



*Technical University of Braunschweig
Institute for Social Sciences
Chair for International Relations*

The Transboundary Freshwater Dispute Database



www.transboundarywaters.orst.edu/database
(Oregon State University)

Lecture by **Prof. Dr. Ulrich Menzel**, Chair for International Relations, Braunschweig University
at the International Alumni Seminar „Water, Wastewater and the Environment“, Oct. 26th 2009
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website

Database | Water Conflict Management and Transformation at OSU - Windows Internet Explorer

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

Datei Bearbeiten Ansicht Favoriten Extras ?

Favoriten Database | Water Conflict Management and Transfor...

Oregon State UNIVERSITY
College of Science

INSTITUTE for WATER and WATERSHEDS

PROGRAM IN WATER CONFLICT MANAGEMENT AND TRANSFORMATION
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The Transboundary Freshwater Dispute Database

(TFDD) is used to aid in the assessment of the process of water conflict prevention and resolution, over the years we have developed this Transboundary Freshwater Dispute Database, a project of the Oregon State University Department of Geosciences, in collaboration with the Northwest Alliance for Computational Science and Engineering.

The TFDD is comprised of six databases

TABULAR

WATER	MIDDLE m e EAST	COLLECTION
<small>the life's work of Dr. Thomas Naff</small>		

Middle East m|e Water Collection - NEW

The Middle East Water Collection provides access to roughly 9000 items on the subjects of politics and water in the Middle East. Oregon State University is privileged to be selected to host Dr. Naff's comprehensive life's work in our Library.

Case Studies - Water Conflict Resolution - Updated

Brief summaries of the processes of conflict resolution for 14 case studies of transboundary dispute resolution are offered here for comparative purposes.

International Freshwater Treaties Database - New Treaties added

A searchable database of nearly 450 international, freshwater-related agreements, covering the years 1820 to **2007**.

International Water Event Database - New Events added

A searchable database documenting historical international water relations from 1948 to **2005**.

International River Basin Register (updated August 2002):

This register lists the world's international river basins, delineated by continent.

U.S Interstate Freshwater Compacts Database

A searchable compilation of 39 US interstate compacts.

Water Conflict and Cooperation Bibliography - Completely new interface!

A searchable database of publications concerning water conflict and cooperation, with a focus on international freshwater resources.



The Transboundary Freshwater Dispute Database (TFDD)

- 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 approx **6400 international water events** (cooperation and conflict) from 1950 to 2005 (International Water Event Database) and rated by the Water Event Intensity Scale
 - Case study and bibliographical databases





I Transboundary Freshwater Spatial Database

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





Research Unit: International Basins

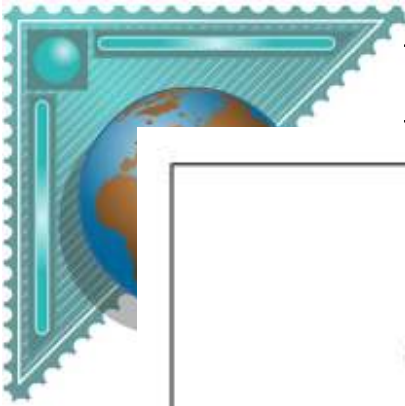




Africa: International River Basin register

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



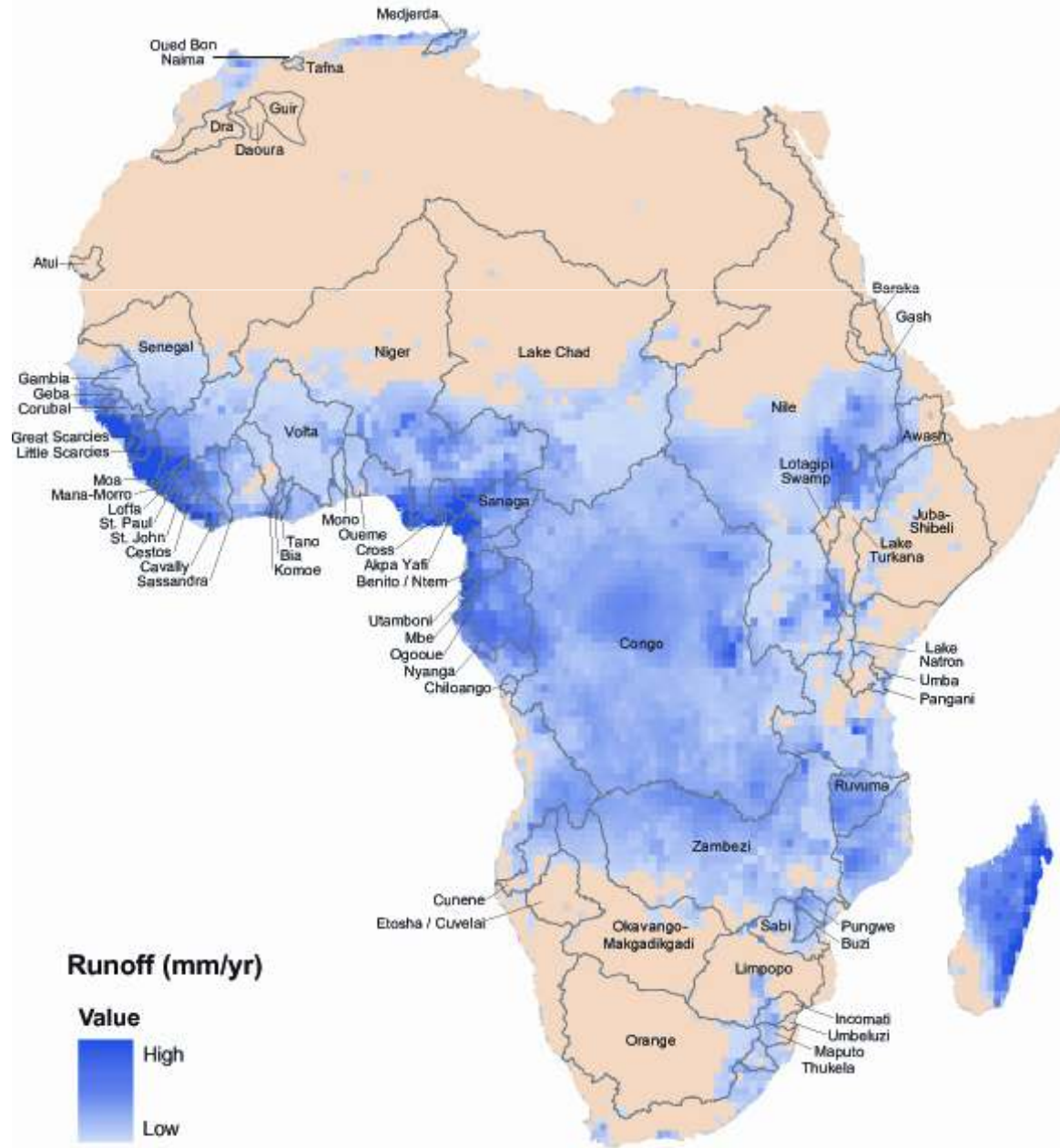


International Basins in Asia



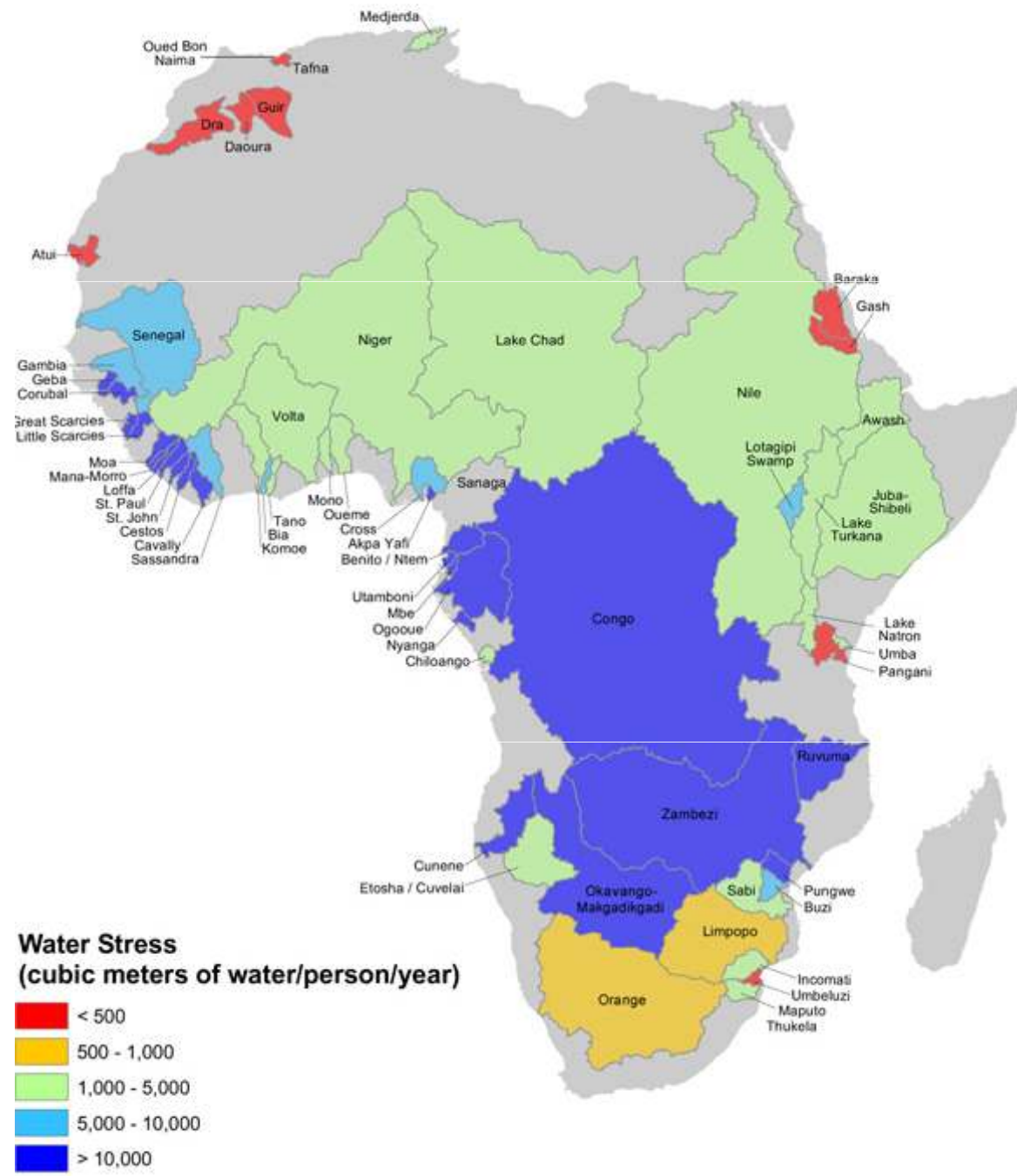


Runoff





Water Stress

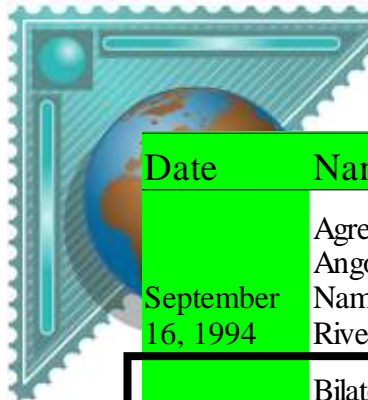




II International Freshwater Treaties Database

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





Intern. Freshwater Treaties Database

Date	Name	Parties	Issue	Basin	Signatories
September 16, 1994	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)	Multilateral	Water Quantity	Okavango	Angola Botswana Namibia
September 20, 1994	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	Bilateral	Water Quantity	Asi/Orontes	Lebanon Syria
October 26, 1994	Treaty of peace between the state of Israel and the Hashemite Kingdom of Jordan, done at Arava/Araba crossing point	Bilateral	Water Quantity	Jordan	Israel Jordan
April 5, 1995	Agreement on the cooperation for the sustainable development of the Mekong River Basin	Multilateral	Water Quantity	Mekong	Cambodia, People's Democratic Republic of Laos, Thailand, Socialist Republic of Vietnam
February 12, 1996	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	Bilateral	Water Quantity	Ganges-Brahmaputra-Meghna	India Nepal
December 12, 1996	Treaty between the government of the People's Republic of Bangladesh on sharing of the Ganga/Ganges waters at Farakka	Bilateral	Water Quantity	Ganges-Brahmaputra-Meghna	Bangladesh, People's Republic of India
May 6, 1997	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	Bilateral	Water Quality (sustainable use; priority potable water for pop)	La Plata	Brazil, Federal Republic of Uruguay, Eastern Republic of
March 17, 1998	Agreement between the government of the Republic of Kazakhstan, the government of the Kyrgyz Republic and the government of the Republic of Uzbekistan on the use of water and energy resources of the Sry Darya Basin	Multilateral	Joint Management	Aral Sea	Kazakhstan Kyrgyz Republic Uzbekistan
August 15, 2000	Agreed items between Malaysia Prime Minister Dr Mahathir Mohamed and Senior Minister Lee Kaun Yew at their 4-eye meeting at Putrajaya	Bilateral	Water Quantity (350 mdg from Mal to Sing)	Johore	Malaysia Singapore





Internat. Freshwater Treaties 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.

[Full Text \(*.pdf\)](#)





Overview of int. Freshwater Treaties

- approx 450 treaties, aknowledgements 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
 - ...





III International Water Event Database

Dataset of approx **6400 international water events**
(cooperation and conflict) from 1950 to 2005 and
rated by the Water Event Intensity Scale





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*)





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





Water Events

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

Countries	BAR- Scal e	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...



Research at the *Institute for Social Sciences* with TFDD-Data





Research Area I: International Water Cooperation

- Evaluation of the causes for cooperation
 - Qualitative analysis of the treaty-texts and assessment of the payoffs for the parties of the treaties
 - Quantitative exploration of independent variables for the explanation of the differences between more cooperation-prone and more conflict-prone basins
 - Variables: e.g. water-scarcity in the basin, power distribution between upstream/downstream-countries, existence of basin hegemons, land-locked or multiple water access for all riparians.





Research Area II: Case Studies of Water Conflicts

- Water conflicts and their individual causes
 - Israel-Palaestinia-Lebanon-Jordan (Jordan Basin)
 - Turkey and his downstream neighbors
 - Role of non-state actors in Water Conflicts
 - ...





Research Area III: Climate Change and Water

- Evaluation of the impact of Climate Change on Water Relations
 - Acceleration and intensification of international conflicts
 - Climate change-related to water problems as an engine for cooperation
 - International migration as a result of climate change-related water problems – conflicts and political solutions
 - Global Governance as a tool for international settlement between developing countries (as main affected countries for climate change-related water problems) and developed countries (as main polluter)

