**Trait Information Portal Ontology**

The traditional way to record metadata is to use descriptors lists. Each descriptor records data regarding a trait and how it is measured. It will store its name, a definition, it may provide information on the many ways in which the measurement can be taken, photos and other material that should provide enough information to figure out both how to measure the trait and what the trait is all about.

These descriptors are organized as lists, they may lie under a general category, but essentially they are an entry in a dictionary. They were designed with standardization in mind, but there is no standard mechanism to identify a descriptor. You can place then in a database and query them by name, but there was never a mechanism to provide a unique global identifier to descriptors, a bit like ISO has done for countries.

This leaves us with a lot of material, but also with a lot of duplicate work that must be sorted out: how many “plant height” descriptors have been developed? How many of them can be legitimately considered unique? How many of them are in reality copies of other descriptors?

If we consider descriptors as a source of information, the above question may be irrelevant, since we can semantically analyse information and group things by name, but if we annotate data using descriptors the problem becomes serious: you cannot store the same data under several names, because then analysis becomes impossible.