



The WEF nexus in the post 2015 development agenda - the role of basin organizations

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IWMI – 26 November 2014

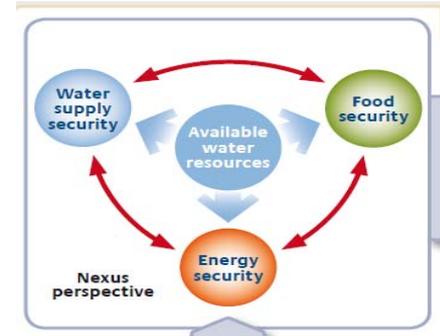


A water-secure world

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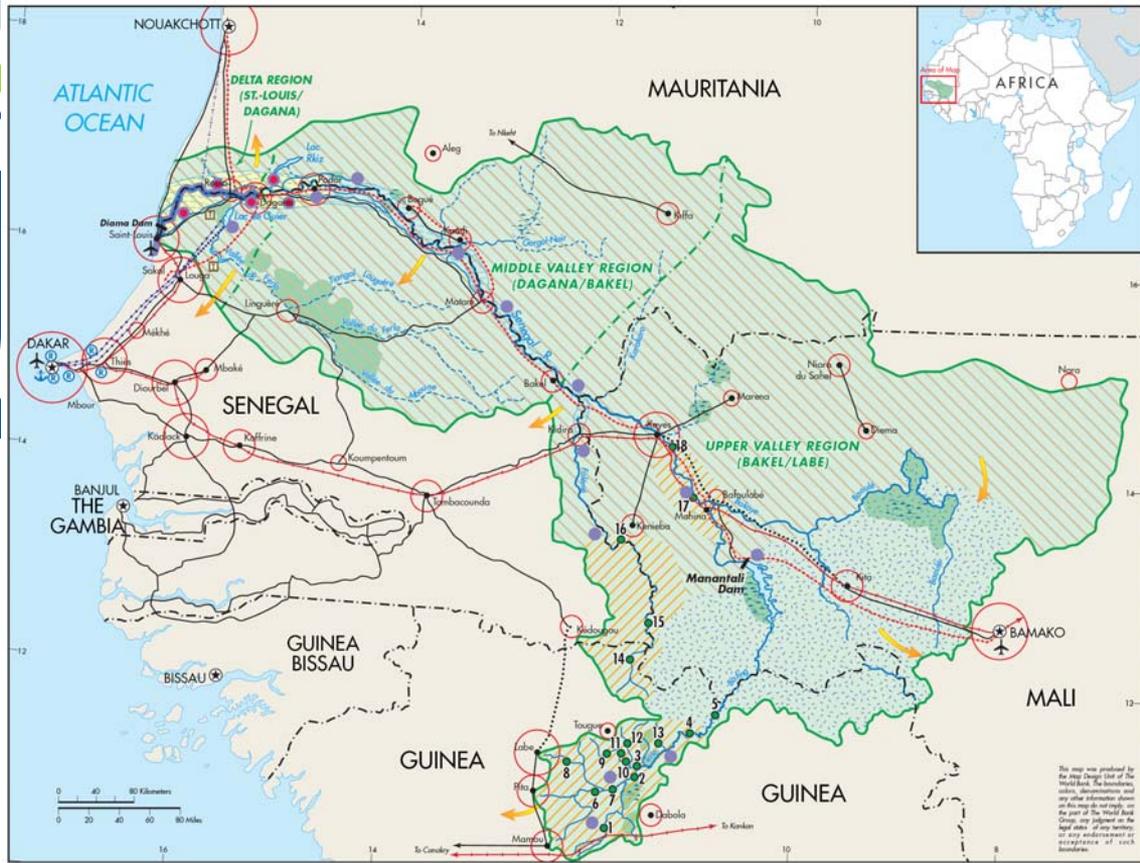
What is the nexus? Is it any different?

- “an approach that integrates management and governance across sectors and scales” ... “an approach that reduces tradeoffs and builds synergies across sectors...”
- No its not entirely new, but ‘the nexus’ frames the debate differently at a time of heightened competition – it has convening power
- There is no single nexus – multi-dimensional – water, energy, food, land, climate change, natural resources, etc
- In a world of increasing water demands, the consequences of not taking a cross-sectoral approach are more significant now than a generation ago
- We shouldn’t turn nexus concept into a structured framework – its value lies in its principles and flexibility
- Doesn’t displace other forms of planning (regulatory frameworks, SEA, IWRM, etc), but provides a focus or ‘lens’ for integration
- Important to extend the knowledge base and analysis of nexus issues



Nexus thinking and the SDGs (Indicative)

Target	Indicator
Water-Health Nexus	Cases of water and sanitation related disease decrease by X percent
Water-Energy Nexus	Productive use of hydropower is increased by X percent while maintaining ecosystem water requirements
Water-Food Security Nexus	Water efficiency and water productivity in agriculture are increased by X and Y percent, respectively
Water-Energy-Food Nexus	Nutrients and energy in WW and sludge are safely recovered and their reuse is increased by X and Y percent, respectively



SENEGAL RIVER BASIN

INFRASTRUCTURE:

- EXISTING RAILROAD WITH FREQUENT OUBREAK
- MAIN ROADS
- PROJECTED ROADS
- POWER TRANSMISSION LINES
- EXISTING WATER PIPELINES
- WATER PIPELINE UNDER CONSTRUCTION
- PLANNED WATER PIPELINE (NICAMCHOTTI WATER SUPPLY)
- WATER RESERVOIR
- TREATMENT PLANT
- EXISTING DAMS
- IDENTIFIED DAM SITES (SEE LIST)
- AIRPORTS
- MAIN PORTS
- NAVIGABLE WAY

HUMAN DYNAMICS:

POPULATION

- > 1,000,000 INHABITANTS
- > 500,000 INHABITANTS
- > 100,000 INHABITANTS
- > 50,000 INHABITANTS
- > 20,000 INHABITANTS
- > 5,000 INHABITANTS

MIGRATION FLOWS

- PREVALENCE OF WATERBORNE DISEASES
- ENDEMIC WATERBORNE AREAS WITH SERIOUS WATER QUALITY ISSUES

ENVIRONMENTAL ISSUES:

- DRYLAND AREAS
- AREAS SUBJECT TO HIGH EROSION
- PROTECTED AREAS WITH BIODIVERSITY RESOURCES (NATIONAL PARKS, GAME RESERVES)
- WETLANDS
- AREAS OF FLOOD EROSION AGRICULTURE
- AREAS OF BIG IRRIGATION SCHEMES
- AREAS OF POTENTIAL SALTATION

GEOGRAPHY

- BASIN BOUNDARY
- BASIN SUB-DIVISIONS
- STREAMS
- SEASONAL STREAMS
- LAKES AND RESERVOIRS
- NATIONAL BOUNDARIES

DAM SITES:

1	TOURNAI	12	KOLE
2	TOURNAI	13	FAGAN
3	KOUKOUSSAMBA	14	TOURNAI
4	TOURNAI	15	TOURNAI
5	TOURNAI	16	GOURBASI
6	TOURNAI	17	GOUINA
7	TENE II	18	FELOU
8	GAYA		
9	SALOUMA		

This map was produced by the Senegal Group of the World Bank. The boundaries shown are approximate and do not imply any endorsement or recognition of such boundaries. Copyright © 2005.

Irrigation, flood recession agr, navigation, hydropower, resilience to variability

Analytical tools inform RBOs / related IWMI work

Sustainable waste and wastewater reuse

Nexus benefits:

Energy reduction in: Water treatment, chemical fertilizer production and transport

Environmental benefits: Reduced pollution of water bodies, reduced nitrogen and phosphorous demand, reduced GHG emissions





Interactions between “agricultural” and “natural” ecosystems – providing multiple services

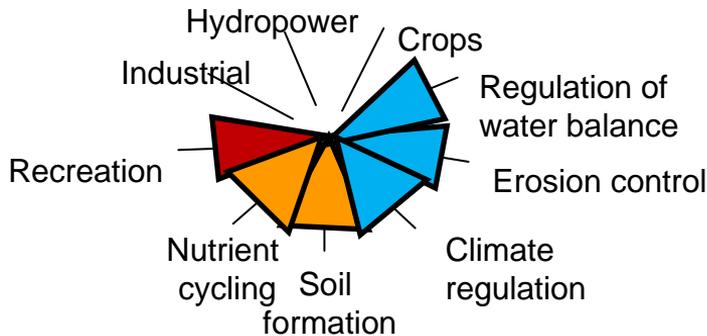
Sources: McCartney, Senaratne Sellamuttu, de Silva

Sustainable use of wetlands:
fulfilling multiple needs
through
ecosystem services including
food production, fisheries,
storage

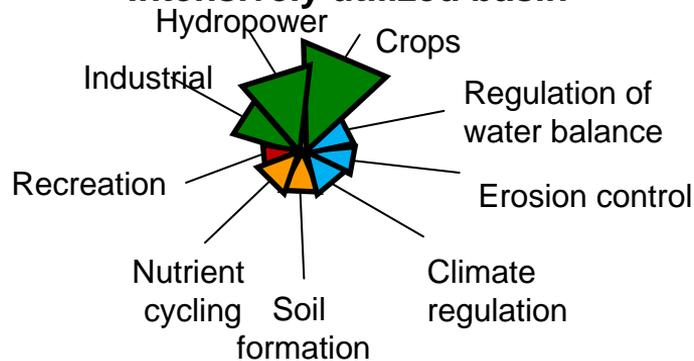


Benefit from functioning ecosystems

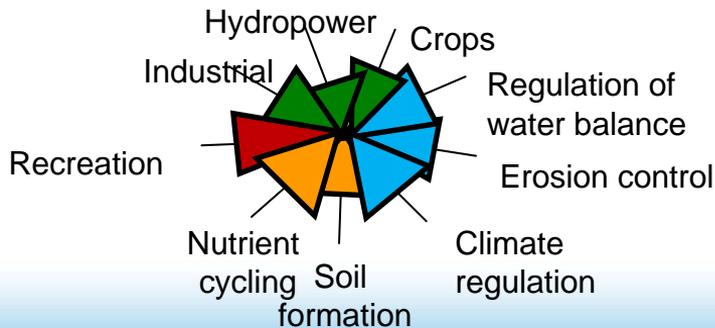
Natural basin



Intensively utilized basin



Multifunctional "green" basin



-  Provisioning services
-  Regulatory services
-  Cultural services
-  Supporting services

Analysis conducted for 16 locations in the Zambezi Basin.

Results confirm that ecosystems affect flows in different ways

Ecosystem	Flood Flows	Low Flows
Floodplains	↓ (10-60%)	↑ (10-50%)
Headwater wetlands	↑ ↓ (<300%)	↓ (40-90%)
Forests	(40-60%)	(15-30%)

But:

- contradictory results for all ecosystems
- no simple relationships between ecosystem extent and the impact on flow

Ecosystem work

Simple method developed.

Quantifies ecosystem impacts and is easily reproducible.

Could be incorporated into a water resource DSS.

Clear that impacts are dependent not just on the presence/absence of a particular ecosystem, but also topography, soils, geology etc.



Also, work on understanding land and water grabbing
=> Link land and water governance, more inclusive business models

Realities about RBOs

- How to foster meaningful, empowered RBOs?
- Link to revenue stream...this may mean thinking a bit out of the box about scale
- Through convening, basin plan development, other analytic work, RBOs can shed light on nexus issues
- RBOs and other forms of water cooperation

Some Bottom line Thoughts

- How are RBOs already incorporating nexus? Can we learn from what RBOs are already doing?
 - Treaty classification?
- RBOs v. water sharing agreements
- Variation in RBO forms – from empowered authorities to ...
 - Need to think about the role for each to play
- Greater focus on analytic tools to inform



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