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# COMMUNITY URBAN FLOOD RESILIENCE IN MATOLA, MOZAMBIQUE

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# 1. Introduction

- Community urban flooding resilience is a challenge in different parts of the world, from parts with more allocation of resources, such as the West, to developing countries, such as Mozambique, especially in lack of resource contexts.
- Matola is a Mozambican city, located on a coastal plain, and lies in two rivers' catchments, Matola and Infulene Rivers. In 2000, with an estimated population of 424,662 inhabitants, Matola was hit by floods that destroyed economic and social infrastructure, and assets with casualties.
- Considering the 2000 floods, and after, the study looks for answers about community action or measures and strategy of adaptation and/or mitigation to floods taken so far.

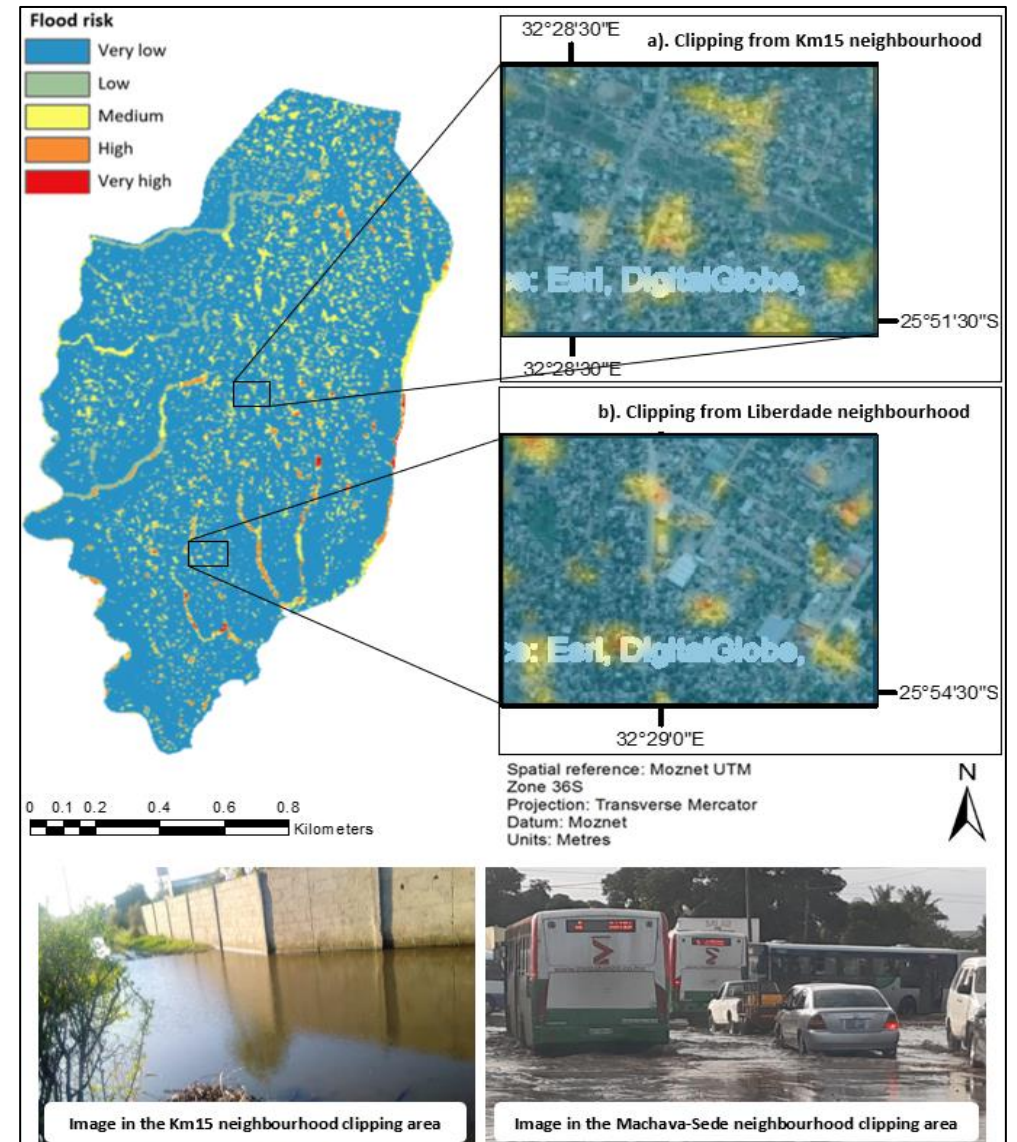


Figure 1. Flood Risk Map over Matola and photographs of floods in the 700 and Nkobe neighbourhoods. Source: Author and (Neves et al., 2022).

# Location of Matola

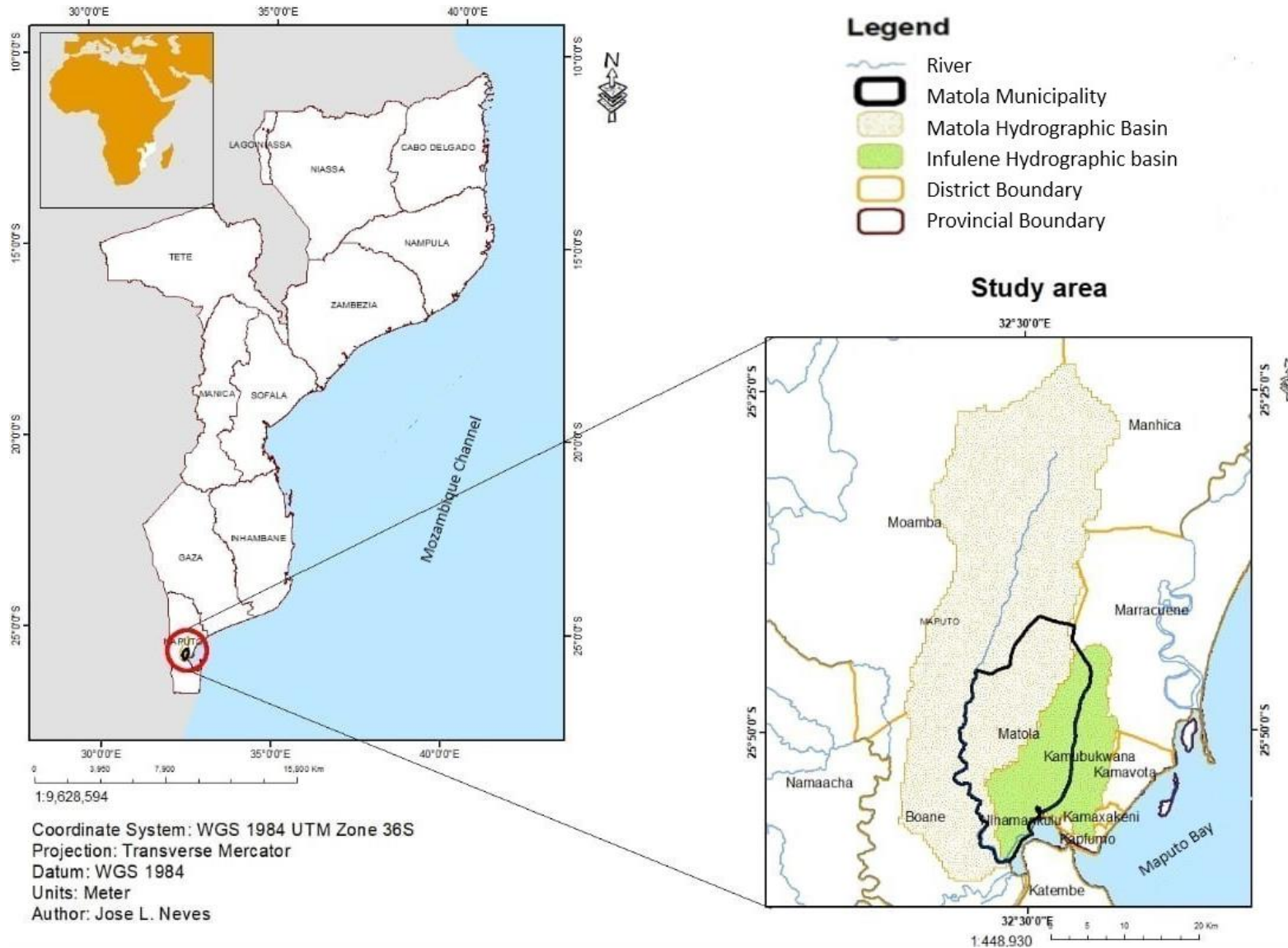


Figure 2. Location of Matola

## 2. Aim and Methods

### **Aim**

- Thus, the main objective is to analyse the mitigation and/or adaptation action and strategies that the community use in their struggles to maintain their lifestyle, to be resilient to urban flood in Matola.

### **Methods**

- The study is based on 18 in-depth interviews and 3 focus groups of 24 citizens living in risk areas and experienced the 2000 flood. GIS was used for the use of satellite images combined with flood risk maps of a study already carried out, which show the incidence of flood risk in Matola. Direct observations were used to capture images of floods and some mitigation actions in Matola.

# 3. Results

## Community experiences and view of the causes of flooding in Matola

- 2000 floods were of such great magnitude that they had never experienced before or since.
- Community were found by surprise, unprepared to be able to prevent the waters from invading their agricultural fields, backyards, and homes.
- There was partial and/or complete destruction of their homes, agricultural crops, livestock and poultry, their possessions being swept away by floods, losing a large part of their family livelihood assets.
- Great erosion which resulted in the impassability of some streets, the difficulty of evacuating families, having been necessary to use small boats.

# Community floods mitigation and/or adaptation measures and action

- **Reinforcing the material condition** of housing structure, and water barriers in houses door, and backyards sealed by a wall with bags filled with sand, during the 2000 floods. Moving some furniture, food, and livestock to these relatively safe places.
- After the flood, was either in addition to improving housing conditions and landfills of backyards, **changing the environment**, and building new homes, either in resettlement sites or in relatively safe self-obtained sites.
- **Financial actions** - Contributions of monetary values in small groups, helped to provide some basic conditions.
- **Social/cultural and community competence** - Mutual help between community members ensured the salvation of people and recovery of property, in moving people and goods to safe places: homes of community members or in the accommodation of flood victims.
- The community collaborative action with Municipality facilitated the rescue of communities besieged by the floods, house material reconstruction and food assistance, and identify the main waterways for opening water drainages, and resettlement.

# Community concern regarding the current urban land use in view of the risk of flooding

- Matola started to suffer from almost cyclical floods, although they were lower than the intensity of 2000
- Formal and informal occupation in areas susceptible to flooding, often in places that are waterways - municipal actions reinforce these attitudes - allocation of land rights in flood-risky locations.
- Clashes between new and old residents who are aware of the increased vulnerability to flooding caused by new construction in risk areas.
- Loss or decrease in social cohesion in recent years due to new residents with different values.

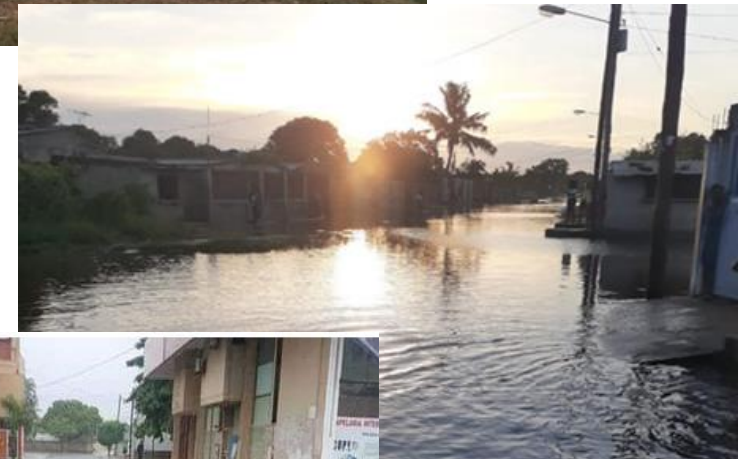


Figure 3. Photographs of land use and floods in Matola. Source: Author.

# 5. Discussion

- A major finding in the research reveals that the **existing social capital in the Matola community was one of the major keys that played an important role** in flood resilience during and immediately after the 2000 floods.
- Social capital is important for community resilience, as the availability of social networks and local organizations facilitates the social ties responsible for intragroup loyalty, mobilizing solidarity; creating specific and pervasive norms of reciprocity, and facilitating communication and participatory actions (Zhong et al., 2020).
- Social capital is important to disseminate information and to create opportunities that link the community to external assets necessary for a community's well-being following a disaster (Wickes et al., 2015).



## 6. Conclusion

- The existence of a social structure based on mutual trust and strong social cohesion is a key factor in promoting resilience in communities with financial and material limitations, as was the case in Matola.
- However, a more consistent community organization and constant interaction in concrete local actions and with the local municipality are necessary, in order to better prepare for mitigation actions and/or adaptation to urban floods.
- Furthermore, this knowledge constitutes a contribution to urban planning, to rethinking how to build a resilient society not only in Mozambique but also in other similar contexts around the world in terms of resilience to the impacts of natural disasters.

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