



Nile Basin Capacity Building network for River Engineering

Knowledge Networks and Collaborative Research in the Nile Basin

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Contents

- **Concepts, vision and objectives**
- **Main building blocks adopted for NBCBN**
- **Network components (Nodes and Research Clusters)**
- **Research modalities**
- **Current status**
- **Future plans**
- **Flood Management Research Cluster**

Main Concept

The main concept on which the network is based is :

To Create an **environment** in which **professionals** from the **water sector** sharing the same river basin would have the possibility to **exchange** ideas, their best practices and lessons learned.

Such an environment can best be established by fostering a network through which education, training, research and exchange of information for and by professionals can take place

NBCBN Vision

“ To Create the opportunity for the water professionals in the Nile basin countries to have an equal access to information and knowledge through; research, training, sharing and transferring knowledge”

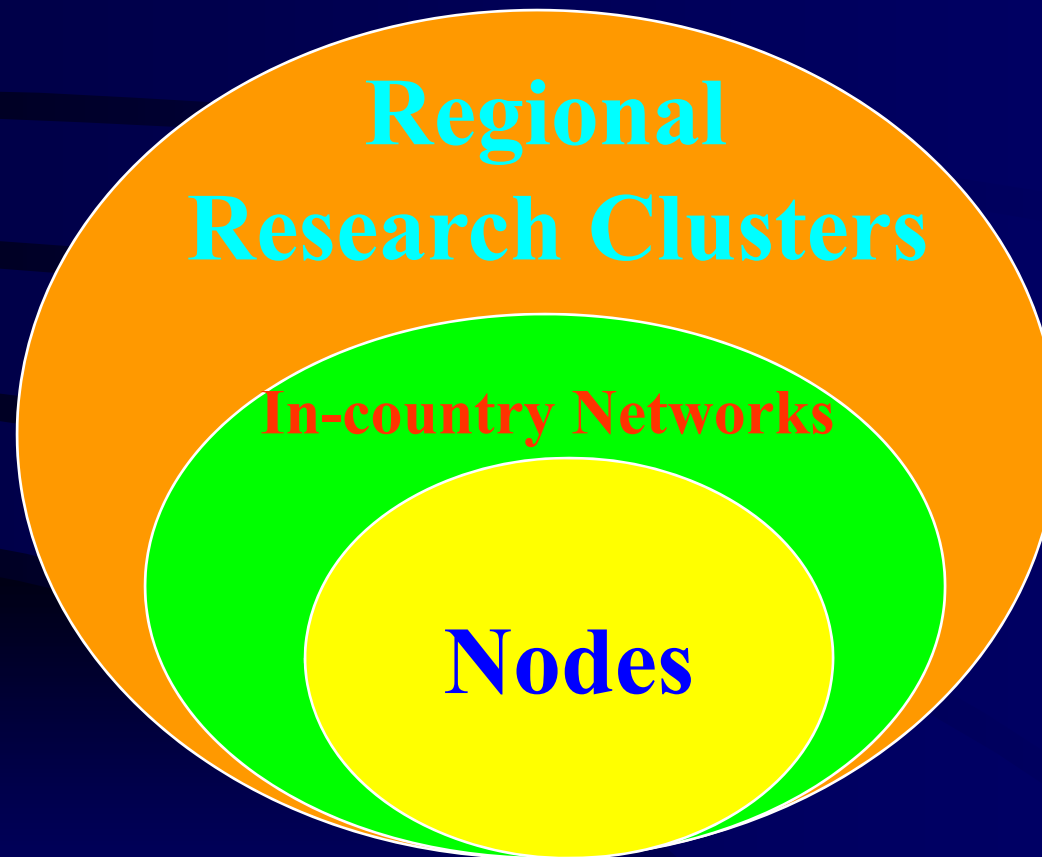
DEVELOPMENTAL OBJECTIVES

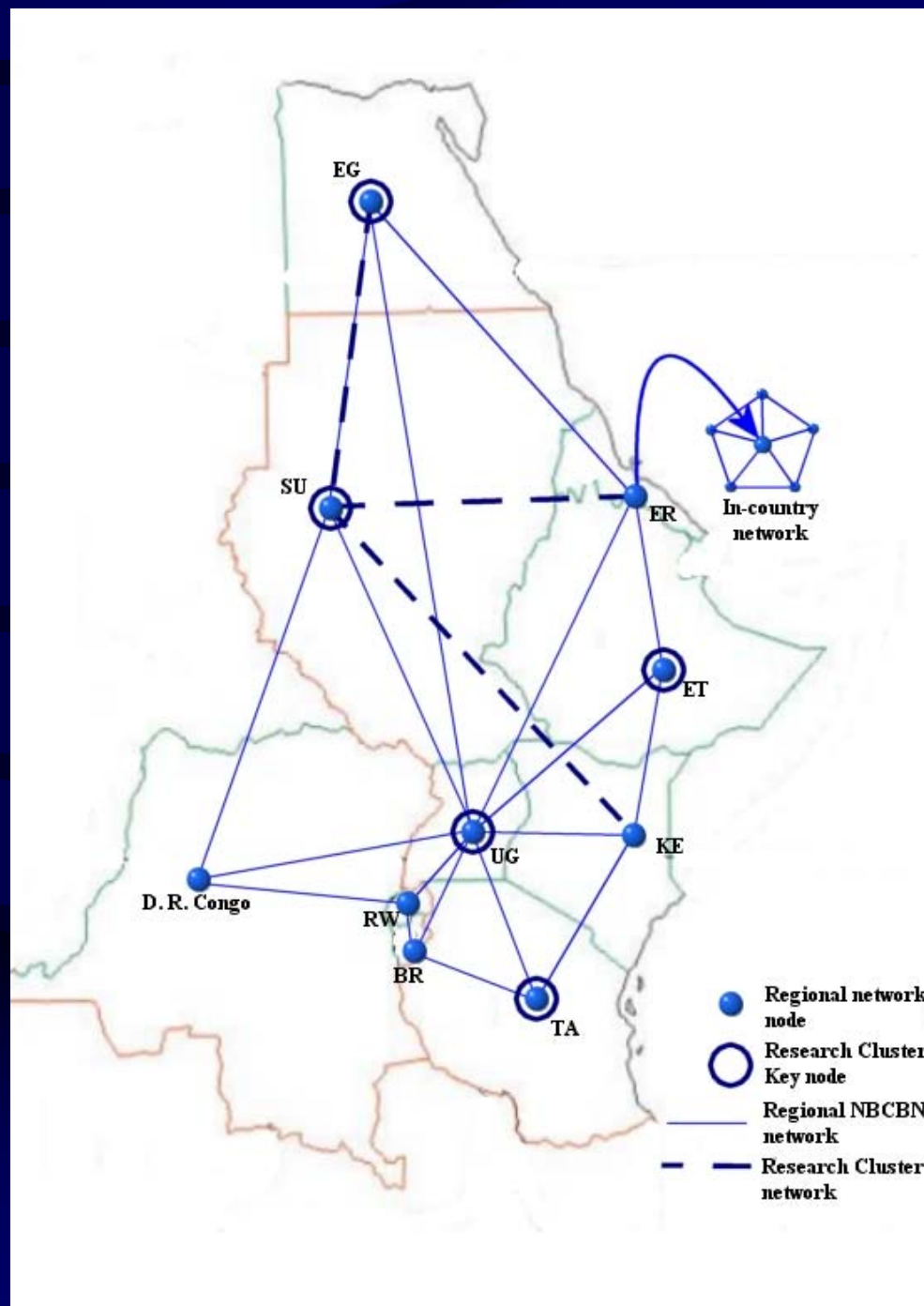
- **To strengthen the human resources development and research capacity in the area of river engineering**
- **To increase the cooperation among the training and research institutions in the Nile basin countries**

Main Building Blocks Adopted for NBCBN



The Approach for Building the NBCBN-RE





How Did We start?

- **A kick-off workshop in January 2002;**
- **Cairo Declaration, 2002**
 - **Develop the concepts and principles of the NBCBN-RE.**
 - **Shape and set the operation rules of the Network.**
 - **Develop a mechanism for the sustainability of NBCBN-RE.**
- **Output of Cairo workshop**
 - **Enhancing regional cooperation.**
 - **Network nodes in all the ten Nile basin countries.**
 - **Six research clusters for carrying out the joint regional research activities.**
 - **NBCBN-RE under the umbrella of NBI.**
 - **Call upon the International organizations to support the NBCBN**

Where Are We Hosted?

Country	Nodes Hosting Institutions
Burundi	University of Burundi
D.R.Congo	Centre De Recherches Geologiques et Minieres (CRGM)
Egypt	Hydraulics Research Institute
Ethiopia	Addis Ababa University
Kenya	University of Nairobi
Rwanda	Institute de Recherche Sceintific et Technologic (IRST)
Sudan	UNESCO Chair in Water Resources
Tanzania	Dar Es Salaam University
Uganda	Makerere University

Our Research Clusters

GIS and Modeling

Egypt

**Kenya , Tanzania
Rwanda, Congo,
Sudan**

River Morphology

Sudan

**Egypt,
Ethiopia, Kenya
Burundi**

River Structures

Ethiopia

**Uganda,
Egypt , D. R. Congo
Sudan**

Environmental Aspects of River Engineering

Uganda

**Kenya
Rwanda , Egypt
Sudan**

Flood Management

Kenya

**Uganda, Egypt
Tanzania , Sudan
Ethiopia,**

Hydropower

Tanzania

**Uganda,
Rwanda , Kenya
Burundi**

GIS & Modeling Research Cluster Launch Event



River Morphology Research Cluster Launch Event



Regional Workshops

Ethiopia



Regional Workshops

Uganda

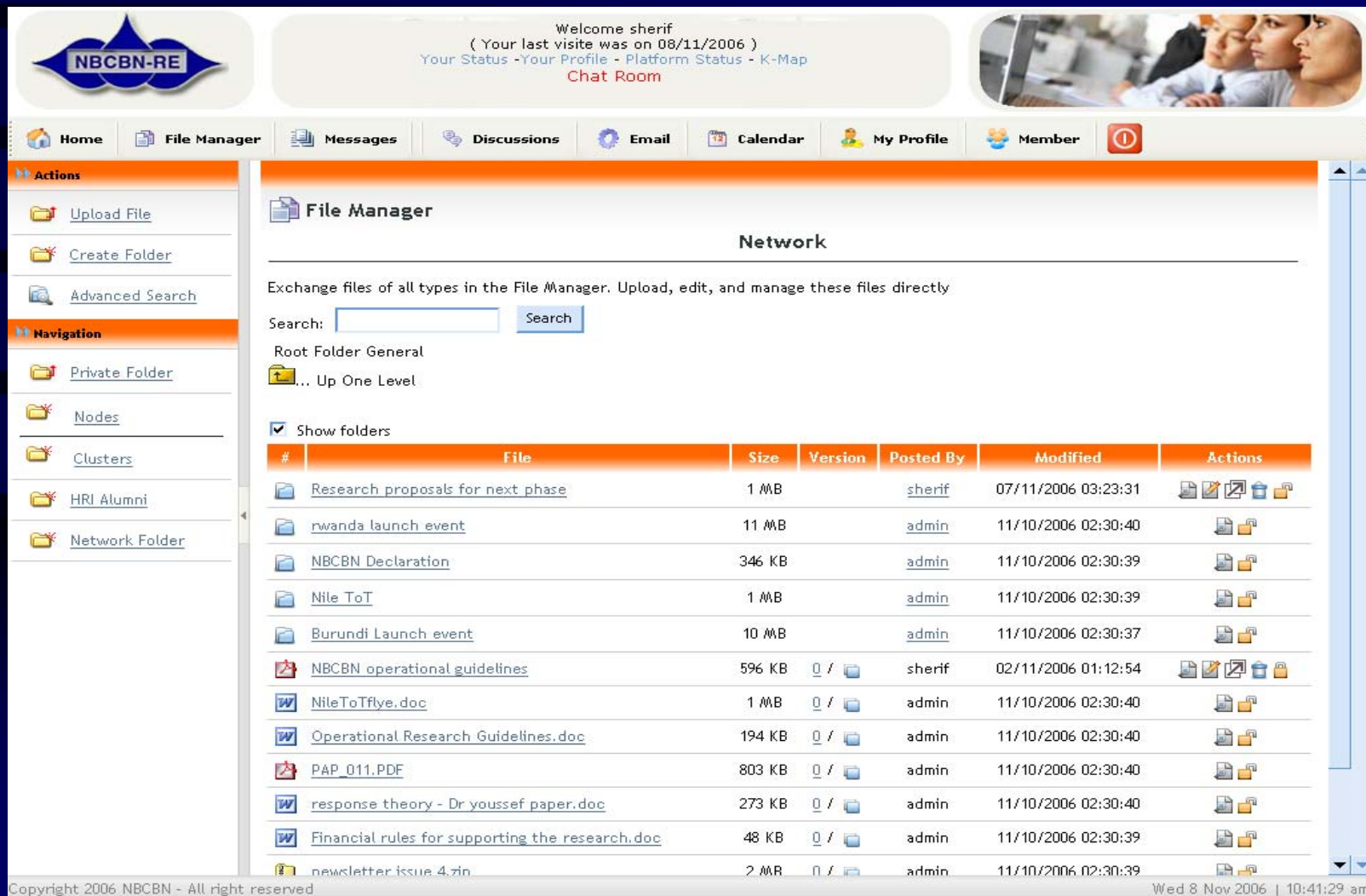




What are Our ICT Tools?

Web-based Collaborative Platform

www.nbcbn.com



The screenshot displays the NBCBN-RE web-based collaborative platform interface. At the top, a navigation bar includes links for Home, File Manager, Messages, Discussions, Email, Calendar, My Profile, and Member. A welcome message for user 'sherif' is shown, indicating the last visit was on 08/11/2006. The main content area is titled 'File Manager' and 'Network', showing a list of files and folders. A sidebar on the left contains 'Actions' (Upload File, Create Folder, Advanced Search) and 'Navigation' (Private Folder, Nodes, Clusters, HRI Alumni, Network Folder). The file list includes details such as file name, size, version, posted by, modified date, and actions.

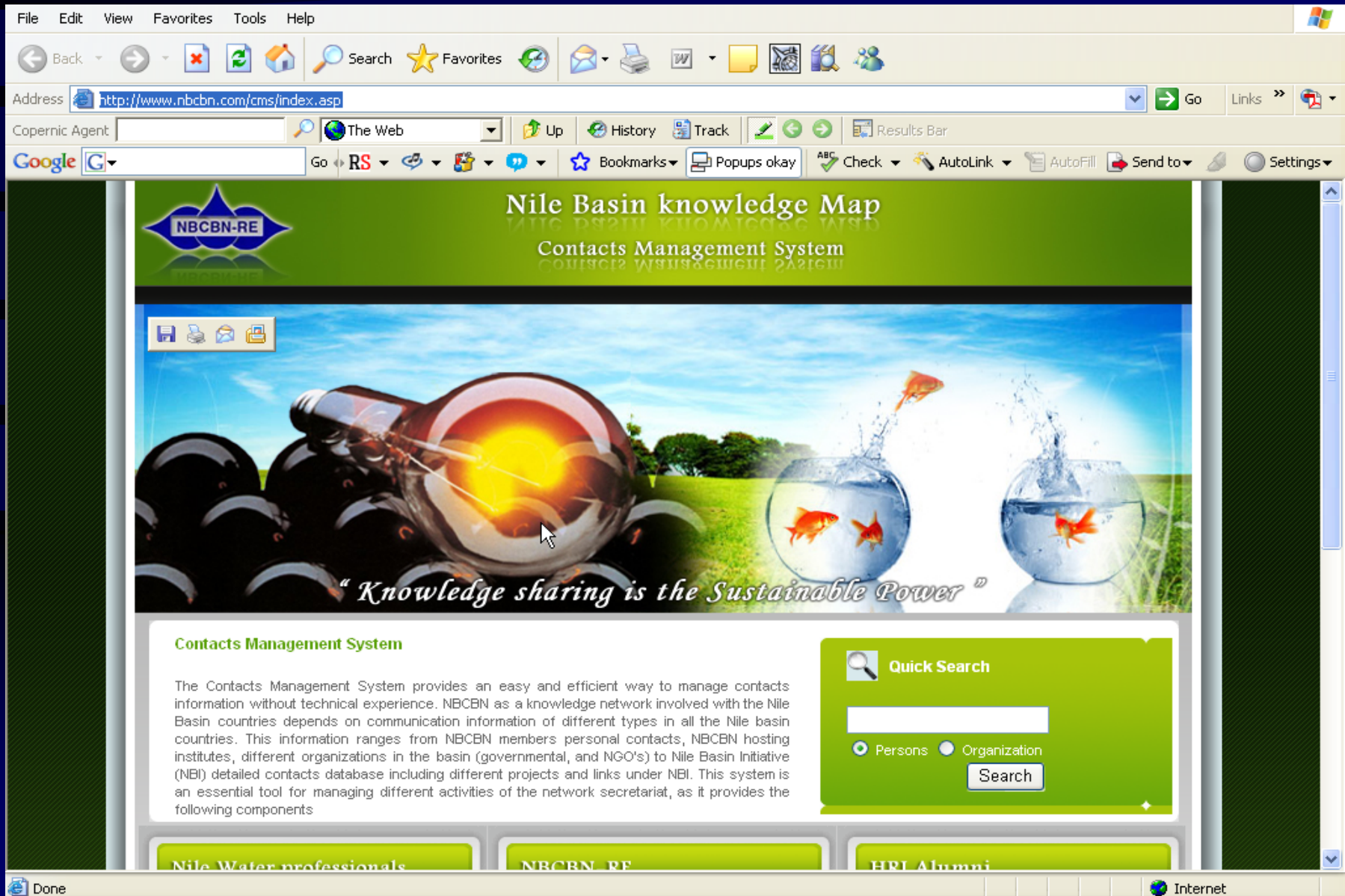
#	File	Size	Version	Posted By	Modified	Actions
	Research proposals for next phase	1 MB		sherif	07/11/2006 03:23:31	
	rwanda launch event	11 MB		admin	11/10/2006 02:30:40	
	NBCBN Declaration	346 KB		admin	11/10/2006 02:30:39	
	Nile ToT	1 MB		admin	11/10/2006 02:30:39	
	Burundi Launch event	10 MB		admin	11/10/2006 02:30:37	
	NBCBN operational guidelines	596 KB	0 /	sherif	02/11/2006 01:12:54	
	NileToTflye.doc	1 MB	0 /	admin	11/10/2006 02:30:40	
	Operational Research Guidelines.doc	194 KB	0 /	admin	11/10/2006 02:30:40	
	PAP_011.PDF	803 KB	0 /	admin	11/10/2006 02:30:40	
	response theory - Dr youssef paper.doc	273 KB	0 /	admin	11/10/2006 02:30:40	
	Financial rules for supporting the research.doc	48 KB	0 /	admin	11/10/2006 02:30:39	
	newsletter issue 4.zip	2 MB	0 /	admin	11/10/2006 02:30:39	

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Wed 8 Nov 2006 | 10:41:29 am

Nile Basin Knowledge Map

<http://km.nbcbn.com>



The screenshot shows a web browser window displaying the Nile Basin Knowledge Map website. The browser's address bar shows the URL <http://www.nbcbn.com/cms/index.asp>. The website's header features the NBCBN-RE logo and the title "Nile Basin knowledge Map Contacts Management System". Below the header is a large banner image depicting a glowing sphere, a fishbowl with goldfish, and a glass of water, with the quote "Knowledge sharing is the Sustainable Power". The main content area is titled "Contacts Management System" and contains a paragraph describing the system's purpose. To the right of the text is a "Quick Search" box with a search input field, radio buttons for "Persons" and "Organization", and a "Search" button. At the bottom of the page, there are three green buttons labeled "Nile Water professionals", "NBCBN-RE", and "HRI Alumni".

File Edit View Favorites Tools Help


Address <http://www.nbcbn.com/cms/index.asp>

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Google Go RS Bookmarks Popups okay Check AutoLink AutoFill Send to Settings

Nile Basin knowledge Map


Contacts Management System



"Knowledge sharing is the Sustainable Power"

Contacts Management System

The Contacts Management System provides an easy and efficient way to manage contacts information without technical experience. NBCBN as a knowledge network involved with the Nile Basin countries depends on communication information of different types in all the Nile basin countries. This information ranges from NBCBN members personal contacts, NBCBN hosting institutes, different organizations in the basin (governmental, and NGO's) to Nile Basin Initiative (NBI) detailed contacts database including different projects and links under NBI. This system is an essential tool for managing different activities of the network secretariat, as it provides the following components

 **Quick Search**

☒ Persons ☐ Organization

Nile Water professionals

NBCBN-RE

HRI Alumni

Done Internet

Nile Water Science and Engineering Journal

The screenshot displays the website for the Nile Water Science and Engineering Journal, which is part of the Nile Basin Capacity Building Network For River Engineering (NBCBN-RE). The page features a header with the journal's title and ISSN 2090-0961. A navigation menu on the left includes links to Home, Objectives & scope, Editorial Board, Authors instructions, Volumes, FAQ, and Contact us. A login area is also present. The main content area is titled 'Aim' and describes the journal's objective: to offer a platform for members of the Nile Basin Capacity Building NBCBN network to disseminate their research output in the field of river engineering to the scientific and public and private professionals and communities active in the Nile basin at local, regional and international level. It aims at raising awareness of the Nile Basin countries on the scientific and technical issues related to the development and management of water resources within the Nile basin. A special focus is on young researchers from the basin to enhance their research skills through publications.

Below the 'Aim' section, there is a search bar with a dropdown menu for 'By Keywords' and 'Author'. A 'Login area' is also visible, with fields for 'Name' and a password field, and a 'Go' button. A 'SUBMIT A PAPER' button is located below the login area. The page also includes a list of articles, each with a title, author(s), and links to 'Abstract' and 'Full Paper'.

ne 1 October 2008

A Comparative Study of International EIA Guidelines and the Sudan EIA Experience, *M. Elmuntasir I. Ahmed*
[Abstract](#) [Full Paper](#)

Environmental Water Requirements Rapid Assessment (Downstream of the Hydropower Plant of Lower Kihansi), *Raphael M. TSHIMANGA, and Preksedis M. NDOMBA*
[Abstract](#) [Full Paper](#)

Assessing the Hydrological Performance of the Nile Forecast System in Long Term Simulations, *Mohamed E. Elshamy*
[Abstract](#) [Full Paper](#)

4. Problems and Prospects of SWAT Model Application in the NILOTIC Catchments, *P.M. Ndomba and B.Z. Birhanu*
[Abstract](#) [Full Paper](#)

5. Empirical Assessment of Local Scour at the Head of Groynes, *Mohamed Akode Osman, Abbas Abd Alla Ibrahim*
[Abstract](#) [Full Paper](#)

6. Prediction of Sediment Inflow to Igedadi Reservoir Using SWAT Watershed and CCHE1D Sediment Transport Models, *Andualem Gessese and Yonas M.*
[Abstract](#) [Full Paper](#)

7. Integration of NFS with Regional Climate Model to Simulate the Nile Basin Hydro-climatology, *Eman S.A. Soliman, M. A. Aty Sayed, M.M, Nour El-Din, and Ghada Samy*
[Abstract](#) [Full Paper](#)

8. Eastern Nile Planning Model, Integration with IDEN Projects to Deal with Climate Change Uncertainty and Flooding Risk, *Mohamed Abdel Aty Sayed*
[Abstract](#) [Full Paper](#)

■ Xhtml valid ➡
■ Css valid ➡

What is Our Research Scope?

1. Cluster Research

- 6 research clusters
- 13 research groups

2. Local Action Research

- 9 in-country local actions

3. Integrated Research

- 2 integrated research activities

4. Multi-Disciplinary Research

- *Impacts of climate change on water resources in the Nile Basin*
- Towards Management of Water Scarcity in Nile Basin Countries

Cluster Research Topics

Regional Cluster /Hosting Node	Research Topic
Environmental Aspects of River Engineering Uganda	Impact Evaluation Tools & Decision Support System For EIA
	Applied methodologies and guidelines for carrying out CBA ,RA,SEA for the Nile Basin Riparian counties
GIS-Modeling Egypt	Hydrological and environmental aspects of wetlands (Analytical Tools for Wetlands Management)
	GIS Based Decision Support Tool for Sustainable development of SUDD Marshes region
	Sediment yield modelling using SWAT model in Tropical regions: Cases of Rugezi Watershed in Rwanda and Wadi Watier Watershed in Sinai, Egypt

Cluster Research Topics Contd.

Regional Cluster /Hosting Country	Research Topic
River Morphology Sudan	Nile Basin Reservoir Sedimentation Prediction and Mitigation
	Nile River Protection Against Bank Erosion
Flood Management Kenya	Flood Catchment And Management
	Flood and Drought Forecasting System and Early warning Program
River Structures Ethiopia	Influence of Settling Basins and Sediment Bottom Vanes on Sedimentation at River Intakes
Hydropower Tanzania	Development of Regional guidelines for Mini-Hydro plants
	Special Problems of Hydropower Reservoirs in the Tropics

Integrated Research Modality

1. Future Hydropower Scenarios for the Riparian Countries of the Lake Victoria Basin, Uganda Regional Cluster
2. Integrated Flood and Drought Management for Sustainable Development in the Nile Basin: The case of Nzoia and Kagera River , Kenya Regional Cluster

Local Action Research Modality

Node	Local Action Topic
Egypt	A Hybrid Approach To Improve The Design of Stilling Basin
Sudan	Assessment of Water Supply Sources and Systems of Potable Water in Khartoum Metropolitan in Relation to Liquid Disposal.
Kenya	Capacity Building For Local Communities To Effectively Respond To Floods And Droughts
Tanzania	Implementation of mini-hydropower plant
Ethiopia	Effect of Watershed Management on Reservoir Sedimentation (Case Study – Koga Reservoir)
D.R. Congo	Survey of Pre-feasibility for the Assessment of the Impact of the Climatic Changes on the operation of the Hydroelectric Dam Of Inga / DRC
Rwanda	Identification and quantification of runoff generation processes during floods and droughts in Migina catchment, Southern of Rwanda
Uganda	Supporting collaborative development and use of water engineering research knowledge in Uganda
Burundi	Analysis of the nature of the sediments load in the Nile Basin (Eastern Burundi).

Multi-Disciplinary Research Modality

- Development of NBCBN framework to study “Impact of Climate change on water systems for the Nile Basin”
- Workshop : 27-28 October 2008
- Participation of NBCBN in the UNESCO IHE research project Adaptation to Climate Change Impacts on the Nile River Basin (ACCION).

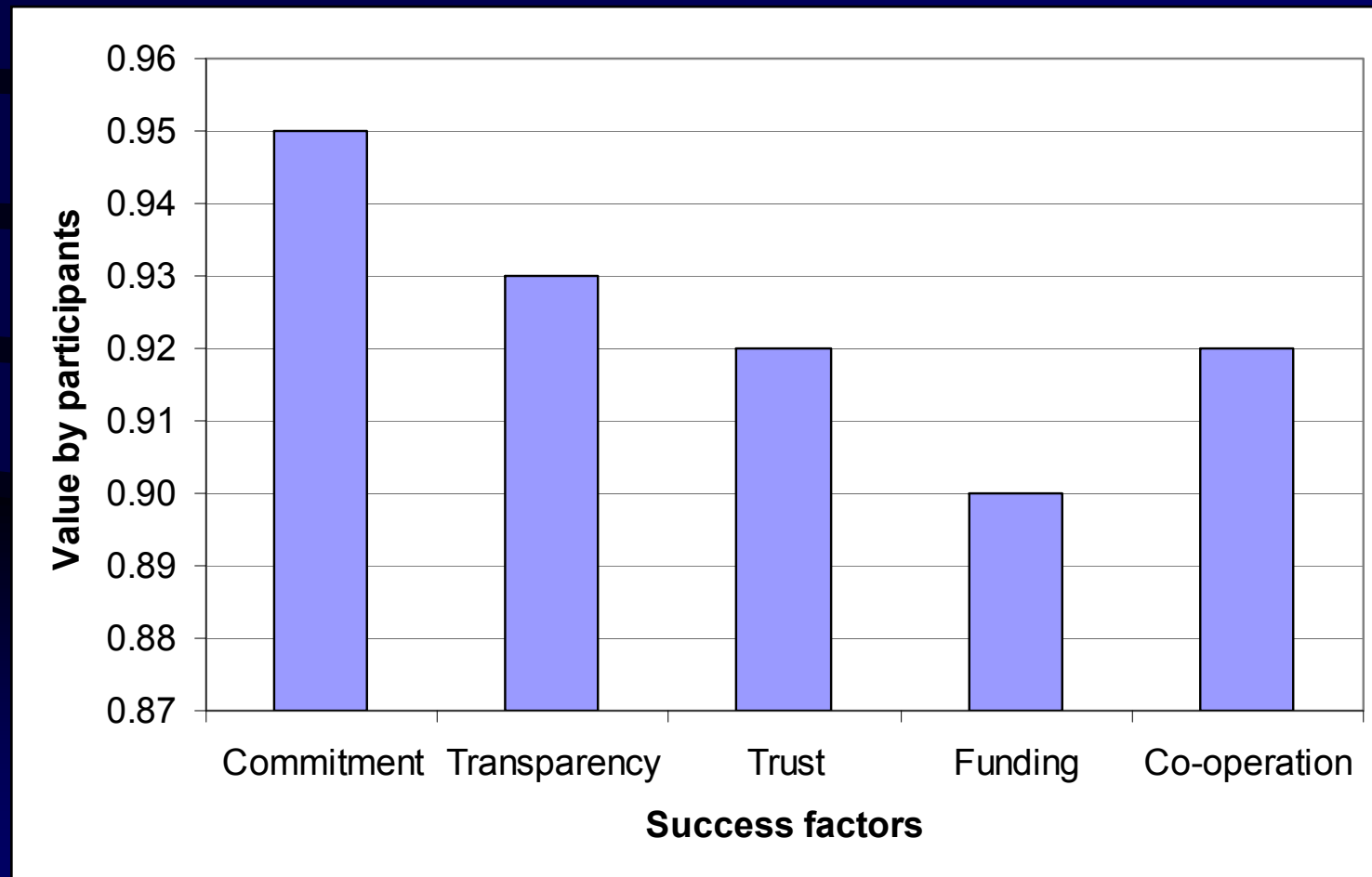
Our Current Status

- Network of more than 300 professionals (from the basin)
- 9 nodes and in-country networks
- 6 research clusters with 13 active research groups
- 9 research groups active on national level
- 2 research groups active on integrated research
- key group of high qualification in collaborative research coordination

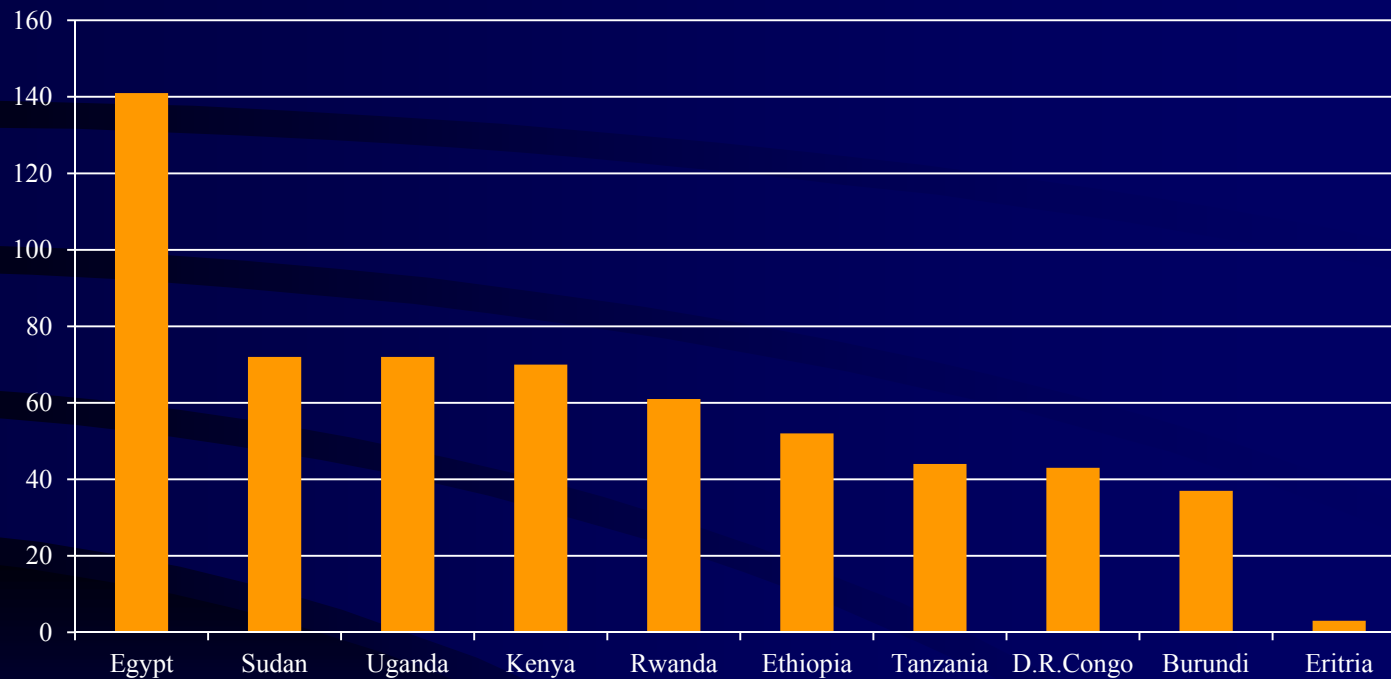
Our Current Status

- Dynamic website with communication platform
- Nile Basin knowledge Map
- Network monitoring and evaluation system
- Periodical Network newsletter
- Nile Water Science and Engineering Journal, (Volumes 1,2)
- Research portfolio with more than 25 research proposals.

Success Factors According to NBCBN Members

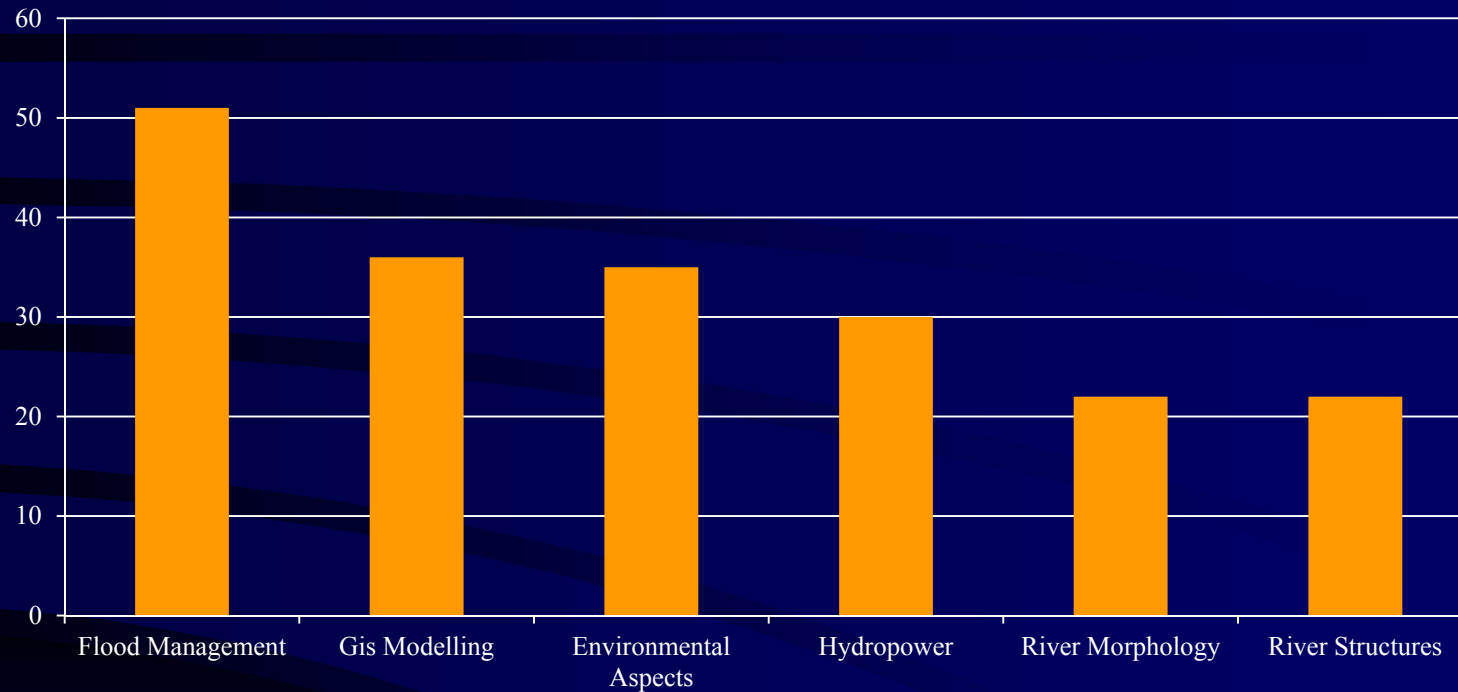


Facts and Figures



Total Members per Node

Facts and Figures



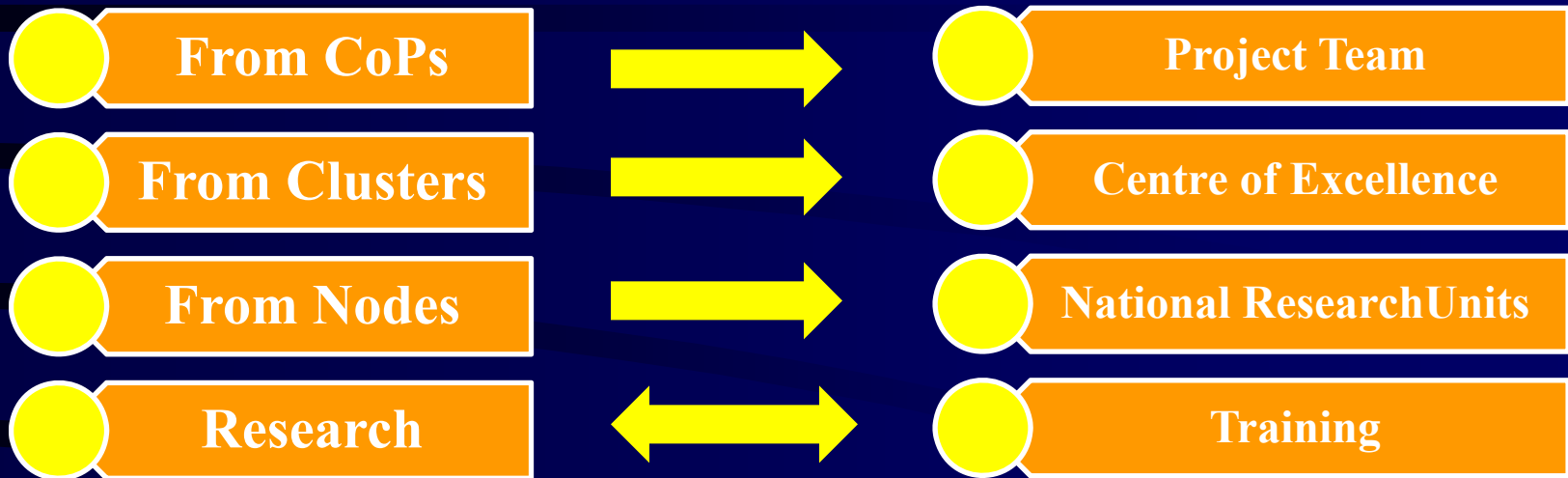
Total Members per
Cluster

Work plan (2009-2010)

- Third Volume of NBCBN Scientific Journal, Feb. 2009
- Joint Workshop for D.R. Congo, Rwanda, Burundi, (Kigali 1-3 December, 2009)
- Research modalities finalization and reporting (Jan-Feb, 2010)
- Development of NBCBN future research proposal on climate change (October 2009-March 2010)
- NBCBN monitoring system trial version (December 2009)
- NBCBN Conference on “ Water Science and Engineering” (Mid 2010)
- NBCBN phase III proposal (January – July 2010)

How do we see our future?

Key Elements for Future Development



- Problem Solving Oriented Research Approach
- Focus on Climate Change Impacts and Mitigation Measures research
- Continue with CB with Focus on specialised training modules that support research activities..

Flood Management Cluster



Cluster Development

Launch Date: 22nd Sept. 2002

Country: Kenya

Hosting Institution: University of Nairobi

Country Coordinator: Prof. Patts Odira

Linked countries: Egypt, Ethiopia, Uganda, Tanzania and Sudan

Number of members: 50 member

Phase I (2002-2004)

Two research groups under cluster research focused on the following topics:

1. Flood Forecasting and Early Warning
2. Flood and Watershed Management

Phase 2 (2006-2010)

Four research groups under Kenya node working under the following research themes:

1. Cluster Research:
 1. **Catchments characteristics for flood and drought management**
 2. **Flood and Drought Forecasting Systems and Early warning Programs**

2. Integrated Research

Integrated Flood and Drought Management for Sustainable Development in the Nile Basin: The case of Nzoia and Kagera River Basins

3. Local Action Research

Capacity Building for Local Communities to Effectively Respond to Floods and Droughts

Thanks for Your Attention

For further information

Our website: www.nbcbn.com

E-mail: a_azab@nbcbn.com, nbcbn-sec@nbcbn.com