

# Impact of climate change on hydrogeology of two basins in northern France

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The impact of climate change on the water resources of the Seine and Somme basins of northern France was studied for 147 hydrological projections based on seven hydrological models, seven climate models, three downscaling methods, and two emissions scenarios (A2 and A1B). The results showed a general agreement on a decrease of the river flow at the outlets of both basins by at least 14 % by the 2050s and at least 22 % by the 2080s.

Projected mean monthly river flow reductions in the Somme basin are around 20 % in 2050 and 30 % in 2080, while in the Seine basin, the decrease is larger in summer (30 % in 2050, 40 % in 2080) than in winter (0 % in 2050 and 15 % in 2080).

A temperature increase is projected of 1.7–2.7° in 2050, and 2.2–4.2° in 2080, compared to the present day (1971–2000). Annual precipitation change is projected of +0.4 to –14 % in

2050 (A1B emissions scenario) and +4 to –24 % in 2080 (A2 and A1B emissions scenarios), compared to the present day (1971–2000).

Source: Habets et al., 2013. Climatic Change 121: 771–785.

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