



2D Flood Mapping of Msimbazi River Catchment, Dar es Salaam-TANZANIA

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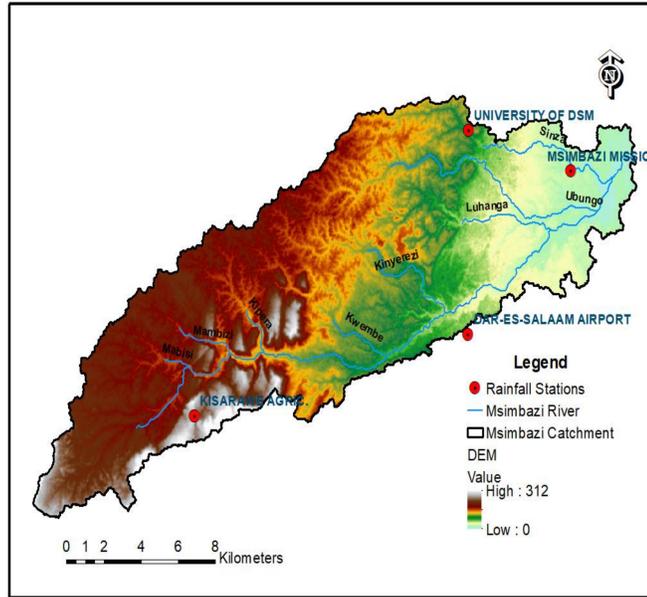
²Global Water Partnership Tanzania



Introduction

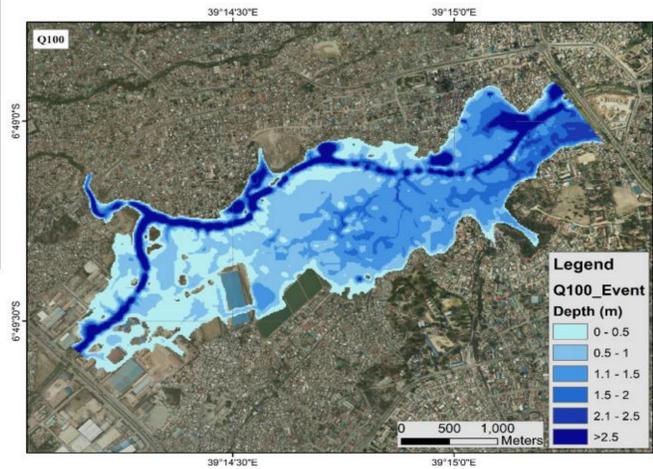
- Majority of disasters in Africa are commonly hydro-meteorological in nature; with floods occurring frequently along major river systems and in many urban areas. (Idai, 2020)
- Tanzania has continued to be affected by floods with numerous cities across the country being underprepared to manage the floods.
- Rapid urbanization in Dar es Salaam has continued in an unplanned manner with large part of population living in areas under flood risks areas (Hallegatte et al., 2016).
- The Msimbazi valley in Dar es Salaam, and its surrounding wards, is a highly flood-prone area with floods occurring almost every year due to its proximity to the river's mouth and low terrain.
- The local people close to the Msimbazi river have continued to dump solid waste in the river thus minimizing its carrying capacity
- This study was designed to develop a 2D floodplain model for the Msimbazi valley in Dar es Salaam

Study Area

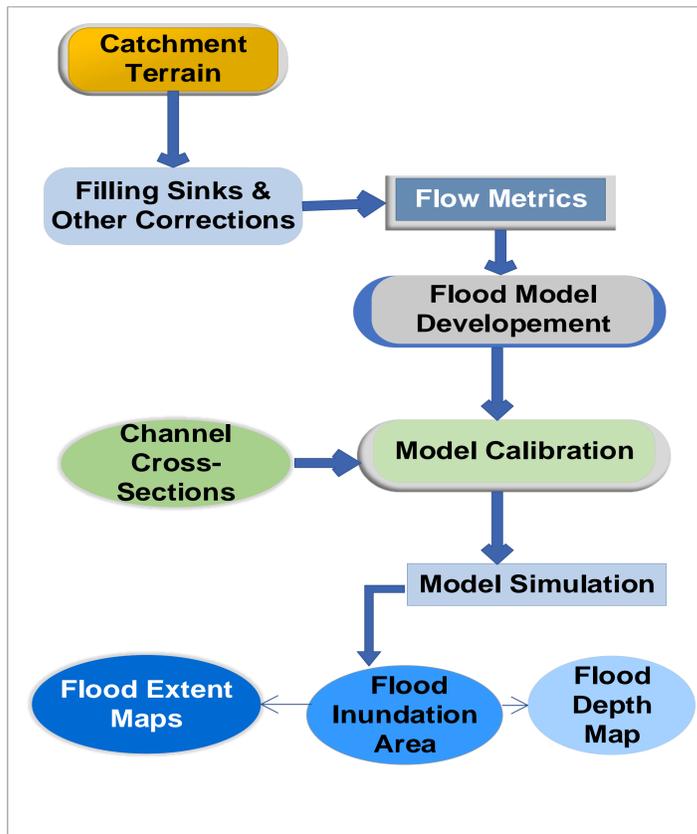


Results

- 2D hydraulic flood model of Msimbazi river catchment.
- Inundation flood extent maps showing the extent and propagation of floods on the catchment.
- 3D flood visualization maps



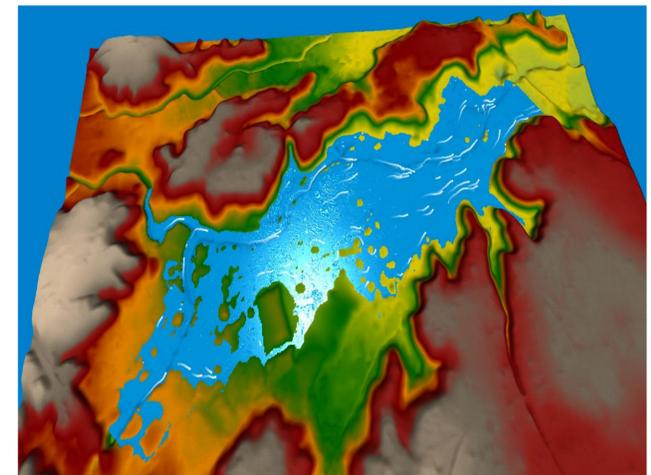
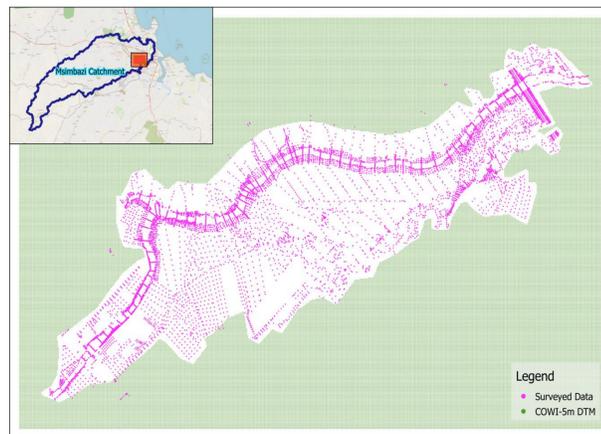
Methodology



Dumping of solid waste



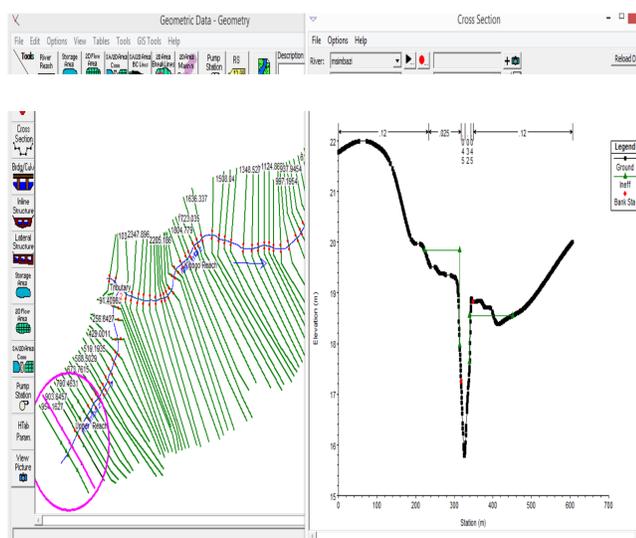
Data



Conclusion

- The hydraulic modeling of the T-100 flood event showed that the largest total accumulated peak flow from all tributaries of the Kigogo catchment during such an event may amount up to about 360.63 m³/s.
- The outcomes from this of theresearch examination can be utilized for disaster management, flood management, early warning system by authorities in addition to infrastructure growth decisions.

Field work



References

- Idai, C., 2020 Flood risk management in Africa 1-5. <http://do.i.org/10.1111/jfr3.12612.ii,2020>
- Hallegatte, S Erman, A. B., Takamatsu, S., Chen, X., (2018). The road to recovery: the role of poverty in the exposure, vulnerability and resilience to floods in Accra. Policy Research Working Paper Series.

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