

Flood Vulnerability and the Quest for Resilience

Urban planning and development challenges in Matola,
Mozambique

José Lourenço Neves

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ABSTRACT

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The increase in flood occurrence due to heavy rainfall associated with cyclones is recognized worldwide. Matola in Mozambique suffers greatly from the negative impacts of floods, such as that of the year 2000, which pose great challenges to urban planners and communities to promote flood resilience. This study investigates the challenges of promoting resilience to urban floods. The study focuses on how have flood hazards and risks been distributed in Matola and what mitigations and adaptations strategies, measures, and actions urban planners and communities used to promote resilience. The study is based on a mixed quantitative and qualitative methodological approach, comprising geoprocessing to assess flood vulnerability and risk in Matola, in 2000, 2020, and 2040 using ArcGIS software, semi-structured interviews with urban planners and community members, focus group discussions with community, and observations. The findings show an increase in the extent of low-risk areas of flooding, and a decrease in the extent of medium/high-risk areas from 2000, through 2020, to 2040. However, there is an increase in the number of inhabitants exposed to combined medium/high-risk areas of medium/high flood hazard ranging from 0.5 m to 5 m in depth, due to the increase in markedly horizontal land occupation by infrastructure, particularly housing. Mitigation actions during the 2000 floods focused on evacuating people besieged by the floods and accommodating them, and after the flood, adaptation measures consisted of supporting the return of residents to their homes, resettlement, and opening drainages. The main strategy of the municipal administration to promote flood resilience in Matola after the 2000 floods, was capacity development through training of staff, gradual hiring of new staff of different specializations, essential for planning and managing land use and adaptation measures, and the development of a new urban plan. During the 2000 floods, social capital, characterized by existing strong social cohesion and mutual trust among community members, was a vital factor for people to come together to support and rescue others besieged by floods. Community adaptation measures after the 2000 floods were improvements and reconstruction of houses, raising yard levels with fill, and adherence to the resettlement promoted by the municipality. The municipality's official collaboration network with communities through elected leaders favoured continuous connection between the parties and in organizing the gradual resettlement.

Keywords: Flood vulnerability, flood resilience, urban planning, community, Matola.

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