



9th Joint Water and Environment Sector Review 2017
Directorate of Water Resources Management

Review of Sector Performance
Report 2016/17

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(Director WRM)

Date: 26th - September-2017

Key Components

- ❑ Water Policies, Laws and regulations
- ❑ Monitoring and Assessment- water quantity
- ❑ Water Quality Management
- ❑ Water resources Planning and Regulations
- ❑ International and Trans-boundary Water Affairs
- ❑ De-concentrated – Water Management Zones
 - ❑ Albert
 - ❑ Kyoga
 - ❑ Upper Nile
 - ❑ Victoria



Priority Interventions for the DWRM FY 2016/17

- ❑ Implementation of catchment based water resources management through the 4 WMZs
- ❑ Coordinating and active participation of Uganda in International & Transboundary water resources management programmes under the **Nile Basin Initiative (NBI)**, **LVEMP II -(EAC)/Lake Victoria Basin Commission (LVBC)**, **African Ministerial Council on Water (AMCoW)**, **Intergovernmental Authority on Development (IGAD)** & **Global Water Partnership – Eastern Africa**
- ❑ Implementation of the National Water Quality Management Strategy

Priority interventions for the DWRM FY 2016/17



- ❑ Finalize the Bill to amend the Water Act & update of the National Water Policy
- ❑ Upgrading in Monitoring and Information services
- ❑ Improve regulatory framework and Implementation of the strategy for compliance
- ❑ Finalise the dam safety regulations and Debase management system
- ❑ Enforcement of water laws and water permit conditions
- ❑ Support to the Water Policy Committee
- ❑ 2 Sector Golden Indicators, 2 Undertakings

Physical Performance FY 2016/17



Water Policies and Laws

- ❑ DWRM Supported the 1st meeting of the 5th Water Policy Committee in February 2017
- ❑ Key policy recommendations made on the National Water Policy, Water Bill and Overall Management of the Subsector:-
 - ❑ The UWASRA Bill differed. Issue of regulation of water supply and sewerage services be captured broadly in the Act). Finalization of the amended Water Act and Updated NWP by November, 2017
- ❑ Finalised development of the Dam Safety regulation and Dam Database management systems

Sales of Data, Information and Specialized services

2016/17 as Non Tax Revenue amounted to **UGX 528.83 million**



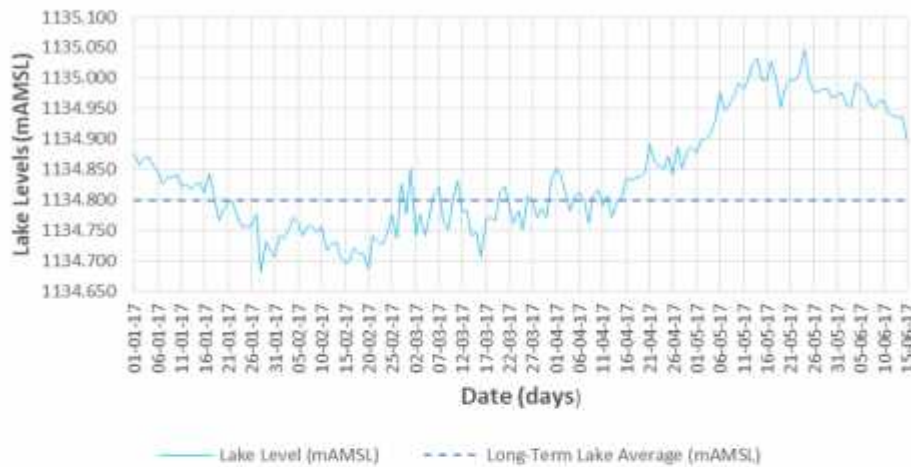
Specifics – Monitoring and Assessment

- Monitoring of SW (**60 stations**) and GW (**39 stations**)
- Upgraded 20 SW & 11 GW stations to transmit data in real time (telemetry)
- **Hydrological Yearbook** on water resources statistics of Uganda & State of Water Resources Report produced
- **UGX 24.23 million NTR** was realized from data dissemination, Major Clients:
UNRA –
 - Upgrade of Hoima Airstrip
 - Ferry crossing at Wanseko – Panyimur
- EON – Pre-feasibility study for the East African Crude oil Pipeline



SW/GW Outputs - Water Level Trends

Lake Victoria Daily Levels at Jinja Pier From Jan to June 2017



Daily Water Levels - Lake Albert at Butyaba



Groundwater levels at Rakai Monitoring Well





Monitoring & Assessment

- Provision of advice on water resources development projects
 - **Aswa HPP Assessment:** The operator was advised to apply a 40% capacity factor since the available water is insufficient to meet the installed capacity (41MM)
 - **Nyagak HPP Assessment:** The HPP is vulnerable to river flow changes which results in unstable power supply
 - **Mubuku Irrigation Scheme:** An alternative source should be identified to *complement supply* from R. Sebwe since it cannot supply water for the entire 480 hectares of the scheme

WQ Mgt - NWQR Lab Upgrade



(i) Gas Chromatograph-Mass Spectrometer (GC-MS)

Volatile Organic Pollutants:

E.g.: Pesticides, Pharmaceutical Residues, Oil & Gas pollutants



(ii) Liquid Chromatograph Mass Spectrometer – LC-MS

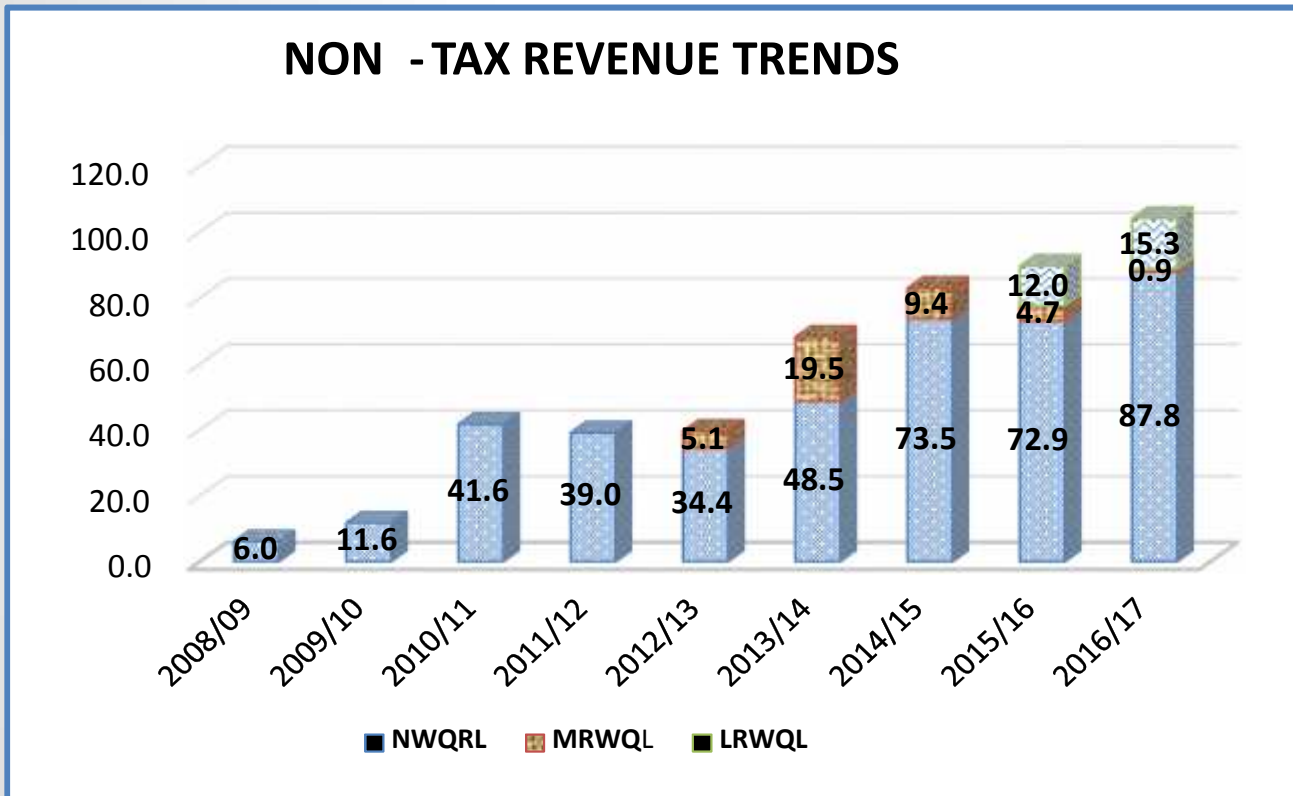
Semi-volatile organic pollutants:
E.g.: **Pesticides**,
Pharmaceutical Residues, Oil & Gas Pollutants



(iii) High Performance Liquid Chromatograph (HPLC)

For Analysis of:
Algal Toxins,
Dioxins and
Endocrine disruptors

Non-Tax Revenue - Planned Vs Achieved



Generated a total of **UGX: 104m** compared to 89.6m last FY against a target of **50m**



Assessment of Drinking Water Quality in 15 Cholera-Prone Districts

- ❑ 33% Districts had no Cholera outbreaks in 5 years
- ❑ Only 50% of the 216 sources taken were safe
- ❑ Out of the 176 households where drinking water was tested, only 32% registered safe water (68% failed test)

Causes of Cholera Outbreaks

1. Influx of Refugees in — Adjumani and Isingiro districts
2. Cross border spread reported in Adjumani and Busia
3. Low water and sanitation coverage in affected sub-counties
4. Poor household sanitation and hygiene
5. Use of un-protected water sources e.g. shadoofs) - in Busia, Kiryandongo



Compliance to Water & Wastewater Quality Golden Indicator

Water Quality Indicator	Target (%)	Performance 2016/17 (%)
Rural Water (Coliform units)	100	59
Urban Water –Large towns (Coliform units)	100	85
Urban water – Small towns (Coliform Units)	100	70
Wastewater (BOD)	50	44
Wastewater (TSS)	65	40

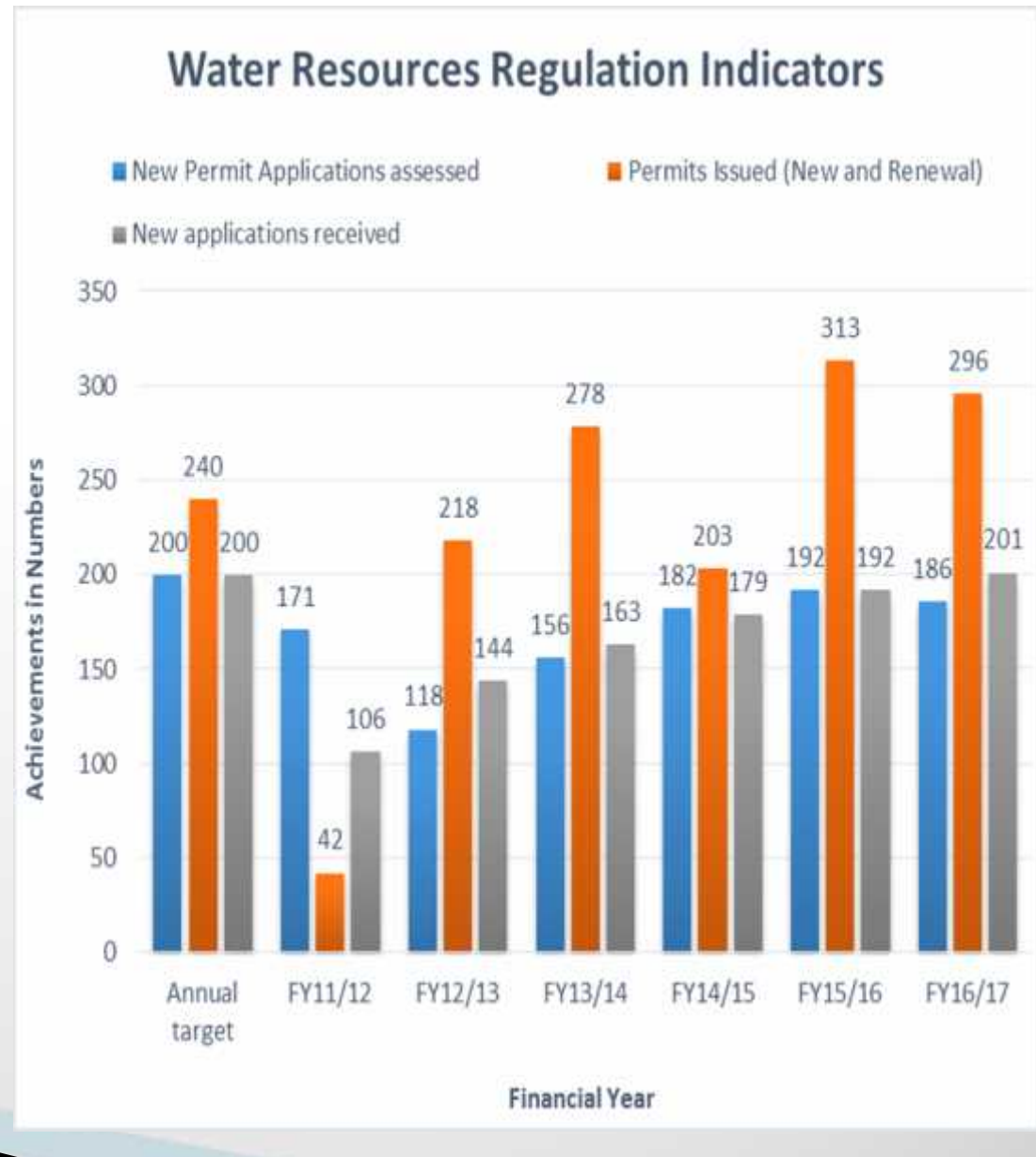
4,526 Water and wastewater samples examined. Target = 4,000

Performance 113% (WMZs and Centre)

Physical Performance – Water Permits



- **201** New permit applications were received and **186** assessed
- **296** permits (**164** new and **132** renewal) were issued.
- There was slight decrease in the number of permits issued from **313** in FY 2015/16 to **296** in FY 2016/17
- Reasons for non-issuance of some water permits were: i) drilled many boreholes close to each other in the same aquifer, ii) some boreholes were illegally drilled in gazetted Water Supply Areas iii) Insufficient data



Golden Indicator no. 11: Compliance to Permit conditions

Type of permit	Permit Condition	Total No. of permits Holders	No. of permits complying	% compliance FY2016 /17
Waste water discharge	Effluent discharge	165	98	59
Surface water	Abstracting within permitted amount	218	164	75
Groundwater	Abstracting within permitted amount	700	500	71
Drilling	Quarterly submission of Borehole Completion Reports	47	42	89
Total		965	798	74

Compliance to Abstraction Permit conditions: **improved from 71% to 73%** compliance

Compliance to wastewater discharge Permit conditions: **improved from 56% to 59%**

DWRM Regulation campaign: Illegal Water Users Identification by Water Management Zone

A total of **867 illegal water users** (abstracting using motorised pumps) were identified during a period of just 3 months

The bulk of these illegal water users are mainly from the Umbrella Organizations, WSDF and NWSC schemes

Permit applications have been issued to all of them

It is envisaged that the non- tax revenue will substantially increase due to the regulation campaign that has identified many new illegal users

No.	Water Management Zone	No. of illegal water users Identified
1	Victoria Water Management Zone	217
2	Albert Water Management Zone	267
3	Kyoga Water Management Zone	226
4	Upper Nile Water Management Zone	157



Water Use and Reservoir Regulation

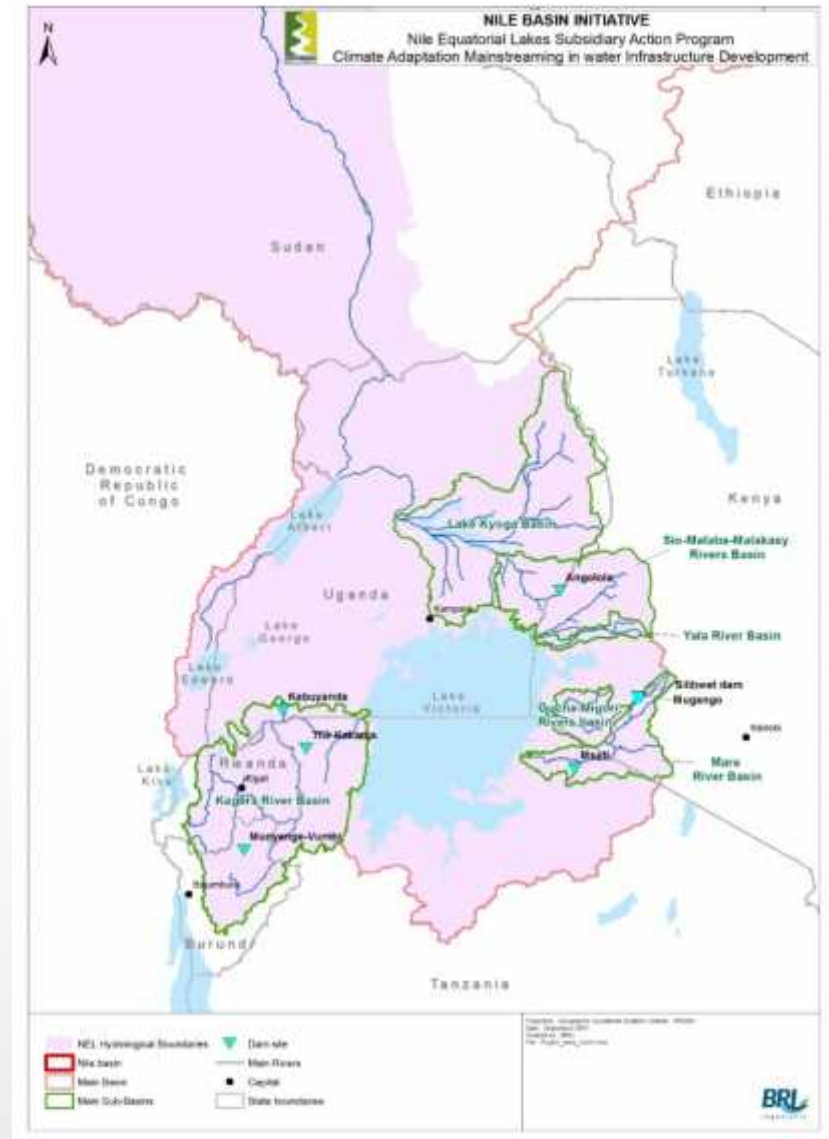
- Non tax revenue amounting to **400.6** Million UGX from water use was collected during the FY2016/17 down from **396.98** Million shillings in FY2014/15
- A total of **122** EIA reports reviewed and comments submitted to NEMA
- Dam Safety regulations and guidelines have been finalized
- Dam safety database finalized and operational
- 10 existing reservoirs (Bujagali, Karuma, Nalubaale, Isimba, Mpanga, Nyamwamba, Mubuku I, Mubuku II, Mubuku III and Ishasha) were monitored for compliance to dam safety and water use permit conditions.

International and Trans-boundary Water Affairs



Nile Basin Office- Uganda

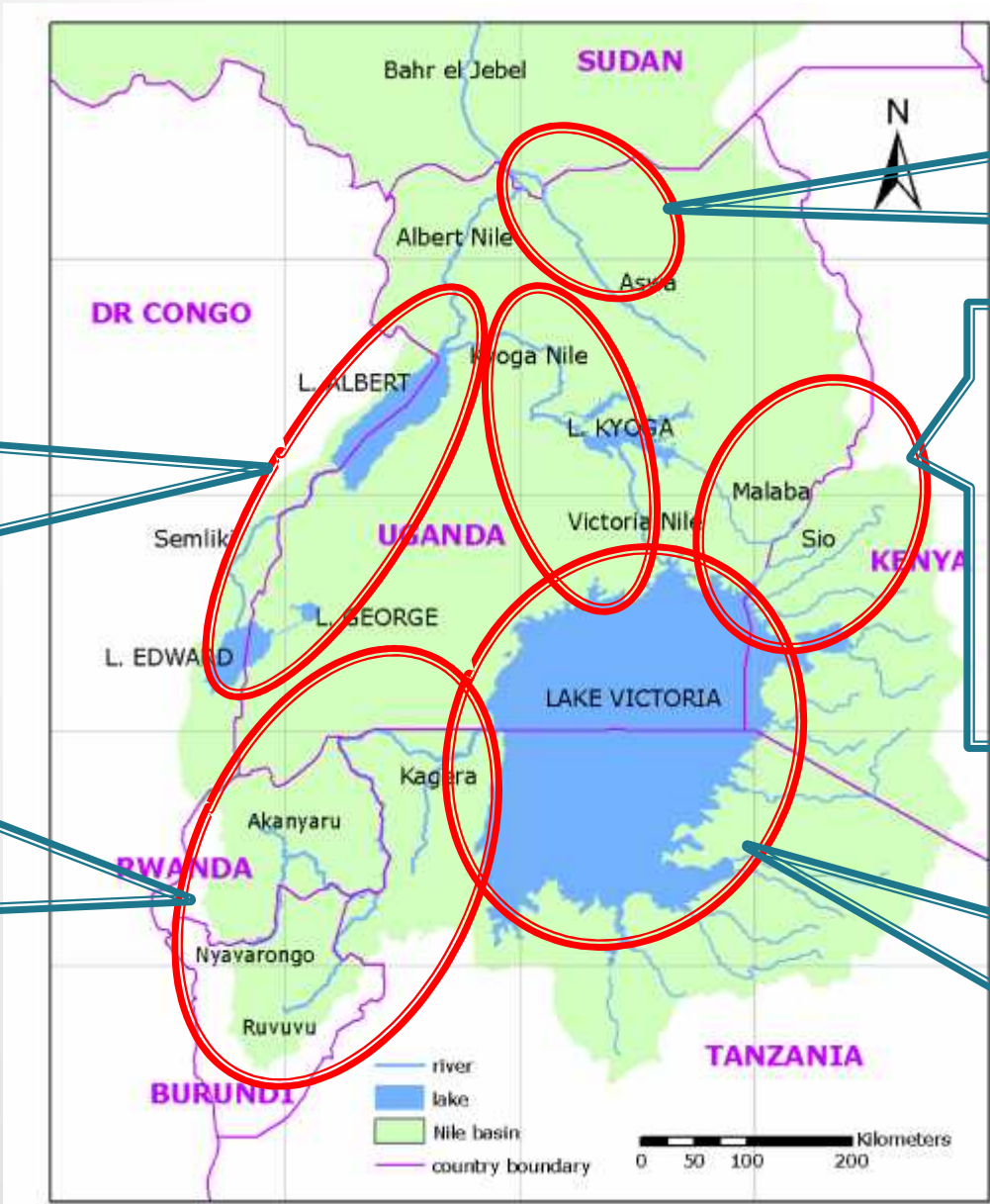
- ❑ Trans-boundary/cross border institutions **coordinated, supported** and operational
- ❑ Uganda Chaired of the Nile Basin Initiative Governance
 - ❑ **Hosted the 1st ever Summit of the Nile Basin Heads of State**
- ❑ Contributed over **UGX 1.6bn** towards NBI Governance and activities
- ❑ Through NBI /Nile NELSAP, a number of projects have been supported that aim at;
 - ❑ **2 benefited from Water Diplomacy Training**
 - ❑ **facilitating investment in shared WRs**



TRANS-BOUNDARY PROJECTS

Lakes Edward and Albert Fisheries and Water Mgt Project
UGANDA/DRC

Kagera_UG/
TZ/RWA/BUR
_Kabuyanda



Nyimur Multi Purpose WR Mgt & Dev't Project
UGANDA/SUDAN

SMM_UG & UG

- Nyabanja
- Angoloro
- Upper & Middle Malaba CM Plans

LVBC – Projects

- LVEMP
- PREPARED
- Nakivubo Wetland

Lake Victoria Environmental Management Project II



- Political commissioning of the Maritime Equipment and Safety and Communication coordination centre at the Ministry of Works and Transport (MoWT) in Kampala.



Physical Performance -WMZs

- ❑ **Operationalisation of the water source protection guidelines-** continued supporting various organisations and agencies (*National Water and Sewerage Corporation, Directorate of Water Development, Electricity Regulatory Authority etc*) in implementing of water source protection guidelines and operationalizing of **3% contribution** by water infrastructure project for water source protection
- ❑ **4 New CMPs prepared** (Lokok, Lokere, Mpologoma and Lumbuye catchments)
- ❑ Implementation of **catchment-based WRM** continued in 4 Water Managements and 15 catchments – Table below



Implementation of Catchment-based WRM in WMZs

6 CMOs established: Lokere, Lokok, Lumbuye, Mpologoma, Katonga, Semliki and Kiiha, in addition to 8 = **15** CMOs in the country as of end of June 2017.

Interventions in **10** catchments Rwizi, Mpanga, Semliki, Aswa, Awoja, Ruhenzamyenda, Katonga, Lokok, Lokere and Mpologoma.

Maziba, Awoja and Aswa attracted financing from Adaptation fund USD 7.7 Million for 4 years beginning 2017/18. Enhancing Community resilience to Climate change usng CbWRM approach

WMZ	Catchment	Status of the Plan	Financial Year
Albert	Mpanga	Finalized	2015
	Semliki	Finalized	2016
	Ruhenzamyenda	Finalized	2015
	Albert	Under development	2018
	Kiiha	Under development	2018
Kyoga	Awoja	Finalized	2013
	Mpologoma	Finalized	2017
	Victoria Nile	Finalized	2017
	Lokere	Finalized	2017
	Lokok	Finalized	2017
Upper Nile	Aswa	Finalized	2016
	Albert Nile	Finalized	2016
Victoria	Rwizi	Finalized	2016
	Maziba	Finalized	2015
	Katonga	Under development	2018

Challenges



- ❑ Limited infrastructure for monitoring & data generation.
Inadequately developed WR management instruments
- ❑ Limited Human capital
- ❑ Limited Knowledge-base on the dynamics of water resources –
floods and droughts
- ❑ Low of compliance to Laws and regulations - wastewater
discharge regulations, illegal water abstraction
- ❑ Water Pollution - catchment and water bodies
- ❑ Water weed invasion and other aliens in the catchment
- ❑ Increasing water demand – population, refugees
- ❑ Uncertainty about future funding for WRM to cope with
challenges

Way Forward



- ❑ Technology shift in drinking water supply infrastructure
- ❑ Build capacity using Local Content and Twinning – **Water Resources Institute**
- ❑ Increased visibility on the centrality of Water in development and overall WRM – **Uganda Water Week 2018 17th – 23d March 2018**
- ❑ Water governance - Catchment-based IWRM – (CMP/ CMC) basis for sustainable Water management and development
- ❑ Funding – Support from all required