



# Introducing a biodiversity evaluation tool for the Greater Mekong Subregion (GMS)

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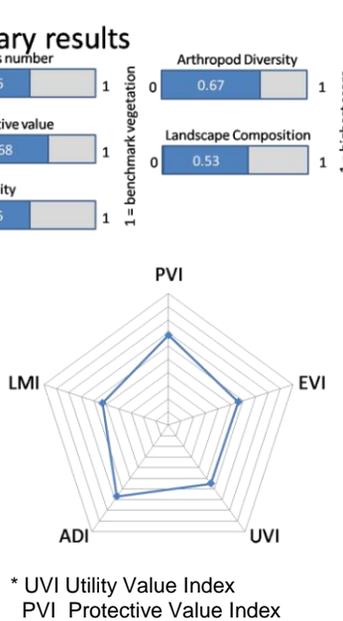
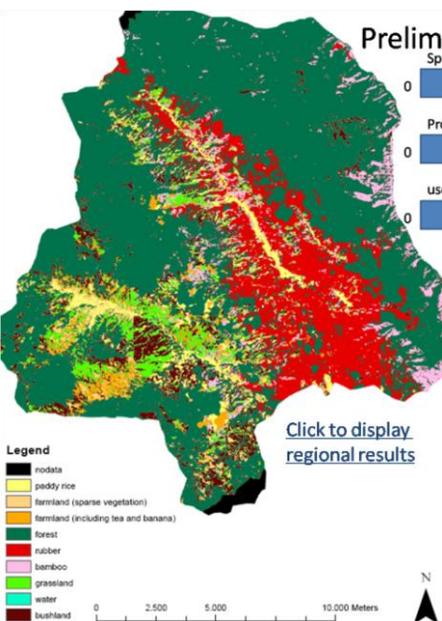
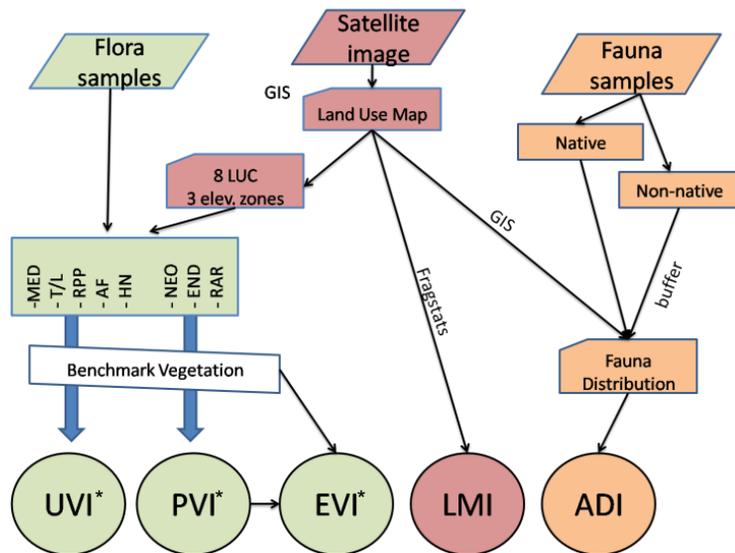
The **aim** of this tool is to provide scientists and policy makers who have to evaluate the consequences of scenarios of future land use with information on the current and likely future state of biodiversity in their research area or administrative region. This will enable them to assess the likely impacts of land use changes on structural and ecological diversity and allow for informed land use planning.



Nabban valley, Yunnan

**Concept**  
A combination of flora, fauna and landscape indices is derived from a benchmarking (BM) process with local close-to-nature forest communities. Species composition of the different land-use types is compared to the BMs in order to receive proportional information that can be summarized to assess biodiversity in the research area.

**Flora**  
Species inventories are classified concerning plant characteristics. Combined indices are calculated by comparison to BM forests with similar location preferences (e.g. elevation).  
e.g.  $PVI = (NEO + END + RAR) / 3$ ;  
 $NEO = 1 - (n \text{ (neophytes)} / n \text{ (total LUC)})$ ;  $END = n \text{ (endLUC)} / n \text{ (end BM)}$ ;  $RAR = n \text{ (rareLUC)} / n \text{ (rareBM)}$



**Landscape matrix**  
A land-use map derived from satellite imagery is analysed for patch density and size as well as contagon and interspersion. The results are compared with BM values and combined into the landscape matrix index (LMI).

**Fauna**  
Based on field surveys and movement pattern analysis an arthropod diversity map is created for target species groups (Carabidae, Cerambycidae, Apoidea) using GIS and buffering functions resulting in an arthropod diversity index (ADI) for the research area.

**Outlook**  
We expect this tool to be an adaptable aid for the comparative analysis of the effect of land-use scenarios on biodiversity. Current research is aimed at improving the steadiness of the indices by sensitivity and field data analyses.