

16:00 – 16:10	<p>Introduction</p> <p><i>Youssef Filali-Meknassi – Senior Programme Specialist, UNESCO International Hydrological Programme</i></p>
16:10 – 17:00	<p>Rethinking Access to Data, Analysis, Knowledge &amp; Learning</p> <p><i>Nagaraja Rao Harshadeep – Global Lead for Disruptive Technology, World Bank</i></p>
	<p>The case of the Orange Senqu River Joint Basin (JBS)</p> <p><i>Lenka Thamae – Executive Secretary, ORASECOM</i></p>
	<p>Knowledge Management on Areas beyond National Jurisdiction: Challenges and Strategies for Consideration at the Regional and National Levels</p> <p><i>Miriam C. Balgos – Senior Associate, Global Ocean Forum</i></p>
	<p>OSS experiences on Waters Cooperation</p> <p><i>Abdel Kader Dodo – Project Manager, Sahara and Sahel Observatory</i></p>
	<p>Guinea Coastal Zone Adaptation to Climate Change</p> <p><i>Kande Bangoura – Research Director &amp; Head of Department of Oceanography, CERESCOR</i></p>
	<p>The Okavango River Commission</p> <p><i>Phera Ramoeli – Executive Secretary, OKACOM</i></p>
17:00 – 17:05	<p>UNESCO's vision</p> <p><i>Chloé Meyer – Consultant, UNESCO International Hydrological Programme</i></p>
17:05 – 17:25	<p>Q&amp;A session with the audience</p>
17:25 – 17:30	<p>Conclusion</p> <p><i>Youssef Filali-Meknassi, Senior Programme Specialist, UNESCO International Hydrological Programme</i></p>



United Nations  
Educational, Scientific and  
Cultural Organization



International  
Hydrological  
Programme



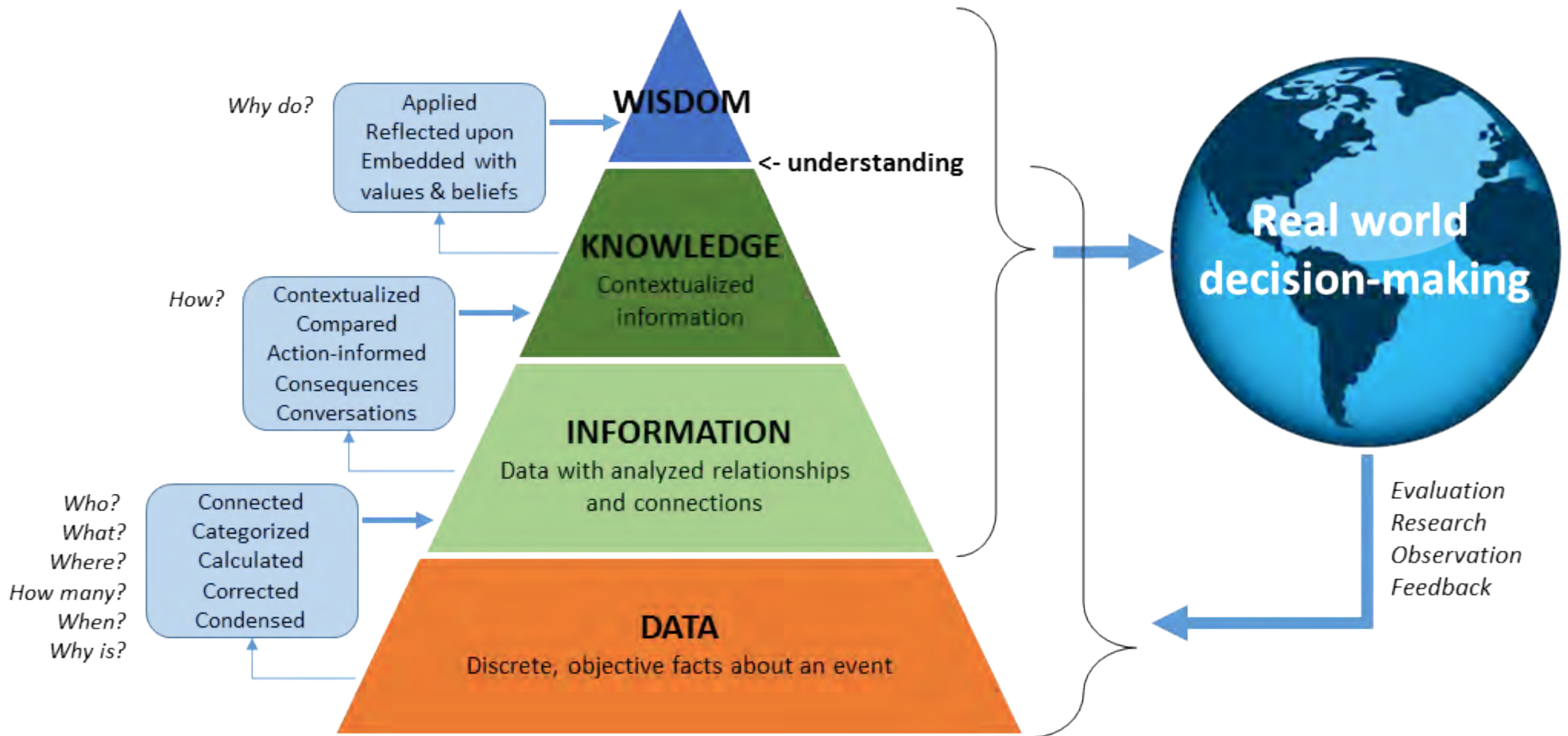
# Enhancing access and dissemination of knowledge to improve decision-making and foster scientific cooperation

**Youssef Filali-Meknassi**

*9th GEF Biennial International Waters Conference*  
Marrakech, Morocco – 6 November 2018



# From information to decision-making: why data matter?



# Workshop objectives

## How to foster a better access and dissemination of knowledge to support decision-makers in managing water resources more efficiently and to contribute to scientific cooperation?

- Challenges of gathering data and transforming them into information that decision-makers can use;
- Collaborative approaches (or the need thereof) to inform decision-making;
- Information that may be lacking as well as ways to bridge knowledge gaps;
- Use, exchange, ownership and sustainability of data and information for decision-making and cooperation;
- Options for capacity-building in other regions.



# Panelists



**Nagaraja Rao Harshadeep**



**Lenka Thamae**



**Miriam C. Balgos**



**Abdel Kader Dodo**



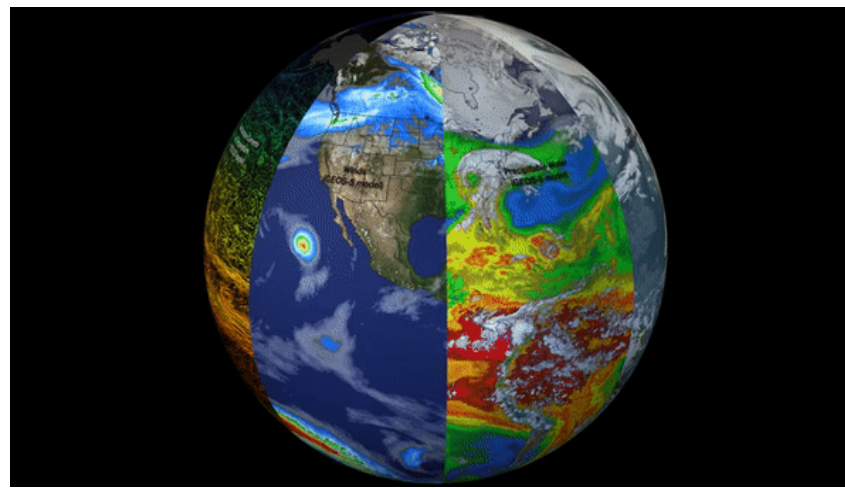
**Kandey Bangoura**



**Phera Ramoeli**



- Lead Environmental Specialist at the World Bank, leading efforts to promote integrated multi-sectoral approaches in a spatial context.
- He also co-leads the Bank's HydroInformatics focal area.
- In over 22 years at the Bank, he has led and supported several environmental, water, and natural resources projects and studies/policy support around the world, primarily in Africa and Central, South and East Asia.
- His work on spatial data and analytics includes the development of interactive spatial Apps (such as "Spatial Agent" to improve public domain geospatial data access, visualization, and analysis) and innovative interactive e-books for outreach.



# *Rethinking Access to Data, Analysis, Knowledge & Learning*

***Nagaraja Rao Harshadeep (Harsh)***

Global Lead (Disruptive Technology)

Environment & Natural Resources Management Global Practice



November 7, 2018

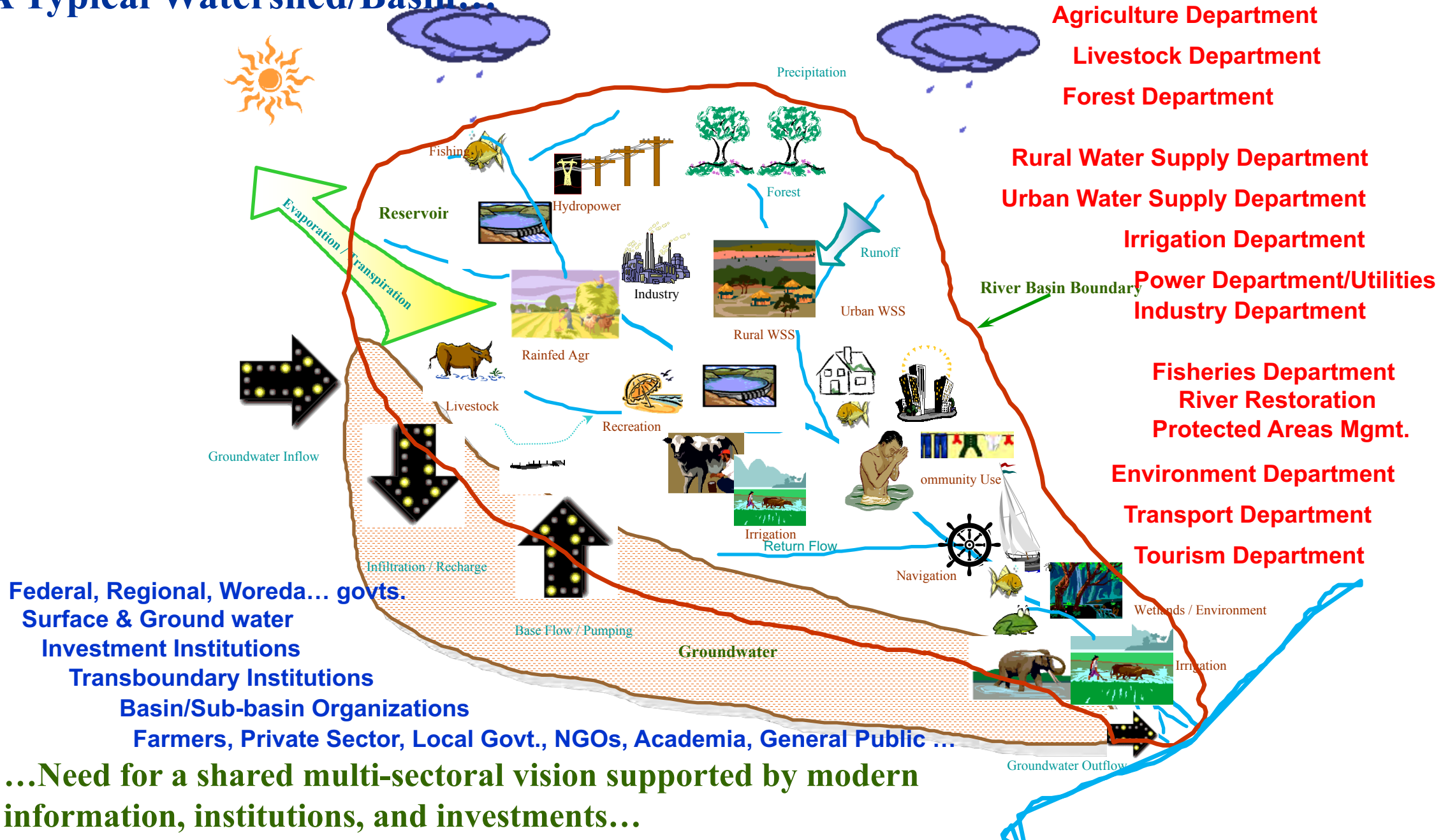
GEF International Waters Conference 9

Panel on Enhancing access and dissemination of knowledge to improve international scientific cooperation

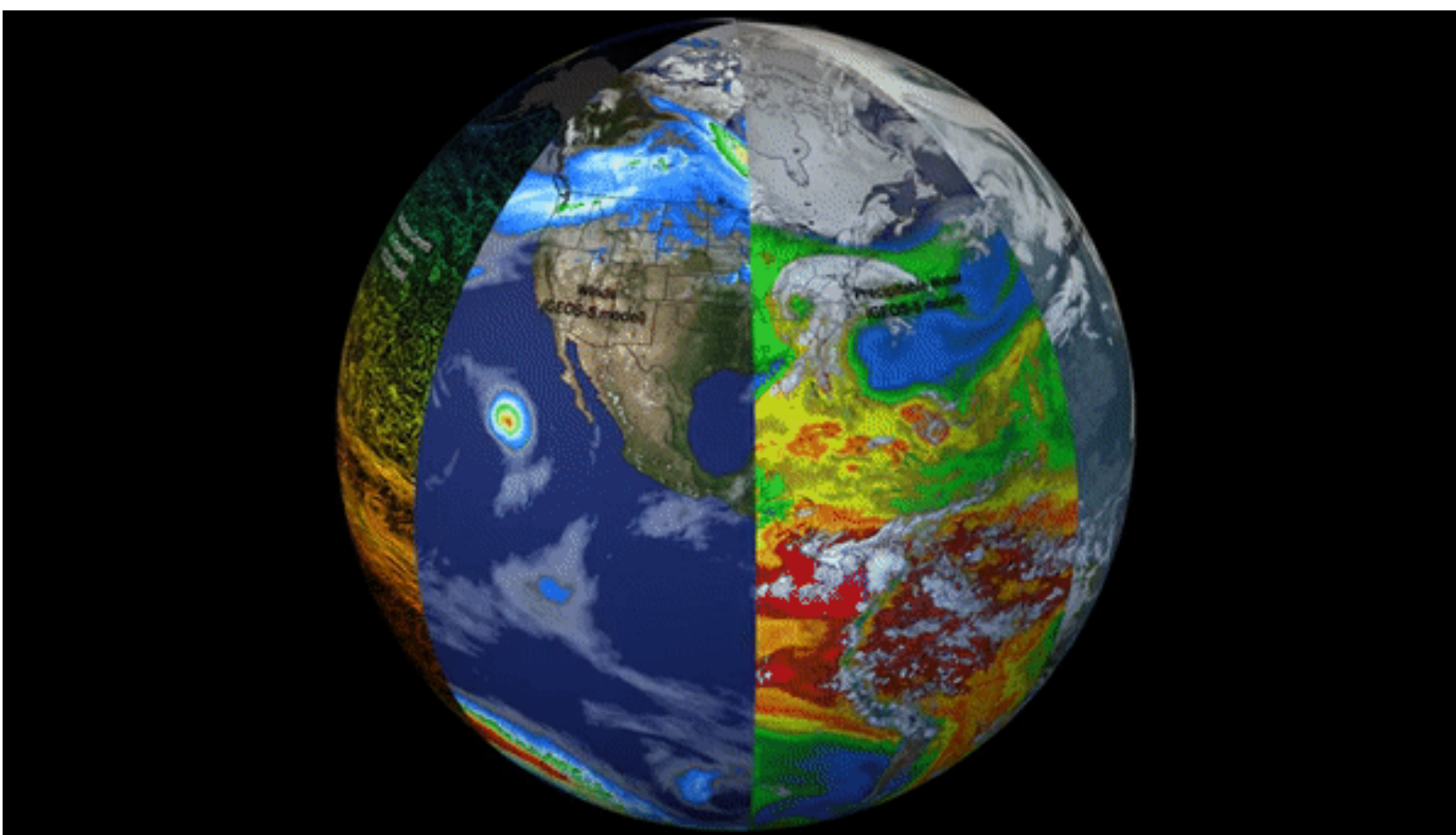
Marrakech, Morocco

# Multiple sectors, multiple institutions, linked by water and natural resources...

## A Typical Watershed/Basin...

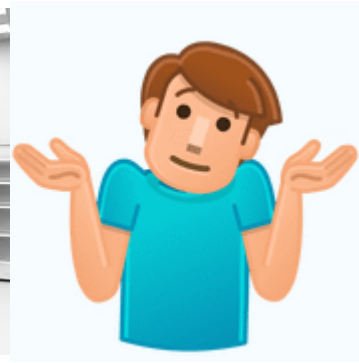






Reimagine Data & Analysis...

*We have NO data...*

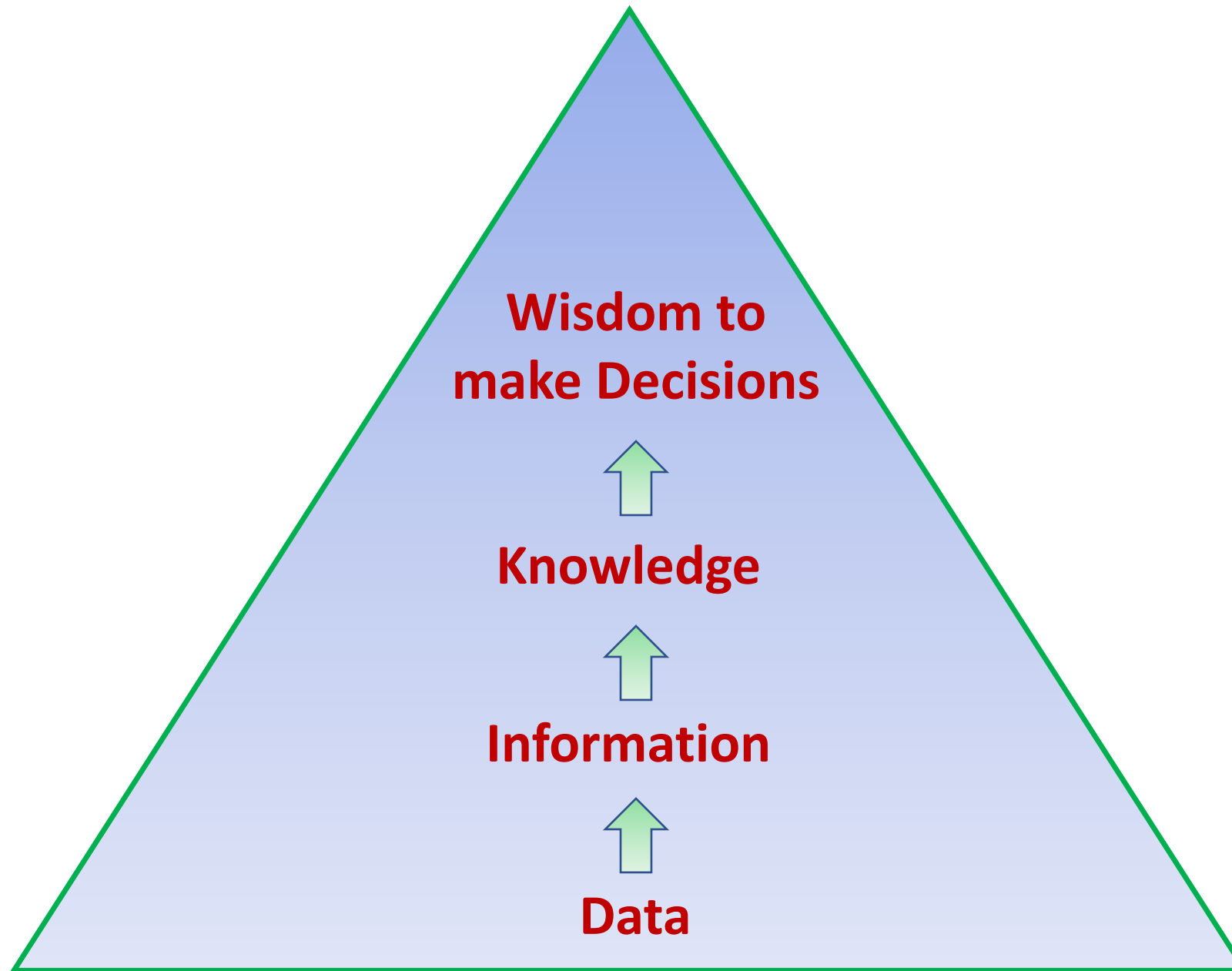


*Of course we have data...*



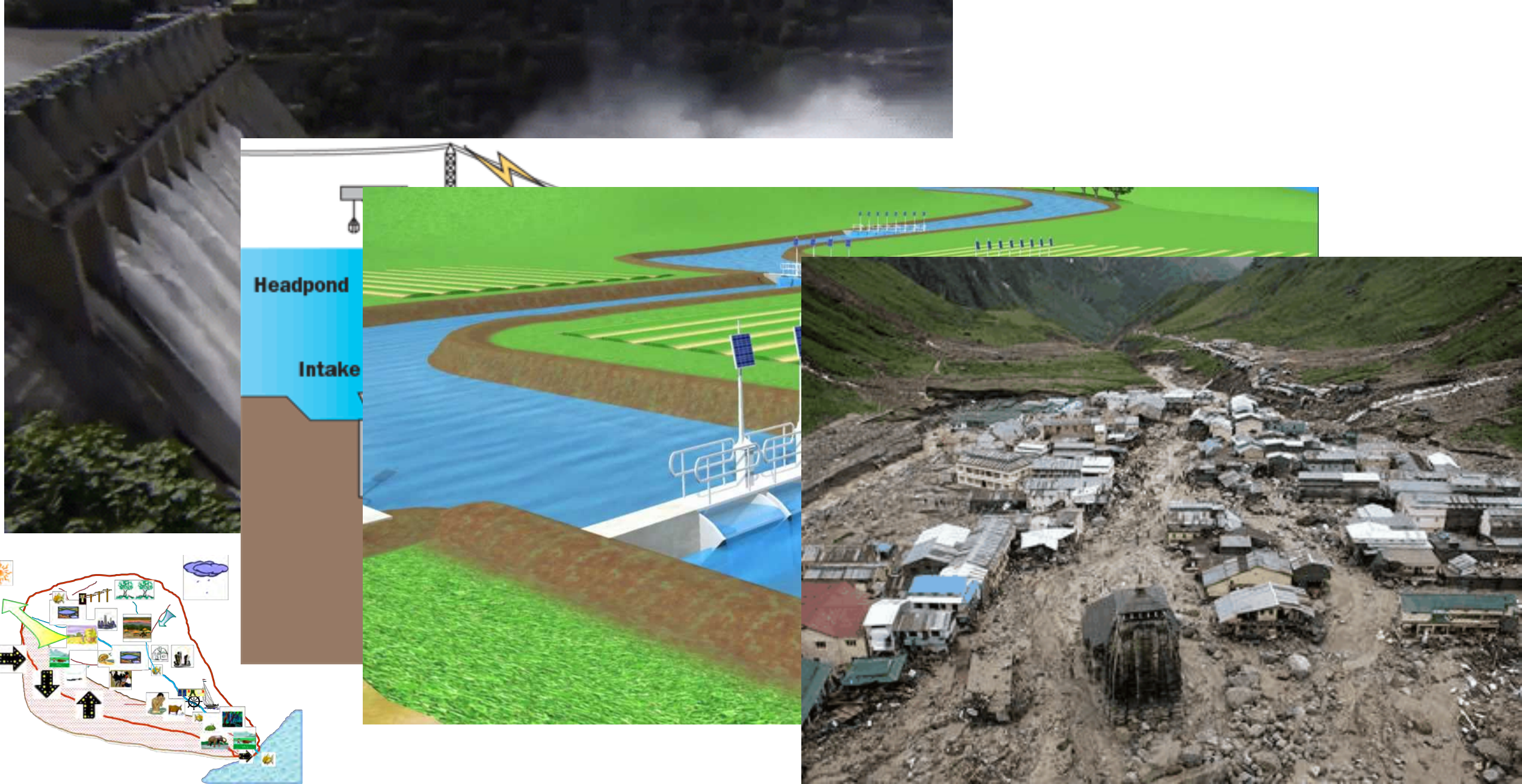
*Data, data everywhere...*







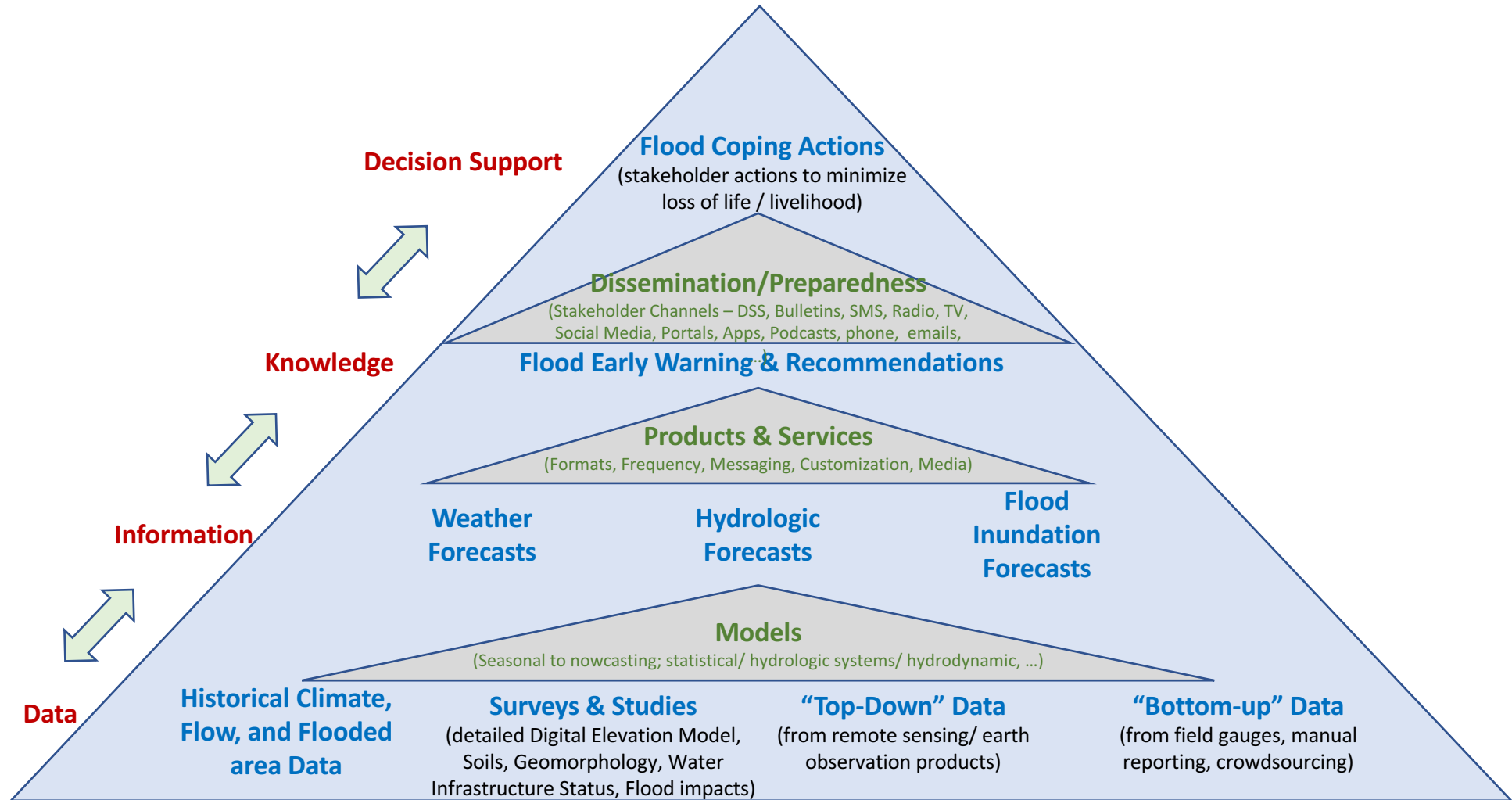
# What Decisions are to be Supported?





# The Data Value Chain

## Example: Deciding on Coping with Floods



# Information & Analysis Trends

## What's Out?



## What's In?



Paper Records/Publications

Desktop Databases

Static, Infrequent data

Data Secrecy

Unclear data pricing

Sectoral approaches

Fragmented activities

Desktop Modeling – “Retail”

Supply-side inputs

“Come to my website &  
see my bit of data...”

Digital Data/Portals/Apps/e-books...

“Analysis Ready” Cloud Data Services

Real-time data services & visualizations

Open, Public-Domain, Available

Free open basic data services

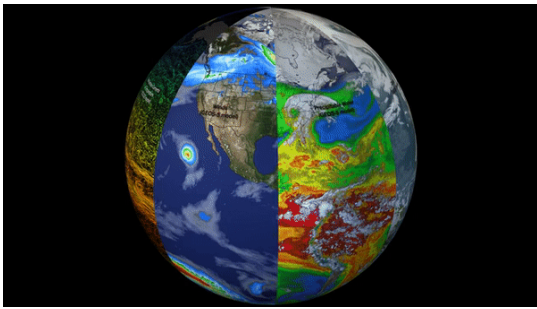
Multi-sectoral/ spatial approaches; AI

Shared vision partnerships; Interoperability

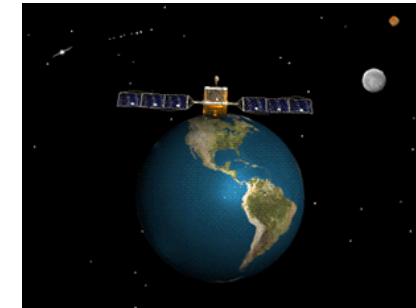
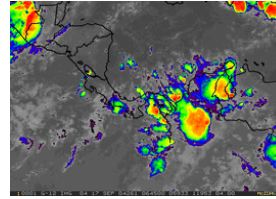
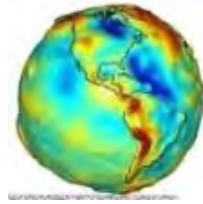
Cloud Analytics – “Wholesale” Platforms

Demand-driven to support decisions

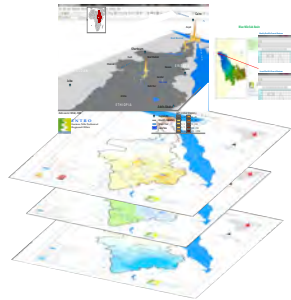
Integrative, Collaborative Data Services &  
Platforms



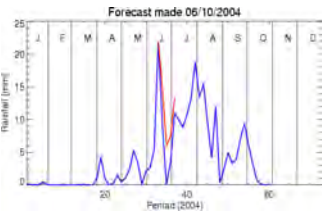
## "Top-Down" Data Acquisition System



Satellite & UAV Earth Observation



GIS and other datasets  
Data Rescue

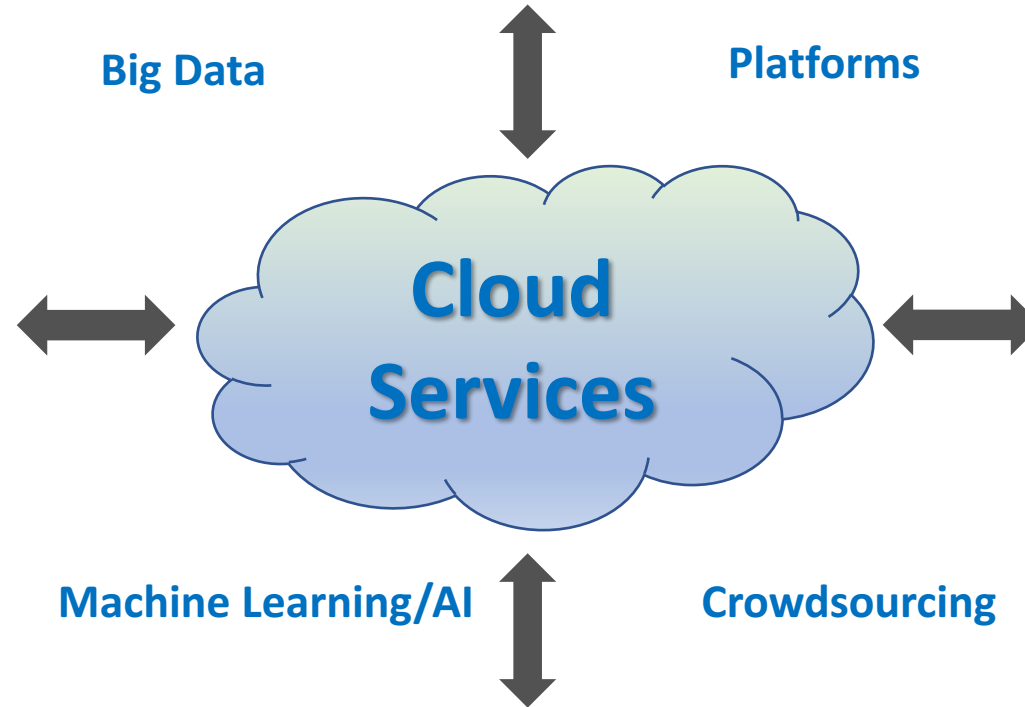


Data Management

Analytics/Models

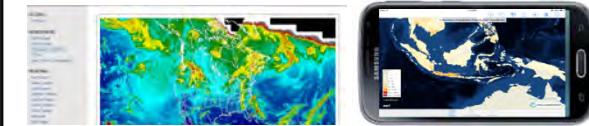
Big Data

Platforms



Machine Learning/AI

Crowdsourcing



Web Portals/Apps/e-books



Stakeholder Alerts



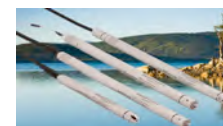
Operational Control Rooms



Manual Monitoring



Automated Monitoring

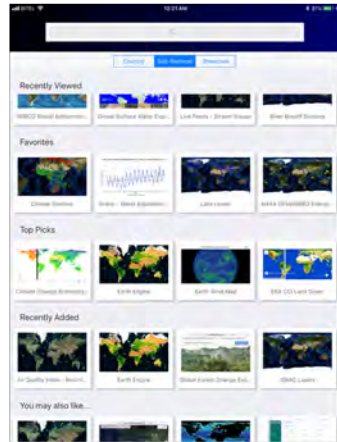


## "Bottom-up" Data Acquisition System → IoT



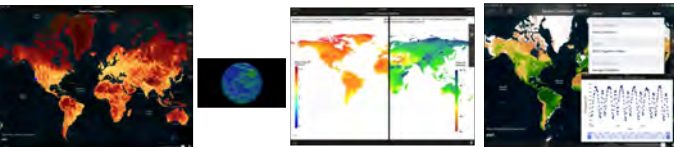
### Country-Level

Check out global data from WDI, MIT Atlas on Trade, etc.  
Great interactive maps and charts.



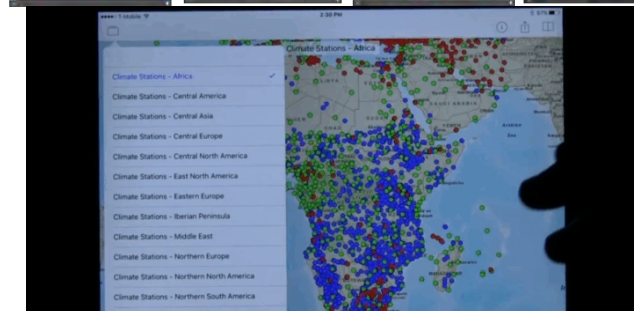
### Sub-National

Check out thousands of global datasets from NASA, UN, ESA, GEO, etc. Great interactive tools, including use of the Google Earth Engine API for live cloud computing.



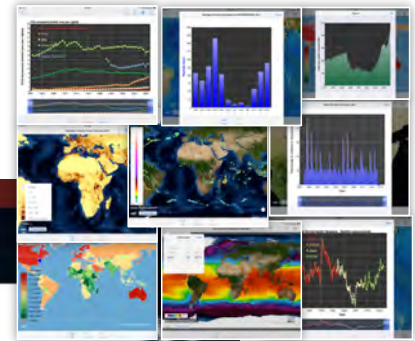
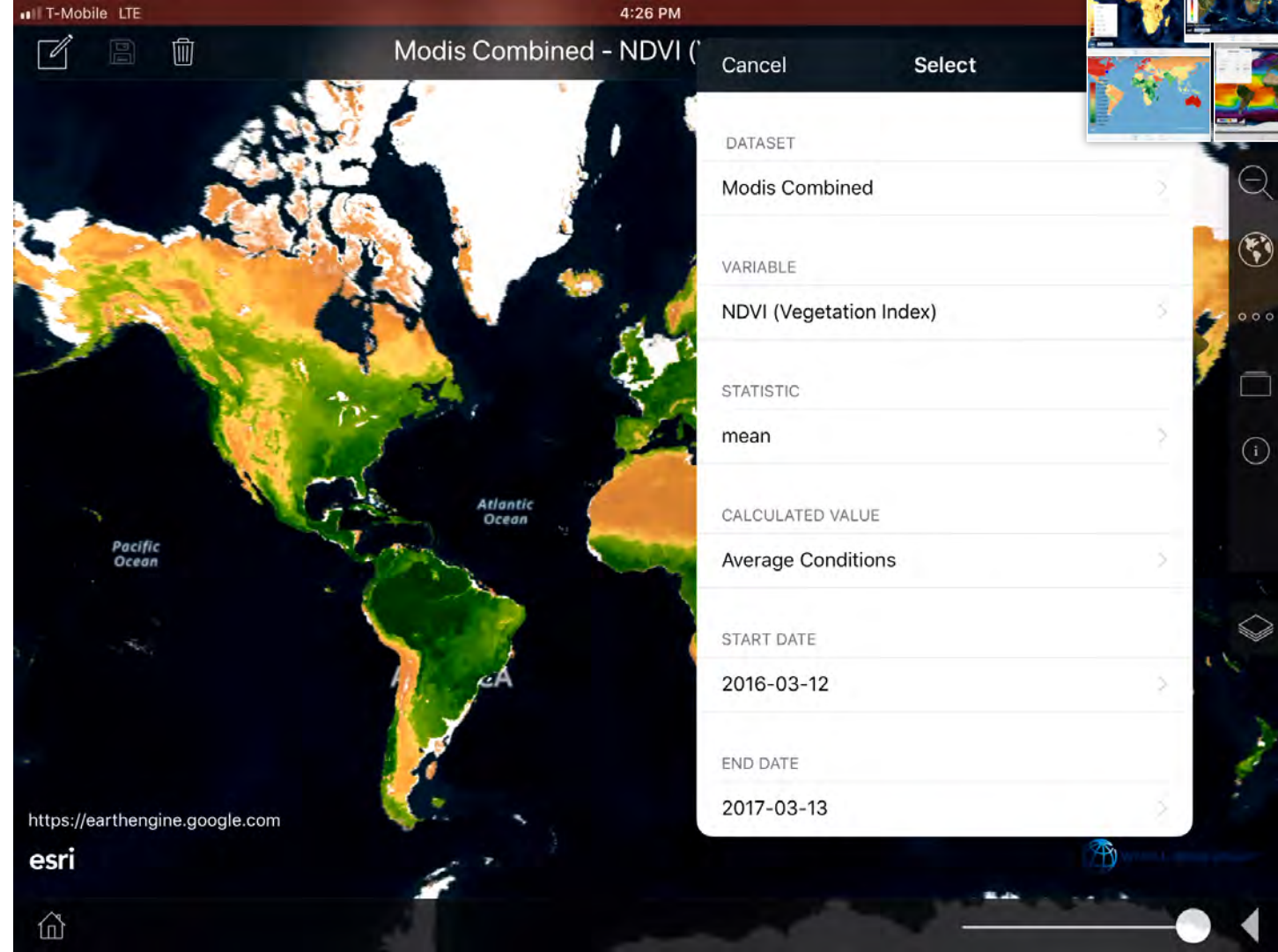
### Showcase

Check out great showcase data on Mekong Delta, Poverty, Forecasts, etc. for selected areas and specialized themes



# Spatial Agent App

*A new world of data and analytics at your fingertips!*



Download free from: <http://apps.worldbank.org> [OLC Resource Page](#) and [Blog](#)  
iOS (iPad and iPhone): search "Spatial Agent" on Appstore or from <http://apple.co/2eVu5xJ>  
[Android Draft version](#)

Contact: Nagaraja Rao Harshadeep

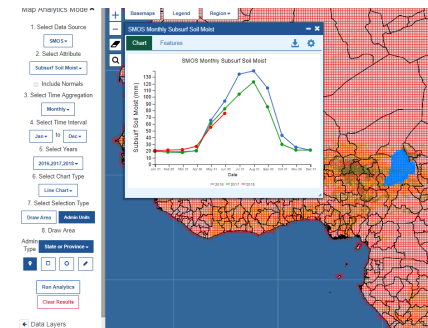
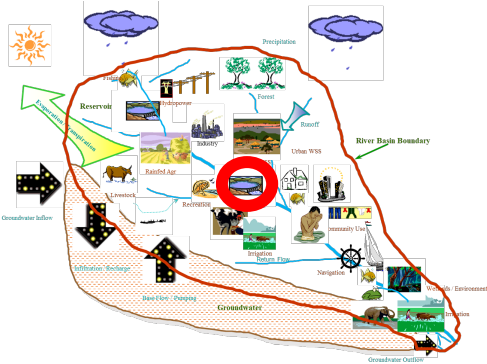
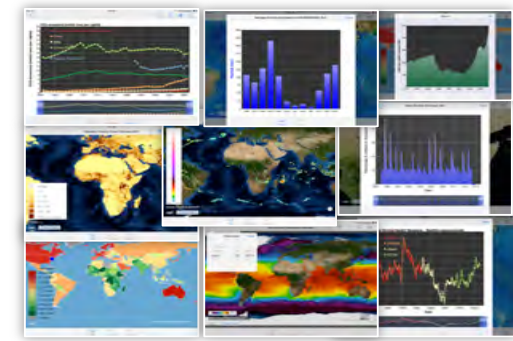




# Illustrative Interactive Dashboards

## Example for Dam Operation

Decisions to be Supported: **When to release? How much to release?**



### Climate

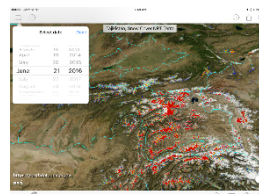
- Rainfall in upstream watershed (GPM, in-situ gauges/radar, CHIRPS, ...) – current & historical
- Weather forecasts (short-term, seasonal); Storm tracks
- Snowmelt estimates (if relevant)...

### Flows

- Current and historical flows (from in-situ observations, satellite estimates where possible)
- Dam inflow forecasts (e.g. from GEOGLOWS Global Streamflow Forecasting, local forecasts)...

### System Levels

- Current and historical levels of this dam's reservoir as well as other storages in system (e.g. from satellite, in-situ gauges)...

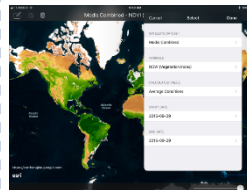
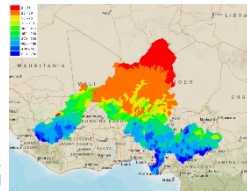


### Downstream

- Irrigation status (crops, crop stage from earth observation and in-situ)
- Soil and sub-surface soil moisture, groundwater (from earth observation and in-situ)...

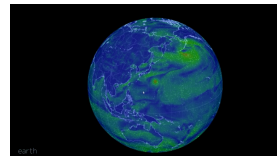
### Other Data & Analytics

- Inundation forecasts
- Systems water infrastructure needs
- Systems model to explore implications of alternative dam operations
- Hi-resolution Satellite data
- Crowdsourced data



...

Need to draw upon global and other accessible data and analytic services to make interactive maps, graphs, and analytics for such decision support dashboards that are accessible on portals, apps, e-books, touchscreens, etc.





**Reimagine Knowledge & Learning...**



# Knowledge & Learning Trends

**What's Out?**



**What's In?**



Hardcopy Reports

Interactive e-books

Project by project approach

Programmatic/Thematic Approaches

Face2Face Training

+ multi-media, e-learning, MOOCs, ...

Workshops/Conferences

+ virtual meetings/presentations

Fragmented Stakeholders

More “connected” stakeholders  
(to develop and use science)

Sectoral approaches

Multi-sectoral/ spatial approaches

Fragmented activities

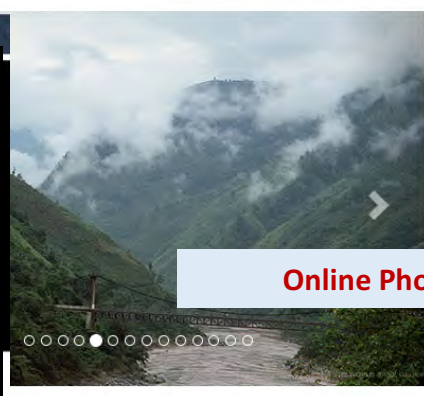
Shared vision partnerships; Interoperability



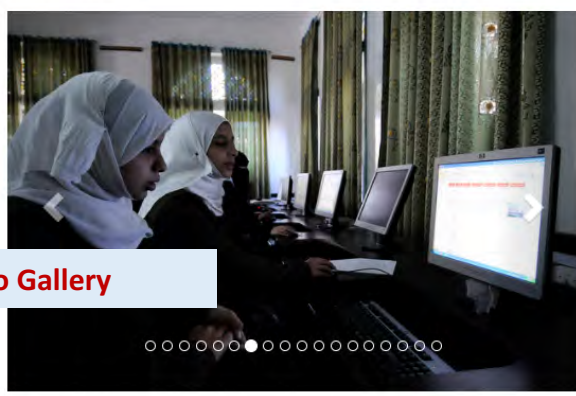
Responsive Design

Example: <http://www.appsolutelydigital.com/WatershedTraining/index.html>

# Illustrative Elements of an E-book



Online Photo Gallery



Online Video Gallery

For development to be environmentally, socially, and economically sustainable, there is a need to be beyond anecdotal approaches to meeting the challenges of today. There is a need to adopt an approach that is based on a long-term, multi-stakeholder, and multi-sectoral approach. This approach is based on a long-term, multi-stakeholder, and multi-sectoral approach. This approach is based on a long-term, multi-stakeholder, and multi-sectoral approach.

**Text/Hypertext**



Modern Data and Tools for Integrated Watershed Management

## Interactive Presentation Slides



Multiple sectors, multiple institutions, linked by water and natural resources... A Typical Watershed...

Water Equivalent Height (cm)

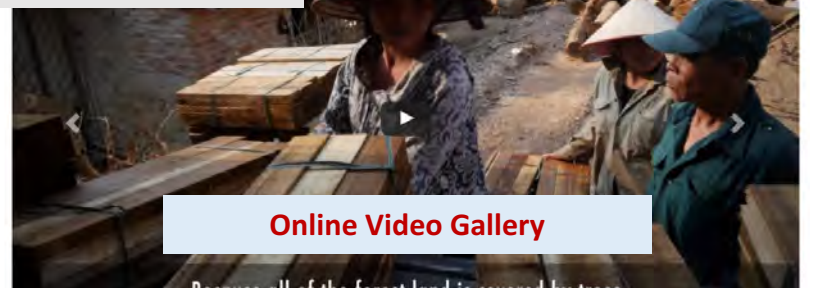


## Interactive Spatial Gateways (e.g. World Bank financed Projects)

Physically, especially in the developing world, it has been extremely difficult to connect the complex, ubiquitous, and often fragmented information and institutional context. The relevant data is often fragmented, often not fully complemented or even close to non-existent, with poor quality.



Interactive Map & Data Services (e.g. web version of Spatial Agent)



Online Video Gallery

### NIGERIAN EROSION AND WATERSHED MANAGEMENT PROJECT

Results

The NERMA project has resulted in an increased understanding of watershed management at the local level. The project has also resulted in an increased understanding of watershed management at the local level. The project has also resulted in an increased understanding of watershed management at the local level.

Interactive Storymaps (e.g. synchronized text and interactive maps and other embeds)

### Watershed Conservation Screening Tool

Estimating how much nature can help keep your water clean

SWATPLUS

Watershed Conservation Report

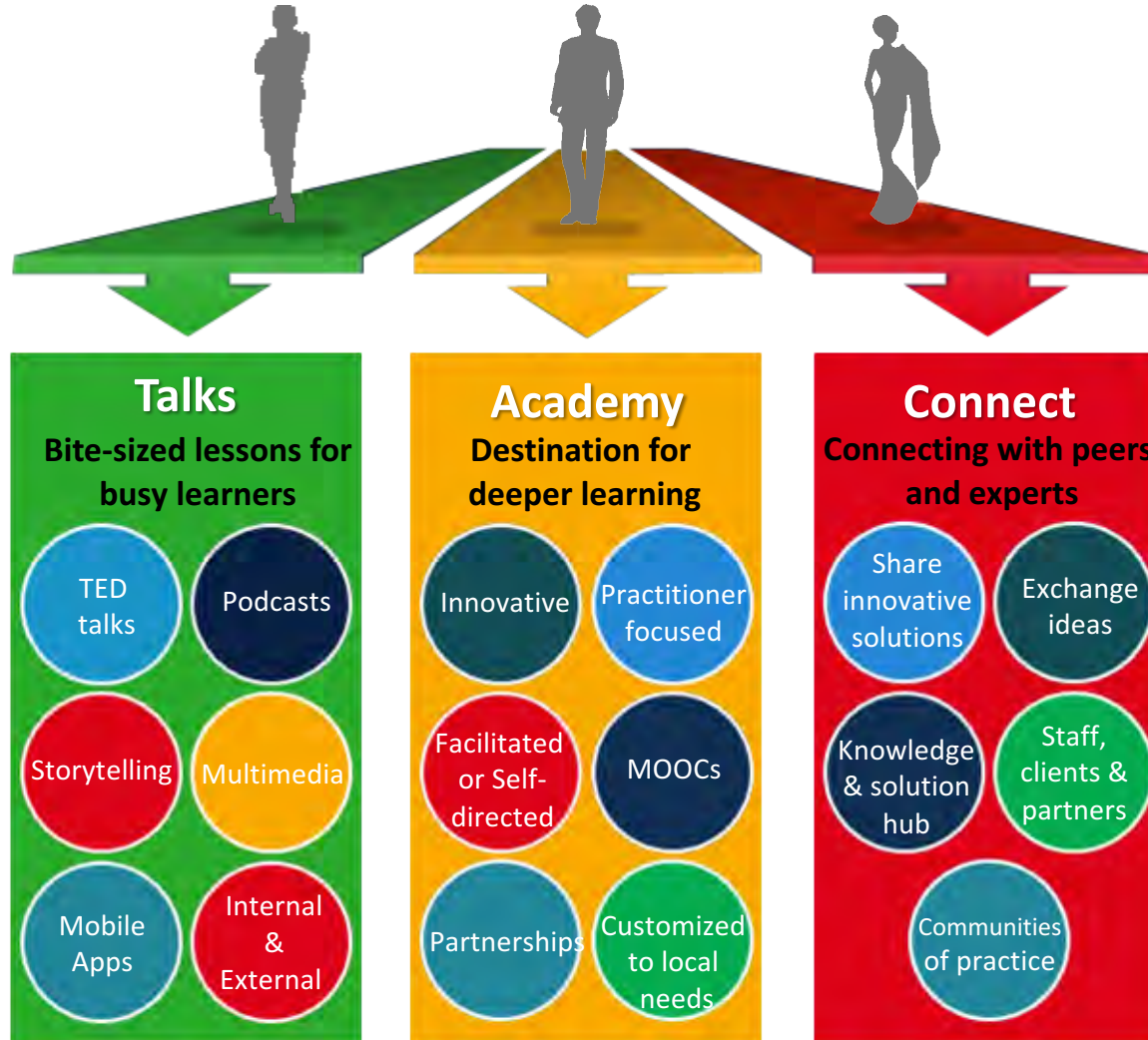
Land Cover

Pollutant Loading

Agriculture Best Management Practices

Interactive online Models





## The OLC is:

- Customizable
- Multi-format
- Interactive

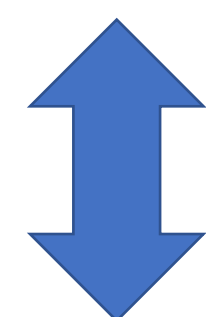
## Users can:

- Rate Courses
- Receive Personalized Recommendations
- Ask An Expert
- Track Learning Progress
- Share Ideas Via Social Media



**Operational Basics & Recent Advances**

**Evolving Global Good Practices**  
**Lessons Learned**



**Government Implementation Experiences**  
**Private Sector Perspectives**



**Online courses, e-books**  
**Professional Networking**



**Videoconference/Collaborative Digital Networks**



**Virtual Seminars on Key Topics from Global Experts**



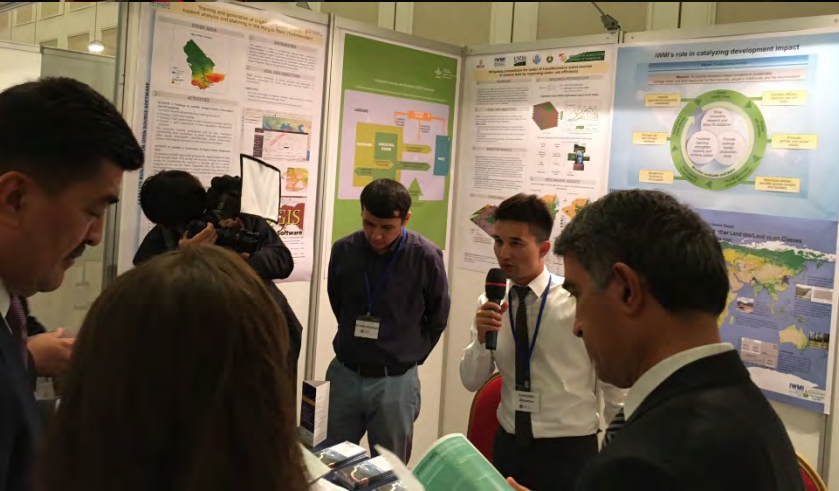
**Virtual Desktop Participation; e-learning**



# Water Week

*Learning from national and global good practices*

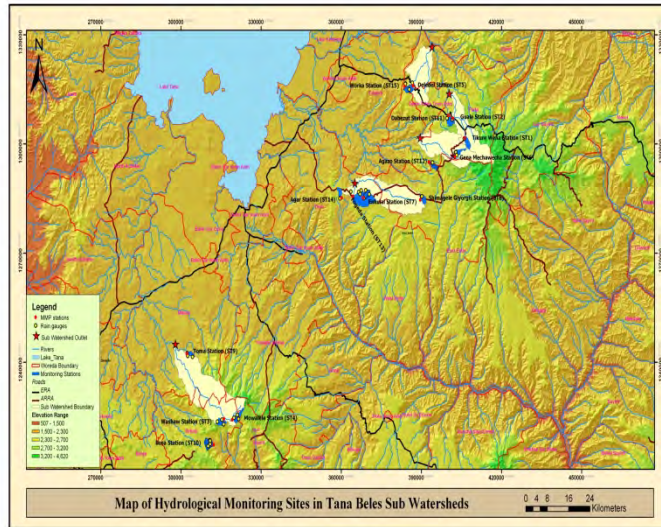
Forum, Expos, Training – e.g.  
<http://centralasiawaterfuture.org>





# Training Communities

(incl. Community Monitoring in Tana-Beles Project, Ethiopia)

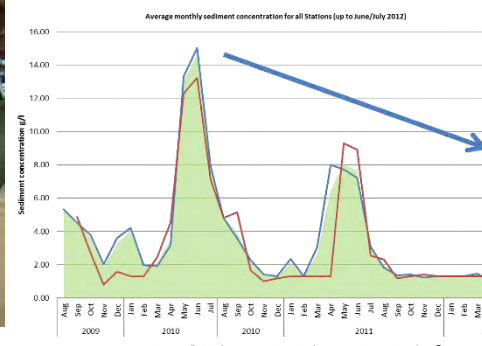


	2009	2010	2011	2012	Total
<b>Staff</b>	3132	11812	12409	6522	33875
<b>Turbidity</b>	3131	12069	12469	6624	34293
<b>Rain</b>	3116	>12777	>15000	>15000	>47000
<b>Flow</b>					>500
<b>Sed samples</b>	1425	4176	3139	1216	9956



Secchi Jug for turbidity

## Sediment Concentration Analyses



Ethiopia: Tana and Beles Integrated Water Resources Management Project

Thanks JB for some of the photos!



# Competitions

Water Appathon

Water Hackathon

Internships

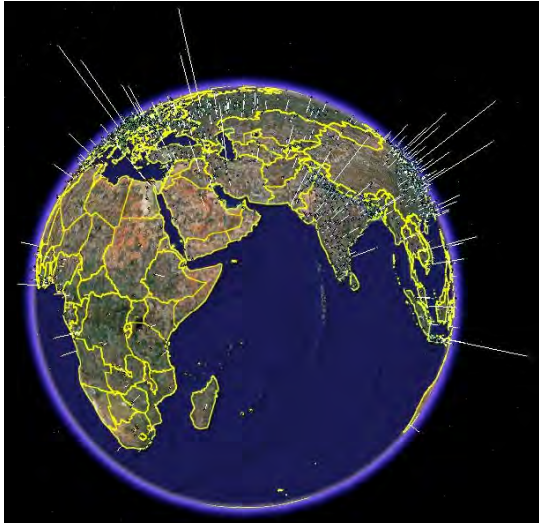
E-books, Designs, Products, Processes...

e.g. Annually/Semi-annually for water-related themes  
and to encourage youth creativity...

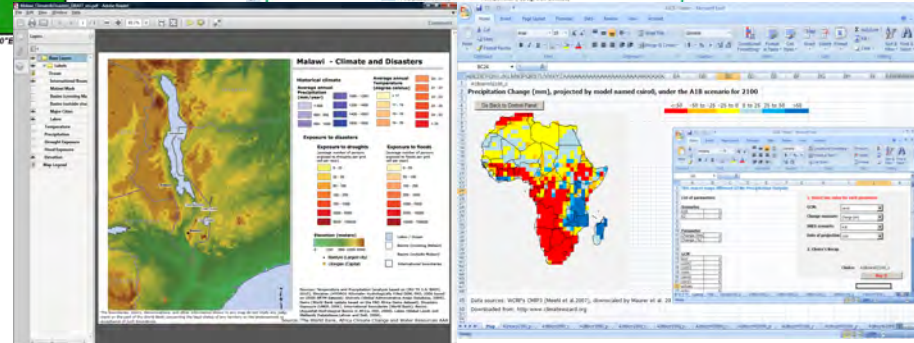
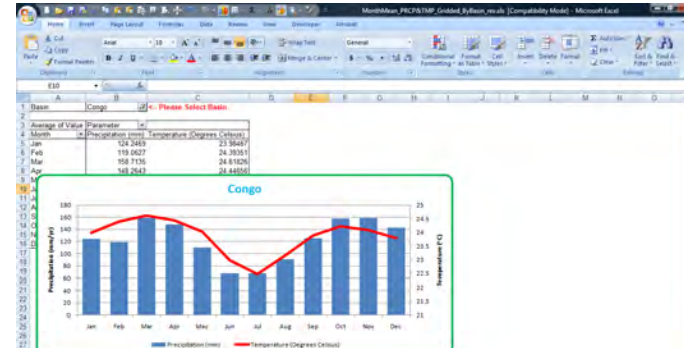




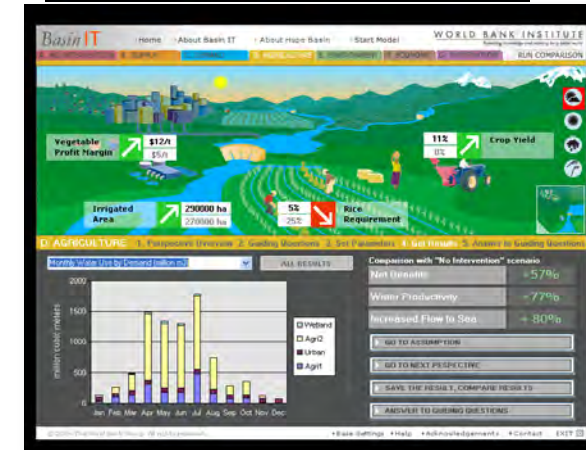
# Information: Many new Innovations



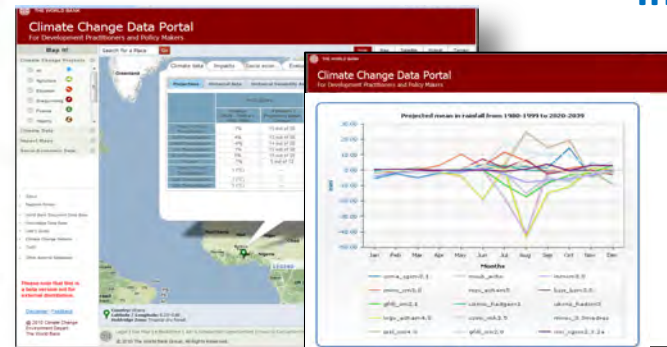
Spatial Tools



Interactive Documents



New Learning Tools



Innovative Hardware  
(e.g. Tablets)

Open Data Online Portals & Apps

Cloud storage/analytics/services



# Modernizing Institutions (Regional, National...)



Situation/ Decision Rooms



Collaborative Workspaces/Internships



Computer Training Room



Audio/Video-Conferencing/ Distance Learning/ Helpdesk



Document, Map & Digital Library



Innovation Marketplace



Collation

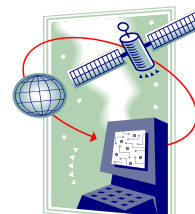
Analysis

Use

Knowledge Repository



Monitoring Hub



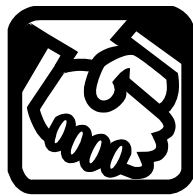
Knowledge Tools/Products Targeted Research



Outreach & Capacity-Building



Institutional Support



Competitions (e.g. Hackathons)

# Looking Ahead...

- Build effective, inclusive partnerships and collaborative frameworks
- Use innovative technologies to “disrupt” status quo
- Develop Global “Wholesale” Platforms to reimagine:
  - Data & Analysis
  - Knowledge & Learning
- Let’s collaborate to further enhance and apply science for International Waters!

# Thanks!



**Nagaraja Rao Harshadeep**

Global Lead (Disruptive Technology)

The World Bank

1818 H St NW

Washington DC 20433

[harsh@worldbank.org](mailto:harsh@worldbank.org)



Download the **Spatial Agent App** (iOS and Android) at: <http://apps.worldbank.org>



# Lenka Thamae – Executive Director, *ORASECOM*



- Executive Secretary for the Orange Senqu River Commission since 2007.
- He leads a team that manages and implements the Commission programme to generate advice for the four basin States that are Botswana, Lesotho, Namibia and South Africa on development, management and conservation of water resources.
- Mr Thamae has previously worked on policy and institutional development in water resources and environmental management at the Southern Africa regional level at SADC and IUCN.
- In addition, in his career, he contributed to the negotiation of the 2000 SADC Protocol on Shared Watercourses, the SADC Regional Environmental Policy and Strategy and other instruments that promote sustainable use of water and natural resources in Southern Africa.



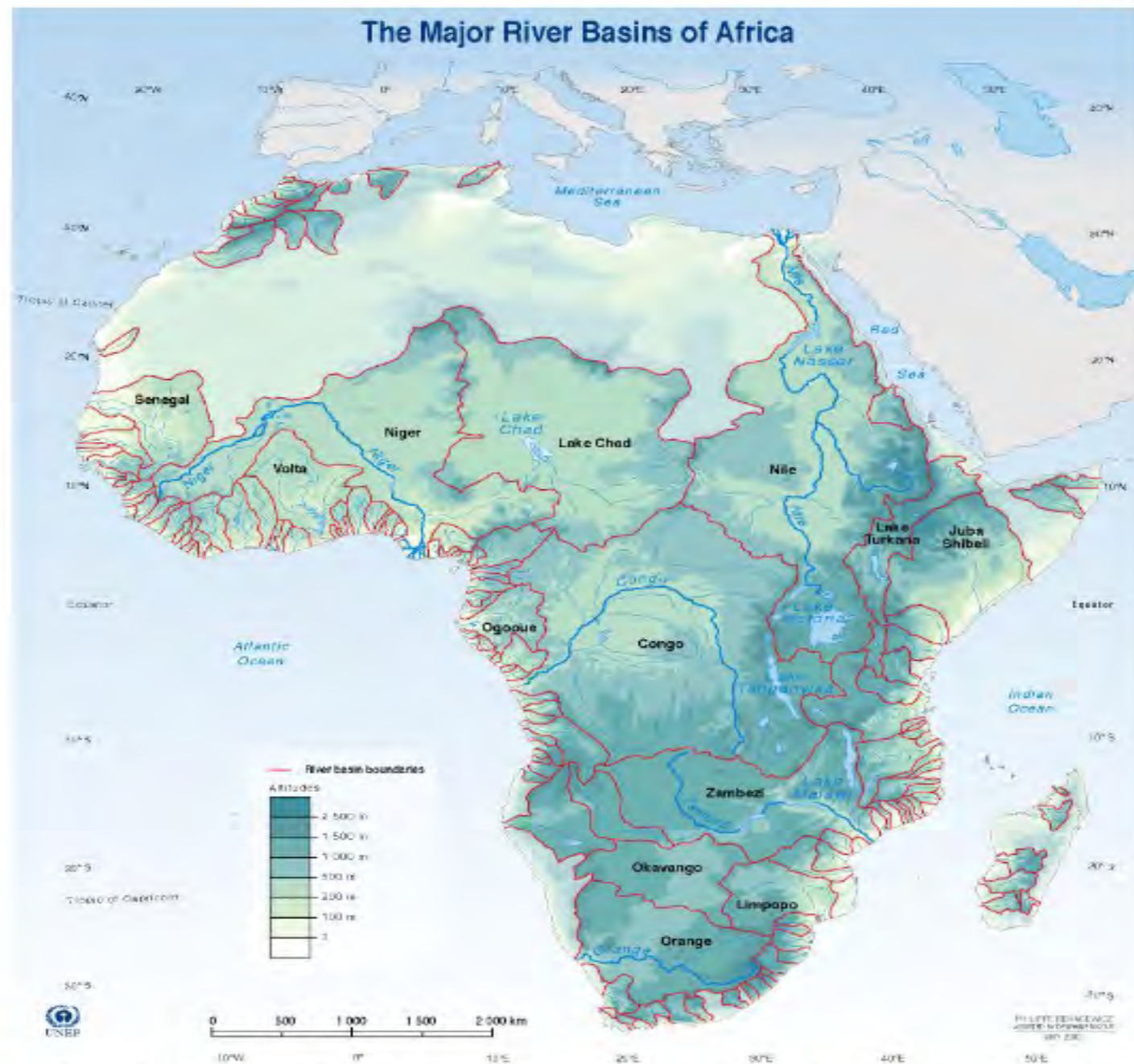
## **9<sup>TH</sup> GEF INTERNATIONAL WATERS CONFERENCE**

**ENHANCING ACCESS AND DISSEMINATION OF KNOWLEDGE TO  
IMPROVE SCIENTIFIC COOPERATION :**

**Case of the Orange Senqu River Joint Basin (JBS)**

**Marrakech 7<sup>st</sup> November 2018**

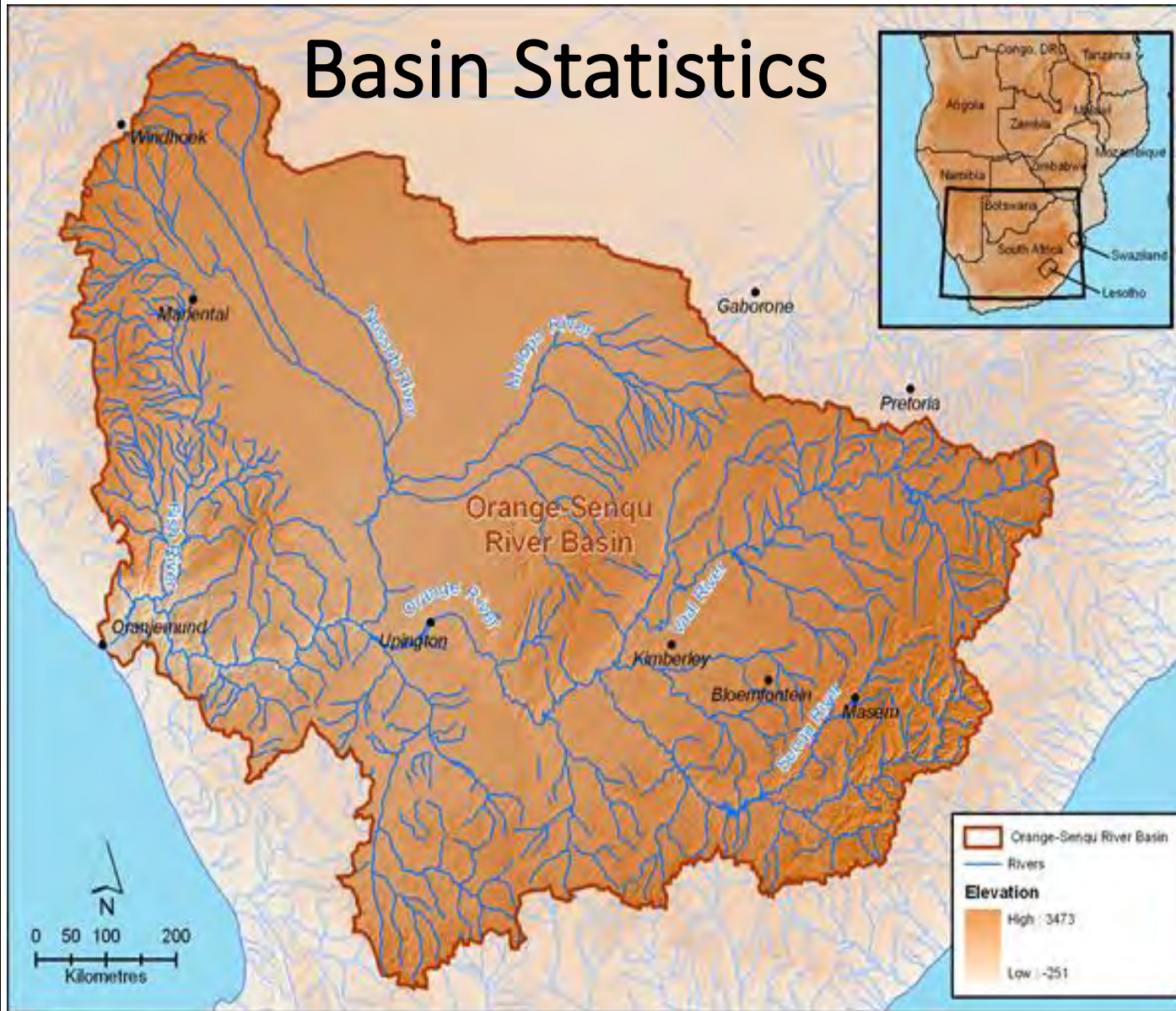
**Lenka Thamae  
Executive Secretary  
ORASECOM  
[www.orasecom.org](http://www.orasecom.org)**



Source: Aaron T. Wolf et al., 1996; Revenga et al., *Watersheds of the World*, World Resources Institute (WRI), Washington DC, 1996; Philippe Rekawicz, *Atlas de poche*, Livre de poche, Librairie générale française, Paris, 1996 (revised in 2001).



# Basin Statistics



Data Sources:  
Digital Elevation Model - CGIAR SRTM Database  
Rivers - UNDP/GEF  
Dams/Waterbodies - UNDP/GEF

K:\Data\Project\GTZ\419\GIS\MXD\1.RiverBasin\1.1.1\_BasinLandscape\_v1\_20090501.mxd

1. Basin Area : 1 million sq km.
2. Rainfall : 1800mm in Lesotho highlands to 45mm at River mouth.
3. Population: 19 million (Earle et al. 2004).
4. Average annual natural runoff : 12,000 mill. cub. metres (quote flood and drought flows as well) less than half of the flow reaches the river mouth on the Atlantic Ocean.
5. Basin States: Botswana, Lesotho, Namibia and South Africa.



Orange-Senqu sources in highlands of Lesotho at around 3000 metres above mean sea level (alpine wetlands “sponges”) – very important for sustaining flows especially in dry season and during drought periods.







Katse dam: central collection point for transfer of water to South Africa (Gauteng).





*Sasol Petrochemical Plant Secunda*

*Produces >30% of SA's Petrol/Diesel  
from coal*

An aerial photograph of the Sishen Iron Ore Mine in South Africa. The image shows a vast, deep open-pit mine with terraced walls. The ground is a mix of reddish-brown soil and greyish-blue iron ore. Several large yellow mining trucks are visible, some driving along a winding road and others parked. A small white cloud of dust or smoke is rising from the center of the mine. In the background, there are more terraced levels of the mine and some industrial structures.

*Sishen Iron Ore Mine*

*One of the largest single open pit  
excavation in the World*





## Confluence of Vaal and Orange/Senqu Rivers





The River Mouth along the border between Namibia and South Africa has been declared a Ramsar Site on both sides of the border.



11/29/18



Alluvial diamond mining operations are also found on the lower Orange-Senqu, the estuary and along shallow sea bed of the Atlantic Ocean.



# ***The Orange Senqu Basin Joint Basin Survey (JBS)***

- *Water Quality and pollution prioritised as challenge by the Commission since its formation.*
- *ORASECOM Tasked with, among other things, “establishing standardised form of collection, processing and disseminating data or information ...” and ...prevention of pollution” (in the Agreement).*
- *During an exchange visit to the International Commission for the Protection of the Danube River ICPDR (2008) ORASECOM Delegation learnt of approach on joint transboundary river water quality monitoring with potential for adaptation to Orange Senqu River Basin peculiarities.*
- *The First Joint Basin Survey of Water Resources Quality undertaken in 2010 – with support of EU, GIZ and the Lesotho Highlands Development Authority.*
- *A complimentary survey of persistent organic pollutants (POPs) (including heavy metals and polycyclic aromatic hydrocarbons, PAHs) also undertaken in 2010 – with support of UNDP-GEF.*

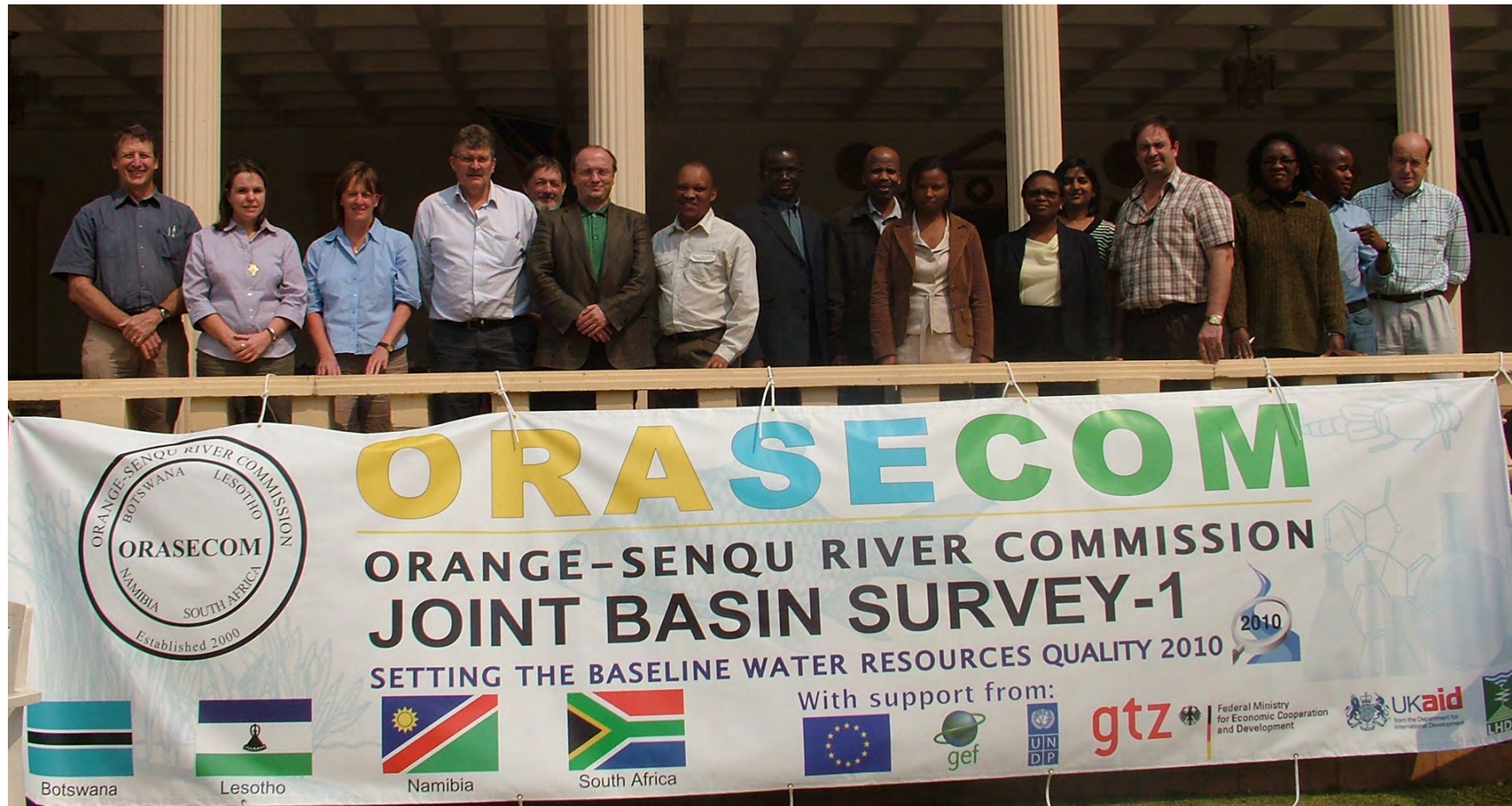
# ***The Orange Senqu Joint Basin Survey***

- *The Joint Basin Survey has now been adopted as a strategic programme of the Commission – undertaken every 5 years.*
- *The 2015 Joint Basin Survey (JBS 2) was supported by GIZ, CRIDF and the Lesotho Highlands Development Authority. And incorporated schools competitions in all 4 state Parties.*
- *While JBS 1 was fully financed by ICPs, State Parties contributed some Euro 72,000 towards JBS 2 budget.*
- *Results of each JBS include: technical report, coffee table report, maps, figures, and a process report (fully costed for future projection, budgeting and time management).*
- *The report also incorporates finding and trends from continuous monitoring by national authorities.*
- *All data and information gathered through the JBS are accessible through the ORASECOM water Information system (WIS) on [www.orasecom.org](http://www.orasecom.org)*

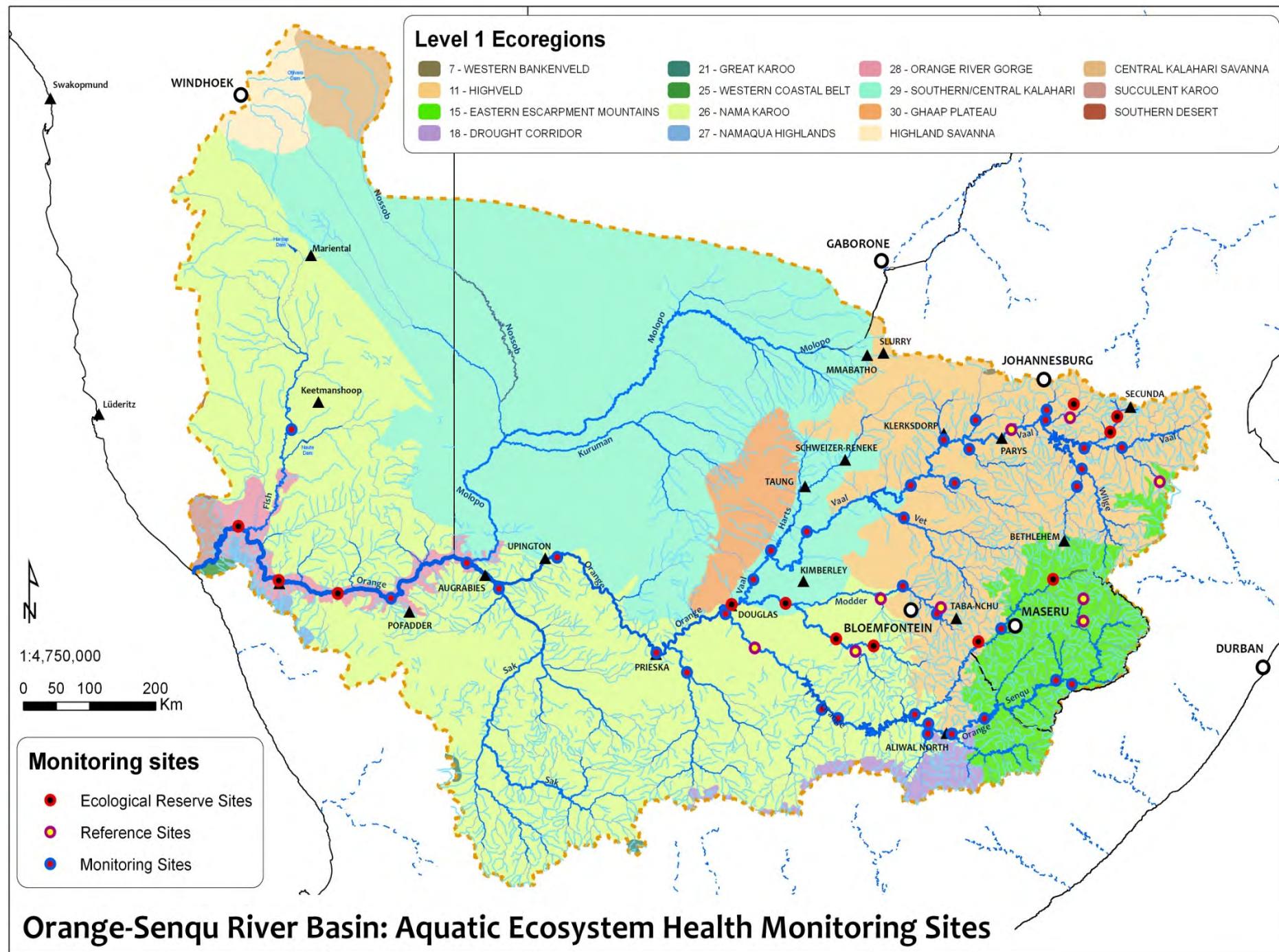


# JBS Coordination

- Planning of the JBS is undertaken by a 'Core Team' made up of 2 experts from each Member State. Supported by specialists from the International Cooperating Partner supported programmes.
- Five main elements of JBS: Aquatic Ecosystem Health; Water chemistry; POPs and metals; Inter laboratory benchmarking and Public events at five sites.







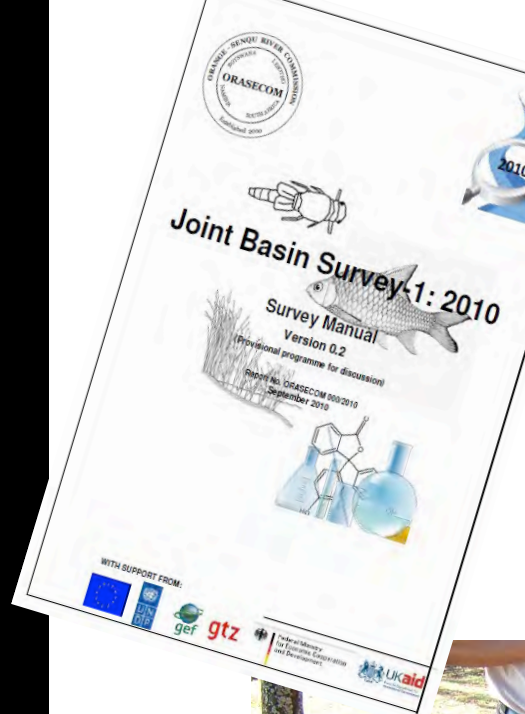


# ***POPs and heavy metals survey in 2010***



- *Sediment samples taken at 61 sites throughout the basin.*
- *Fish collected and tissue samples taken at 4 locations.*
- *Bird eggs collected at 4 locations.*
- *POPs (21 chemicals and chemical classes) analysed.*
- *Heavy metals (42 elements) analysed.*
- *Polycyclic Aromatic Hydrocarbons (PAHs) analysed.*
- *Human Health Risk Assessment conducted.*
- *Scientific report peer reviewed, and published as ORASECOM Report.*

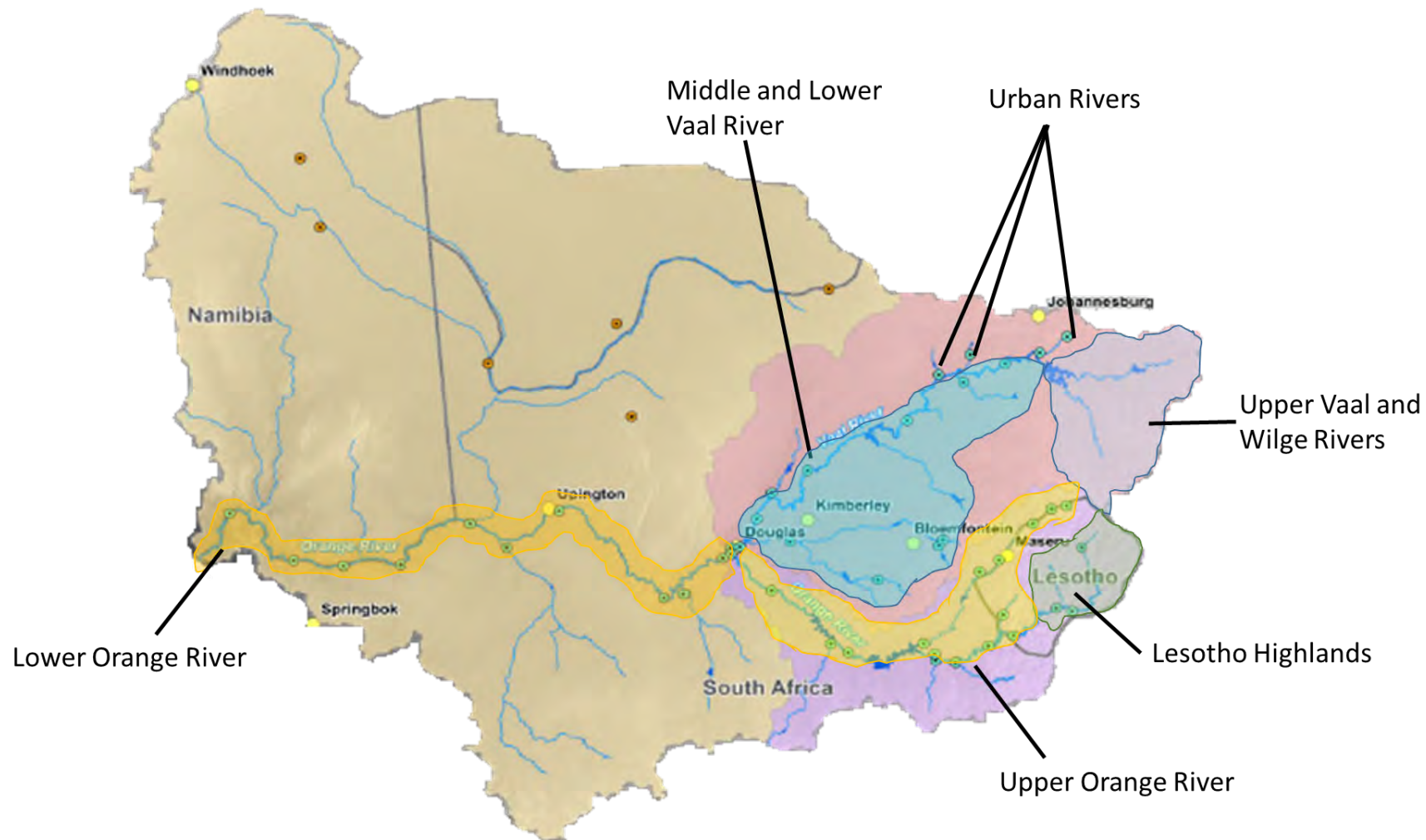






# ***POINTS SAMPLED FOR JBS-2***

***Showing the areas where the river was telling us a similar story***



# WHAT WAS THE RIVER TELLING US?

## Water quality:



Growing pollution problems from the cities and towns will increase the cost of treating the water to safe standards, and is affecting ecosystem functioning.



The low salinity water from the Lesotho Highlands is reducing salt concentrations in the Vaal river System.

## The condition of aquatic ecosystems



Aquatic ecosystems for most of the basin are largely natural to moderately modified and appear to have retained some of their ability to recover from impacts.



Aquatic ecosystems in tributaries in South Africa's Gauteng and North West Provinces, and in the middle Vaal River are in a poor condition. They are likely to have lost much of their ability to recover.

## Environmental flows:



Finding the water required to maintain certain ecological functions is a major challenge for the member countries.

## POPs and Metals



The levels of many of the toxic substances are below international guidelines for much of the System.



The concentrations of some substances are a cause for concern, and in some places concentrations were higher in 2015 than in 2010.



# Lessons

- *The Joint Basin Survey contributes to close collaboration among state Party water quality monitoring agencies.*
- *The programme contributes to improved level of transparency, trust and confidence among the state Parties.*
- *The Survey results are a very useful communication tool to decision makers and political structures.*
- *It is possible to leverage full financial support for joint surveys such as JBS.*
- *Planning for the JBS needs particular attention to, e.g skills availability, logistics and cost.*
- *Staff mobility may hamper long term vision of the JBS.*
- *Availability of requisite facilities strains the joint survey.*

Thank you.

[www.orasecom.org](http://www.orasecom.org)





# Miriam C. Balgos – Senior Associate, *Global Ocean Forum*



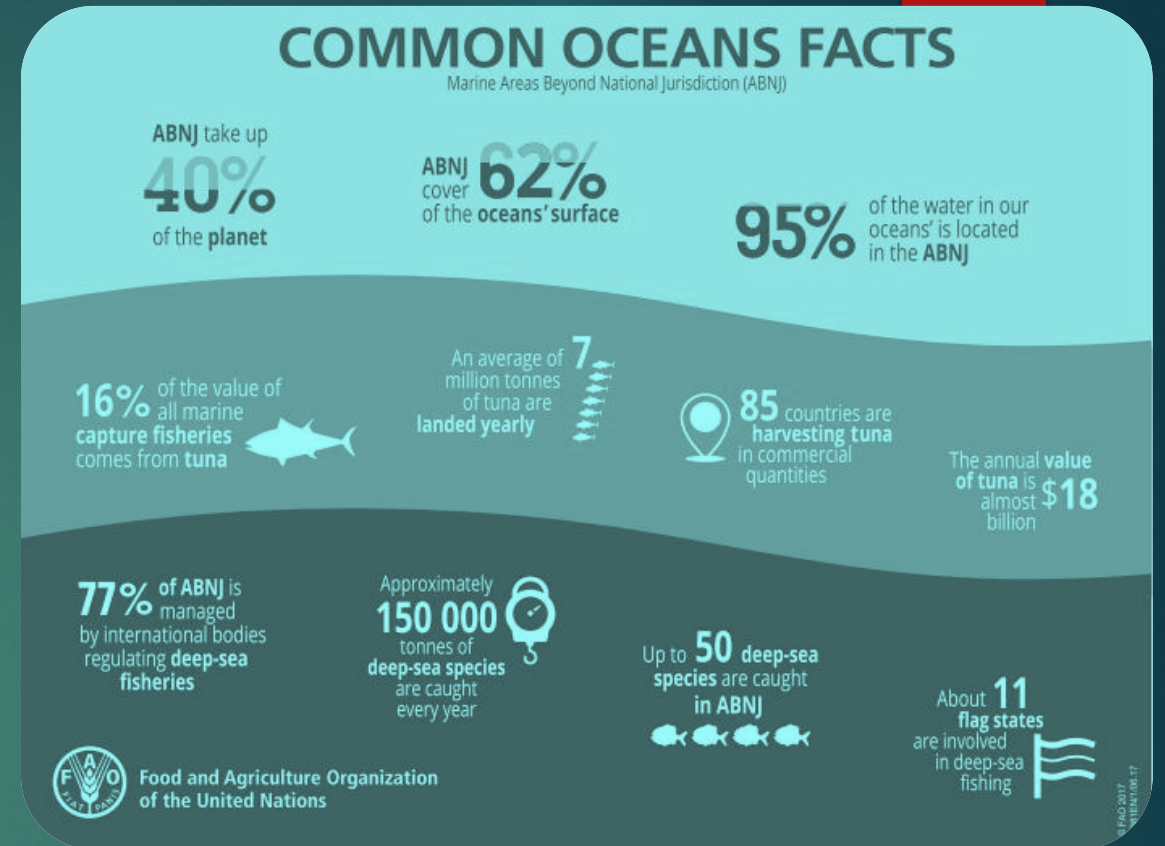
- Senior Associate at the Global Ocean Forum.
- She was formerly Associate Scientist at the College of Earth, Ocean, and Environment, University of Delaware, and Program Coordinator for the Global Ocean Forum.
- Miriam led the UD Gerard J. Mangone Center for Marine Policy team in the organization and conduct of capacity development activities, multi-stakeholder dialogues and policy analyses aimed at advancing the ocean agenda and tracking progress achieved on major ocean-related goals.
- Miriam also worked with the WorldFish Center and the Philippine Council for Aquatic and Marine Research and Development.

# Knowledge Management on Areas beyond National Jurisdiction: Challenges and Strategies for Consideration at the Regional and National Levels

MIRIAM C. BALGOS

GLOBAL OCEAN FORUM

WORKSHOP ON ENHANCING ACCESS AND DISSEMINATION OF KNOWLEDGE TO IMPROVE INTERNATIONAL SCIENTIFIC COOPERATION, 7 NOVEMBER 2018, IWC-9, MARRAKECH, MOROCCO





# ABNJ Capacity Project under the GEF/FAO Common Oceans Program

- ▶ Lessons learned from regional experiences drawn from multi-stakeholder dialogues (Rome, 2015; Grenada, 2016)
  - ▶ Major issues and challenges facing the management of fisheries, biodiversity and other ABNJ uses
  - ▶ Knowledge and information that exists within different sectors and organizations to address these challenges
  - ▶ Best practices in ABNJ
  - ▶ Gaps to be addressed in the Management and Governance of ABNJ
  - ▶ Future activities and research
- ▶ Capacity-building (Communities of Practice, Policy Brief, Regional Leaders training, global survey)
- ▶ ABNJ Portal and Outreach to the Media and the Public



Data/  
knowledge  
management  
is key  
throughout

# Building Capacity for ABNJ

## Individual Pathways to Capacity Development



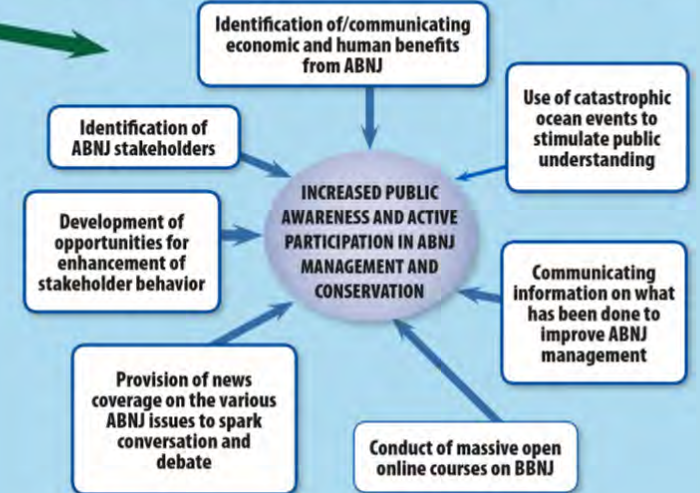
## Institutional Pathways to Capacity Development



## ABNJ Capacity Project Contribution

- Multi-stakeholder workshops and high level policy dialogues provided venues for discussion and exchanges
- ABNJ Regional Leaders Program provided training on ABNJ for individuals from governments and other organizations
- ABNJ Communities of Practice provided a platform for networking and exchanges
- Capacity Policy Brief provided input to BBNJ Intergovernmental Conference
- Outreach to the Media and Public activities provided input to raise the profile of ABNJ and create public awareness

## Societal Pathways to Capacity Development



## BBNJ Process

BBNJ Ad-Hoc Working Group  
↓  
BBNJ PrepCom Process  
↓  
BBNJ Intergovernmental Conference (IGC)

For more information, contact:  
**Dr. Biliana Cicin-Sain, Project Manager,**  
[bilianacicin-sain@globaloceans.org](mailto:bilianacicin-sain@globaloceans.org)





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## Common Oceans - A partnership for sustainability in the ABNJ



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Importance of capacity building for a new agreement on BBNJ



# Among major issues and challenges facing management of fisheries, biodiversity and other ABNJ uses


- ▶ Ensuring that baseline data for management is in place, in communicating and coordinating data and information, and in using data and information for control and enforcement
- ▶ Dictate how data are managed:
  - ▶ Different management structures/styles of RFBs, RSPs, LMEs, political/economic communities, other regional organizations
  - ▶ Different regional/sub-regional priorities



# Knowledge and information that exists within different sectors and organizations to address these challenges

Long-term series of high quality data, e.g.:

- ▶ in NAFO - Joint Fisheries Commission and Scientific Council Working Groups
- ▶ Addresses the need for more accurate catch reporting data on which to base scientific advice and fisheries management decisions
- ▶ Availability and quality of data depend on specifics, on what information is needed and what will it be used for



# Knowledge and information that exist within different sectors and organizations to address these challenges

- ▶ Sufficient strategic information to understand trends, e.g., long-term pollution data exists
- ▶ Relevance to ABNJ? - datasets have been primarily drawn from coastal and marine regions, not much from deeper and offshore waters in ABNJ



# Examples of regions with resources for long-term monitoring and assessment to inform decision-making: Northeast Atlantic and Mediterranean

Resources include:

1. EMODnet (European Marine Observation and Data Network;
2. MAPAMED (Marine Protected Areas in the Mediterranean)

Strong in establishing a case for the protection of ABNJ based on scientific information, e.g., the long-term data series for the Sargasso Sea

# Gaps to be addressed in the Management and Governance of ABNJ, inter alia:

Specific data requirements, e.g.:

- ▶ Human uses (other than fisheries) and their impacts
- ▶ Deep-sea habitats and species
- ▶ Invasive species
- ▶ Mediterranean VMEs, and
- ▶ Socio-economic data in particular



# Future activities and research

- ▶ Strengthening inter-sectoral cooperation/collaboration, e.g., the use of inter-operable databases promoting joint work (compare NAFO and NEAFC/OSPAR) has started in some areas but still needs to mature
- ▶ Enabling stronger integration in building future scenarios, e.g. making use of EBSA descriptions
- ▶ Developing a common understanding of ecosystem function and structure vis-à-vis biodiversity conservation and maximum sustainable yield



# Capacity development: A major factor in data/knowledge management, and vice versa



ABNJ Regional Leaders Program 2016



August 2018



## Policy Brief on Capacity Development as a Key Aspect of a New International Agreement on Marine Biodiversity Beyond National Jurisdiction (BBNJ)



By

**Biliana Cicin-Sain**, Marjo Vierros, Miriam Balgos, Alexis Maxwell, Meredith Kurz, Global Ocean Forum; **Tina Farmer**, FAO, Lead Technical Officer, GEF/FAO/GOF Capacity Development Project; **Atsushi Sunami**, **Miko Maekawa**, **Iwao Fujii**, Ocean Policy Research Institute of the Sasakawa Peace Foundation (OPRI-SPF); **Awmi Benham**, International Ocean Institute; **Julian Barbieri**, **Salvatore Arico**, **Kirsten Isensee**, **Ward Appeltans**, **Harriet Harden-Davies**, Intergovernmental Oceanographic Commission of UNESCO (IOC/UNESCO); **Aimee Gonzales**, **Stephen Adrian Ross**, Partnerships in Environmental Management for the Seas of East Asia (PEMSEA); **Alfonso Ascencio Herrera**, **Chapi Mwango**, **Annekah Mason**, International Seabed Authority; **Ronán Long**, **Larry Hildebrand**, World Maritime University (WMU); **Philippe Vallette**, Nausicaa/World Ocean Network; **Joseph Appiott**, Secretariat of the Convention on Biological Diversity; **Yugraj Yadava**, Bay of Bengal Programme Inter-Governmental Organisation; **Kouete Kofi Afachawo**, Office of the Special Adviser of the President of Republic of Togo; **Odanwu Chizoba Margaret**, Federal Ministry of Justice, Nigeria; **Abdul Rahman Bin Abdul Wahab**, Department of Fisheries, Malaysia; **Andre Polejack**, Ministry of Science, Technology, Innovation, and Communication, Brazil; **Lizanne Aching**, Trinidad and Tobago; **Jenny Bowie-Wilches**, Embassy of Colombia in The Netherlands; **Transform Agorau**, Advisor, Parties to the Nauru Agreement; **Rudolf Hermes**, former Chief Technical Advisor, Bay of Bengal Large Marine Ecosystem Project (BOBLME); **Dominique Benzaken**, Advisor, Government of Seychelles; **Laleta Davis-Mattis**, University of the West Indies, Jamaica; **Nguyen Chu Hoi**, Vietnam National University; **Abou Bamba**, Abidjan Convention; **Rose Lesley Kautoke**, Attorney General's Office, Government of the Kingdom of Tonga; **Bojotthe Butale**, International Law Unit of the International and Commercial Division, Attorney General's Chambers, Botswana; **Kanako Hasegawa**, Institute for Advanced Sustainability Studies.

Prepared with the support of:



Food and Agriculture  
Organization of the  
United Nations



Global Ocean  
Forum

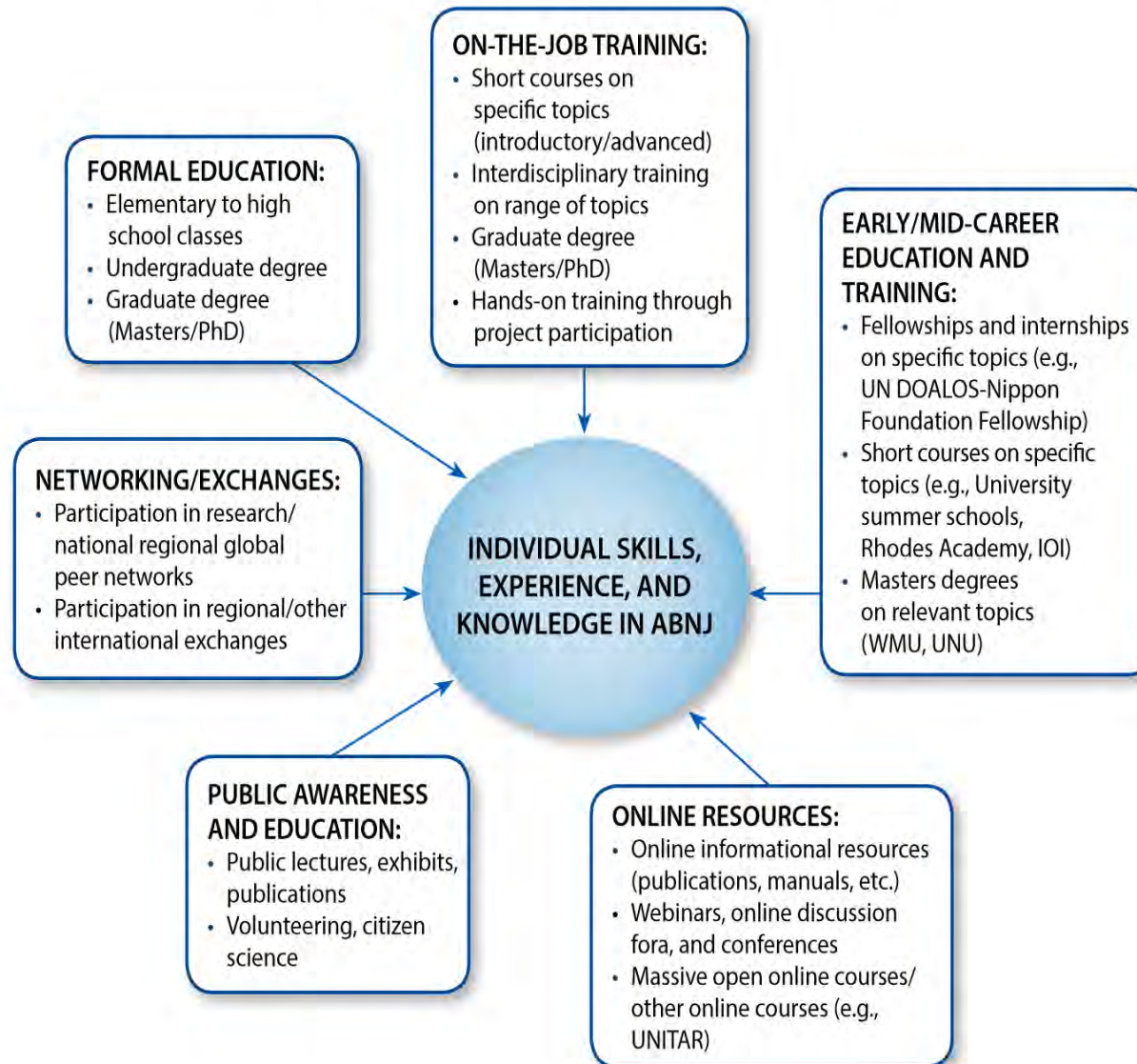


[www.fao.org/in-action/commonoceans](http://www.fao.org/in-action/commonoceans)



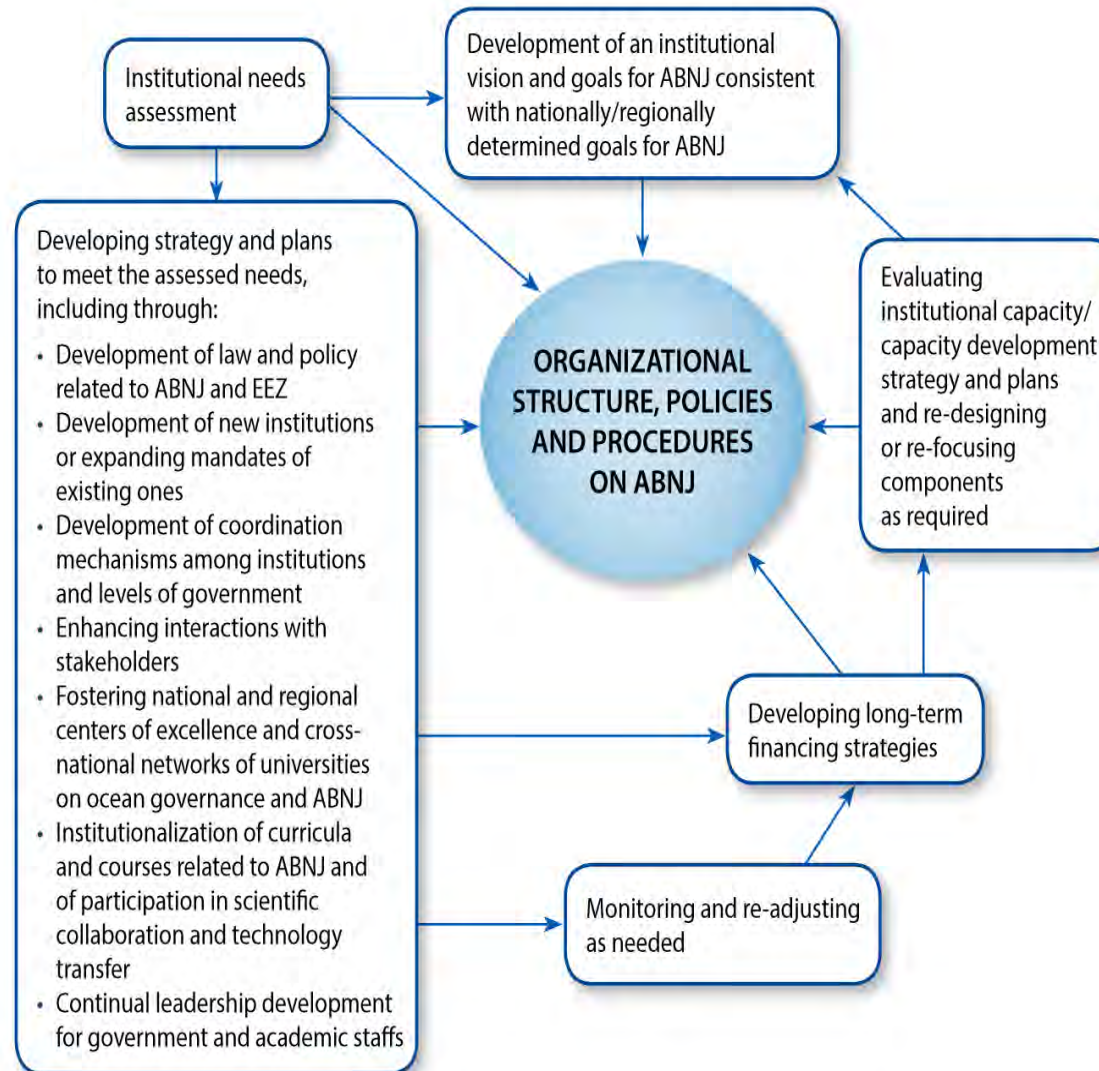


## Individual Pathways to Capacity Development



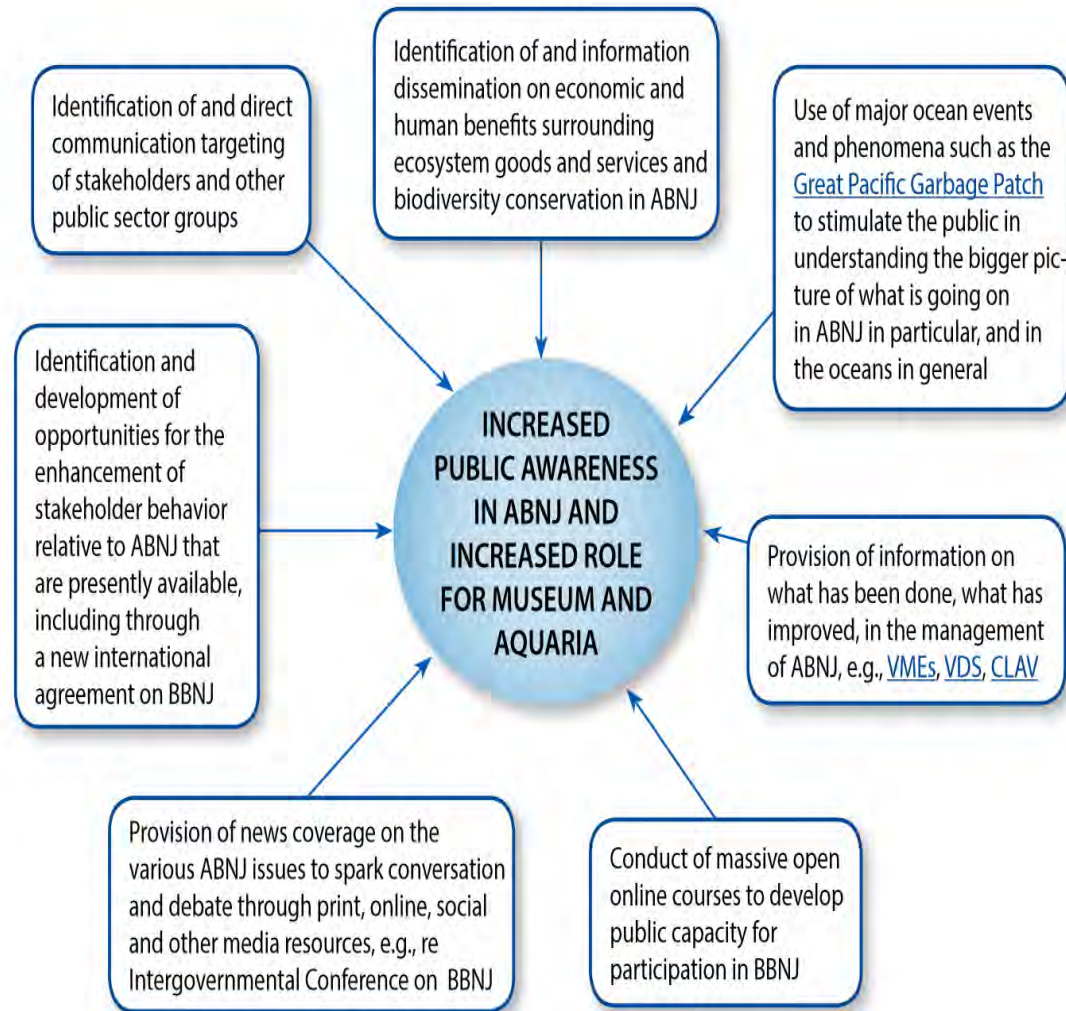


## Institutional Pathways to Capacity Development





## Societal Pathways to Capacity Development





# Outreach to the Media and the Public



High-Level Event and Media Workshop, 26-28 June 2018,  
Nausicaá, France





At Nausicaá, France, the world's first-ever large-scale high-seas exhibit, *Voyage on the High Seas*, was launched on 19 May 2018



# Stock-taking

- ▶ Where are we?
- ▶ Where do we want to go?
- ▶ How do we get there?



**Data is key!**

# BBNJ Process: Development of an international legally-binding instrument on BBNJ under UNCLOS


- ▶ Ad Hoc Open-ended Informal Working Group (2006-2015)
- ▶ Preparatory Committee (2016-2017)
- ▶ Intergovernmental Conference (2018-2020)



## ABNJ and potential sectoral contributions to the SDGs

Goals/targets	ABNJ Sector	ABNJ Contribution to Sustainable Development
Goal 1 No Poverty	Shipping	• Improved access to basic materials, goods and products through shipping is expected to lift millions of people out of poverty
Goal 2 Zero Hunger	Fisheries Shipping	• Sustainable fish production through marine fisheries and aquaculture • Maritime sector enables food and energy to be delivered cost-effectively
Goal 4 Quality Education	All	• Capacity building and technology transfer in ocean and coastal management, in EEZs and ABNJ
Goal 8 Decent Work and Economic Growth	Tourism	• Sustainable tourism in ABNJ
Goal 11 Target 11.2	Transportation	• Sustainable shipping
Goal 12 Responsible Consumption and Production	Sustainable consumption and production	• Reducing and improved use of by-catch; improving post-harvest handling and processing • Ocean-based multinational enterprises to adopt sustainable practices and integrate sustainability into reporting cycles
Goal 12 Targets 3.9, 6.3, 11.6, 12.3-12.5	Chemicals and waste	• Prevention of marine pollution: plastics and other waste, other land-based pollutants; pollution from cargo and cruise ships
Goal 13 Climate Action	Climate change	• Oceans and climate change (ocean-based mitigation, e.g., Blue Carbon, CCS; coastal adaptation, etc.)
Goal 13 Targets 13.b and 14.b SIDS	SIDS	• SIDS as large ocean States
Goal 13, para 31	Atmosphere	• Oceans and climate change; ocean acidification
Goal 16 Peace, Justice and Strong Institutions	Information for integrated Decision-Making & Participation	• Knowledge management in ocean and coastal management in a rapidly changing world; participatory management approaches
	Institutional Frameworks and international cooperation for Sustainable Development	• Enabling environment for national ocean and coastal policy development and international cooperation • Promotion of maritime security coordination and cooperation
Goal 17 Partnerships for the Goals (as part of the means of implementation under each of SDG 1-16 and under SDG 17)	Finance	• Financing for ocean and coastal management, Blue Economy, ocean and climate change
Goal 17	Multi-stakeholder partnerships and voluntary commitments	• Multi-stakeholder partnerships and voluntary commitments for oceans and coasts initiatives
Goal 17	Science	• Science-policy integration; science as basis for ocean and climate change initiatives, capacity building and technology transfer, etc.
Goal 17 Target 17.9	Capacity building	• Capacity building on BBNJ
Goal 17	Technology	• Technology development, transfer/exchange between and among countries
Goal 17	Trade	• Trade and related issues associated with EEZs and ABNJ resource exploitation





**"Let us go further than SDG 14 targets on marine protected areas ... A new treaty on marine biodiversity beyond national jurisdiction, with teeth and vision, could be the "Paris Agreement for the ocean"."**

Sir Richard Branson, Founder of Virgin Group, World Oceans Day at UN Ocean Conference, 13 June 2017



# Cooperation and collaboration within the IW community

- ▶ GEF objective on ABNJ
- ▶ TDA-SAP process – revise to better address ABNJ/link to EEZs more adequately?

Steps in the TDA process	Considerations for ABNJ
Steps in the SAP process	Considerations for ABNJ

- ▶ Support for the BBNJ process

# How incorporating ABNJ issues in the TDA-SAP process benefits the ABNJ process and vice versa

- ▶ The TDA-SAP process would increase awareness of ABNJ among government and other stakeholders as a result of their participation in the TDA-SAP process - **raises the ABNJ profile; puts ABNJ in the national agenda**
- ▶ The TDA would provide the factual basis in the identification of issues that affect the EEZs, transboundary waters, and ABNJ and interlinkages, and in the development of alternative solutions
- ▶ The SAP would help in the identification of global benefits derived from ABNJ emanating from international and national action in national/transboundary/international waters
- ▶ The SAP would help in development of institutional mechanisms at the regional and national levels for addressing ABNJ issues



# How to define national interests in ABNJ? Consider:

- ▶ Nationally Determined Goals (NDGs) for BBNJ (an adaptation of Nationally Determined Contributions (INDCs) for greenhouse gas emissions reductions within UNFCCC framework)
- ▶ Allow countries to set goals and priorities, assess capacity needs in regards to an ILBI under UNCLOS
- ▶ According to their own national priorities, capabilities, and responsibilities
- ▶ May be jointly carried out by a group of countries as a step in a regional planning process for regional waters

# Challenge at all levels:

- ▶ How do we manage data and information to efficiently and effectively serve the needs for the management of ABNJ within the context/framework for:
  - ▶ BBNJ process and subsequent implementation
  - ▶ 2030 Sustainable Development Agenda
  - ▶ A Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects
  - ▶ United Nations Decade of Ocean Science for Sustainable Development (2021-2030), OBIS
  - ▶ Other existing regional and international frameworks



# Abdel Kader Dodo – Project Manager, *Sahara and Sahel Observatory*



- Mr. Abdel Kader Dodo Hydrogeologist with a Ph.D., Senior Lecturer at the Abdou Moumouni University in Niamey (Niger).
- He was National the Director of Water Resources at the Ministry of Water Resources and currently workin at the Sahara and Sahel Observatory (OSS) in Tunis (Tunisia) as Project Manager also in charge of the Water Department.

## **"Sustaining International Waters Cooperation"**

**Enhancing access and dissemination of knowledge to  
improve international scientific cooperation**

**“OSS experiences on Waters Cooperation”**

**Wednesday, November 7<sup>th</sup>, 2018**

**Venue: Agdal Hall**

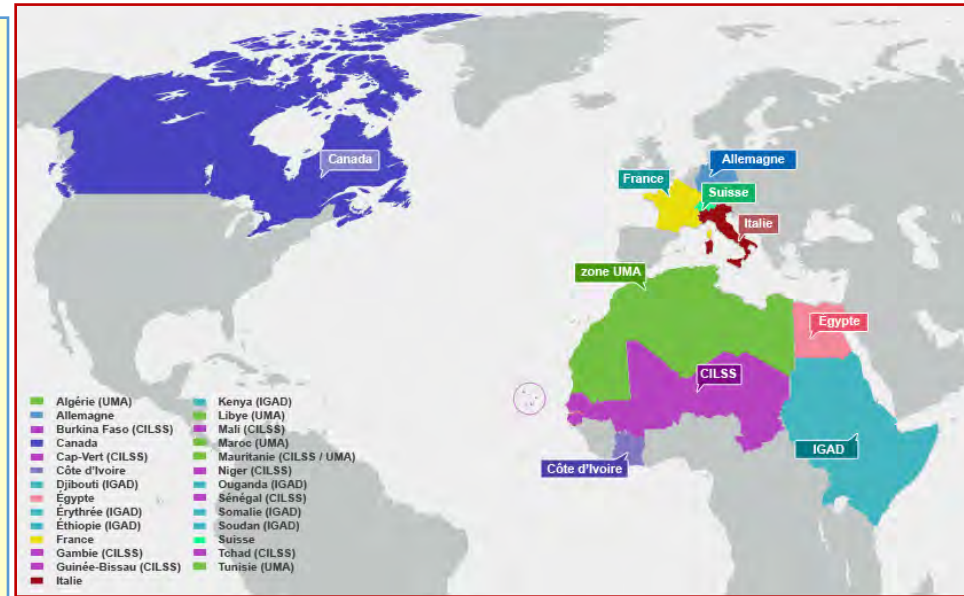
**Time: 16:00 – 17:30**



# OSS: INTERNATIONAL ORGANISATION

## 32 Member States

- **25 African Countries:** Algeria, Benin, Burkina Faso, Cameroon, Cape Verde, Chad, Côte d'Ivoire, Djibouti, Egypt, Eritrea, Ethiopia, Gambia, Guinea-Bissau, Kenya, Libya, Mali, Mauritania, Morocco, Niger, Nigeria, Senegal, Somalia, Sudan, Tunisia & Uganda.
- **7 Non-African Countries:** Belgium, Canada, France, Germany, Italy, Luxemburg & Switzerland.
- **13 Member Organizations:** UNESCO, FAO, UNCCD, UMA, IGAD, CILSS, CEN-SAD, CBLT, APMGV, CARI, ENDA, RESAD, CRTEAN



## Missions

- to support its African member countries in the sustainable management of their natural resources in an unfavorable context of climate change, based essentially on knowledge transfer, capacity building and awareness-raising.
- A North-South-South partnership platform

## TWO MAJOR PROGRAMMES : WATER & ENVIRONMENT

OSS Programmes and Projects are financed by voluntary contributions, grants and donations from its members and partners.

OSS works with its member countries according to the principle of subsidiarity.

## What OSS offers ?

- **Structured Databases** for Water & Environment
- **Hydrogeological Modelling** for groundwater Management (Water balance, simulating the water abstraction impacts, ...)
- **Modelling** for assessing the water abstraction through **Remote Sensing**
- **Indicators** to monitor Water & Environment
- **The Consultation Mechanism** to be implemented by riparian countries (Governance of shared Water)
- **Web Geoportals, Water Information System**
- **Capacity building** for Member States (Databases, GIS, Modelling, Remote Sensing, IWRM, )
- **Access to Climate Funds:** As GCF & AF Entity, OSS provides its members and partners with technical and institutional support to develop project proposals to address the impacts of climate change and contribute to countries' adaptation and mitigation efforts.



# North Western Sahara Aquifer System (SASS)

**Countries:** Algeria, Libya, Tunisia

**Area:** 1.000.000 km<sup>2</sup>

**Theoretical Reserves (Fossil Water):** 60.000 Billion m<sup>3</sup>

**Recharge:** 1 billion m<sup>3</sup>/year

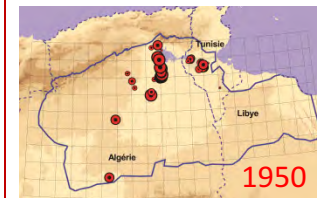
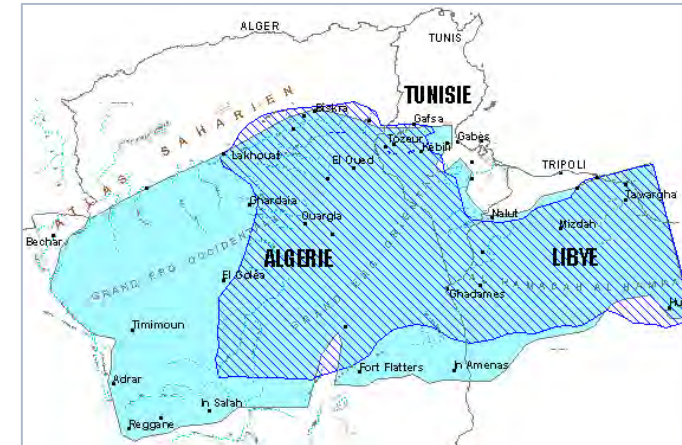
**Water Demand (m<sup>3</sup>/year):** 600 Million (1970), 2.5 Billion (2000), 8 Billion (2030)

**Increase of irrigated Area (ha):** 50.000 (1970), 170.000 (2000), 400.000 (2030)

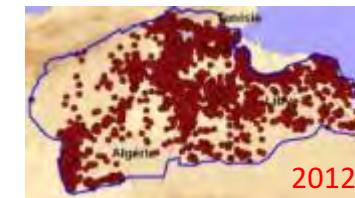
**Abstraction (m<sup>3</sup>/year):** 0.6 milliard (1950), 2.7 milliards (2012), 3,1 milliards (2016)

**Over Water abstraction →**

- Water salinization, Disappearance of artesianism, Saline water intrusion into the gulf of Syrte (Libya)
- Drying up of Tunisian outlets & “foggaras” in Algeria



400 boreholes



16000 boreholes



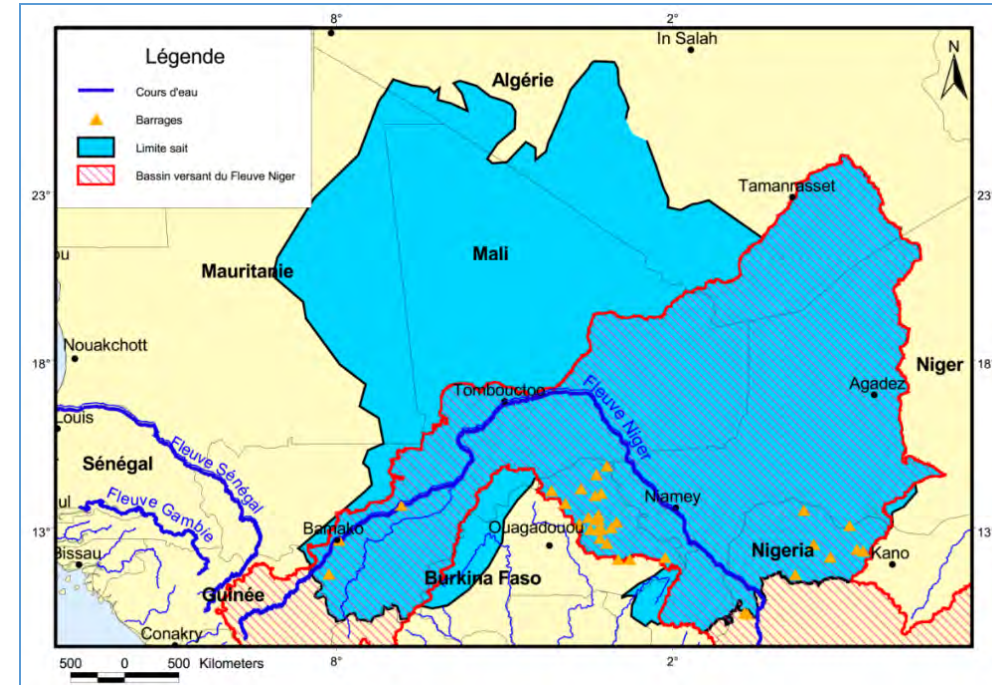
Consultation Mechanism initiated in 2002 et operational since 2008 between the 3 countries

## Main Outputs/Outcomes:

- Management tools developed (DB, GIS, Models, Remote Sensing) → Knowledge improved
- Hydro-economic Model (Water valuation)
- Countries capacities on groundwater management strengthened
- Consultation Mechanism established
- Improve the agricultural productivity of irrigation through the rational use of water & production techniques

# The Iullemeden Taoudeni / Tanezrouft Aquifer Systems

- ❖ **7 Countries:** Algeria, Bnin, Burkina Faso, Mali, Mauritania, Niger and Nigeria
- ❖ **Area:** 2.500.000 km<sup>2</sup> - 2<sup>nd</sup> largest aquifer in Africa : 2,5 million km<sup>2</sup>, after the Nubian Sandstone Aquifer System (2,6 million km<sup>2</sup>)
- ❖ **Population:** 30 million inhab. (10% of total ECOWAS population)
- ❖ **Exploitation :** 350 million m<sup>3</sup> /year



1<sup>st</sup> Ministerial Meeting  
(Bamako, 2009)

## Main Outputs/Outcomes:

- Management tools developed (DB= 120.000 boreholes, GIS, Models, Remote Sensing) → Knowledge improved
- Models: Groundwater resources directly connected to Niger River flow:
  - Niger River supplies Taoudeni/Tanezrouft with 1.5 billion m<sup>3</sup>/year
  - Niger River receives from Iullemeden 3.3 billion m<sup>3</sup>/year
  - A renewable water resources potential: 19 billion m<sup>3</sup>/year
- Zones with high groundwater potential identified
- Consultation Mechanism established

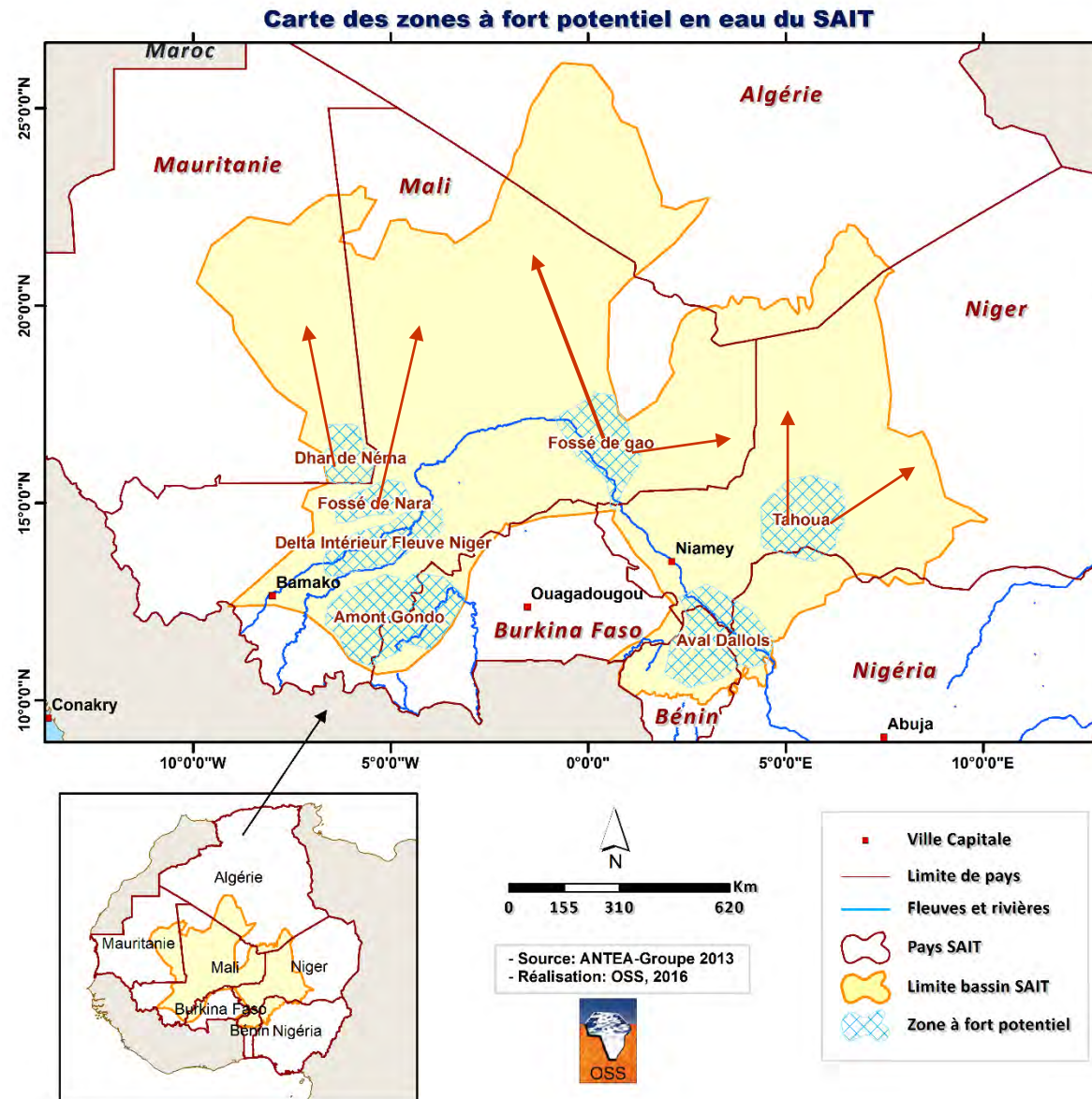


2<sup>nd</sup> Ministerial Meeting  
((Abuja, 2014))

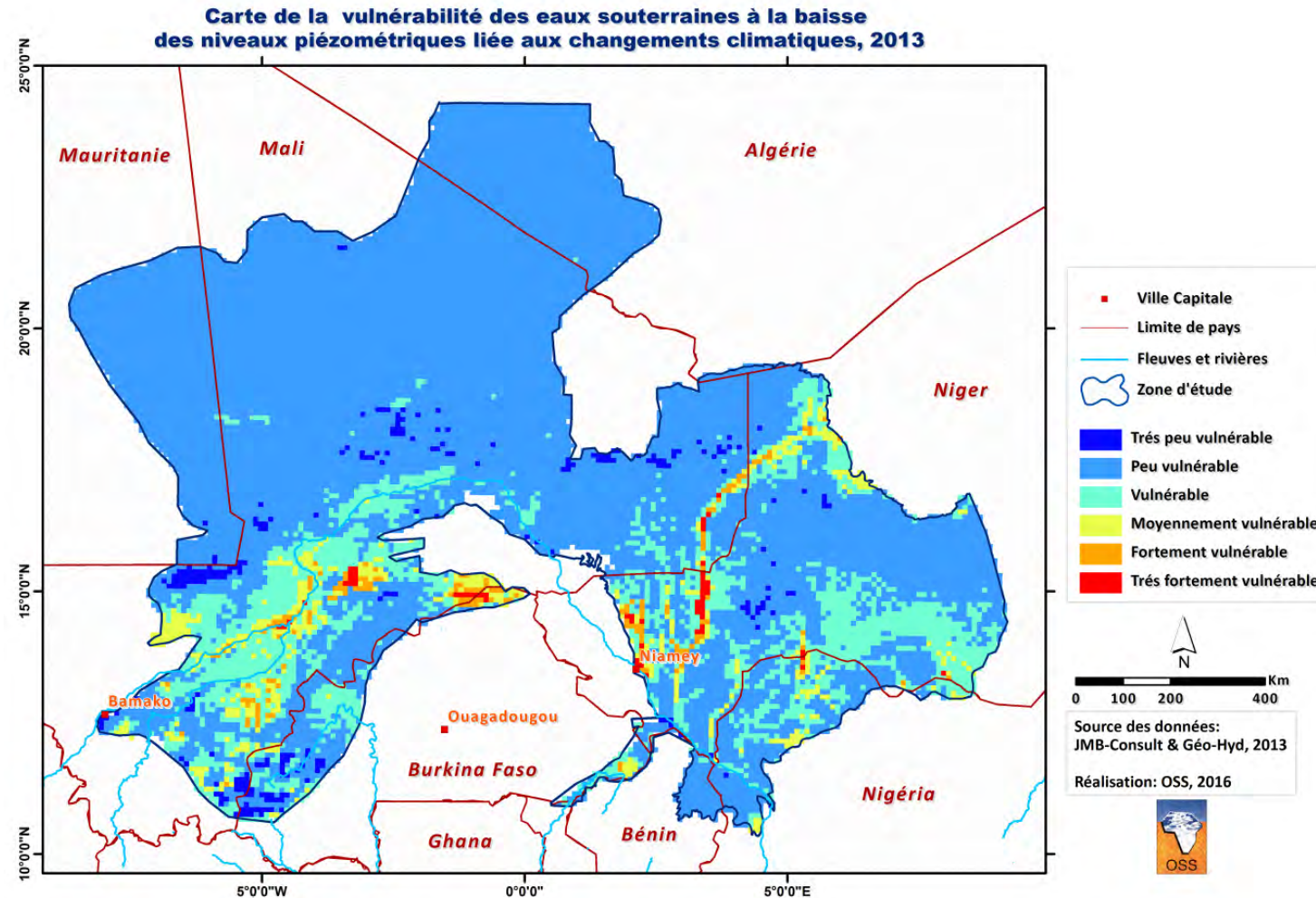


# Water Transfer from Areas with High Water Potential

One of the most appropriate  
(economically realistic)  
solutions for Water to  
populations living so far to  
the Niger River flows



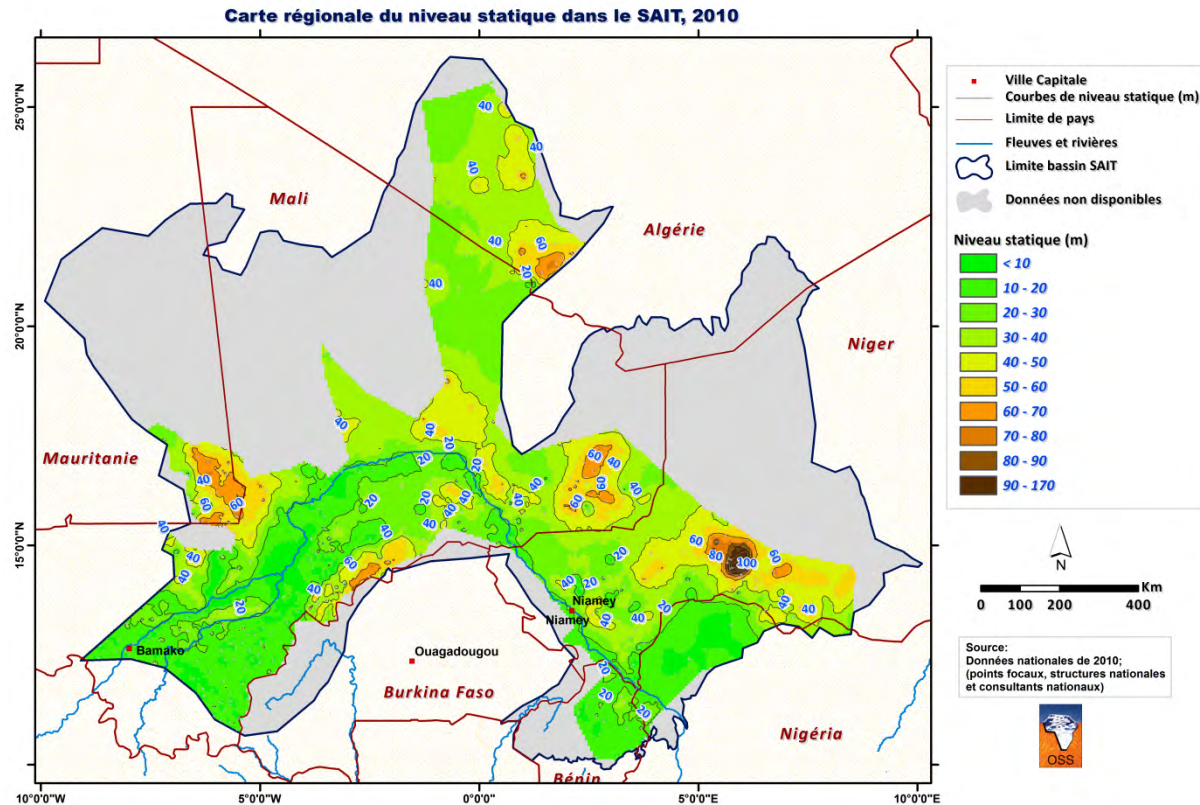
# Vulnerability to Climate Change



**80% of Iullemeden-Taoudeni/Tanezrouft resources protected of climate change except shallow Aquifer mainly in the Valley (Water table so close to the ground)**



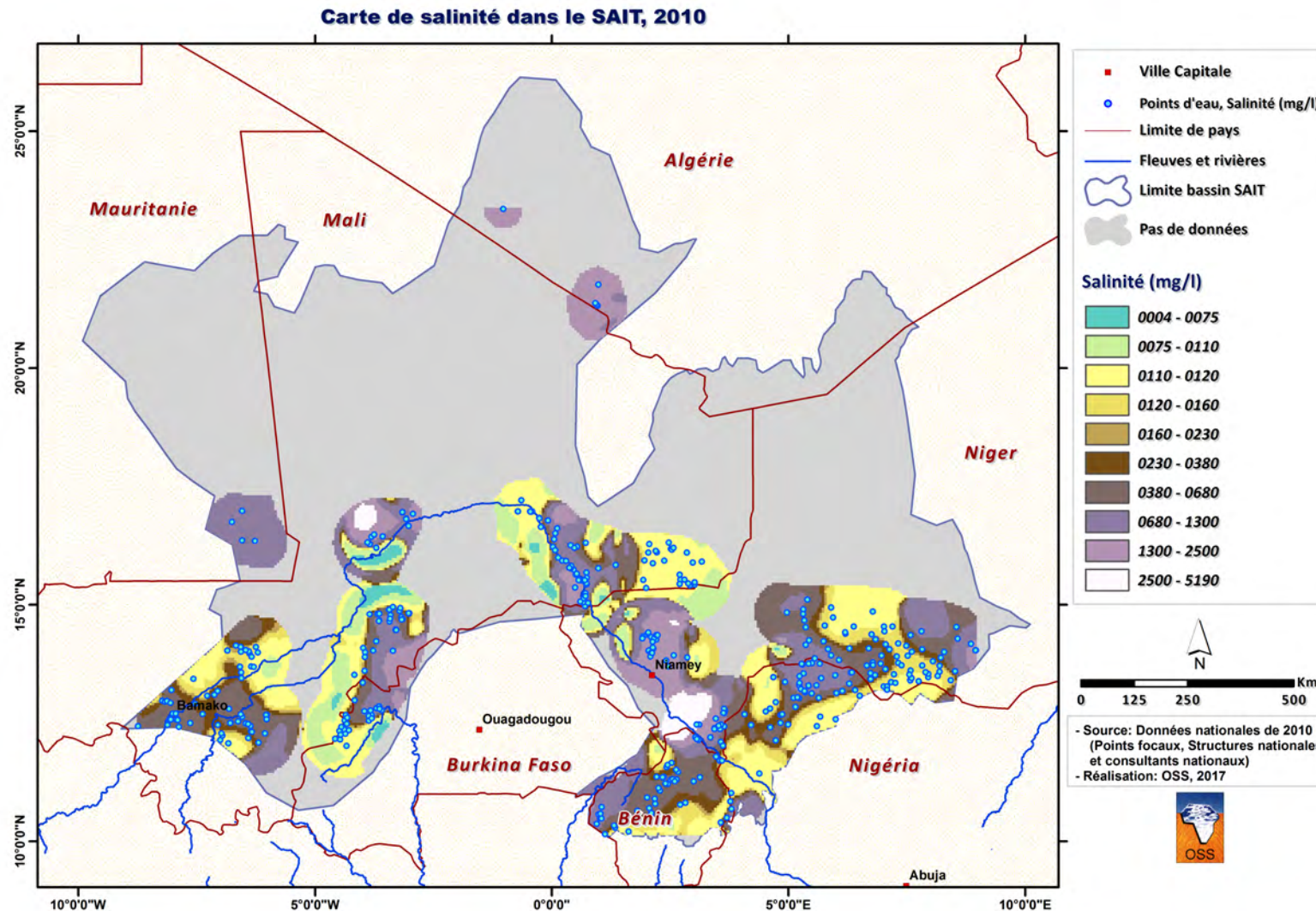
# Interaction Water & Energy (Solar) – Wind Power



Water level provides useful information for Decision-makers & managers, allowing them to analyze the cost and the selected **Energy (thermal, solar, wind)** to be considered to ensure the drinking water supply of the populations

	Sunshine (kWh/m <sup>2</sup> /year)	Wind Speed (m/s)
Algeria	2650	2 - 6
Benin	1800 à 2200	3 - 5
Burkina Faso	2000	2 - 5
Mali	1800 – 2550	4,5 - 6,5
Mauritania	2 000 - 2 300	Max 9
Niger	1800 – 2550	Moy 5
Nigeria	800 – 1800	4 - 5

# Groundwater quality (Salinity)



Good quality of water, in terms of Salinity (TDS), but..... some places excess Fluoride



# Common Health effects of excess Fluoride

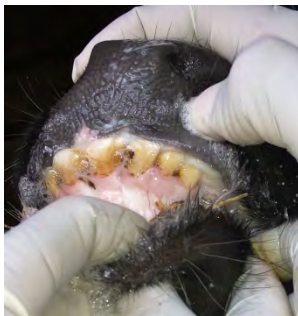
## Dental Fluorosis



## Skeletal fluorosis



## Fluorosis in cattle and in sheep



**GEF/UNEP UNDP NBA OSS UNIDO project: CONJUNCTIVE MANAGEMENT**

***“Improving IWRM, knowledge-based management and governance of the Niger Basin and the Iullemeden-Taoudeni/Tanezrouft Aquifer System (NB-ITTAS)”***

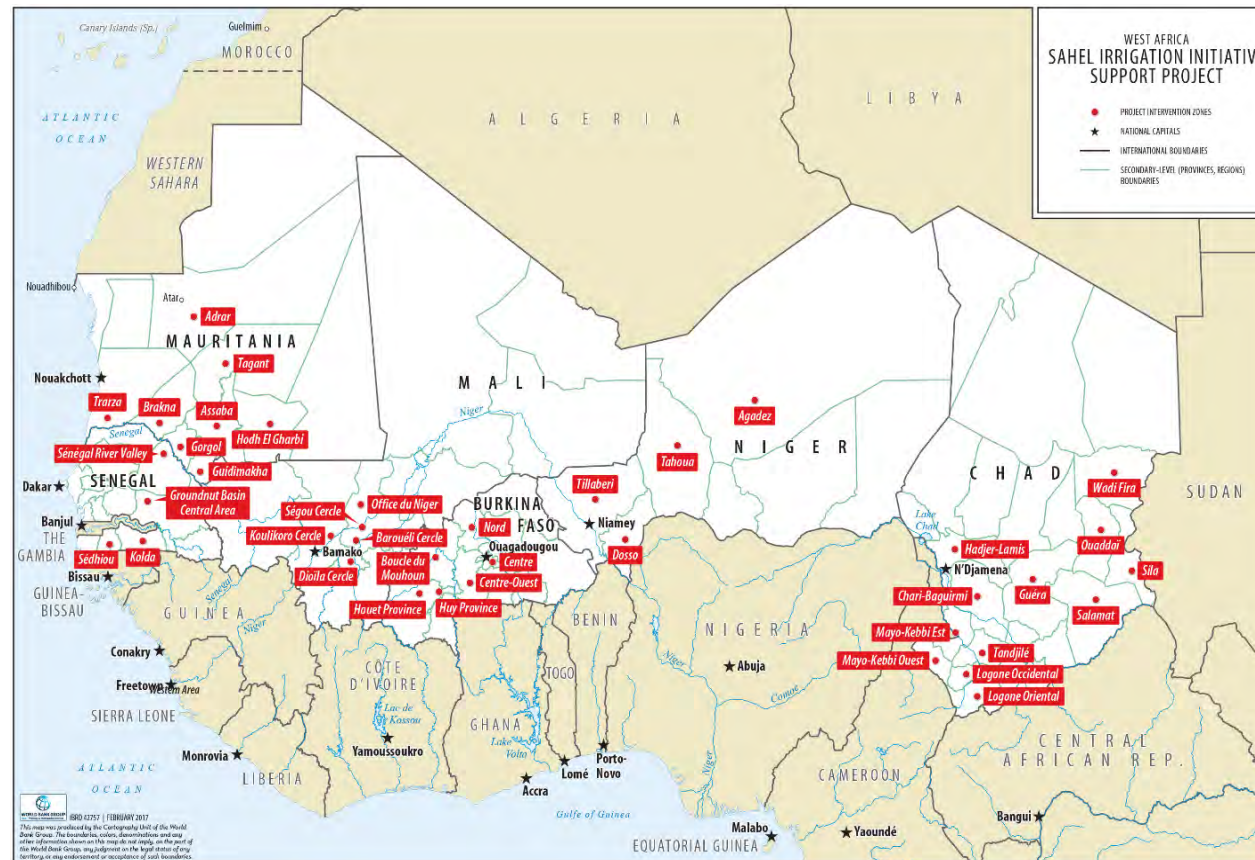
**Algeria, Benin, Burkina, Cameroon, Chad, Cote d’Ivoire, Guinea, Mali, Mauritania, Niger, Nigeria**



**Implementation of **Conjunctive Management** of surface and ground waters through knowledge-based management and governance of the Niger Basin and the Iullemeden-Taoudeni/Tanezrouft Aquifer System (ITTAS) leading to improved IWRM for the benefit of communities and the resilience of ecosystems**



**GEF/WB project: “Economic Growth and Water Security in the Sahel through Improved Groundwater Governance”** **Mali, Niger & Chad**  
*Cooperation OSS, CILSS/CRA, FAO, UNESCO, IWMI*



**This project supports the big “Sahel Irrigation Initiative Support Project (SIIP)” project: CILSS countries Initiative for irrigation of the Sahel: to bring irrigated land in the region from 479,000 ha (total or partial control) to 1 million ha by 2020 (Burkina Faso, Mali, Mauritania, Niger, Senegal and Chad )**



## OBSERVATOIRE DU SAHARA ET DU SAHEL SAHARA AND SAHEL OBSERVATORY

# THANK YOU FOR YOUR ATTENTION





# Kandey Bangoura – Research Director & Head of Department of Oceanography, *CERESCOR*



- Mr. Kandey Bangoura is a research Director, and head of Department of Oceanography at the scientific center of Conakry-Guinea (CERESCOR).
- He coordinates a project dedicated to strengthening the resilience and adaptation to the negative impacts of climate change in coastal areas of Guinea.
- His project tackles issues caused by sea level rise, while contributing also to the integration of climate change issues in planning policies at different levels, as well as building technical capacity for the management of coastal zone and for the dissemination of lessons learned



République de Guinée

MINISTRE DE L'ENVIRONNEMENT, DES EAUX ET FORETS

## PROJECT "Increased Resilience and Adaptation to Adverse Impacts of Climate Change in Guinea's Vulnerable Coastal Zones"

Photo 1: Erosion côtière et intrusion saline dans le delta du Fouta



**Objectif :** Strengthen the protection of the areas and coastal communities to change and climate variability particularly by the elevation of the sea level and the intrusion saline; the disruption of rainfall; for frequent periods of drought in the North of the coastal zone



- Tools to collect and disseminate the results are developed: media, Radio, TV, documentary, Foras, websites, conferencesn seminars, etc..
- [www.guimeteoclimat.org](http://www.guimeteoclimat.org) ;
- <http://jp1.estis.net/sites/cerescor/>

### Résultats

- 34/38 coastal municipalities have their Local Development Plan revised to include the climate change aspects
- 3 cities and 5 urban communities have their revised development plans,
- 53 public institutions including 7 were affected by the different formations,
- 08 rice perimeters vulnerable are rehabilitated and 320 ha of mangrove reforested protecting 2154 ha and with the performance of 600kg to 2, 9-3, 4ha per hectare on average.
- Promotion of the solar salt production and protecting the mangrove oysters,
- Studies on Impact of climate change on the water resources in coastal area,
- automatic stations for data collection and weather information 5 coastal prefectures and 250 gauges installed in 135 villages in the coastal area...



# Phera Ramoeli – Executive Secretary, *OKACOM*



- Mr. Phera Ramoeli is the Executive Secretary of the Okavango River Commission.
- He has a wide experience in water issues in the SADC region and was previously the head of the Water Division of the SADC Secretariat's Infrastructure and Services Directorate in Gaborone.







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IHP **WINS**

# Sharing knowledge Connecting people Building capacities

Chloé Meyer  
Consultant – UNESCO IHP



# Welcome to the Water Information Network System

*by the International Hydrological Programme of UNESCO*



<http://ihp-wins.unesco.org/>



## 153 Layers

Click to search for geospatial data published by other users, organizations and public sources. Download data in standard formats.

[Explore layers »](#)



## 3 Maps

Data is available for browsing, aggregating and styling to generate maps which can be saved, downloaded, shared publicly or restricted to specify users only.

[Explore maps »](#)



## 208 Users

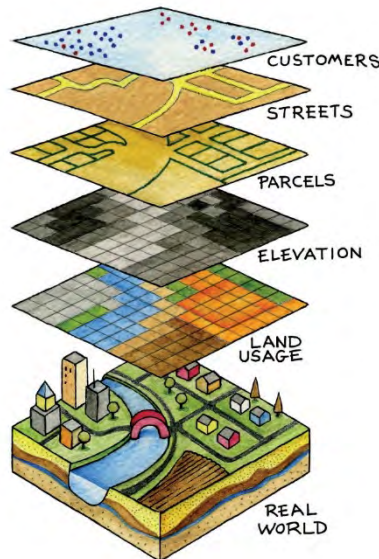
IHP-WINS allows registered users to easily upload geospatial data and various documents in several formats.

[See users »](#)



# Online participatory platform for sharing knowledge on water and connecting stakeholders

**Visualizing information**



**Ensuring transparency and ownership**



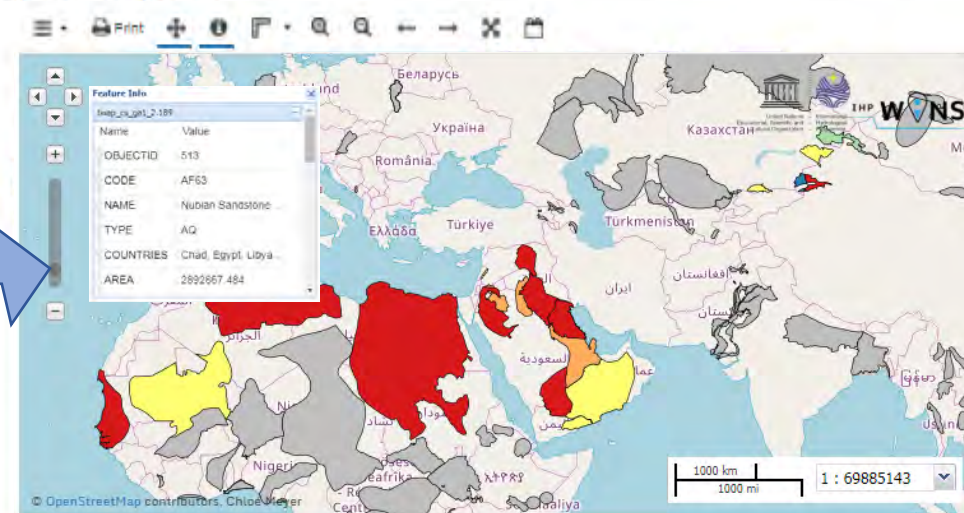
**Connecting people**



Map viewer with tools for analysis

Open-access information that are freely available for download

## Annual amount of renewable transboundary groundwater resources per capita



Download Map

Metadata Detail

Download Metadata

### Legend

- Very high (>10000 m3/yr)
- High (5000-10000 m3/yr)
- Medium (1000-5000 m3/yr)
- Low (100-1000 m3/yr)
- Very low (<100 m3/yr)
- No data

### Maps using this layer

This layer is not currently used in any maps.

### Create a map using this layer

Click the button below to generate a new map based on this layer.

### About

Responsible, Point of Contact



More information on the contributors who shared this map

Info Share Ratings Comments

**Title** Annual amount of renewable transboundary groundwater resources per capita

**Abstract** Calculated as the long-term mean transboundary groundwater recharge, including man-made components, divided by the number of inhabitants of the area occupied by the aquifer. Indicator is expressed in m3/yr/capita

**Publication Date** Feb. 15, 2017, 3:06 p.m.

**Type** Vector Data

**Keywords** Groundwater, Population, Recharge, Transboundary

**Category** Groundwater

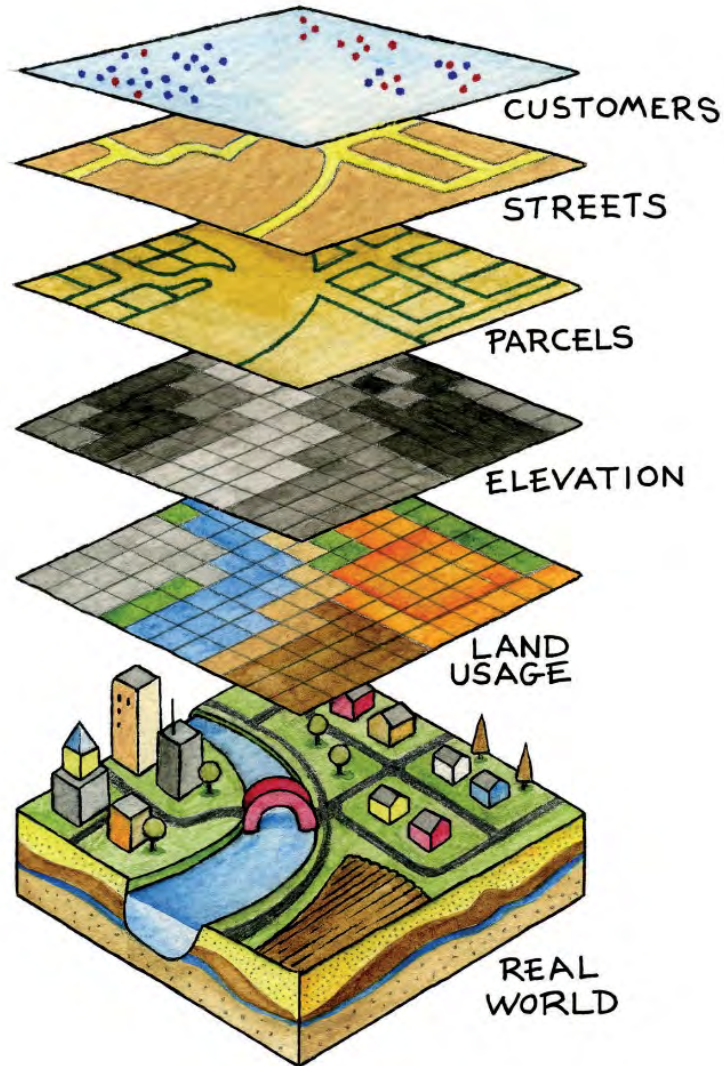
**Global** Global

**Responsible** Chloe Meyer

**Group** Theme 2: Groundwater

Standardized metadata

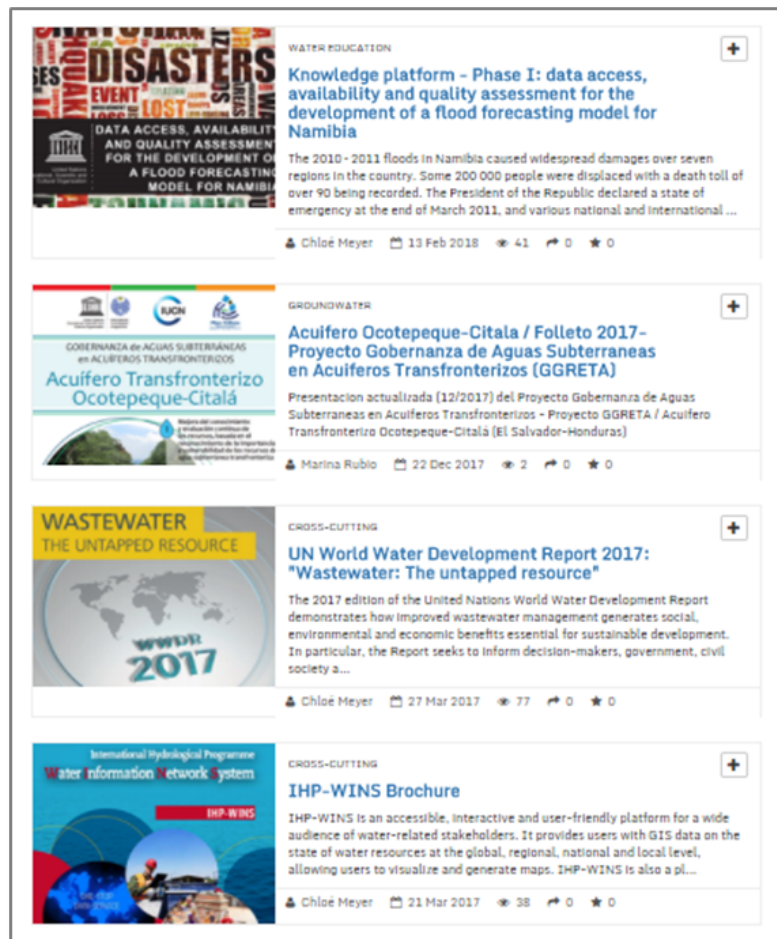




Storing, combining from several sources, and sharing open data on water resources, at all levels (local, regional, global)

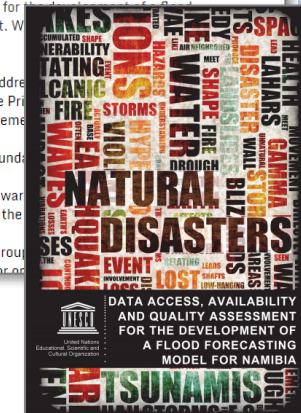
→ Providing a scientific knowledge base to support sound decision-making

## Hosting and sharing several types of documents to create INSTITUTIONAL MEMORY



Transparency and respect of authorship:  
A unique Digital Object Identifier is embedded in the metadata

Title	Knowledge platform - Phase I: data access, availability and quality assessment for the development of a flood forecasting model for Namibia
Abstract	The 2010 - 2011 floods in Namibia caused widespread damages over seven regions in the country. Some 200 000 people were displaced with a death toll of over 90 being recorded. The President of the Republic declared a state of emergency at the end of March 2011, and various national and international partners responded in diverse manners to the call for assistance and collaboration in addressing flood management issues. UNESCO also responded to the call by sending a team of hydrologists on an exploratory mission to determine areas in which UNESCO can further collaborate with Namibia in addressing flood management. The team visited Namibia in July 2011, and presented its initial findings to the Prime Minister on 29 July 2011.
Publication Date	Feb. 13, 2018, 5:49 p.m.
Keywords	Capacity-building , Flood
Category	Water education
Regions	Namibia
Responsible	Chloé Meyer
Group	Theme 6: Water education
DOI	10.29104/WINS.D.0001.2018
Maintenance Frequency	There Are No Plans To Update The Data
Restrictions	Unless otherwise specified, no restriction applies.
Edition	Filali-Meknassi Y., Ouarda T., Wilcox C. (2014). Knowledge platform - Phase I: data access, availability and quality assessment for the development of a flood forecasting model for Namibia. Final Report. WINS
Language	English
Supplemental Information	The findings included: <ul style="list-style-type: none"> <li>• Strong political will and commitment in addressing flood management at the level of the Office of the Prime Minister</li> <li>• The provision of national budget for flood emergency response</li> <li>• The fact that a DDR policy is in place;</li> <li>• Uncertainty in forecasting flood levels, inundation, and the impact on vulnerable communities affected, etc.</li> <li>• Limited capacity for monitoring and early warning systems</li> <li>• Sub-optimal flow of information between the national, regional, and community;</li> <li>• Mandates of the various institutions and group organizations, and the potentials of academic resources not fully or not</li> </ul>



True ID card for every element shared  
→ Contributor name, title, abstract, etc.





**Bringing together  
water-related  
publications and documents**

**→ Using open access to reduce the  
knowledge-access gap**

**Connecting water-stakeholders,  
promoting  
experience-sharing,  
offering online  
working spaces through groups**




**→ Building capacity through an  
online community of practice**



# IHP W@NS 3. Connecting people

Contributors are organized into several **WORKING GROUPS**, each administered by a dedicated manager.



**Namibia**  
Group for Namibia  
3 Members 1 Manager 19.10.2017

**Youth for Water**  
This group is dedicated to youth and young professionals involved in the water sector.  
14 Members 1 Manager 6.11.2017

**UNESCO-IHP Category 2 Centers**  
This group is dedicated to Category 2 Centers, which are water-related centres under the auspices of UNESCO, and which work on relevant thematic and geographic priorities in their area of expertise. Since Member States have realized the potential of these centres, the network has been rapidly expanding...  
1 Member 1 Manager 29.5.2017

**UNESCO-IHP**  
UNESCO International Hydrological Programme is the only intergovernmental programme of the UN system devoted to water research, water resources management, and water-related education and capacity building.  
7 Members 1 Manager 29.5.2017

**Armenia**  
Group for Armenia  
3 Members 1 Manager 19.10.2017

**Theme 5: Ecohydrology**  
In the face of increasing climate instability, demographic growth and human migration, there is an urgent need to reverse the degradation of water resources and stop further decline in biodiversity. Ecohydrology aims the understanding of relationships between hydrological and biological processes at ...  
1 Member 1 Manager 19.10.2017



**Username** (wasif.babar)

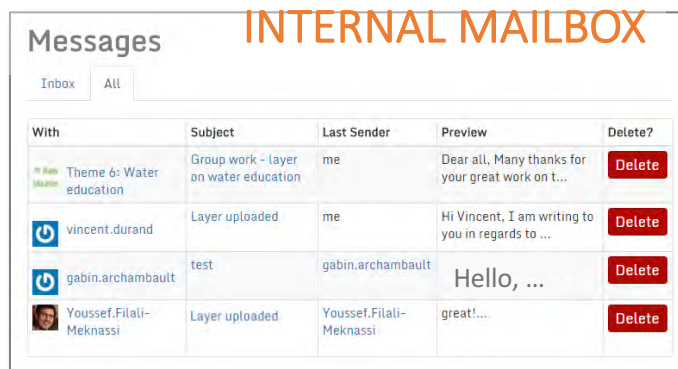
**Groups membership**

**Details on the profile and activities**

**Description**  
Mr. Muhammad Wasif Bashir Babar is son of soil of Pakistan and a very energetic young professional & Researcher in the field of Water, Ecological Sanitation, Hygiene (WASH) Climate Change, Ecosystem, and Disaster Risk Reduction. He holds Master of Science (MS) degree in Environmental Science with specialization on "Sustainable Water Sanitation Health & Development" while Master of Arts (MA) in Sociology with Specialization of Civic Engagement and Good Governance. He has been working in social & WASH development sector since 2008 with diversified national & international Research & humanitarian organizations. He is youth motivator and working to engage the young professionals in achieving the global commitments on Sustainable Development Goals (SDGs) Agenda 2030 especially for SDGs 5, 6 & 13. Mr. Babar is an Active Member of World Youth Parliament for Water (WYPW), Asia Pacific Youth Parliament for Water (APYPW). He is leading

In groups, contributors can connect with each other

Exchange messages with the

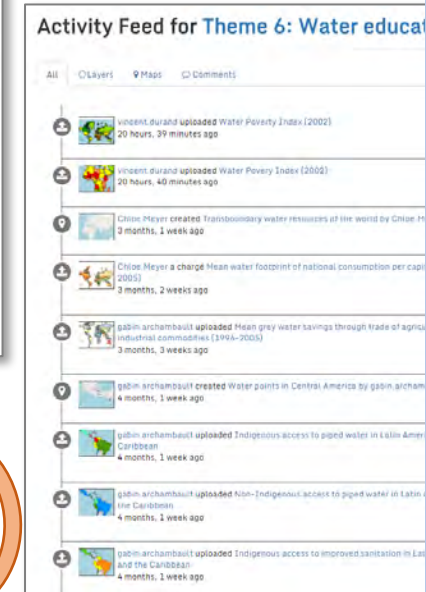


**INTERNAL MAILBOX**

Messages

With	Subject	Last Sender	Preview	Delete?
vincent.durand	Group work - Layer on water education	me	Dear all, Many thanks for your great work on t...	Delete
vincent.durand	Layer uploaded	me	Hi Vincent, I am writing to you in regards to ...	Delete
gabin.archambault	test	gabin.archambault	Hello, ...	Delete
Youssef.Filali-Meknassi	Layer uploaded	Youssef.Filali-Meknassi	great!...	Delete

Update on each other's work and contributions



**Activity Feed for Theme 6: Water education**

All Layers Maps Comments

- vincent.durand uploaded Water Poverty Index (2002) 20 hours, 39 minutes ago
- vincent.durand uploaded Water Poverty Index (2002) 20 hours, 40 minutes ago
- Chloe Meyer created Transboundary water resources of the world by Chloe Meyer 3 months, 1 week ago
- Chloe Meyer a change Mean water footprint of national consumption per capita (2005) 3 months, 2 weeks ago
- gabin.archambault uploaded Mean grey water savings through trade of agricultural commodities (1994-2005) 3 months, 3 weeks ago
- gabin.archambault created Water points in Central America by gabin.archambault 4 months, 1 week ago
- gabin.archambault uploaded Indigenous access to piped water in Latin America and the Caribbean 4 months, 1 week ago
- gabin.archambault uploaded Non-Indigenous access to piped water in Latin America and the Caribbean 4 months, 1 week ago
- gabin.archambault uploaded Indigenous access to improved sanitation in Latin America and the Caribbean 4 months, 1 week ago

**Online community of practice**

# Thank you for your attention!

[ihp-wins.unesco.org](http://ihp-wins.unesco.org)







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# Q&A



- What role has data versus information in the decision-making process for water planning and management?
- What limits does the data / information-driven decision-making process face (political, technical, scientific)?
- How was decision-making coordinated before the creation of your data base (if any)?
- What elements have facilitated the sharing of data and information among stakeholders?
- What solutions would you propose to improve on the current situation?
- Are the challenges faced by data-driven decision-making and scientific cooperation different for fresh water management and oceanographic management?