

2014 UN-Water Annual International Zaragoza Conference. Preparing for World Water Day 2014: Partnerships for improving water and energy access, efficiency and sustainability. 13-16 January 2014

Case study: Aquifer Management, Renewable Energy and Desalination for Baja Region, Mexico

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Abstract

The partners have extensive experience with energy, water and renewable energy and desalination technologies. The Centro Mario Molina is engaged in economic and public policy analysis for aquifer management and impact of electricity rates for agriculture on aquifer depletion. IMPLAN Los Cabos has information and knowledge of energy and water in the municipality.

There is significant knowledge in the Baja region of Mexico on existing water resources and regional to municipal water needs. Research and analysis was recently conducted by the Centro Mario Molina in partnership with municipal governments and water departments including water scenario planning, economic analysis and modeling.

The aquifers that are the main water sources in the Baja region are being depleted, and contaminated by saline intrusions. Electricity is predominantly generated by hydrocarbons despite abundant solar and wind resources. The agricultural and tourism sector is growing and the population is increasing, with communities like La Paz and Los Cabos being of great importance due to growing government and tourism centers.

For the Baja region, aquifers are managed at the state level, while municipalities provide local water services. These municipalities do not have access to sufficient water to meet current or future needs. Water efficiency and pricing approaches have been proposed by Centro Mario Molina to address water shortfalls at a municipal level. However, renewable energy and desalination can create additional safe, clean drinking water, replenish depleted aquifers, reduce carbon emissions, and assist in adapting to climate changes.

This case study will demonstrate how to achieve energy and water efficiency, security and sustainability, while also lowering the carbon footprint of the Baja region, which currently depends on imported hydrocarbons for electricity generation and desalination.

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