



OCP Policy Center Conference series

Implementing the Nexus : Green Water & Sustainable Policy Options

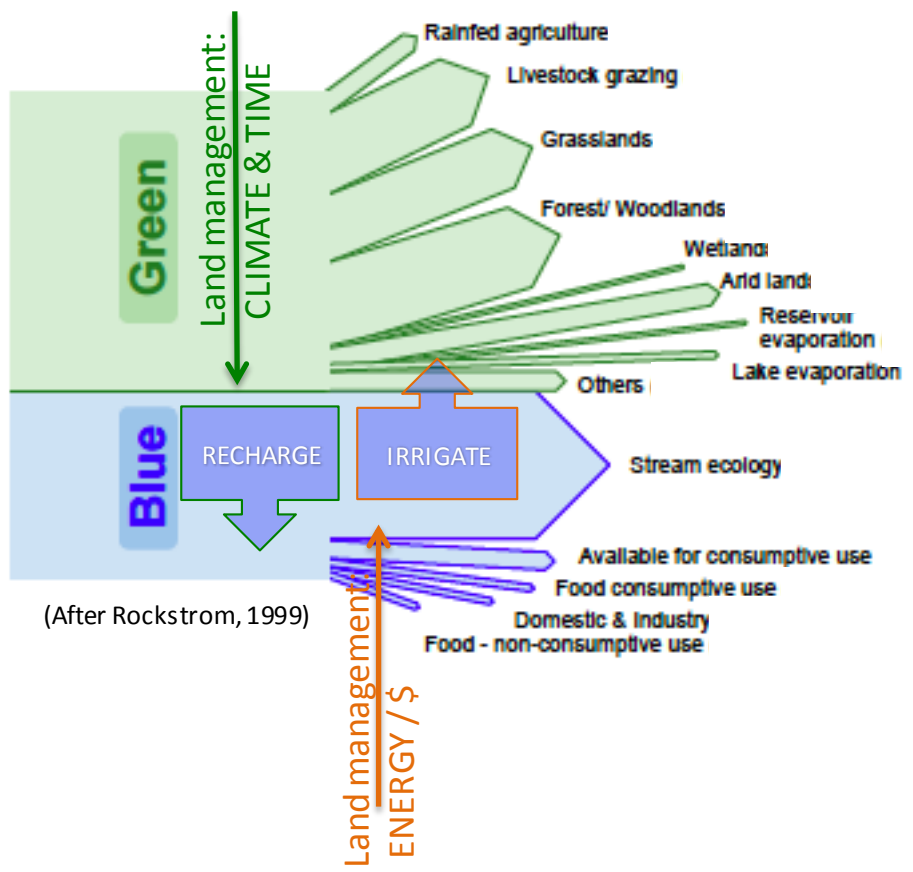
Caroline King-Okumu

11-13 June 2014

POLICIES AT THE WATER-FOOD-ENERGY-CLIMATE NEXUS

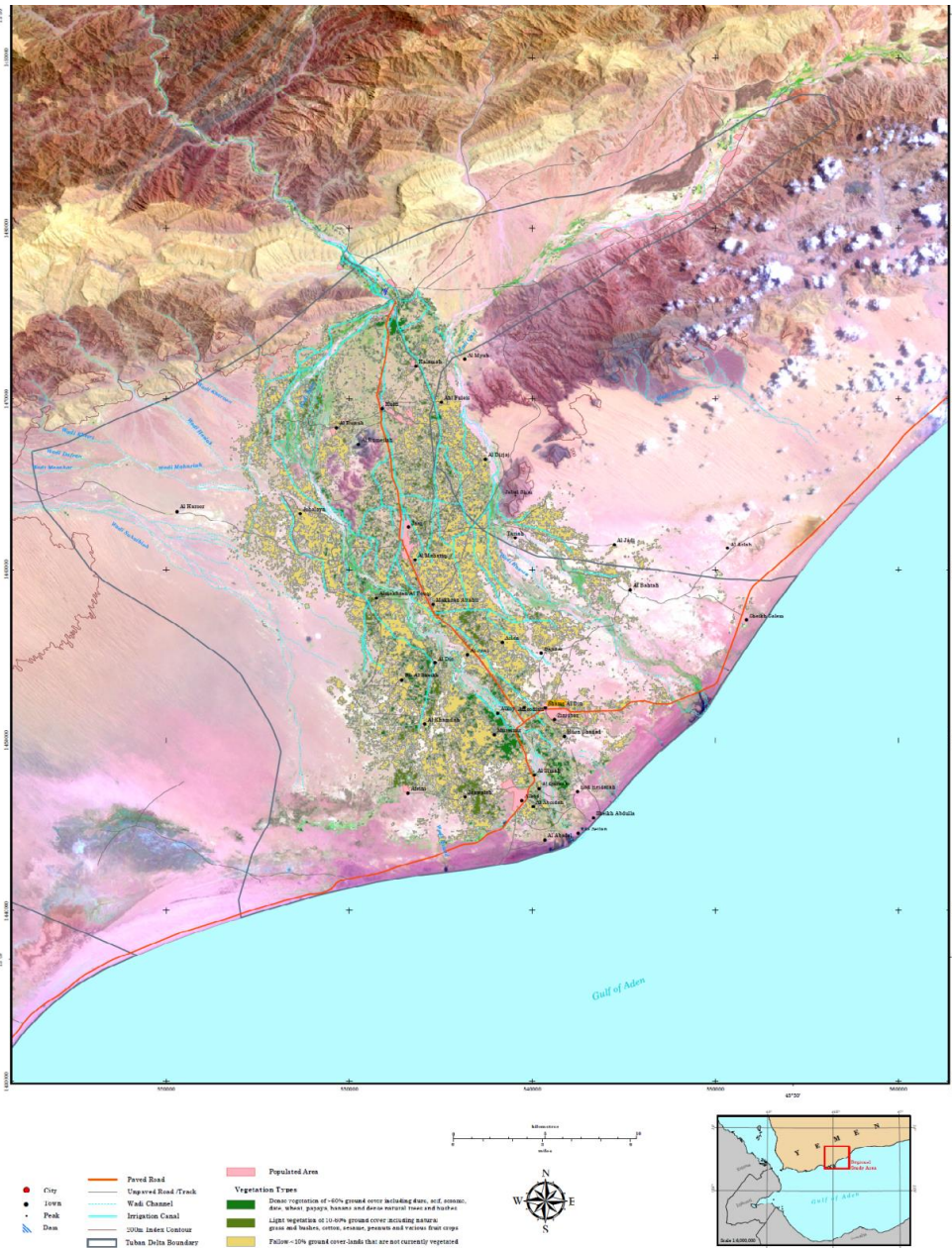
(Based on UNDP, 2013: Water Governance in the Arab Region)

Basin	Countries	Basin Size (1000km ²)	National Sectoral Plans	Nexus Integrated Climate Strategy	Basin Level Water Balance	Energy Use to Secure Water & Food
Abyan	Yemen	0.536	✓✓✓	National level	Atroosh et al, 2014	?
Zeuss Koutine	Tunisia	1.305	✓✓✓	Na		
Jordan River	Lebanon, Syria, Israel, Jordan, Palestine	19.839	✓✓✓	Na lev		
Orontes	Lebanon, Syria, Turkey	37.900	✓✓✓	Na lev		
Tigris-Euphrates	Iraq, Syria, Turkey, Jordan, Saudi Arabia, Iran	793.314 (combined)	✓✓✓	-		
Nile	11 Countries	3,173	✓✓✓	Na lev		



(After Rockstrom, 1999)

EXAMPLE: ABYAN DELTA BASIN, YEMEN



Annual Balance Sheet: Abyan Delta Basin: *Spate System*

	INPUT	PRODUCT
WATER	RW	GW+
ENERGY	LABOR	CS+
GEOCHEM	MANURE	FOOD+
SUB-TOTAL		+++
BALANCE		positive

Annual Balance Sheet: Abyan Delta Basin: *GW Irrigation*

	INPUT	PRODUCT
WATER	RW & GW	GW-
ENERGY	FUEL	Emissions
GEOCHEM	AGROCHEM	FOOD+ Pollutn
SUB-TOTAL	+++	++--
BALANCE		negative

(based on UN System of Environmental Economic Accounting, 2012)

EXAMPLE: KOUTINE WATERSHED, TUNISIA



Annual Balance Sheet: Koutine Watershed: *Rural Depopulation*

	INPUT	PRODUCT
WATER	RW+SW+GW	Urban DW
ENERGY	Pump & desal	
GEOCHEM		(soil erosion)
SUB-TOTAL		-
BALANCE		<i>negative</i>

(Based on Hadded, 2013)

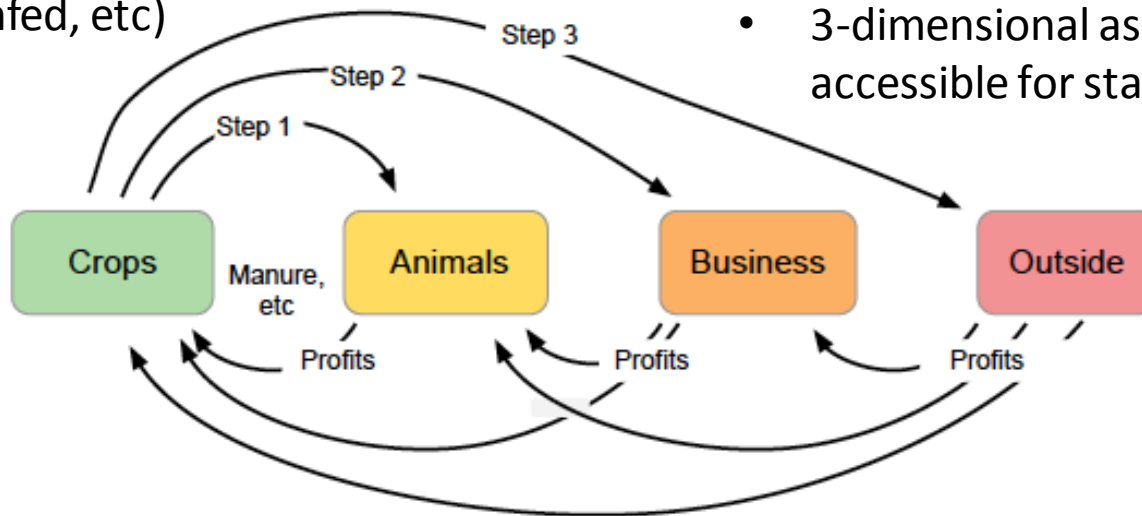
Annual Balance Sheet: Koutine Watershed: *Rural Conservation*

	INPUT	PRODUCT
WATER	RW+SW+GW	DW + storage
ENERGY	Pump & labour	Carbon seqsn
GEOCHEM	Manure	Trees, amenity & stock
SUB-TOTAL		+ + +
BALANCE		<i>positive</i>

(Based on Ouessar, 2009)

Nexus Policy Options

- Seek internal efficiencies at local scales (incl. domestic, urban and industrial activity) *in 3 dimensions*
- Incentivize or support low-energy water management technology adaptation and access
- Increase support for sustainable production through external trade standards and audits (GAP, organic, rainfed, etc)



Science-Policy Capacity Needs

- Existing institutions not designed to address nexus science-policy capacity needs
- Environmental accounting approach will be useful to weigh tradeoffs quantitatively
- Monetary valuation inherent in decision-making in need of sustainability rethink
- 3-dimensional assessment is accessible for stakeholder discussion

Releasing the Pressure:
Water Resource Efficiencies &
Gains for Ecosystem Services
(UNEP/SEI, 2012 Adapted from
Mortimore and Adams, 2000)

Figure 15: Diagram for how livestock rearing can integrate with poverty alleviation goals

(Adapted from Mortimore and Adams 2000)

Type of Water Resource			
WATER BODIES	Surface	Ground	Soil
Opening Stock			
Additions to Stock			
returns			
precipitation			
inflows			
Reductions to Stock			
abstraction			
evaporation & ETP			
outflows			
Closing Stock			
Geochemical Stocks and Flows			
LAND COVERS	Grass-land	Crop-land	For-est
Opening Stock			
Additions to Stock			
Expansion of area			
Salts & ag. inputs			
Carbon sequestration			
Reductions to Stock			
Reductions in area			
Crops, stock, emissions			
Closing Stock			

(based on UN System of Environmental Economic Accounting, 2012)



THANK YOU

*Caroline King-Okumu
Ecosystems and Human Development
Association
(EHDA)
email: caroking@yahoo.com*