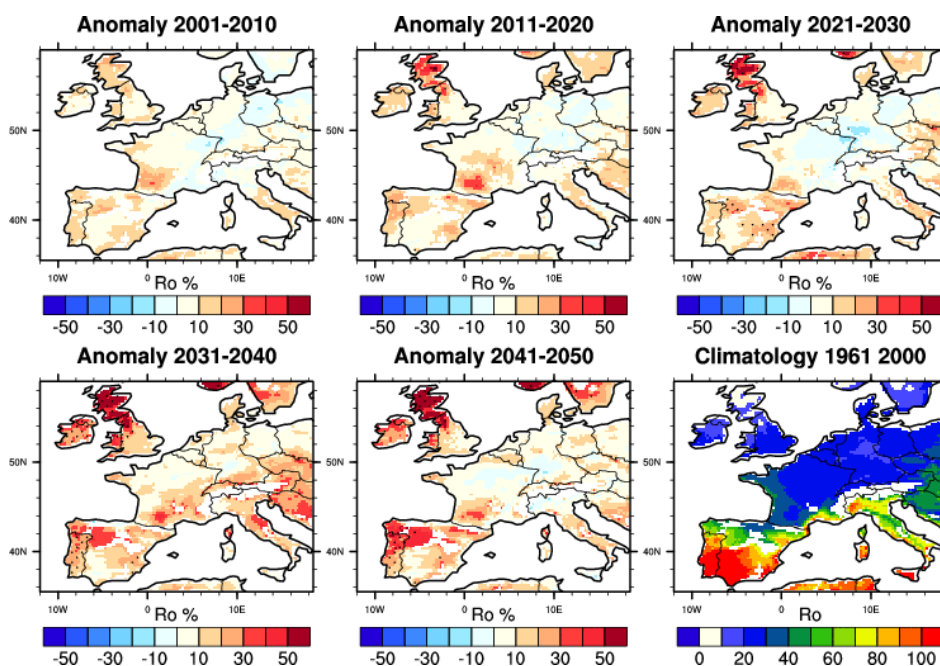


## Influence des changements climatiques dans l'émergence des maladies Influence of climate change on disease emergence

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Climate impacts this emergence through a complex interplay of influences on all the actors involved (host, pathogen, and potential vectors in the case of a vector-borne disease). The basic reproduction ratio ( $R_0$ ) measures the number of secondary cases arising from the introduction of one infected host in a susceptible population. It reflects the risk of transmission if all actors are present. By combining ensembles of climate models over the past, present and future periods to  $R_0$  disease transmission models, we can assess how climate will influence the disease transmission risk. By applying this approach to bluetongue, a vector-borne disease of ruminants, we illustrate how this framework enables us to map past and future impacts of climate (and their uncertainties), and helps us identify underlying biological and climatic mechanisms involved in transmission risk increase or decrease.



Simulated future decadal anomalies in bluetongue transmission risk  $R_0$  (with respect to 1961-2000 time period in August, September, October) using an ensemble of 11 regional climate change models under the A1B emission scenario.

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