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An inter and transdisciplinary participatory approach to assess the current flood risk management practices in Ghana

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The understanding of the multifaceted nature of flood risk management (FRM) of a country requires the consideration of both social, technical as well as governance aspects. The inclusion of these components in the analysis and assessment of FRM allows comprehending the veracity of its interdependencies, its strengths and weakness that would, in turn, aid in improving the current system.

This paper presents an inter and transdisciplinary and participatory multi-method participatory approach to promptly assess Ghana's current FRM practices, describing the current gaps and opportunities for improving FRM. Here, we describe the challenges on its institutional, governance and implementation, scientific, technical and social capacity levels and potential ways forward. The methodological approach comprised a systematic literature review of 53 peer-reviewed articles, stakeholder analysis, engagement of stakeholders on workshops through focus group discussion and collaborative mapping, interviews with key individual stakeholders, and household surveys with 1,479 citizens living in flood prone areas. The stakeholders were identified and categorized into governance and implementation, academia and research and security agencies.

Results show that stakeholders have diverse and even contradictory views regarding FRM in Ghana. Overall, the findings indicate that: (1) the most critical regions are Accra, Kumasi, and the White Volta river basin, (2) the most crucial aspects for reducing vulnerability and exposure are related with high population density, social hotspots and location of Critical Infrastructure, (3) FRM are unsustainable and unintegrated and it heavily relies on short-term projects and external funders, (4) reliable data is scarcely available and communities need to be engage more in the planning and provision of information and data, (5) there are weaknesses in flood early warning systems (FEWS), institutional collaborations, human capacity, trained FRM professionals and problems in policy implementation, (6) the most important vulnerability criteria are the existence of FEWS, disaster relief agencies, areas with a high density of children and poverty rate, (7) the interviewed communities in Accra and Kumasi claimed that flood disasters are caused mainly by human activities and interventions.

The applied participatory multi-method approach proved to be useful to capture the factual situation of the FRM in Ghana, this was shown when cross-referencing the results of the different methods. The use of a participatory and inter and transdisciplinary approach allowed capturing a

multitude of views as well as the stakeholders needs and requirements in terms of FRM. The co-production of knowledge allowed improving the credibility, salience and legitimacy of project outputs.