

Bringing together Brazilian soil scientists to share soil data

Alessandro Samuel-Rosa (Federal University of Technology – Paraná)
and 53 collaborators

21st World Congress of Soil Science
Brazilian Soil Science Society, Rio de Janeiro, Brazil
Tuesday 14 August 2018 – Reconciling pedometrics and pedology



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Collaborators

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Free Brazilian Repository for Open Soil Data (febr)

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Structure

Spreadsheets



Easiness/Familiarity



Individualized
management



Google Drive




Google Sheets

Structure

Spreadsheets

 Easiness/Familiarity

 Individualized management

 Google Drive

 Google Sheets



Data model (tables)



dataset (id)



observations (x, y, t)



layers (z)



metadata (methods)



history (version)

Standards

Metadata schema



Consistent description and identification of datasets based on soil science community and basic government standards



Standards

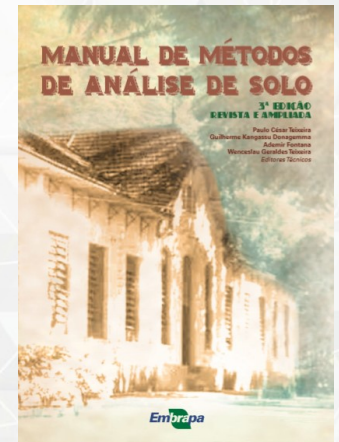
Metadata schema

- Consistent description and identification of datasets based on soil science community and basic government standards



Naming conventions

- Soil variables → column names
 - ph_h2o_25: soil pH determined using a soil:water ratio of 1:2.5
 - ph_kcl_25, ph_kcl_10, ph_cacl2_25



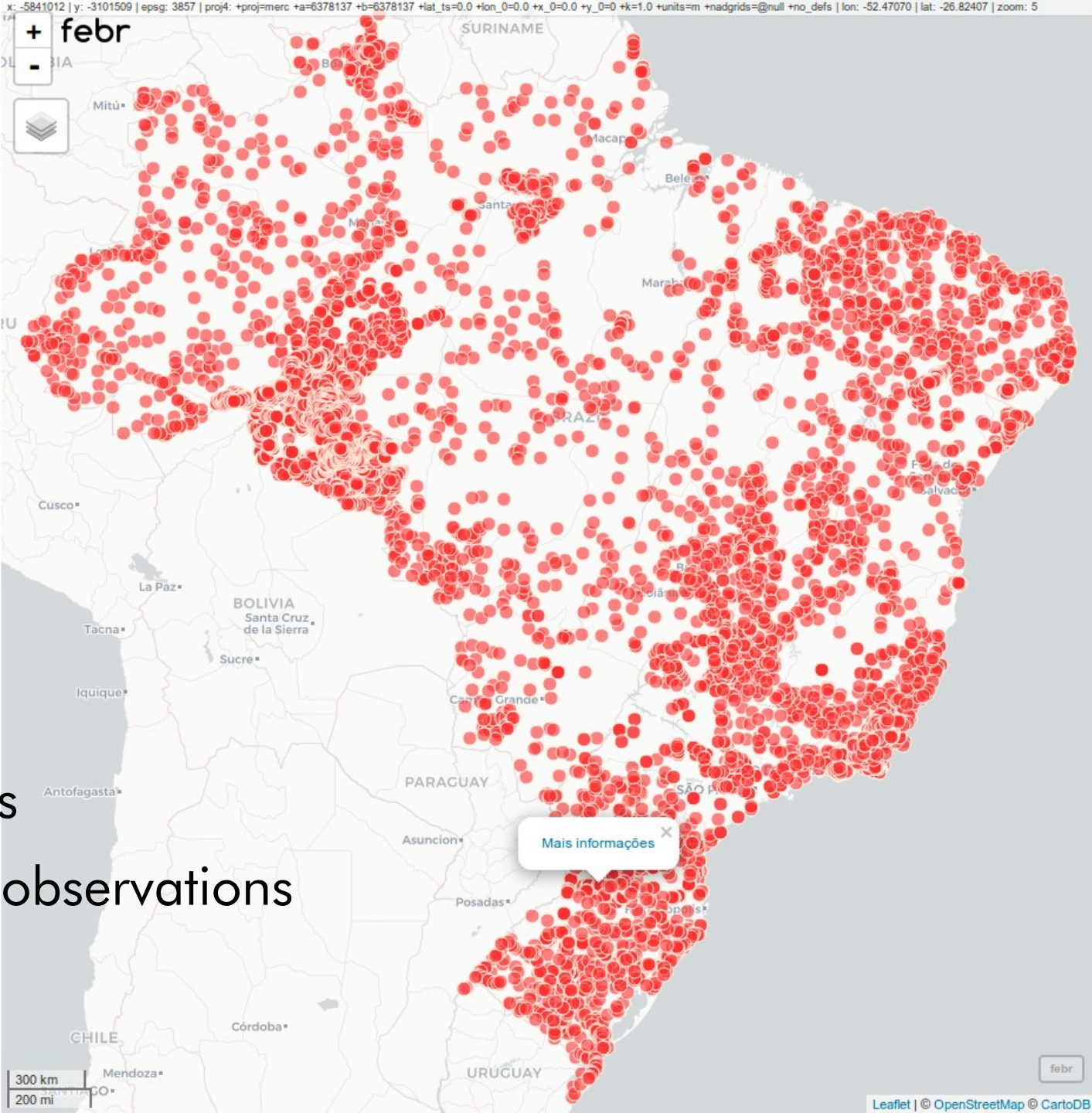
Search

Targeted search
JavaScript library jQuery
www.ufsm.br/febr/search

Global visualization
JavaScript library Leaflet
www.ufsm.br/febr/view

Metadata catalog
Static HTML pages
www.ufsm.br/febr/catalog/





232 datasets

14 477 soil observations

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Download

Google Sheets

 XLSX, ODS, PDF, HTML, CSV, and TSV

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R-package febr

 Select dataset, table, variable;
standardization + harmonization

`# Installation`

```
install.packages("febr");library(febr)
```

`# One line to download all data from a dataset`

```
dts <- febr(dataset = "ctb0629", variable = "all")
```



Support

Website + Blog

 Users: www.ufsm.br/febr

Documentation

 Users: febr-team.github.io/febr-package/

 Maintainers: www.ufsm.br/febr/book/

Discussion group

 Users & Maintainers: febr-forum@googlegroups.com

Challenges

What problems do you have in sharing datasets?

46% → Organising data in a presentable, useful way

37% → Unsure about copyright, licensing

33% → Which repository to use?




26% → Lack of time

19% → Costs

Stuart et al. Whitepaper: Practical challenges for researchers in data sharing. Springer Nature, Figshare, 2018. 30 p. DOI: [10.6084/m9.figshare.5975011](https://doi.org/10.6084/m9.figshare.5975011)


Future

Following 3 years:


-  Consolidate project and partnerships
-  Continue data rescue
-  Consolidate standards
-  Start planning the next phase

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Next phase – two fronts:

1. Soil data rescue
 -  Collaboration (Google Sheets)
2. Soil data sharing
 -  Management system for data storage and distribution
 - 

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www.ufsm.br/febr/

febr-forum@googlegroups.com



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