

CALCULATING SOIL QUALITY INDICATORS USING LANCA[®]

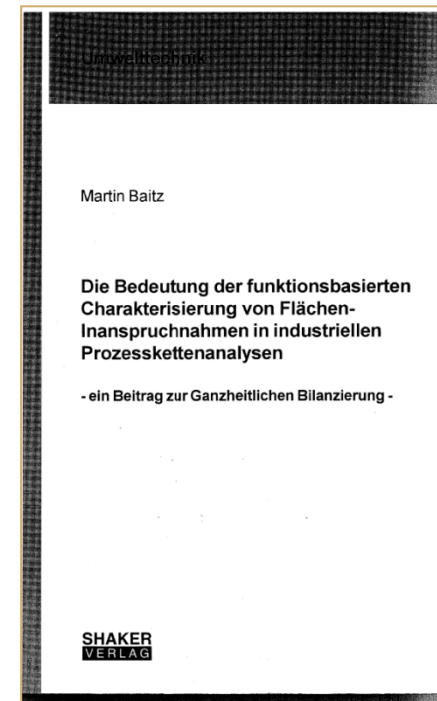
1st Soil quality indicators in Life Cycle Assessment Workshop
30th August, Bordeaux, France

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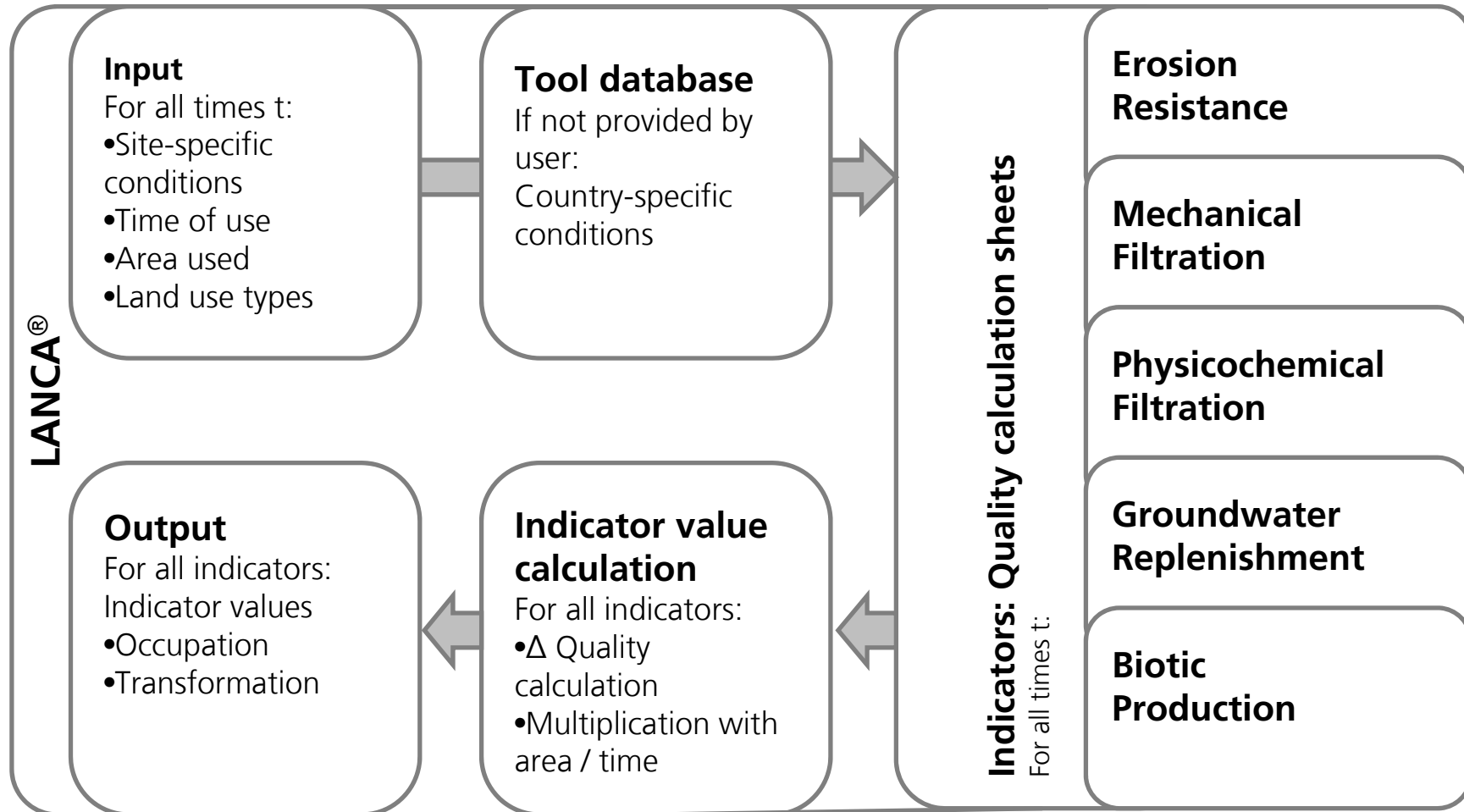
Background and research question

PhD by Martin Baitz: “Die Bedeutung der funktionsbasierten Charakterisierung von Flächen-Inanspruchnahme in industriellen Prozesskettenanalysen. Ein Beitrag zur Ganzheitlichen Bilanzierung”.

- Based on geo-ecological principles and literature: Development of calculation approaches for the indicators of:
 - Erosion Resistance
 - Filtering, Buffering, Transformation
 - Groundwater Function
 - Runoff Regulation Function
 - Biotic Production
 - Immission Control Function
 - Ecotope Formation Function
 - Other Functions



Method and data



Progress, main results, remaining questions

- Land use implications can be quantified, related to a functional unit and integrated into LCA software and database
- Relevant soil functions are scientifically addressed, high quality and reliable results
- Method is continuously improved, background data are updated and maintained
- Many case studies have been calculated
- Input databases GIS-based and globally available
- Data has been included into GaBi software for background mining, agricultural and forest processes
- Sensitivity analyses concerning input data have been performed
- Detailed and transparent method description is published
- Further indicators can be integrated easily

Progress, main results, remaining questions

Current work:

- Global characterization factors are calculated for all land use flows
- Update of LANCA[®] tool and methodology

Outlook:

- Characterization of land use indicators to one land use parameter
- SOM can be integrated in LANCA[®]
- Global site-specific (GIS-based) calculation of LANCA[®] indicator values

Challenges for the LCA land use community:

- Agreement on consistent choice of reference situation and land use types