Endangered tree species within vanilla plantation

Background: Vanilla plantations are able to harbour tree species as vanilla vine always need trees for support and for shade provision.

Statistical question: What is the correlation between endangered tree species and vanilla plantation landscape?

Mathematical question: And how the density of vanilla plant influence the density of endangered tree species?

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The R function:

clmm(tree conservation status ~ tree pressure + EN + land_use_type + (1|village_code), data = dat3, Hess = T)

Response variable: endangered tree species (CR, EN, VU, LC, DD, unknown)

predictor variables:

Villages (10 villages),

Land use types (VH, VM, VL, WF, FF, OGF),

Tree pressures (human damage, storm damage, undamaged)

The hypothesized outcome: Endangered tree species decreases with land use degradation gradient and land use history

Brief summary of the data:

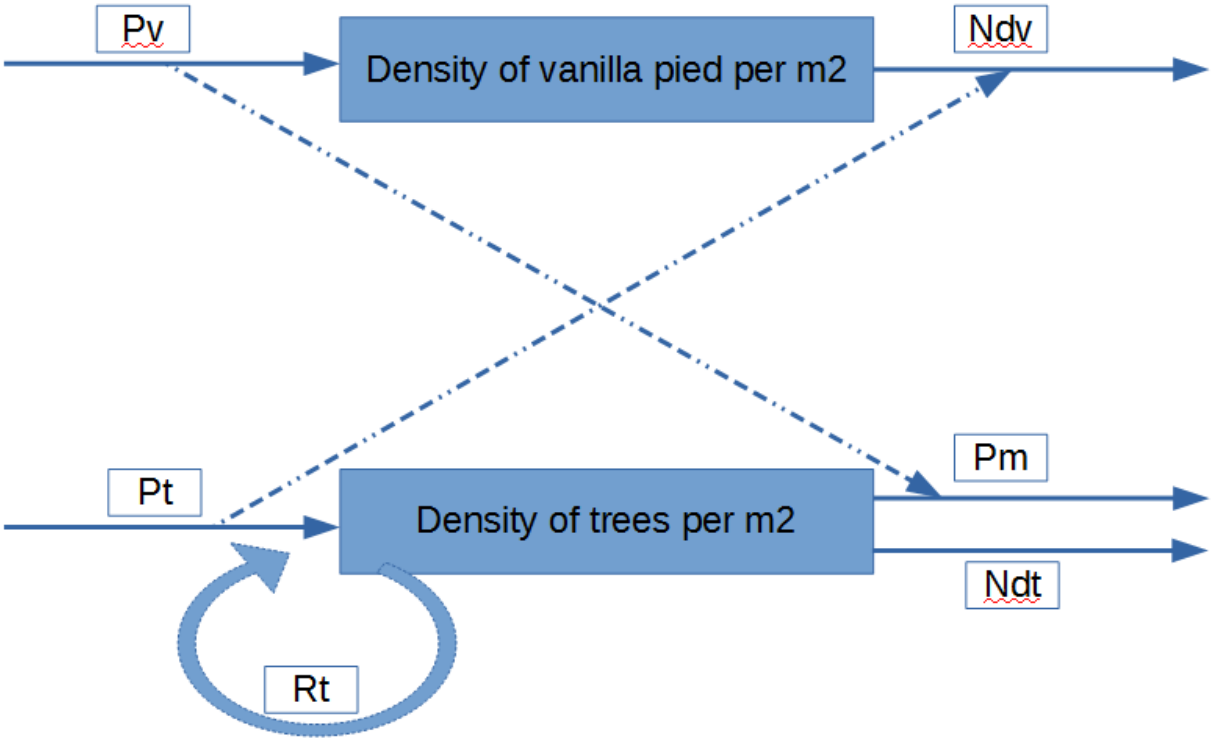
Endangered tree species, LUT, tree pressures

States:

High vanilla pied density
Medium vanilla pied density
Low vanilla pied density
High endangered tree density
Medium endangered tree density
Low endangered tree density

Processes:

Pv: Vanilla plantation
Ndv: Number of vanilla death
Pt: Number of tree planted
Rt: Number of tree regenerated
Pm: tree death by human pressures
Ndt: Nuber of tree naturally dead



Next steps

To add temperature and hygrometry and altitude as explanatory variable

To analyse the phylogenetic affinity of tree species and compare it with LUT

To estimate the Aboveground biomass of tree species