Presentation

Presentation from the 2009 World Water Week in Stockholm

The Benefit Sharing concept and the TWO analysis

prepared for the WWW seminar "Dialogue on Transboundary Waters – Structured Approaches to Realise Benefits for All", Stockholm, August 16, 2009

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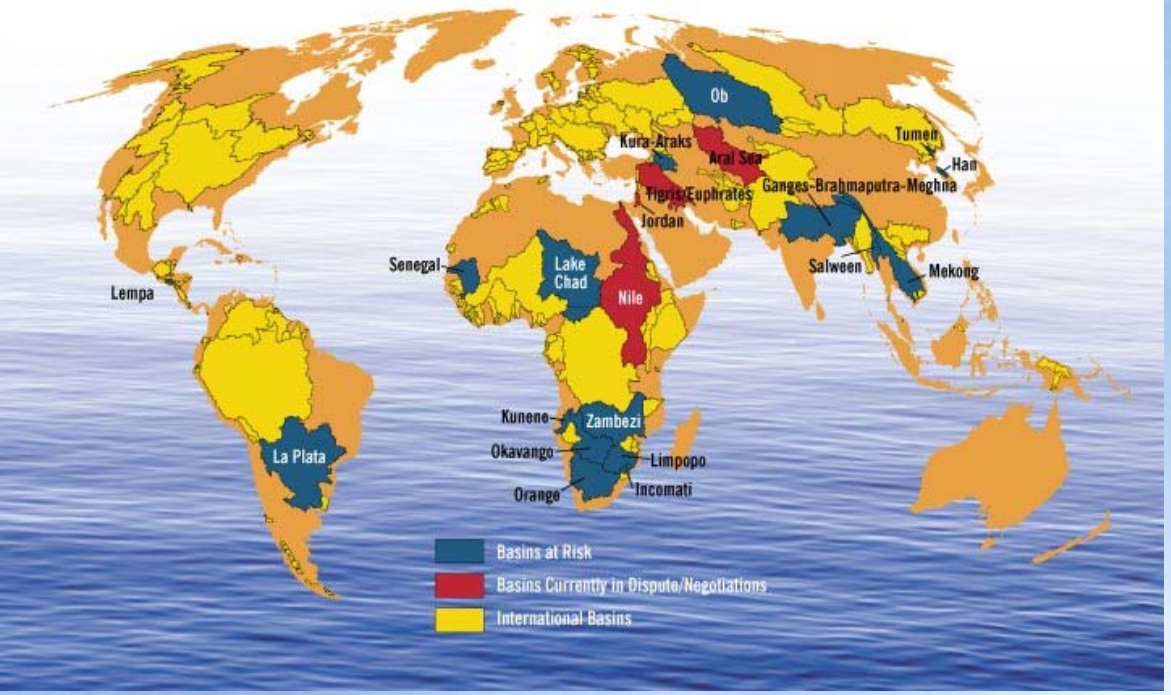
Outline of presentation

- Benefit sharing – concept and theory
- Applicability of benefit sharing concept
- TWO analysis – practical use



Benefit sharing principles from Grey and Sadoff

- tensions
- opportunities
- perceptions

From sharing ***water*** (quantity) to sharing ***benefits*** - incentives for cooperation; wide range of potential benefits:

Environmental: to the river e.g. water quality & biodiversity

Direct economic: from the river productive use e.g irrigation

Reducing costs: because of river e.g. conflicts

Indirect economic: beyond the river regional integration

Benefit Sharing Paradigm after Turton

- **The Traditional Paradigm**
  - Based on **IWRM** as an overarching set of management approaches.
  - **River basin** as the unit of management
  - Decentralized decision-making in the form of "**subsidiarity**" in terms of the **Dublin Principles**
  - Uses the **negotiated international regime** as the core foundation for international agreement
  - Tends to focus on **volumetric allocation**

- **The Benefit-Sharing Paradigm**
  - Suggests an **alternate approach**
  - Uses different arguments
  - Suggests different **institutional architecture**
  - Is more **adaptive** to specific sets of conditions
  - Is **democratic** but **complex**.....
  - Yields **higher rewards** for those that persevere..... so the incentive is good.

Comparing elements of the traditional approach with the benefit sharing approach, after Turton

1. Water is treated as a stock vs a flux
2. Water centric vs broad based benefits (electricity, environment, urbanization etc.)
3. Optimization at the state level vs optmization at the level of a region
4. State and river basin focussed vs beyond the river basin (region)
5. Fear of loosing soverignity vs accepting that each state has a right to be water secure
6. Centralized decision making vs decentralized decision making
7. National security vs human security
8. Data is kept within a state vs full sharing of data
9. Zero sum vs plus-sum and win-win

From Single Output ... to Multiple Interests (WB, Fields)

Energy for growth

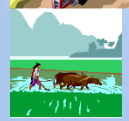
Hydromet System

Regional Transmission System

Fisheries & aquatic ecosystems

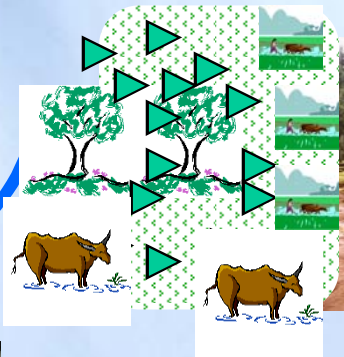
Growth Pole Investments

Hydropower



Irrigated Agriculture

Flood mngmt.



Watershed Management

Local Community Infrastructure

The TWO Analysis – development of the benefit sharing concept (by CSIR, DPA and SIWI)

The TWO analysis

- A methodology to identify Positive Sum Outcomes, using available data and expert opinion on transboundary basins.

- The overall aim is to promote the sustainable and equitable use of transboundary water resources, and to clarify trade-offs relating to development.

Objectives of the TWO analysis

- To demonstrate possible alternatives (development opportunities) for countries sharing trans-boundary water resources
- To act as a 'compass' identifying the need for subsequent detailed investigations by riparian countries
- To act as a scenario tool to illustrate longer-term changes and future options in a non-threatening manner.
- To identify opportunities for public and private financiers to support initiatives taken by riparian countries.

The TWO Analysis: Factors of Relevance

- **The hydrocycle:**
  - **the efficiency of water utilization;**
  - **the availability of 'New Water'.**
- **The development options:**
  - **primary production;**
  - **hydropower potential;**
  - **urban growth and industrial development;**
  - **ecosystem services (fisheries and tourism).**

The water related factors

- Studies to date have only very rarely included the hydrocycle as a whole:

- Blue Water;

- Green Water;

- Grey/Black Water

- The TWO Analysis addresses all of these, and the interactions between them

- This is critical, if the optimal development options are to be defined

The Development Options
[1] Agriculture

- The need for fresh water for potable use is limited – the human right to water [about 50 litres/person/day] shows this.
- The great bulk of the water needed by human populations generates food.
- Agricultural uses of water are thus a hugely important benefit. Improvements in this sector will directly reduce hunger and poverty.

The Development Options
[2] Hydropower

- **The availability of power – and especially of electricity – is also a highly important factor in constraining economic growth and well-being.**
- **Hydropower potential is massive in many developing countries, and is a very important source of future energy.**
- **However, dam building also affects the availability of Blue Water and the benefits that can be attained from fresh waters. The siting of dams must be very carefully considered.**

The Development Options
[3] Urban Growth / Industrial Development

- The economic returns available from Blue Water in the agricultural sector are minor.
- The economic returns from the industrial and services sectors are about 100 times greater than those from agriculture.
- The inter-sectoral reallocation of fresh water from agriculture to the other sectors therefore offers a massive uplift in benefits.
- However, societal effects must be considered when this is contemplated.

The Development Options
[4] Ecosystem Services

- **Two specific ecosystem services are included in the TWO Analysis:**
  - **tourism (including ecotourism) and**
  - **fisheries (riverine and estuarine/coastal).**

- **Each of these can be important drivers of economic growth in specific basins, e.g.**
  - **tourism in southern Africa;**
  - **fisheries in the Mekong River basin.**

Development Opportunity Factors	a) New water	b) Efficient use of water	c) Other sources in basins that are not closed
1. Hydropower & power trading	*Location of reservoirs in high-altitudes to minimize evaporative losses*	*Siting of multipurpose dams for e.g. hydropower and irrigation in optimal locations*	*Additional electricity generation through hydropower schemes and power pooling*
2. Primary production	*Re-use of treated waste-water for irrigation* *Interbasin water transfer schemes*	*Green-water use to increase agricultural outputs* *Increase efficency in irrigation*	*Investment in bioenergy crops* *Introducing aqua culture*
3. Urban growth and industrial development	*Strengthen institutional management for water allocation to more high value use*	*Maximizing economic returns per unit of water in industry*	*Recharge of groundwater*
4. Environment and ecosystem services	*Use of "green credit schemes" through e.g. water purification in wetlands*	*Optimizing economic returns from developing fisheries and tourism sectors*	*Allocate water to restore ecosystems*
5. Others (every basin is unique and other opportunites may exist)	*Desalinate water for high value use*	*Drought proofing through improved land management*	*Flood protection*

The Power of the TWO Analysis

- The TWO Analysis facilitates the creation of a ‘shared vision’ for the future development of a trans-boundary basin, and the process involved is of a generally non - threatening nature
- Broad stakeholder participation is preferred

Thank you!