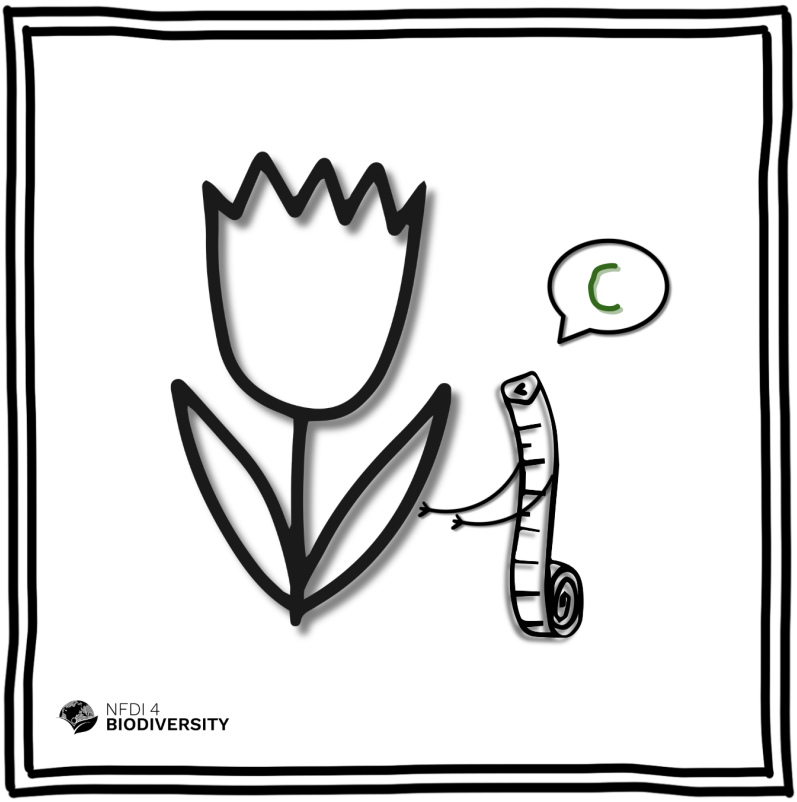
4. From head to toe, crown to sole



Although all measurements were available, analysis had to wait for a long time.

A doctoral student was given a data set for analysis that contained measurements of different plants. A former member of the research group had examined several individuals per species for this data. Several distances were measured on each specimen. A little hand drawn sketch indicated from where to where each measurement was supposed to be conducted. In this sketch, each distance was labelled with a different character, which were then used as column names in the measuring sheet.

Unfortunately, the sketch was lost – and with it the information which character represented which distance. Under these circumstances, an analysis was rendered impossible. Only after months of searching, the measuring protocol could be reconstructed.

In order to be able to use data as long as possible, comprehensive metadata are essential. In this case, a first step would have been to use „speaking“ column names (leaf length, leaf area, seed mass) and units (mm, cm^2, mg) for each measurement. Detailed descriptions of each measurement would have been even better, maybe referring to a corresponding figure (e.g. „leaf width: maximum width of the leaf orthogonal to maximum leaf length“, „maximum shoot height“, „leaf area: leaves were scanned and areas were calculated automatically in ImageJ“). Well-documented data facilitate your own analyses and they are available long term – for your own research questions and for those of others. Finally, generally standardised measuring protocols and standardised vocabularies or ontologies with defined terms (GFBio 2024, Kissling et al. 2018) allow for using data in global analyses, like e.g. the modelling of biodiversity trends by IPBES.

Sources: Personal communication

GFBio. (2024). *GFBio Terminology Service*. https://terminologies.gfbio.org

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