

CONSTRUCTION OF A NATIONAL HYDROGEN AND OXYGEN ISOSCAPE FOR COLOMBIA AS A BASELINE FOR THE IDENTIFICATION OF REGION OF ORIGIN OF UNIDENTIFIED VICTIMS OF THE INTERNAL ARMED CONFLICT.

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SUMMARY

The armed conflict in Colombia generated the forced displacement of thousands of victims, the recruitment of people by illegal armed groups who then were deployed across much of the national territory, and the transport of victims from one region to another, some of whom have died and are unaccounted for. For this reason, it is important to have tools that establish the geographical origin of unidentified persons buried in cemeteries so that this information can help identify a universe of missing persons and locate their potential families.

OBJECTIVE

The purpose of this research was to construct a national hydrogen and oxygen isotope reference map for Colombia based on tap water samples (drinking water), which will guide both the identification of unidentified persons within the country and contribute to global reference databases, such as the University of Utah's database WaterIsotopes.org.



METHODOLOGY

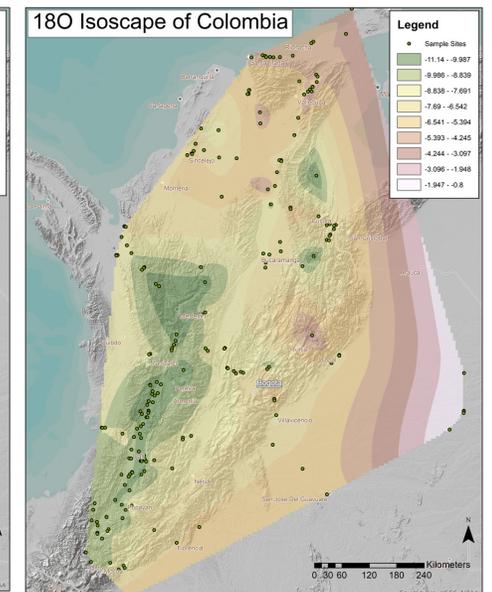
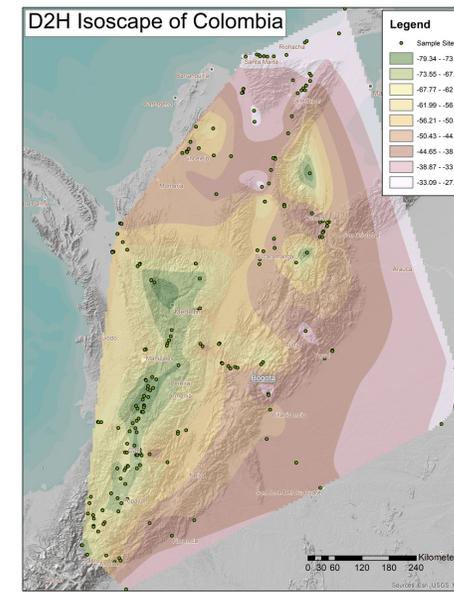
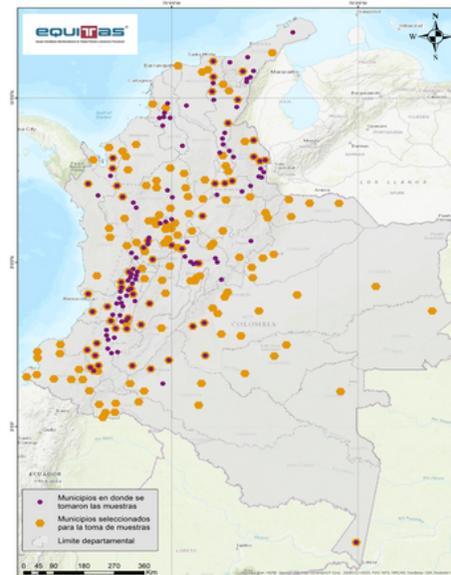
- 1 Selection of cities to be sampled
- 2 Collection of samples
- 3 Transfer and analysis of Samples
- 4 Isoscape Construction → Nearest Neighbor

SIRFER - UTAH
Isotopic Water Analyzer
Picarro L2130-i

SIRFER #	Original ID	δ ² H _{SMOW} (‰)	δ ¹⁸ O _{SMOW} (‰)
ACGG-0403-01		-43,8	-6,8
ACGG-0403-02		-45,5	-7,3
ACGG-0403-03		-55,0	-8,5
CACG-0227-01		-53,6	-8,8
CACG-0228-01		-65,7	-9,6
CACG-0228-02		-74,8	-10,8
DMAG-0222-01		-42,3	-9,1
DMAG-0223-01		-61,9	-9,1
DOR-0329-01		-31,2	-5,7
DOR-0329-02		-56,1	-8,8
DOR-0403-01		-34,0	-3,2
DOR-0403-02		-65,9	-10,0
ELG-0311-04		-67,8	-9,8
FGDD-0311-01		-79,3	-11,0
FGDD-0311-02		-67,1	-9,7

RESULTS

271 samples in 26 departments



The values of δ²H range from -0.9 ‰ in the Amazon region to -80.6 ‰ in the Santander region.
The values of δ¹⁸O range between -0.1 ‰ in the Amazon region and -11.3 ‰ in the Santander region