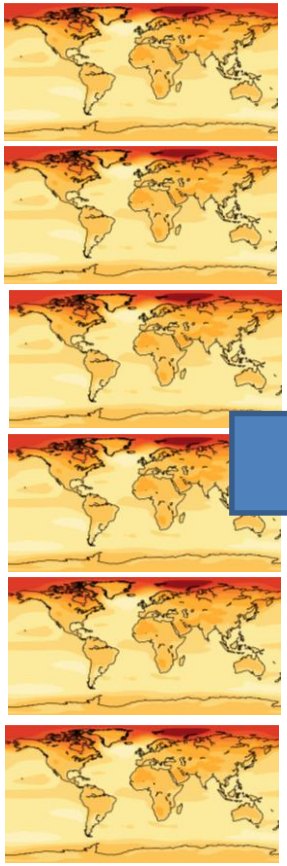
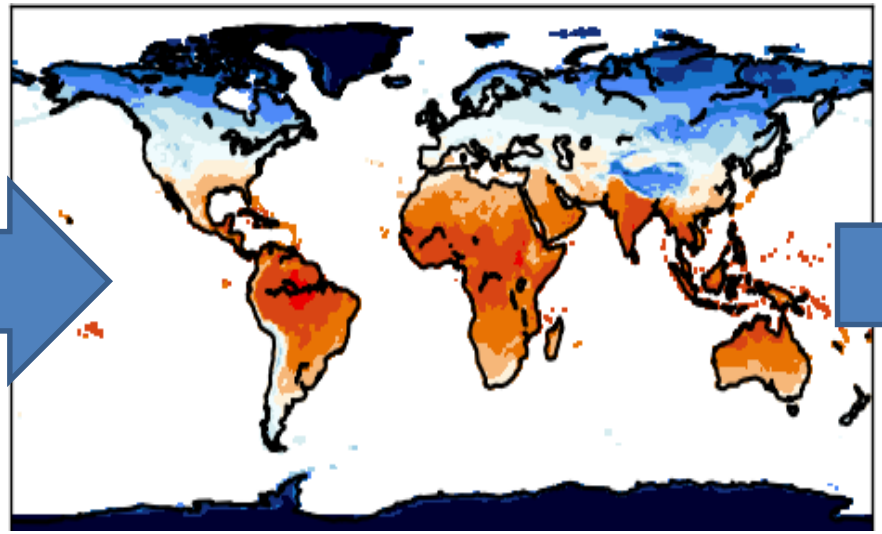
Impacts of climate change on extreme weather, food and water resources at 1.5°C and 2°C global warming

Richard Betts



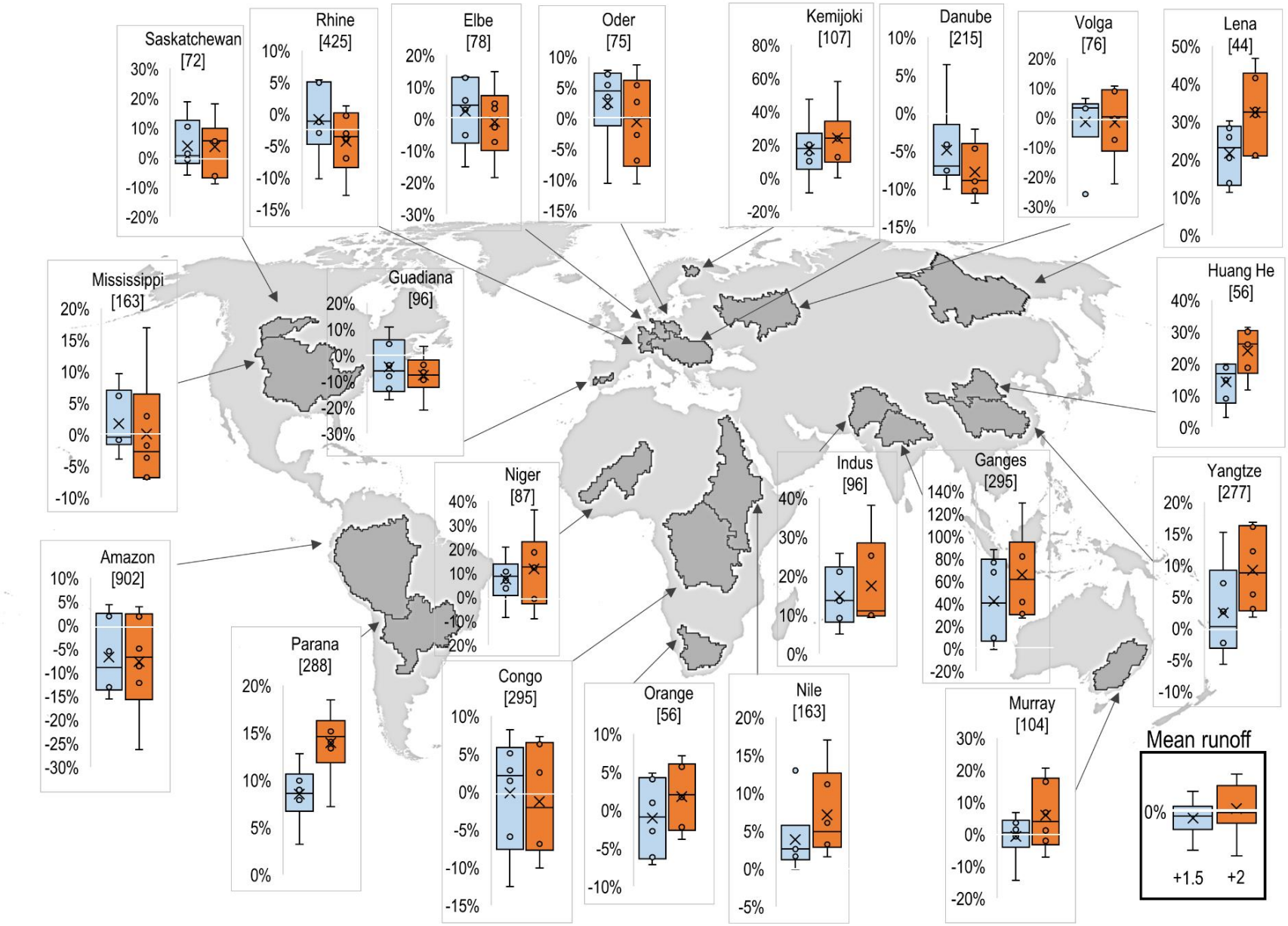
6 IPCC AR5 projections



New higher-resolution global atmosphere simulations

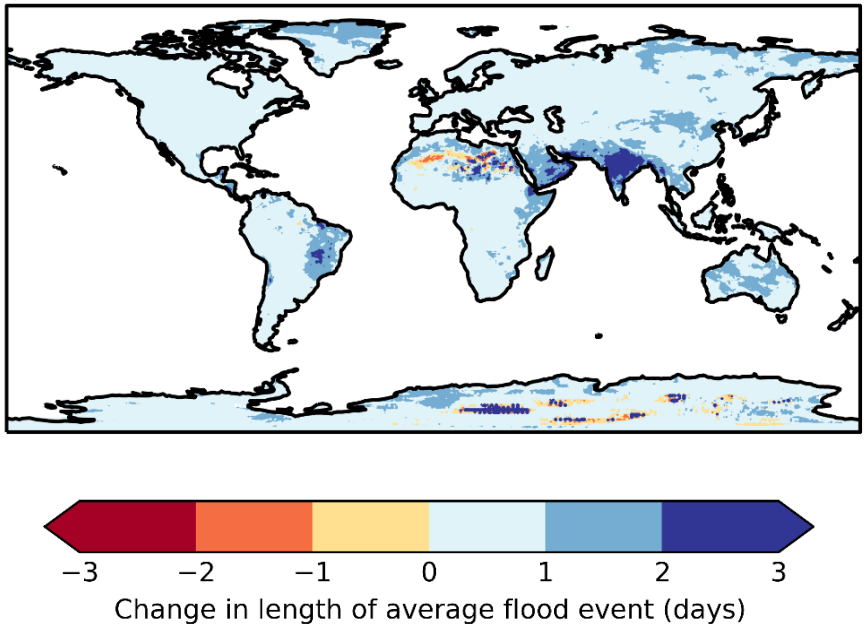
Impacts at 1.5°C, 2°C & above

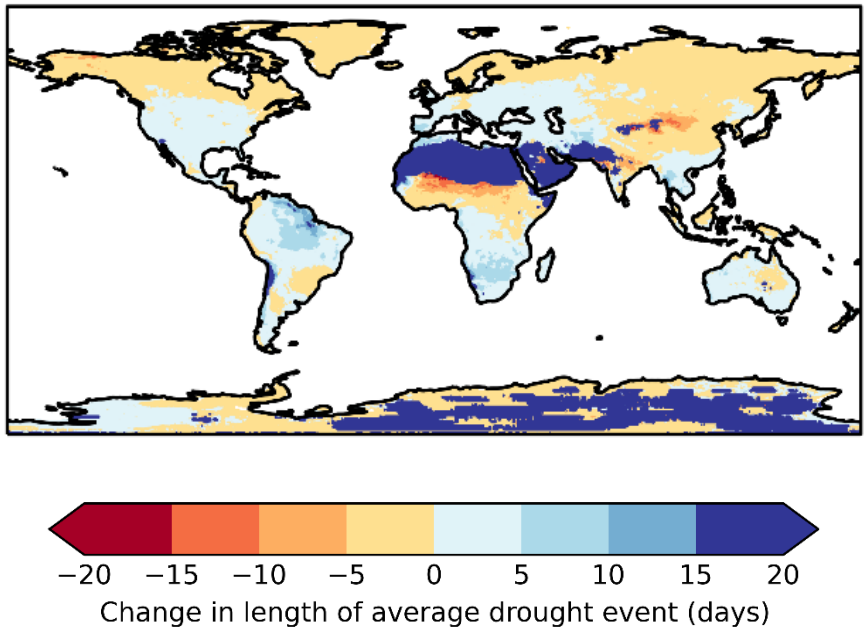
Projected change in river flows at 1.5°C and 2°C



Projected changes in extreme precipitation at 2°C

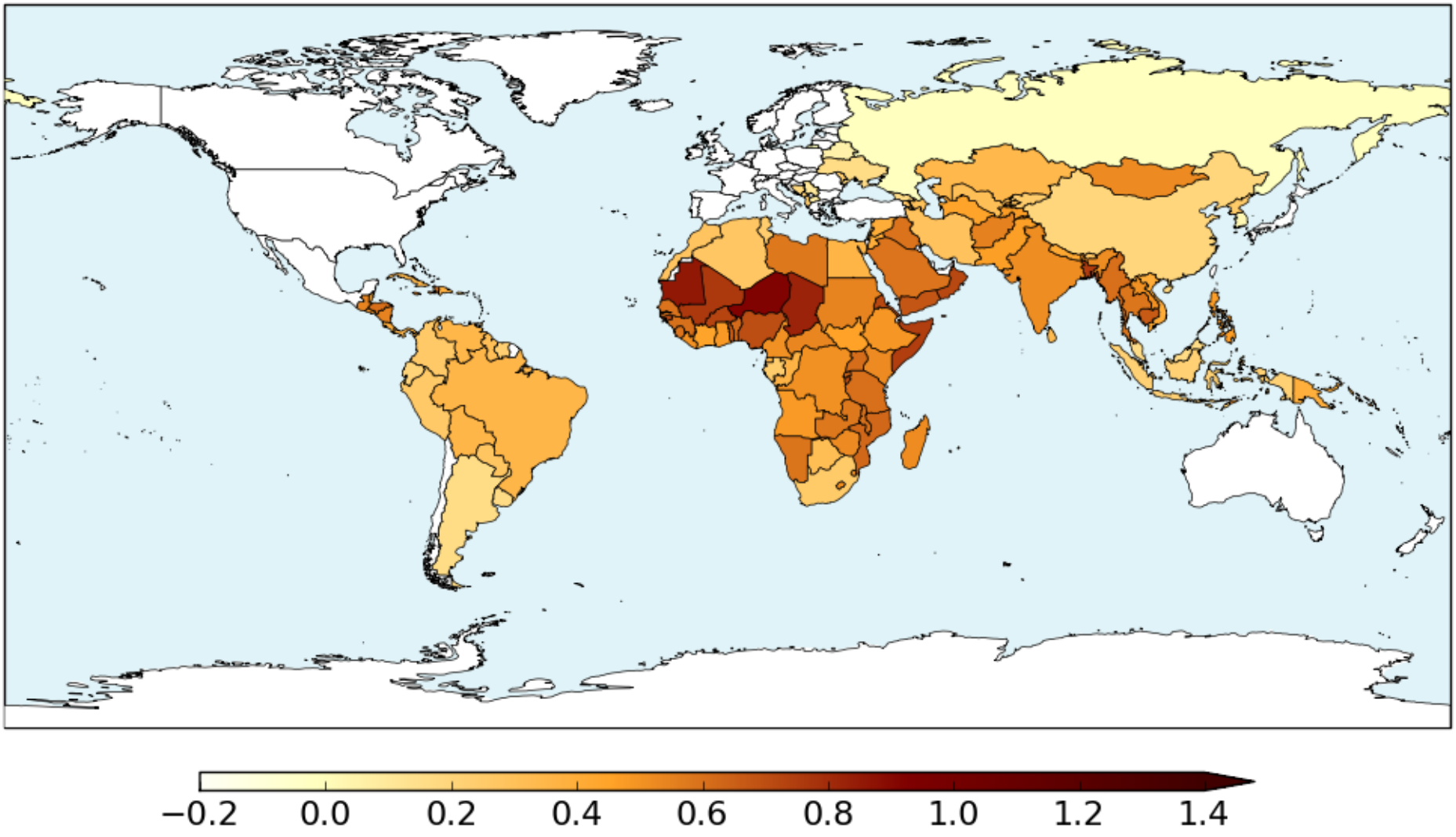
(averages of 5 simulations)





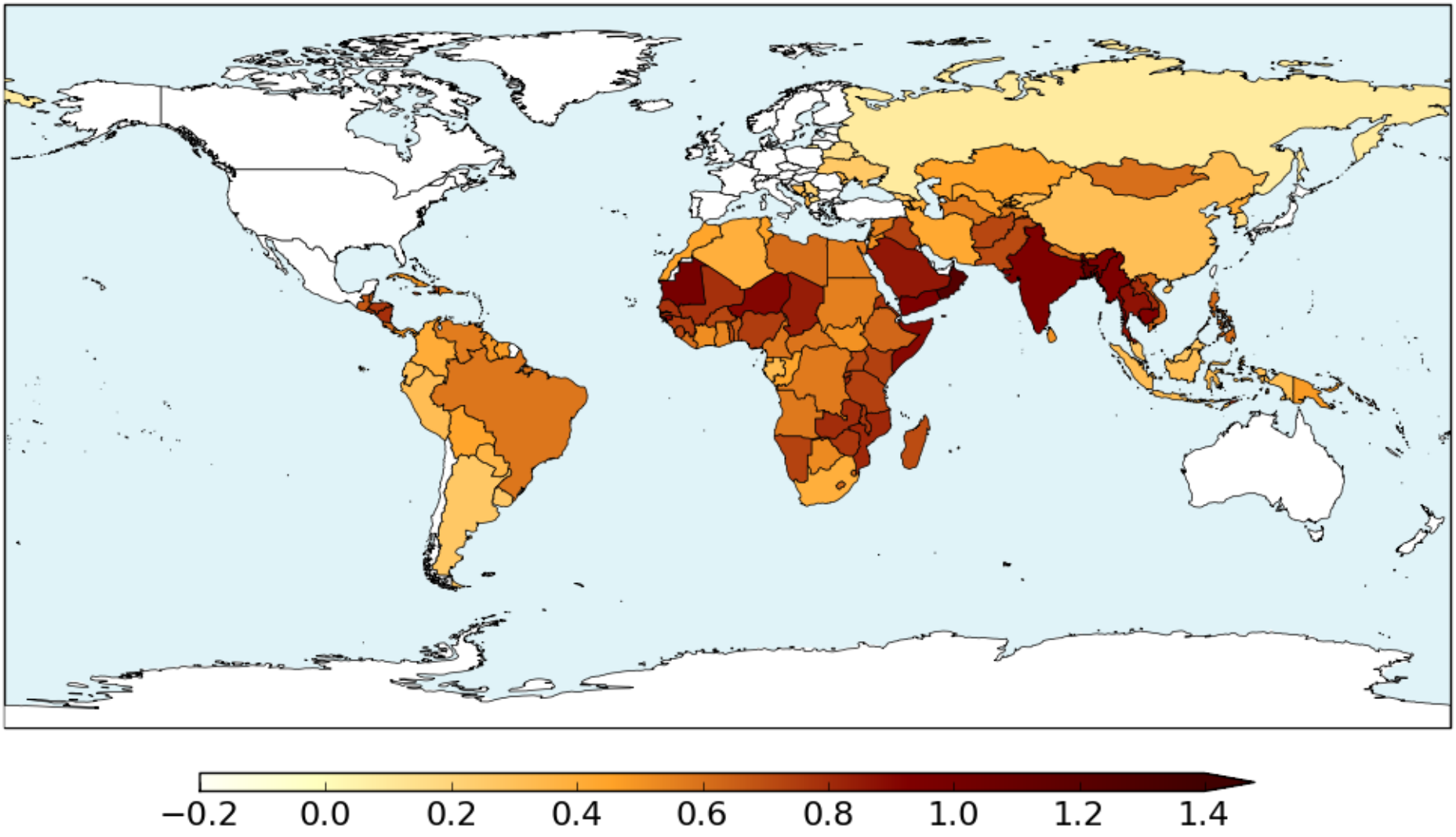
Hunger vulnerability at present day

Average of 5 simulations



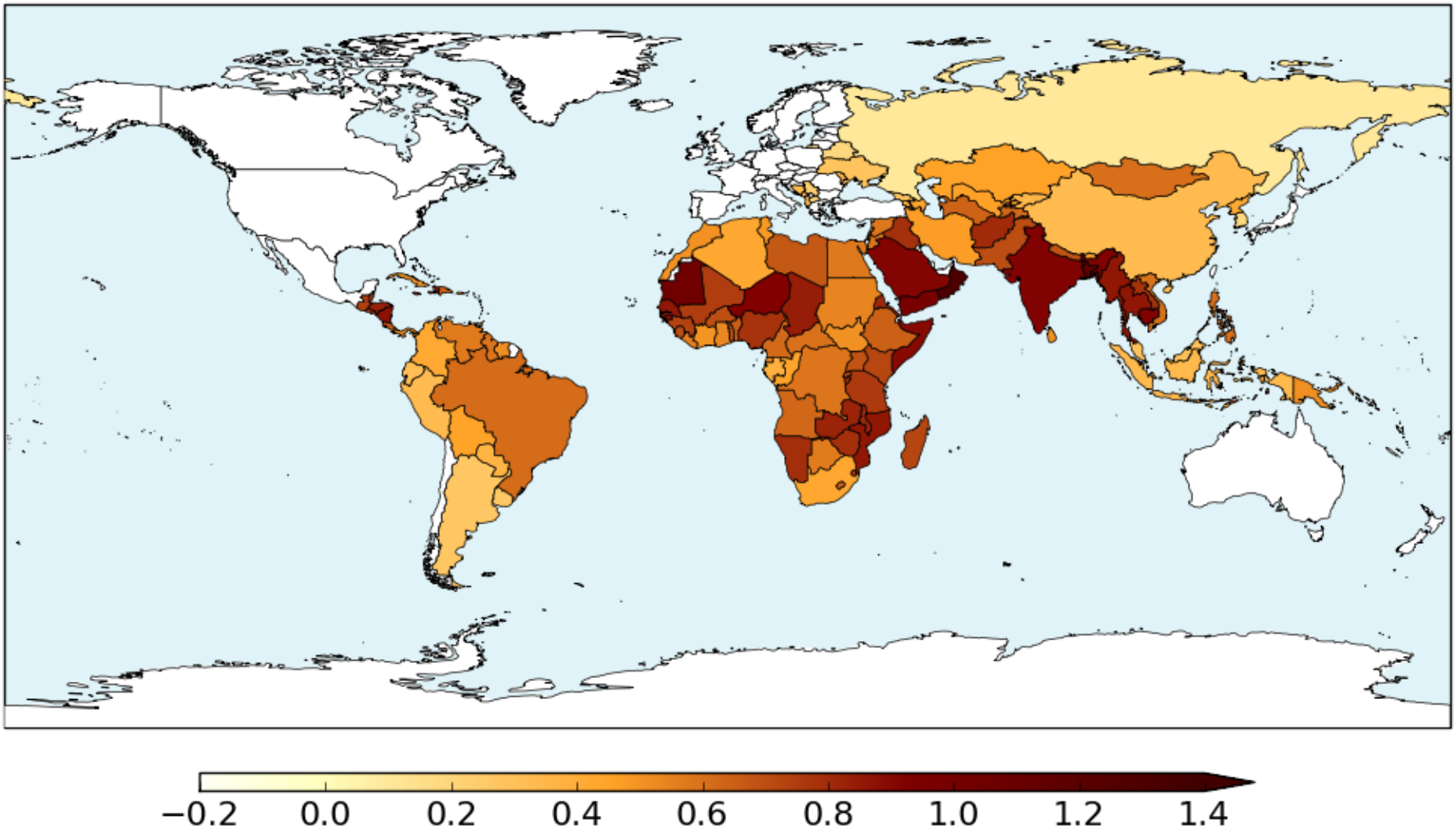
Hunger Vulnerability at 1.5°C

Average of 5 simulations



Hunger Vulnerability at 2°C

Average of 5 simulations



Conclusions

- Changes in river flows and vulnerability to food insecurity are generally projected to be larger at 2°C than 1.5°C global warming

- Changes in river flows highly uncertain
  - for many rivers could either increase or decrease
  - larger changes at 2°C than 1.5°C
  - uncertainty ranges often also larger 2°C than 1.5°C

- Vulnerability to food insecurity depends on non-climatic factors as well as climate, but generally increases with global warming.