Code Evaluation questionnaire

this document aims to provide a guideline how to evaluate (R) code

Please note: not all item might be applicable - please cross-out any non-relevant parts.

1. **Informative naming of the file(s)/package/commands?**
   □ absolutely □ not really because: _____

Meta-Information

2. **Meta-information does exist?** □ Yes □ No
3. **Authors name**: _____
4. **Contact details are provided (email, URL, git)?** □ Yes □ No
5. **Date of development is listed?** □ Yes □ No
6. **Main purpose of the analysis is explained?** □ yes □ not really because: _____
7. **Needed input is defined?**(format incl. which information are requirede.g. shp with column of type x and content of y) □ yes □ not really because: _____
8. **Output is defined?** (incl. explanations, format etc.) □ yes □ not really because: _____
9. **R version used and R packages needed are listed?** □ yes □ not really because: _____
10. **Operating system used is listed or on which one it has been tested?** □ yes □ no
11. **Required other scripts/commands are listed?** (e.g. script with functions called via source())
    □ yes □ not really because: _____
12. **Required other software is explained?** □ yes □ not really because: _____
13. **Informative header is well formatted?** □ yes □ not really because: _____
14. **All necessary details are provided?**
    □ Yes, I understand its aim and needed input
    □ No, I need to check the code carefully
    □ just some parts are provided.
15. **What do you think until now what the output/results will be? Describe it briefly before checking the actual code:**

    _____

    _____

    _____

_____

Actual Code for the Analysis

16. **Data import is generic?** (no full paths, direct import possible) yes □—□—□—□—□ no
17. **Well commented?** horrible □—□—□—□—□ fantastic
    remarks: _____
18. **Ratio of Comments vs. Code is adequate?** no comments □—□—□—□—□ too many comments
19. **Easy to read?** (appropriate indentation and spacing) horrible □—□—□—□—□ fantastic
20. **The code is written for generic data analysis?** (not just one specific data set can be used)
    □ absolutely □ not really because: _____
21. **Does the code require a rigid data structure?** (e.g. specific column names in data frame)
    □ absolutely □ no, quite flexible

22. **Is the code flexible?** (i.e allows inputs of different data types)
    □ absolutely □ not really because: _____
23. **Data can be retrieved without contacting the author?**
    □ absolutely □ not really because: _____
24. **Code follows a logical structure?** □ absolutely □ not really because: _____
25. **Analysis only includes relevant codes?** (no code or output which is not used afterwards)
    □ absolutely □ not really because: _____
26. **Are the derived variables self-explanatory?** (e.g. through clear variable names and/or comments)
    □ absolutely □ not really because: _____
27. **A standard documentation structure/naming convention is applied?**
    □ absolutely □ not really because: _____
28. **The analysis can be run easily on other data sets?** (generic code)
    □ absolutely □ not really because: _____
29. **Appropriate use of commands - no unnecessary complex code snippets?**
    □ absolutely □ not really because: _____
30. **If a function or command is provided: are example code/data provided/explained?**
    □ absolutely □ not really because: _____
31. **Does the code minimize the storage of data?** (e.g. removal of unused variables)
    □ yes □ no
32. **Does the code minimize the use of RAM?**(e.g. appropriate subsetting, no re-reading data)
    □ yes □ no
33. **Data handling and transformation is coherent and well commented?** yes □—□—□—□—□ no
34. **Novel code not covered in the course is used?** a lot □—□—□—□—□ just known commands
35. **The script is actually a package?** □ yes □ no
36. **Proper documentation (manual pages) is provided for this package?** □ yes □ no
37. **Analysis is fast (based on performance measures)** yes □—□—□—□—□ no

    Which parts could be improved?

    _____
    _____
    _____

38. **The code can be executed without any fixes?** □ absolutely □ not really because: _____

    _____
    _____
    _____

Code Impression

39. **The analysis triggered interest and you learned new things?**
    yes, a lot □—□—□—□—□ no, not a bit
40. **Please describe what was special/interesting:**

    _____
    _____
    _____

41. **What is missing from the code?**

    _____
    _____
    _____

42. What do you especially dislike about the code:

43. Please describe your impression of the code:

Graphs and Maps

44. Plots or maps are providing key messages? □ absolutely □ not really because: _____

45. Plots/maps are self-explanatory? □ absolutely □ not really because: _____

46. Plots/maps are informative? yes □—□—□—□—□ no

47. Graphs include all necessary items? (legend, axis title etc.)
□ absolutely □ not really because: _____

48. Plots/maps are not overloaded? yes, clean □—□—□—□—□ no, totally cluttered

49. Plots/maps layout is consistent through-out the analysis?
□ absolutely □ not really because: _____

50. Plots/maps have appropriate colour scheme? □ absolutely □ not really because: _____

51. Plots/maps have appropriate font size/type/orientation? □ absolutely □ not really because: _____

52. Maps have scale bars, legend, coordinates? □ absolutely □ not really because: _____

53. Maps include landmarks, cities, roads for orientation?
□ absolutely □ not really because: _____

54. Please write what you (dis-)liked in the graphs/maps:

Overall Impression

Please evaluate the following parts:

55. Readability horrible □—□—□—□—□ fantastic

56. Information horrible □—□—□—□—□ fantastic

57. Structure horrible □—□—□—□—□ fantastic

58. Innovation horrible □—□—□—□—□ fantastic

59. Do you think it qualifies for being scientifically reproducible?

- ☐ yes
- ☐ no
- ☐ needs some more work: _____

60. Is the code really worth the effort for you to check it out?

☐ yes, totally. ☐ rather not. ☐ don't know, not fully understood yet.

61. Would you be interested to use this code for your analysis?

- ☐ yes, would love to
- ☐ no, not really anything I couldn't do myself
- ☐ yes, definitely parts of it.
- ☐ No clue what is does. I just can't figure it out.

Impression of the analysis

62. When you check your anticipated results/output (Q 15) at the beginning - are your expectations met? and if no, why not:

63. What is missing from the analysis?

64. What do you especially like about this analysis:

65. What do you especially <u>dislike</u> about this analysis:

66. How do you think the analysis can be improved or which crucial parts need to be fixed/added: