BIOTABase –
a data base software for biodiversity monitoring

Muche, G.[1,2], Suwald, A.[1,3], Finckh, M.[1,4], Schmiedel, U.[1,5], Jürgens, N.[1,6]

[1]Biodiversity of Plants, Biocentre Klein Flottbek and Botanical Garden, University of Hamburg, Ohnhorststr. 18, 22609 Hamburg, Germany
gerhard.muche@botanik.uni-hamburg.de [2]; andrzej suwald@botanik.uni-hamburg.de[3]; mfinckh@botanik.uni-hamburg.de[4]; uschmiedel@botanik.uni-hamburg.de[5]; juergens@botanik.uni-hamburg [6]

Federal Ministry of Education and Research

1. What is BIOTABase:

BIOTA AFRICA aims at an integrated trans-disciplinary approach towards sustainable land use and conservation of biodiversity in Africa. Within the frame of these project the software BIOTABase has been developed. The main goal of BIOTABase is the structured storage of vegetation observations under consideration of soil, climate and land use data.

A permanent plot in a BIOTA biodiversity observatory in Leliefontein / South Africa
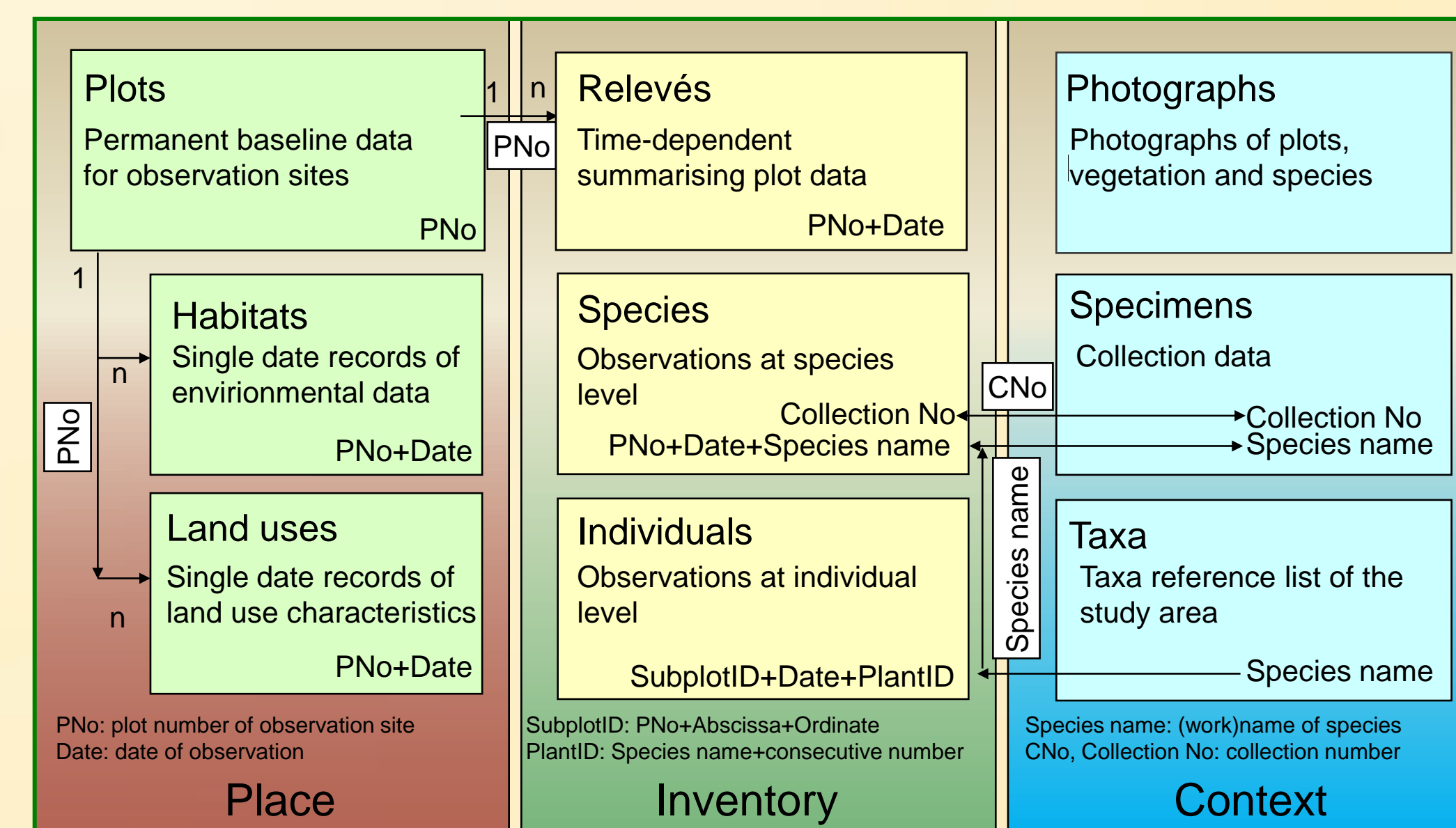
Structure of BIOTABase

2. What is BIOTABase able to do:

BIOTABase is able to store vegetation data in combination with environmental information. Vegetation cover values can be stored according to vegetation strata. It is possible to link observations directly to the respective records of the collected specimens. The process of taxonomic identification of specimens can be documented.

BIOTABase facilitates the handling of taxonomic reference lists in order to ease data input and to check nomenclature. Photographs can be administrated and linked to site, relevé and species data. Data input is supported by several tools for quality checks.

3. Special features of BIOTABase

Traditionally, a relevé number relates to a vegetation record at a given moment and a definite place. Hence this number includes two different types of information: the location and the date of the relevé. However, these informations are handled in BIOTABase separately in order to store permanent plots in an adequate way. This has great advantages for the statistical analysis of large datasets and time series. It is relatively easy to handle nested plot data and to compile species inventories according to the spatial hierarchy of the study sites.

4. Further special features

BIOTABase connects field observations with herbarium collections. The results of identification processes can be used to update observation records automatically. A controlled update procedure makes it possible to rename either just the corresponding record (with the respective collection number) or all records which share the same field name.

Controlled taxonomic updating routines
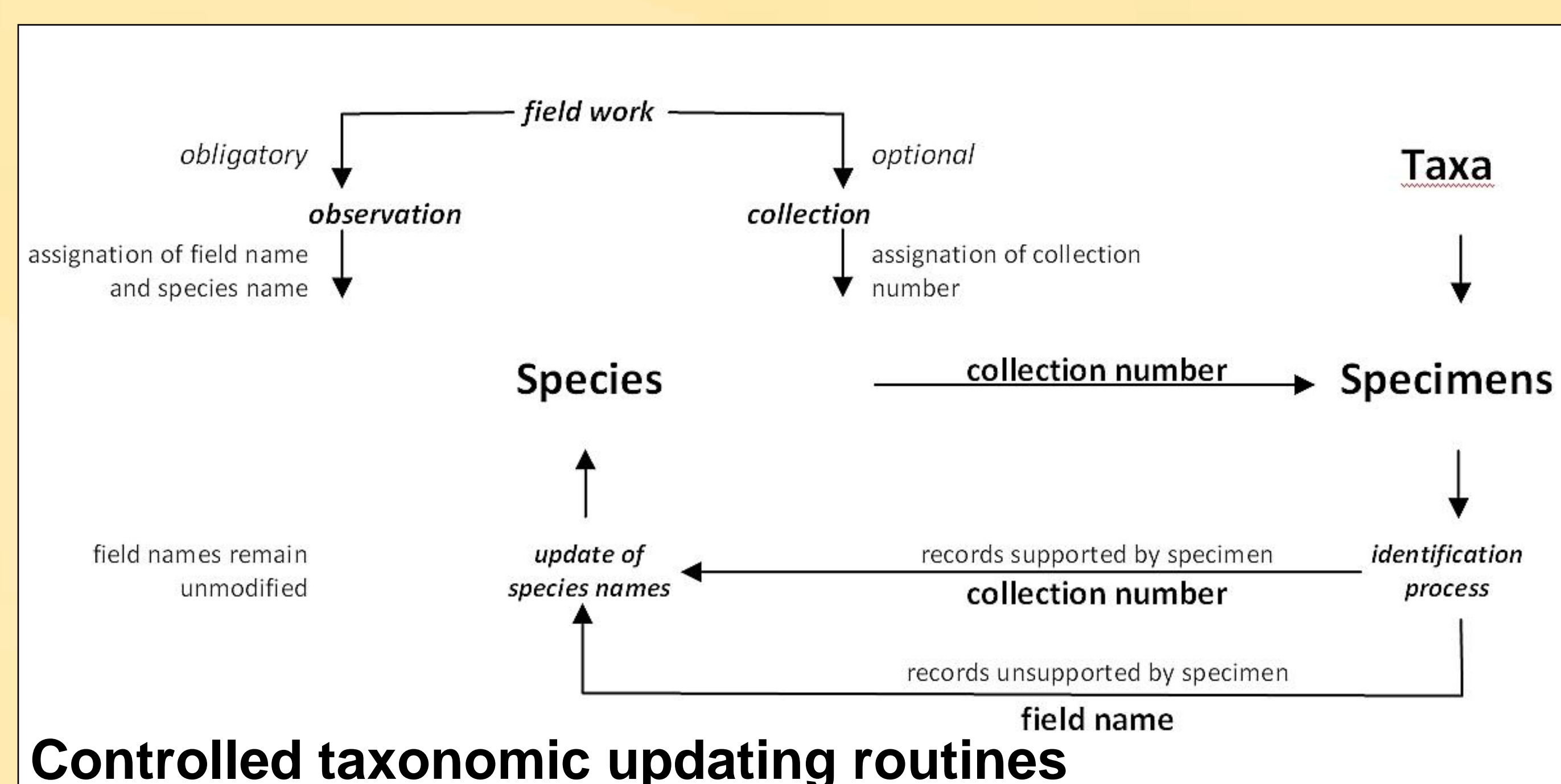
5. Screenshots:

The form "Plots" contains time invariable site information related to location and topography. The form "Habitats" stores time dependent abiotic and biotic soil information. The form "Species" retains time dependent species observations. "Releves" uses these data to compile the floristic composition and structure of the relevés.

Plots: general data

Plots: topography

Habitats: Plot soil data

Species records

Species composition

6. The following features are of highest importance:

• BIOTABase facilitates merging of the different databases in international cooperation projects.
• BIOTABase offers tools for taxonomic quality control
• BIOTABase allows continuous data updating.
• BIOTABase links field observations with herbarium collections.
• BIOTABase links image documentation with field observations.
• BIOTABase provides data structures for the analysis of times series.

Interfaces:

BIOTABase provides interfaces to: CANOCO, Juice, MS-Office, GIS-Applications, and FAO SOTER.