



Presentation from  
**2016 World Water  
Week in Stockholm**

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

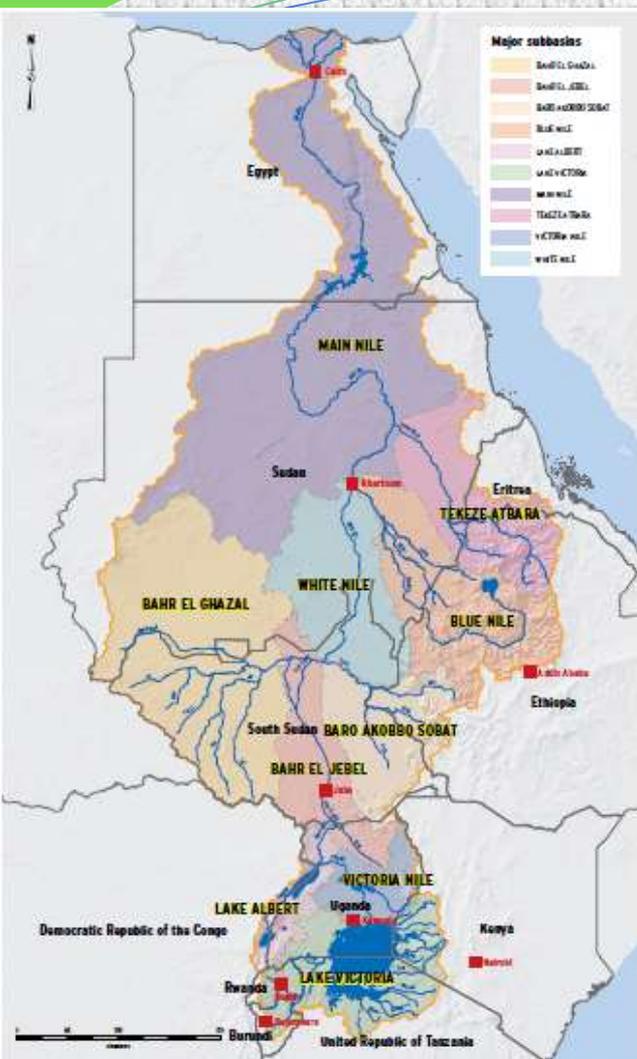
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# Managing Shared Risks thru Cooperative Water Resources Investment (Planning) The NBI Experience

**Nile Basin: Land and energy investments and changing hydro-political  
landscapes**

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World Water Week, Stockholm, Aug 29, 2016*



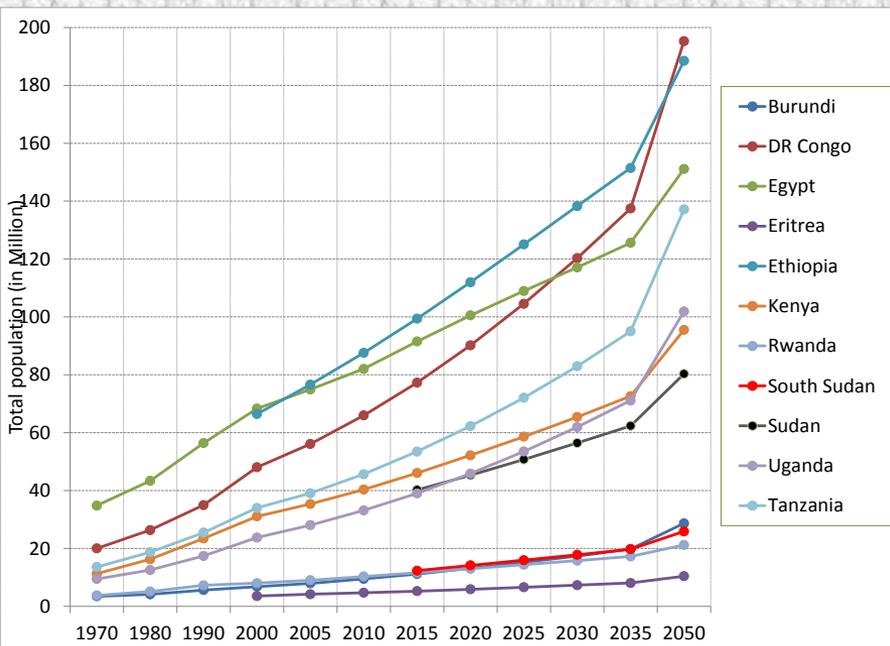
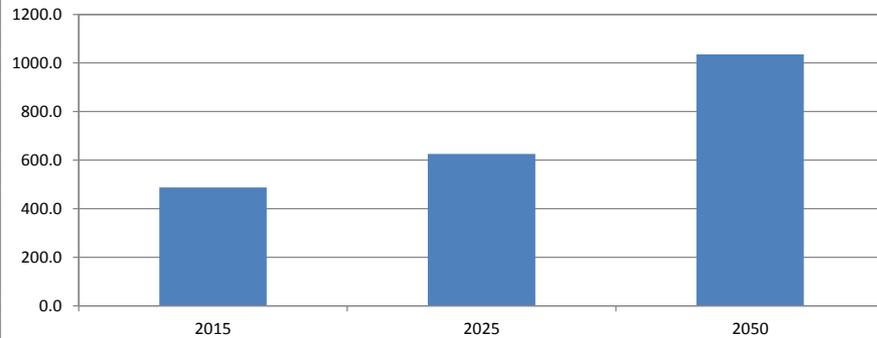
## The Nile Basin

- Source of livelihood for > 250 million people in 11 countries
- 3.2 million sq km area
- Most part of the basin is arid/semi-desert
- *Over 80 percent of river flow originate from a relatively small part of the basin that is prone to regular climate extremes (drought, floods)*
- *Most current uses are in the d/s arid/semi-desert part*
- *Most undeveloped part is upstream in water source countries*
- *Home to fragile ecosystems and world-class environmental assets*

# Rapidly growing population and economies



NB Countries' total population, Millions



- Rapidly increasing water demand for consumption, food and energy production
- Decreasing per capita water availability

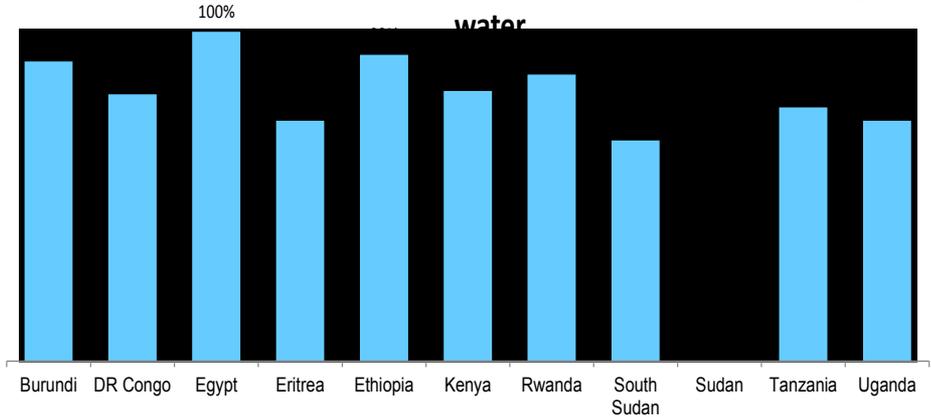
# The substantial unmet basic needs



**Percentage of rural population with access to clean drinking water**

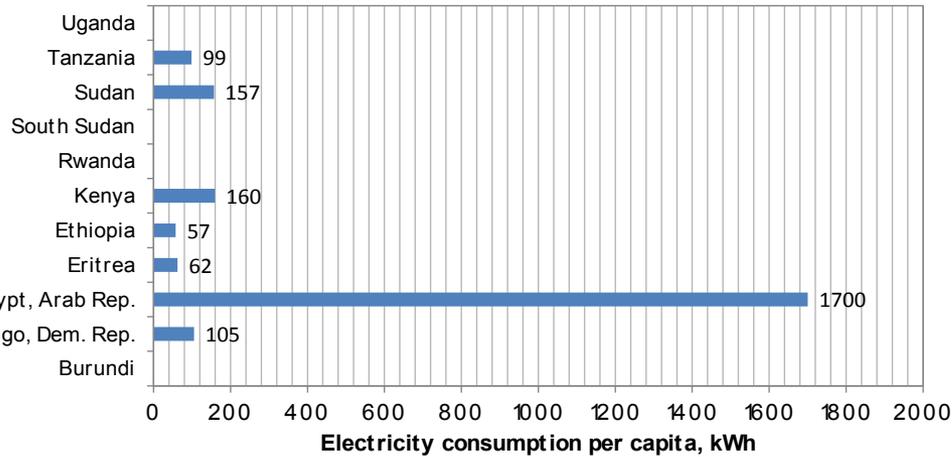


**Percentage of urban population with access to clean drinking water**

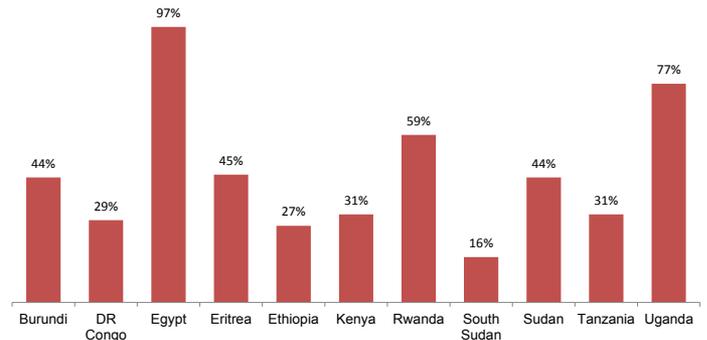


**Per capita electricity consumption**

(Source: World Development Indicators, World Bank, 2011)



**Access to improved sanitation - urban areas**

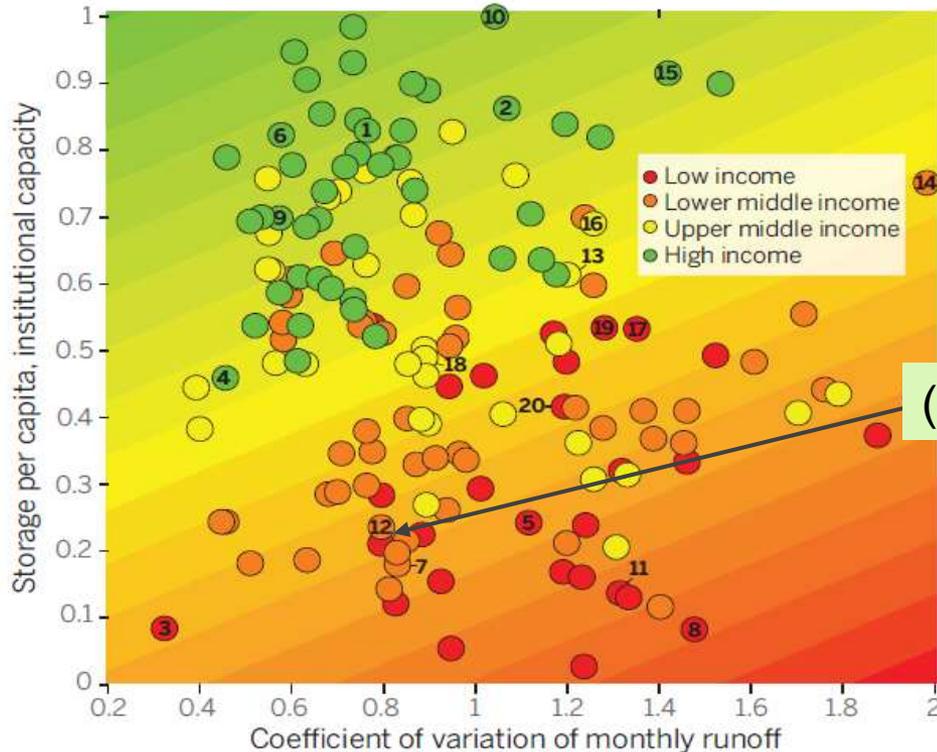


# Low level of investment in water infrastructure, high hydrologic variability, climate change risks.....



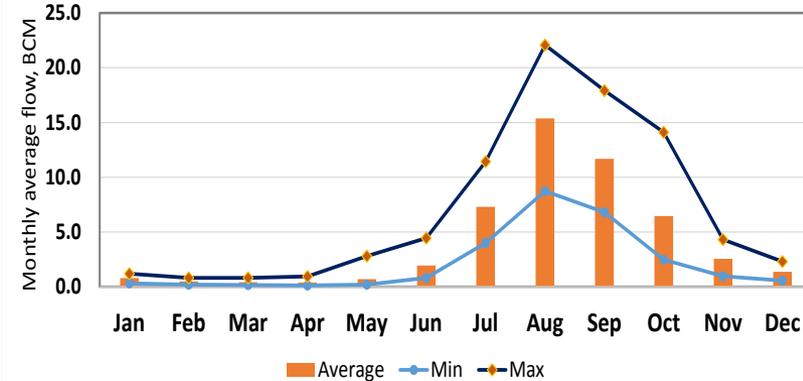
## Linking economic growth, hydrologic variability, and investment in risk mitigation

Increasing investment →



(Nile Basin)

Monthly Average Flow for Blue Nile @ Diem, 1913 - 2014

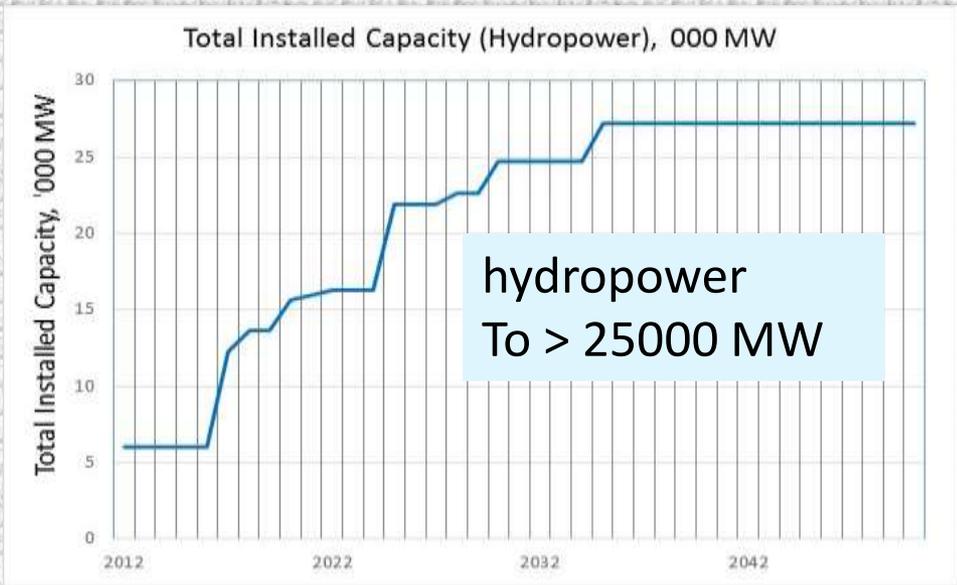


Adapting to hydrologic variability and resilience to climatic risks through:

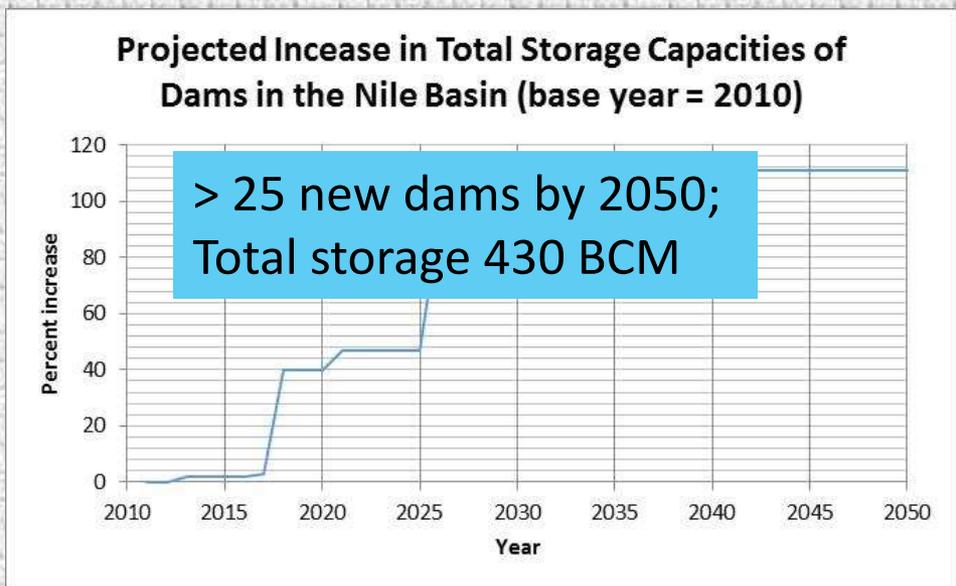
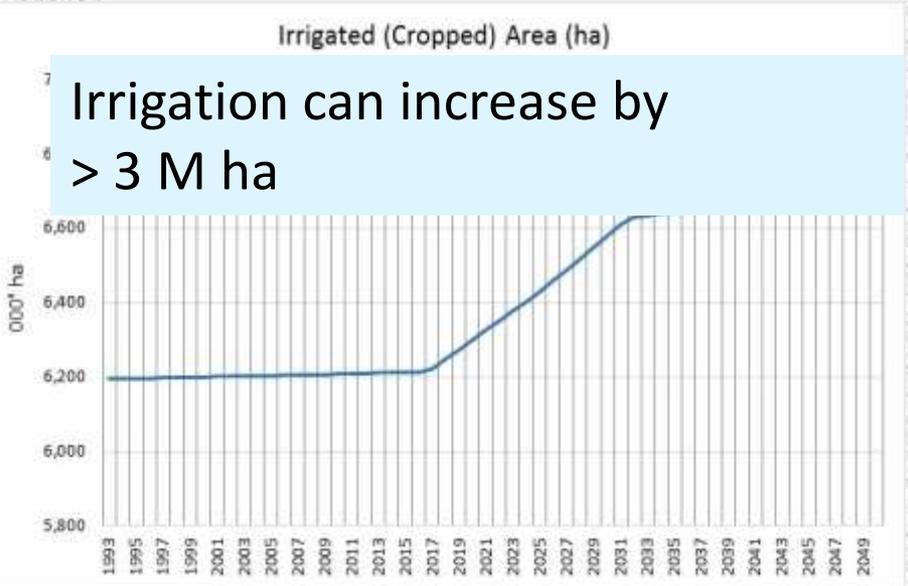
- Information
- **Infrastructure**
- Institutions

Increasing hydrological complexity →

# How are countries addressing the increasing water demand?



*Water infrastructure development seen as key to achieving water security*

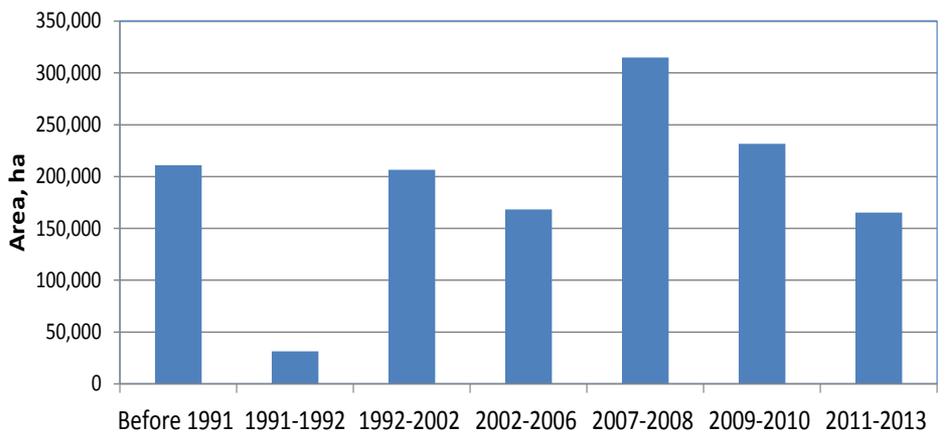


# Investment in land in Ethiopia

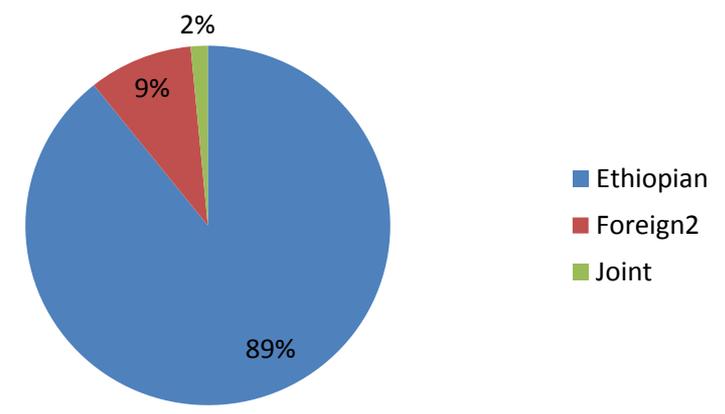
some facts (*landmatrix.org; 24 May 2016*)



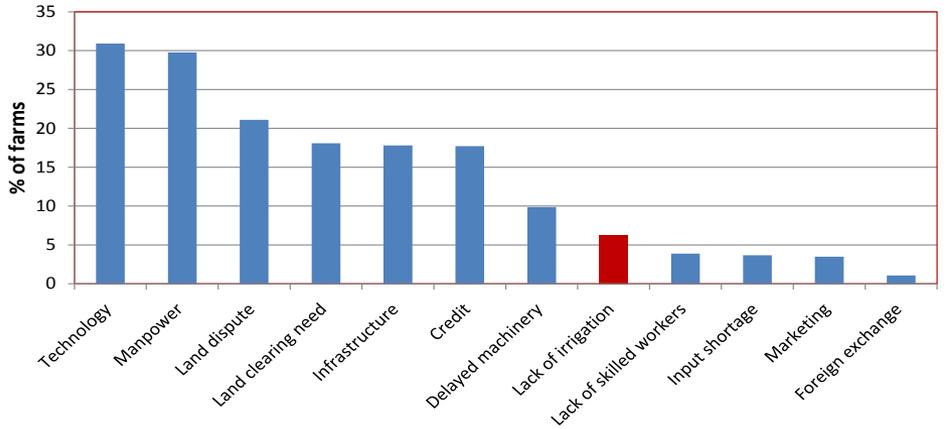
**Area leased by year, Ethiopia (ha)  
(WB 2015)**



**Land leased by nationality of owner, Ethiopia (%);  
WB 2015**

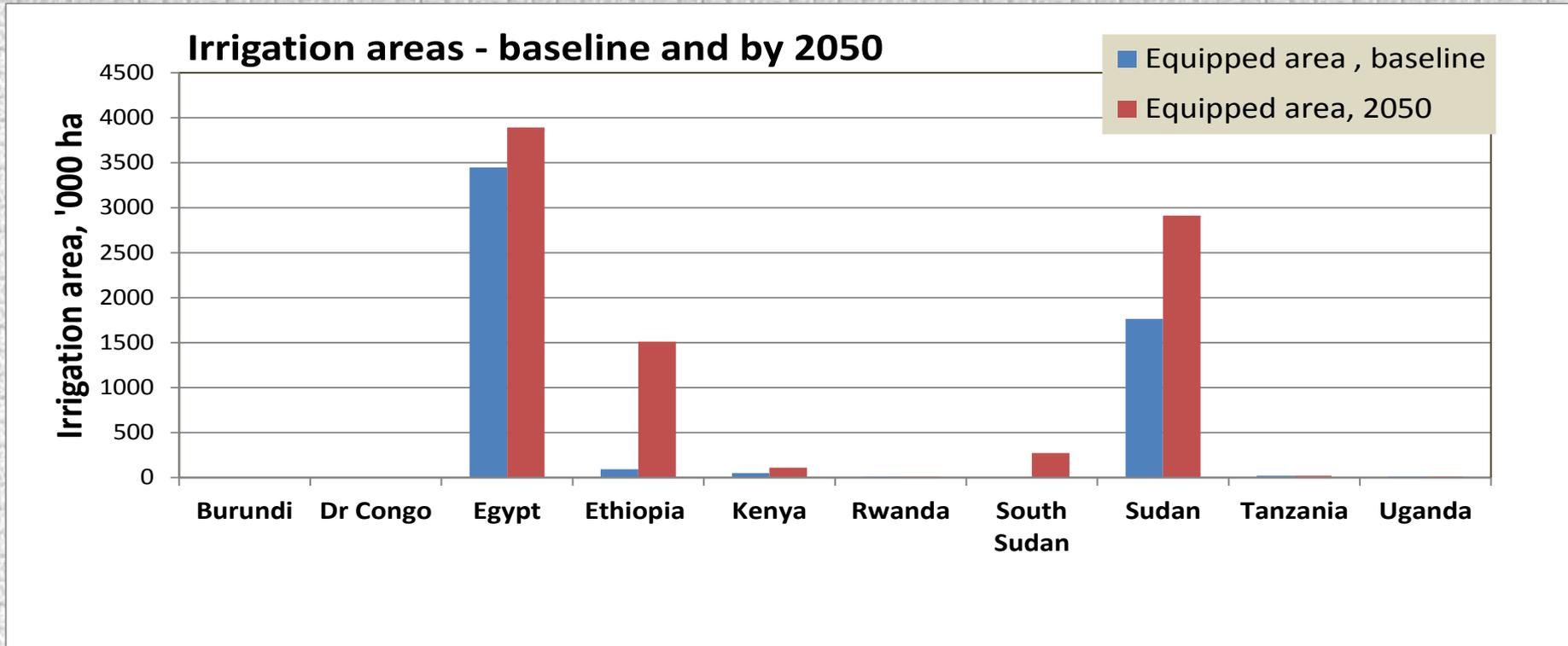


**Factors for commerical farms' failure  
to cultivate all area allocated to them**



- *Most land leased to Ethiopians*
- *Most farms are rain-fed;*
- *Declining rate of land leasing*

# Irrigated agriculture expected to grow in the Nile Basin

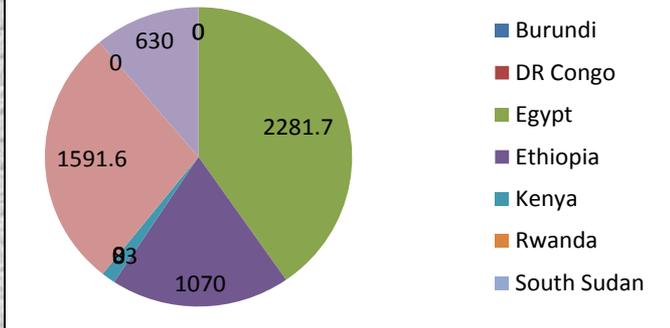


*Total basin-wide irrigation area expected to increase from a current level of 5.4 Million ha to 8.7 Million ha*

# Growth in hp plants installed capacities

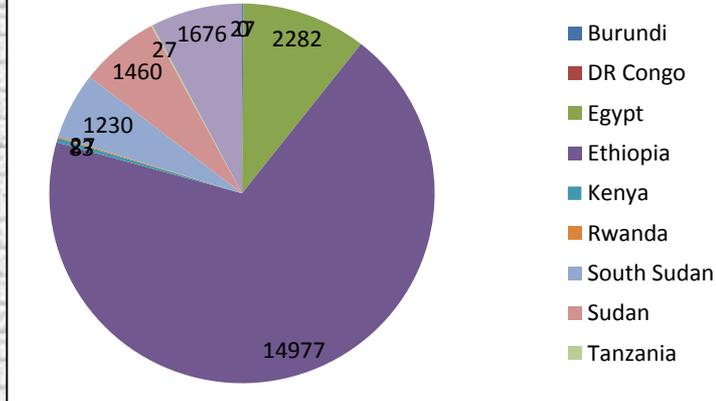


**Baseline Installed capacity of hp plants, (MW)**



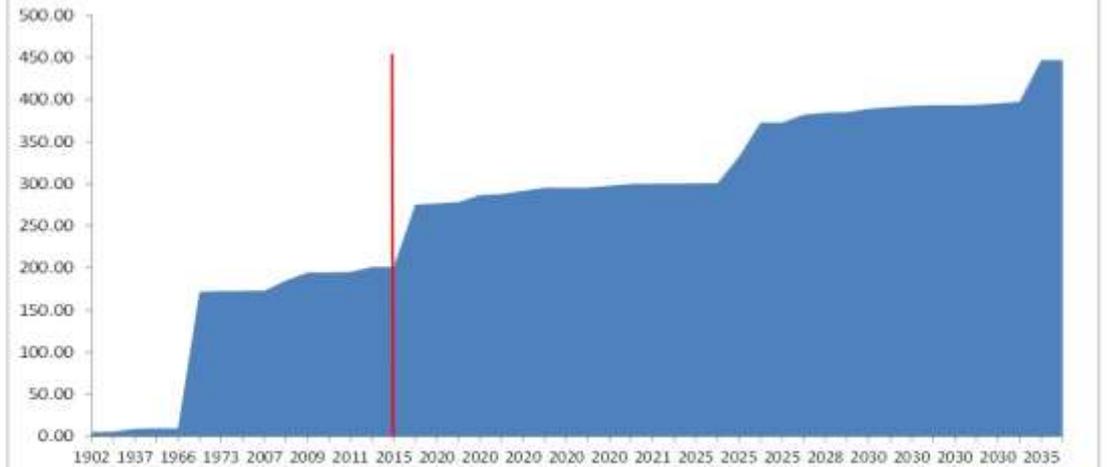
2014: 5600 MW

**Projected installed capacities of hp plants, 2050; MW**



2050: ca 2700 MW

**Growth in Cumulative Storage Capacities of Dams (BCM)**



2015 (< 200 BCM)

2050 (> 400 BCM)

## Consequences of 'business as usual' approach



**U/S Development deficit** → Inability to meet growing demand (for food, energy, drinking water, etc.) → **Pressure for development** → Development happening; will happen; → **Unilateralism** → Competitive utilization → **Violation of hydrologic unity** → **Biodiversity loss; critical ecosystem and environmental functions deteriorate** → **water quality deteriorate** → The river endangered → **U/S -D/S water use/share conflicts** → **spillover to other arenas** → security, military, economic, ideological → political = Potential to turn into a really bad scenario!!!!

## 2. Why Basin Risk Appraisal Matters

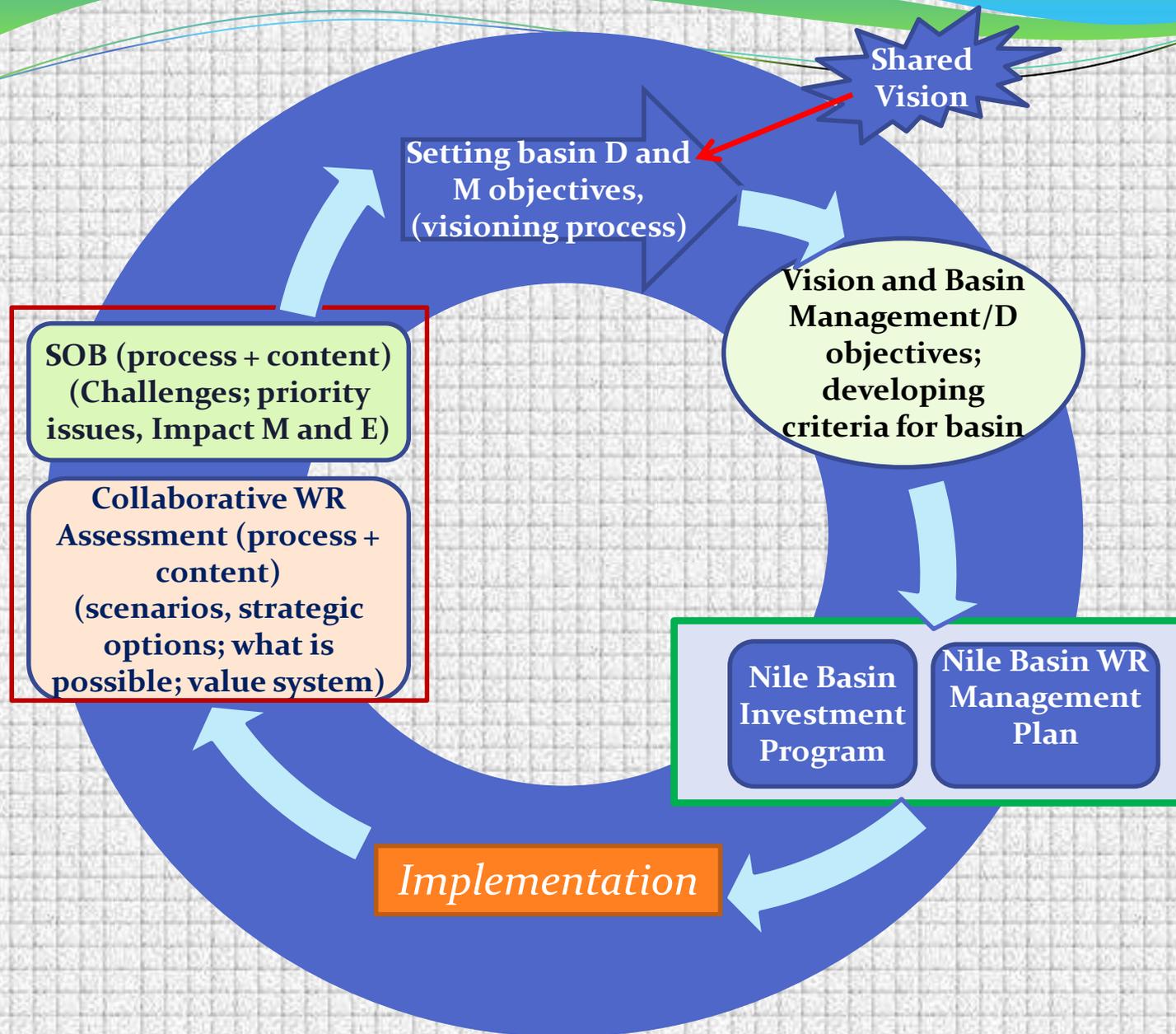


- Need for mitigation, avoidance (of political, financial, economic, social, reputational, etc.) of risks to WR investments;
- Leveraging Risks to create awareness about the commons; promote collective; cooperative action
- Ensuring return to scarce capital (loss minimization; profit/social welfare maximization)



- The NBI has embarked on important activities that have the potential to address such risks ...
  - **Strategic Water Resources analysis → determining the 'safe development space'**
  - Multi-Sector, Multi-country Investment Opportunity Analysis
  - Policy suites, e.g. social and environmental policy, environmental flow guidelines to ..
  - Issue state of the Nile Basin report for periodic monitoring and reporting; red flagging
  - Engage Basin states on regional Nile Basin hydromet monitoring system

# Collaborative/joint Planning for managing risks



# Key messages



Aggregate water demand of NB countries can likely surpass available surface water resources. However, there are various ways by which NB countries can address the mismatch without necessarily over-stressing surface water resources. Examples of such strategies include:

- ***Increasing the diversity of water resources investments- in increasing basin water yield; water use efficiency; managing scarce water resources***
- **Leveraging scale, Resource Use efficiency** → doing more with less; optimization
- **Building trust and confidence** → Conflict prevention thru mutual gains from resource use efficiency ;
- **Building WR knowledge** → more nuanced understanding of the resource base; defining the development space and system limits; hydrologic unit perspective;
- **Sustaining the River and associated ecosystems** → managing likely future mismatch between demand and supply; environmental flow; the Nile and associated ecosystems as Stakeholders;
- **Building Basin wide Collective Adaptive Capacity ; Resilience** → Cooperative management – development regime