

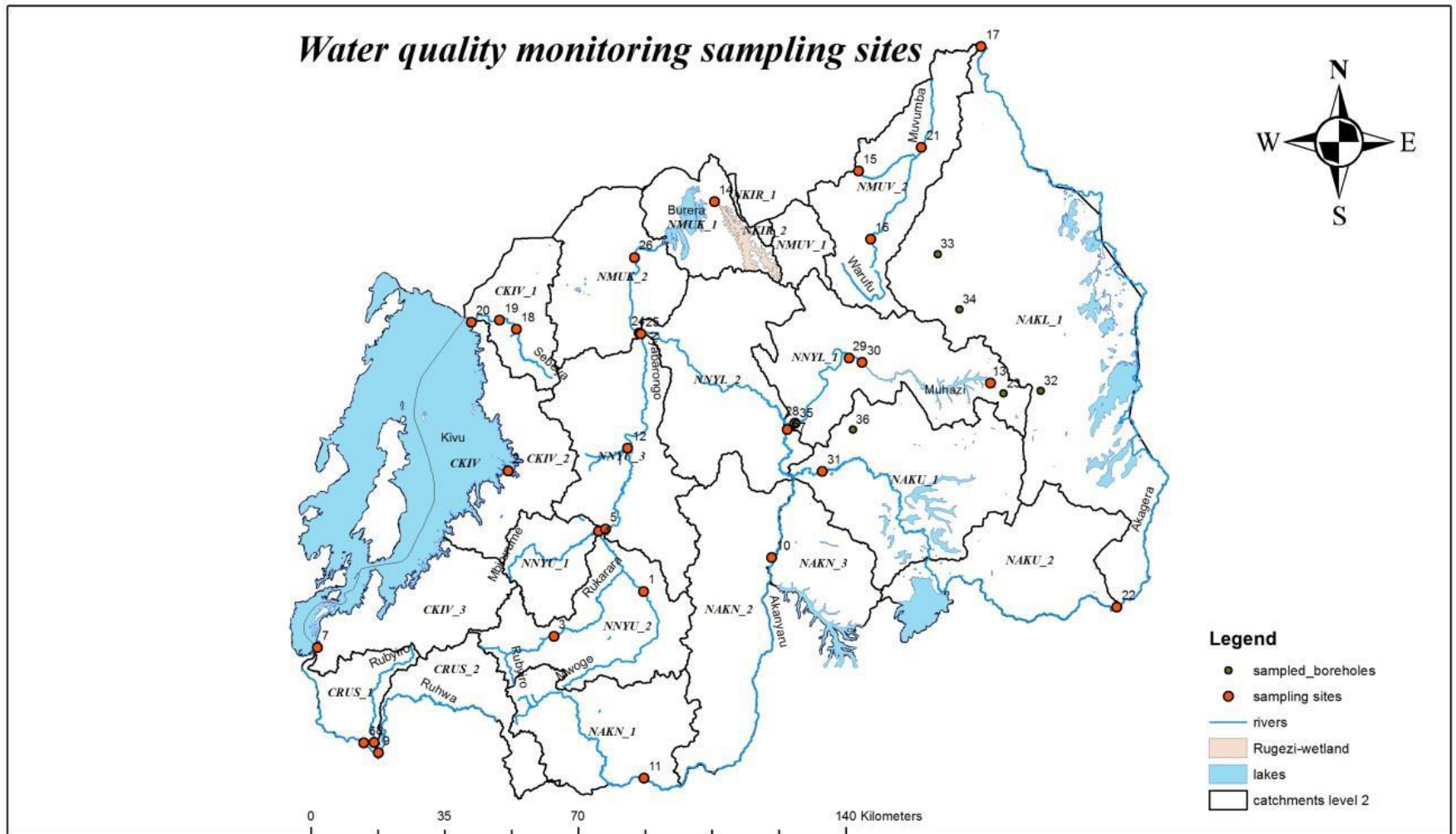


# Water quality and pollution control

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# Water quality Current status in nine Catchments (2018)



# Measured parameters in November 2018

- **Physico-chemical parameters:** Biochemical Oxygen Demand (BOD), Dissolved Oxygen (DO), Potential in Hydrogen (pH), Electrical Conductivity (EC), Total Dissolved Solids (TDS), Total Suspended Solids (**TSS**), **Turbidity**,
- **Nutrients parameters:** Nitrate ( $\text{NO}_3^-$ ), Total Nitrogen (TN), Total Phosphorus (TP), Total Dissolved Inorganic Nitrogen (DIN), Total Dissolved Inorganic Phosphorous (DIP)
- Chloride ( $\text{Cl}^-$ ), Sulfate ( $\text{SO}_4^{2-}$ )
- **Biological parameters:** Fecal coliform (**FC**) and *Escherishia coli* (**E.Coli**).



# Results of this study

- the sedimentation /siltation of water bodies mainly due to soil erosion
- the microbiological contamination that can be linked to poor sanitation systems and practices.
- The most critical water bodies in terms of turbidity and microbiological contamination were found to be **Akanyaru** river border to Burundi, **Secoko river** before discharging into Nyabarongo, **Sebeya** river at Musabike, Sebeya river at **Nyundo** station, Akagera at **Kanzenze** bridge and the **Nyabarongo** river before receiving Mukungwa river.

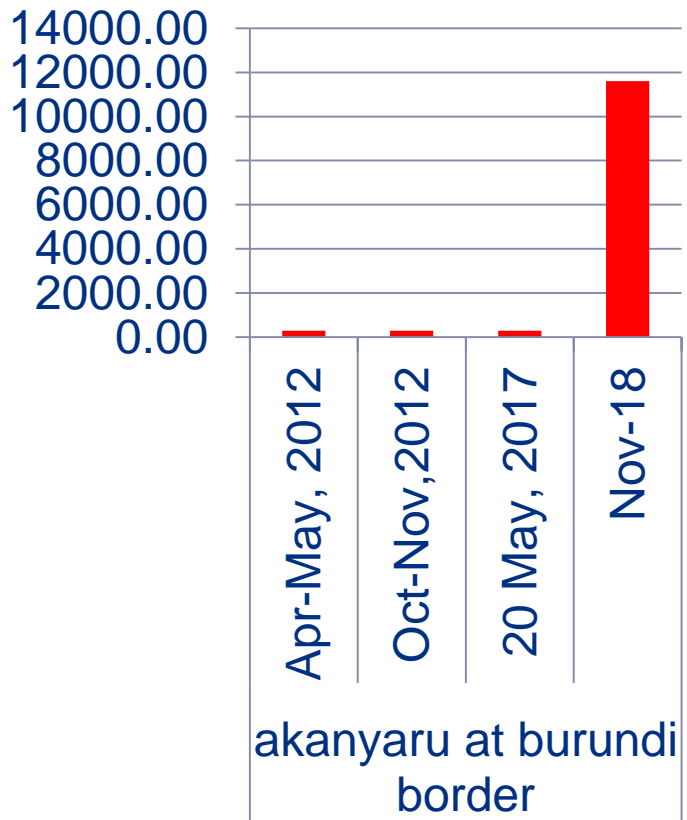


*Picture 1: Variation of TSS in Akanyaru River border to Burundi (left side picture) and Sebeya River at Musabike (right side picture) where sediment transportation is noticeable by the brownish and yellowish developed colour showing land heavy load within rivers waters.*



*Picture 2: Erosion and sediment transport in Secoko River (left side picture) and in Sebeya River at Pfunda Tea factory (right side picture) for protecting the factory against stones and soil transport within Sebeya river which have been destroying and flooding the factory compound for years.*

# Trends in turbidity of rivers correlate to the concentration of Total Suspended Solids (TSS)



- River catchments are facing intensive agricultural activities and intensive unsustainable mining activities .
- Application of soil erosion control measures as proposed by CROM DSS (afforestation, Agroforestry, Radical and Progressive terraces,..)
- For Mining there is a need of regulation enforcement (tailing dams, Restoration of abandoned mining sites)

# Recommendations on Fecal Coli forms and E-Coli contamination

- in urban areas could be through improved wastewater treatment technology and management
- Relocations of households which are in marshland to prevent from groundwater contamination
- For rural areas the most appropriate approach could be through on-site sanitation systems coupled with education, sensitization and behavior change campaigns on improved sanitation practices

