

A Composite Indicator to Monitoring European Water Policies Using a Flexible Sustainability Approach

Authors : De Castro-Pardo M., Cabello J. M., Martin J. M., Ruiz F.

Abstract : In this paper, we propose a new Water Sustainability Indicator based on a Multi-Reference methodology that permits modeling compensation between the analysed criteria and provides a participative approach. The proposed indicator provides results based on 19 variables grouped into 5 dimensions: availability, access, resilience, good governance and economic capacity. The indicator was applied to assess water sustainability in 27 European countries. The results showed that Finland, the Netherlands, Sweden and the United Kingdom obtained the best global results in terms of weak water (compensatory) sustainability. In terms of strong water (non-compensatory) sustainability, no country gained acceptable results in terms of strong sustainability. Climate change and the state of freshwater resources were detected as especially vulnerable in all the analysed countries. The results identified some eastern European countries with low GDP and good performance of availability and cost of water, with bad results in terms of governance and water productivity. These results could jeopardize water sustainability in the event of a potential economic development if these limitations are not addressed. In a context of economic and political instability due to the current armed conflict in nearby countries such as Ukraine, it is especially important to pay attention to these countries, whose good governance indicators could worsen even more. The proposed indicator allowed to the identification of warning signs and could contribute to the improvement in decision-making processes. Moreover, it could improve the monitoring of international water policies.

Keywords : water sustainability, composite indicators, compensatory approach, sustainability European policies

Conference Title : ICEB 2023 : International Conference on Ecosystems and Biodiversity

Conference Location : Zurich, Switzerland

Conference Dates : July 24-25, 2023