

Brief Description of the Living Lab and the challenge in South Kalimantan

A Living Lab is a real-life, user-centered research and innovation environment where diverse stakeholders collaborate to develop, test, and refine solutions to complex challenges. It brings together civil society, academia, companies, and government actors to co-create innovations in real-world settings. By prioritizing experimentation and contextual learning, Living Labs foster practical, sustainable outcomes tailored to local needs.

This particular Living Lab is led by Universitas Lambung Mangkurat and focuses on peatlands in South Kalimantan Province, Indonesia. Key partners include Van Hall Larenstein (VHL), local communities, companies as PT. Hasnur, and government stakeholders at both district and provincial levels. This Living Lab is part of SustainPalm project (WP3). The program aims at developing a more sustainable oil palm sector, by providing alternatives to oil palm there where it should not be cultivated (meaning on peat). The focus is on Batola district, South Kalimantan province.

South Kalimantan, located on the southeastern coast of Borneo, is a province rich in natural resources and cultural heritage. Its landscape is characterized by vast peatlands, lowland forests, and an extensive river network, making it both ecologically significant and economically strategic. The province has long relied on extractive industries such as coal mining and oil palm plantations, contributing to economic growth but also to environmental degradation, particularly through peatland drainage and deforestation. In recent years, South Kalimantan has become a focal point for sustainable development initiatives, including peatland restoration and green economy transitions. Its local government has shown increasing commitment to balancing economic needs with environmental stewardship, making it a promising site for Living Lab interventions that aim to co-create sustainable business models and test scalable alternatives to unsustainable land use practices.



Figure 1 Map of Indonesia, with South Kalimantan and Batola districts being highlighted.

The challenge

Peatlands, essential ecosystems for carbon storage and biodiversity, face severe threats due to their conversion for agriculture, particularly for oil palm and paper-pulp plantations. Oil palms require water tables between 40-70 cm below the surface, necessitating massive peatland drainage. This drainage triggers peatland subsidence and oxidation, releasing huge amounts of CO₂ into the atmosphere and contributing significantly to global greenhouse gas emissions. Additionally, drained peatlands become highly flammable, increasing the risk of catastrophic fires that harm millions through toxic haze and makes Indonesia a leading CO₂ emitting nation.

One of the major challenges in Indonesia's peatland management is balancing economic development with environmental sustainability. Maintaining high water tables is essential for preserving peatland ecosystems, preventing land subsidence, and reducing CO₂ emissions. However, many communities and industries continue to lower water tables to support conventional agriculture—particularly oil palm cultivation—leading to a direct conflict between economic interests and ecological preservation. Resolving this tension is critical to Indonesia's broader efforts to protect its peatlands and reduce its global carbon footprint. Within this context, we ask you to develop a **Sustainable Business Model Canvas** that aligns ecological goals—such as maintaining carbon stocks and biodiversity—with the socio-economic needs of local stakeholders. Exploring viable alternatives to oil palm that are both economically attractive and environmentally sound will be central to this process. The ultimate aim is to pilot and scale this model through the Living Lab framework.

Involved coaches

- Pak Arief Budiman (ULM);
- Pak Alan Dwi (ULM)
- Prof. Yudi Firmanul Arifin (ULM)
- Peter van der Meer (VHL)
- Idsert Jelsma (VHL)

For more details on this Living Lab contact: arief.budiman@ulm.ac.id or idsert.jelsma@hvhl.nl

Relevant sources

- www.sustainpalm.org
- <https://www.agroberichtenbuitenland.nl/actueel/nieuws/2024/10/3/annual-meeting-sustainpalm-program-10-11-july-2024-jogjakarta-indonesia>



Figure 2 Example of workshop in which the local community is trained on using purun, a product from the peatlands, to develop baskets and bags.