

Climate change adaptation and Flood Risk Management in Transboundary Basins

Experience of the Nile Basin Initiative

By

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The Nile Basin Initiative



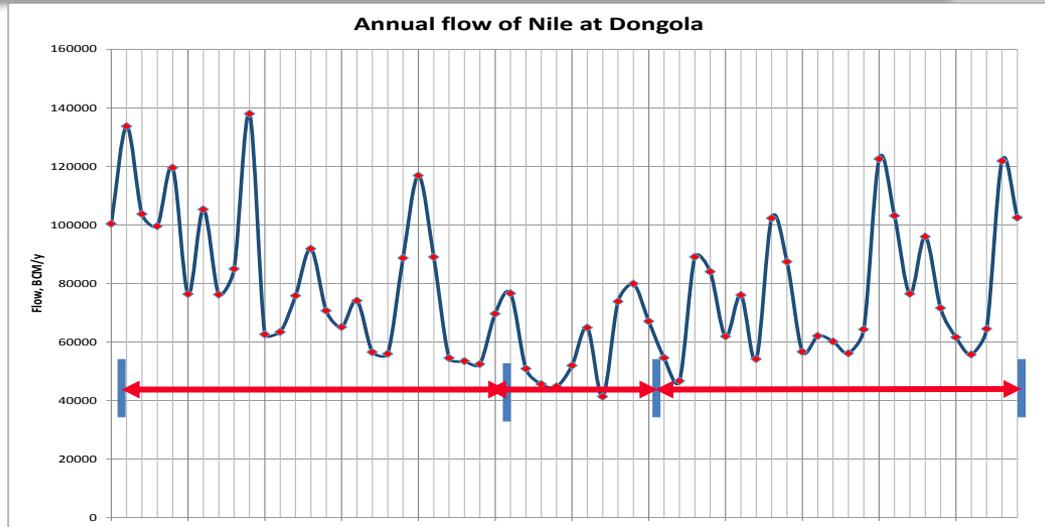
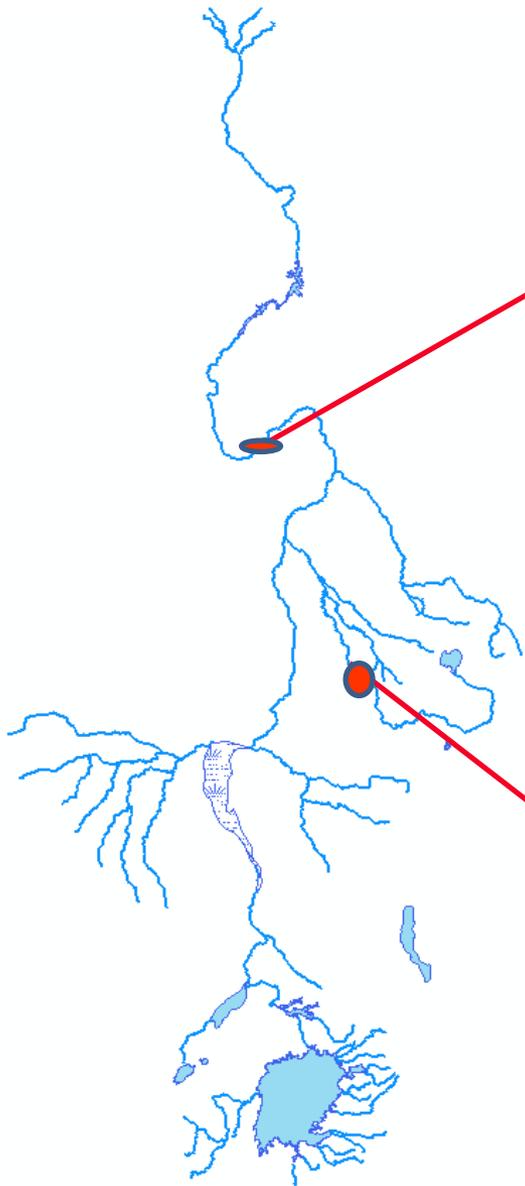
Shared Vision: To achieve sustainable socio-economic development through equitable utilization of, and benefit from, the common Nile Basin Water resources.

Burundi, DR Congo, Egypt, Ethiopia, Kenya, Rwanda, South Sudan, Sudan, Tanzania, Uganda

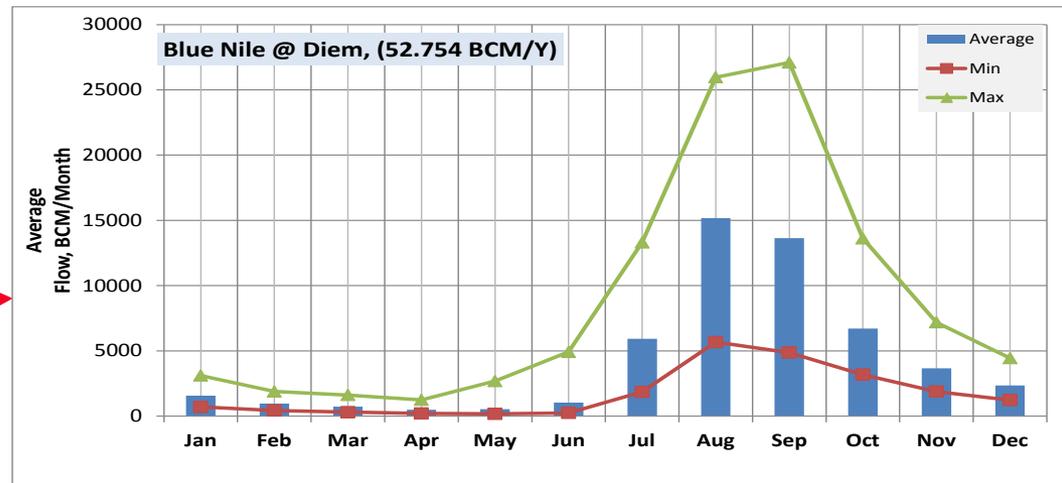


the Nile Basin...

High seasonal and inter-annual river flow variability



Flow for 1987 was 54 % of 1955 – 2014 average



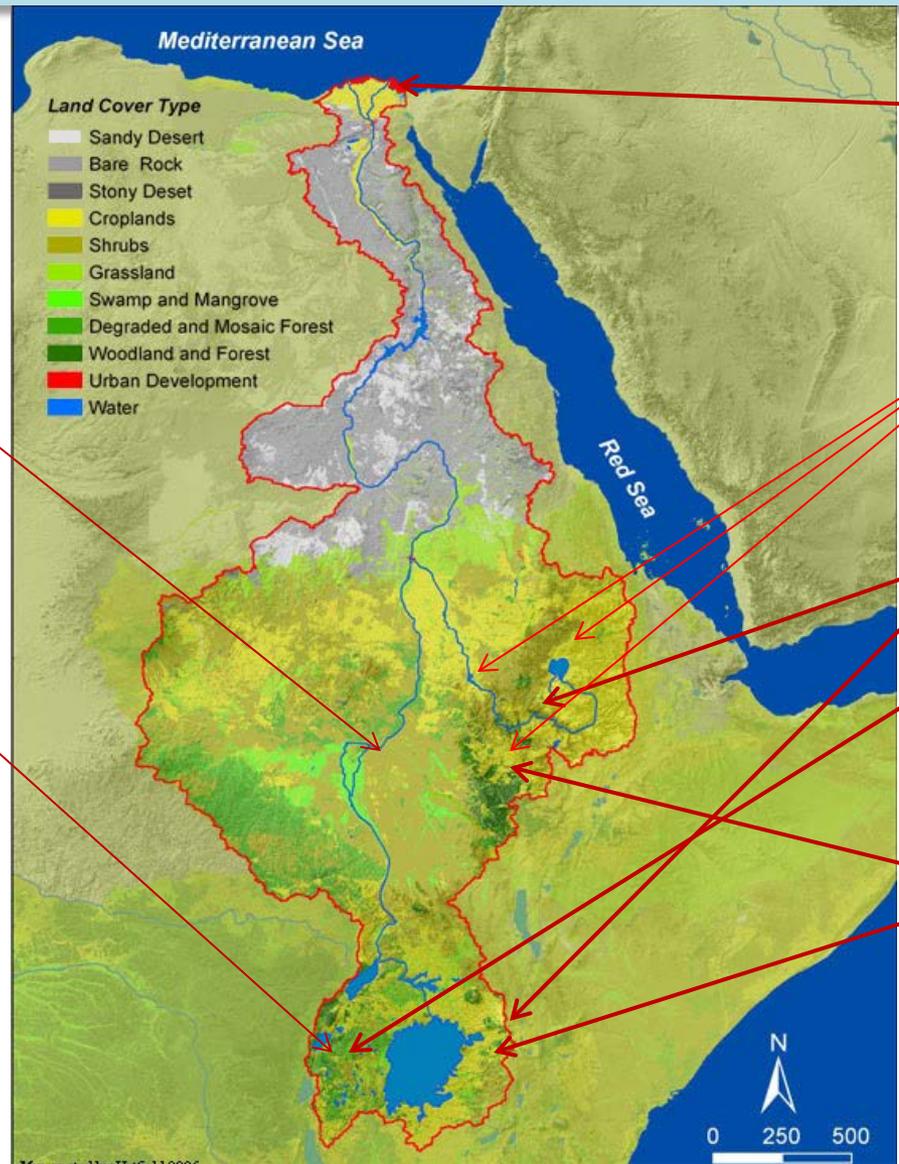
Climate Change and the Nile Basin

Issues at regional level

Water retention, high evaporation

Glacier dynamics

Overall issues
water scarcity;
General land degradation



sea level change

Flood risk

Soil erosion, stream loading

Land use change and conversions

Nile Basin Initiative response to climate change



- Setting up an overarching policy guide for addressing climate change → *the Nile Basin Sustainability Framework*
- Contributing to *climate change knowledge base and decision making tools*, thus raising awareness on climate change among key target groups of stakeholders
- Coordinating *Basin-wide monitoring* of climate change
- Addressing climate change *risks and uncertainties in investment projects*
- Supporting countries in flood early warning and preparedness
- Actively facilitating integration of climate change research into relevant policy planning contexts at regional and national scale (*collaboration with partner institutions*)

NBI's Approaches for Addressing CC Policy level



The **Nile Basin Sustainability Framework**: the overarching guide on set of policies and strategies that shall guide NBI's activities; *endorsed by NBI Governance in 2011*

The Nile Basin Sustainability Framework (NBSF)

Key Strategic Direction 1:

Water-related socio-economic development

Key Strategic Direction 2:

Water resources planning and management

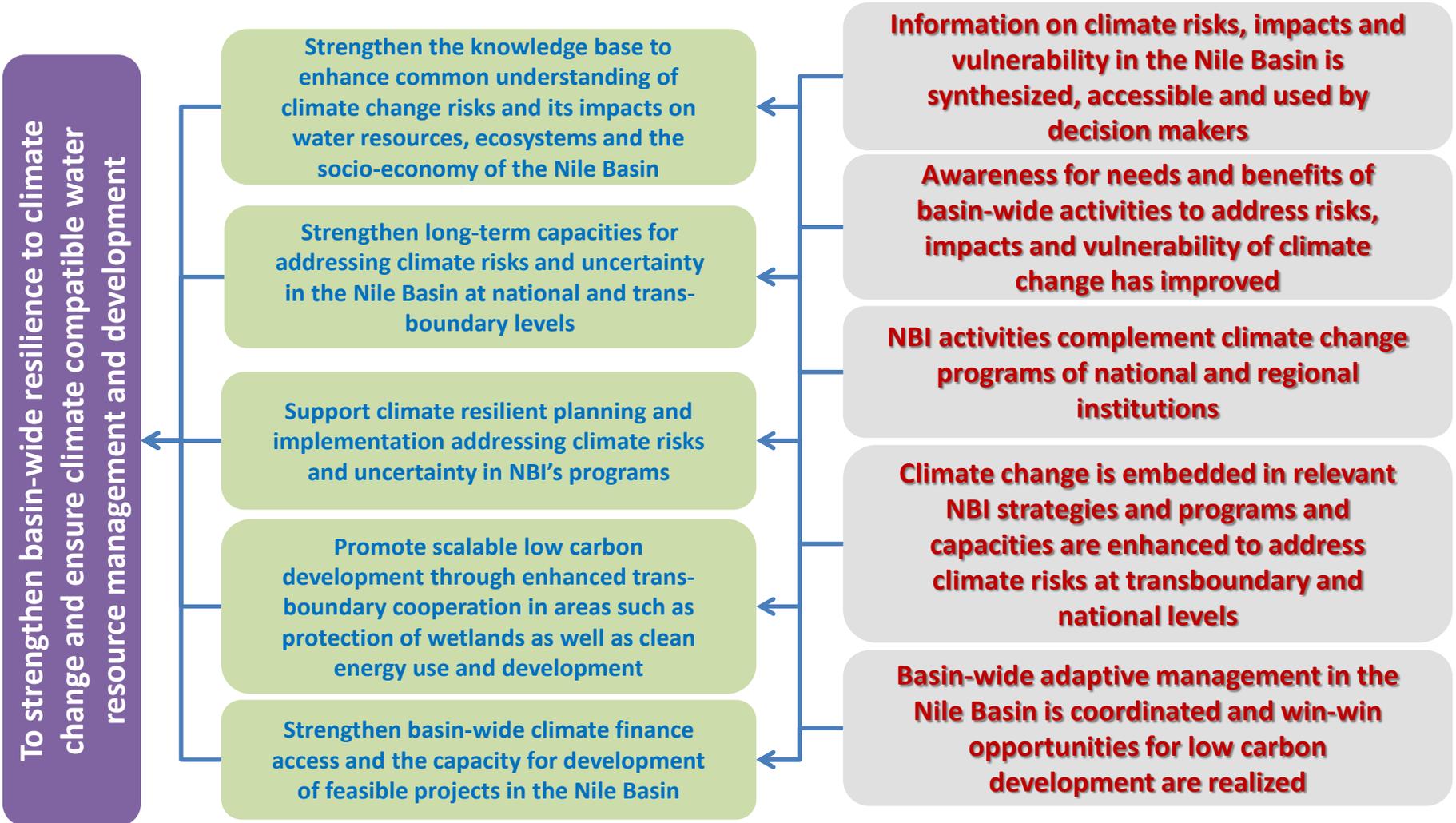
Key Strategic Direction 3:

Environmental and water-related natural resources management

Key Strategic Direction 4:

Climate change adaptation and mitigation

The NBI Climate Change Strategy

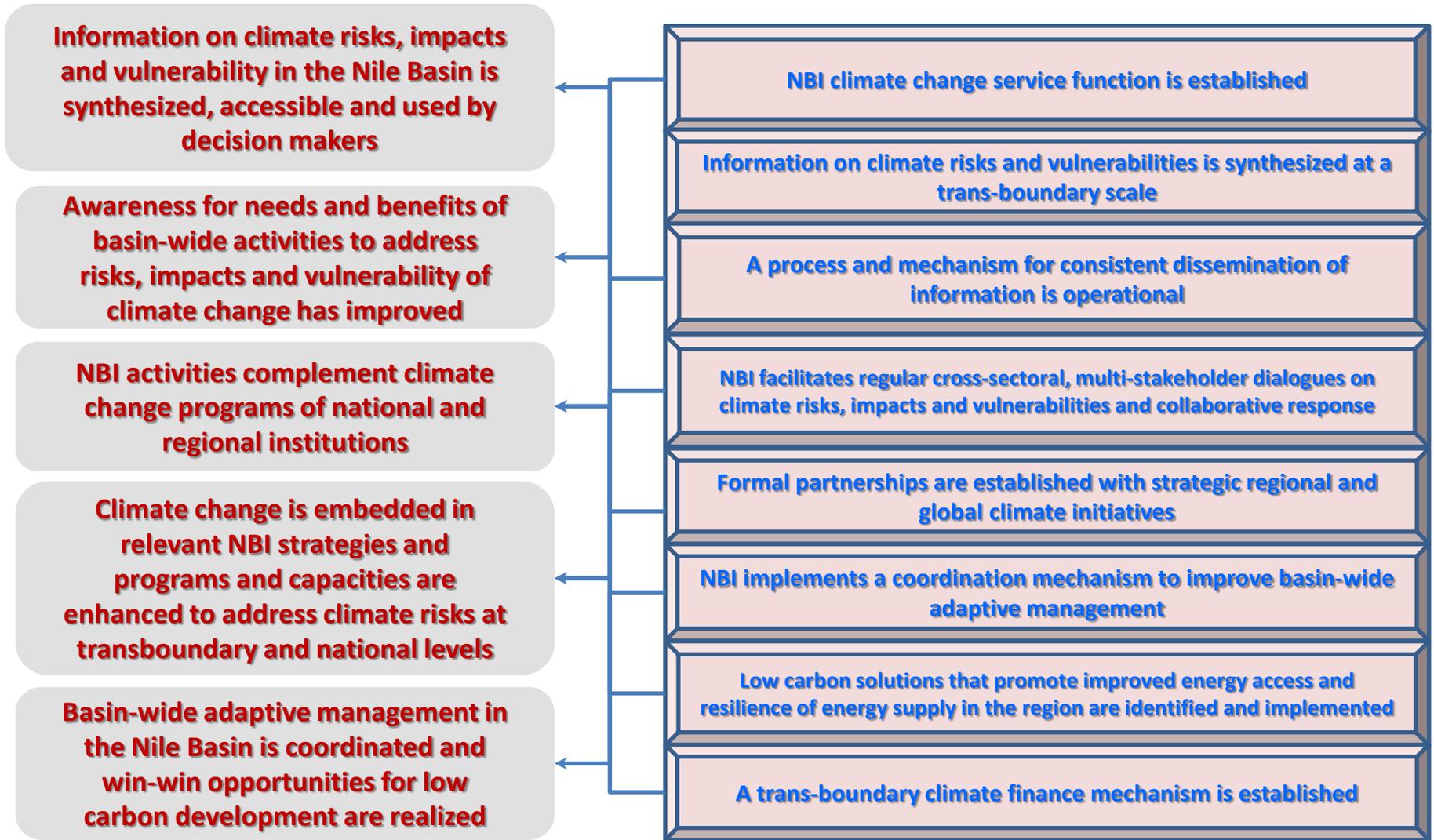


OVERALL GOAL

STRATEGIC OBJECTIVES

OUTCOMES

The NBI Climate Change Strategy



OUTCOMES

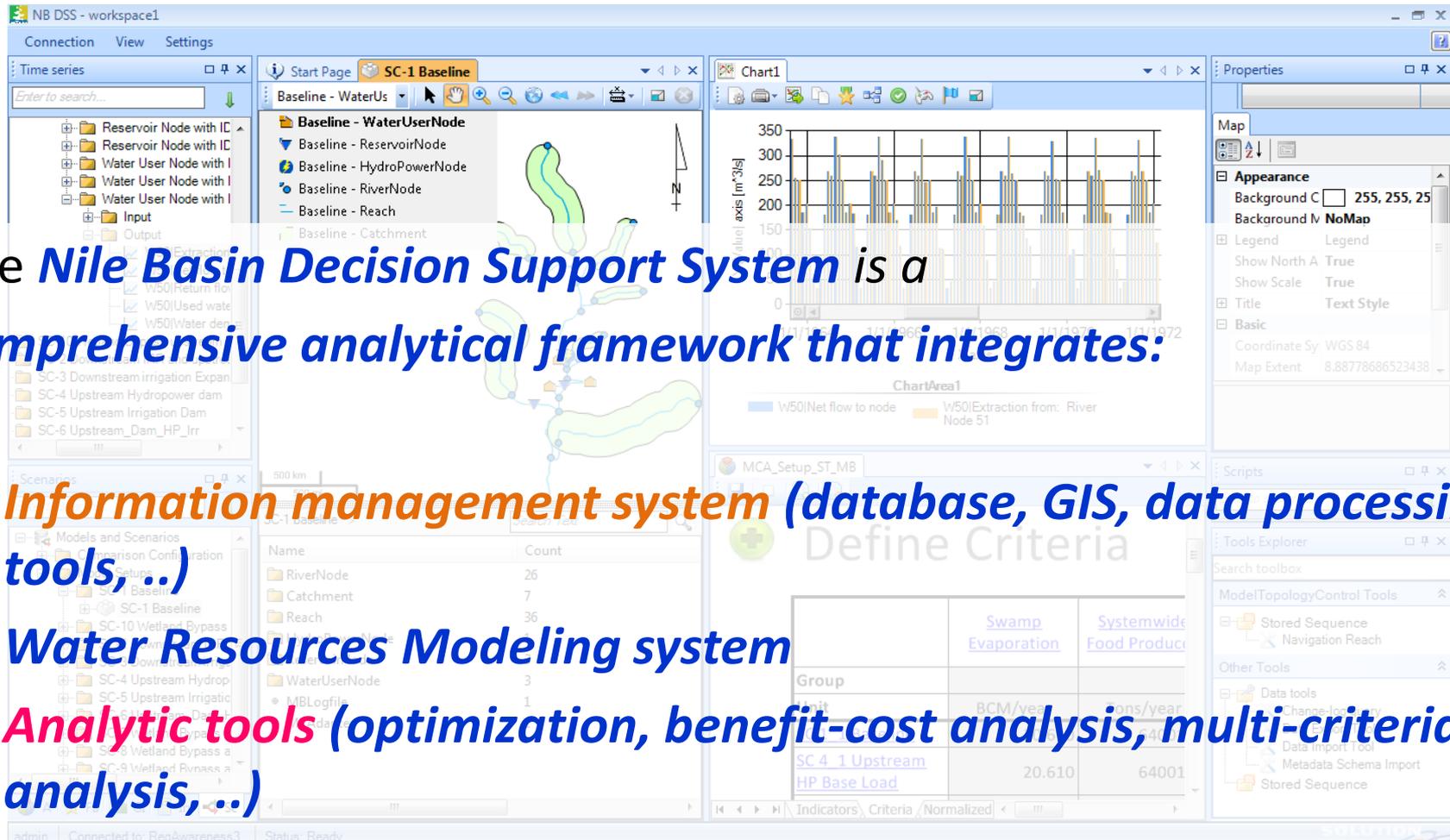
PRIORITY OUTPUTS

Building the knowledgebase

- NBI issued 1st River Nile State of the Basin Report
- NBI has strengthening its planning tools : Nile Basin Decision Support System (NB DSS)
- Supporting science-policy dialogue : the Nile Basin Development Forum (by-annual event);
The theme for 3rd Forum (2011): Climate Change and its Implications for Sustainable Development and Cooperation in the Nile Basin – Threats and Opportunities to Nile Basin Cooperation
- The Nile Basin Water Resources Atlas (currently under development)
- The Nile Basin Regional Hydromet System (design completed)
- Water Resources balance (Supply Vs Demand)
- E-Flow study to determine the reserve water for environmental concern and basic human needs.

NBI's Approaches for Addressing CC

Building analytic capacity



- One of the pillars of NBI's Strategic Action Programs is the subsidiary actions programs in the two sub-basins
- The SAPs have supported the identification, preparation and implementation of investment projects
- Guidelines developed for mainstreaming CC in water resources investment planning
- The projects
 - Hydropower generation with multipurpose dams
 - Promoting integration of regional power grids and power trade to overcome local shortages
 - Livelihood centered watershed management in the Eastern Nile
 - Agriculture - irrigation
 - Fisheries management

Flooding in Khartoum (2013)



Goal: Reduce human suffering caused by frequent flooding while preserving the environmental benefits of floods

Specific objectives:

- Establish regional institutional & strengthen existing capacities of the EN countries in flood forecasting, mitigation and management,
- Promote regional cooperation & enhance the readiness of the EN countries to subsequent implementation of Phase II FPEW projects
- Develop and implement flood forecasting and early warning system;
Pilot forecast areas are Lake Tana, Gambella, BAS, Blue and Main Nile and Wadi Al Arish areas

Strengthening Flood Preparedness - Eastern Nile;



Weekly flood bulletins issued during flood season



Communities Training



Delineation of flood prone areas and setting flood marks (GYR colors)

Watershed Management in the EN



Area 3: To provide an improved water supply and sanitation to the entire population of the NEL region

Enhancing system efficiency and demand management for water supply systems (under plan; 1st stage: Kigali, Kericho, Arusha)

- Reduction of Non revenue Water Collection
- Includes investments in demand management and infrastructure
- Initial Phase in Kenya, Rwanda and Tanzania. To be later rolled out to Uganda, DRC and South Sudan

Area 4: Investments in Fisheries and water resources Management



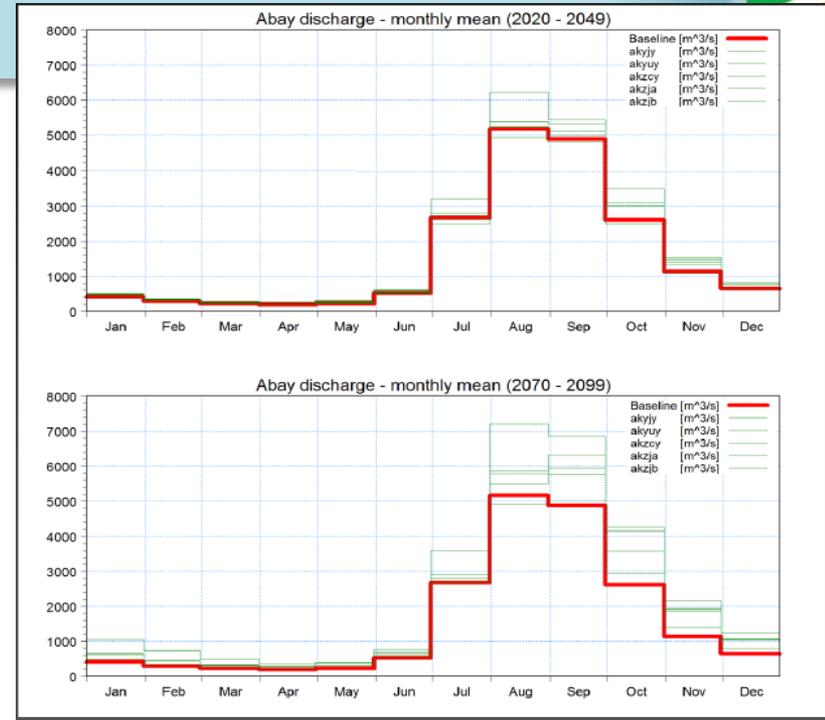
- **Lakes Edward and Albert Water Resources Development Project (FY14), US\$ 67 million.**
- **Project focus:** policy reforms, regional institutional development, fisheries and watershed management and improved lake navigation.
- Financed by AfDB and World bank (under Great Lakes Rural Development Program)

Joint NBI – UNEP Climate Change study

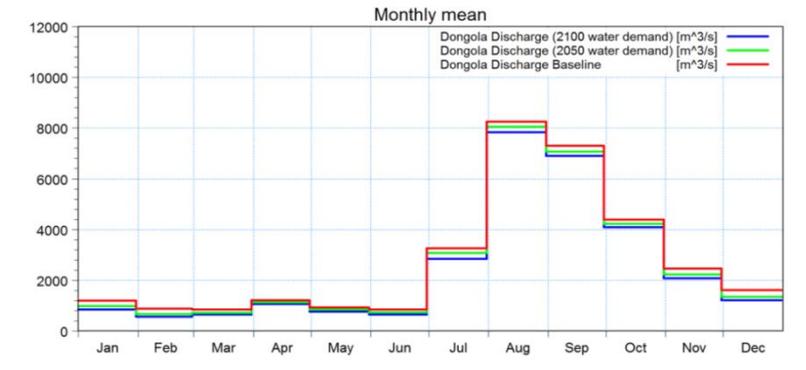


Title: *adapting to climate change induced water stress in the Nile River Basin (Completed 2013)*

Goal: to build the resilience of ecosystems and economies that are most vulnerable to climate change induced water stress in the Nile Basin countries through building key **adaptive capacity** and **piloting** adaptation in “Hot spots” with **technical, policy** and **financial** interventions.



Projection of flow for Blue Nile



Projected flow for Nile @ Dongola

Summary



- NBI has been following a mix of approaches to address risk of climate change:
 - Policy framework – the NBI Climate Change Strategy
 - Building the knowledgebase
 - Enhancing basin monitoring
 - Establishing its modeling framework (Nile Basin DSS)
 - Partnership with other actors (UNEP, University of Bergen)
- A new 5 year program (the *Nile Basin Climate Resilient Growth Program*); first project (NCoRe) launched in March 2013
 - Basin monitoring
 - Modeling and scenario analysis for climate –resilient water resources management
 - Knowledge management
 - Investment planning in water resources