Rainwater harvesting as alternative water source in Morocco

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Keywords : Anti-Atlas Mountains, Water Scarcity, Rainwater Harvesting, Water Management

The native population of remote communities in south Morocco's Anti-Atlas Mountains suffers from recurring droughts and struggles to satisfy basic daily necessities due to poor income and difficult access to isolated little settlements. Water scarcity endangers local cattle and agricultural activity, resulting in severely tough living circumstances. The situation worsens as (i) climate models predict severe droughts in the future, (ii) the water table retreats due to overexploitation of groundwater to meet irrigation demand, and (iii) groundwater quality deteriorates due to a poor sanitation system in which domestic wastewater is poured directly outdoors or into traditional septic tanks. In this research, we highlight and advocate efficient and cost-effective alternatives for improved water management in Anti-Atlas rural communities. Rainwater harvesting (RWH) systems may be used to supplement home and agricultural water supplies. The long-term outcomes of this study will help to improve the living conditions of the local population by providing an easily accessible water source and, as a result, a healthy and balanced rural lifestyle, preserving small-scale agriculture as the region's main source of income, and reducing rural-to-urban migration waves to the city, which will, in turn, reduce pressure on the cities and aid in the preservation of the local and original Amazigh culture. Other projected environmental benefits of RWH include increased water table owing to reduced pumping, biodiversity preservation in such dry locations, and the promotion of environmental awareness and sustainable development education. The installation of RWH setups in rural regions in pilot sites will serve as a baseline for bigger projects spanning wider areas, helping to persuade authorities and decision-makers that RWH is an effective water management strategy.