

# GLOBAL LITTER DECOMPOSITION STUDY

## TEA COMPOSITION

Ika Djukic

Contact: [ika.djukic@umweltbundesamt.at](mailto:ika.djukic@umweltbundesamt.at)

### INTRODUCTION

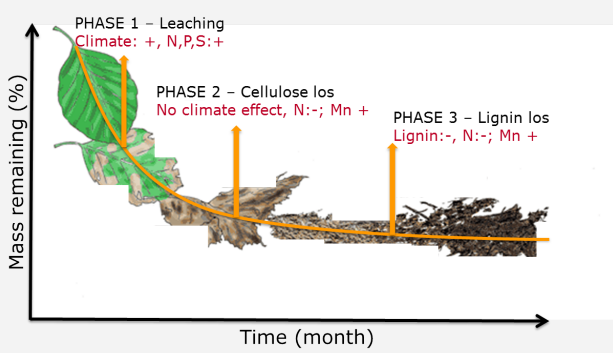


Fig.1 Litter decomposition model and rate-regulating factors and chemical changes during decomposition modified from Berg 2014 and Schächter 1988.

Litter decomposition drives nutrient turnover, soil formation and atmospheric composition but it is also risk to the climate change. In order to understand C losses and C storages during the litter decomposition long-term studies are needed. Already, diverse large-scale decomposition experiments were focusing on this fundamental soil process mostly based on site specific litter and methodology so that a comparison across different experiments and sites is challenging due to the lack of common protocols and standard matrices. Since

This study aims to investigate the long-term litter decomposition and its key drivers (Fig.1) at the present and predicted climate scenarios worldwide by using standardized substrate i.e. tea (Fig.2).



Fig.2 Tetrahedron-shaped synthetic tea bags of Lipton Green and Rooibos Tea used for the experiment.

### STATUS

Fig.3 Distribution of the sites involved in the TeaComposition initiative across the nine zonobiomes.

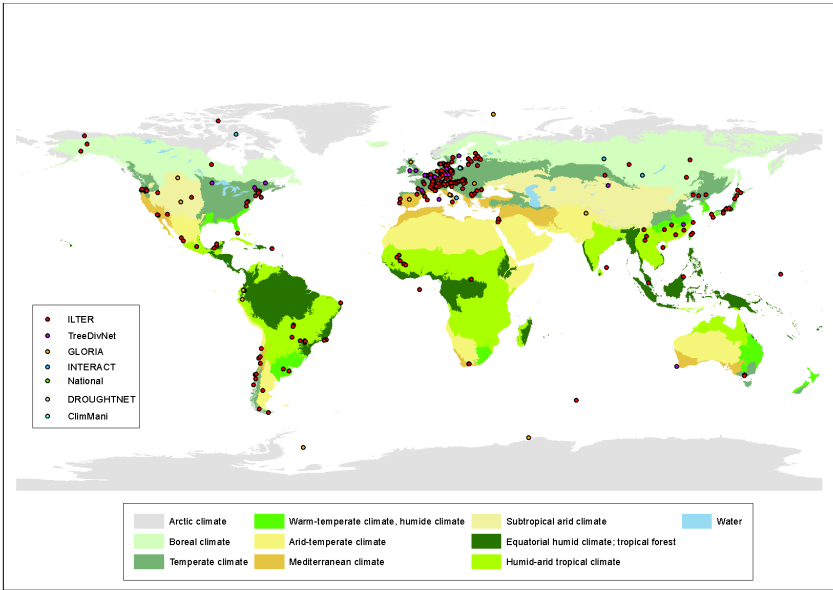


Table 1: Preliminary assignment of the involved sites to zonobiomes, ecosystem types as well as available drivers and response variables. Green versus white fields indicates available or non-available sites, respectively.

Biome		Ecosystems						Manipulation/drivers											Responses variables				
		Agricultur	Forest	Shrubland	Grassland	lake	Wetland	Ecotone	Precipitation	Temp	CO2	Hydrological change	Nutrients addition / eutrophication	Air pollution	Management	Biodiversity	Habitat fragmentation	Pests	Fire	Carbon	Water	Nutrients	Biodiversity
1	Arctic climate																						
2	Boreal climate																						
3	Temperate climate																						
4	Warm-temperate, humid climate																						
5	Arid-temperate climate																						
6	Mediterrane climate																						
7	Subtropical arid climate																						
8	Equatorial humid climate; tropical rain forest																						
9	Humid-arid tropical climate																						
	Water																						

existing

not existing

### NEXT STEPS

- ✓ “Fill the gap” that all important ecosystems, drivers or response variables are represented
- ✓ Data processing (i.e. completeness, plausibility's, analyses)
- ✓ Within ClimMani: developing research questions for data analyses and publication
- ✓ Setting up a scientific consortia

