

## **MANAGED AQUIFER RECHARGE IN SÃO PAULO STATE, BRAZIL: Opportunities for Facing Global Climate Change Issues**

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### **RESUMO**

Brazil is the ninth largest user of groundwater worldwide. More than 70% of the cities in São Paulo state are partially or entirely supplied by the groundwater, making it the largest user in the country, but generating problems associated with intense exploitation in some regions. Managed aquifer recharge (MAR) can improve water security by purposeful water recharge to aquifers for subsequent recovery of stored water or environmental benefit; however, the extent of MAR practice is relatively limited in the region. There is a gap in the scientific, technical, and governance dimensions, with lost opportunities in the quest for greater societal resilience. The resistance to MAR practice derives from sources beyond technical or legal issues, including socio-cultural acceptance and technician insecurity due to a lack of knowledge. The present paper evaluates the opportunities for MAR implementation in São Paulo and discusses how to make it an ordinary water resources management strategy. Therefore, it is necessary to create simple documents showing the advantages and risks associated with MAR adoption for policymakers, water resource managers, and technicians. Furthermore, it is essential to identify the locations in São Paulo where MAR could recover aquifers by evaluating the technical, social, and institutional aspects. The result of this study shows that in critical regions such as Ribeirão Preto and Bauru, where the Guarani Aquifer System has experienced potentiometric water level drops of more than 50 m, or even in São José do Rio Preto, where thousands of private wells compete for the groundwater of the Bauru aquifer, MAR could prolong and sustain groundwater exploitation.

**Palavras-chave:** Integrated water resources management; aquifer resilience; water insecurity.