Environmental Engineering and Management Journal August 2021, Vol. 20, No. 8, 1263-1276
http://www.eemj.icpm.tuiasi.ro/; http://www.eemj.eu

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ASSESSMENT OF FLOOD RESILIENCE USING RAAAR FRAMEWORK: THE CASE OF NARMADA RIVER BASIN, INDIA

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Abstract

This paper proposes a framework for the assessment of flood resilience. The RAAAR framework is an acronym for 5 attributes or factors of Resist, Absorb, Accommodate, Adapt and Recover that define Resilience. The paper details this generic framework that can further be up-scaled for the entire districts, states or countries. The paper also illustrates the application of this framework by assessing reliance for the case of 21 districts along the River Narmada in central India, and discusses the results in the context of planning and policy. The RAAAR factors/attributes were represented by 16 physical, social, economic, demographic and infrastructure facilities-based indicators. Principal Component Analysis was then employed to assess the quantum of resilience represented by the Flood Resilience Index across 21 districts, for which Spatial mapping of the resilience was also undertaken. The RAAAR framework would be found useful by various stakeholders such as the urban planners and policy makers, disaster managers, district administrators, communities and the non-governmental organizations that are involved in managing the flood related risks.

Key words: flood related resilience, flood resilience index, planning and policy, RAAAR framework, spatial mapping of the resilience

Received: March, 2020; Revised final: November, 2020; Accepted: February, 2021; Published in final edited form: August, 2021

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