Trees susceptibility to wind damages: the effect of slope

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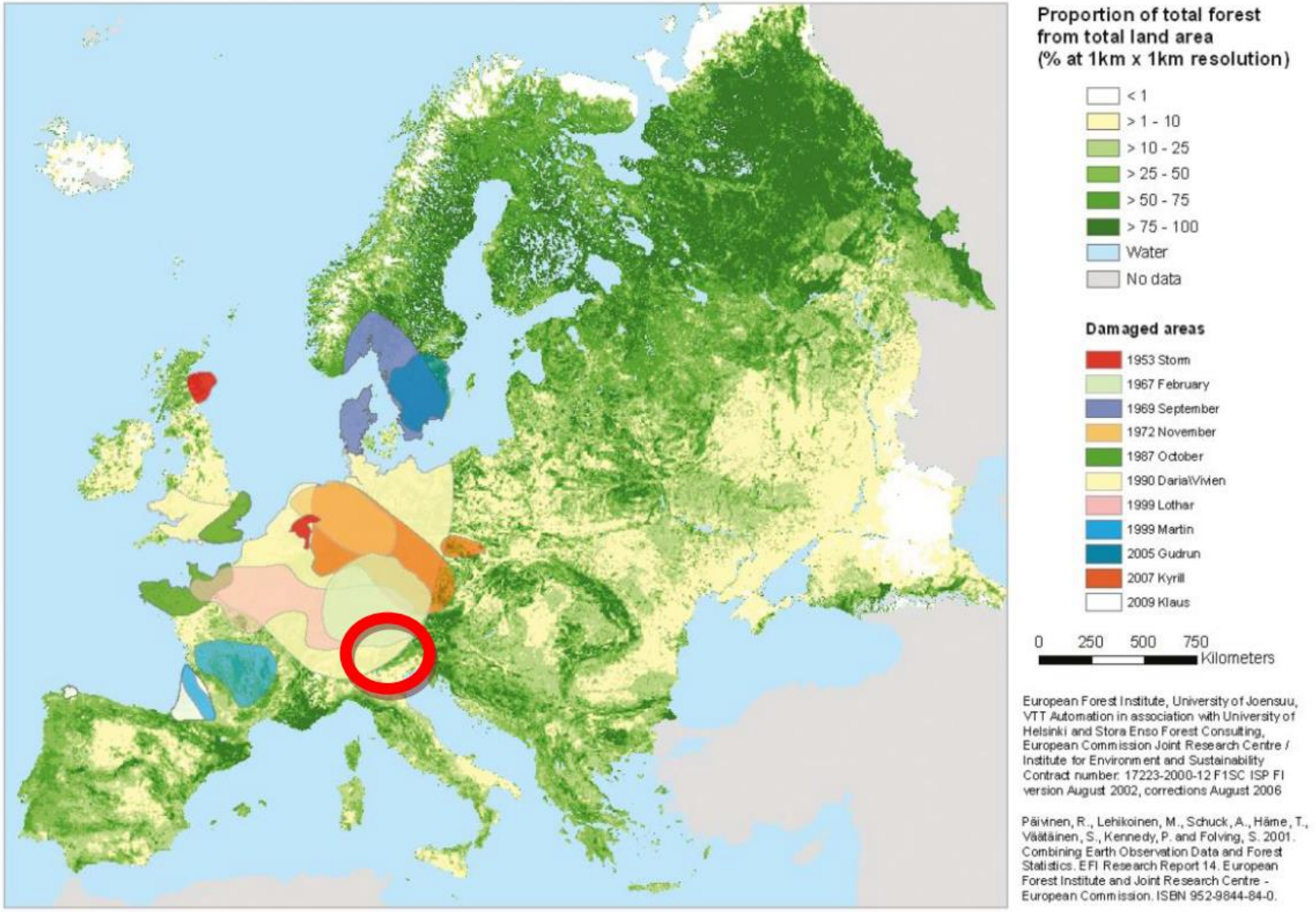
Introduction



Wind

One of the main natural disturbances in European forests

Case study

Storm «Vaia»

27-30 October 2018

First severe windstorm event in the southern Alps

Introduction

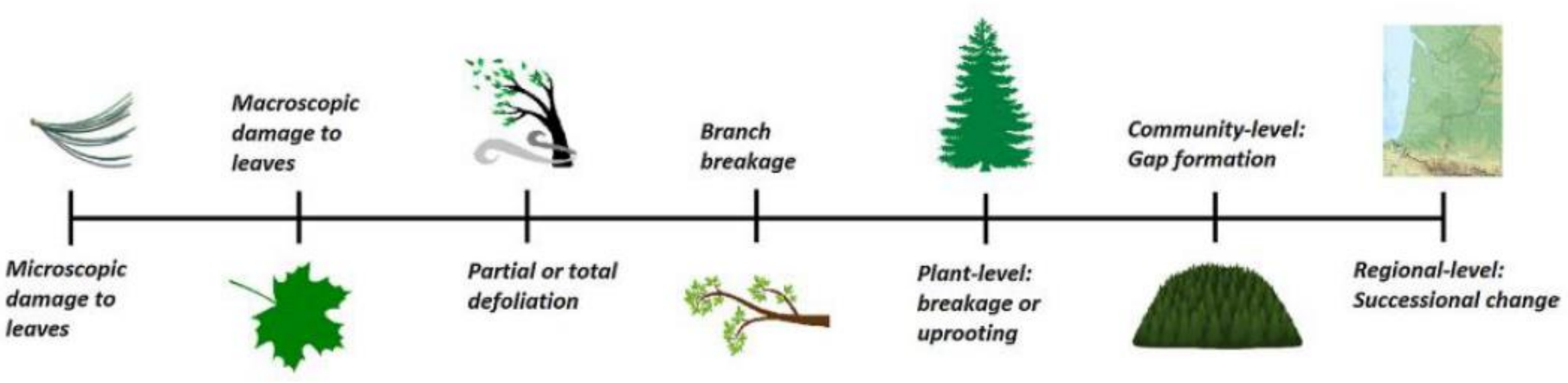
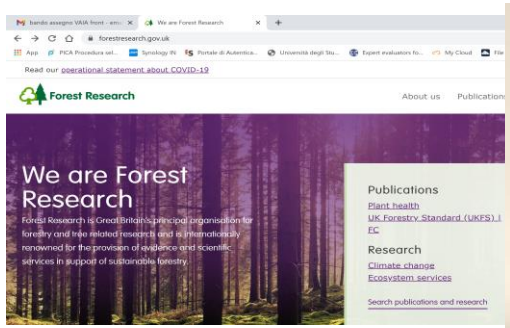


Illustration by Tommaso Locatelli (Gardiner et al. 2016)



ForestGALES
A wind risk decision support tool for forest management in Britain

fgr

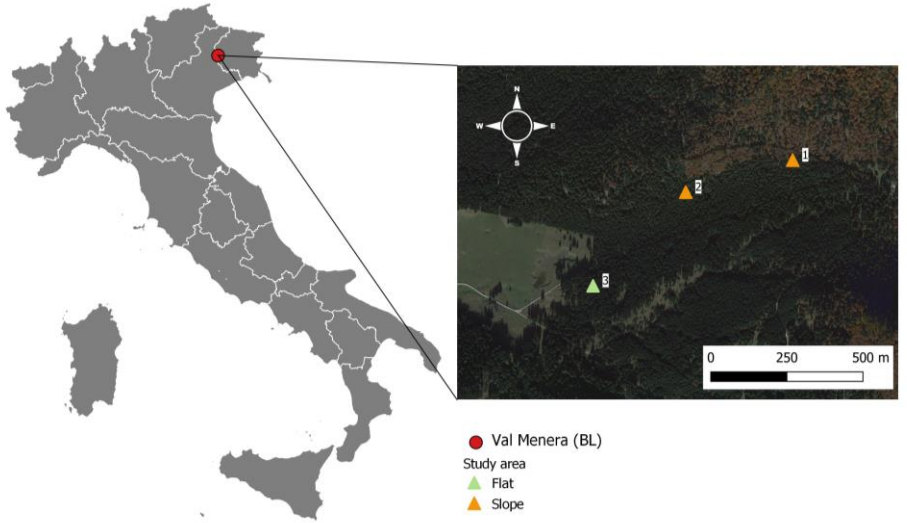
(https://www.forestresearch.gov.uk/tools-and-resources/fthr/fgr-the-forestgales-r-package/)

Field campaign : pulling tests

Ph: Matteo de Mayda

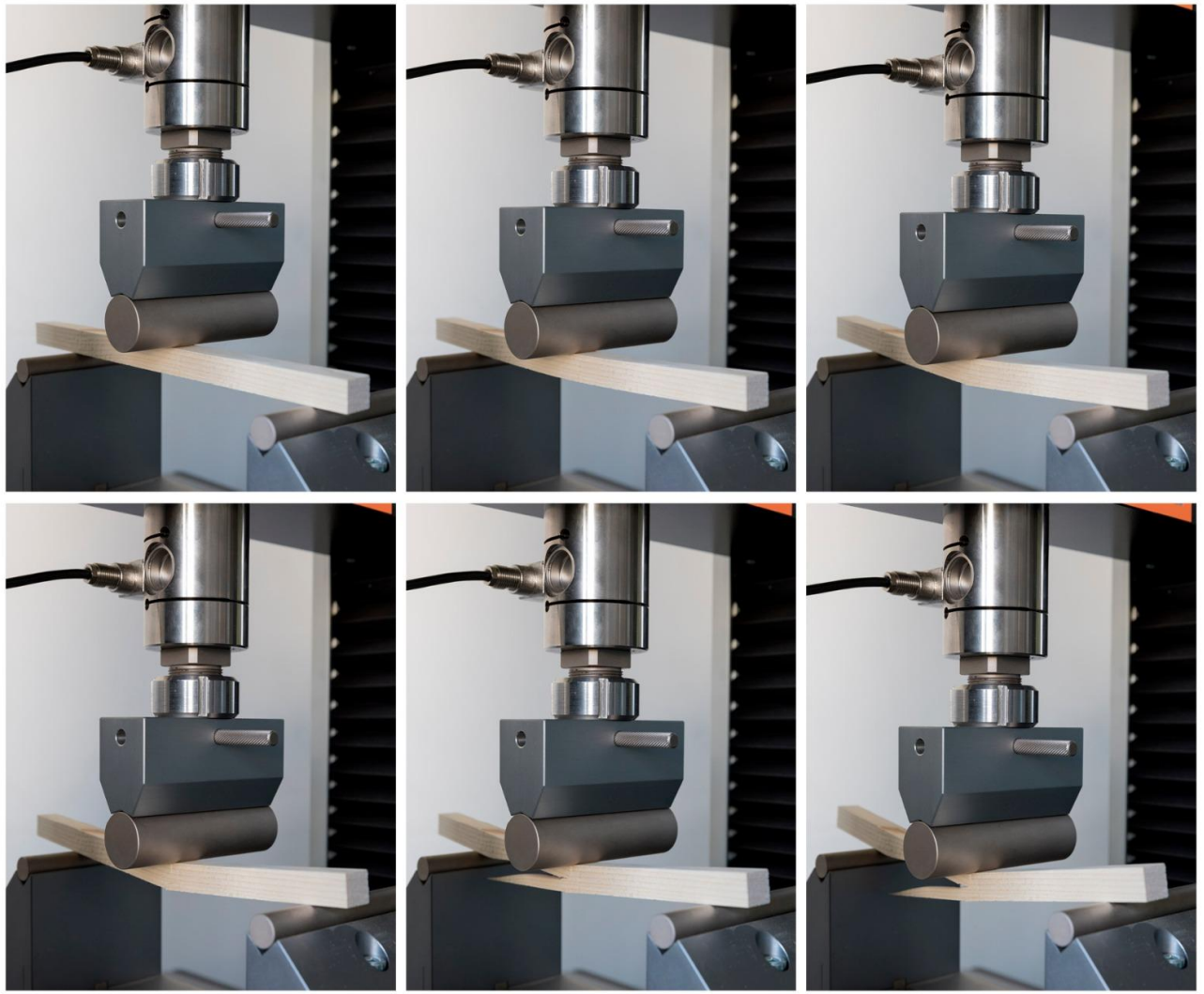
Site = Cansiglio forest, Valmenera (BL)

- 27 trees felled during tests in 2018
- 13 trees felled during tests in 2020
- 6 trees felled during tests in 2021
- Average slope (2020 tests): 20°



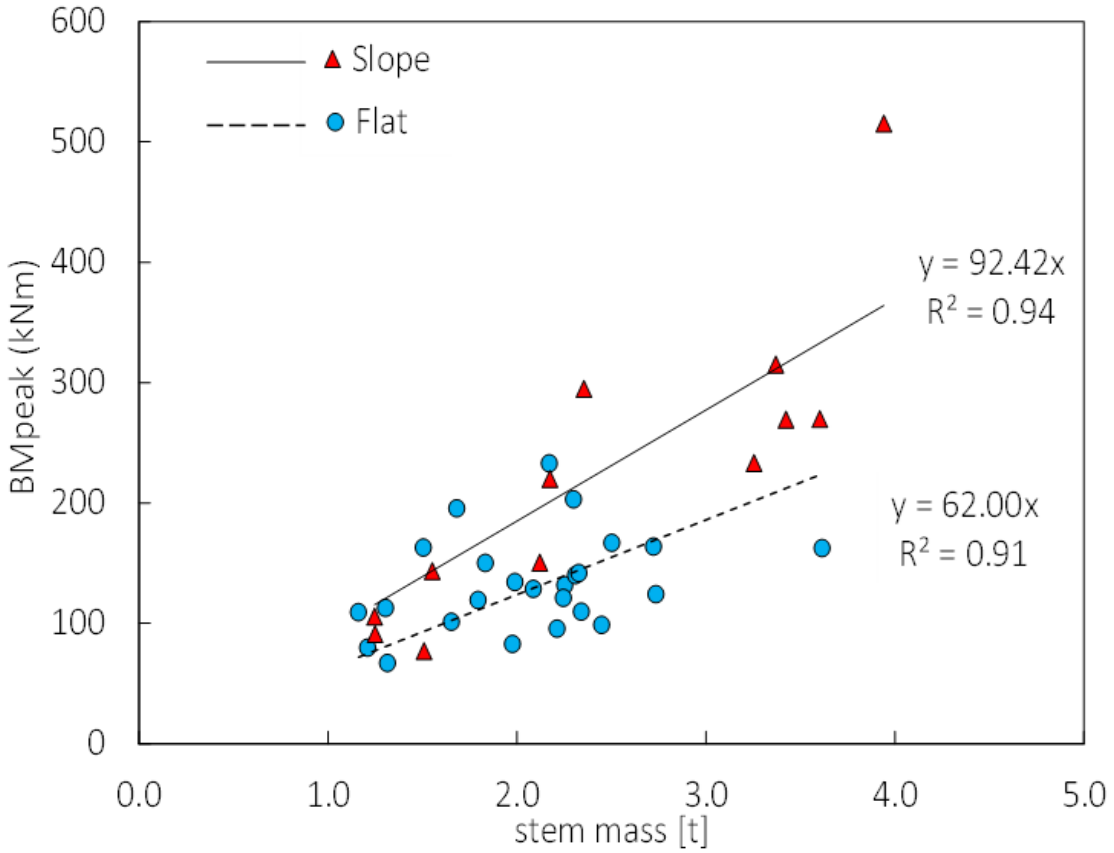
Marchi et al. (sub)

Lab tests: MOE/MOR analysis

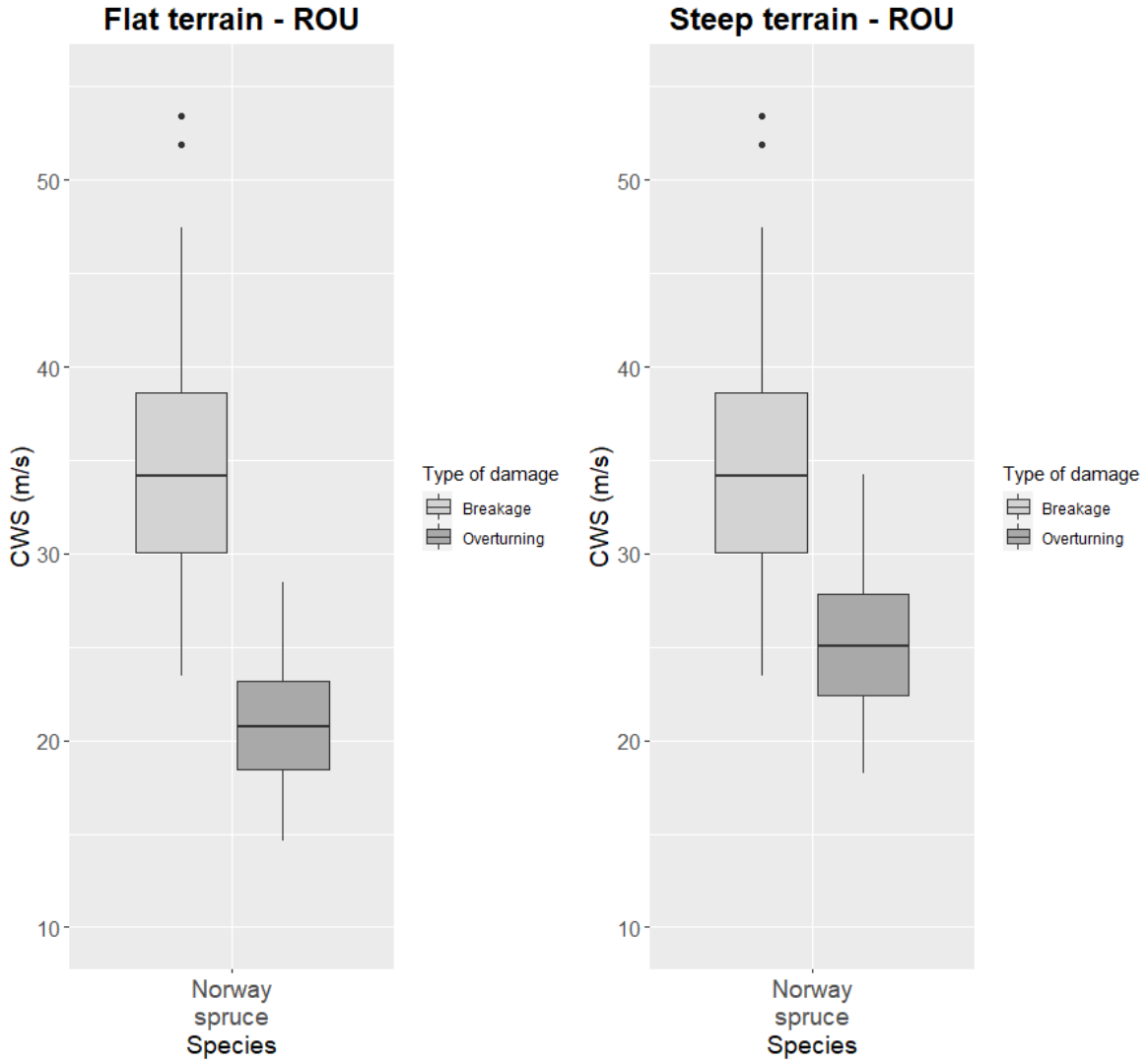


Ph: Matteo de Mayda

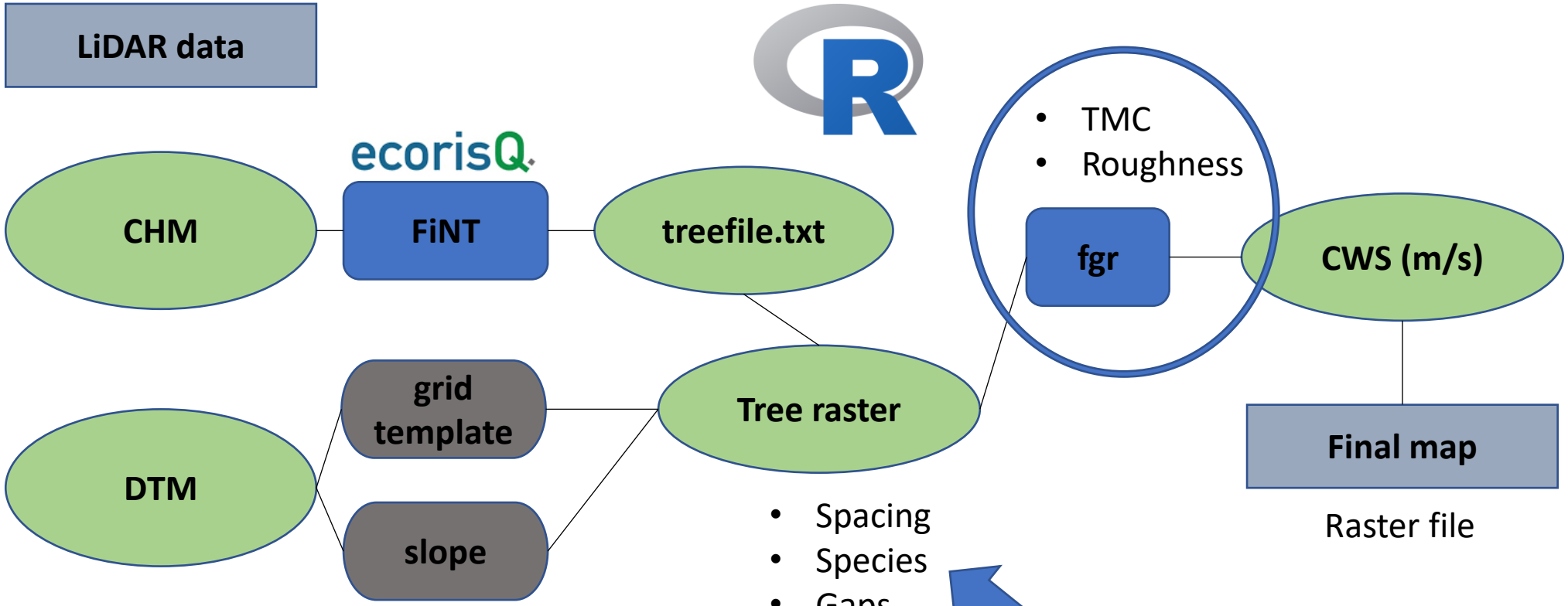
Results: slope vs flat



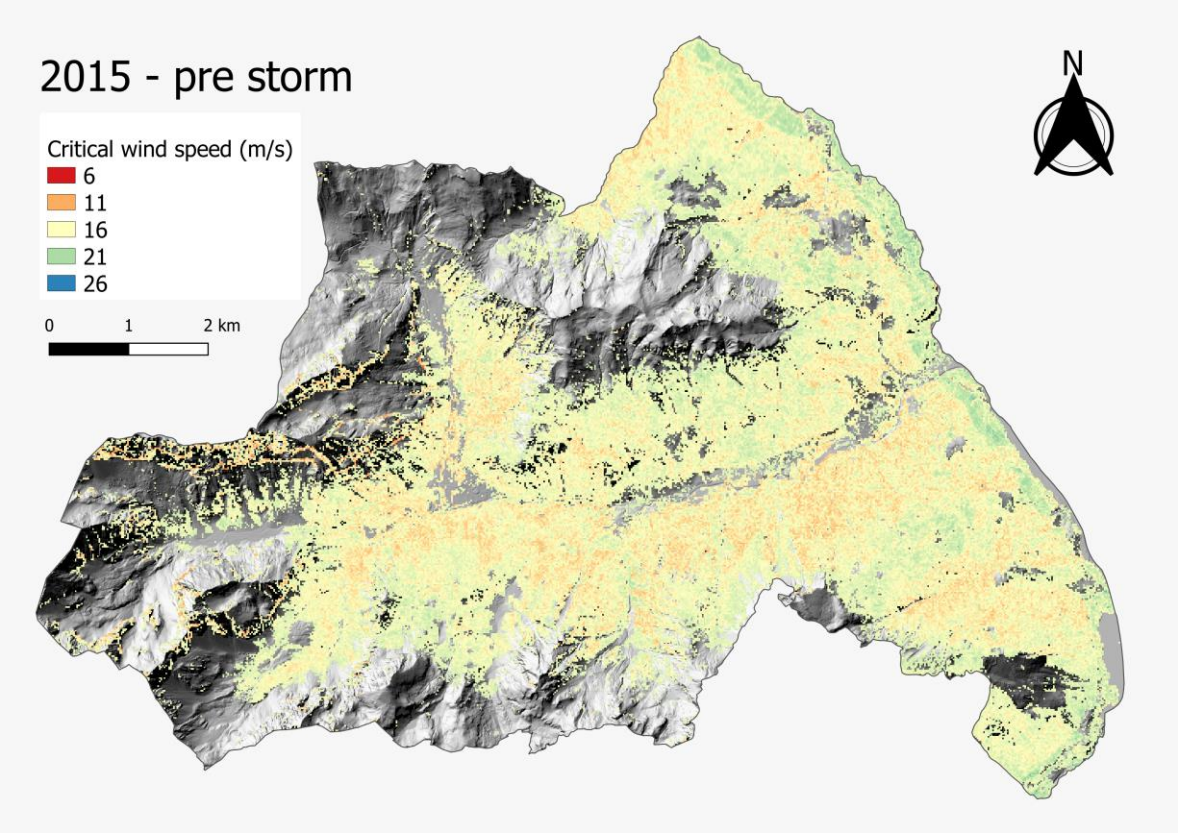
Marchi et al. (sub)

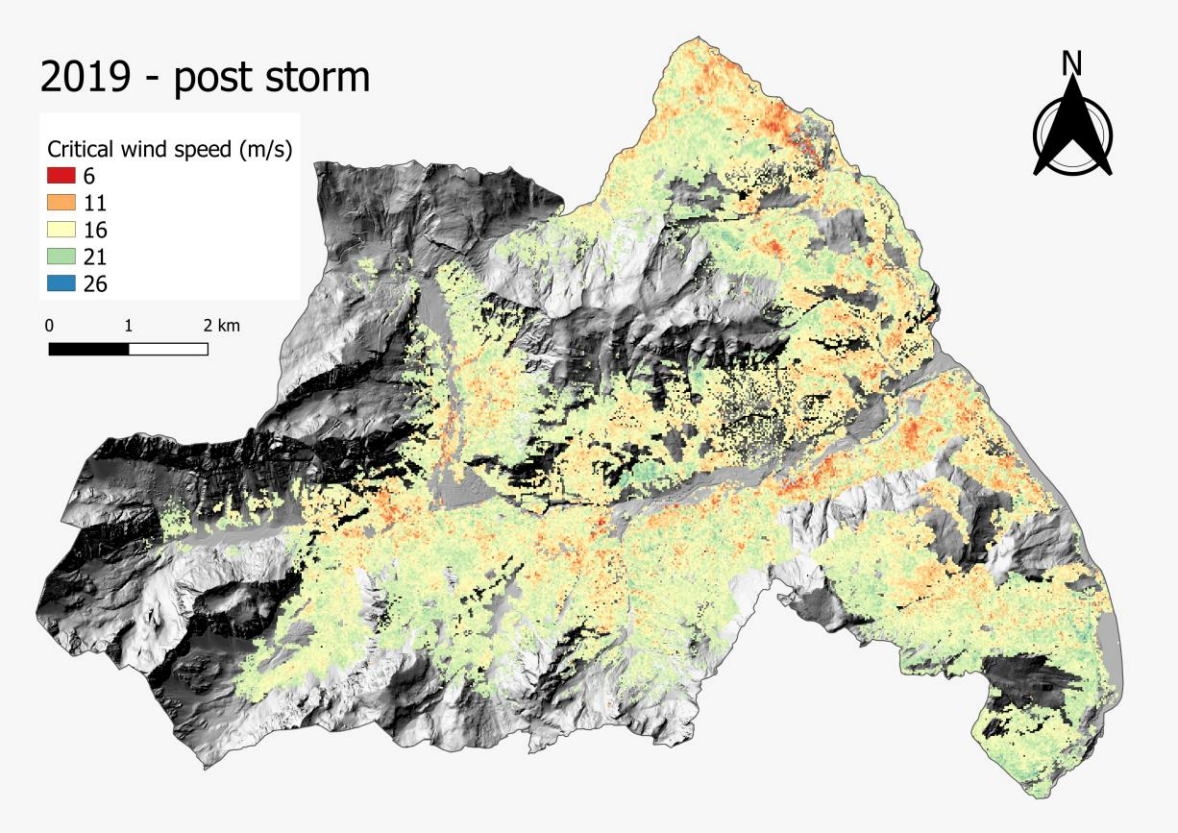


Wind risk mapping



Mapping susceptibility in different scenarios





Conclusions

Calibration of fgr model resulted successful for the alpine context

Next step: Evaluation of the performance of the model, introducing other variables (e.g. exposition to wind)

(Costa et al., in preparation)

Thanks for your attention!