First Meeting of the Task Force on the Water-Food-Energy-Ecosystem Nexus
Geneva, 8–9 April 2013

WATER FOR FOOD, ENERGY AND ECOSYSTEMS IN THE RIVER NIGER BASIN.

WETLANDS INTERNATIONAL

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Structure of presentation

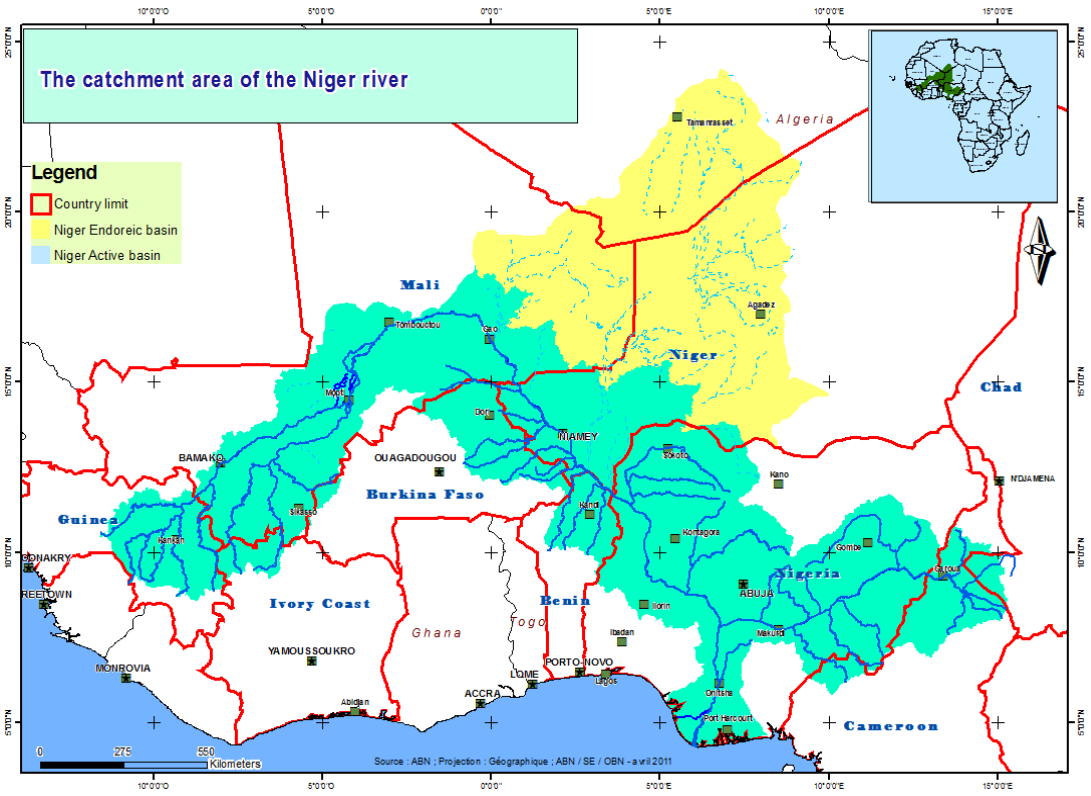
- Presentation of the Niger River Basin [brief!]
- Environmental Issues & Key Challenges
- Political & Institutional Policy/Shared Vision
- The Shared Vision Achievements
- Mobilization of Funds
- The basin in 4 Wetland Ecoregions
- Targeted Wetlands in the Basin.
- Our understanding of The Nexus Approach
- Way Forward to implement the Nexus intersectoral Coordination :

  Re-Think investment;

PRESENTATION OF THE NIGER BASIN

- River **Niger : 4200 km long - (3rd in Africa and 9th in the world);**

- **Main tributary : the Benue with 1200 km.**

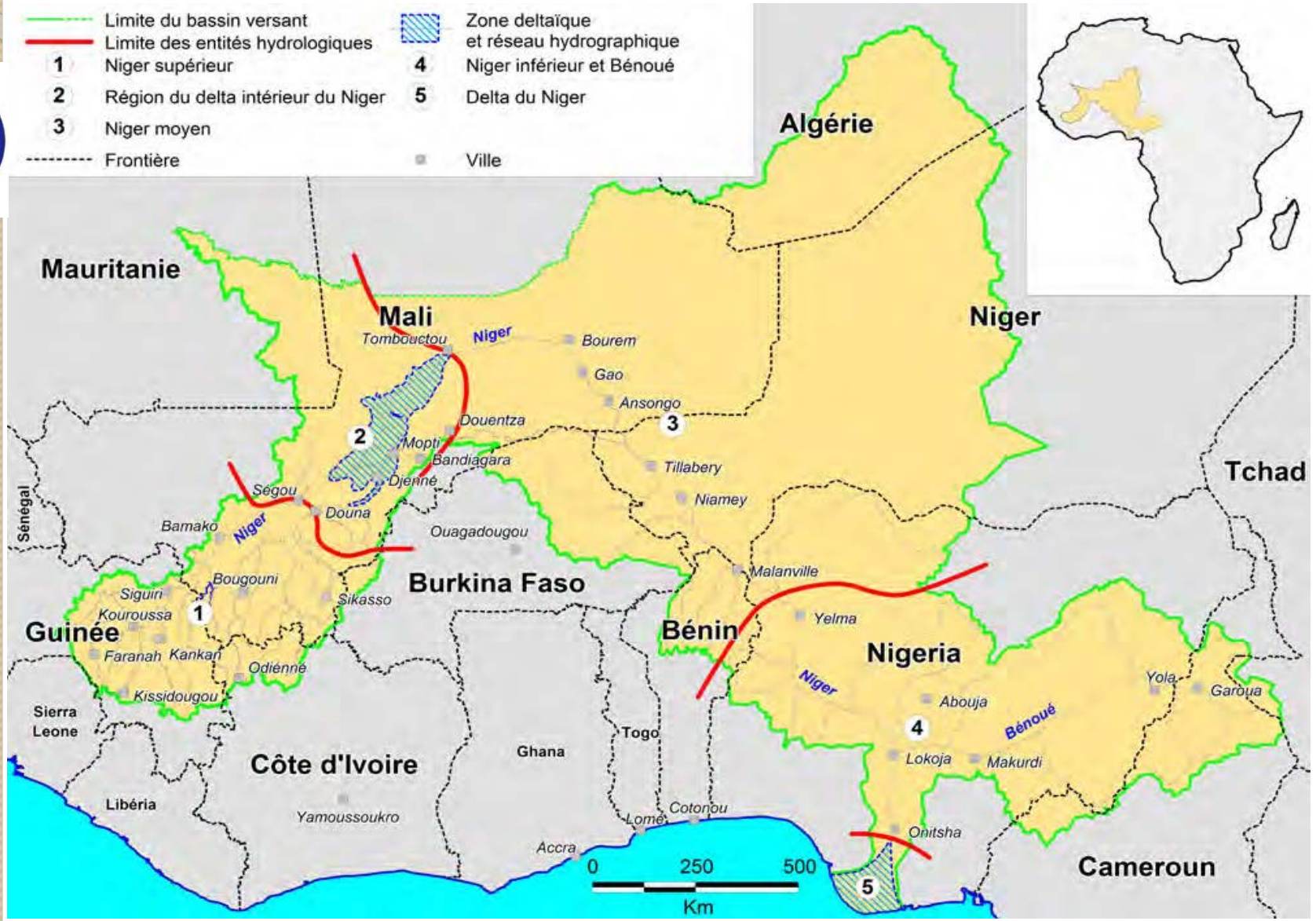


- **Active Catchment area : 1.5 million km²**

- **An estimated Population of 160 millions (yr2010), Annual pop.growth 2,6**

- **<u>9 countries</u>: Benin, Burkina Faso, Cameroon, Chad, Cote d'Ivoire, Guinea, Mali, Niger ,Nigeria,**

The Niger River Watershed from the Guinean Highlands to the Nigerian maritime Delta



WHAT ARE MAJOR CHALLENGES?

-The sustainable and equitable use of water resources by all users;

-Economic development and regional integration

- Water , Energy and Food security;

- The sharing of mutual benefit from water management process;

- Reducing poverty and improving living conditions of populations;

- Protection of the environment and ecosystems.

four agro-ecological zones

The basin can be divided into four agro-ecological zones:

- Humid tropical zone, with average annual rainfall of 1,200 mm;
- Sudanian subtropical zone with a dry season and average annual rainfall ranging between 800 and 1,200 mm;
- Sahelian subtropical zone with a long dry season and average annual rainfall ranging between 100 and 800 mm;
- Saharan subtropical desert zone with very irregular or no rainfall, averaging less than 100 mm a year.

ENVIRONNEMENTAL ISSUES AND KEY CHALLENGES OF THE RIVER BASIN DEVELOPMENT

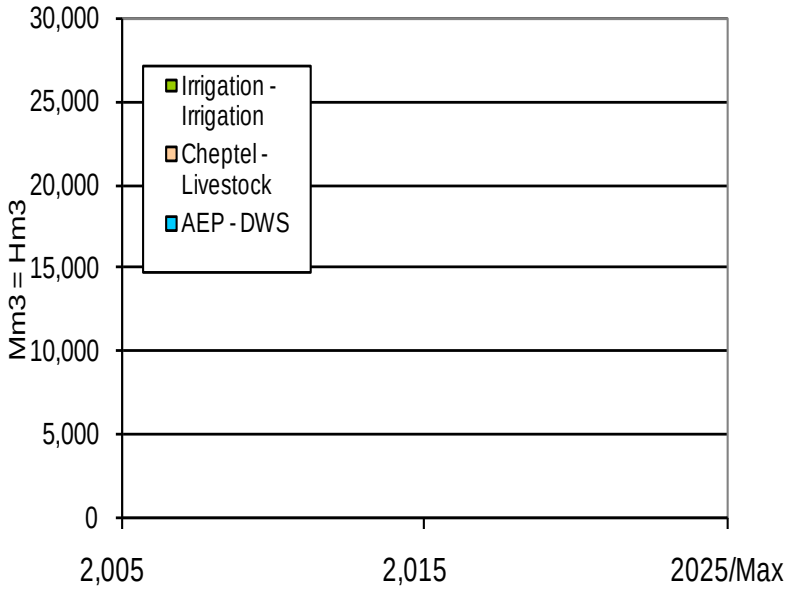
The combined effects of climate variability (downward trend in rainfall of 20-30%) and a high population pressure result in:

(i) an extensive degradation of the environment of the basin with a drastic reduction of natural resources, including water resources.

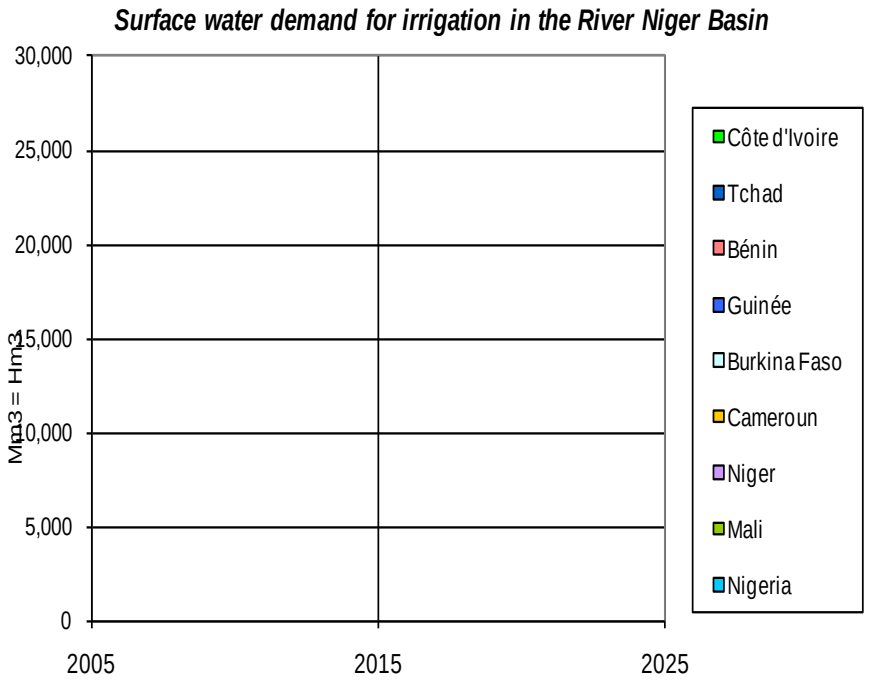
(ii) the appearance and / or aggravation of some phenomena that take the shape of a threat to human existence in the basin:

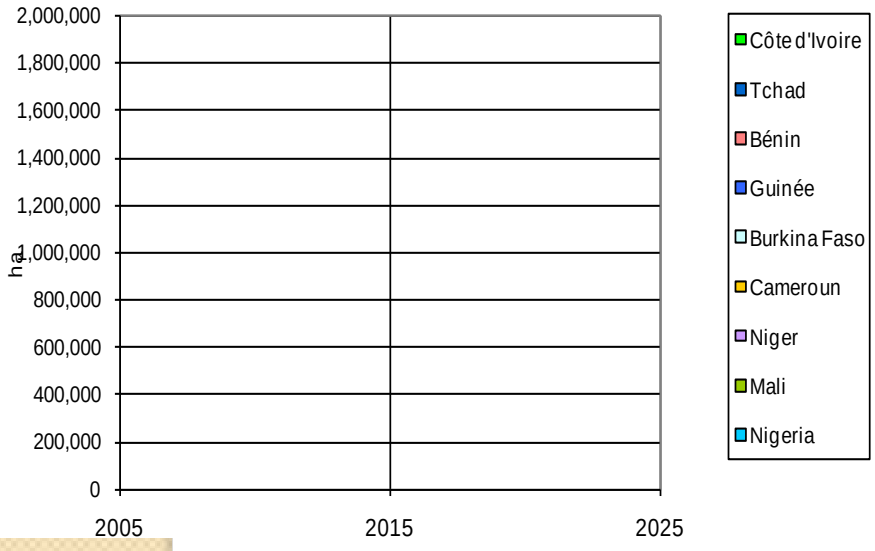
- Land and water Degradation (Erosion, Siltation, Pollutions of various origins) ;
- Spread of invasive aquatic plants;
- Loss of biodiversity.

Water Demands



- Fully **controlled irrigation** expected to increase from **265,000 ha** (2005) to **1.6 million ha** in 2025/Max,
- Total **water demands** for all irrigation (including controlled flooding) will increase from **5.4** BCM/yr in 2005 to **25.7** BCM/yr in 2050/Max
- Domestic water demand expected to triple.
- Irrigation water demand expected to rise five fold.
- Share of livestock water demand to drop from 3.5% (2005) to 1.4% (2025-2050).
- Industrial and mining water demands not considered





With construction of Fomi dam - a dry season irrigation intensity of **35%** was assumed as part of the envisaged **220,000 ha**, increase.

This will increase the total share of Mali in the basin's irrigation water resources to just **over 50%.**

Domestic Water Demand

Factors likely to influence domestic water consumption:

(i) Urbanization

(ii) Increased per capita water consumption.

A **30% increase in the per capita** consumption would increase domestic water demand **to 5BCM/yr** in 2050, **double the amount projected for 2025** and **16% of total demands in 2050.**

Livestock

- Livestock water demands measured in TAU (Tropical Animal Units), defined as a fully grown animal of 250 kg with a daily water consumption of 30 l/day (11 m^3/yr).
- Yr 2005, livestock demands estimated **as 26 million TAU.**
- Increases in livestock numbers vary from **2.1%** in Niger to **4.6%** in Guinea; **basin averages = 3%**
- In 2025 the Basin projected to carry **47 million TAU**, total demand **to grow from 221 Mm^3/yr** in 2005

  to **385 Mm^3/yr in** 2025, or **1.4%** of total projected water demand in 2025.

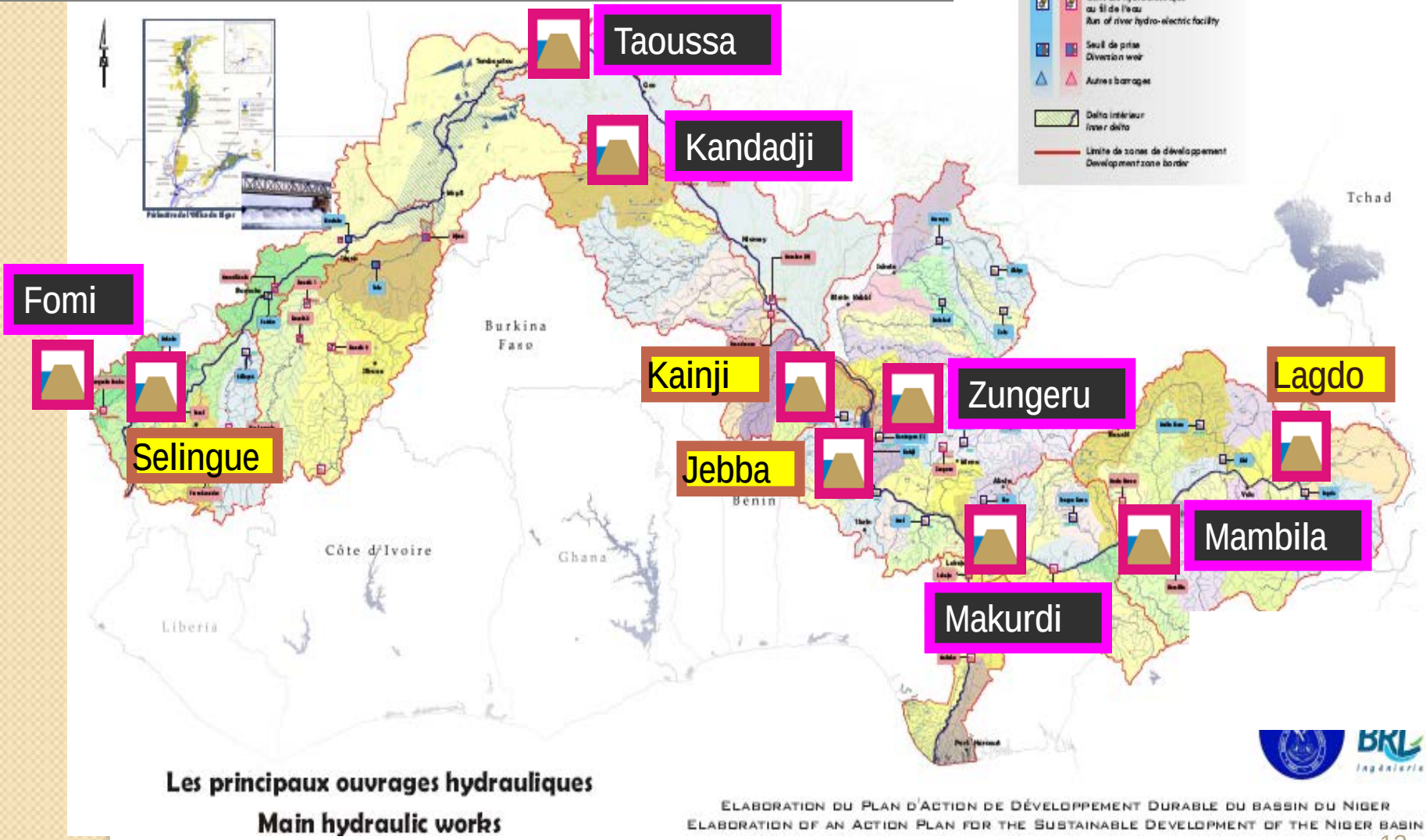
Domestic Water Supply

- In 2005 **41 million** (45%) of the basin's **92 million** inhabitants relied on surface water.
- Population growth estimated at **2.65%**
- By 2025 **69 million** (45%) of the basins **155 million** people will depend on surface water.
- Population growth assumed to slow **down to 2%** beyond 2025.
- Thus, by 2050, **113 million** (45%) of the basins **252 million inhabitants** will depend on surface water

Major dams projected in the NBA countries

Existing

Planned



Cooperation in the niger basin

The need to create a framework for an optimal, Integrated Resource Management in the NRB was apparent in the early 1950s and led to the Creation of the NIGER RIVER RESEARCH AND DEVELOPMENT MISSION in Bamako.

The NIAMEY ACT relating to the Navigation and Economic Cooperation among the States of Niger river, was signed on 26th october 1963 to,among other things, regulate navigation and transport activities of the River Niger and its tributaries and sub-tributaries . Then revised on february 1968, and revised again in June 1973 in Niamey.

POLITICAL AND INSTITUTIONAL POLICY

The NIGER BASIN AUTHORITY (NBA) was created at Faranah (GUINEA) with its headquaters in Niamey (NIGER) and replaced The Niger River Commission founded on 1964

- Its mandate is expressed as a bold political commitment to a cooperative agenda.

This mandate of NBA is right and derives from the recognition that NBA, as an inter-governmental transboundary organization, can promote cooperation among the member countries by integrating water resources and sustainable ecosystems management at the basin level.

THE SHARED VISION ACHIEVEMENT

- Adoption of the Sustainable Development Action Plan (SDAP) for the basin with an Investment Program (IP) 2008-2027 of 639 actions and projects

- - Adoption of the Water Charter as a legal and regulatory reference document for the concerted and sustainable management of water resources of the Niger Basin. The Charter was ratified by 8 of the 9 countries and entered in force since July 19, 2010.

- Establishment of 9 national coordinations and one regional coordination of users of natural resources of the Niger Basin (involvement of the civil society).

THE SHARED VISION ACHIEVEMENTS (cont'd)

❑Setting up of Planning Tools / management:

- Hydraulic model management and allocation of water resources;
- Hydrological Forecasting Model (Computerized Forecasting System);
- Macro-economic optimization Model for water resources ;
- Monitoring of the Basin environment with tools such as GIS and Geo-directory;
- Silting Control Master Plan ;
- Environmental Strategic Action Plan (GEF /Project);

The Investment Program 2008-2027 (IP)

- The total estimated amount of the IP, is USD 8.25 billion which is divided into 4 Five Year Priority Plans (FYPP).First (FYPP 2008-2012) estimated to cost USD 2.05 bn

Funding For the FFYPP

- A round table f donors, held in June 23, 2008 in Niamey to fund the FFYPP(2008-2012) resulted in the pledging of USD 1.4 bn i.e. (68%)of the total USD 2.05 billion needed for the FFYPP. o

MOBILIZATION OF FUNDS FOR THE FFYP (CONT'D)

	Total Amount in USD x Billion	Current Pledge Total amount in USD Billion	Signed Conventions Total amount in USD x million	Conventions under preparation Total amount in USD x million	Total amount mobilized or being mobilized in USD x Bn
FYPP 2008-2012	**2 .05**	**1. 4**	**682.057**	**374.964**	**1,057**
% of the FYPP current plegde		68.3% of the total amount of FYPP	48.6%	26.7%	75.4%

Amount pledged for the structural works on Fomi, Taoussa and Kandadji Dams projects represent USD 411 Billion

The sum of USD 0.30 bn was also pledged for other actions outside of the FFYPP.

MOBILIZATION OF FUNDS FOR THE FFYP (CONT'D)

Ongoing mobilization of funds for Following Actions:

- ***Programme for Development and Climate Change Adaptation in the Niger basin (PDACC / NB):***
  - An aide memoire with the ADB for a funding contribution of **USD 75 million** was signed during the preparatory mission;
  - Discussions with WAEMU/UEMOA for **USD 56 million** for the joint funding of the PDACC ;
- ***Program for Rehabilitation of Public Irrigated Perimeters in Niger*** financed by the German Cooperation **for 11 million Euros.**

- The Great Rivers Partnership with IUCN and The Nature Conservancy (TNC) a proposal of 40,000,000 USD is submitted to the boards;

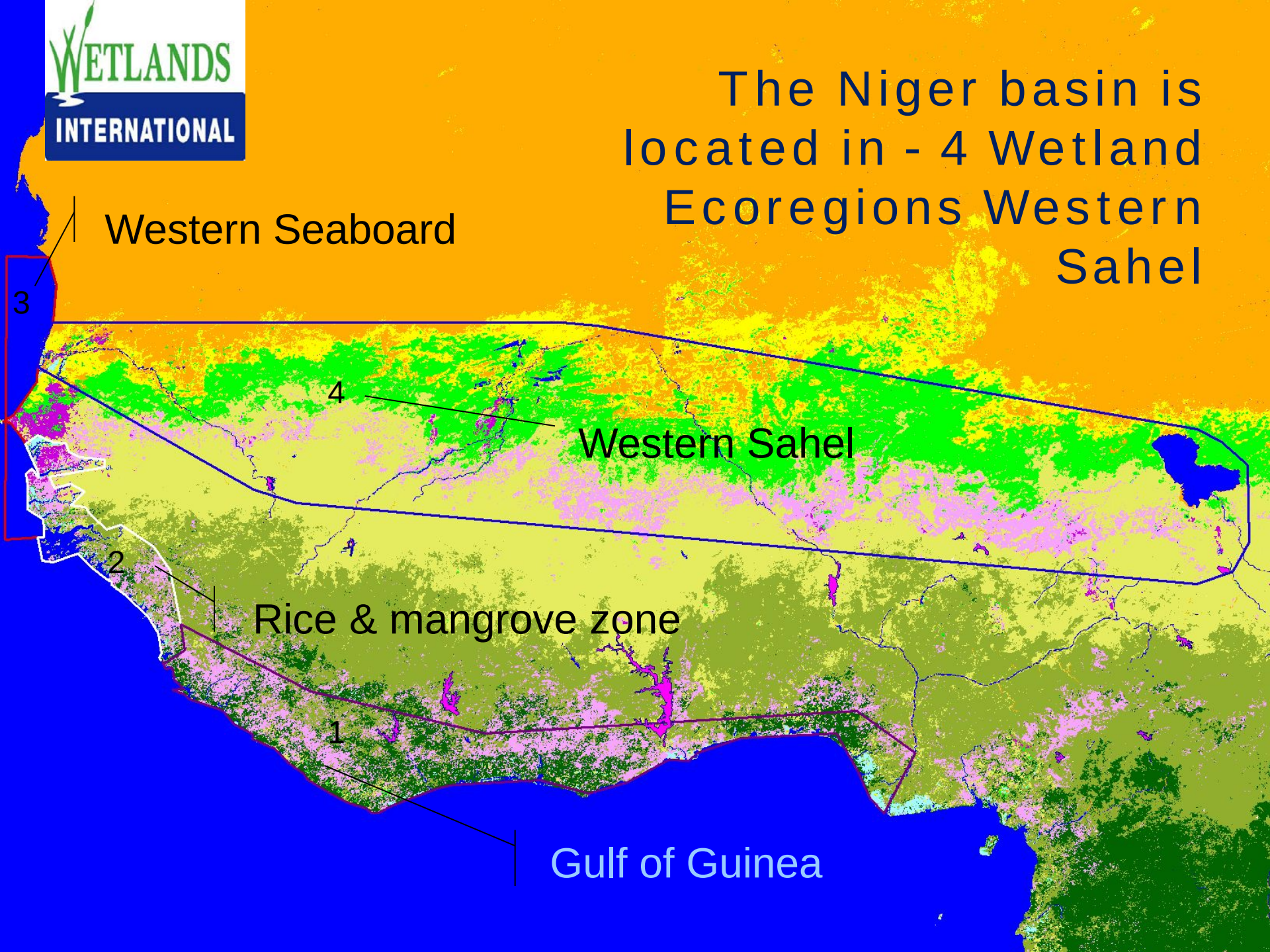
MOBILIZATION OF FUNDS FOR THE FFYP (CONT'D)

- **The Share Water Partnership: A grant of 100.000 USD is obtained for the Share Water Partnership managed by UNDP financed by the US department of States;**

- **The Implementation of Environmental Strategic Actions Plan with the GEF founding of 12,000,000 USD**

- **The Fomi dam was selected from the works ECOWAS priority and is enrolled in the program of infrastructure development in Africa (PIDA) adopted by the 18th Ordinary Session of the Assembly of the African Union held on 29 and 30 January 2012 in Addis Ababa.**

- **Disasters Risks Management :Discussions are ongoing with the World Bank Management of a Disaster Risks Management (DRM) in the Niger River;**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The Niger basin is located in - 4 Wetland Ecoregions Western Sahel
Western Seaboard
3
4
Western Sahel
2
Rice & mangrove zone
1
Gulf of Guinea

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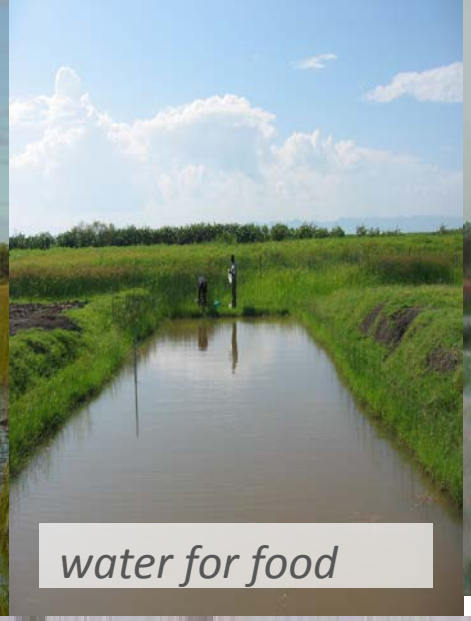
water purification
flow regulation
water storage



water for food

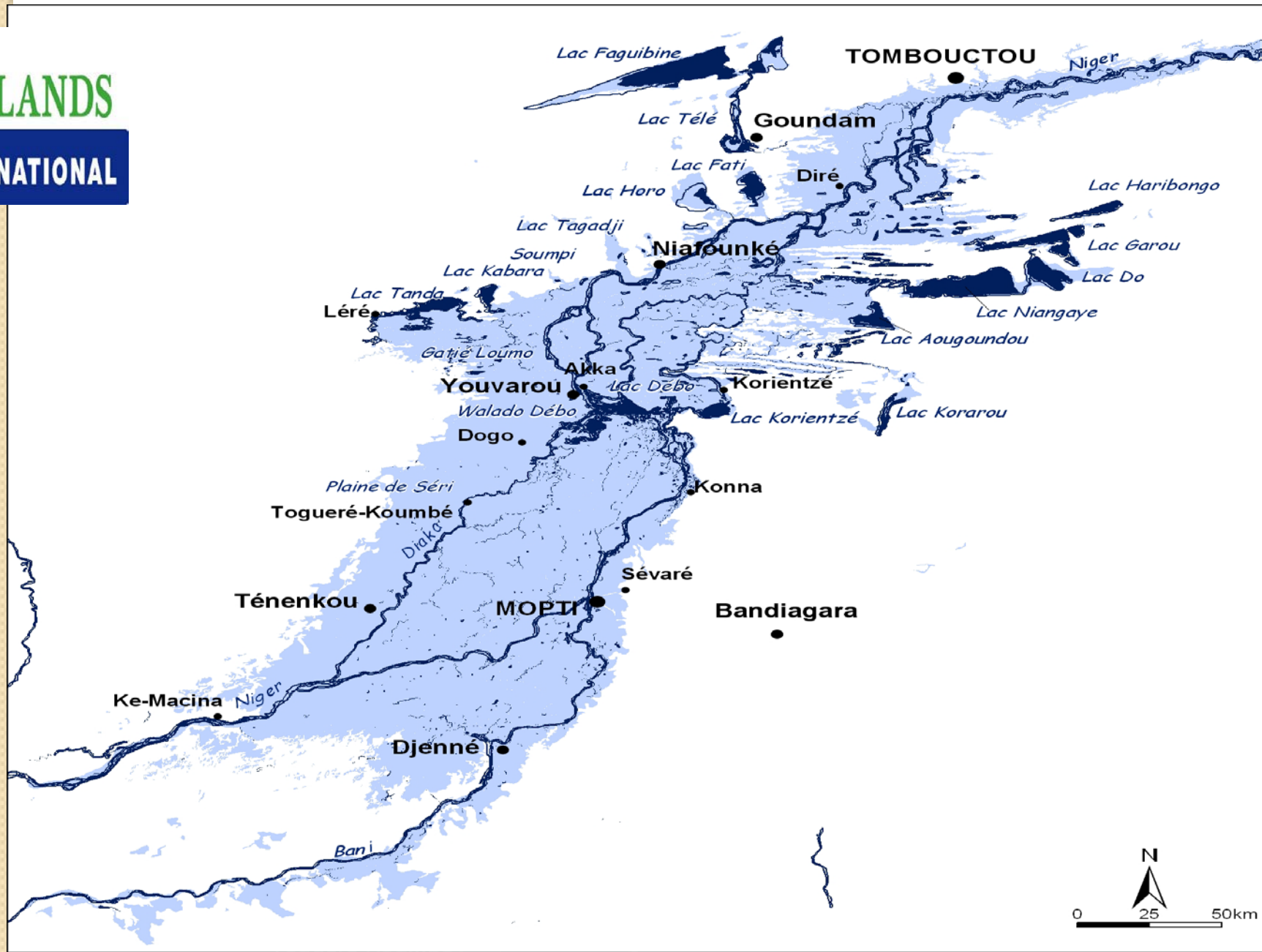
water supply
water storage

fisheries provision

water supply
water conveyance
cultural services

water for energy

Water for Food, Energy and Ecosystems - Options for Benefits Sharing in the Upper Niger Basin



Livelihoods in the Inner Niger Delta

Fishers:
30% of the rural population

Cattle Breeders:
30% of the rural population

Farmers: 40% of the rural population, producing 25.000 – 170.000 tonnes rice

flood regulation
water purification

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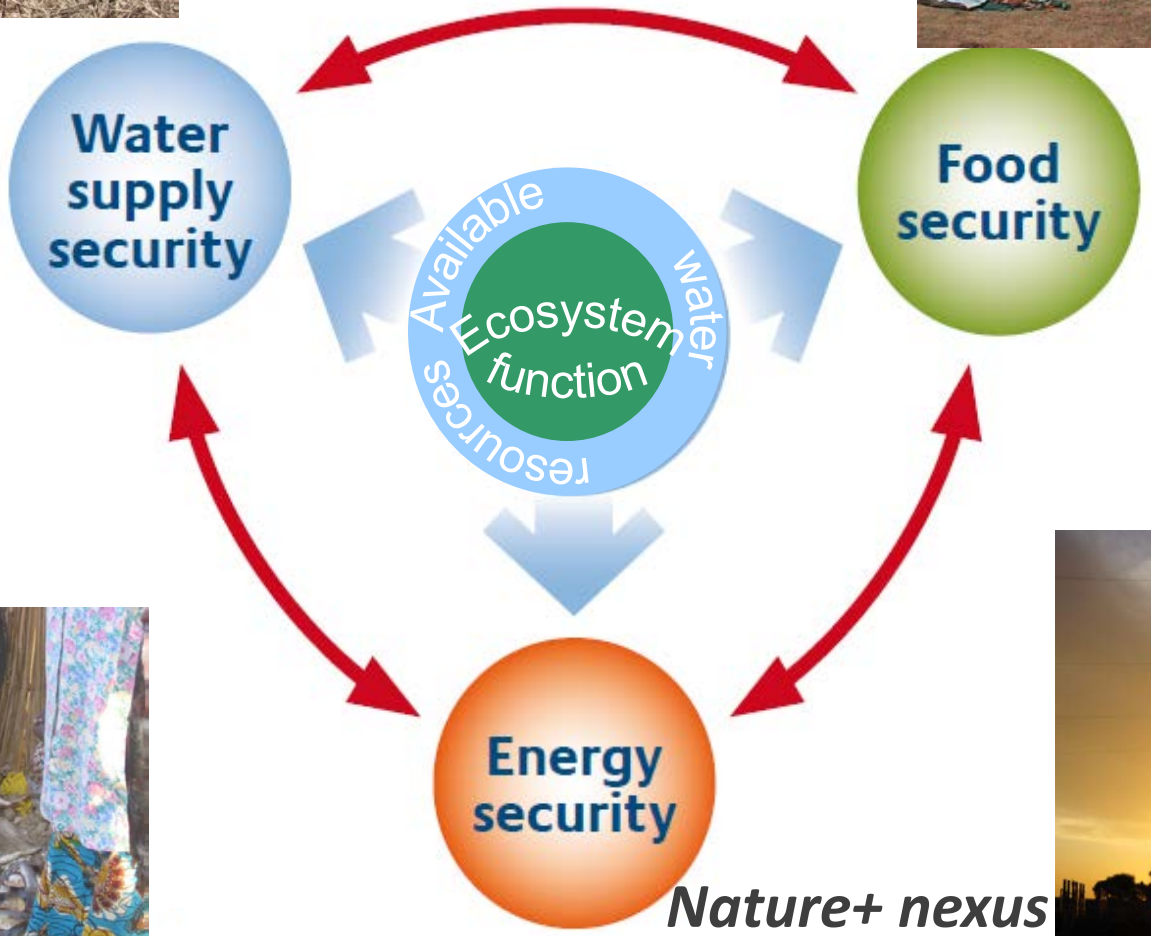
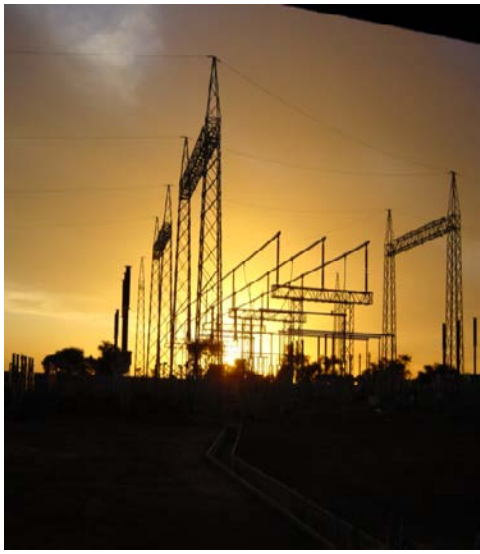
water provision
water storage



fisheries provision

Nature+ nexus Water-Energy-Food Security

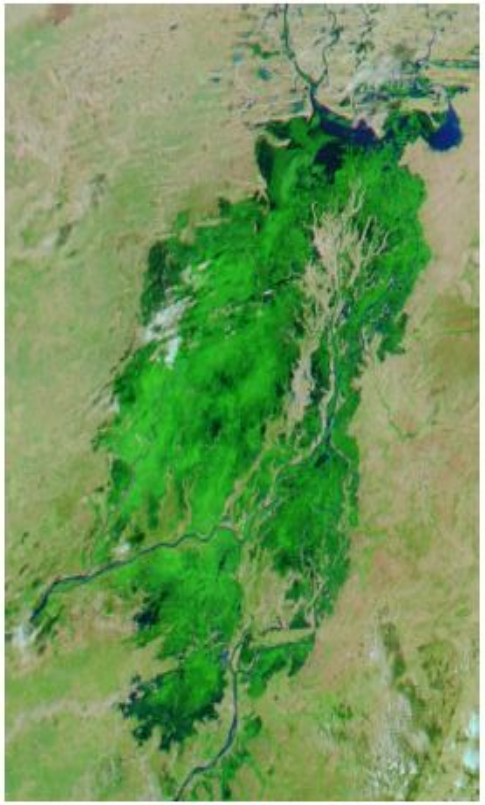


water for energy

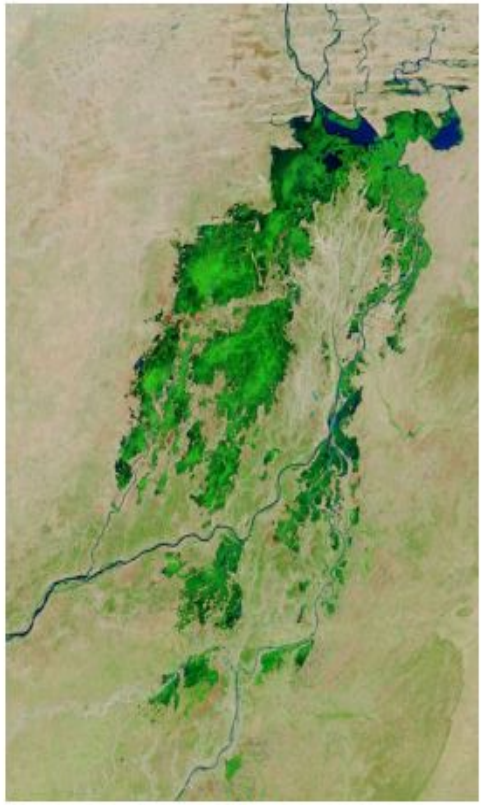
Food and water security provided by annual flood regime

2011: deficit of water in the Inner Niger Delta

2009



2010



2011

From Ecosystem Approach to Action Plan

1. What is the **problem**?
2. What **biodiversity /ecosystem services** are needed to **solve the problem**?
   - what technologies, infrastructure and/or ecosystem services are needed?
3. What **actions** are needed on the ground?
4. What **governance** is needed **to enable action**?
5. **Who** needs **to be empowered** to act?
6. What **knowledge and capacities** are needed?





Ecosystems are infrastructure –
part of the *"stock of facilities, services and installations needed for the functioning of a society and economy."*

However, what is our understanding of the Water, Energy and Food Security nexus ?

The nexus approach acknowledges

- the **links between water, energy and food** in management, analysis, planning and implementation.
- In doing so, **water related strategies and plans are designed in collaboration between relevant authorities and stakeholders,** with the aim of avoiding cross-sector impacts and, looking for combined solutions and synergies for more efficient resource use.
- **The tradeoffs** that may arise are **analysed and discussed considering the relevant water, energy and food security issues** as well as potential impacts on or relations to environment, climate, people's livelihoods and other economic sectors.

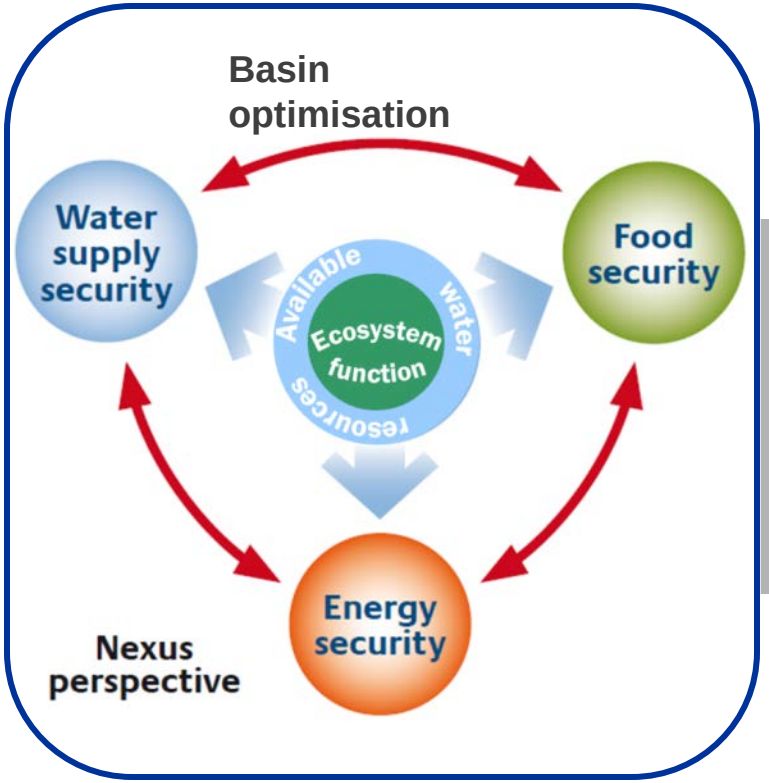
Basin infrastructure portfolios

Energy
Alternatives to HEP; less water dependence

Agriculture
Rainfed productivity; sustainable irrigation

Urban
Rural-urban trade-offs identified

Environment
Natural infrastructure investments



- sustainable water resources
- more equitable development opportunities
- more water efficient energy & agriculture
- ecosystem services underpin livelihoods

More Resilient + Green Economy

Based on: ECOWAS, 2012

A NEED FOR NIGER BASIN AUTHORITY TO STRENGTHEN COOPERATION

With UN Water Convention and Wetlands International TO IMPROVE QUALITY

- Of the WETLANDS
  - Ecosystem restoration & management.
  - Tools & Technologies
  - Stakeholder Knowledge and Skills
  - Empowering people to act
  - Participation, Consensus building
  - Good Water Governance
- Social development & Equity


Thank you for listening
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