

Reforming The Governance of Water in Light of Global Climate Change

By

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Whiskey's for drinkin'
Water's for fightin'

Mark Twain

Water Law at all Levels Is under Stress

- Growing Demand shaped by
 - Burgeoning populations
 - Changing patterns of use
 - Efficiency promoting by rising costs
- Local, National, and Regional Management Systems are already under Stress
- Global Climate Change is likely to add further stress

The Last Great Global Climate Change

- The end of the Ice Ages
- Hunter-Gatherers had to choose
 - Migrate
 - Starve
 - Find a new way to survive
- Result: The invention of agriculture
 - Women were first
 - Irrigation brings in the men
 - Cities and civilization follow

Water Is the Critical Resource

- Water is more immediately essential to our survival than any other resource
 - deny us air, and we die in minutes
 - deny us water, and we die in days
 - deny us food, and we can live for months
- “Countless millions of people have lived without love, but none without water.”
- Already 1,000,000,000 cannot obtain a clean glass of water

Basic Premises of Sound Water Law

- Water is a public good
- Water is an ambient resource
- Water must be conjunctively managed
- Water management must be integrated with the management of related resources
- Water is subject to economic incentives

Public Goods

- Basic characteristics
 - indivisible
 - shared freely among a relevant public
- Consequences of treating something as a public good
 - funding difficult (“free riders”)
 - market failure
 - the “tragedy of the commons”

Raw Water as the Paradigm Public Good

- Transaction costs are too high for markets
- “Equity” precludes excluding people (and others) who cannot afford water
- Common metaphors recognize that water is the paradigm public good
 - “common pool resource”
 - “spill over effect”

Three Patterns of Property in Water

- Common Property
- Private Property
- Public Property

Common Property

- Found in 15 states of the United States and many countries
- Each person with access individually determines when, where, how, and how much to use
- Result: tragedy of the commons
 - each user realizes the full benefit of each increment of use, but shares the cost with the community
 - an approach to the carrying capacity of the resource results in an accelerated exhaustion of the resource

Private Property

- Found in 17 western states of the United States and a few countries
- Well defined rights to use water
 - rights defined as to time, location, purpose, and amount of use
 - strict priority (in the United States, first-in-time, first-in-right)
- A most peculiar form of private property
 - markets remained rare and small
 - most uses were effectively frozen in place

Public Property

- The emergence of regulated riparianism
 - Enacted in about 18 eastern states of the United States and in many countries
 - The ASCE Regulated Riparian Model Water Code
- A public agency determines how water is to be used
 - time limited permits
 - based on “reasonableness”

Why Markets for Water Fail

- Water's importance to life
- Water's mobility
- Water's high transaction costs

The California Water Bank

- A most peculiar “market”
 - only one lawful seller and only one lawful buyer
 - little or no negotiation over prices
- Regulatory intervention masquerading as a market
- Economic incentives are critically important, but should not be confused with markets

Ric Masten, Stark Naked in '69 and '79 (1980)

To Nuke
or Not to

is it not disturbing to consider
that everything in and about
a nuclear power plant
will be furnished
by the lowest bidder

Water as an International Resource

- Water largely ignores boundaries
- Approximately 264 river basins-- including most larger rivers and home to at least 40% of the world's population--are international
- Result: The English word "rival" derives from Latin word "rivalis"--people who live on opposite sides of a river

“Water Drives Men to Drink with Their Enemies”

- The Indus Valley
- The Nile Valley
- The Jordan Valley
- Cooperation requires legal arrangements

Milestones in International Water Law

- State practice crystallizes for trans-boundary water resources (1900-1950)
- The *Helsinki Rules* approved (ILA, 1966)
- The *UN Convention on Non-Navigational Uses of International Watercourses* approved (1997)
- The Gabcikovo-Nagymoros Decision (1997)

Customary Rules of International Water Law

- Only riparian states have a legal claim upon a water resource
- Traditional (competing) theories
 - Absolute Territorial Sovereignty
 - Absolute Riverine Integrity
 - Equitable Utilization

The Codified Law of International Waters

- *Helsinki Rules*--equitable utilization is the only rule that matters
- *UN Convention*--major debate regarding the relation of equitable utilization to the "no harm rule"

The Challenge of Current and Future Stresses

- We need to coordinate adequately international environmental law and international water law
- States are developing a new governing paradigm--joint, basin-wide management (sometimes called "equitable participation")

Basics of the New Paradigm

- Duty to Cooperate
- Conjunctive Management
- Integrated Management
- Equitable Utilization
- Sustainable Use
- Minimization of Environmental Harm

Participatory Water Management Systems

- Cooperation between states
- Including affected populations
- Including all relevant dimensions of the water cycle
 - even today little clear law regarding groundwater
 - *UN Convention* says very little about this
- Integrating water resources with other environmental management processes

Equitable Utilization

- No *a priori* preferences
- Includes:
 - natural features of the drainage basin
 - past, present, and foreseeable future needs
 - alternative means for satisfying needs
 - sustainability of use
 - avoidance of unnecessary harm
 - compensation for injuries

Sustainability and Minimization of Environmental Harm

- Ecological Integrity
- Prior Assessment of Impacts
- Precautionary Principle
- Least Net Environmental Harm
- Harmonization and Coordination of National Policies
- Compensation for Injuries (“Polluter Pays”)