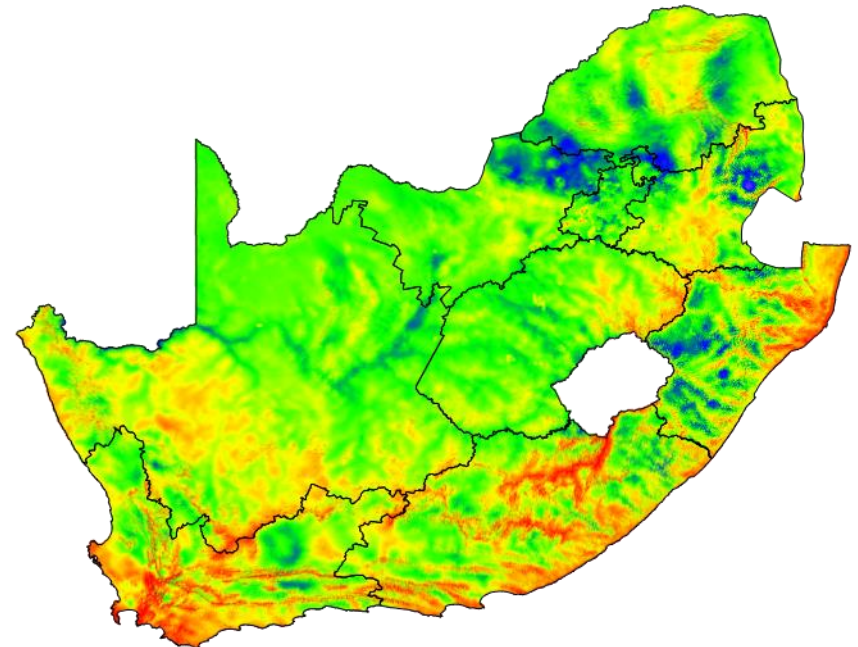


WASA 2 Numeric Atlas Validation Approaches

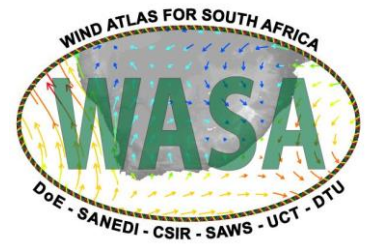
Johan Stander, Eugené Mabile, Eric Prinsloo
CSIR

Patrick Volker, Andrea Hahmann, Niels Mortensen
DTU, Wind Energy Department

20 June 2018, Cape Town, South Africa



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- Why validating?
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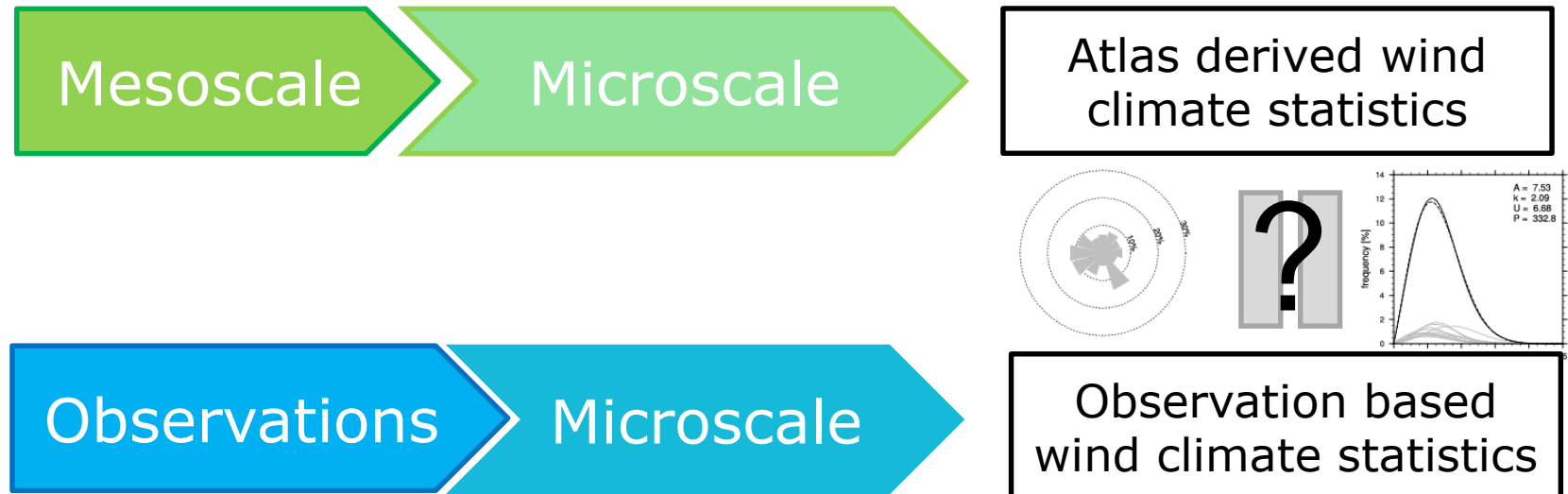
*Empowered lives.
Resilient nations.*



sanedi
South African National Energy
Development Institute.

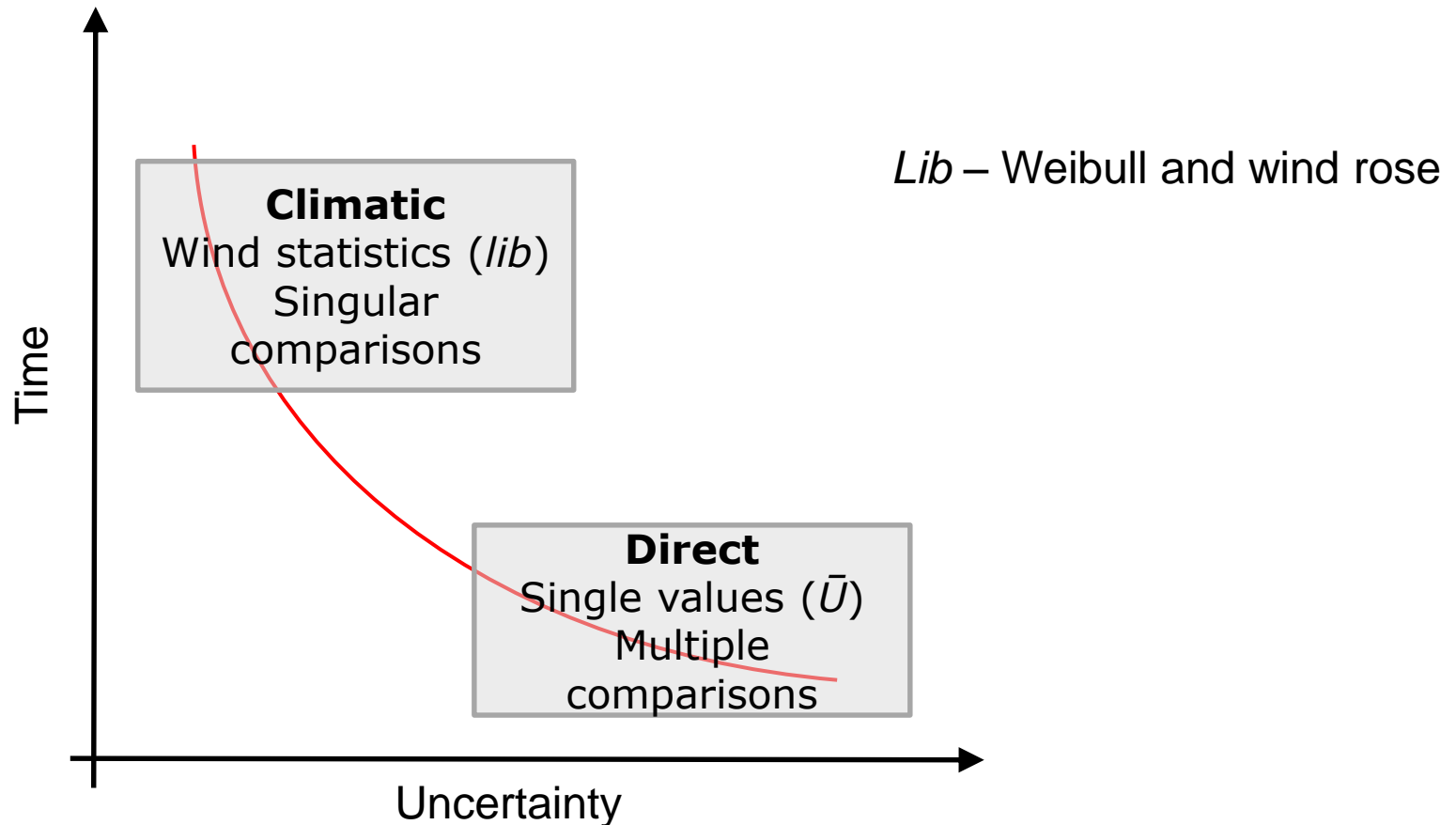
Why validating?

- Numerical wind atlas **must** be validated against observations
 - to lower prediction uncertainties
- Validation involves – downscaling the generalised mesoscale results
- Downscaling involves locating and introduce terrain features

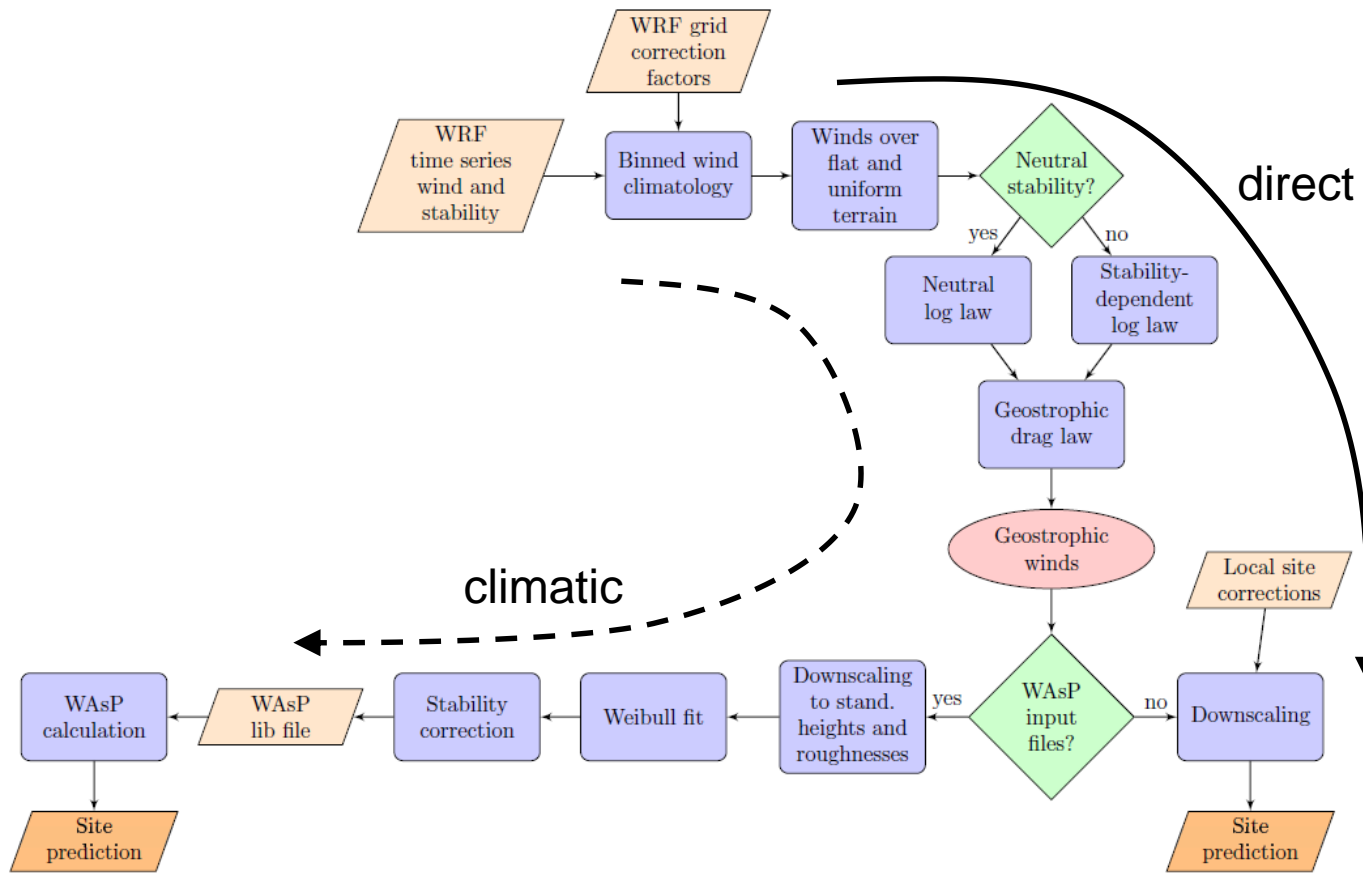


Why validating ?

- Suite of validation approaches – each with a different range of uncertainty



Approach sensitivities

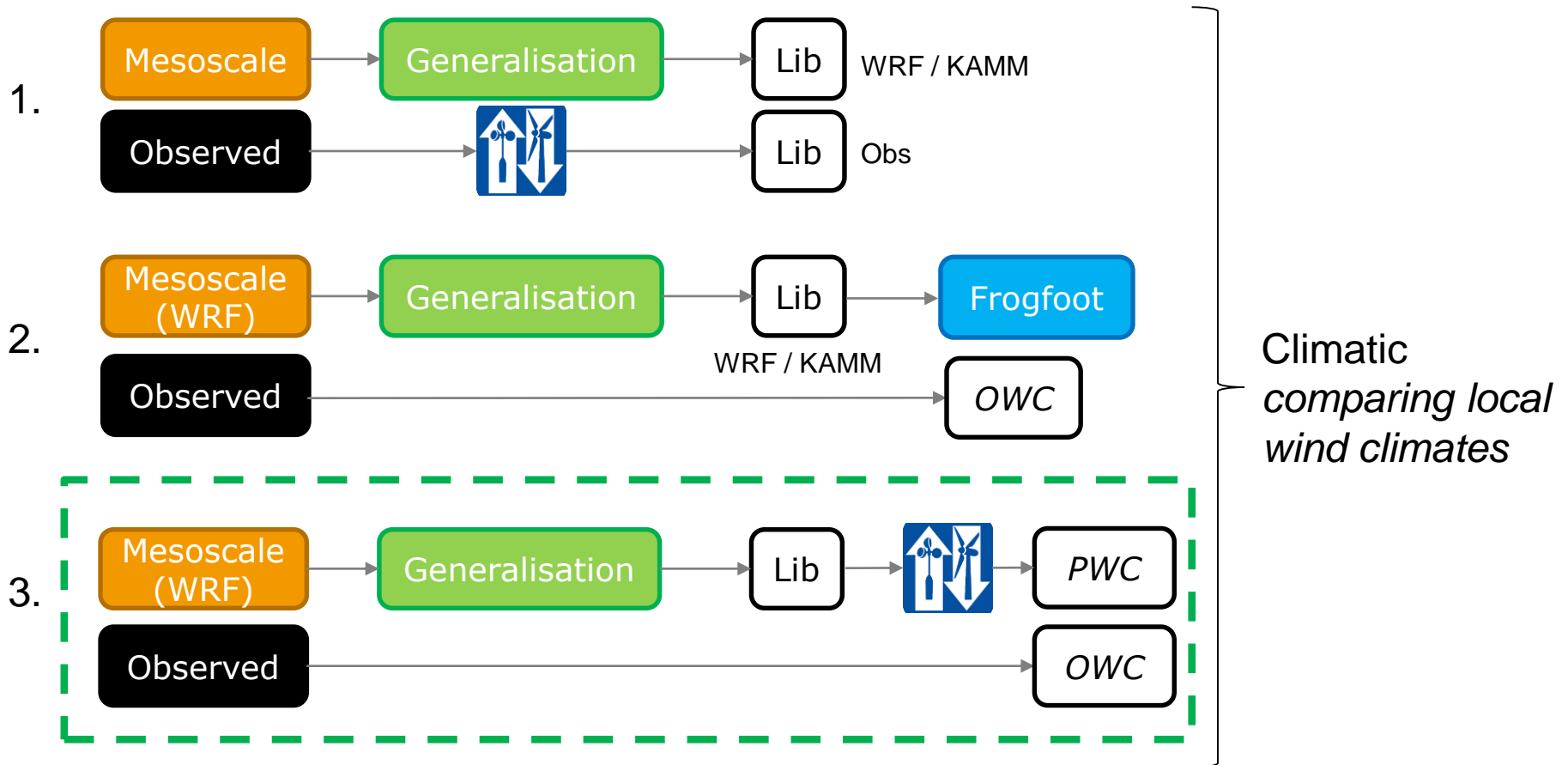


To consider:

- projection corrections
- atmospheric stability
- validating with extrapolated obs. wind
- distance between WRF cell centroid and site location
- local site characteristics
- source of site data

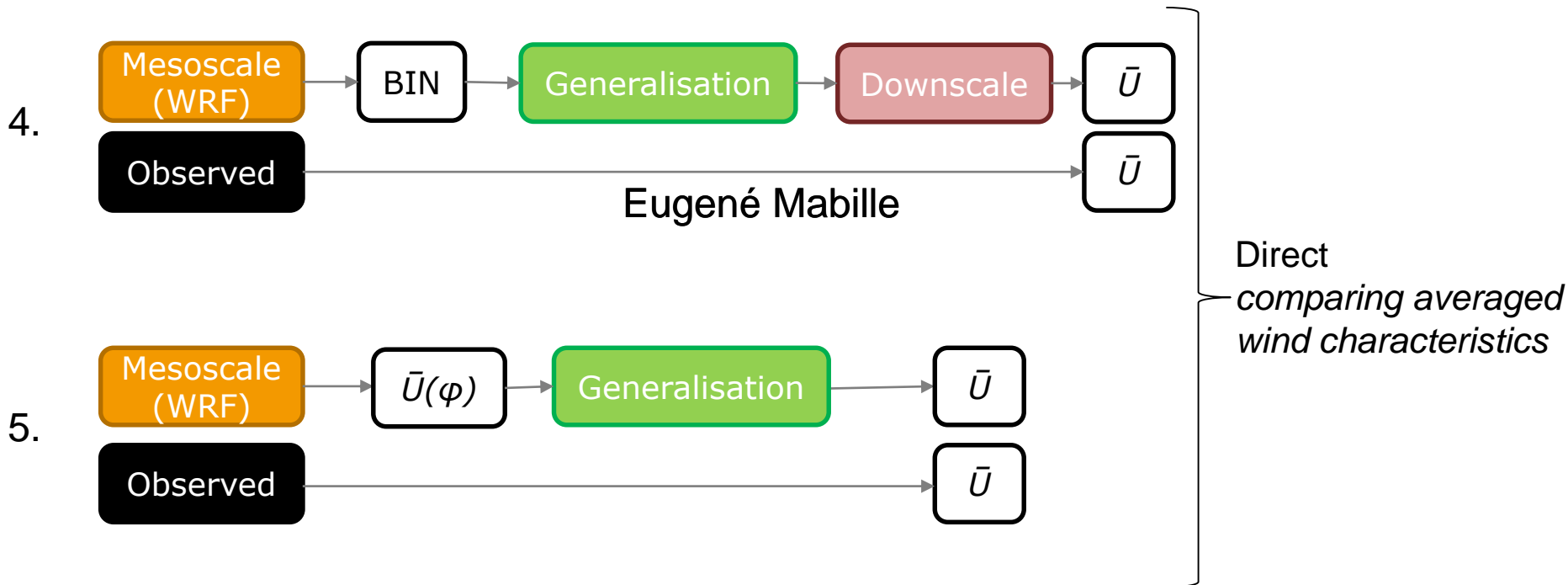
Overview of different approaches

Testing of these approaches is on-going



Overview of different approaches

Testing of these approaches is on-going



Conclusion

- Validating the numeric wind atlas prediction of climates (*Lib*) is an on-going process
- Validation of the atlas is **not** a straightforward exercise
- A number of **external factors** need to be considered
- Currently 5 validation approaches are being tested