

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/354652979>

What is the carbon footprint of works related to obtaining drinking water in the aquifers of the Canary Islands?

Conference Paper · September 2021

CITATIONS

0

READS

34

4 authors:



Noelia Cruz-Pérez

Universidad de La Laguna

91 PUBLICATIONS 155 CITATIONS

SEE PROFILE



Jesica Rodríguez-Martín

Universidad de La Laguna

93 PUBLICATIONS 246 CITATIONS

SEE PROFILE



Alejandro Garcia-Gil

Spanish National Research Council

119 PUBLICATIONS 1,255 CITATIONS

SEE PROFILE



Juan Carlos Santamarta

Universidad de La Laguna

328 PUBLICATIONS 695 CITATIONS

SEE PROFILE

What is the carbon footprint of works related to obtaining drinking water in the aquifers of the Canary Islands?

Noelia Cruz-Pérez¹; Jesica Rodríguez-Martín²; Alejandro García-Gil³; Juan C. Santamarta¹

¹ Departamento de Ingeniería Agraria, Náutica, Civil y Marítima. Universidad de La Laguna (ULL), Tenerife. Spain

² Departamento Técnicas y Proyectos en Ingeniería y Arquitectura. Universidad de La Laguna (ULL), Tenerife. Spain

³ Geological Survey of Spain (IGME), Madrid, Spain

Corresponding Author(s): ncruzper@ull.edu.es

Groundwater is one of the main sources of drinking water in the Canary Islands (Spain). Groundwater accounts, in some cases, for up to 70% of the water consumed in the archipelago, which is mainly used for agriculture and urban use. The carbon footprint and water footprint of different groundwater-related facilities in the Canary Islands, such as water galleries and wells, have been studied. The main difference between water galleries and wells is that water galleries are horizontal excavations that draw water by gravity, and wells are vertical excavations that reach the coastal aquifer and pump water to the surface. The results show that galleries have a lower environmental impact than wells, as they do not need to be pumped with diesel to obtain drinking water from the aquifer. In addition, a comparison has also been made with installations that obtain drinking water from seawater, to show the differences in the electricity consumption of an installation such as a sea desalination plant, with installations that exploit groundwater. Seawater desalination plants are becoming more and more common in the Canary Islands, mainly due to problems related to the recharge of the islands' aquifers, which are in an increasingly critical situation due to climate change. In the archipelago, therefore, it is considered urgent to take environmentally friendly measures to protect groundwater and to be able to continue using groundwater as a source of drinking water, thus preventing groundwater-related infrastructures from being displaced over time by seawater desalination facilities.

Keywords: groundwater protection; island hydrology; regional review



47TH IAH CONGRESS | XV CONGRESO LATINOAMERICANO DE HIDROLOGÍA SUBTERÁNEA | XXI CONGRESSO BRASILEIRO DE ÁGUAS SUBTERRÂNEAS

Presentation Type POSTER

Eixo / Subeixo 02. GROUNDWATER SUSTAINABILITY: MANAGEMENT, POLICY AND GOVERNANCE /

Work code 501

Title WHAT IS THE CARBON FOOTPRINT OF WORKS RELATED TO OBTAINING DRINKING WATER IN THE AQUIFERS OF THE CANARY ISLANDS?

Authors NOELIA CRUZ PÉREZ, JESICA RODRÍGUEZ MARTÍN, ALEJANDRO GARCÍA GIL, JUAN C. SANTAMARTA CEREZAL

Institution UNIVERSIDAD DE LA LAGUNA

Palavras Chave Groundwater protection, Island hydrology, Regional review