

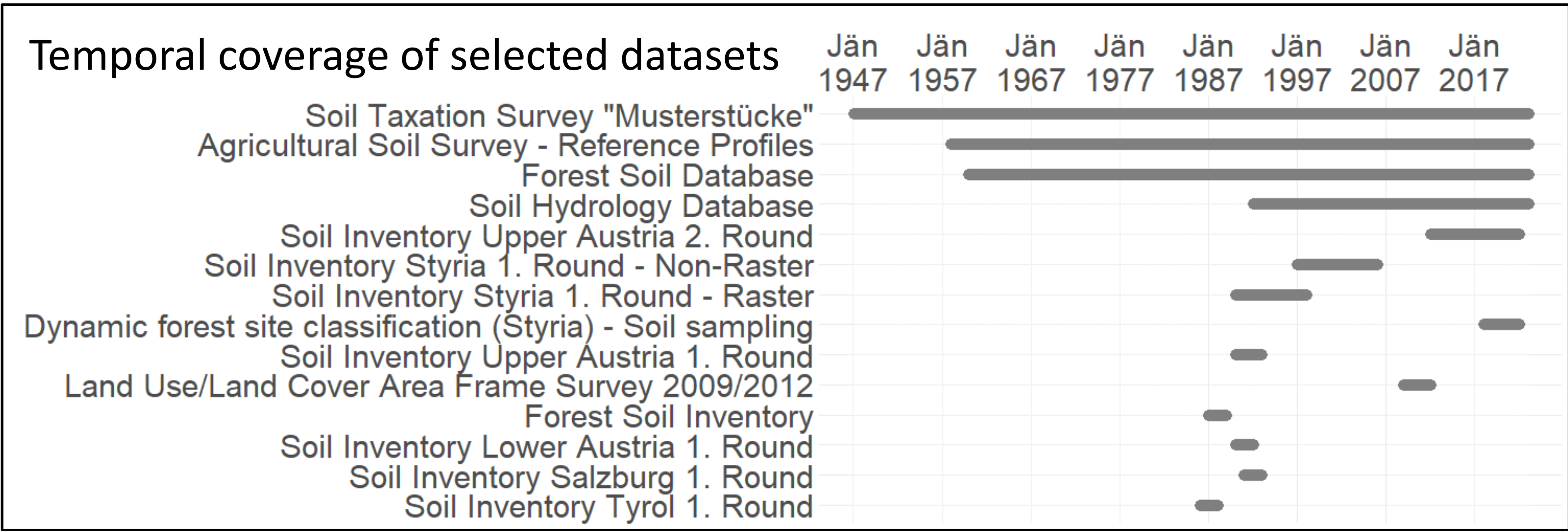
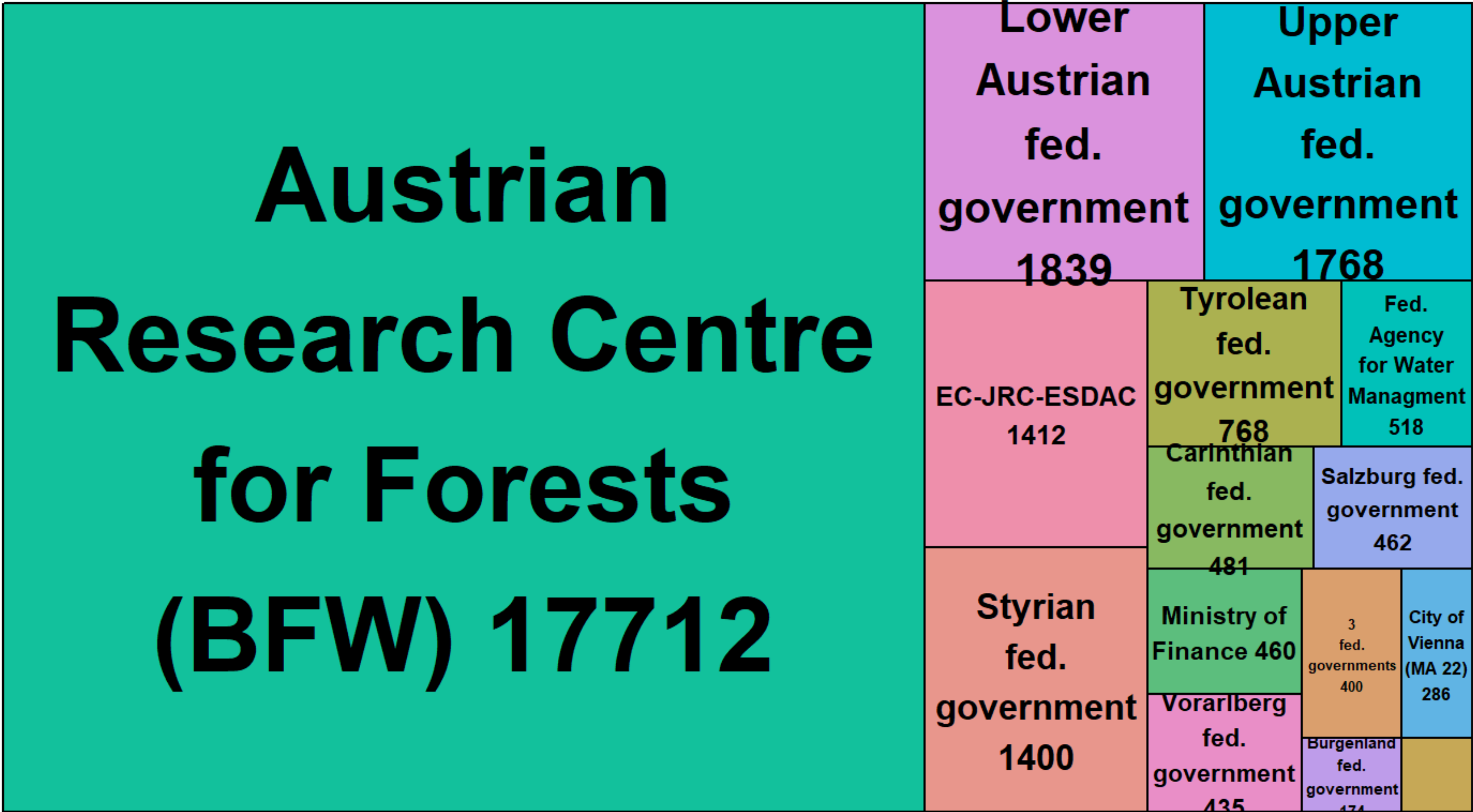
Leveraging legacy soil data for national DSM in a data-rich country: opportunities and obstacles in Austria

Stefan J. Forstner¹, David Kessler¹, Tobias Huber², Klaus Klebinder², Josef Gadermaier³, Klaus Katzensteiner³, Sigrid Schwarz⁴, Andreas Baumgarten^{4,5}, Hans-Peter Haslmayr⁵, Günther Aust¹, Ernst Leitgeb¹ and Michael Englisch^{1,4} on behalf of the Working Group „Digital Soil Mapping Austria (DSM-AT)“

Background

Austria has a rich legacy of soil point data, gathered over 7 decades by various institutions. Together with an ever-increasing set of spatial covariates, these points could serve as excellent input data for digital soil mapping (DSM) to produce soil property maps on a national scale. Yet, data standardization and harmonization remain major challenges.

Sites by Institution (n=15)



Strengths

- good coverage of agricultural land
- many soil properties analysed
- vertical coverage (to 1m or bedrock)
- temporal coverage (some properties)
- samples partly archived (re-analysis, spectral libraries)

Weaknesses

- forest, peatland underrepresented
- data scattered among 15+ institutions
- access is difficult (licencing)
- no common scheme (standardization)
- different methods (harmonization)

SWOT

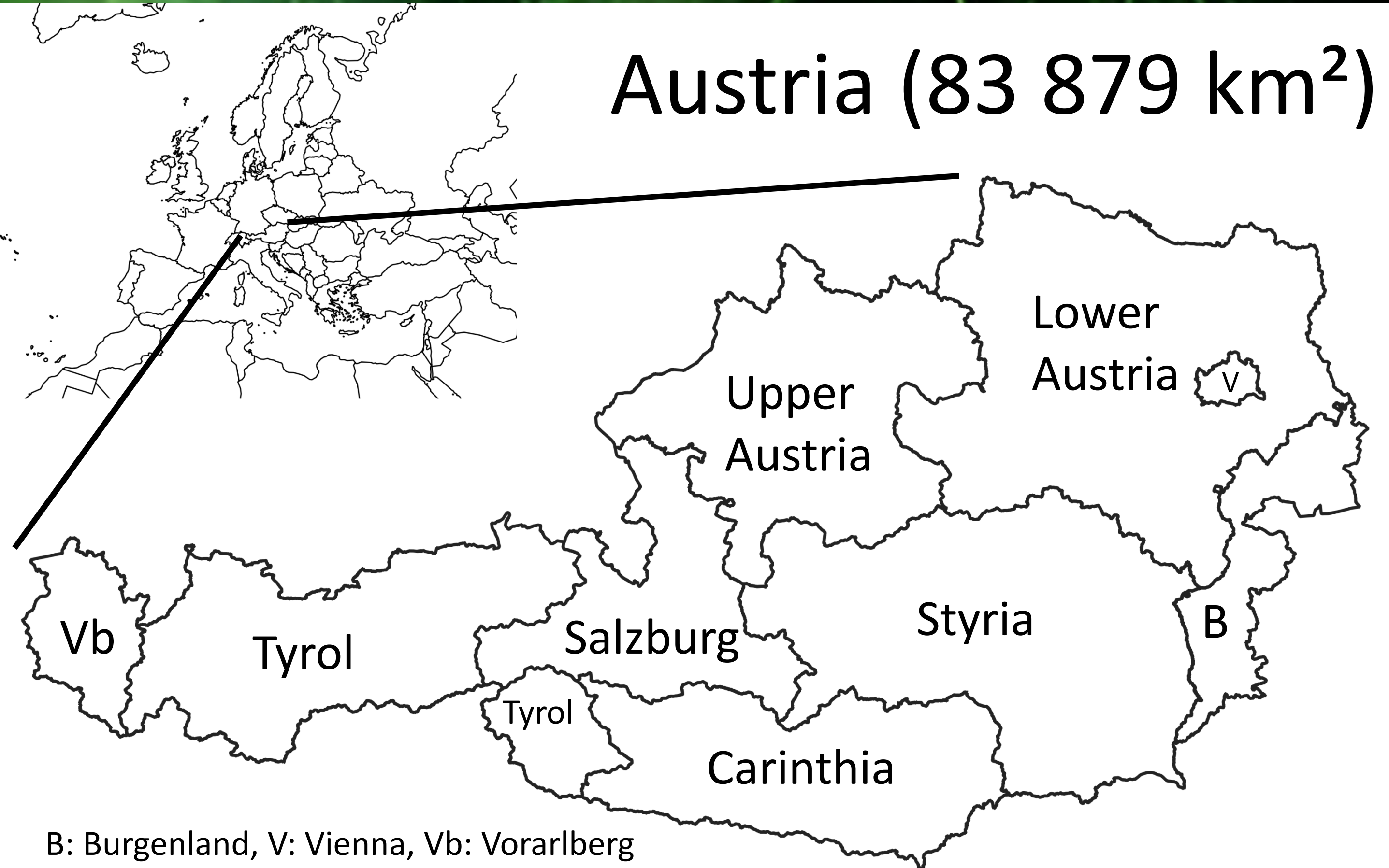
Opportunities

- standardization and harmonization
- large expertise by data holders
- tailored pedotransfer functions
- high potential for digital mapping of soil properties at national scale

→ „Common Austrian Soil Database“

Threats

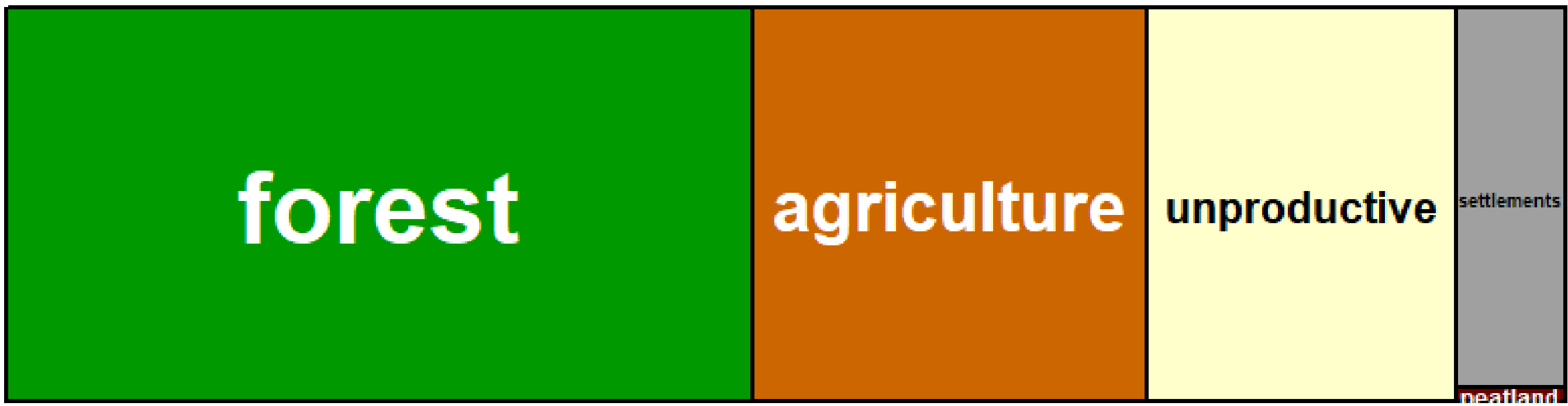
- no agreement on data sharing policy
- advantages of harmonization not clear
- funding cuts for data holders
- no funding for training and employing of needed domain experts (field & lab soil scientists, DB, GIS, DSM)



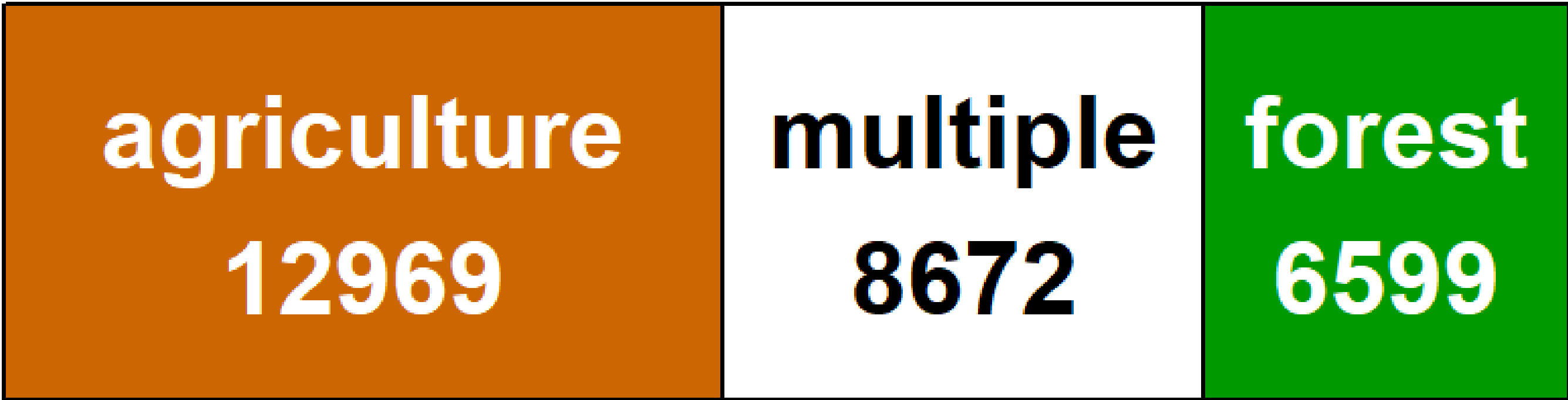
B: Burgenland, V: Vienna, Vb: Vorarlberg

28 240+ sites
337+ sites / 1000 km²

Landuse in Austria

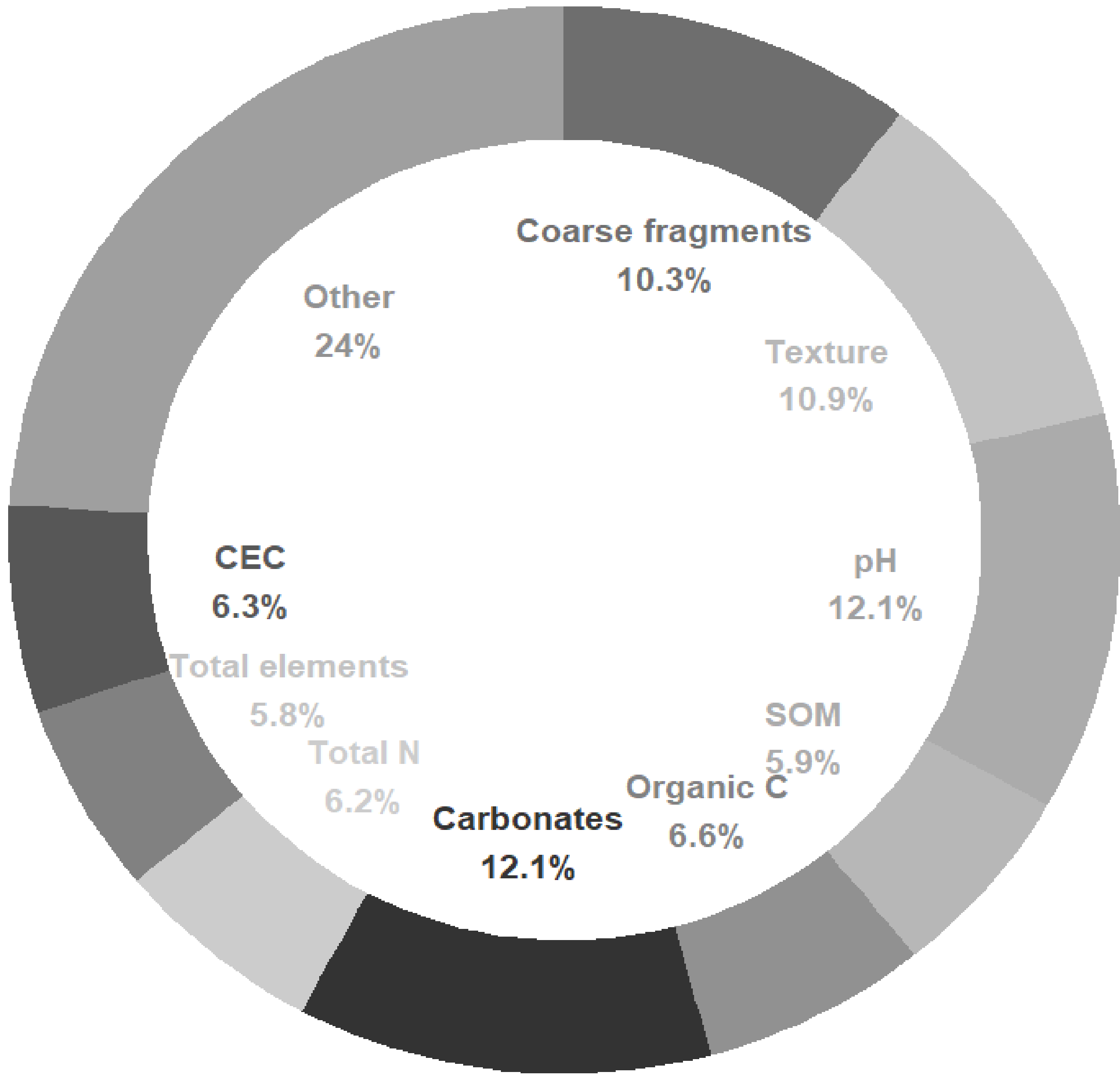


Sites by Landuse



Soil properties

Measured soil properties across the datasets (n=36)



Properties <5% summarized as Other, i.e. available nutrients, total P and S, conductivity, bulk density, porosity, pF, organic contaminants

Author affiliations: [1] Austrian Research Centre for Forests (BFW), Department of Forest Ecology and Soil – Vienna, Austria, [2] Austrian Research Centre for Forests (BFW), Department of Natural Hazards – Innsbruck, Austria, [3] University of Natural Resources and Life Sciences (BOKU), Department of Forest and Soil Sciences – Vienna, Austria, [4] Austrian Soil Science Society (ÖBG) – Vienna, Austria, [5] Austrian Agency for Health and Food Safety GmbH (AGES), Department of Soil Health and Plant Nutrition – Vienna, Austria

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Contact

Stefan J. Forstner
Agricultural Soil Map of Austria
Austrian Research Centre for Forests (BFW)
stefan.forstner@bfw.gv.at