

## **Hargreaves evapotranspiration in Argentina with high-resolution gridded data**

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### **Summary**

The increase in world demand for food requires a continuous improvement in the efficiency of the use of resources, particularly of water. Much of the Argentine territory has experienced increase in temperatures during the last decades, which may have affected the amount of vapor that can potentially be transferred to the atmosphere by evapotranspiration. In this work, we try to quantify this impact. For this purpose, high-resolution spatial data (0.5° latitude and longitude) of maximum, minimum and average temperatures were used, with coverage throughout the Argentine mainland, from 1960-2010. Increases in annual total potential evapotranspiration were observed in arid parts of the Northwest and Patagonia and decrease in the center of the country. The most significant changes occurred during the summer, coinciding with the period of greatest evaporative demand. In particular, in the central areas of the country, a downward trend of 4% was observed with respect to the annual average and 10% in the summer period. It is presumed that this could be an aggravating circumstance for the frequent situation of water excesses in the region, accompanying the documented increase in precipitation.

**Key words:** temperature; climate change; hydrological cycle