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A twelve-year living lab for the experimentation and implementation of fog collection in the Valles Crucenos Region, Bolivia

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The region of “Valles Cruceños”, Bolivia, is characterized by intrinsic water scarcity and increasing pressure for food production. In the area, located between the Andean altiplano and the Bolivian lowlands, orographic fog is a phenomenon occurring all year round and represents a sustainable water source to improve farmers’ resilience to dry spells and to promote food security and sovereignty. Here, the NGOs ICO and Zabalketa, and the University of Florence realized the first-ever experience of fog collection in Bolivia, in a structured set of activities, started in 2012 with a pilot project. After that, in 2018, the first scientific study on the potential of fog collection in the area was carried out in 10 locations, with a 1-year experimental analysis made through 1-m² fog collectors, resulting in a yearly average of 6.01 l/m²/d observed in the best location. Based on these results, a large-scale fog collection system was implemented through international funding with innovative CloudFisher collection meshes starting in 2022, with a total of over 330 m² of mesh over 4 locations, for multiple water uses (domestic, irrigation, reforestation). In the present contribution, we documented the whole implementation process from 2012, presenting the results of fog collection rates of the new system from 2022 up to the present, including also lessons learned and the main potential development for the area's future.

References:

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