Water, violence, and peacebuilding

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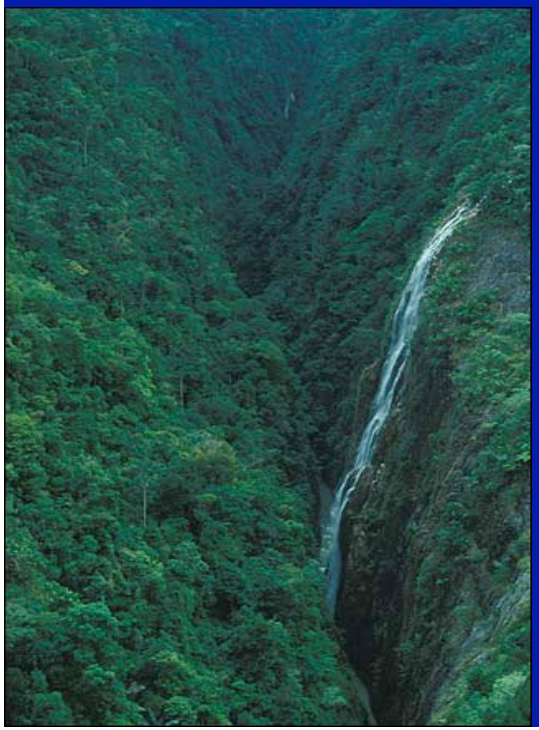


Water is…

…unsubstitutable in its most important uses;

…unevenly distributed;

…difficult to capture;

…movable for human purposes--but often only at great social, economic, or ecological cost;

…highly variable over time in its availability.

Challenge: Unmet basic needs

- 1 billion people lack reliable access to safe drinking water; 2.5 billion lack access to improved sanitation system
- WHO estimates 1/10 of total global disease burden prevented by improved water supply & sanitation
- Some progress on Millennium Development Goals
- But half to two-thirds of the world's people may live in conditions of "water insecurity" within a few decades under business-as-usual

Millennium Development Goals

"By 2015, cut in half the proportion of people without sustainable access to safe drinking water and sanitation."

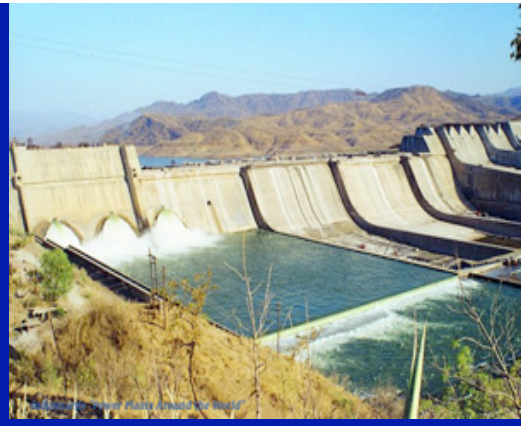
Millennium water goals: mixed progress

Region	Drinking water	Sanitation
Arab States	n.a.	n.a.
Central/Eastern Europe	Achieved	n.a.
East Asia/Pacific	Lagging	Lagging
Latin America & Caribbean	On track	Lagging
South Asia	On track	Lagging
Sub-Saharan Africa	Lagging	Reversal

Source: Worldwatch Institute, *State of the World 2005*

Challenge: Reversing the ecological toll

- importance of freshwater ecosystem services
- cumulative toll of damming, diverting, draining, dumping, developing
- 1/3 of world's fish species endangered (mostly freshwater)
- 800k dams on world's rivers
- , 500,000 km of waterways altered for navigation



Millennium Ecosystem Assessment

- *"The total economic value of unconverted wetlands is often greater than that of converted wetlands."*

- *"The degradation and loss of wetlands is more rapid than that of other ecosystems. Similarly, the status of both freshwater and coastal wetland species is deteriorating faster than those of other ecosystems."*

Millennium Ecosystem Assessment

Primary indirect drivers: population growth, economic development.

Primary direct drivers: infrastructure, land conversion, water withdrawal, eutrophication & pollution, overharvesting and overexploitation, invasive species.

Challenge: Allocating water across competing uses

- Growing inter-sectoral competition
- Strong growth projections across all sectors
- Ineffective mechanisms for allocating water across sectors
- Controversies over water pricing and private-sector participation

What about climate change?

IPCC 4th assessment:

"The negative impacts of climate change on freshwater systems outweigh its benefits (high confidence)."

"Climate change affects the function and operation of existing water infrastructure as well as water management practices (very high confidence)."

Source: IPCC Fourth Assessment Report, Working Group II

- Addressing unmet human water needs
- Reversing the assault on freshwater ecosystems
- Allocating scarce water across competing uses

???

- And, thus, managing social conflict…
- …in a greenhouse world

Water: looming source of violent conflict?

- "The wars of the next century will be over water." (Ismail Serageldin, World Bank)

- "The next Middle East war will be over dwindling water supplies." (Moammar Gaddafi)

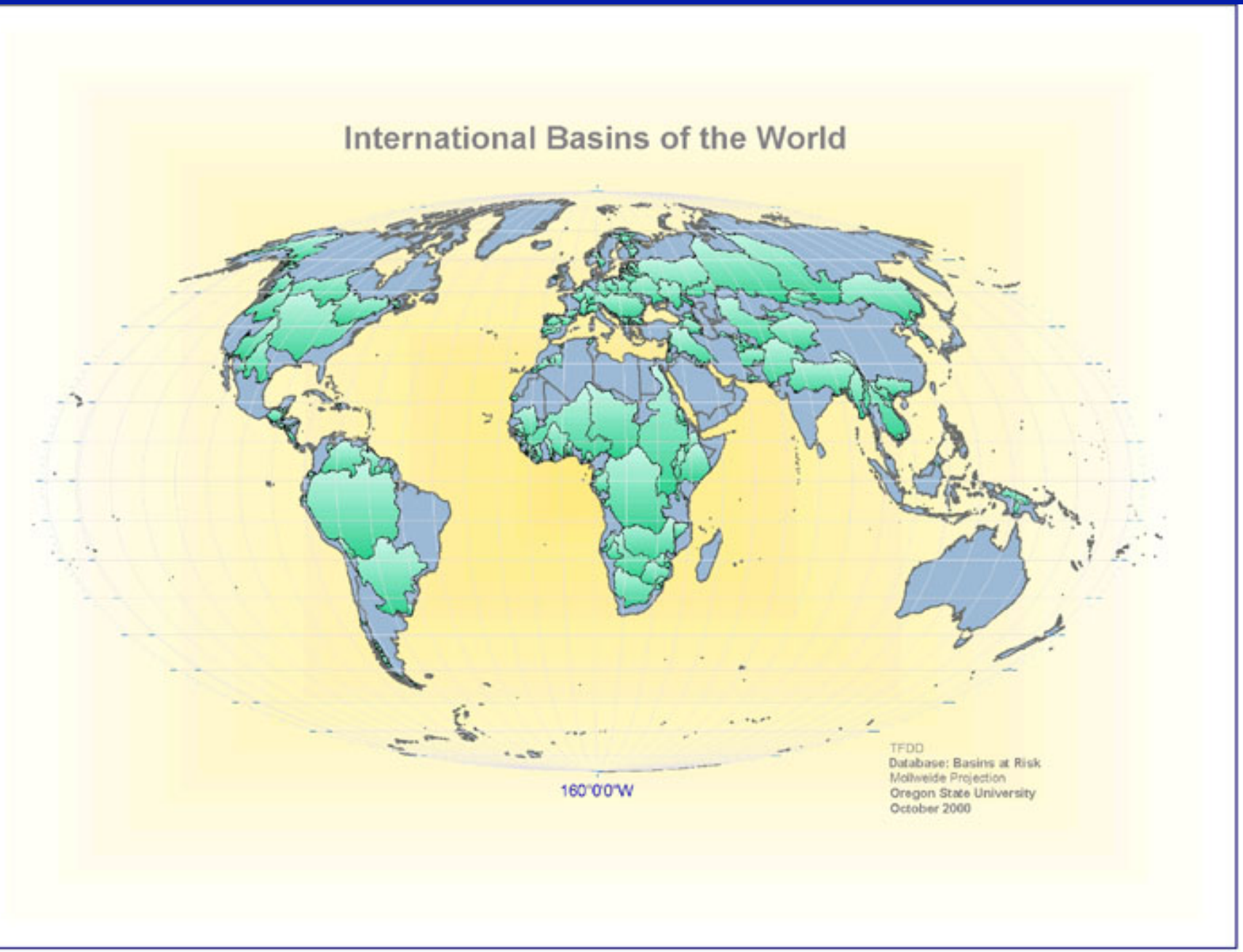
•"Conditions are ripe for a century of water conflicts." (*The Economist*)

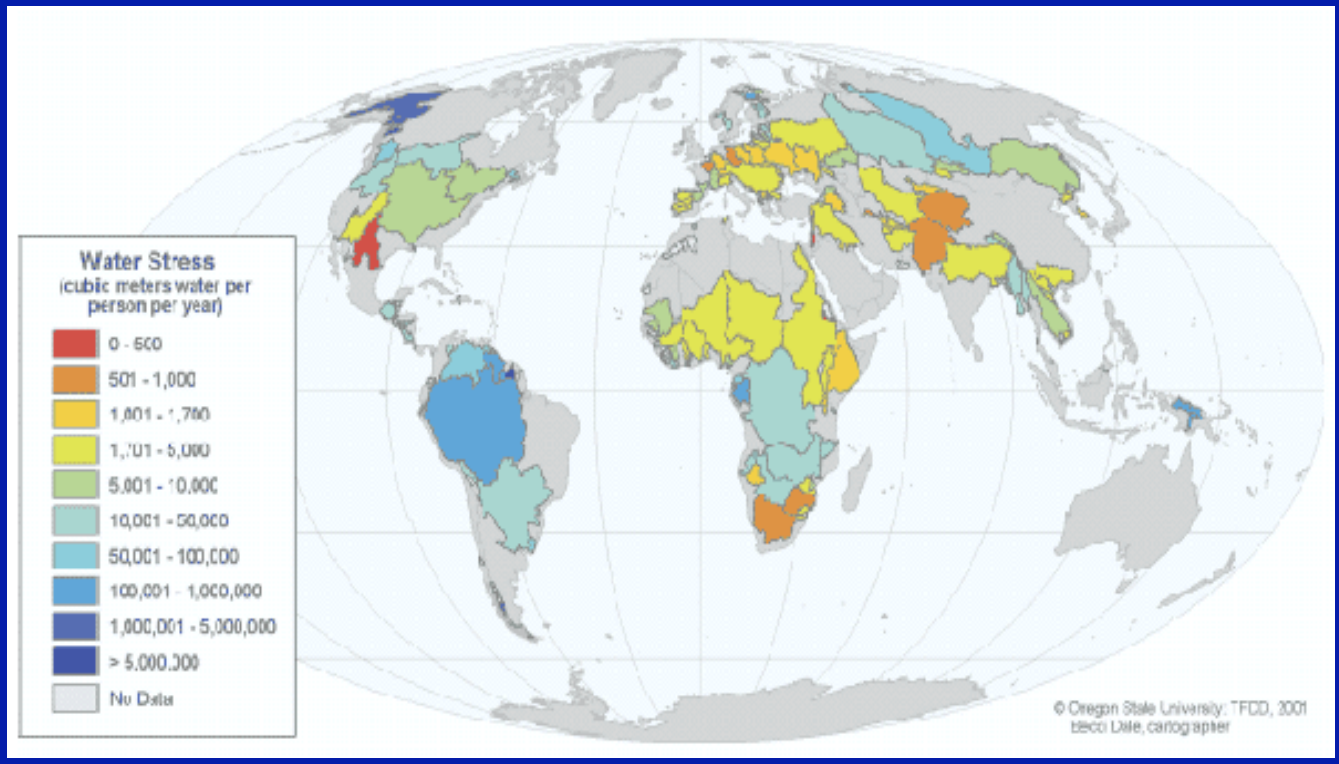
Water wars?
key questions

- What is the historical record? Will the future be like the past?
- Violence at what levels of social aggregation—localized, regional, international, …?
- By what specific pathways?
- Cooperation potential?

Potential pathways to water-related violent conflict

- International conflict over shared river basins
- Civil conflict: resource scarcity? resource abundance?
- State-society conflicts and the “violence of development”


International Basins of the World
160°0'0"W
TFDD
Database: Basins at Risk
Mollweide Projection
Oregon State University
October 2000


Water Stress
(cubic meters water per person per year)
0 - 500
501 - 1,000
1,001 - 1,700
1,701 - 5,000
5,001 - 10,000
10,001 - 50,000
50,001 - 100,000
100,001 - 1,000,000
1,000,001 - 5,000,000
> 5,000,000
No Data
© Oregon State University, TFDD, 2001
Becci Dale, cartographer

- Sharing a river basin does make it more likely countries will be involved in militarized international disputes.

- Border-crossing rivers are riskier than border-forming rivers.

- BUT: hard to find an example of a “water war” in the historical record.

Oregon State University "Basins at Risk" project

- 50-year database of scaled cooperative and conflictual events
- Tested wide array of social, economic, political variables for causal link to conflictual/cooperative events
- Used results to identify "basins at risk"

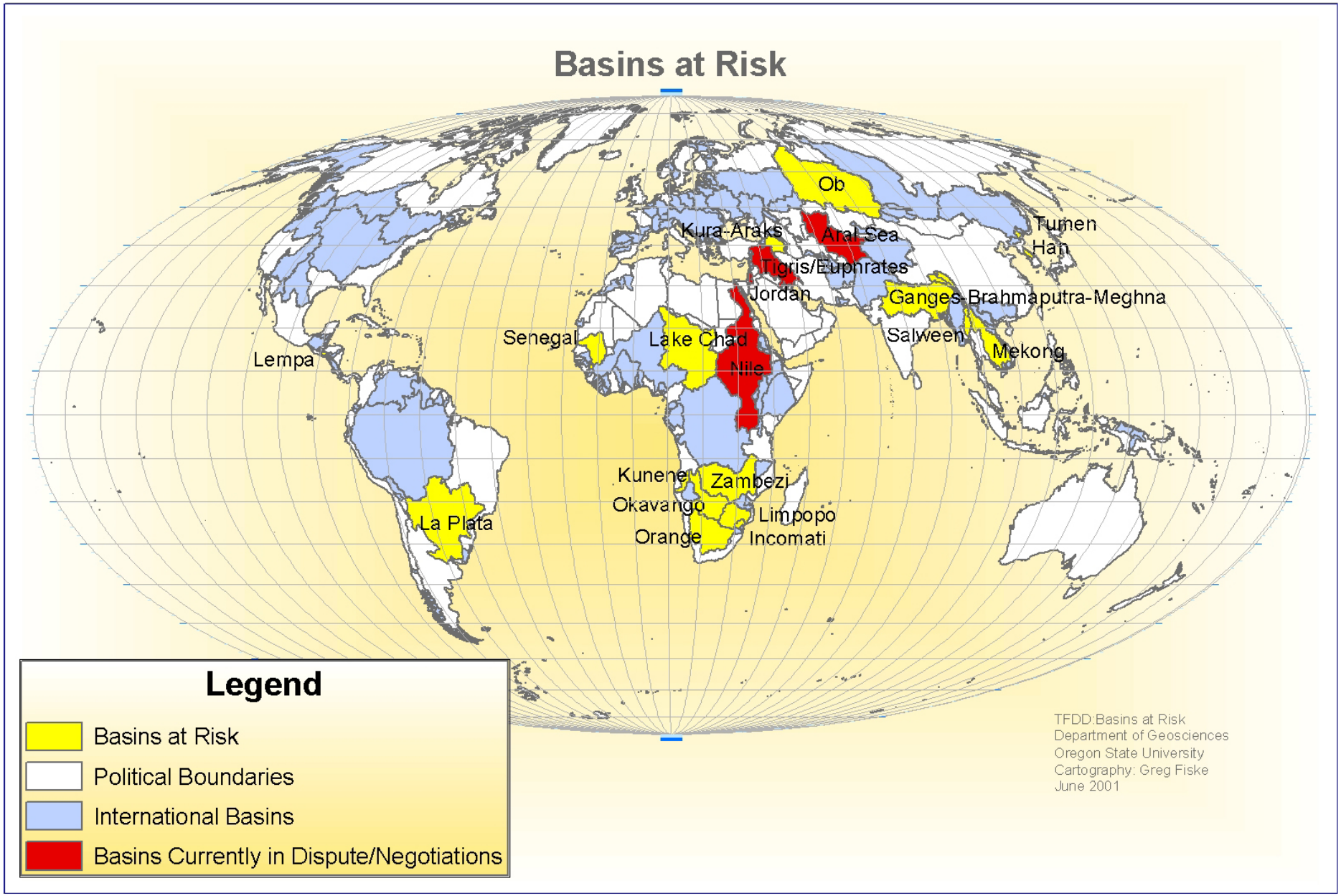
Findings:

- Cooperative events outnumber conflictual by more than 2 to 1
- Few extreme events
- Major issues: water quantity and water infrastructure
- Variables that don’t explain much: income level, regime type, water stress (!)

Findings (cont'd):

Key is rate of change—when rate of change within basin exceeds capacity of institutions to adapt—specifically:

- "internationalized" basins
- unilateral development in the absence of international cooperative agreement


Basins at Risk
Ob
Kura-Araks
Aral Sea
Tumen
Han
Tigris/Euphrates
Jordan
Ganges-Brahmaputra-Meghna
Salween
Mekong
Senegal
Lake Chad
Nile
Lempa
Kunene
Zambezi
Okavango
Limpopo
Orange
Incomati
La Plata
Legend
Basins at Risk
Political Boundaries
International Basins
Basins Currently in Dispute/Negotiations
TFDD:Basins at Risk
Department of Geosciences
Oregon State University
Cartography: Greg Fiske
June 2001

Principles for shared river basins (1997 U.N. Watercourses Convention)

- All basin states should participate
- “Equitable and reasonable use”
- Obligation to avoid “significant harm”
- Regular exchange of information
- Prior notification
- Peaceful dispute resolution

The weakness of cooperation

- ***Poorly institutionalized***: Fewer than one in five shared river basins has a modern international agreement in effect
- ***Fragmented:*** Only a handful of agreements involve all basin states
- ***Narrow focus:*** Emphasis on sovereign rights & water allocation rather than shared management
- ***But*** … a growing emphasis on dispute resolution mechanisms, environmental protection

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The scarcity thesis

- Environmental change >> “scarcity” >> violent conflict
- Violence will tend to play out along pre-existing social cleavages (ethnicity, class, etc.)

Problems with the scarcity thesis

- Weak evidence: core cases tend to be over-determined for conflict
- Not borne out in “large-N” statistical analyses
- most studies suggest that environmental factors are outweighed by traditional political/ economic drivers

Problems with the scarcity thesis

- "Grievance" (as poverty, deprivation) is a poor predictor of civil conflict

- At national level, resource **wealth** a better predictor of conflict than resource scarcity

Structural determinants of civil conflict: the “base model”

- GDP per capita
- Population
- Ethnic fractionalization
- Religious fractionalization
- Regime type
- Noncontiguous territory
- Mountainous terrain
- Country age
- Prior civil conflict

Adding natural resources to the base model:

- "Environmental scarcity" not a reliable predictor of conflict
- Oil associated with onset of conflict, particularly secession
- "Lootable" resources (diamonds, timber) associated with duration of conflict
- No significant association with conflict for agricultural commodities or generic "commodities" measure

Source: Ross (2004)

Resource curse theses

- Weak state
- Corruption
- Borrowing against resource income yields debt-burdened development model
- Subnational disputes about control and wealth distribution
- Lootable resources create incentives for secession, insurgency

Water as a conflict resource?

- Will increasingly scarce water supplies look like oil, timber, diamonds… or none of the above?
- ***Bad water-development models*** may be a greater risk for civil conflict than ***water scarcity***

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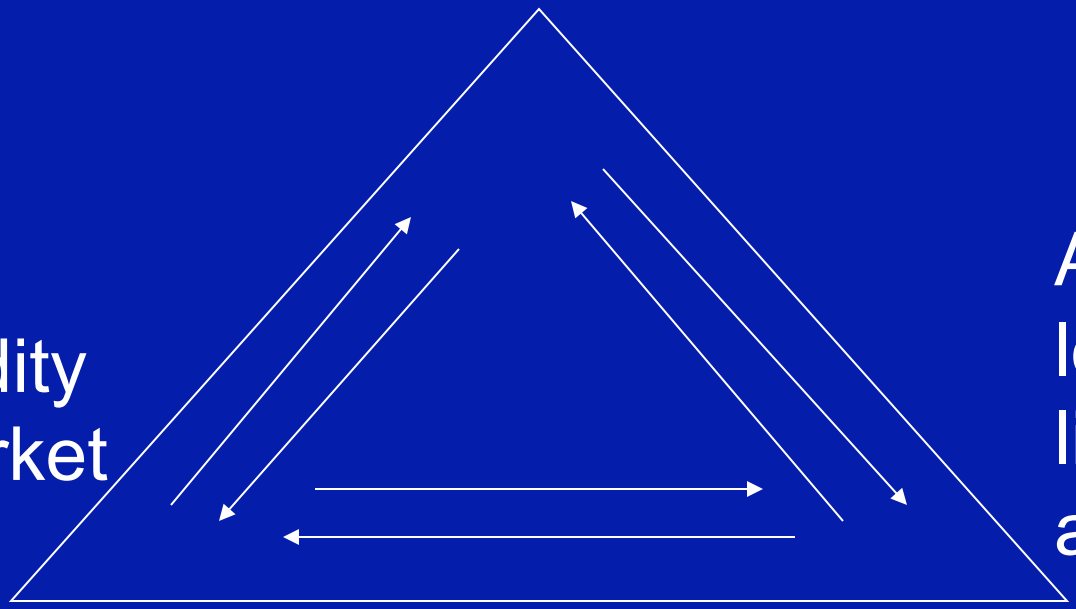
Critical ecosystem

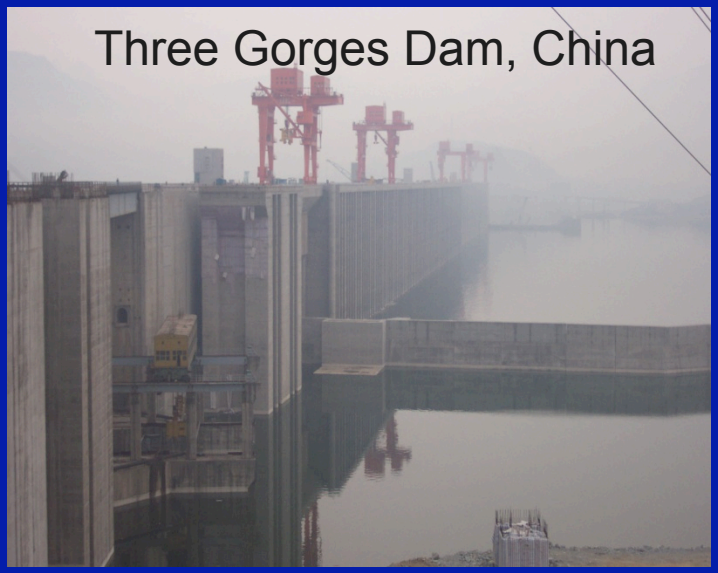


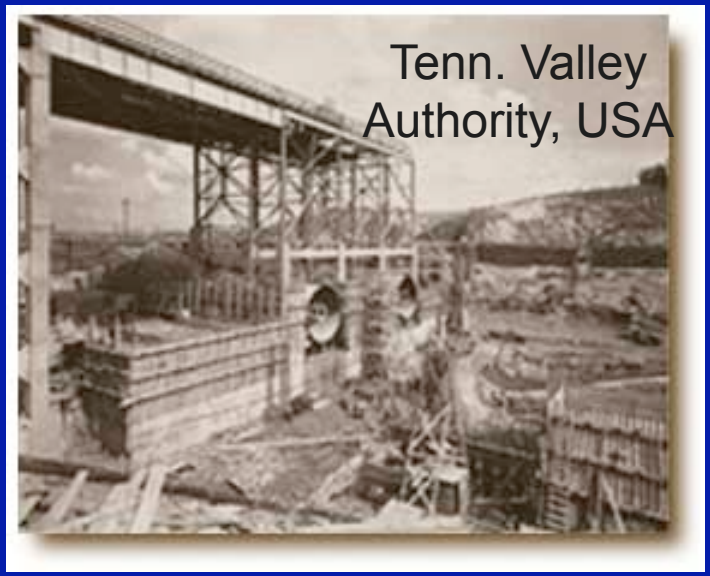
Scarce commodity with market value

Anchor of local livelihoods and culture

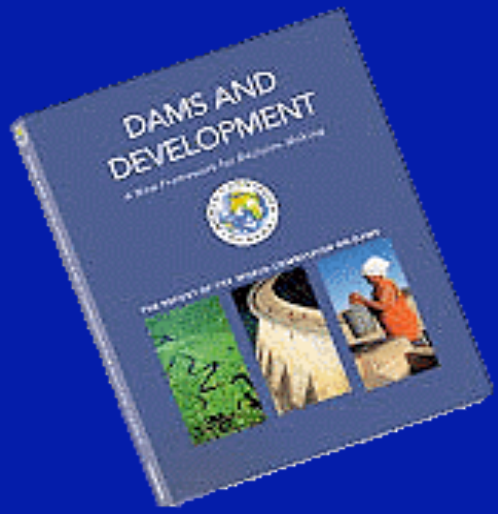
Large dams, large controversies

Nehru: “Dams are the temples of modern India.”





Stalin: “Water which is allowed to enter the sea is wasted.”



"The construction of large dams has led to the displacement of some 40 to 80 million people worldwide….Many of them have not been resettled or received adequate compensation, if any."

Anti-dam activism

Human Rights
& the environment

IRN
International Rivers Network

Fury as Amazon dam is approved; Indigenous tribes vow to fight for survival
The Times (London), February 3, 2010

Kenya: Power Project Will Condemn Thousands to Lasting Poverty Africa News, December 13, 2009

Thai activists protest proposed dam near Burmese border BBC Monitoring Asia Pacific, November 24, 2009

South Korea Launches 4-River Project Despite Protests Korea Times, November 10, 2009

GUATEMALA: Activist killed at rally The Advertiser (Australia), October 14, 2009

Rights, green activists protect against India's planned dam BBC Monitoring South Asia, August 30, 2009

Sudanese police clash with farmers protesting water shortage BBC Monitoring Middle East, May 23, 2009

Nigeria: Shiroro Dam - Police Avert Closure Africa News, May 7, 2009

Villagers arrested after dam relocation protest South China Morning Post, March 17, 2009

Water marketization

"Water has an economic value in all its competing uses and should be recognized as an economic good."

--1992 Dublin principles

"Free water is wasted water."

--Mohamed El-Ashry, GEF

Forces driving water marketization

- Attractiveness of the untapped market
- Trade liberalization, “bulk water” transfers
- Capital-intensive vision of water futures

** IFI structural adjustment conditionality

GWP projection for funding global water security (billion $/year)

	today	vision
In-country government	48	50
In-country private sector	14	70
International private sector	4	48
International public finance	9	12
TOTAL	75	180

UNDP 2006: “Some privatization programmes have produced positive results. But the overall record is not encouraging….[T]he conviction that the private sector offers a “magic bullet” for unleashing the equity and efficiency needed to accelerate progress towards water for all has proven to be misplaced…. [F]ailures of water concessions point to the need for greater caution, regulation and a commitment to equity in public-private partnerships.”


WATER IS NOT A
PRIVATE
COMMODITY
Bechtel: STOP
exploiting Bolivian People!


いのちを奪う
水道民営化にNO!
No! Water
Privatisation


POLICIA
FOTO COREA

“If you dare to do cost recovery in the townships, it will spark a fire. It will be something you will regret forever. ....If it’s necessary, we’ll use violence. If they come into the township to cut our water supplies or take our goods, we'll vandalize their cars and beat up their workers.....If they continue on this path, we will start with meetings and rallies and rolling mass action. Things can turn ugly. We will meet violence with violence.”

--Anti-Privatization Forum activist Henry Nkuna

- Addressing unmet human water needs
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- Allocating scarce water across competing uses

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1. ***Strengthen the human right to water***

"[Water is] a human right and a public commodity fundamental to life and health…. The human right to water is indispensable for leading a life in human dignity. It is a prerequisite for the realization of other human rights..... Water should be treated as a social and cultural good, and not primarily as an economic good.... Water, and water facilities and services, must be affordable for all."

--U.N. Committee on Economic, Social and Cultural Rights (2002)

2. *Learn from innovative water reforms around the world*

- **Brazil**: basin-level “committees” as stakeholder bodies for conflict resolution
- **South Africa**: human and environmental “reserves”, constitutional right to water; minimum free allocation

3. ***Strengthen mechanisms of stakeholder participation***

Structural Adjustment Participatory Review International Network

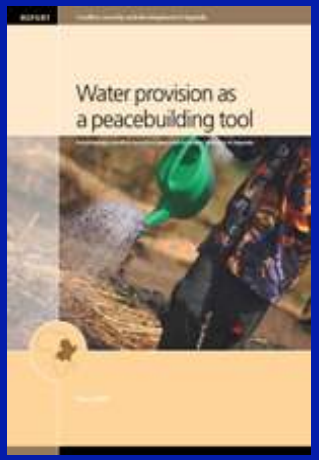
World Commission on Dams

World Bank Inspection Panel

4. ***Invest in appropriate water technologies***

- drip irrigation systems
- "more crop per drop" agriculture
- rainwater harvesting
- micro-hydro
- alternative energy technologies

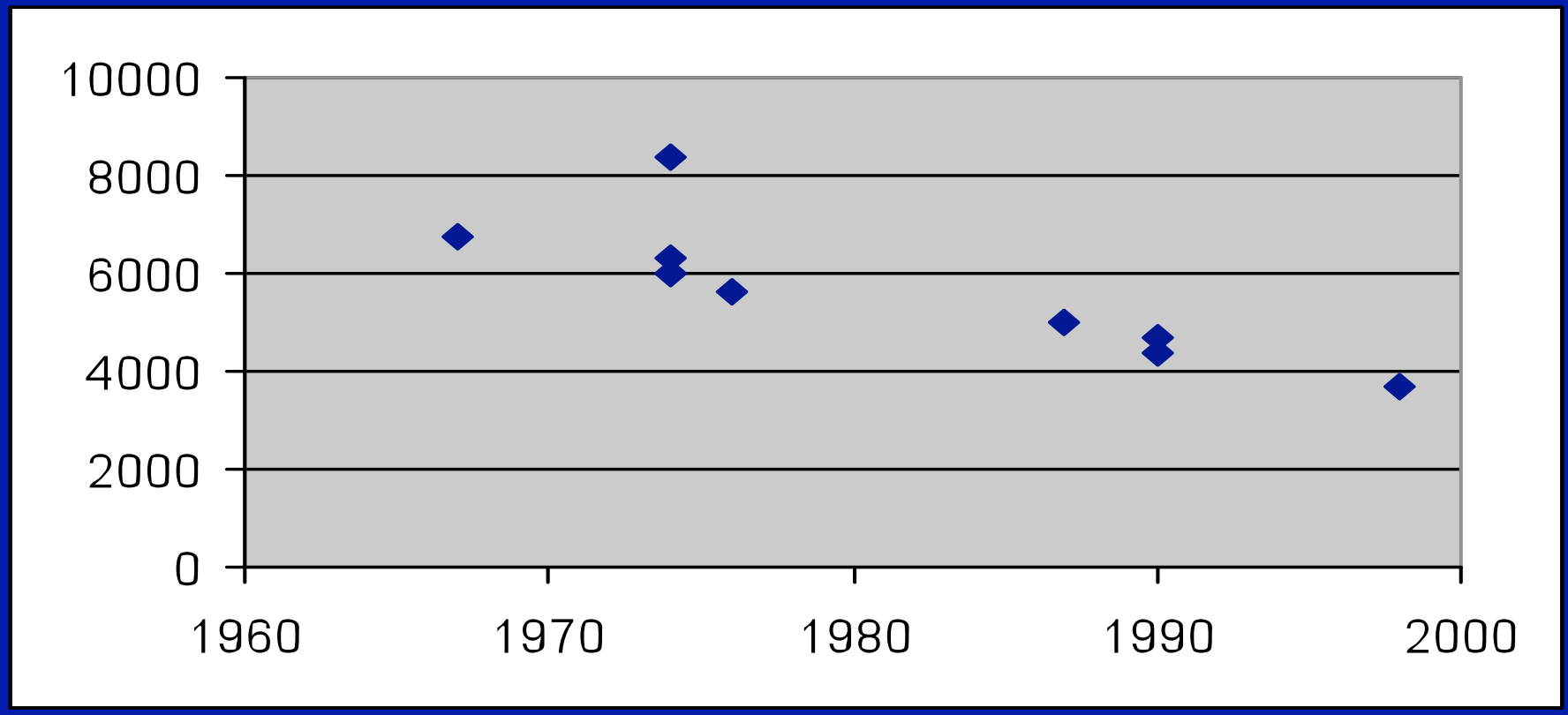
5. *Tap water's cooperative potential*



"Global 2000" Report (1980): Water Conclusion

"Regional water shortages will become more severe. In the 1970-2000 period population growth alone will cause requirements for water to double in nearly half the world. Still greater increases would be needed to improve standards of living. In many [less-developed countries], water supplies will become increasingly erratic by 2000 as a result of extensive deforestation. Development of new water supplies will become more costly virtually everywhere."

Projected Global Water Withdrawals in the year 2000 (cubic km), by year of forecast



Source: Adapted from Gleick, *The World's Water 2000-2001*

Critical variables shaping global water futures

-Population growth
-Economic growth
-Technological innovation

** Effectiveness of water diplomacy
** Commitment to a human right to water
** Innovation in water conflict resolution
**Broadened civil society participation in water governance