"EGU General Assembly 2025"
HS2.1.6-Advances in African hydrology and climate: Flood and Droughts

Presentation ID: PICO spot A
EGU25-10900
ECS | On-site presentation

Flood Hazard Mapping and 1D Hydrodynamic Modeling for Sebeya River in North Western Rwanda

Joseph Hahirwabasenga[1,2], Fainaz Inamdeen[1], Erik Nilsson[1] and Hussein Bizimana[2]

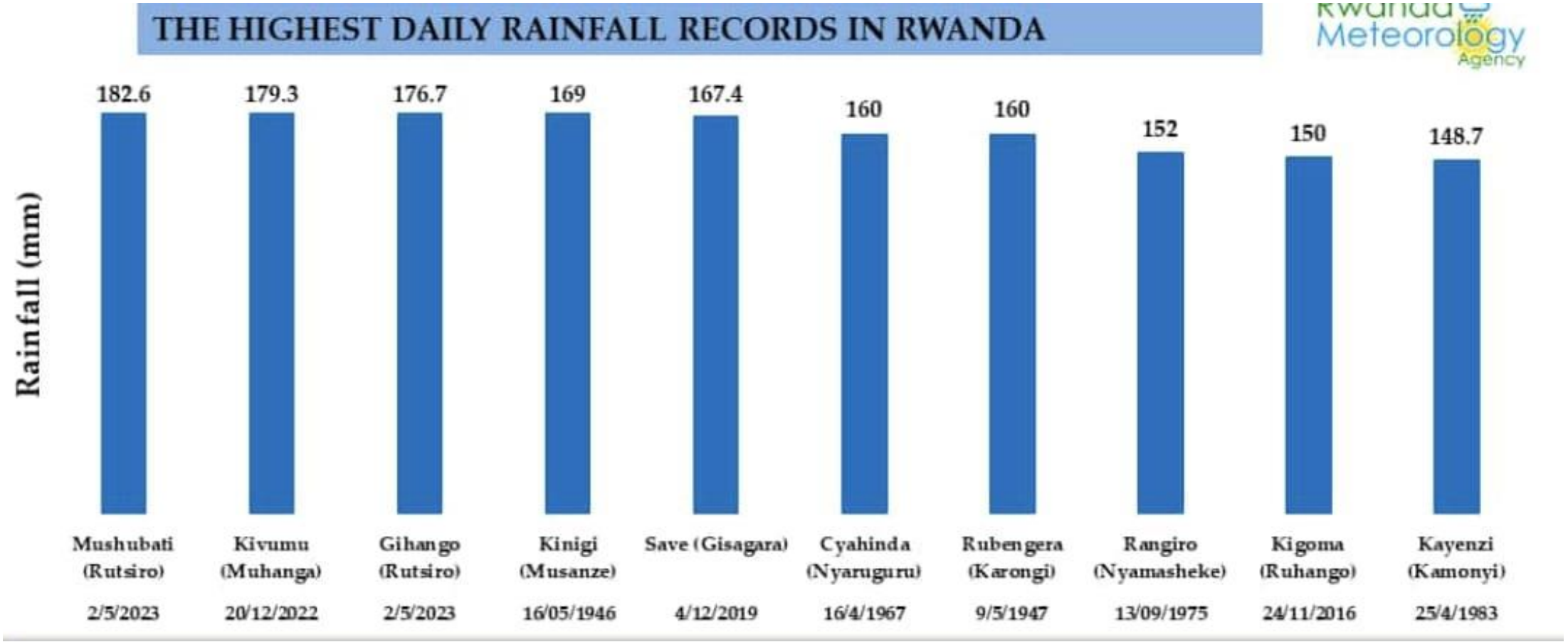
[1] *Lund University, Sweden.*

[2] *University of Rwanda, Rwanda.*

Sebeya River outlet to Lake Kivu

Causes of floods in Sebeya Catchment

For instance, during the most recent flood in May 2023, Meteo Rwanda (2023) reported the highest daily rainfall ever recorded in Rwanda - **182.6 mm** recorded at Mushubati station in Rutsiro district that replaced the previous record of **179.3 mm** recorded at Kivumu station on 20th December 2022 in Muhanga district in the southern province.



Cont…

The flooding in the Sebeya catchment can be triggered by both different anthropogenic activities and several natural factors (Hahirwabasenga et al., 2024).

May 2023 flood impact

Flood impacts on the 2nd and 3rd of May 2023, MINEMA (2023)

District	Deaths	Injured	Houses Damaged
Ngororero	23	4	197
Nyabihu	17	9	193
Rubavu	28	50	1621
Rutsiro	29	23	223
Total	**97**	**86**	**2234**

Flood prone areas : Down stream

- Mahoko center
- Nyundo sector
- Rugerero sector

Nyundo Minor Seminary School in Rubavu District. Photos taken on 5th May 2023; the blue line to the left indicates the location of a masonry brick wall and to right the stone masonry foundation destroyed by water during the flooding (Hahirwabasenga et al., 2024).

May 2023 flood impact