

RETHINKING URBAN VALLEYS IN THE FLOOD RISK PREVENTION PROCESS (MOROCCO)

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ABSTRACT

Catastrophic urban flood events, often exacerbated by climate change, are becoming increasingly frequent and intense in Morocco. They affect not only populations but also infrastructure and the urban environment. This vulnerability is amplified by several factors, including poorly controlled urbanization, shortcomings in water and urban planning legislation, and the absence of effective and preventive flood risk management. The economic cost of these risks weighs heavily on the budgets of the State, local authorities, and especially insurance companies.

Indeed, for more than five decades, Morocco has experienced floods of exceptional severity in terms of human losses and resulting economic damage. The tragic events in Fez in 1950 and 1989, in the Gharb in 1962 and 2025, in Ourika in 1995, El Hajeb in 1997, Taza in 2000, 2002 and 2010, Guelmim in 2014, Laayoune in 2016, and more recently in Larache, are telling examples.

The metropolitan area of Fez is regularly exposed to flood risks. The city's geographical configuration, located in a basin surrounded by the Saïss plateau and mountainous relief, facilitates the rapid transfer of water and the generation of sudden flash floods, similar to a flushing effect. These floods are often aggravated by anthropogenic factors, particularly uncontrolled urbanization occupying river valleys and risk-prone areas, as well as inadequate and/or insufficient hydraulic infrastructure. The city is therefore among the priority action areas and is currently at the center of concern for the supervising ministries.

The flooding of the wadis converging toward the city of Fez is further intensified by severe urban stormwater runoff. Our focus is on the political, social, and economic assessment of these risks and disasters. The conclusions of this reflection are based on a new approach to the geography of risk (cydinics), applied to spatial planning particularly human settlements and good governance—for sustainable development. This new approach to planning, territorial management (PER, Flood PPR), and environmental preservation in urban areas has already proven effective in risk-prone territories. We adopt it within the local contexts of Moroccan urban agglomerations, with Fez serving as a concrete model of this application.

Managing risk means preventing it ; it means living with projected risk. To achieve this, it must be institutionalized, adopted, and integrated into every project, large or small, within planning, management, and prevention programs.

This reflective work aims to address the real need to rethink the valley system of the city of Fez, particularly in terms of planning, management, and preservation of blue and green infrastructure in urban valleys. The objective is to act on environmental dysfunctions, placing them at the service of citizens and their well-being. This situation highlights the urgency of rethinking, among other elements, green and blue infrastructure in order to reshape the city of tomorrow.

Keywords: Urban floods, climate change, metropolitan area of Fez, planning, management and preservation.