空間的な環境フットプリントの解明 / Exploring the Spatial Dimensions of Environmental Footprints

Integrating spatial data and trade models for sustainable futures:
Global insights into deforestation, biodiversity, and water footprints
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From Forests to Cities: Dissecting the Drivers of Deforestation in Indonesia
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Mapping Natural Product Biosynthetic Hotspots: Prioritizing Conservation for Drug Discovery Potential
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セッション概要 / Abstract: LCA and input-output analysis have advanced environmental footprint assessments at levels of products, sectors, and countries, but their spatial impacts remain poorly understood. This gap is especially critical for environmental impacts like biodiversity loss, water, and air pollution, where the specific location is a key factor. TNFD underscores the importance of identifying and assessing the locations of biodiversity loss caused by companies in their supply chains.

First presentation: Understanding environmental footprints is crucial to consider strategies to mitigate environmental conflicts. This talk will elucidate our developed methodologies to map deforestation, agriculture–conservation conflict, and overconsumed bluewater footprints, as well as the key findings of our research.

Second presentation: While many studies highlight the impact of deforestation in developing countries caused by consumption in developed countries, the deforestation due to domestic consumption within developing countries remains less understood. This study explores the contribution of local household consumption toward deforestation in Indonesia. Our outcomes disclose the scales and drivers of the contribution of regional consumption, incl. the gaps between producer and consumer areas, to the deforestation caused by crop cultivation.

Third presentation: Natural products (NPs) have been fundamental for promoting human health for millennia. However, their continued availability is currently threatened by biodiversity loss and ecosystem degradation. In order to strategically prioritize areas for conservation of NPs, we constructed a global diversity map for 1,434 woody angiosperm species, each represented by existing genomic or transcriptomic data. We curated a list of 166 enzymes essential for the biosynthesis and structural diversity of NPs, and identified geographical hotspots of NPs by averaging enzyme presence across the grids.