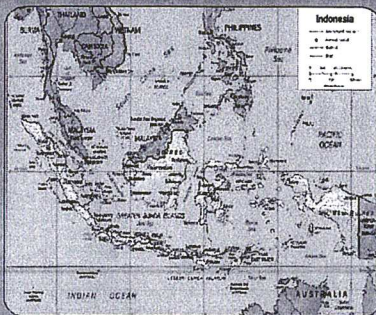


My Fragile World is Getting Weary to Bear the Burden

Suherman

Chemistry Department, Faculty of Mathematics and Natural Sciences,
Universitas Gadjah Mada, Sekip Utara Kotak Pos 21 BLS Yogyakarta 55281, Indonesia
Email: herman_7735@yahoo.com

Indonesia at a glance

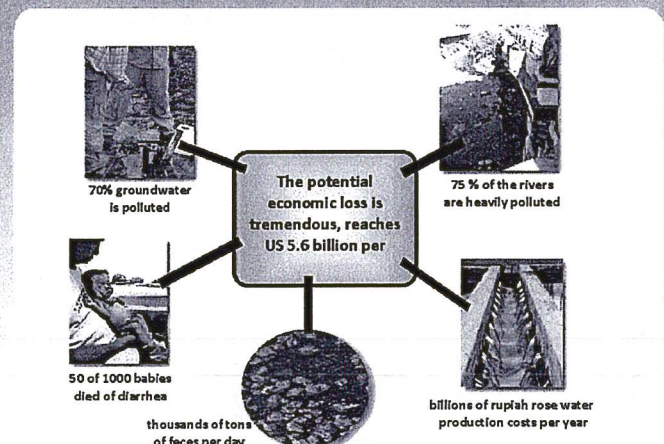
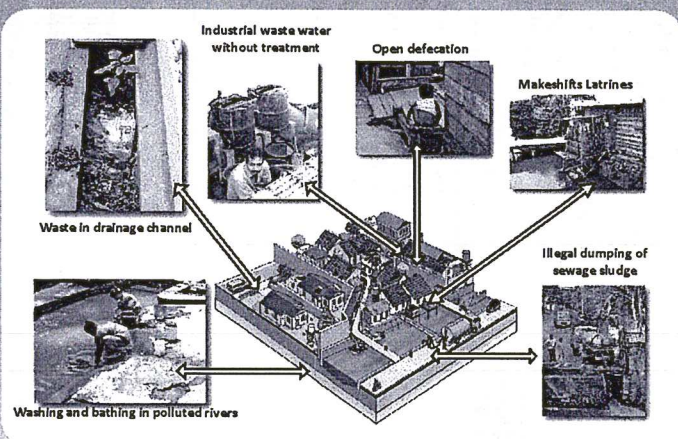


- Population 237.6 m in 2010; 57,86% live in rural areas (Statistics Indonesia, 2010)
- 17,504 islands (MOHA, 2004) across 1,890,754 km² (Statistics Indonesia, 2009)
- GDP per capita US\$4,429 (World Bank, 2010)
- Human Development Index ranking 111 of 172 countries (UNDP, 2011)

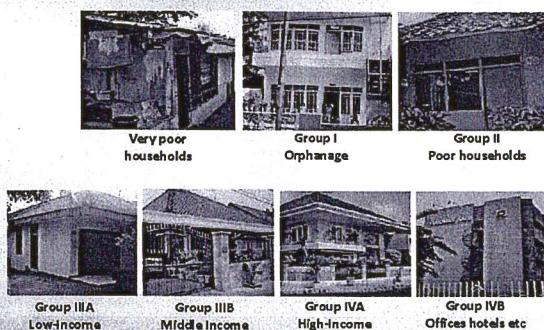
Our common problems

- Limited availability of master plans for water resources development
- Lack of qualified person in charge
- Limited funding resources
- Incomplete policies and regulations
- Low priority on water and river developments
- Low awareness and local responsibility from the people surrounding
- Low level of public education led to lack of knowledge and understanding

The reality from our communities



The consumer groups



Acknowledgements

- DAAD-BMZ Funds for the EXCEED Summer School program 2011
- Technical University Braunschweig-Germany
- Universitas Gadjah Mada-Indonesia
- Mr. Budi Hidayat, National Development Planning agency, Republic of Indonesia for the materials
- Nur Endah Sofiani for the pictures

Opportunities of cooperation for The Nile Basin Countries

EXCELLENCE CENTER FOR
DEVELOPMENT COOPERATION
SUSTAINABLE WATER MANAGEMENT

Mesay Daniel Tulu

Summer School on Water and International Relations
September 5 – September 15, 2011 / Braunschweig, Germany

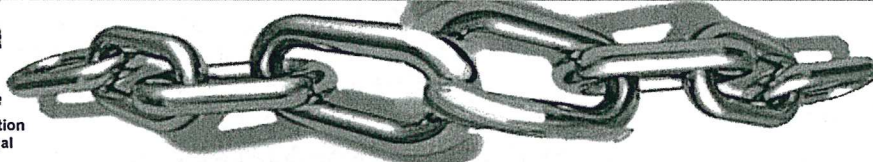


Introduction

The Nile River Basin that covers an area of 3,020,100 km² is made up of eleven nations (see figure). 86% of the Nile's water comes from the Ethiopian highlands and the rest originates mainly from the equatorial lakes. Egypt, a former British protectorate, and Great Britain signed the Nile Water Agreement in 1929, which grants Egypt a veto power for every upstream project and allocates 48 km³ of water to Egypt and 4 km³ of water to Sudan, while the rest stayed unallocated. In 1959, Egypt and Sudan signed an agreement for the full utilization of the Nile Waters, which again excluded the other riparian. This agreement allocates 55.5 km³ of the Nile water to Egypt, 18.5 km³ to Sudan, and 10 km³ for evaporation.

Current trends indicate an increase in the demand for fresh water in the Nile Basin, and therefore it is becoming an increasing potential for conflict. The upstream states demand "reasonable and equitable use" and "full utilization" of the Nile Water, while downstream states have called on other countries to refrain from causing "appreciable harm" and to adhere to "historic rights plus "Water Security". Thus, all the riparian countries sharing the river basin should cooperate closely and make efforts to address the problems and issues pertaining to their basin in a holistic way. The riparian countries should coordinate and integrate their respective policies for their common development.

This poster presents hydro-political relations and opportunities of cooperation for the riparian countries.



Development and implementation of permanent and inclusive legal and institutional framework

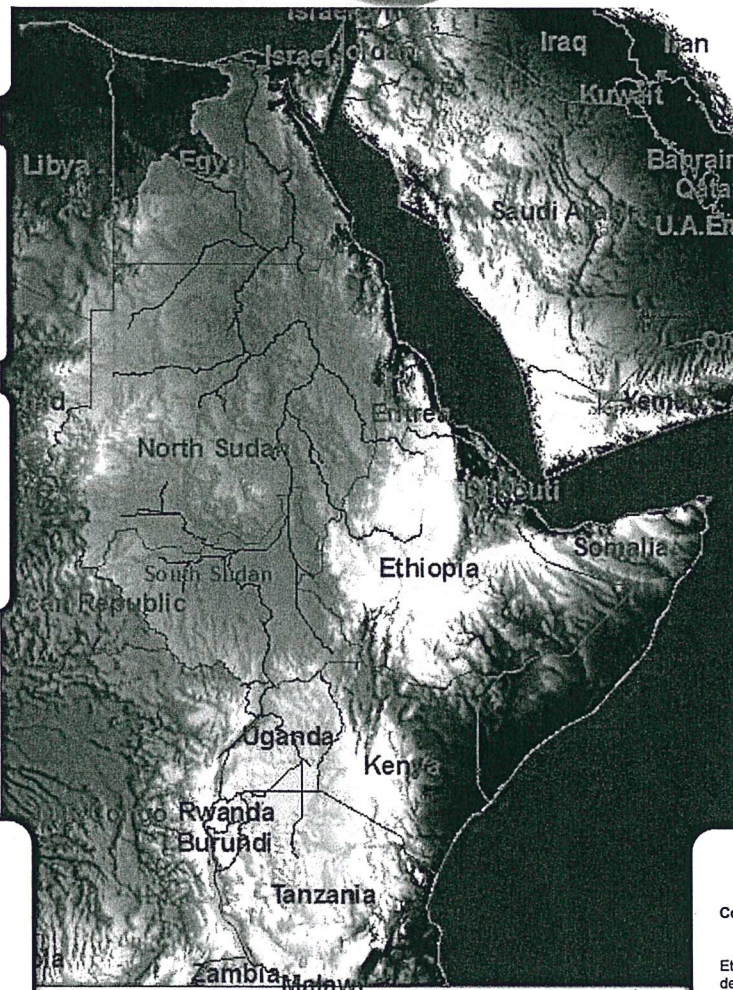
Maximize benefits per unit of water consumed

Establish conflict resolution methods

Exchange technology and Data,

- o Establish water allocation rules
- o Overcome any potential impasse in negotiations
- o Open to dialogue and compromise

- o Consideration of regional virtual water trade
- o Optimized benefits from regional power trade

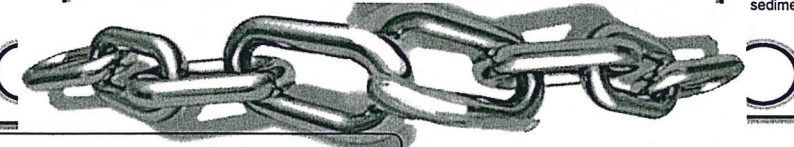


- Socio-economic development and benefit sharing
- Implement win-win projects
- Move from Bilateral to Multilateral cooperation
- Trade of between different interests
- Avoid polarized judgment
- Promote peace, confidence building, and security in the region
- Define the rights and the duties of all actors using the basin resources

Comparative advantage and economic integration

Ethiopian topography is suitable for hydropower development and the temperate climate encourages storage reservoirs in this countries than in the desert lands of Sudan and Egypt.

Hydropower development dams in Ethiopia also diminish sediments from being transported into the Sudan.



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Makonnen, D. Z. (2010). "The Nile Basin Cooperative Framework Agreement Negotiations and the Adoption of a "Water Security" Paradigm: Flight Into Obscurity or a Logical Cul-de-sac?" *European Journal of International Law* 21(2): 421-440.

305 ex|ceed

DAAD

Deutscher Akademischer Austausch Dienst
German Academic Exchange Service

Federal Ministry
for Economic Cooperation
and Development

THE ENVIRONMENTAL IMPACT OF BRAZILIAN AGRICULTURE AND ITS AFFECTS ON WATER.¹

Alexandre ten Caten²

¹Presented at the Summer School on Water and International Relations / Braunschweig – Germany (09/2011)

²Doctoral candidate / Universidade Federal de Santa Maria (RS-Brazil)

³Land survey Teacher / Instituto Federal Farroupilha (RS-Brazil)



Environmental pressure building elements:

→ World demands for clean (green) energy;

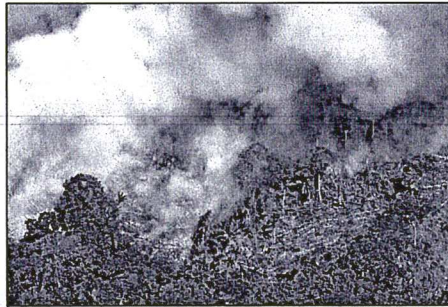
→ Growth of world population and food demand;

→ Imposition of technologies developed for other countries and agricultural models;

→ The 'state of the art' of the Brazilian political stability, economy efficiency, social justice, ecological sustainability, cultural identity and social e political participation (Menzel's six points).

Some features about Brazil:

- Ecosystem diversity;
- Dense drainage network;
- Enormous potential for hydro electricity;
- Rich in natural resources;
- Ethnic and indigenous diversity;
- Many archaeological sites.



Action:

Raise awareness among Brazilians of the importance of their own natural resources;

Large scale collecting and detailing of the country's natural wealth;

Promote "the 6 points needed" to develop the country.

External technologies:

- Farming machinery;
- Irrigation systems;
- Soil tillage cultivating systems;
- Genetically modified organisms;
- Pesticides, herbicides and fungicides;
- Simplistic agriculture models.



Action:

To develop local technologies;

Research on cropping systems adapted to different conditions of soils and climates in Brazil;

Adding value to agricultural products;

To increase the value of small and organic farms;

Disseminate successful techniques for crops in tropical areas.

Consequences:

- Loss of farmers knowledge;
- Increasing farms size and decrease in the number of farmers;
- Decreasing of the environmental resilience;
- Reducing lifetime of dams;
- Depletion of water quality;
- Land degradation;
- Biodiversity decline.



Action:

Quantify and monitor the agriculture impact in Brazil;

Develop and share technologies for the recovery of degraded areas;

Provide training to farmers;

Provide training for technicians to work with farmers;

Strengthen compliance of existing laws for environment protection.



Build partnerships to exchange experiences on:

-)Collecting data related to all human activities at river basin level;
-)Promoting the protection of water resources;
-)Promoting the equitable access to water resources;
-)Promoting the protection of biodiversity;
-)Preservation of farmers knowledge;
-)Protection of the native culture and of humanity's cultural heritage.



International River Basins of SOUTH AMERICA

Acknowledgment

Lecturers specially for Dr. Müfit Bahadır and Dr. Ulrich Menzel

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