

IUCN



Nexus Dialogue on Water Infrastructure Solutions

James Dalton
Coordinator, Global Initiatives
IUCN Water Programme, Switzerland

UNECE, SEPTEMBER 9, 2014



The Dialogue

Partnerships for innovation in water, energy and food security



waternexussolutions.org



nexus dialogue on WATER INFRASTRUCTURE SOLUTIONS

building partnerships for innovation in water, energy and food security

English Spanish

Select Language

HOME

ABOUT

SOLUTIONS

EVENTS

MEDIA

GET INVOLVED

Central Asia Nexus video



Central Asia Nexus Workshop



Search website

Search

Recent contributions

The latest contributions to the toolkit

- Vision 2050: The New Agenda for Business
- New Smart Technology Can Predict Water Infrastructure Failures
- Resilient Infrastructure, Institutions, and Information...

Submit your tool/case study



Like 169



JAMES DALTON


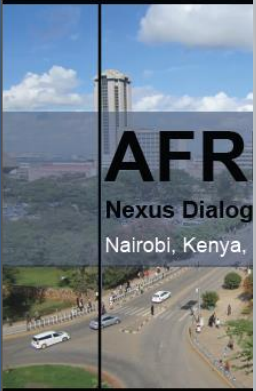
Nexus Dialogue on Infrastructure Solutions


ASIA



March 2014

LATIN AMERICA

AFRICA

	Nexus Dialogue on Water Infrastructure Solutions
	AFRICA Nexus Dialogue Nairobi, Kenya
	Workshop I

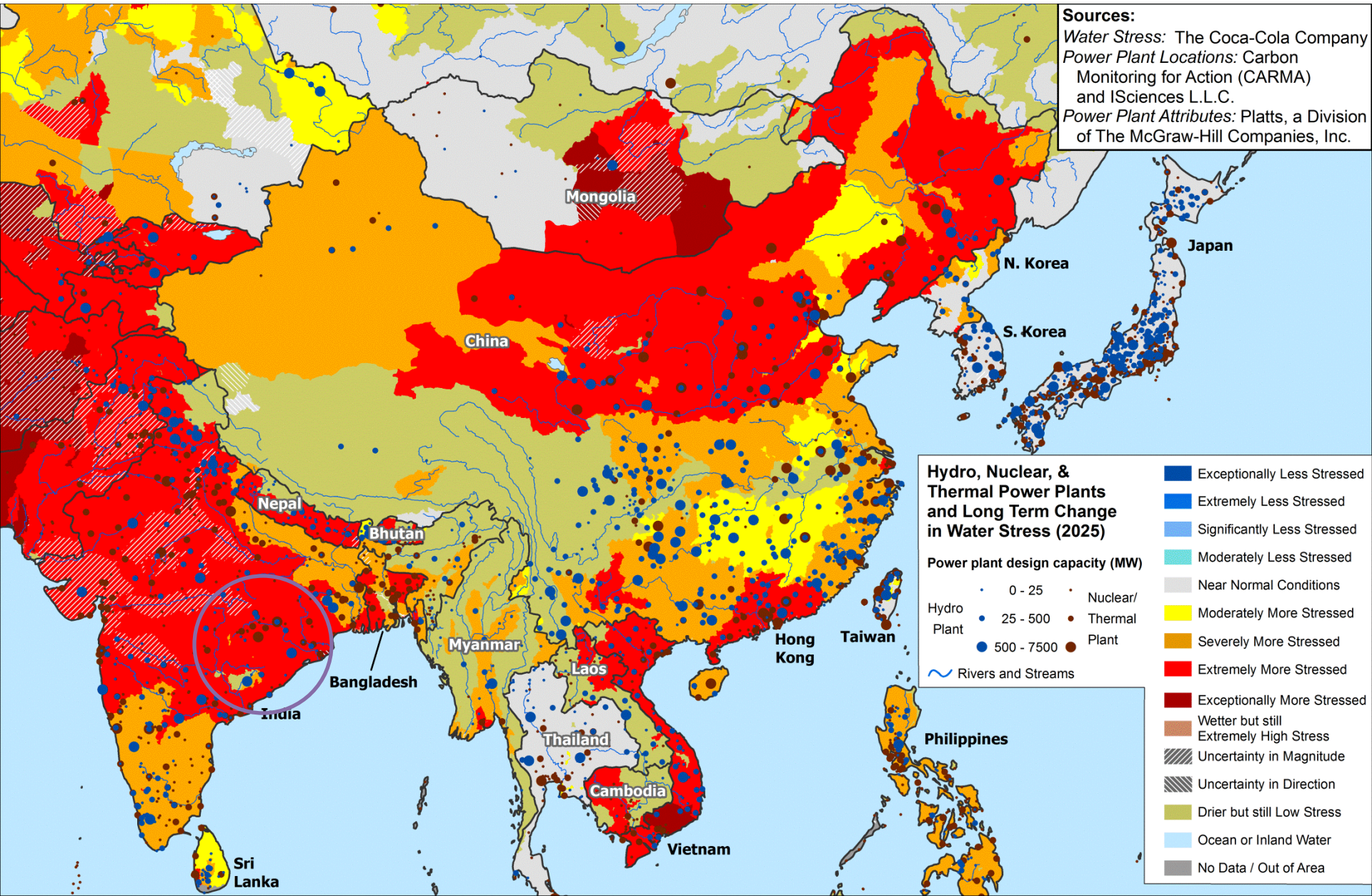
	Nexus Dialogue on Water Infrastructure Solutions
	Nexus Reference Group
	22-26 July 2013, Meetings Report

	Nexus Dialogue on Water Infrastructure Solutions
	LATIN AMERICA
	Nexus Dialogue Workshop Bogota, Colombia, 24-26 September 2013
	Workshop Report



Long Term Water Stress

(and the location of power plants, based on 2025 IPCC Scenario A1B)



Sources:
 Water Stress: The Coca-Cola Company
 Power Plant Locations: Carbon Monitoring for Action (CARMA) and ISciences L.L.C.
 Power Plant Attributes: Platts, a Division of The McGraw-Hill Companies, Inc.

Hydro, Nuclear, & Thermal Power Plants and Long Term Change in Water Stress (2025)

Power plant design capacity (MW)

- Hydro Plant:
 - 0 - 25
 - 25 - 500
 - 500 - 7500
- Nuclear/Thermal Plant:
 - Nuclear/Thermal
 - Thermal Plant

Water Stress Legend:

- Exceptionally Less Stressed
- Extremely Less Stressed
- Significantly Less Stressed
- Moderately Less Stressed
- Near Normal Conditions
- Moderately More Stressed
- Severely More Stressed
- Extremely More Stressed
- Exceptionally More Stressed
- Wetter but still Extremely High Stress
- Uncertainty in Magnitude
- Uncertainty in Direction
- Drier but still Low Stress
- Ocean or Inland Water
- No Data / Out of Area

Other Symbols:

- Rivers and Streams

What is happening?

Globally, by 2050:

- Water demand is projected to increase by 55% over current levels
- Energy demand by 80%
- Demand for renewable energy will increase by 60%
- In 2008 –Kenya had an overall drop in GDP of 10% due to drought
- China's electricity generation in 2035 will be 3 more times what it was in 2008
- In sub-Saharan Africa, levels of access to electricity in rural areas are typically much lower than coverage of water supply and sanitation (Burkina Faso, 1%; Kenya: 8%; Uganda 5%; Tanzania 4%, (SE4All, 2013)). Of the 1.3 billion people with no access to electricity, 95% of them are in sub-saharan Africa
- 2011-2030 – to close the energy poverty gap need US\$980 billion

Water in the economy....

- Turkey: cotton and textiles represent 20% of export income
- Peru: asparagus largest export crop represents 40% of export revenue from agriculture – in one valley
- S. Africa the Western Cape – 12.5% of land area, responsible for high value crops, represents 55-60% agriculture exports –needing irrigation, and therefore energy
- Kafue in Zambia: Kafue Gorge power station produces 50% of total electricity
- France: 75% of surface water storage is for hydropower
- Gujarat.....

Its hard to keep on top of.....

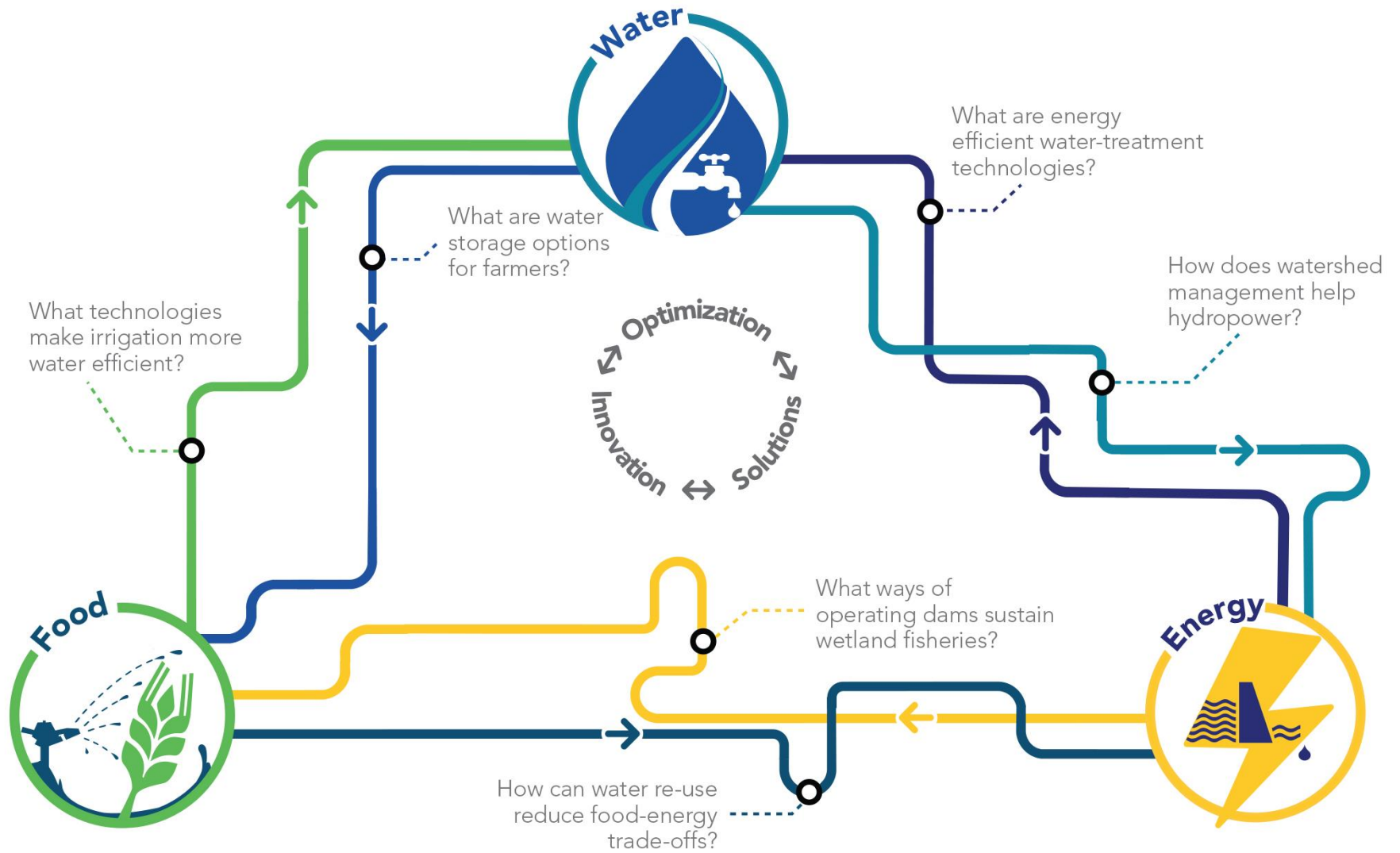
We silo ourselves

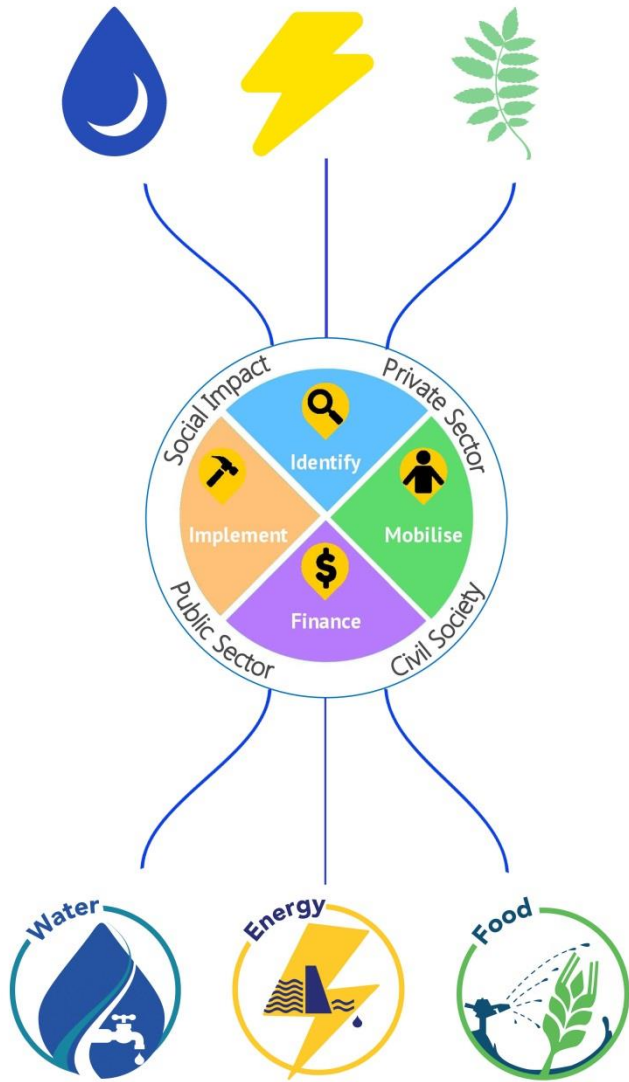
- Different objectives, frameworks, tactics
- IWRM plans (all of them) consider energy a user, or a beneficiary of an allocation, and not a water manager
- Cost recover of water use by energy sector is poor
- Energy operates differently
- Agriculture remains fairly silent *'en masse'*, but many solutions locally

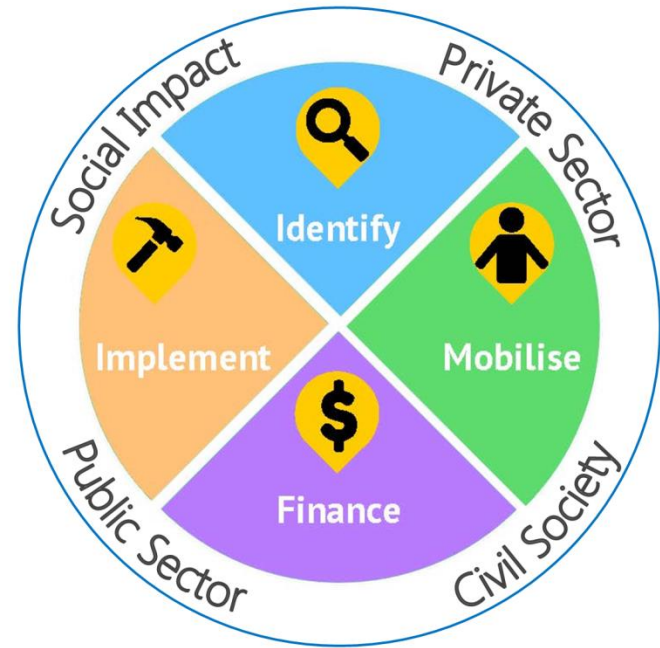
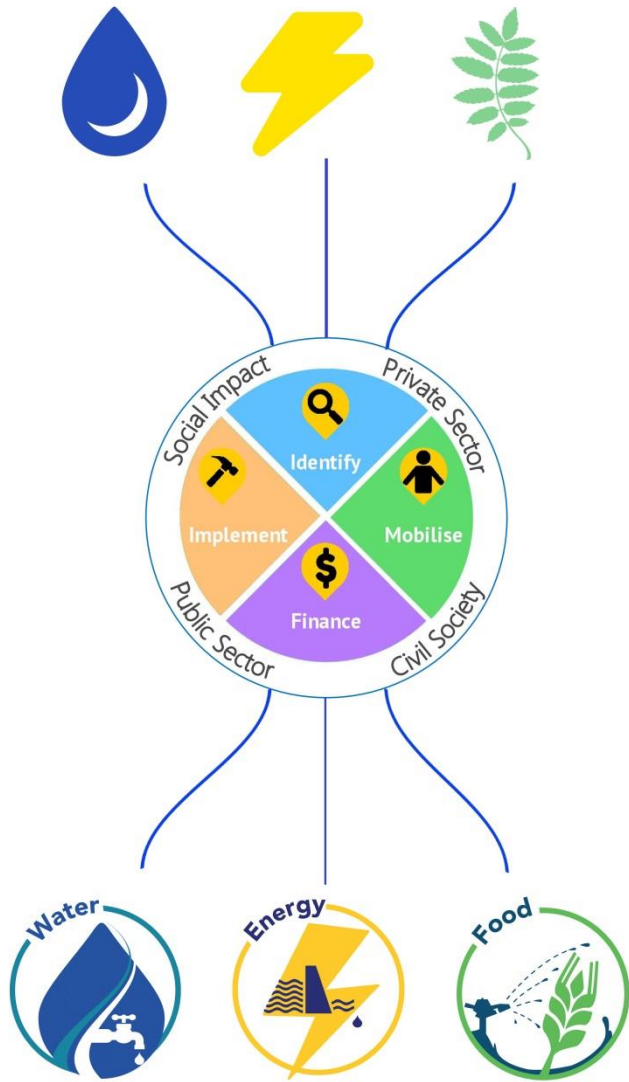


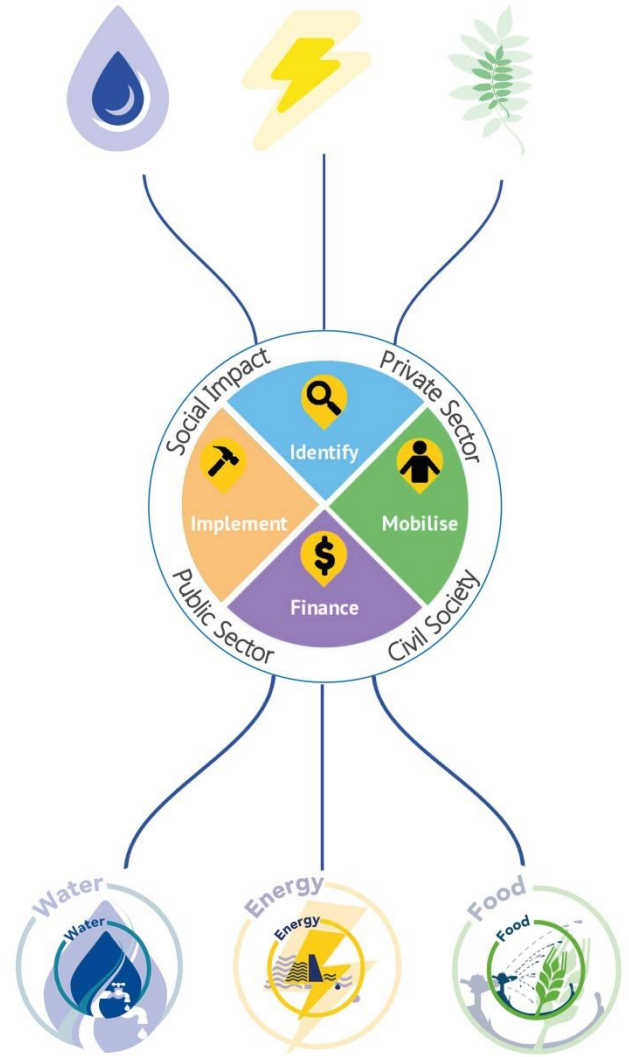
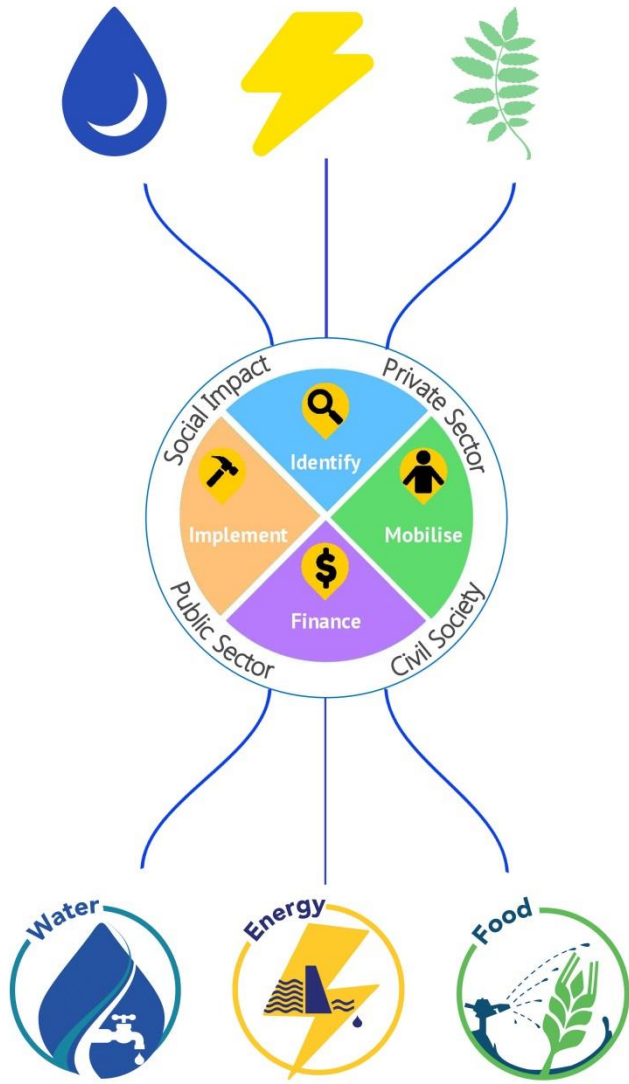


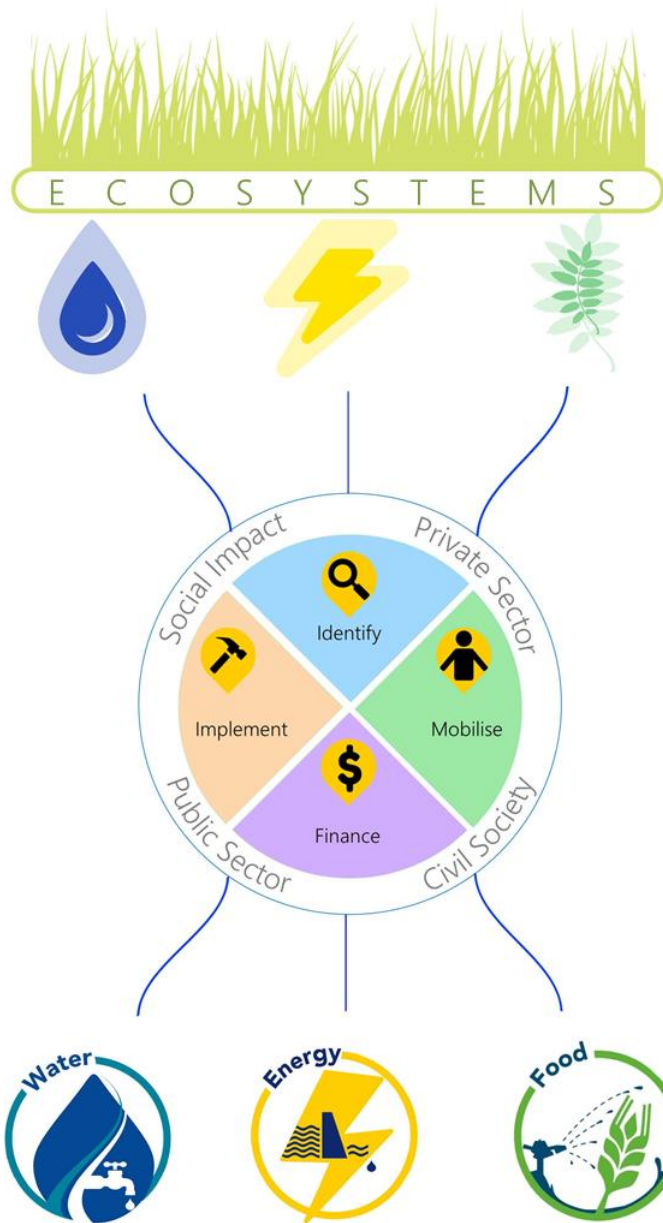
Interactions between water, energy and food











SOLUTIONS FOR THE NEXUS:

Building Partnerships to Optimise Infrastructure & Technology
for Water, Energy & Food Security



Conference Themes:


- Using the nexus to accelerate development
- Cleantech nexus infrastructure and technology solutions
- Collaboration and institutional arrangements for a nexus approach
- Influencing pathways of investments for nexus infrastructure and technology



More information coming soon: waternexussolutions.org

Follow us on social media channels: @WaterNexus



- 
- An aerial photograph of a large dam and reservoir. The dam is a long, concrete structure with several spillways. The reservoir is a large body of water behind the dam. The surrounding landscape is hilly and green, with some buildings and infrastructure visible near the dam. The sky is overcast.
- Energy needs to be in the room
 - And, at times they need to lead...
 - Overcome the Tyranny of Experts
 - Appropriate technology and policy tools – common data (challenge)
 - Integrated policy is ideal...but so was an IWRM plan...need policy connections and pointers ('indicators' as a compass.....), non-coercive incentives
 - The strength lies in the silos....use them more effectively to build a systemic response to the challenges ahead



WISE-UP to climate

Water Infrastructure Solutions from Ecosystem Services
underpinning Climate Resilient Policies and Programmes



'WISE-UP to climate' is a project that demonstrates natural infrastructure as a 'nature-based solution' for climate change adaptation and sustainable development. The project will develop knowledge on how to use portfolios of built water infrastructure (eg. dams, levees, irrigation channels) and natural infrastructure (eg. wetlands, floodplains, watersheds) for poverty reduction, water-energy-food security, biodiversity conservation, and climate resilience. WISE-UP will show the application of optimal portfolios of built and natural infrastructure using dialogues with decision-makers to agree trade-offs. WISE-UP will run over a four-year period and link ecosystem services more directly into water infrastructure development in the Tana (Kenya) and Volta (Ghana-Burkina Faso) river basins.

Activities

- **Assessments of Natural Infrastructure** – tested in decision-making on infrastructure in the Volta and Tana basins
- **Hydrological Monitoring** – eco-hydrological functions quantified in planning models
- **Economic Assessment** – returns on investment for natural and built infrastructure options compared
- **Novel Tools** – innovation for analyzing trade-offs in river basins and built and natural infrastructure optimized
- **Innovation Drivers** – opportunities for new policies and investment strategies identified and promoted
- **Action Learning** – learning by doing with decision makers and stakeholders participating in dialogues and negotiations
- **Capacity Building & Communications** – skills and capacities strengthened through 'learning communities' and dissemination of results to knowledge networks.

Shared basin vision approach

Adaptive capacity increased through:

recognition and inclusion of ecosystem services provided by natural infrastructure in investment strategies for climate change adaptation and through

optimisation with built infrastructure planning and development.

IUCN



Thank you

James Dalton
Coordinator, Global Initiatives
IUCN Water Programme, Switzerland

UNECE SEPTEMBER 9, 2014

