

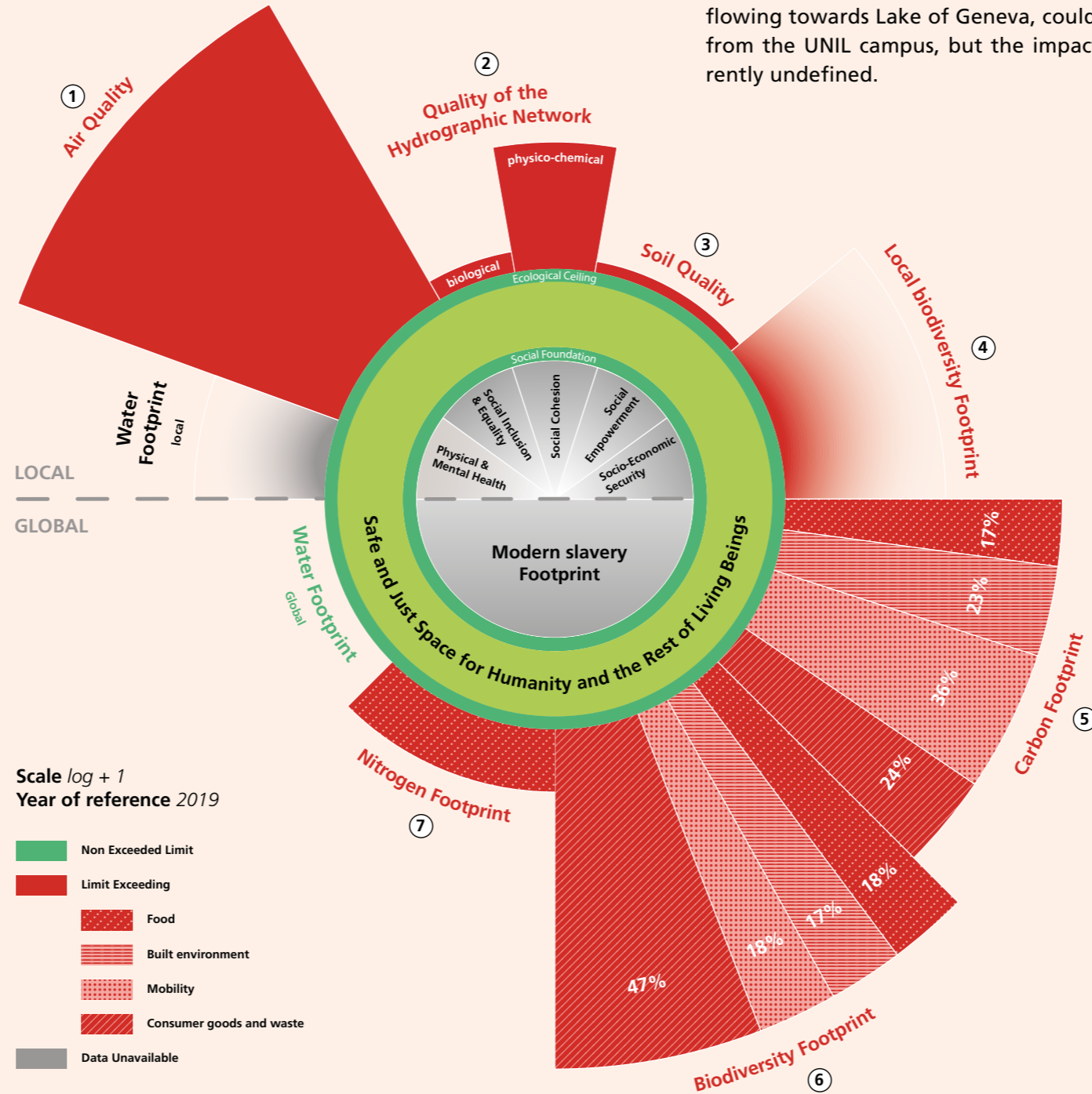
Executive Summary

The UNIL Doughnut is a diagnostic and navigation tool for the ecological transition of the University of Lausanne. Inspired by Kate Raworth's model (2012), it allows for the identification of local and global challenges facing our society and quantifying UNIL's impacts on them. The UNIL Doughnut demonstrates, among other things, that the university's activities (mobility, food, procurement of research and teaching materials, etc.) generate impacts that far exceed the ecological boundaries of the planet, known as "planetary boundaries."

The findings are unequivocal, and the UNIL Doughnut is a valuable tool that enables the University of Lausanne to continue its transformation, guided by a detailed diagnosis and target objectives for 2050 that align with scientific literature.

① Air Quality at UNIL

The main UNIL campus (Dorigny) is exposed to air pollution levels that exceed WHO recommended thresholds for 216 days per year. This is **36 times** higher than the limits recommended by the WHO.



⑦ Nitrogen Footprint

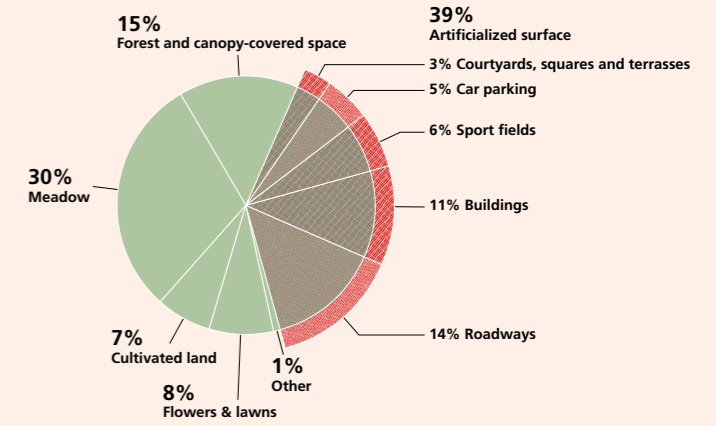
2/3 of UNIL's impacts on the disruption of the global nitrogen cycle are related to meat consumption. UNIL's nitrogen footprint must be reduced **by half** by 2050 to respect planetary boundaries.

② River and Lake Quality at UNIL

The river that runs through the main UNIL campus exhibits **poor** physico-chemical quality, attributed to its high concentrations of macronutrients and pesticides. Some of the chemical, plastics, or pharmaceutical pollutants present in the river, flowing towards Lake of Geneva, could originate from the UNIL campus, but the impacts are currently undefined.

③ Soil Quality at UNIL

39% of the UNIL campus is artificialized, with half of it associated with the mobility sector and the other half associated with buildings and constructed infrastructure.



④ Local biodiversity

The state of biodiversity on the UNIL campus, assessed on the population of nesting birds, should improve by 2050. The precise target value is unclear, but the measures to be implemented include increasing canopy cover, preserving and enhancing existing dry meadows, and creating wetland habitats, among others.

⑤ Impacts of UNIL on Climate Change

UNIL's activities generate approximately 40'000 metric tons of CO₂ equivalent per year, both directly and indirectly, actively contributing to global climate change. The transportation sector is the largest source of greenhouse gas emissions: air travel alone accounts for 20% of UNIL's CO₂ equivalent emissions. To contribute to the goals of the Paris Agreement, UNIL must reduce its greenhouse gas emissions by a **factor of 20** by 2050.

⑥ Impacts of UNIL on Global Biodiversity

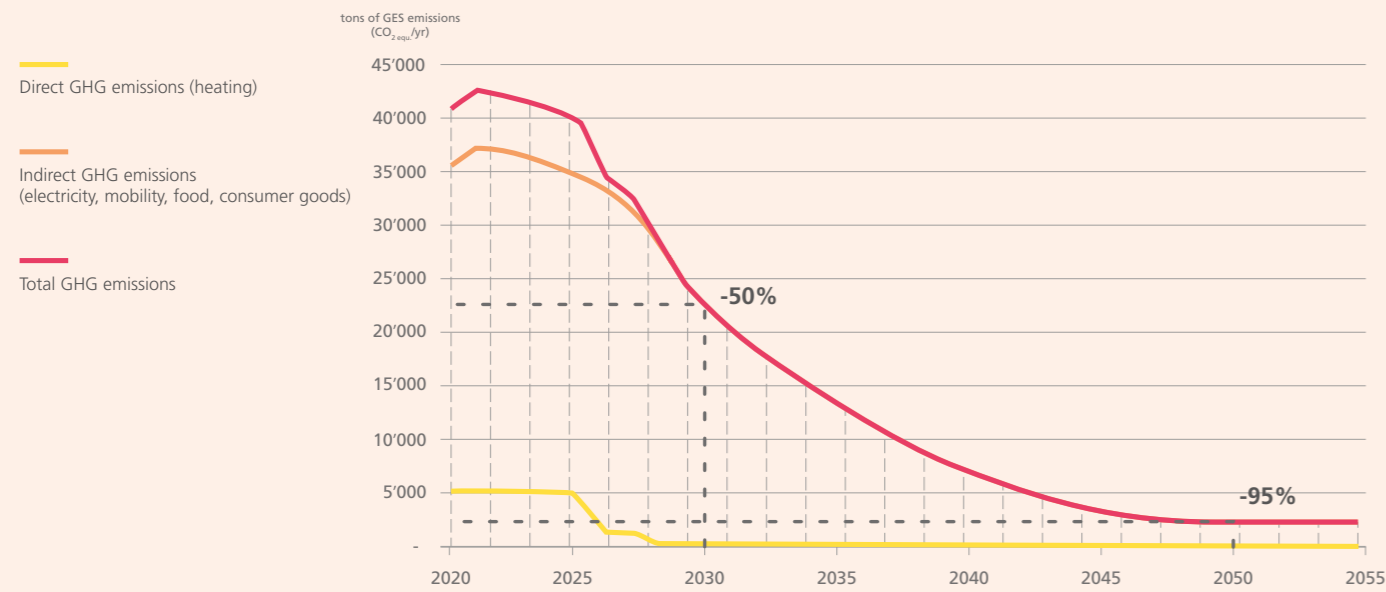
UNIL's activities, particularly the procurement of research and teaching materials, contribute to the widespread collapse of biodiversity through the extraction of resources and pollution generated during the production and transportation of products. To reduce its impacts below planetary boundaries, UNIL must reduce its footprint on global biodiversity by a **factor of 30**.

From assessment to navigation tool

The UNIL Donut paints a worrying picture. In order to stop destabilizing the Earth's ecosystem and guarantee decent living conditions for current and future populations, UNIL must divide its impacts on climate and biodiversity by 20 and 30, while also guaranteeing a minimum social foundation to its community.

The UNIL Donut sets target values for 2050, but pollution and degradation accumulate in the biosphere: in order to limit the extent of the consequences identified by the scientific literature, it is necessary to initiate a rapid decline of anthropogenic pressures. This notion of accumulation, year after year, is particularly well-documented in the case of climate change: the university thus has a certain remaining carbon budget – calculated between 2020 and 2100. If UNIL continues its current greenhouse gas emissions for several decades and then suddenly reaches carbon neutrality in 2049, it will have far exceeded the fair and equitable budget allocated to us.

In order to guide the profound transformation of UNIL – and the rest of society – that this challenge implies, a curve of greenhouse gas emissions reduction is drawn for UNIL, with two main deadlines compared to 2019 (2030 and 2050).



Projected greenhouse gas emissions reduction curve for the University of Lausanne between 2020 and 2050, aiming to contribute to the goals of the Paris Agreement. CCD (UNIL), 2023

Respecting this curve of greenhouse gas emissions reduction is necessary to participate in the international objectives signed by Switzerland and thus limit global warming to 1.5°C or 2°C by 2100. If this curve has been quantified for greenhouse gas emissions, its shape - providing information on the pace and scale of the efforts to be made - is extrapolable to other planetary boundaries exceeded by UNIL.