

Seasonal planning for monsoon-related multi-hazards: using Hydro-JULES to predict landslide susceptibility in Nepal

Sihan Li, Simon Dadson

Contact: sihan.li@ouce.ox.ac.uk



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Sajag-Nepal



FLOWMINDER.ORG



Mountains, earthquakes, monsoon rain, people, preparedness, planning



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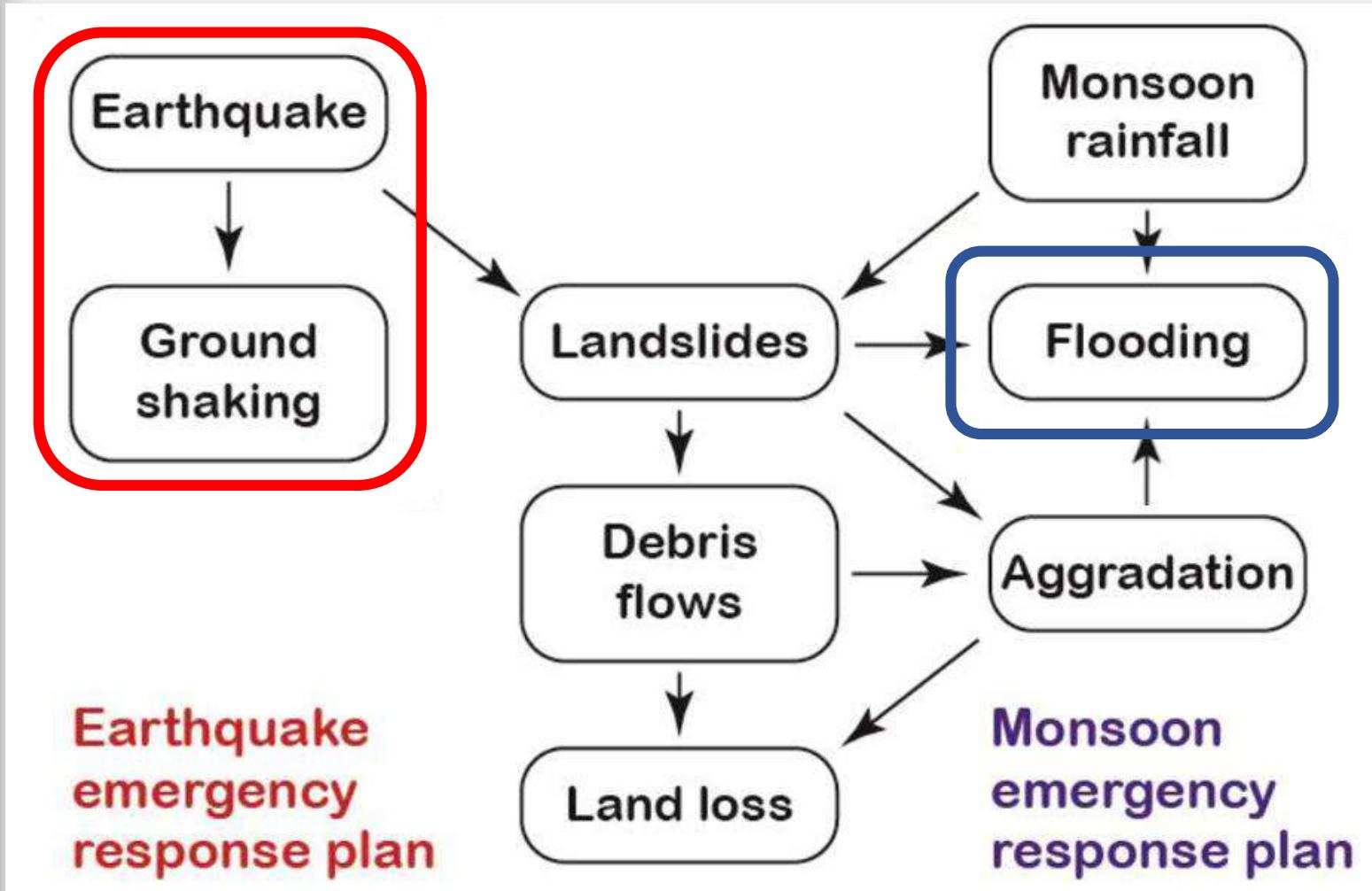
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Mountain multi-hazard chain in Nepal



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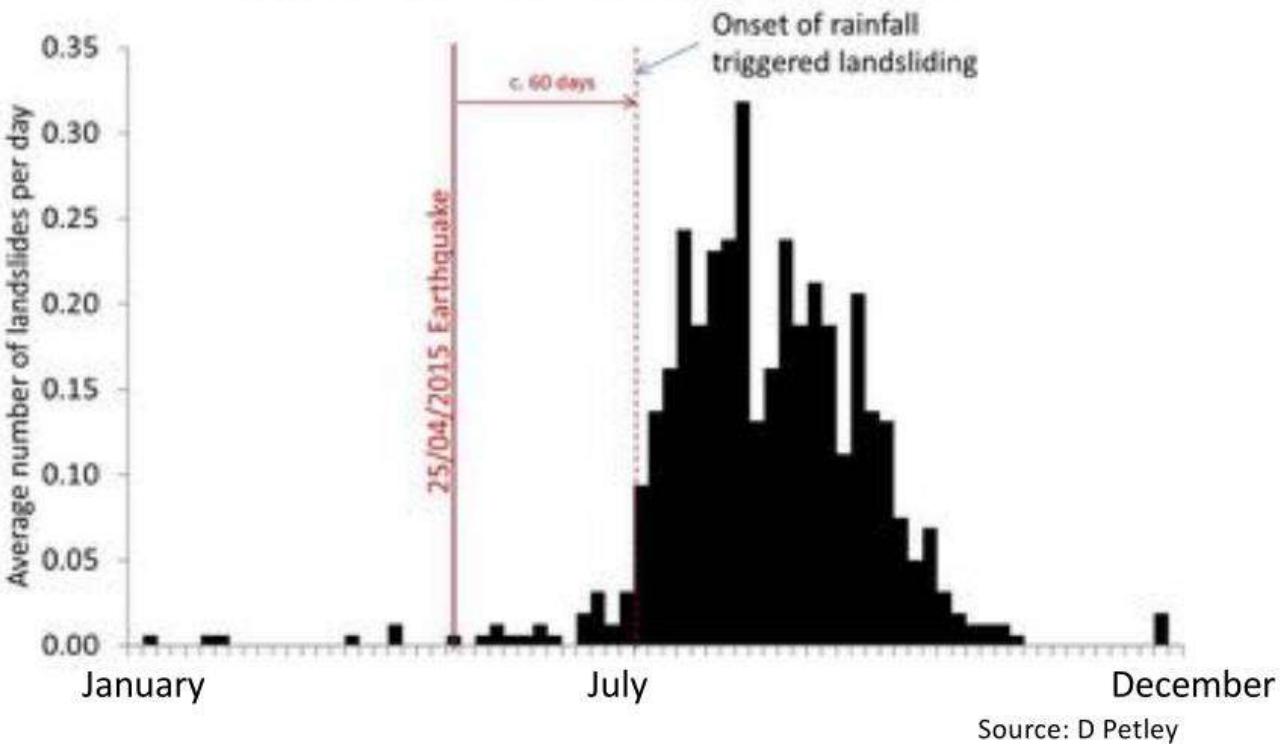
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Annual landslide fatalities



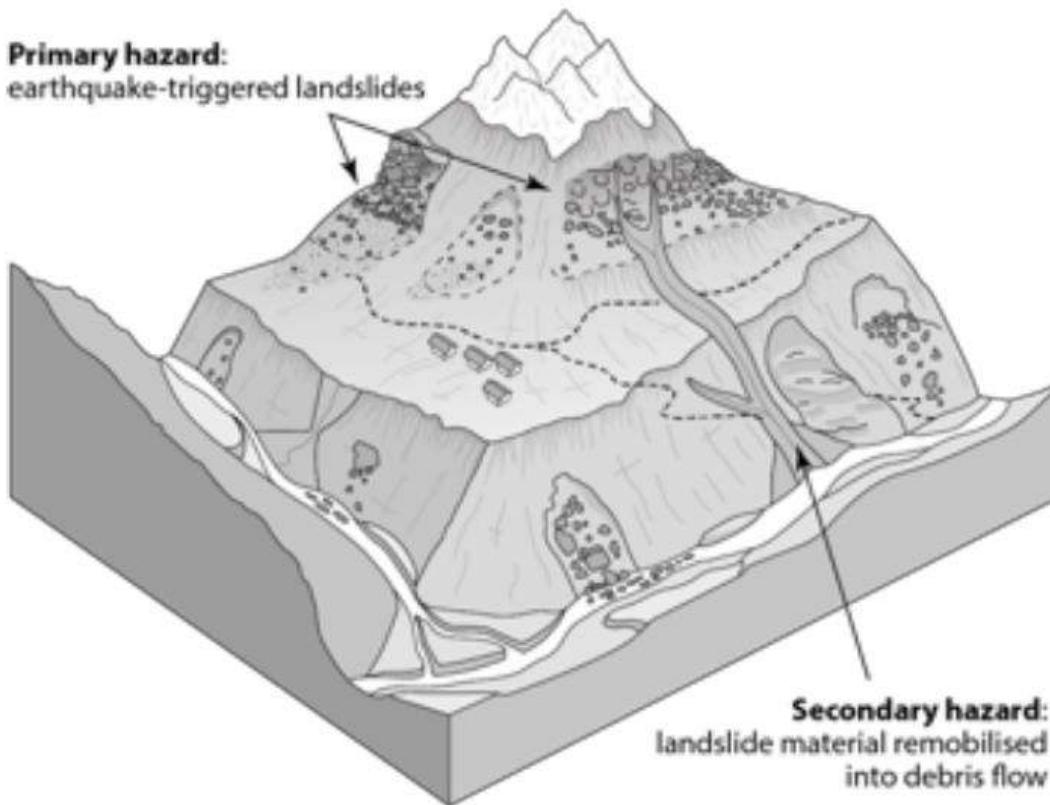
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Post-EQ landslide hazard



Longevity & location of secondary landslide hazard
Does nature of landslide hazard change & what risk does this pose?

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WP1: Contextualising the contemporary multi-hazard and systemic risk landscape in Nepal

- Conceptual framework and multi-hazard inventory
- Comparative ethnographic research across case-study localities
- Integrating local and scientific understandings of the mountain hazard chain

WP2: National-scale planning for catastrophic multi-hazard events

- Dynamic of population exposure
- Exposure, agency, and vulnerability
- Multi-hazard, multi-temporal risk ensemble
- Contingency planning

WP3: Seasonal planning for monsoon-related multi-hazards events

- Occurrence and impacts of the monsoon hazard chain
- Anticipating the impacts of the next monsoon
- Communication & Support for individual and palika decision-making

WP4: Embedding multi-hazards and systems risk in disaster preparedness and response

- Understanding the evolution of risk in multi-hazard events
- Practical and ethical guidelines for the use of local and scientific knowledge in DRR
- Multi-hazard and systemic risk perspective in UN humanitarian response

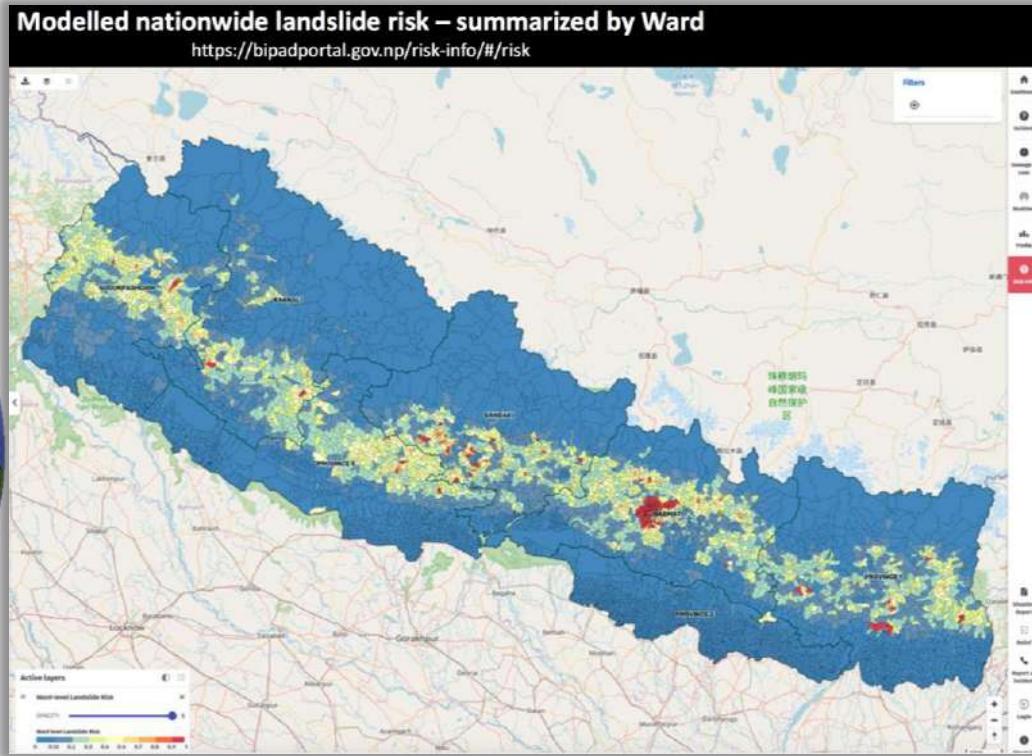
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Bridging the resolution gap

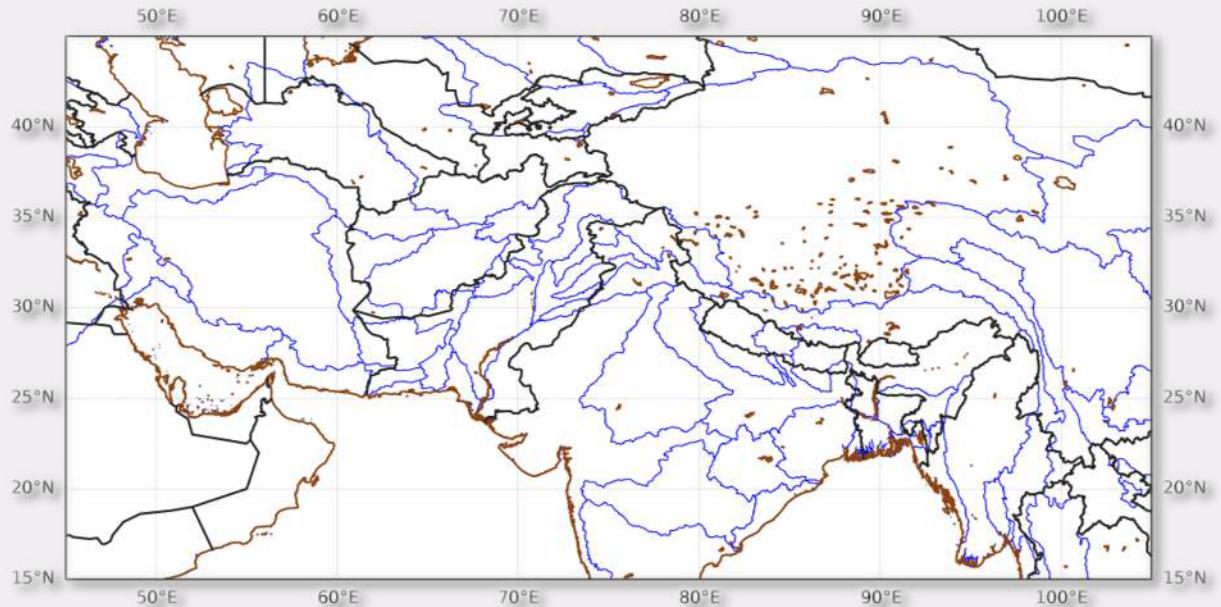
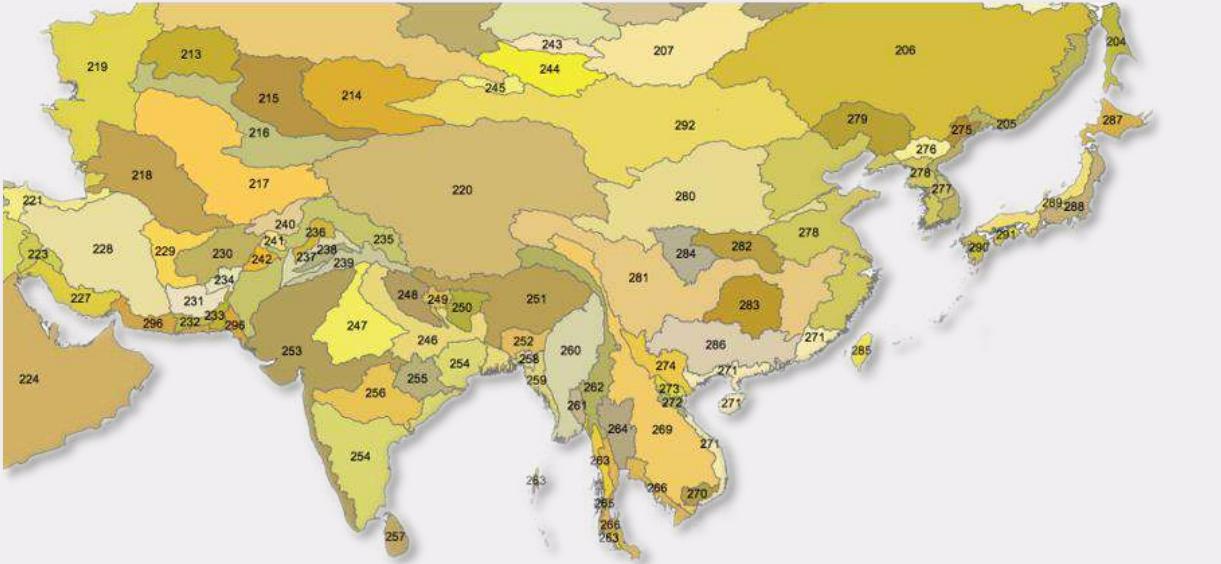


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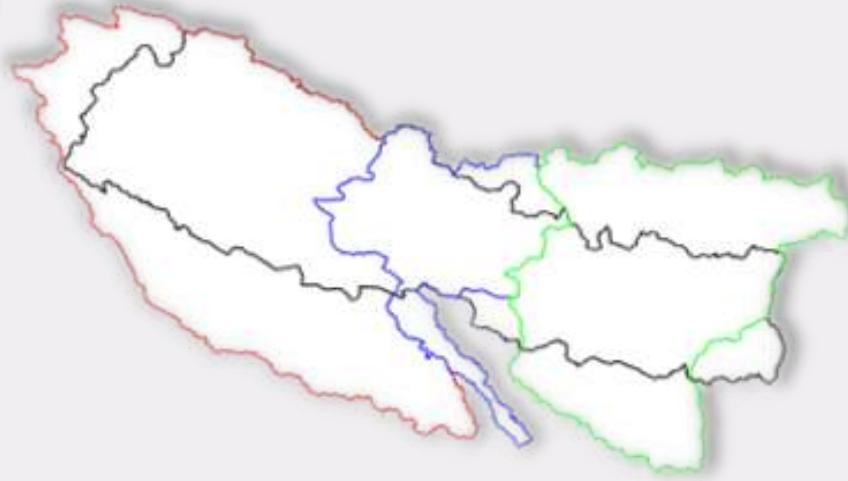


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By major river basin



By district

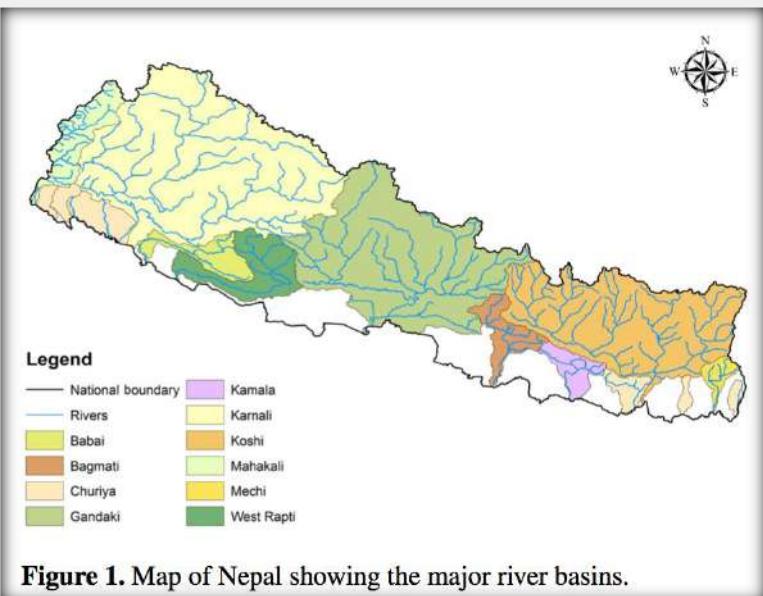
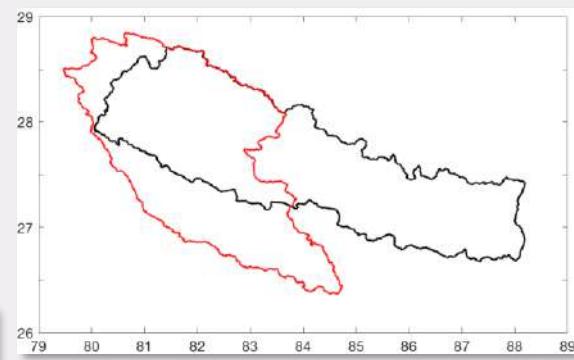
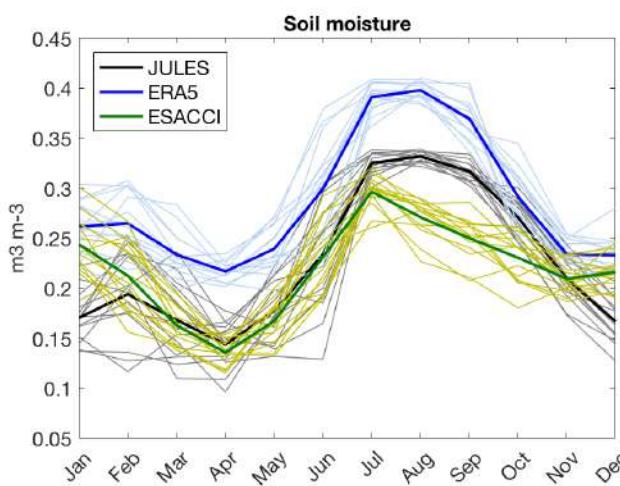
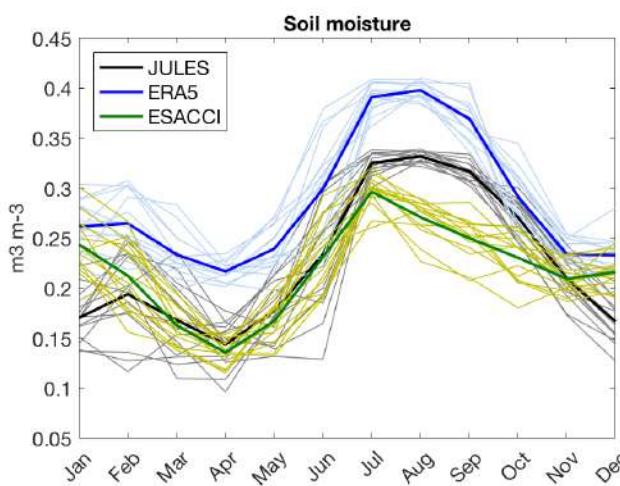
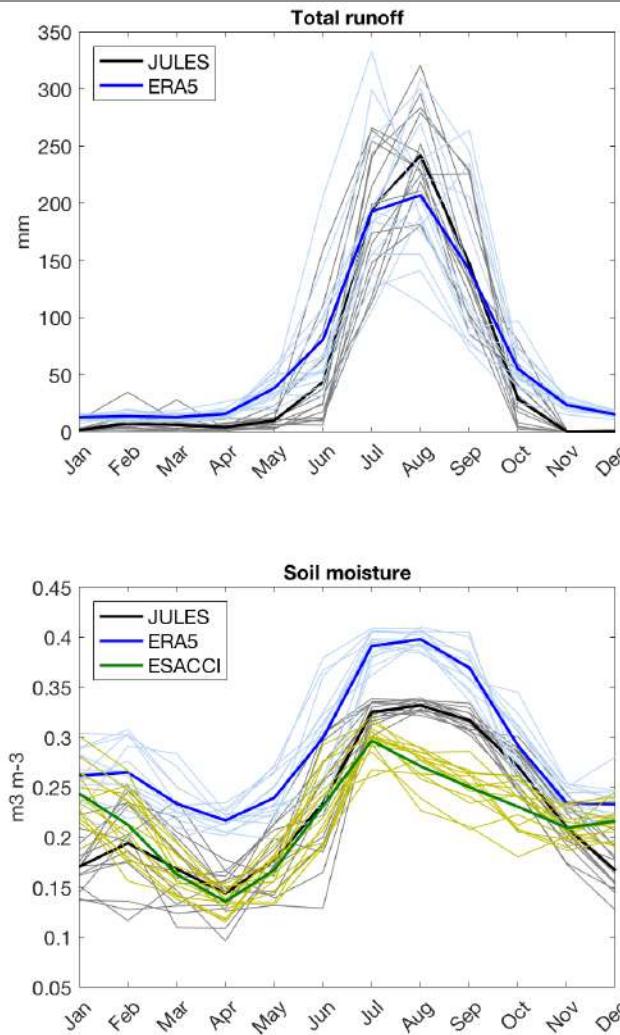
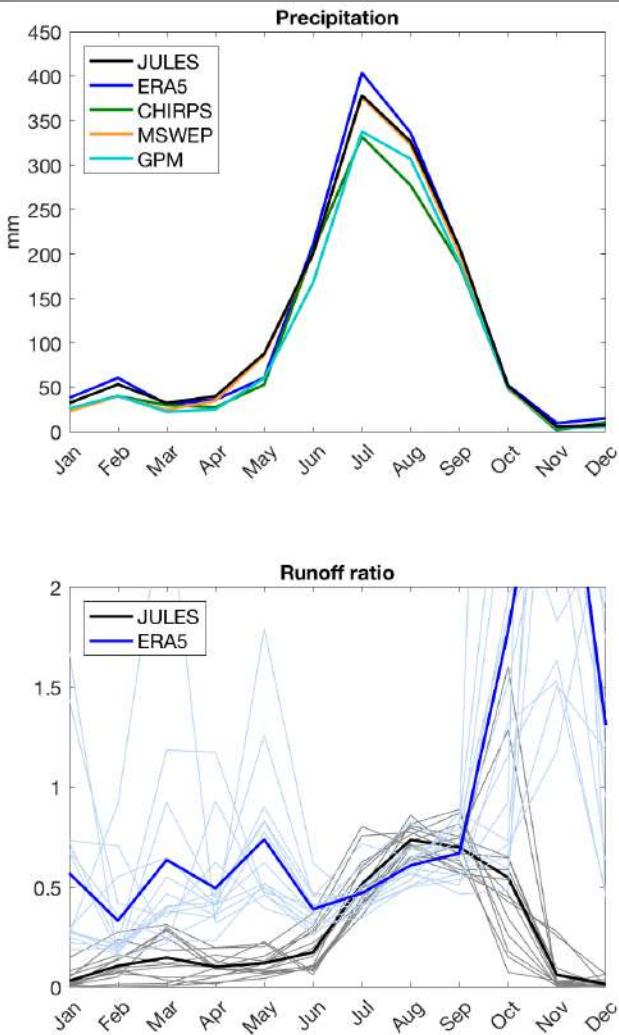


Figure 1. Map of Nepal showing the major river basins.

GOGRA RIVER (also KAURIALA RIVER)

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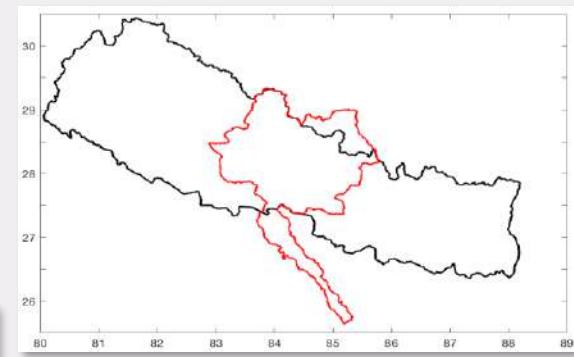
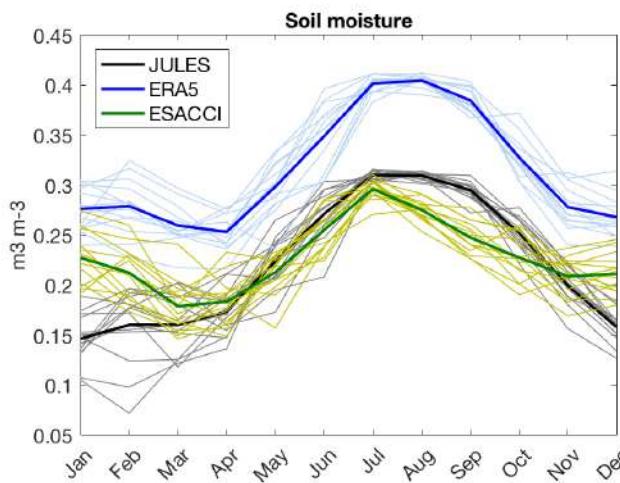
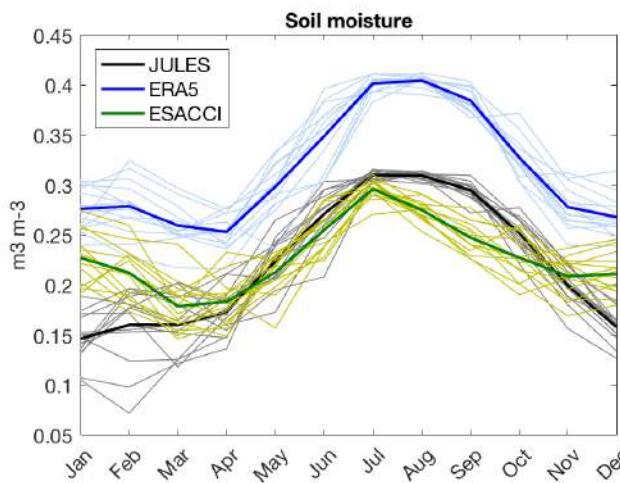
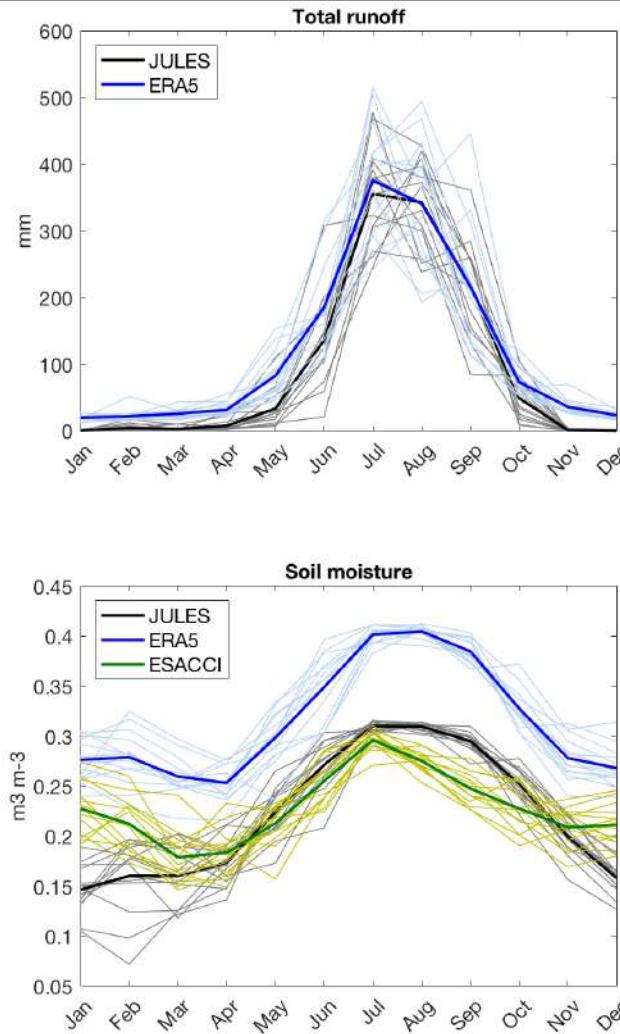
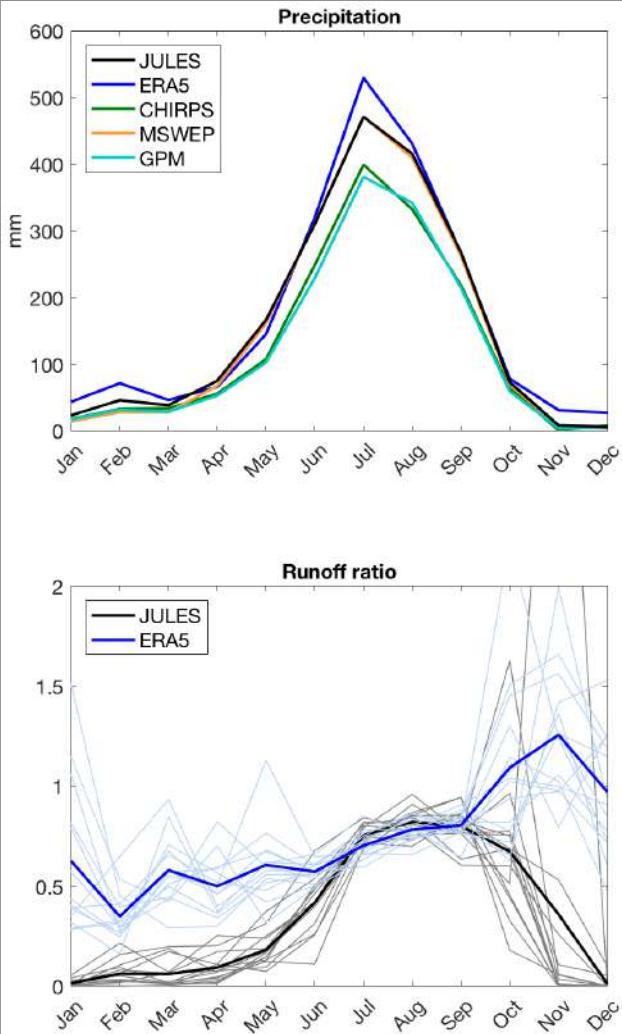
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GANDAK (also NARAYANI)

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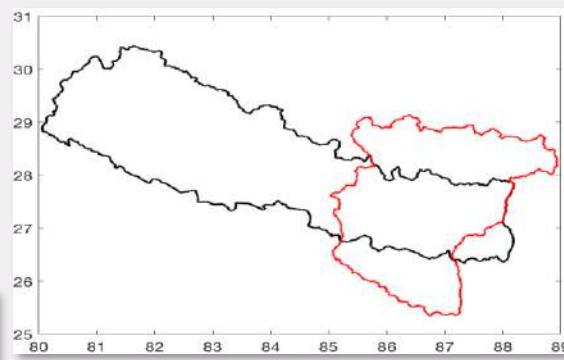
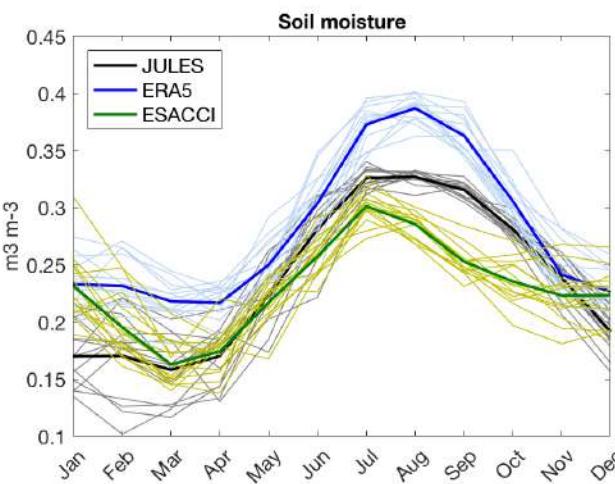
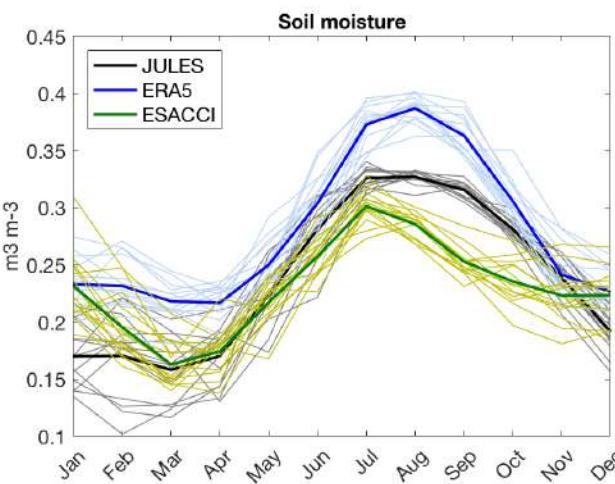
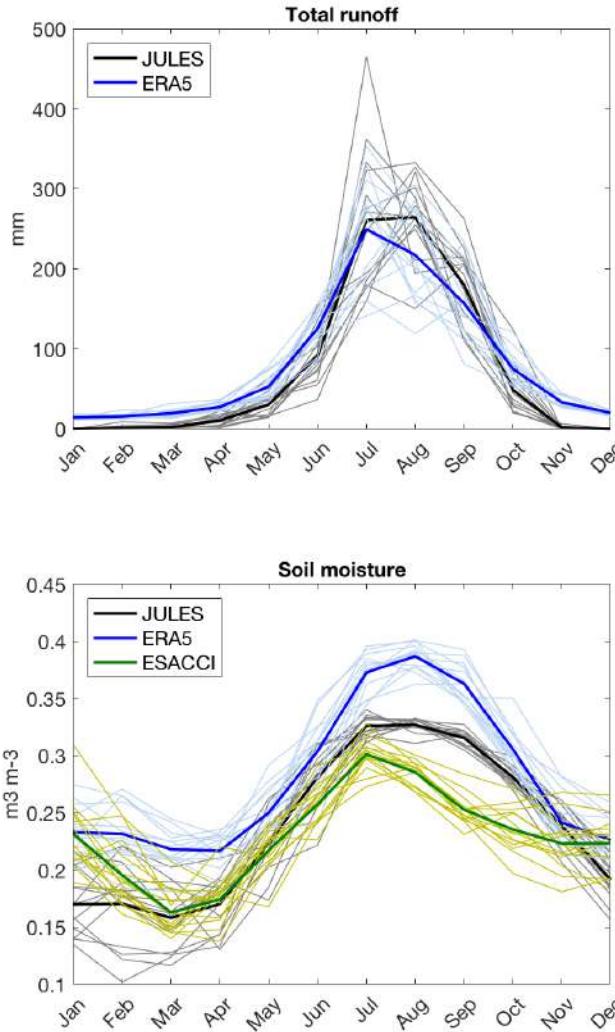
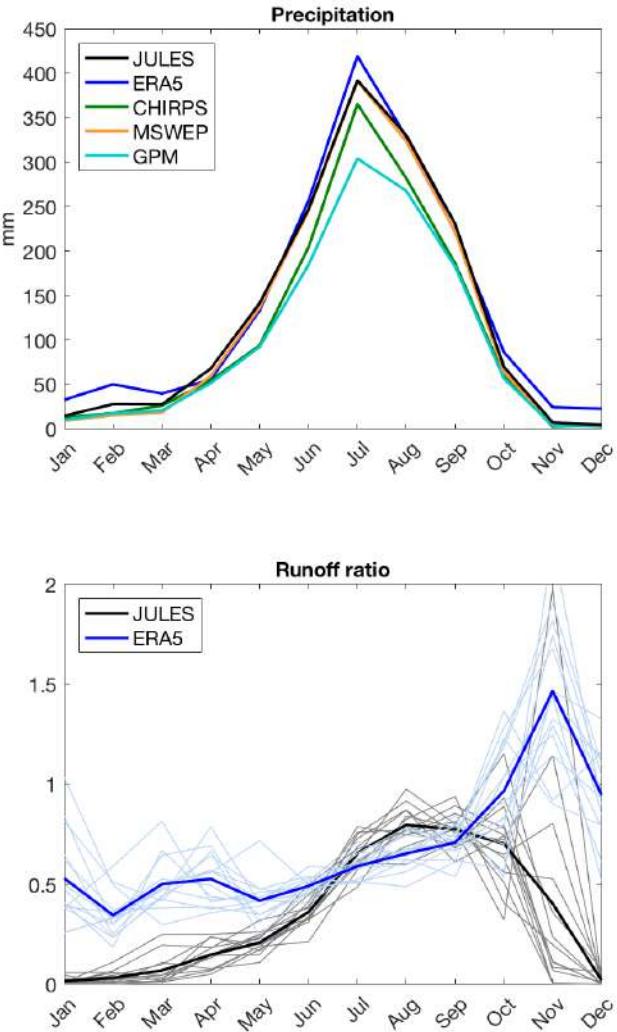
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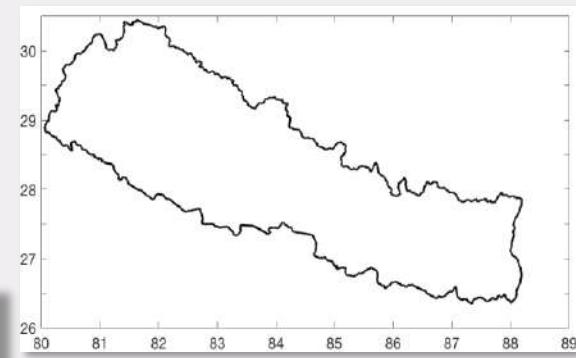
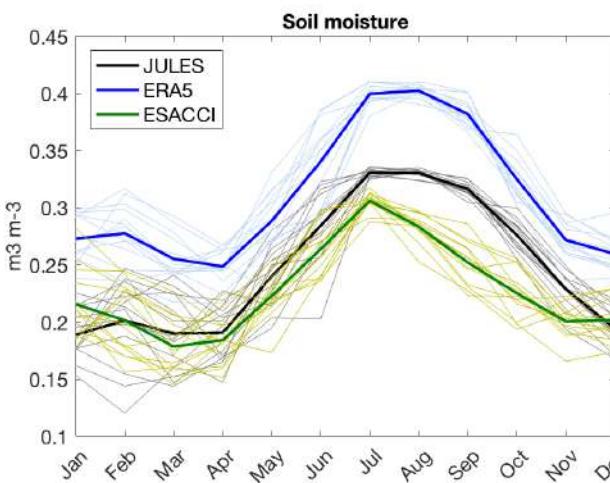
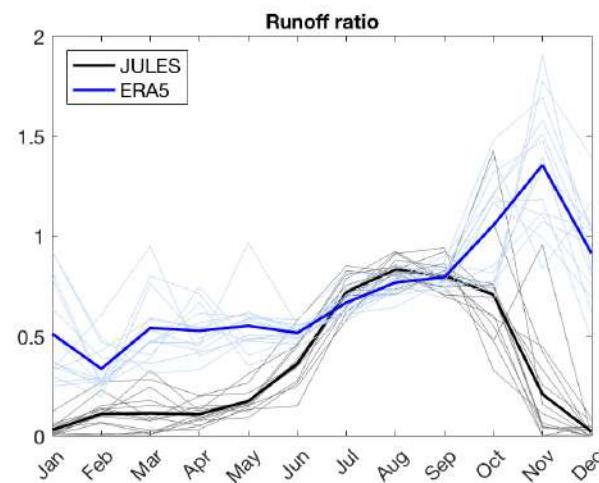
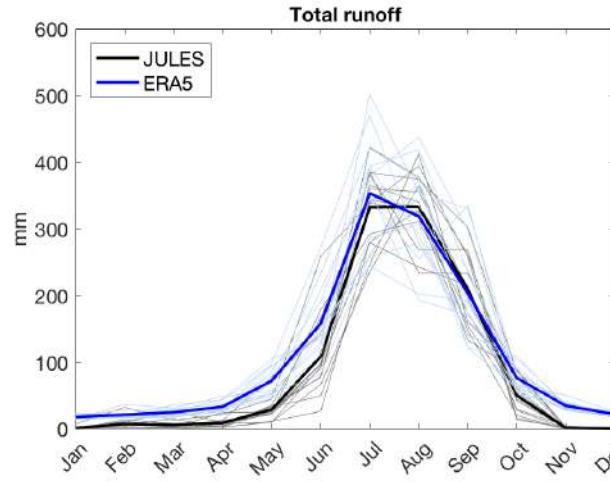
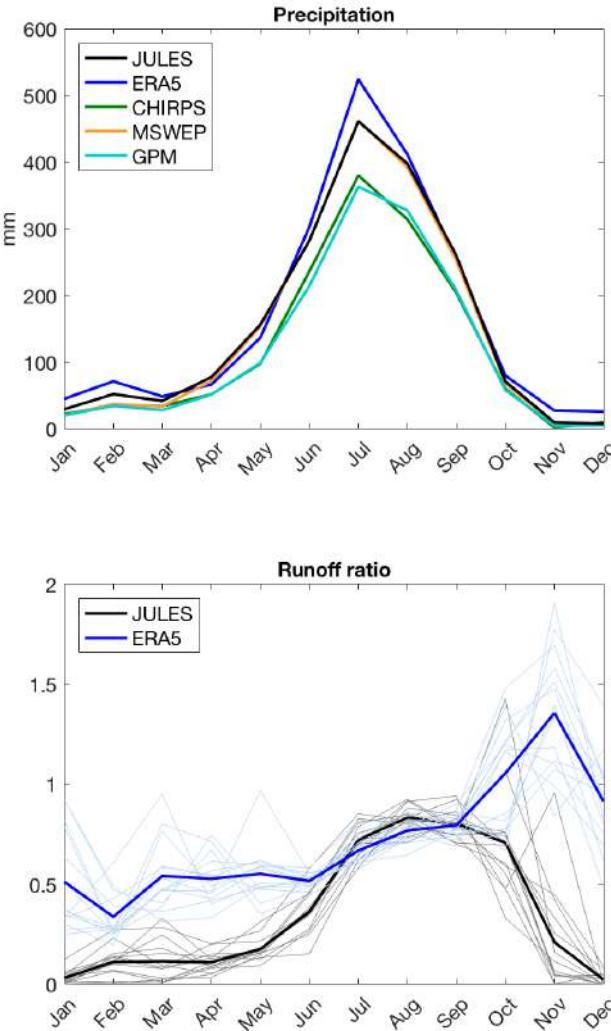
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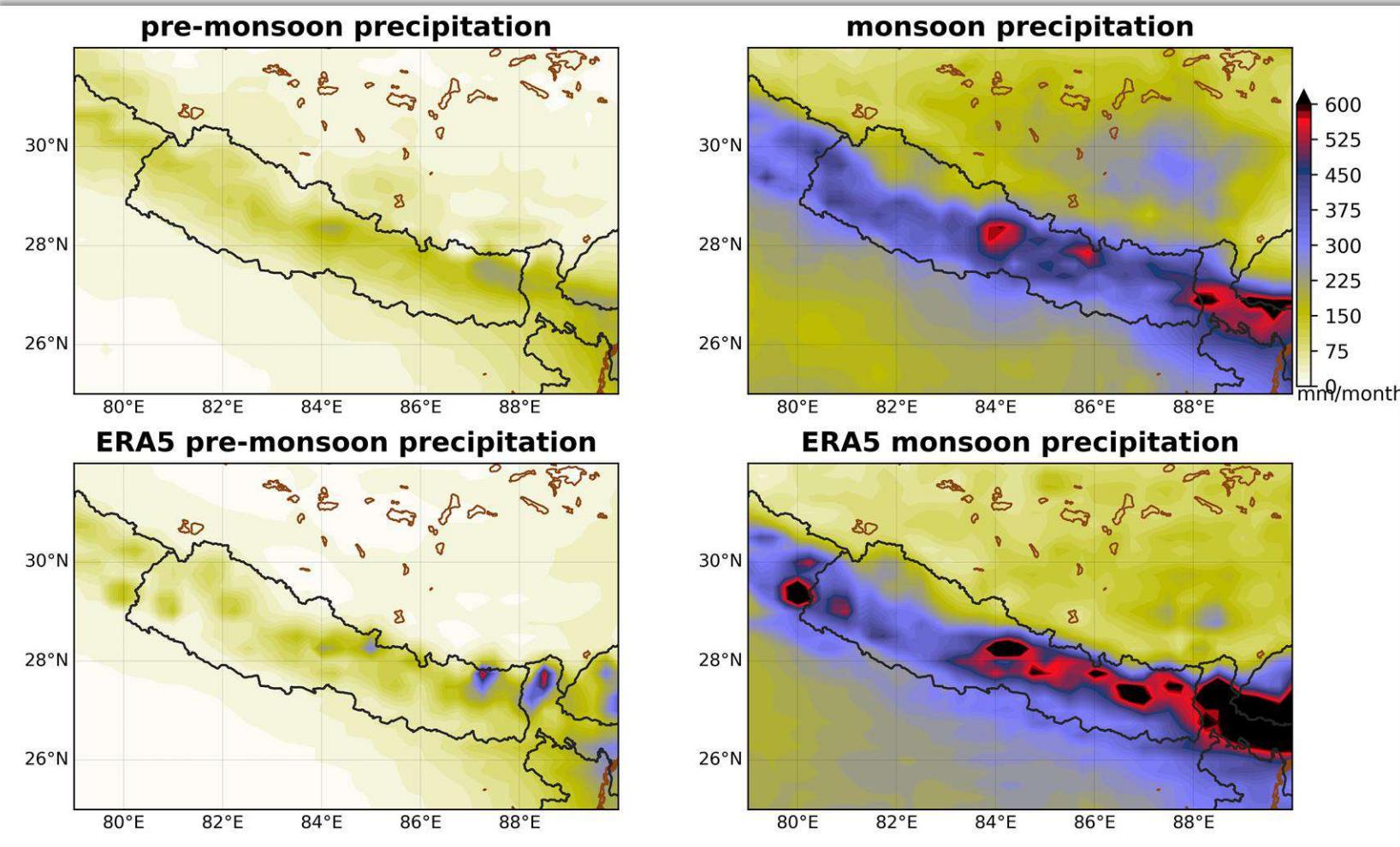


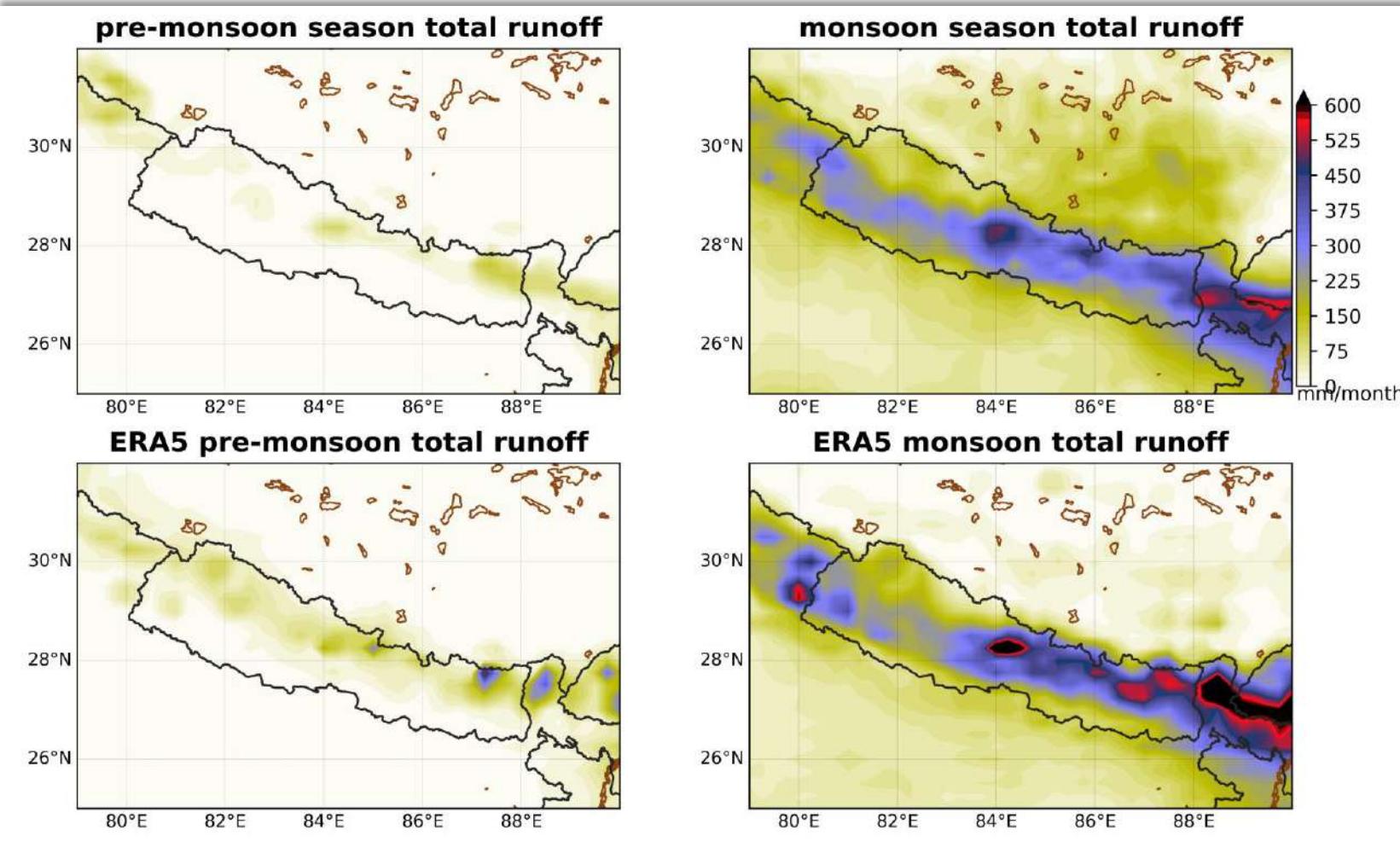
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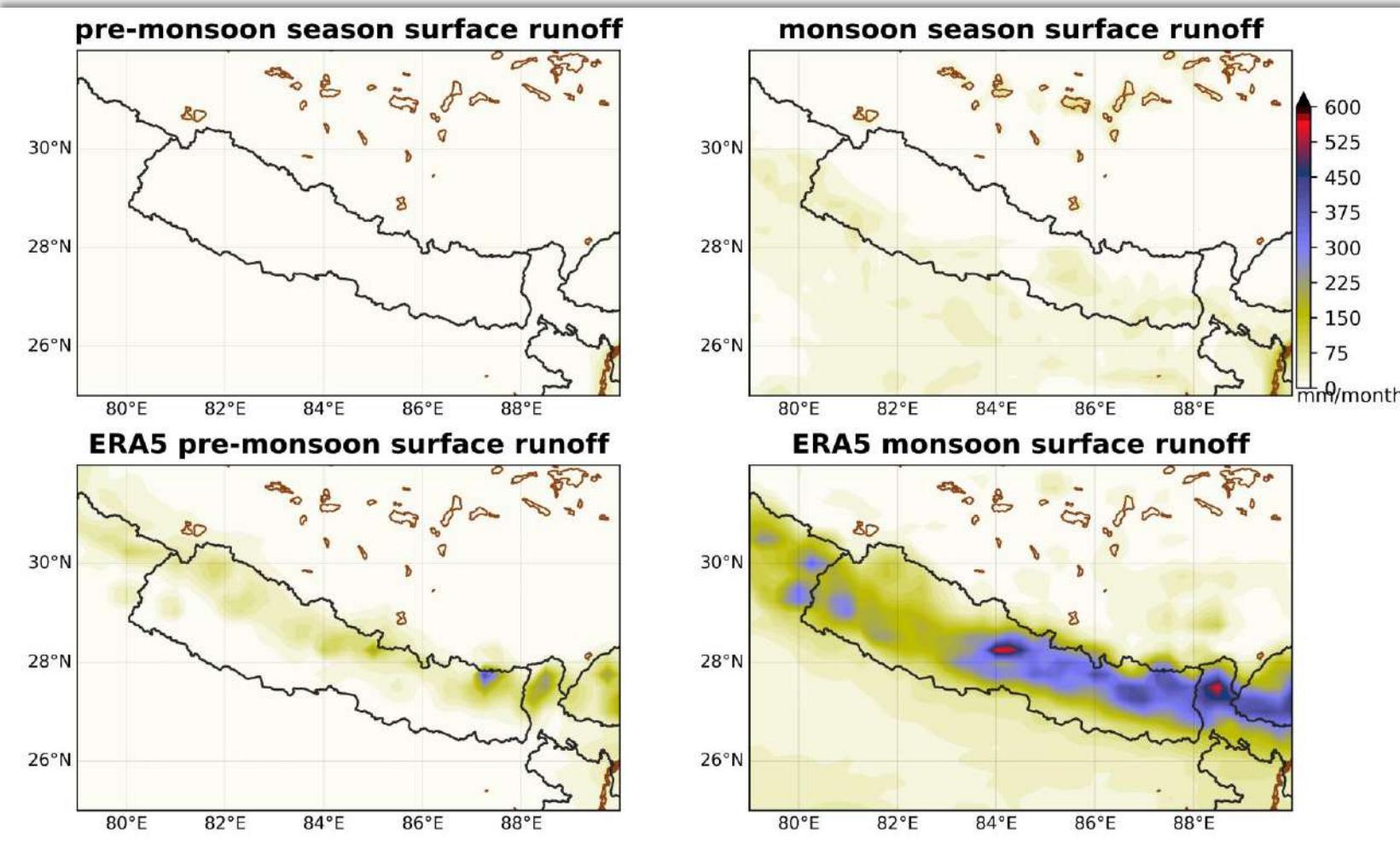
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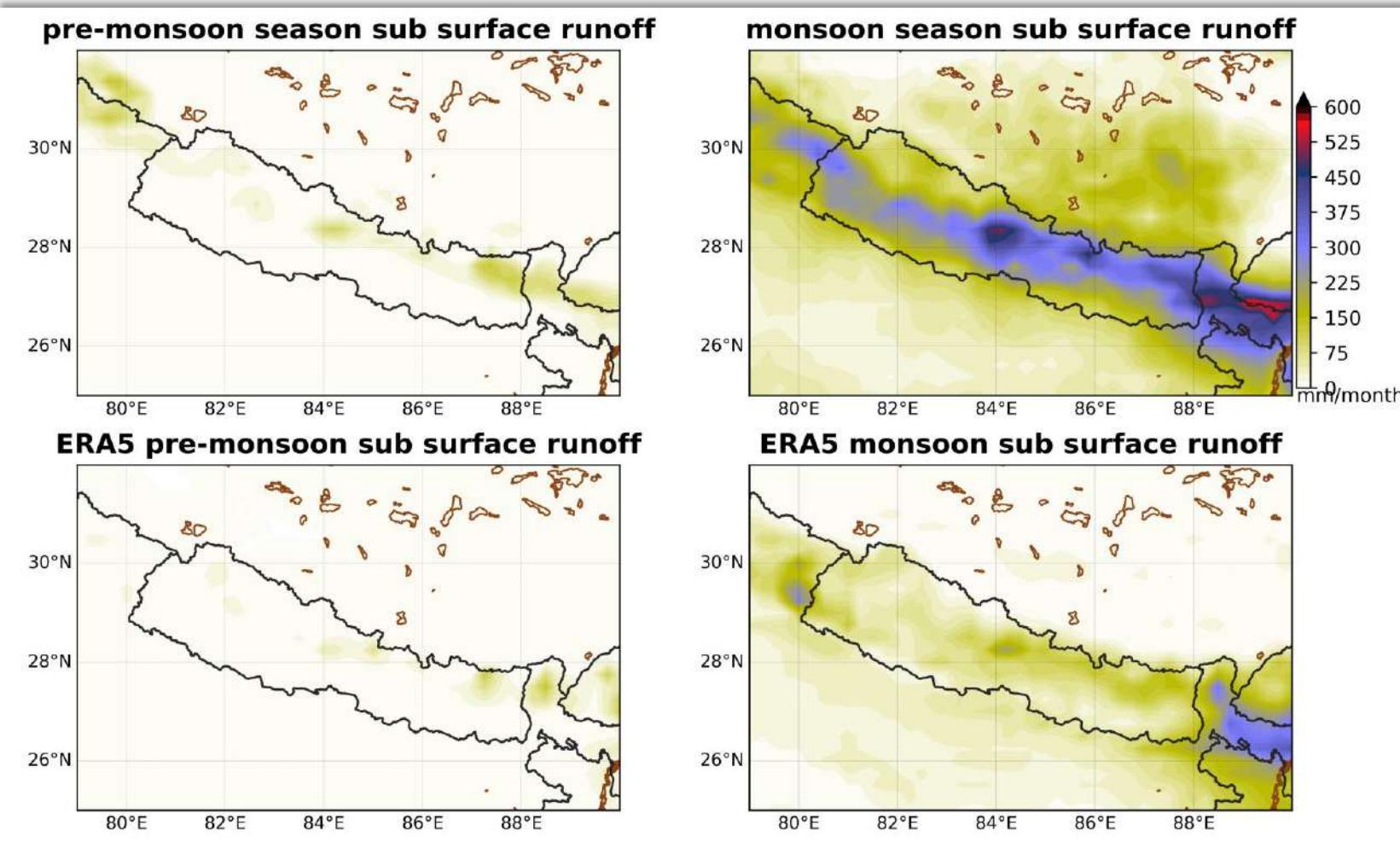
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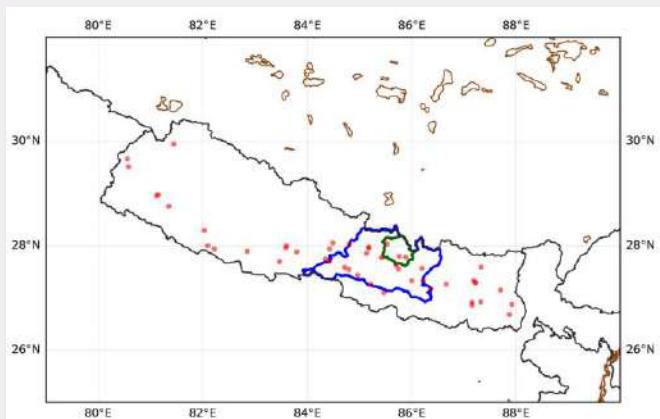






Future steps

- Improve model performance
 - Use seasonal-forecast/hindcast of monsoon precipitation to drive the JULES and look at the hydrological response over Nepal
- Set up a finer-resolution version of the model (to narrow the gap with the geomorphology community)
- Establish a better link between meteorological, hydrological, geomorphological conditions and landsliding



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