Non-Integrated Water Resources Management

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Summary

IWRM principles are a reasonable guide, but

1. They are not appropriate for all times and circumstances, sometimes resulting in policy failure and

2. the dominance of the IWRM discourse has shut out alternative thinking.

There are non-IWRM alternatives that should be considered in any policy discussion

IWRM principles

Integration

Decentralization

Participation

Economic and financial sustainability

Basin as the unit for decision making

IWRM principles in practice

Overall water policy and law

Water rights

Pricing in allocation

Participation in decision making

Basin as the scale of management

Usually encouraged by a donor

What can happen? The case of Sri Lanka

Process:

    Water policy reform funded by USAID/ADB

    115 Consultations

    Working groups to identify problems and propose institutional solutions

Initial result: full package adopted

    Policy and law

    Tradable water rights

    Pricing

    RBOs

What can happen? The case of Sri Lanka

Response:

Protests that process not open

Failed to understand cultural norms

Done to satisfy donor demands

Current state:

20 years later and still no policy

No coordination to solve current drought

Are there alternatives to IWRM?

Ignore the basin: Reducing transboundary conflict in central Asia

Don't charge for water: Combating groundwater overdraft in India

Forget rights and participation: Reallocating to higher value uses without devastating agriculture in China

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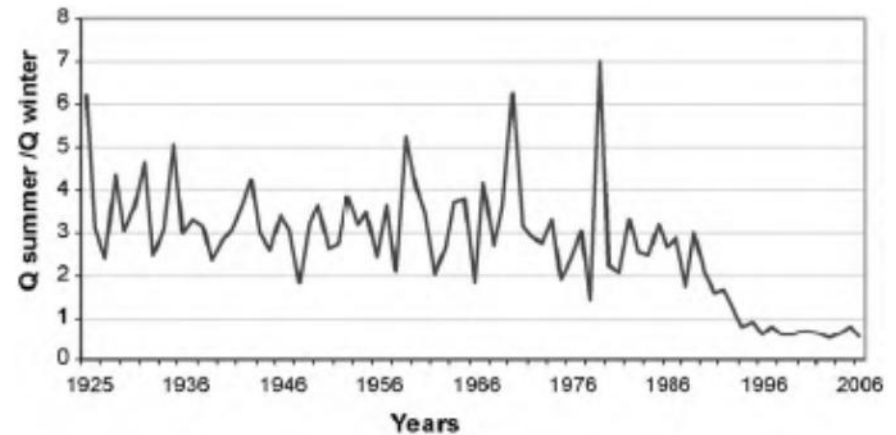
The problem in Central Asia

End of Soviet rules

Hydropower-irrigation competition

IWRM solution: Rebuild basin scale cooperation

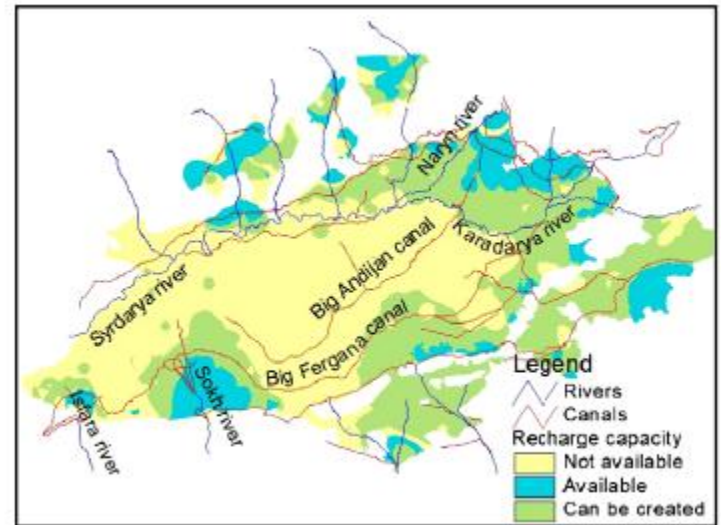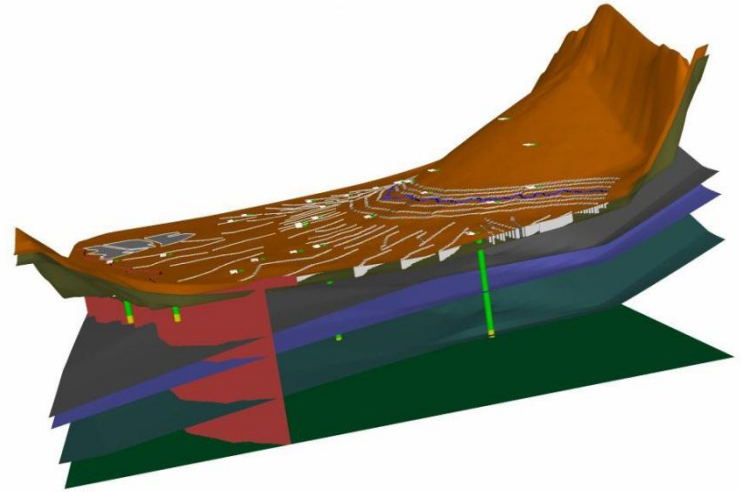**But already codified at the highest levels and 20 years later no progress**

Summer/Winter Flow, Narin River

Non-IWRM alternative: Unilateral Aquifer Storage

Store winter releases underground in downstream countries

Increase storage even more through summer pumping

Sokh Aquifer, Uzbekistan

Result

50% of the current upstream/downstream issue could be solved

Provides a new option for enlarging the negotiating space,

especially when coupled with other alternative ideas
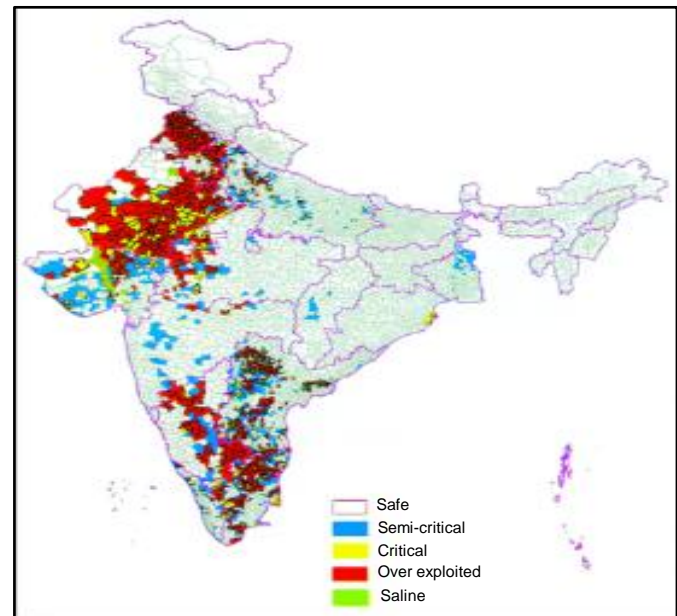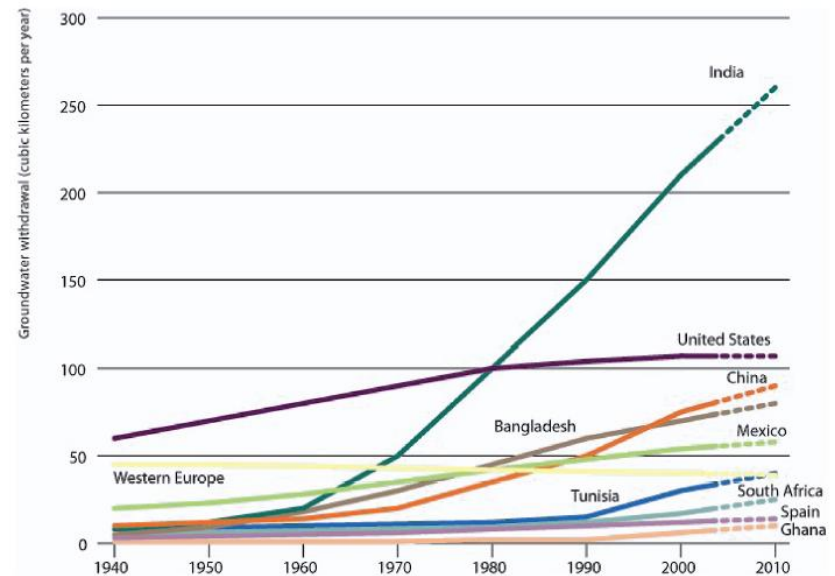
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The problem in Gujarat, western India

Free electricity to encourage groundwater use and free groundwater

Overdraft

IWRM Solution: Price at marginal cost

Farmers organize and agitate

Political suicide or inaction

Electricity industry nearly bankrupt

Poor rural power supply

Groundwater disaster

Non-IWRM alternative: Intelligent subsidy, plus some pricing

Separate power feeds for farm and non-farm use

Give villages 24 hour metered, three-phase power supply for domestic uses, in schools, hospitals, village industries

Target high-quality power supply on 30-50 days of peak irrigation demand

Support on-farm storage, reward groundwater recharge, subsidize drip-irrigation

Result in Gujarat

Actually implemented!

Halved subsidy to agriculture

Reduced groundwater overdraft

Spurred rural non-farm enterprises

Negative impacts on marginal farmers

Rolling out in other states

Are there alternatives to IWRM?

Ignore the basin: Reducing transboundary conflict in central Asia

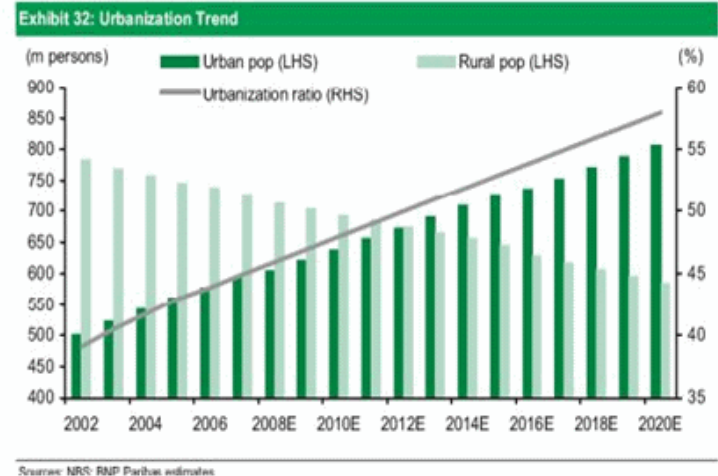**Don't charge for water:** Combating groundwater overdraft in India

Forget rights and participation: Reallocating to higher value uses without devastating agriculture in China

The problem

Rapidly urbanizing population and industrial growth mean new water demands

Urban uses have higher economic value

Worries about food security and farmer welfare

Exhibit 32: Urbanization Trend
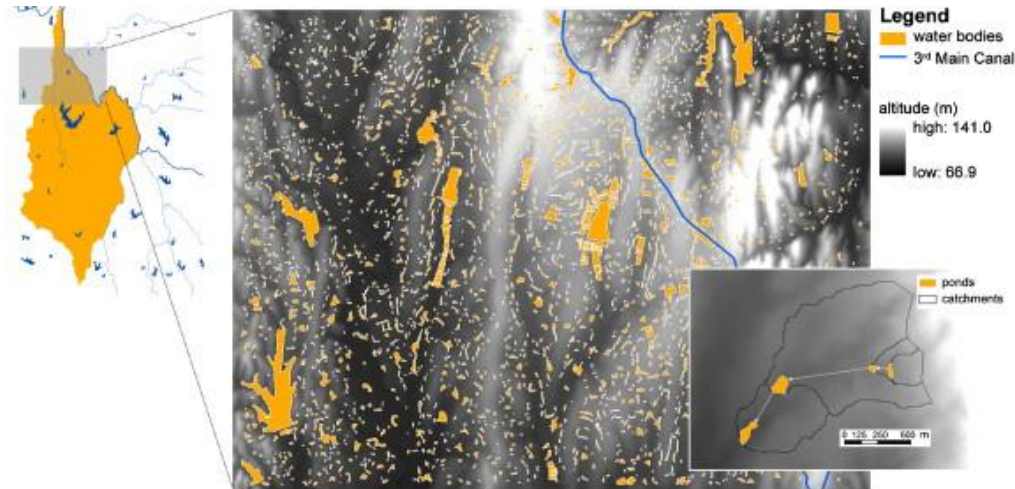
IWRM Solution:

Water rights

Pricing

Non-IWRM alternative for Zhanghe Irrigation District

Top-down approach with water reallocated to cities

Farmers "induced" to respond with construction of 1000s of small reservoirs to capture runoff and return flow.

Research provides ways to grow more rice with less water through alternative wetting and drying and extension gets the message out.

Result

Cities now take almost all the water

But agricultural output relatively steady

Water supplied by Zhanghe Reservoir and Rice Production in Zhanghe Irrigation District (1965-2005)

Similar result in India

Urban–agricultural water appropriation: the Hyderabad, India case   51

Legend:
- Kharif without reallocation
- Kharif with reallocation
- Rabi without reallocation
- Rabi with reallocation

Y-axis: Area cultivated (ha) — 0, 20 000, 40 000, 60 000

X-axis: 1999-2000, 2000-2001, 2001-2002, 2002-2003, 2003-2004, 2004-2005
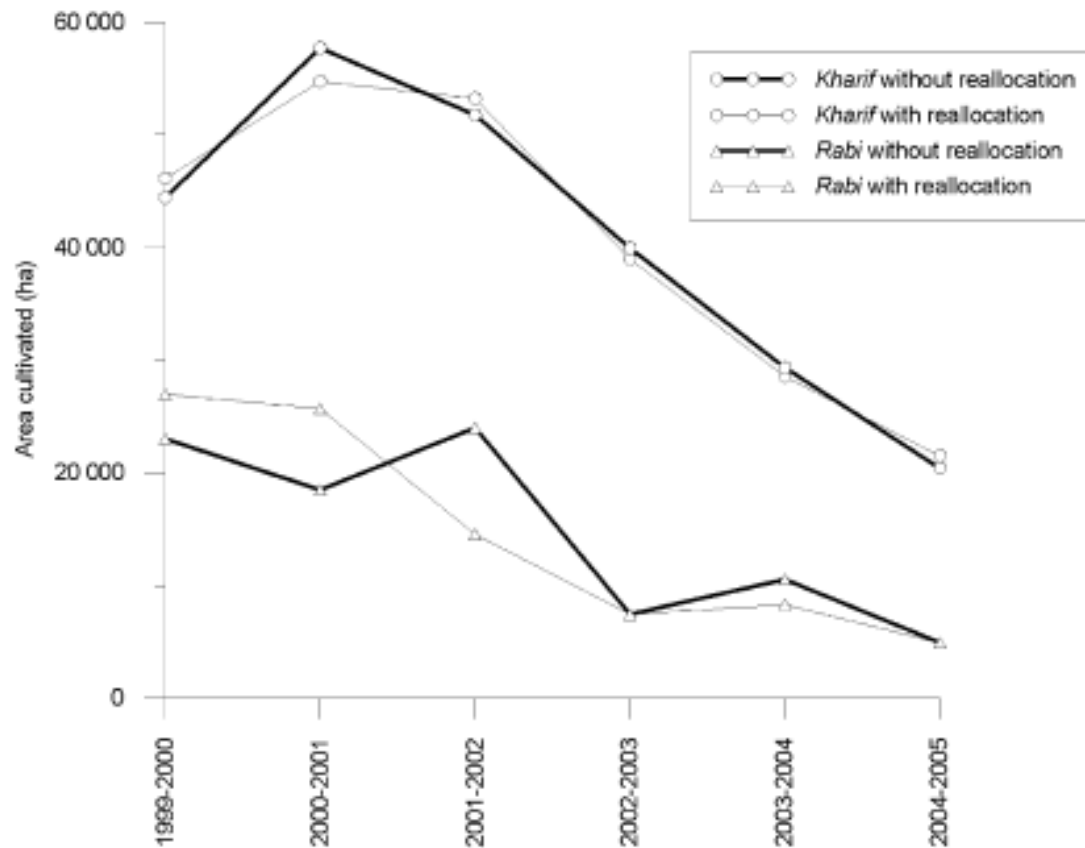
Figure 8 Seasonal area cultivated under paddy in Nizamsagar command area, actual (with water transfer to Hyderabad) and calculated (for the scenario without water transfer)

Conclusions

1. Ideas of IWRM are fine, but costs of IWRM implementation must not be forgotten

2. IWRM principles should not have a monopoly on potential solutions.

3. There are imperfect alternatives to the IWRM package and its components that can solve real world water problems

4. An implemented, imperfect solution is usually better than an unimplemented ideal.

Citations

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Molden, David, Jonathan Lautze, Tushaar Shah, Dong Bin, Mark Giordano and Luke Sanford. 2010. **Governing to Grow Enough Food without Enough Water—Second Best Solutions Show the Way.** *Water Resources Development*, 26, 249–263.

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