Reducing waste in efficient irrigation: what pathways and who gains?

31 August 14:00-17:30

Stockholm Water Week

NL 357

Hosted by WWF, IUCN, UEA

Session Agenda: Seeking to frame the irrigation performance challenge (as a group)

- **1400 to 1415:** Stuart Orr (WWF), James Dalton (IUCN) and Bruce Lankford (UEA)
- **1415 to 1425:** Saskia van der Kooij (Wageningen University) "*Re-allocating yet-to-be-saved water in irrigation modernization projects. The case of the Bittit Irrigation System, Morocco*"
- **1425 to 1435:** Brian Richter (Sustainable Waters) "*Incentivizing farmers to reduce consumptive use*"
- **1435 to 1445:** Elena Lopez-Gunn (ICATALIST and University of Leeds) "*AudiMod: a methodology to audit modernisation projects from an environmental perspective: spatial gains and losses*"
- **1445 to 1520:** Audience Discussion and Panel
- **1520 to 1530:** Wrap up

Why are we here?

JD

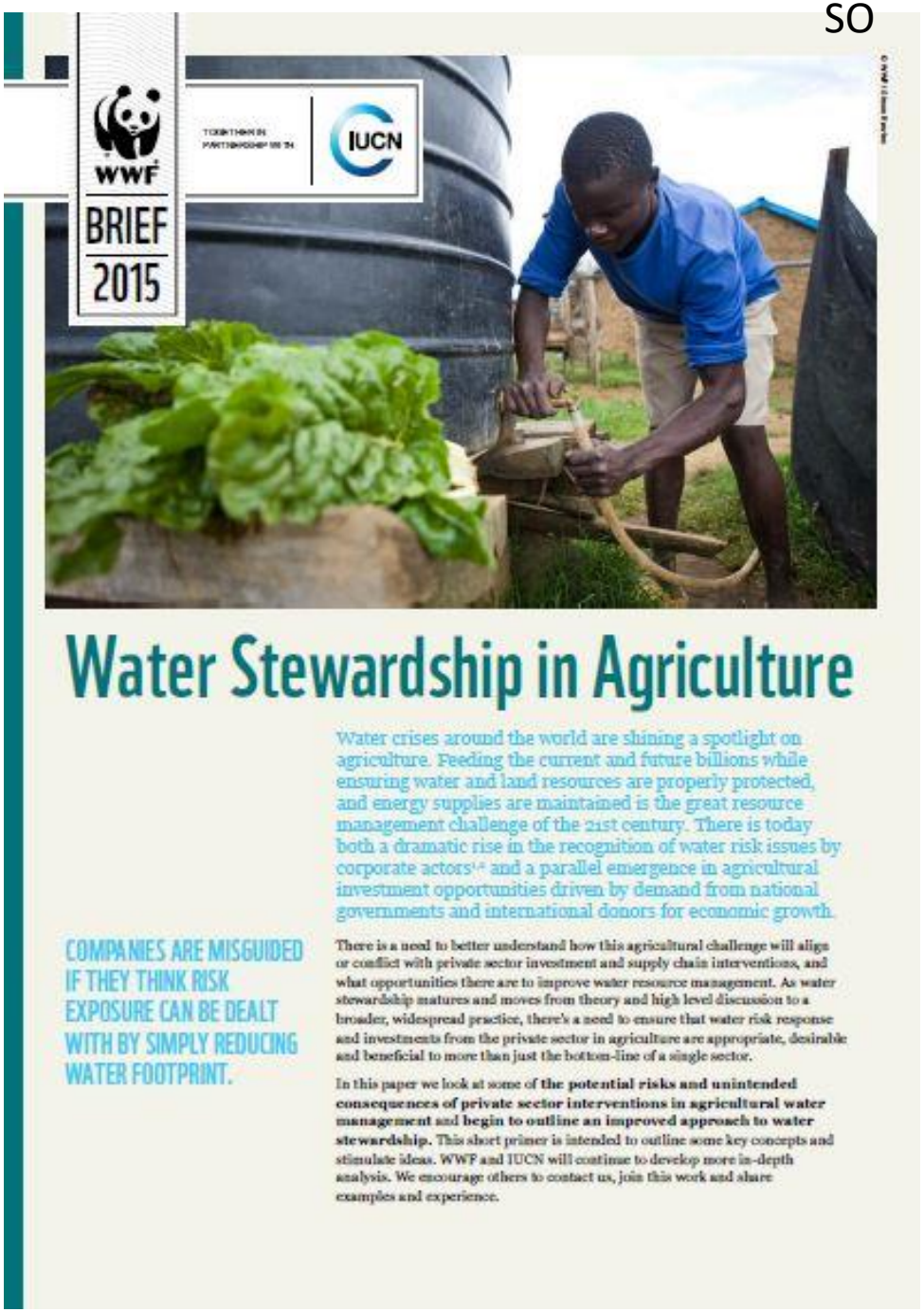
High performing, basin aware, carbon accountable irrigation is one of our greatest (forgotten) challenges, un-represented in the SDGs:

- Irrigation covers 330m ha – consuming 4 km^3/day, or 10% of global river discharge
- Responsible for between 70-90% of freshwater depletion in developing and transitional economy river basins
- Represents 80% of water use by society
- 40% of the food produced using 20% of the agricultural area
- Ten populous nations, accounting for 50% global population (Bangladesh, India, China,….) eat rice on a daily basis – a field crop nearly totally irrigated
- By 2050 global food demand likely to be 60-70% higher due to population growth and dietary changes

Water stewardship in agriculture

- Improving transparency of information flow
- Link irrigation back to the basin – not separate it
- Focus on sharing water, not individual efficiency
- Understand water's role in the economy
- Understand allocations and definitions better – multiple interpretations
- Reform field and policy interventions in parallel
- Saving water doesn't make it yours

SO

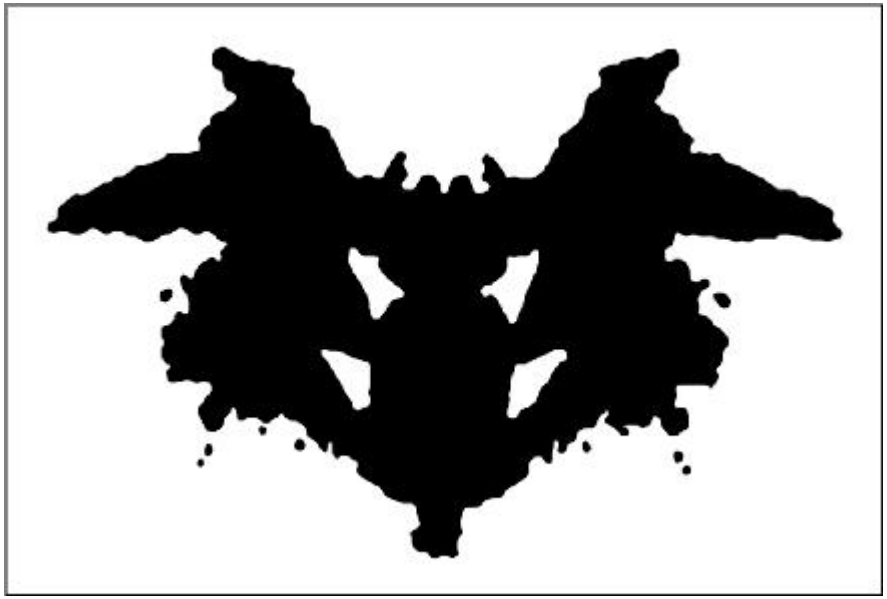


JD

There *is* a challenge…

- There is no clear agreement in this field
- Lack of research to allow us to choose the most appropriate irrigation options (there is disagreement on this also!)
- Despite the importance of irrigation and previous experience, there remain capacity shortfalls
- Getting it wrong has implications on nutrition, food security, land degradation, livestock, livelihoods and economy
- Lack of data and analysis on irrigation system performance, and the socio-economics of systems within river basins
- Irrigation is not just a technical subject – it is the world's largest water consumer and has complex governance challenges
- Large differences in public and private responses to irrigation challenges – guided by financers, donors, RBO's, national interests, global goals, etc

The Irrigation Rorschach Test:– *What do you see in this photo?*



BL

The Irrigation Rorschach Test:– *What do you see in this photo?*

BL

Do you see:

A flooded field clearly '**wasting**' water,
…creating a large water **footprint**
…that needs 'upgrading' to **drip** irrigation
…in order to ostensibly '**save** water' and
…to '**grow more with less**' and
…where **efficiency** is assumed to improve
… because we think we 'know' **efficiency**
… better than farmers do (?)

Or do you see:

A complex socio-technical system managed by famers,
…using gravity to move water and
…appropriate technologies to control water, in a situation
…ideal for growing a field crop where
…savings are possible but subject to much discussion
…where efficiency depends on many practices & ideas,
… that are not easily understood at different scales,
…and where farmers are central to technological change

Guiding questions for discussion:

SO/JD

No regrets irrigation that will meet the challenges of the 21st Century

- How do we raise the performance of a challenging and complex sector and major water user?
  - What does high performing irrigation mean to you?
  - Huge areas of canal irrigation can not simply be switched to drip irrigation (with a carbon cost and huge social change)
  - What do you think is required in the near and medium term future to raise performance and/or reduce water consumption per ha/ per system and at basin level
  - What obstacles need to be removed?
  - What new partnerships?
  - What new forms of capacity building are required?

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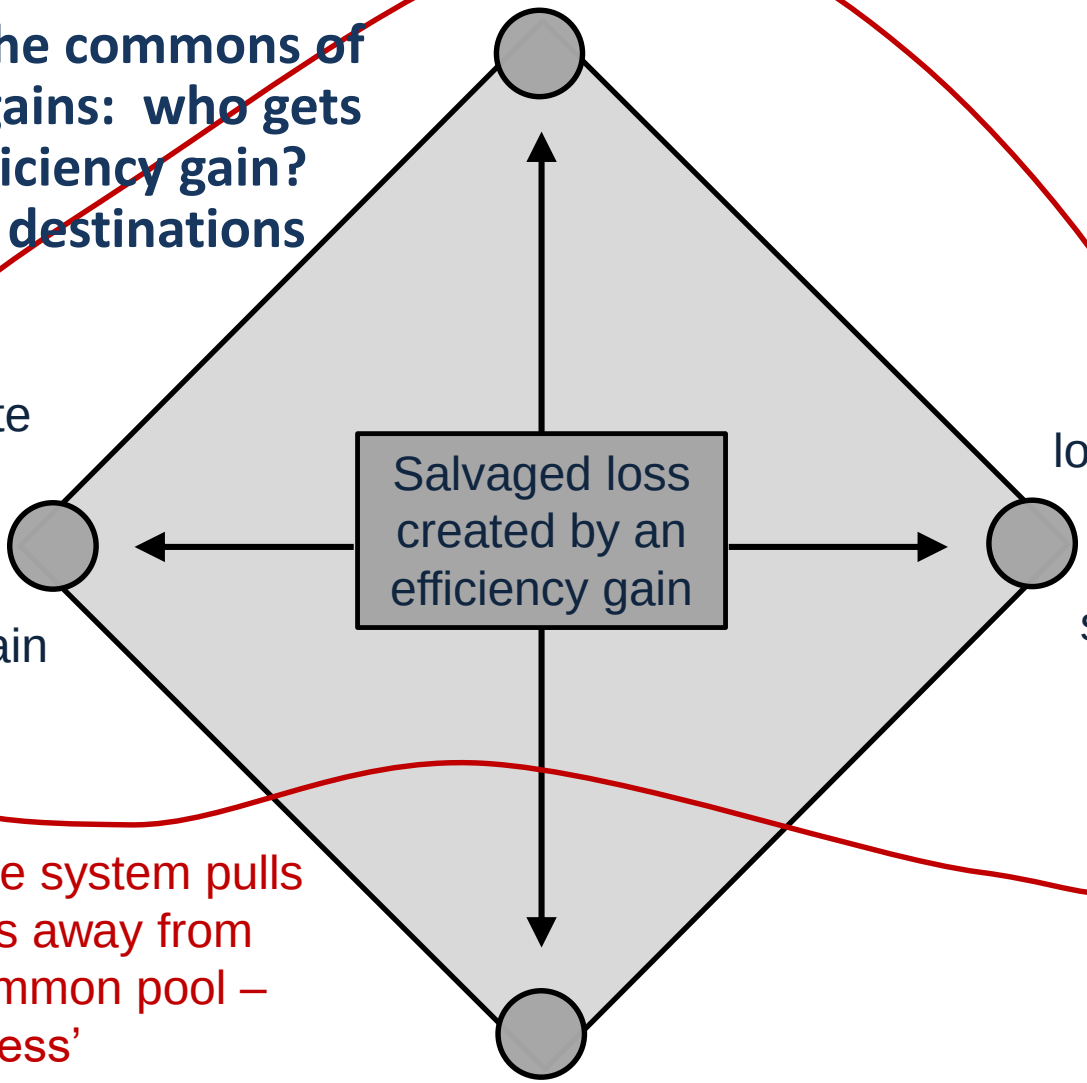
The salvaged loss moves to the **wider economy**, or to government, urban, and industrial demands. To 'unrelated neighbours'

Paracommons. The commons of future salvaged gains: who gets the gain of an efficiency gain? Conceptualises 4 destinations



The salvaged loss moves to immediate **neighbours** in a neighbourhood system to raise production or sustain benefits

The salvaged loss moves to or stays with the **proprietor** system to raise production and productivity

Highly appropriative system pulls salvaged resources away from returning to the common pool – away from 'greenness'

The salvaged loss moves to the **common pool** and/or the environment for conservation and productivity

A: Entry points

- Corporate – CEO interest/risk assessment
- Donor – SDG agenda/trade and aid agenda
- National Gov't - Eco growth and tax base development/employment/rural growth
- Local Gov't – Data monitoring/investment

B: High-level drivers

- Global concerns (*e.g.* food/water security)
- Growth and Development pathways
- Beguiling narratives (*e.g.* 'save water')

C: Supply-side & simplifying tools

- McKinsey cost curve
- 'Efficient' technologies
- More crop per drop 'transfer'

D: Internal structures and fault-lines

- Schisms between operational and location realities vs high-level corporate targets
- Timelines and urgency of making deals

E: Alliances and partnerships influences

- Regulators, bureaucrats & donors
- Venues, NGOs, meetings, conferences
- Reports, 'success stories', positioning

Insufficient cross-checking

- Debate within or external to organisation lacking
- Professionals do not seek alternative views on ag-water
- Poor stewardship guidance
- Internet search-engine bias
- Little field experience of experts
- Ineffective farmer participation
- Lack of field-to-basin water data

- Simplified diagnoses of problems
- Selection of inappropriate solutions
- Not enough follow-up

Predominantly these result in 'efficiency orthodoxies' and supply-side thinking