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A Novel Method to Assess the Impact of a Government's Water Strategy on Research: A Case Study of Azraq Basin, Jordan

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Abstract: Water scarcity drives governments in arid and semi-arid regions to promote strategies for improving water use efficiency. Water-related research generally also plays an important role in the same countries and for the same reason. However, it remains unclear how to link the implementation of new government strategies and water-related research. This article's principal objective is to present a novel approach that defines water-related research gaps from the point of view of a government strategy. The proposed methodology is based on an extensive literature review, followed by a systematic evaluation of the topics covered both in grey and peer-reviewed literature. Finally, we assess if and how the different literature sources contribute to the goals of the water strategy. The methodology was tested by investigating the impact of the water strategy of Jordan's government (2008–2022) on the research conducted in the Azraq Basin, considering 99 grey and peer-reviewed documents. The results showed an increase in the number of water-related research documents from 37 published between 1985 and 2007 to 62 published between 2008 and 2018. This increase should not, however, be seen as a positive impact of increased research activity from the development of Jordan's water strategy. In fact, the increase in water-related research activity matches the increasing trend in research production in Jordan generally. Moreover, the results showed that only about 80% of the documents align with the goals identified in the water strategy. In addition, the distribution of the documents among the different goals of the strategy is heterogeneous; hence, research gaps can be identified, i.e., goals of the water-strategy that are not addressed by any of the documents sourced. To foster innovative and demand-based research in the future, a matrix was developed that linked basin-specific research focus areas (RFAs) with the MWI strategy topics. In doing so, the goals that are not covered by a particular RFA are highlighted. This analysis can inspire researchers to develop and apply new topics in the Azraq Basin to address the research gaps and strengthen the connection between the RFAs and the strategy topics and goals. Moreover, the application of the proposed methodology can motivate future research to become demand-driven, innovative, and contribute to solving societal challenges.

Keywords: research gap; water strategy; Azraq Basin; water management; water governance