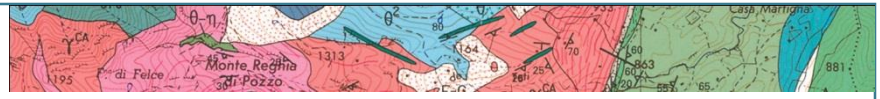
INSeaPTION



Global analysis of the uncertainties prevailing in global-scale assessment of coastal flood damage & adaptation costs under 21st century sea-level rise

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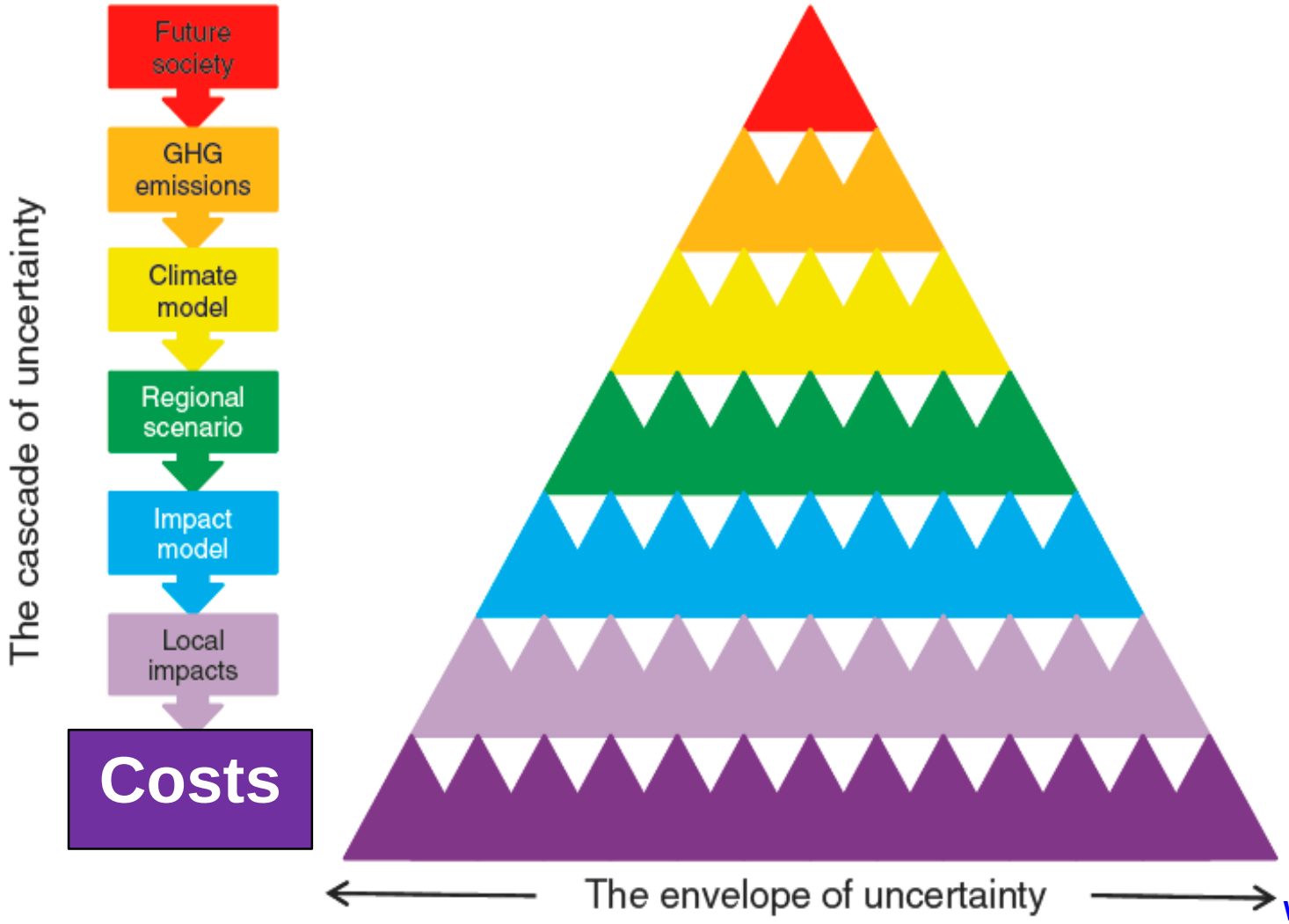
3: Universiteit Utrecht **2:** Global Climate Forum **1:** Géosciences pour une Terre durable brgm

What are the most important uncertainties to be reduced in the cascade?



Adapted from Wilby & Dessai, 2010

Study case

Coastal flood damage and adaptation costs under 21st century sea-level rise

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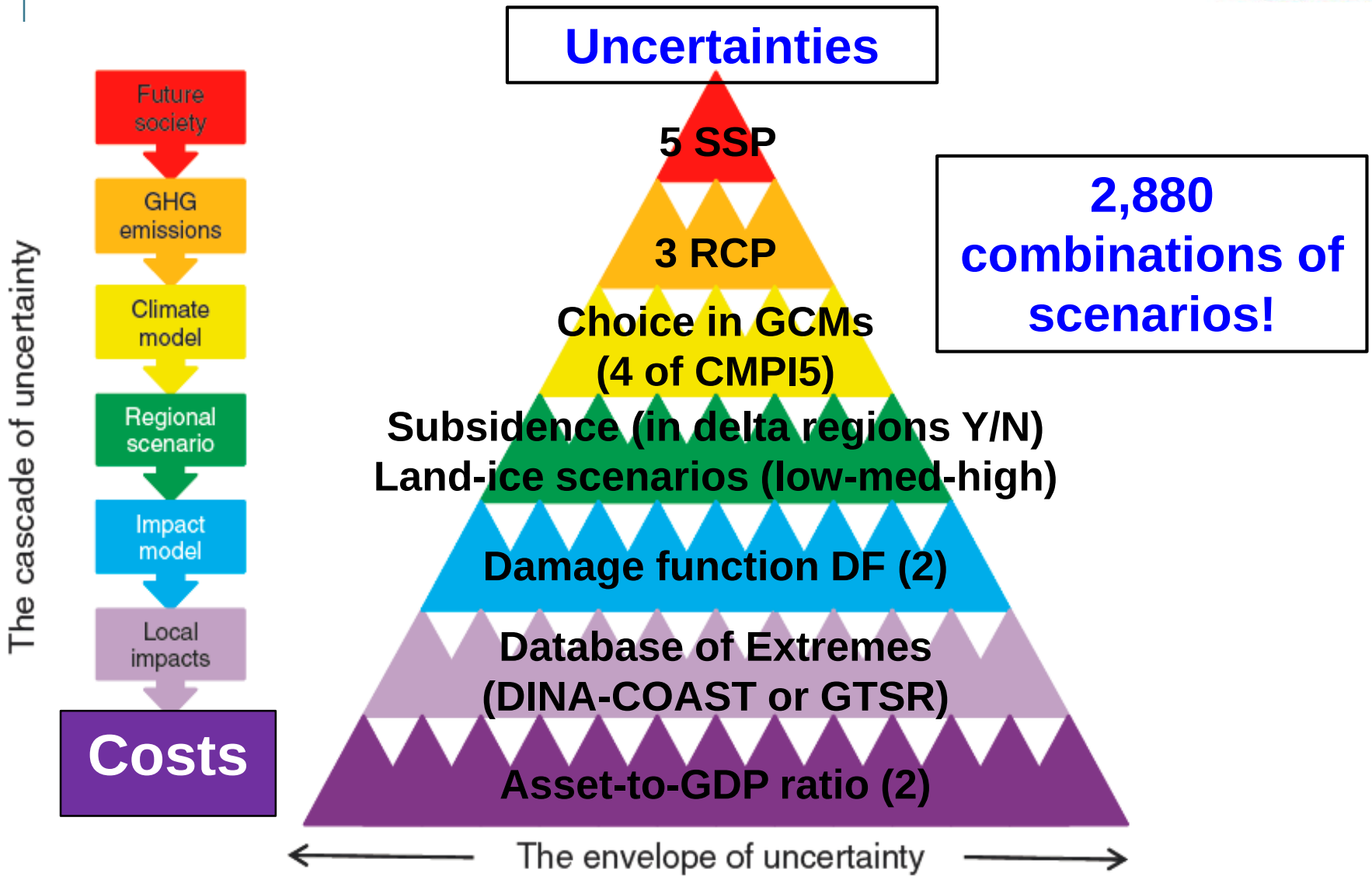
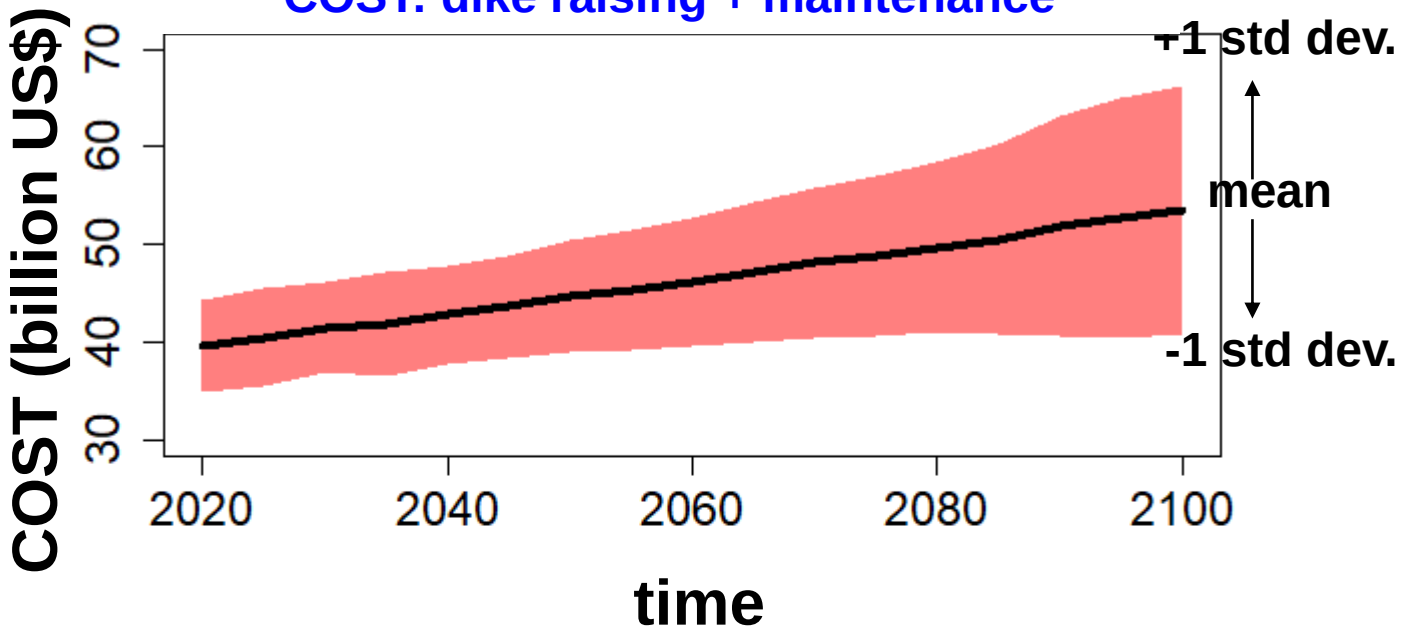
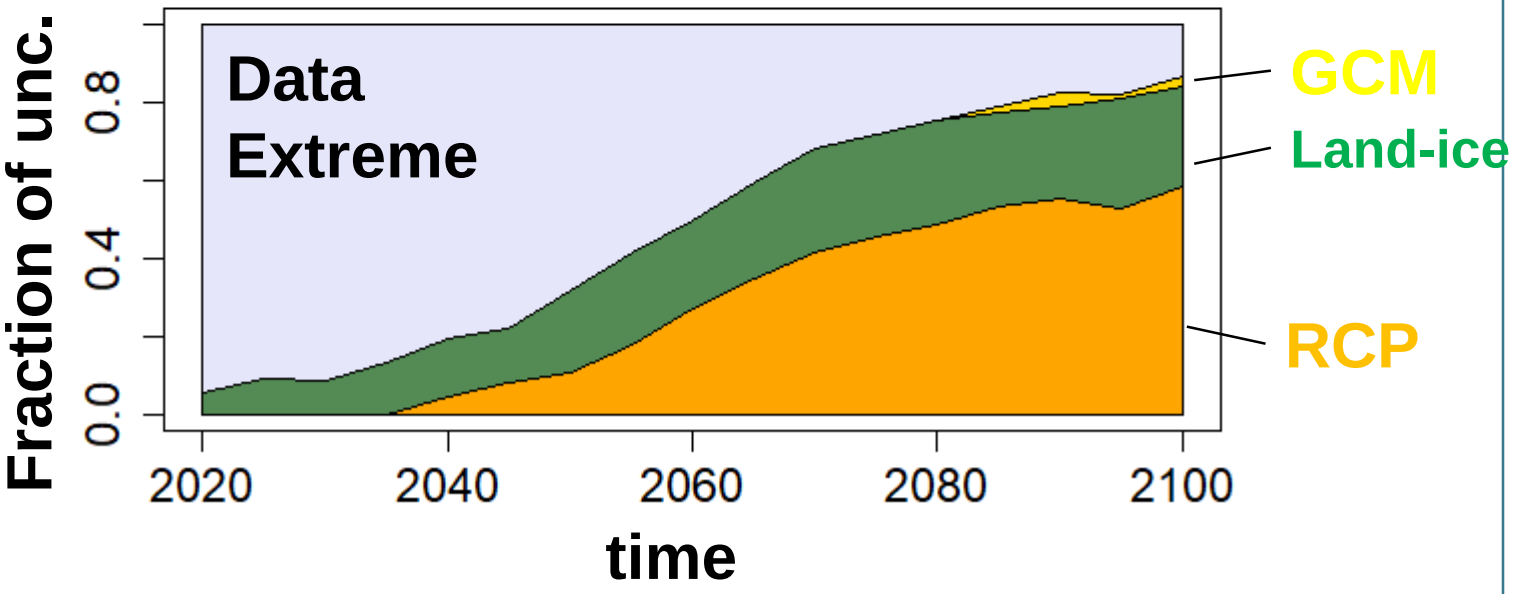
PNAS

DIVA

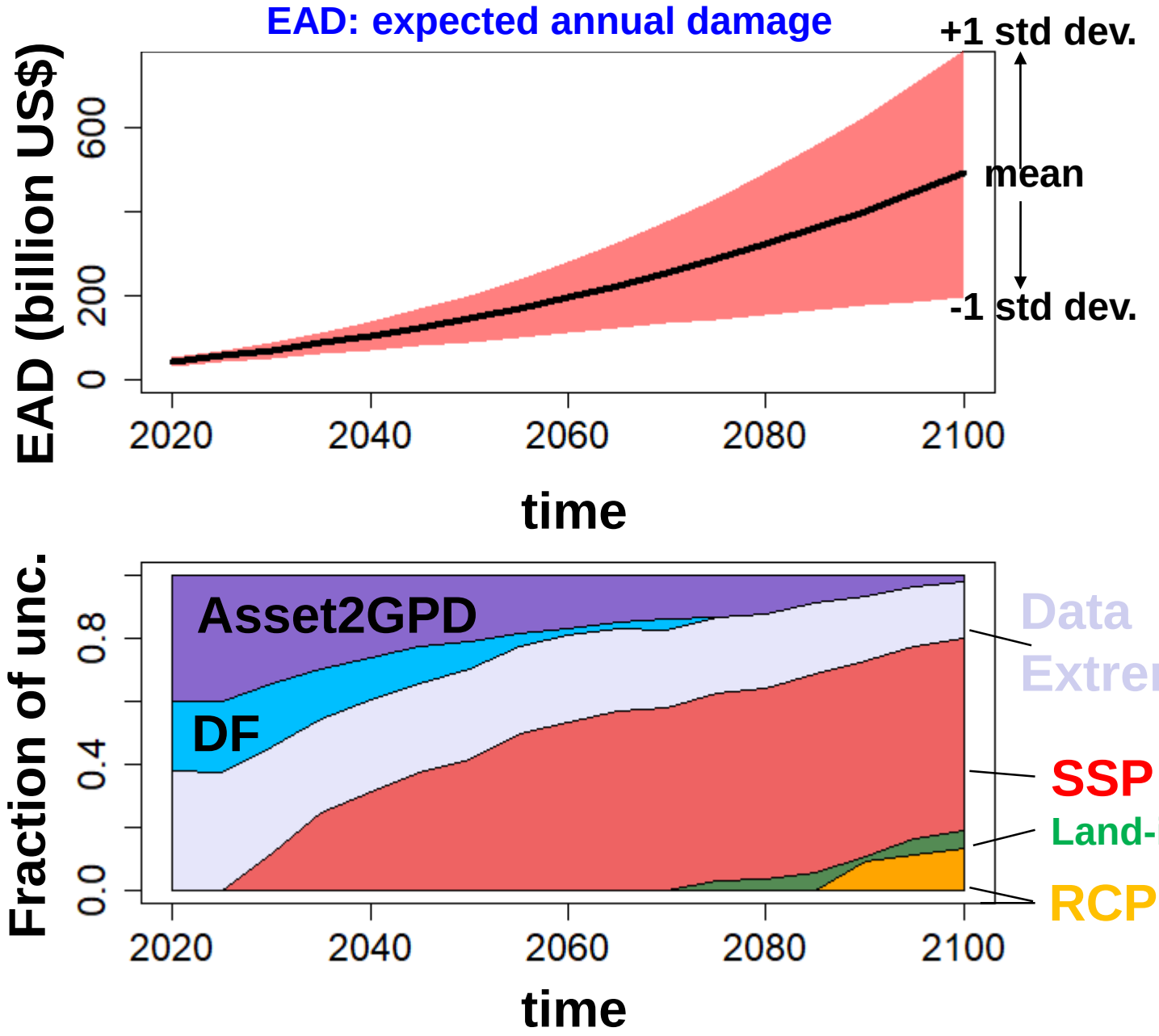


COST: dike raising + maintenance





Using a tree-based Machine Learning approach



Using a tree-based Machine Learning approach

Summary

- Decreasing role over time of extremes
- Increasing role of SSP and of RCP after 2030 and 2080 for the damage and adaptation costs respectively.
- This means: “mitigation of climate change helps to reduce uncertainty of adaptation costs, and being able to identify SSP reduces the uncertainty on the expected damages”.

Further work

- Update with new SLR projections (SROCC 2019)
- Integrate additional uncertainties
  - DEM (Kulp & Strauss, 2019)
  - GEV fitting (Wahl et al., 2017)