

Environmental Data Training 2022

XI SIMBIOMA - Slowing down the Anthropocene: challenges and possibilities in the Atlantic Forest

Part 01

Environmental Data Analysis Steps

Part 02 - More tools and deeper thoughts

Environmental Data Training 2022 - XI Simbioma

Part 01 Environmental Data Analysis Steps

1. **Ask**
Environm. Data Basics/Resources
 2. **Prepare**
Database, Dataset and Software
 3. **Clean**
Dataset Setup, Clean and LOG
 4. **Process**
Data collection and selection
 5. **Analyse**
Hypothesis and tools
 6. **Share**
Present and show
 7. **Act**
Data-driven
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Part 01 Environmental Data Analysis Steps

Step 1 - Ask

Environmental Data Basics and Resources

- A. Sources and relations
 - B. Time, deadline
 - C. Expectation / Objectives
 - D. Resources for environmental
information
 - E. Resources for raw data
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Part 01 Environmental Data Analysis Steps

Step 2 - Prepare

Database, Dataset and Software

- A. Database understanding and structure
- B. Dataset definition
- C. Software
- D. Relationship over data, time and space
- E. SpreadSheet - Excel/Google
- F. R-CRAN/R-Studio - Libraries
- G. Structured Query Language (SQL)
- H. Geography Information System —(GIS) database

Part 01 Environmental Data Analysis Steps

Step 3 - Clean

Dataset Setup, Clean and LOG

- A. Visual validation
- B. Registering changes, sources and assumptions (LOG)
- C. Fields, Keys, conventions (Tidy-R)
- D. Data validation
- E. Qgis - Plugins, processing, add-ons, python
- F. Spatial data validation
____(topology check)

Part 01 Environmental Data Analysis Steps

Step 4 - Process

Data collection and selection

- A. Business Problem, objectives and target needs
- B. Expected steps and duration
- C. Data type, volume and timeframe
- D. Filtering data (Spreadsheet, R-studio, SQL)
- E. Data group, parts and cross relation
- F. Summary and report

Part 01 Environmental Data Analysis Steps

Step 5 - Analyse

Hypothesis and tools

- A. Initial hypothesis, problem definition
- B. Graphs and charts for a start
- C. Maps and tests to keep track
- D. Description and explanation

Part 01 Environmental Data Analysis Steps

Step 6 - Share

Present and Show

- A. Analysis and pictures/images
- B. Presenting results
- C. Positioning, Slide usage, information transmission
- D. 5 second rule
- E. Highlight, focus and importance scaling
- F. Dashboard, Business Intelligence
- G. Update window

Part 01 Environmental Data Analysis Steps

Step 7 - Act

Data-driven decisions

- A. Conclusions
- B. Proposals
- C. Listen and amplify
- D. Correct and enhance

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