

32nd IAA SYMPOSIUM ON SPACE AND SOCIETY (E5)  
Space Assets and Disaster Management (4)

Author: Ms. Elisabeth Bergler  
Austria, elisabeth.bergler@aon.at

Ms. Verena Mrak  
Austria, m.verena@gmail.com

SPACE-BASED TECHNOLOGIES FOR EFFECTIVE FLOOD MANAGEMENT IN URBAN AFRICA:  
BENEFITS, CHALLENGES AND POTENTIAL SOLUTIONS**Abstract**

Global warming exerts increasing pressure on hydrological systems leading to more frequent and more severe natural hazards such as floods. Especially in cities, climate change alongside increasing urbanisation and land-use change exacerbate flood risks. The African continent is considered one of the most vulnerable regions to the negative effects of the climate crisis. Simultaneously, Africa's urban population is among the fastest-growing in the world and is expected to rise to 1.5 billion urban inhabitants by 2050. Space-based technologies are vital tools in the context of hazard management and urban development. Satellite remote sensing provides comprehensive information coverage of large areas in near real-time. The high data reliability as well as the absence of geographical constraints, such as site accessibility, emphasise the technology's potential in the field. The provided data contributes to flood risk reduction and mitigation efforts as well as to humanitarian action in the form of rapid flood mapping. This paper investigates the role of satellite remote sensing with regard to flood risk management in African cities. Taking into account the UN75 initiative promoting communication and dialogue, a qualitative study was conducted with subject matter experts from UN entities, (inter-) governmental institutions, academia and the private sector. The interview partners highlighted the multi-dimensional character of urban floods and the numerous opportunities offered by earth observation tools. However, a lack of capacities in many cases was stressed so as to leverage the scope of satellite remote sensing - particularly when addressing long-term flood prevention. Prospective forms of cooperation were advocated as possible solutions to promote awareness raising and knowledge transfer to local experts. In addition, effective communication and coordination among thematically related stakeholders is recommended.