

# **Environmental resilience in Morocco : an attempt to develop a measurement model**

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In Morocco, a country rich in environmental diversity, faces a complex set of environmental challenges resulting from increasing pressures associated with population growth, rapid urbanization, and the impacts of climate change. In this context, the concept of environmental resilience holds crucial importance, as it aims to assess the capacity of ecosystems, communities, and human systems to withstand environmental shocks and adapt to changing conditions."

"In the light of dynamic capabilities theory, our aim is to delineate environmental resilience and the favorable conditions in which it emerges. Next, we will attempt to explore the fuzzy concepts (determinants) (Lin, 2006) related to this resilience and, ultimately, assess it based on fuzzy logic."

"In fact, the concept of environmental resilience encompasses a set of interconnected dimensions, ranging from biodiversity to natural resource management, as well as environmental governance and resistance to climate change. Our choice to adopt fuzzy logic (Patel, 2017) is aimed at identifying the measurement items for the attributes of environmental resilience and the appropriate linguistic scales (Fayek & Lourenzutti, 2018), subsequently weighting them with fuzzy numbers, which will generate a fuzzy index of environmental resilience, including attribute scores and corresponding weights tailored to the Moroccan context. In most cases where there is no optimal or exact solution, fuzzy logic provides multiple answers or solutions that 'combine a wide body of expert knowledge with subjective and sometimes contradictory opinions' (Fayek, 2018).

Our proposed measurement of environmental resilience by component fits within a framework for environmental performance management, and we intend to contribute to the preservation and sustainability of ecosystems while fostering a better understanding of the challenges and opportunities inherent in environmental protection in a constantly changing world.

**Keywords :** Environmental resilience – Fuzzy logic – Ecosystem sustainability – Dynamic capabilities.