

THE EFFECTIVE PRECIPITATION IN THE ISONZO PLAIN

The application of the SINTACS protocol (Civita, 1994; Civita e De Maio, 1997) for the evaluation of the vulnerability of aquifers requires the computation of the effective infiltration in the study area. The effective infiltration is a parameter depending on the hydrogeology and the effective precipitation.

The methodology for the computation of the effective precipitation can be divided in two steps:

- The first step consists of the analyses of the time series (1981-2010) of precipitation and temperature (15 rain gauges and 10 thermometers in Italy and Slovenia) to identify missing data and temporal trends;
- The second step involves the computation of the mean annual precipitation (P) and temperature (T) in the study area, considering the effect of topography on the two meteorological factors. The maps of the mean annual precipitation and the mean annual temperature were obtained applying co-kriging. Afterwards, the effective precipitation (P_e) (Fig. 1) was computed, as:

$$P_e = P - E_r$$

where E_r represents the mean annual evapotranspiration in the study area.

The mean annual evapotranspiration was determined by the Turc method (Turc, 1954, 1955).



2007-2013
cooperazione territoriale europea
programma per la cooperazione
transfrontaliera
Italia-Slovenia
evropsko teritorialno sodelovanje
program čezmejnega sodelovanja
Slovenija-Italija



REPUBLIKA SLOVENIJA
SLUŽBA VLADE REPUBLIKE SLOVENIJE ZA RAZVOJ
IN EVROPSKO KOHEZIJSKO POLITIKO



Ministero dell'Economia
e delle Finanze



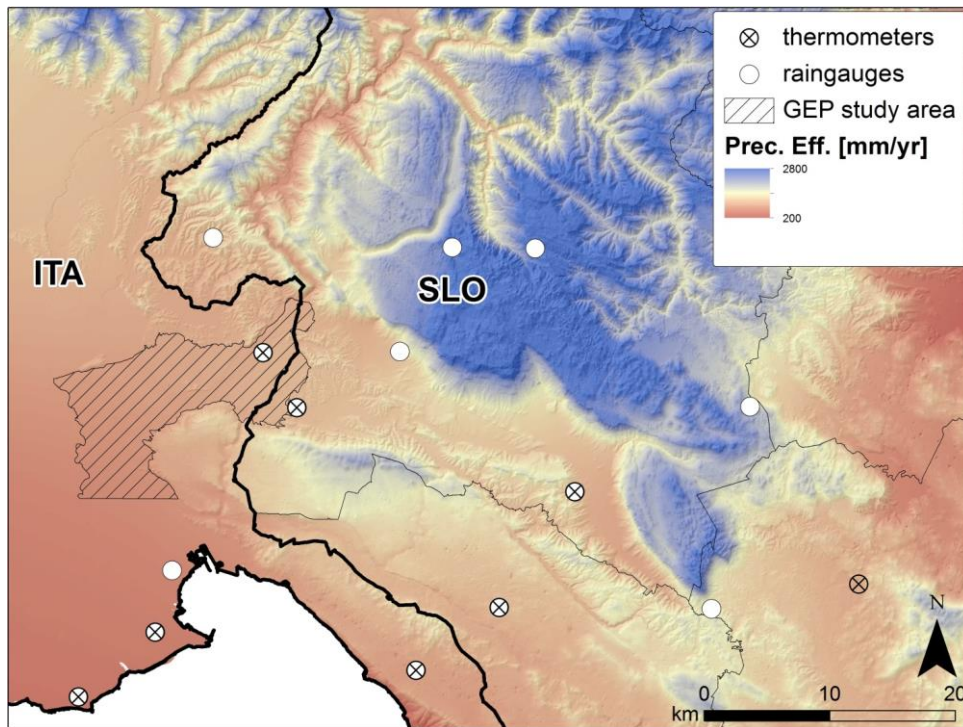


Fig. 1. Maps of the effective precipitation. Locations of rain gauges and thermometers used for the computations are also displayed.

REFERENCES

- Civita M., 1994. Le carte della vulnerabilità degli acquiferi all'inquinamento: teoria e pratica. Quaderni di tecniche di protezione ambientale. Pitagora Editrice, Bologna, p. 325.
- Civita M., De Maio M., 1997. SINTACS: Un sistema parametrico per la valutazione e la cartografia delle vulnerabilità degli acquiferi all'inquinamento. Metodologia e automatizzazione. Pitagora Editrice, Bologna, p. 191.
- Turc L., 1954. Calcul du bilan de l'eau. Évaluation en fonction des précipitations et des températures. IASH Rome Symposium, 111, pub n. 38, 188-202.
- Turc L., 1955. Le bilan de l'eau des sols: relations entre les précipitations, l'évaporation et l'écoulement. INRA, Paris, p. 252.