

Geothermal potential of the Swiss Plateau using a GIS-based multicriteria Source-to-Sink approach

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Goals

Compile key information to assess surface and subsurface potential

Conduct a GIS-based analysis on the repartition of key factors determining the best suited location for project implementation

Produce GIS dataset for public use

Problem

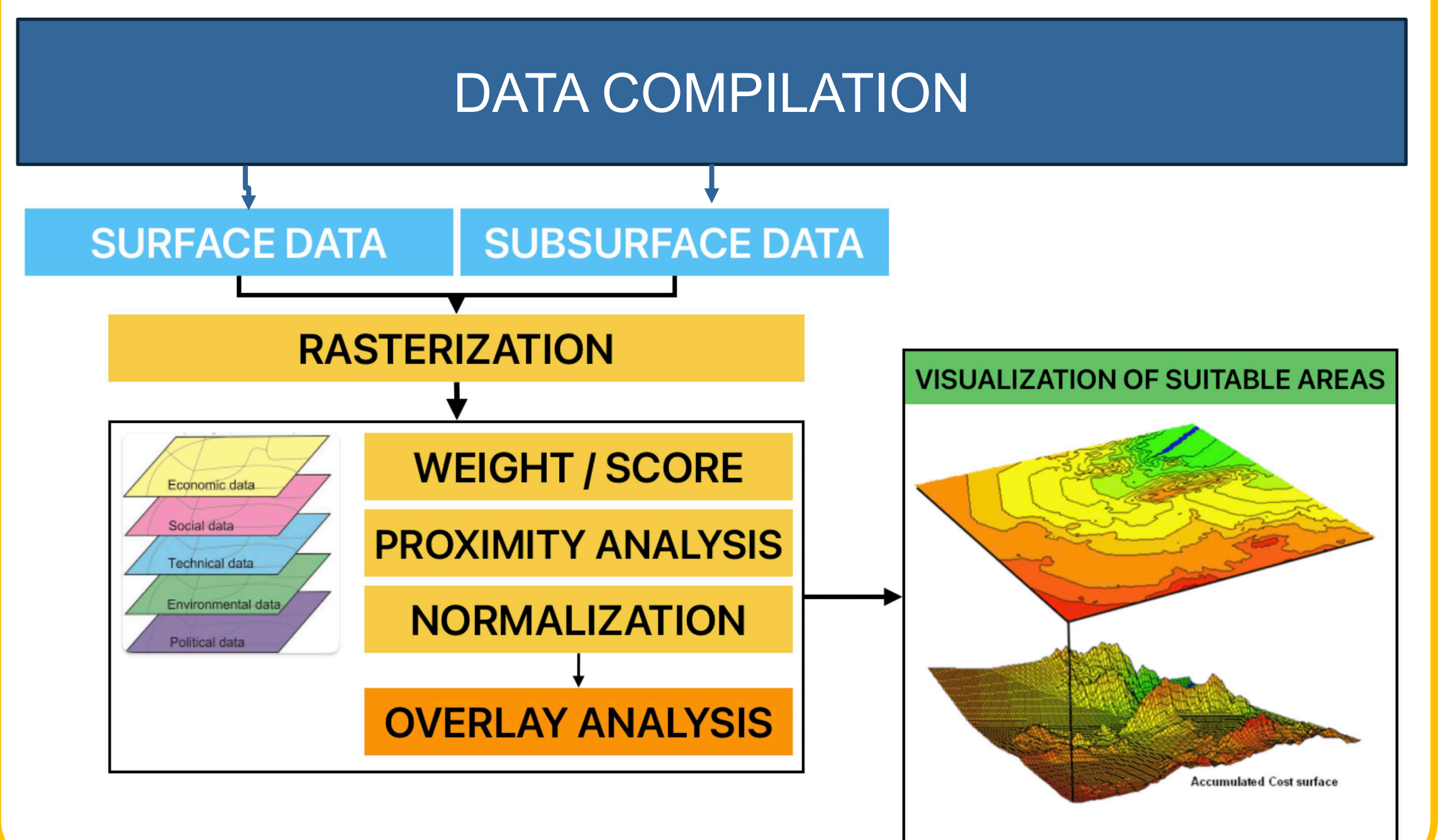
A geothermal project is the adequation between an energy demand (SINK) and a subsurface potential (SOURCE).

However, both the SOURCE and the SINK are related to different spatial, economical and temporal variables

Introduction

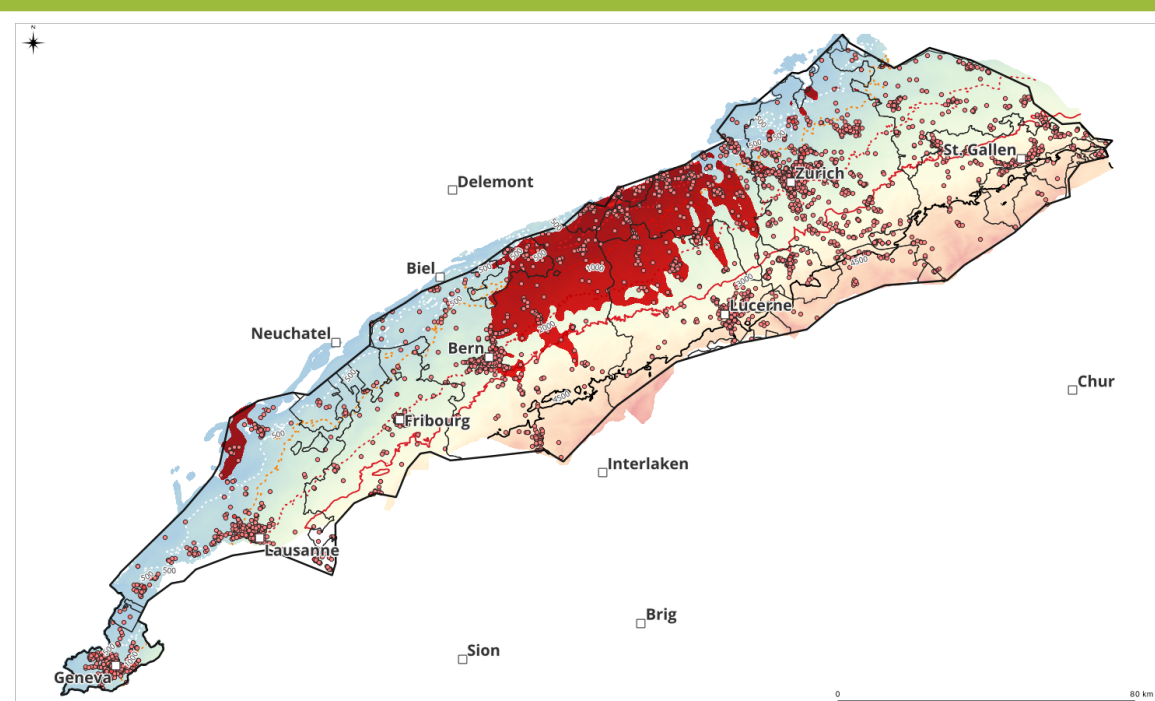
The evaluation of the subsurface geothermal potential (source) is carried through a characterization of the: depth, temperature, lithology and reservoir properties of the main geological units in the Swiss plateau. In parallel, the demand (sink) is characterized using to the energy demand, industrial CO2 production, DHCN location and size, The sink is particularly critical because it implies the understanding of the energy demand portfolio and consumption distribution over time.

Method



Results

A GIS dataset composed of "suitability maps" has been generated by combining key surface and subsurface factors, identifying promising prospects at different depths/temperature in the Swiss Plateau



Area where subsurface temperatures reaches 70 ° C at 1500m deep and location of main energy demand

Conclusions

- The source-to-sink approach can be used to identify suitable location where geothermal energy could respond to the energy demand
- Multicriteria GIS based analysis provided ready-to-use datasets

Core partners

Associate partners

Cooperative partners: