









Improving knowledge for adaptation to climate change

Climate change adaptation and Flood Risk Management

Experience of the Nile Basin Initiative

Sowed WAMALA Nile Basin Initiative

Water and Climate Conference
Meeting of the Great Rivers of the World
Rome, 23-25 October 2017

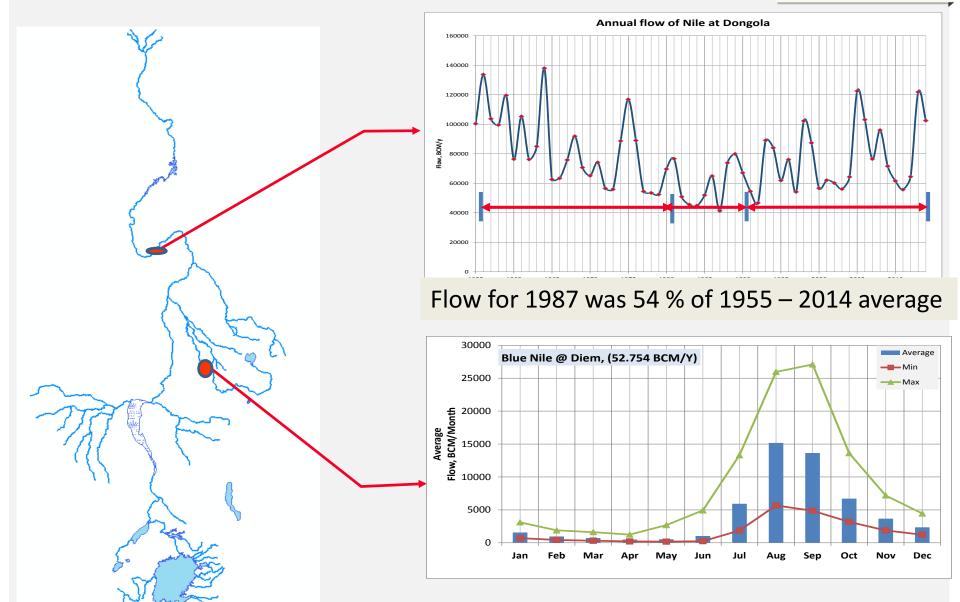


Key elements

- Cooperation among key stakeholders in the Nile Basin to tackle climate change issues
- Climate Change addressed at policy level Nile Basin
 Sustainability Framework and basin wide monitoring of climate change
- Strengthening of planning tools (Nile Basin Decision Support System) and generation of knowledge products on Climate Change

the Nile Basin...

High seasonal and inter-annual river flow variability



Climate Change and the Nile Basin Issues at regional level



sea level

change

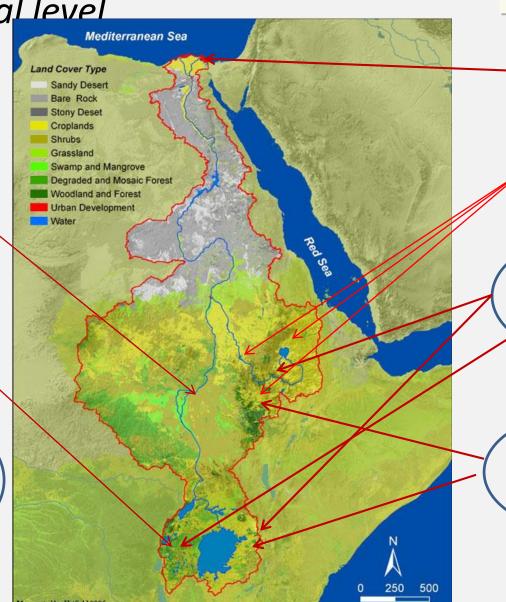
Flood risk

Water retention, high evaporation

Glacier dynamics

Overall issues

water scarcity; General land degradation



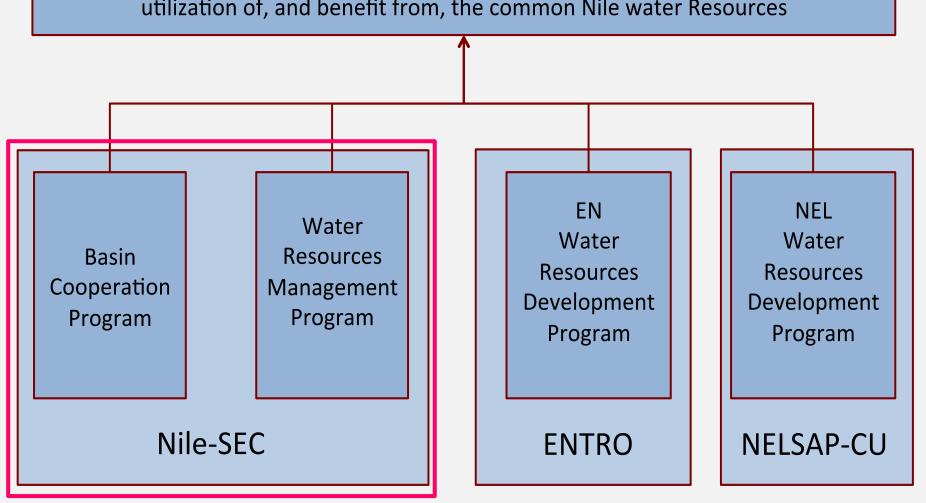
Soil erosion, stream loading

Land use change and conversions

NBI Program Structure



Sustainable socio-economic development in the Nile Basin through the equitable utilization of, and benefit from, the common Nile water Resources



Nile Basin Initiative response to climate change



- Setting up an overarching policy guide for addressing climate change
 → the Nile Basin Sustainability Framework
- A climate change strategy
- Contributing to climate change knowledge base and decision making tools,
- Strengthening hydro-meteorological monitoring
- Addressing climate change risks and uncertainties in investment projects (guidelines)
- Supporting countries in flood early warning and preparedness
- Capacity building (training) on climate change modeling; climate finance

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 Directions:

Water-related socio-economic development

Water resources planning and management

Environmental and water-related natural resources management

Climate change adaptation and mitigation

Climate change	
Goal for 10 year strategy (2017-27)	5 Year Strategic Objectives (2017-22)
Improve basin resilience to climate change impacts	Strengthen NBI's climate service and build member country capacity for climate proofing water resources plans and investments at national and regional levels.

The NBI Climate Change Strategy



To strengthen basin-wide resilience to climate change and ensure climate compatible water resource management and development Strengthen the knowledge base to enhance common understanding of climate change risks and its impacts on water resources, ecosystems and the socio-economy of the Nile Basin

Strengthen long-term capacities for addressing climate risks and uncertainty in the Nile Basin at national and transboundary levels

Support climate resilient planning and implementation addressing climate risks and uncertainty in NBI's programs

Promote scalable low carbon development through enhanced transboundary cooperation in areas such as protection of wetlands as well as clean energy use and development

Strengthen basin-wide climate finance access and the capacity for development of feasible projects in the Nile Basin

Information on climate risks, impacts and vulnerability in the Nile Basin is synthesized, accessible and used by decision makers

Awareness for needs and benefits of basin-wide activities to address risks, impacts and vulnerability of climate change has improved

NBI activities complement climate change programs of national and regional institutions

Climate change is embedded in relevant NBI strategies and programs and capacities are enhanced to address climate risks at transboundary and national levels

Basin-wide adaptive management in the Nile Basin is coordinated and win-win opportunities for low carbon development are realized

The NBI Climate Change Strategy



Information on climate risks, impacts and vulnerability in the Nile Basin is synthesized, accessible and used by decision makers

Awareness for needs and benefits of basin-wide activities to address risks, impacts and vulnerability of climate change has improved

NBI activities complement climate change programs of national and regional institutions

Climate change is embedded in relevant NBI strategies and programs and capacities are enhanced to address climate risks at transboundary and national levels

Basin-wide adaptive management in the Nile Basin is coordinated and win-win opportunities for low carbon development are realized

NBI climate change service function is established Information on climate risks and vulnerabilities is synthesized at a trans-boundary scale A process and mechanism for consistent dissemination of information is operational NBI facilitates regular cross-sectoral, multi-stakeholder dialogues on climate risks, impacts and vulnerabilities and collaborative response Formal partnerships are established with strategic regional and global climate initiatives NBI implements a coordination mechanism to improve basin-wide adaptive management Low carbon solutions that promote improved energy access and resilience of energy supply in the region are identified and implemented A trans-boundary climate finance mechanism is established

OUTCOMES

PRIORITY OUTPUTS

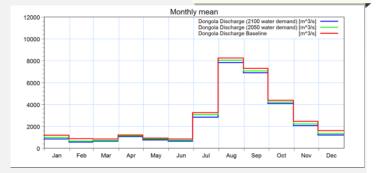
NBI CC related activities (2017-2020)



Activities Completed

Adapting to climate change induced water stress in the Nile River Basin (2013) –NBI-UNEP

CMIP5 – Climate Model outputs used for Strategic analysis



Planned/ongoing

- Operationalize the Nile Basin climate change service function (WB)
- Stakeholder involvement and capacity strengthening
- Develop and operationalize short term to seasonal river flow forecast system
- Stakeholder forums
- Dam safety and dam cascade operation (ENTRO and NELSAP-CU)
- Flood forecasting and early warning (ENTRO)
- Strategic water resources analysis using the NBDSS
- Investment planning (regional investment programs of NBI); ENTRO and NELSAP-CU
- NELSAP: infrastructure projects on flood and drought management; flood analysis (flood frequency analysis, damages curves, etc) factoring in climate change
- NELSAP: reservoir management; capacity building of countries
- EU: strategic nexus on watershed management biodiversity and climate change
- Food security and climate change; climate smart land and water management
- ENTRO: Irrigation efficiency assessment; assessment of conjunctive use of groundwater and surface water

NBI's Approaches for Addressing Climate Change

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 (bi-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 (1 Chapter on climate change)
- The Nile Basin Regional Hydromet System (design completed)
- The Nile Basin Decision Support System is a comprehensive analytical framework that integrates: Information management system (database, GIS, data processing tools, ..), Water Resources Modeling system, Analytic tools (optimization, benefit-cost analysis, multi-criteria analysis, ..)

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
- The 10 year NBI strategy (Improve basin resilience to climate change impacts addressed in the strategy)



Thank you