

13. CLIMATE CHANGE

Introduction

In the last decades, a slight decrease of the precipitations and of the average provisions has been observed in the Júcar River Basin District. This decrease has not been homogeneous in all settings, but it has been concentrated in the headwaters and interior areas, increasing even the average precipitation in the coastal areas with the recent series. This slight increase of precipitation in coastal areas causes a greater surface run-off and generates resources that are less usable from the hydrological planning point of view, increasing, in addition, flood risk.

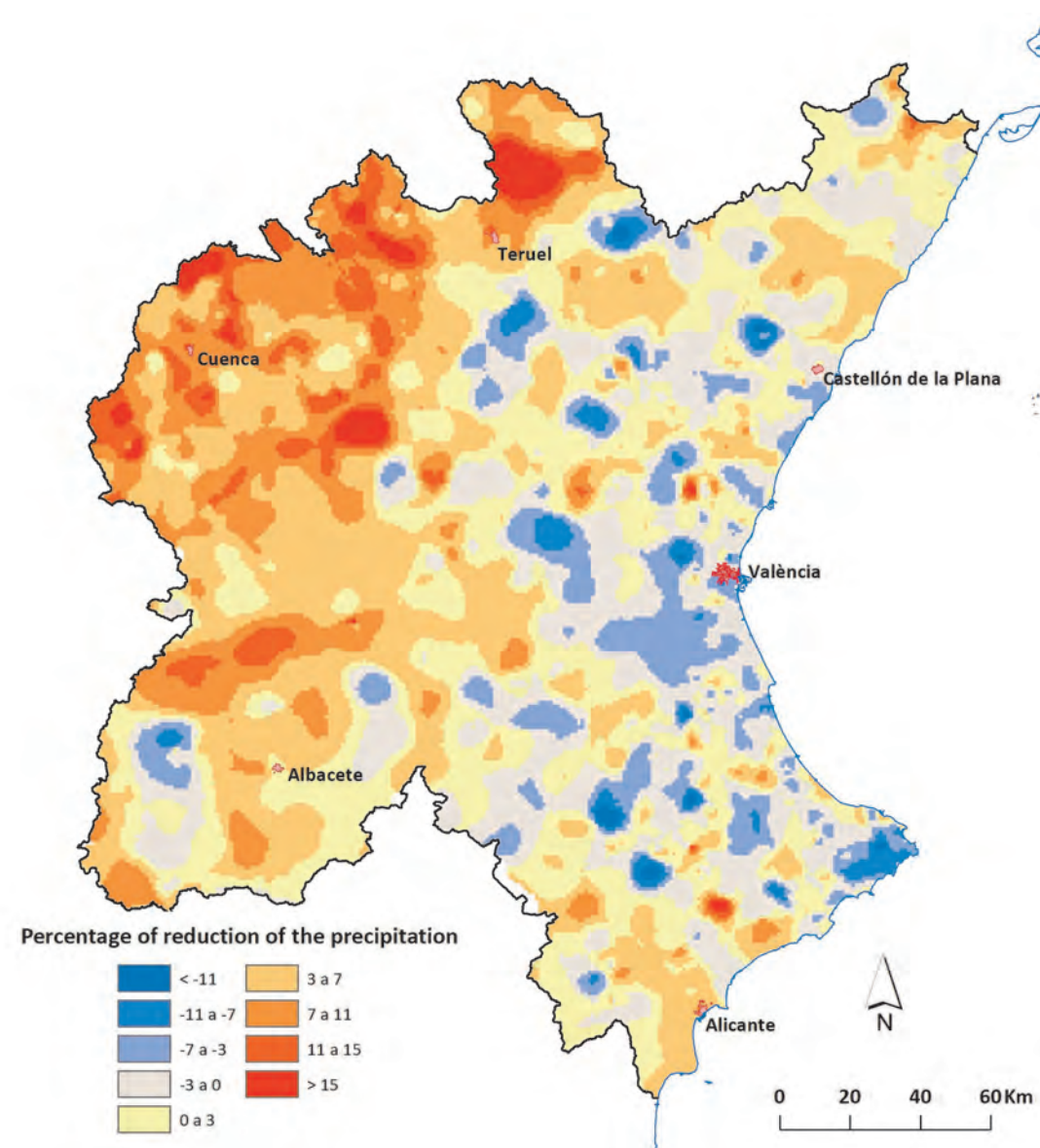
Hydrological planning implications

The reduction of water resources in natural regime in the medium and long term involves one of the aspects to take into account in the review of the hydrological plan.

In accordance with the studies carried out by the CEDEX Hydrographic Studies Centre on the evaluation of the effects of Climate Change on the water resources using the climate scenarios generated by the State Meteorological Agency, the global reduction rate of the provisions to be used in the District would be 12%.

In accordance with CEDEX works, future surface run-off trends of the rivers of the Júcar River Basin District show a decrease with regards to the reference period 1961-1990, whose magnitude varies depending on the emissions scenarios and the regional climate models used. By averaging the values obtained with the different models for each emission scenario, an average between -5% and -12% is obtained for the period 2011-2040, between -18% and -13% for the period 2041-2070, and between -32% and -24% for the period 2071-2100.

Notwithstanding the above, there is a lot of uncertainty about the effect of climate change on water resources as well as on demands and ecosystems. For this purpose, it is necessary to continue working on the study of the impacts of the climate change as well as on the measures required to mitigate its effects.



Percentage of reduction of the precipitation of the recent series (1980/81-2011/12) with regards to the complete series (1940/41-2011/12)



Image: Talayuelas Lagoon

Most aquatic ecosystems may be affected by the effects of climate change. A specific measure has been included in the programme of measures of the River Basin Management Plan: “Study of the effects of Climate Change in the Júcar River Basin District and their impact on the status of water bodies and supply guarantee”.