\*\*\* Agrarian Biohubs for drop-in marine biofuels: A techno-economic and environmental assessment for Spain, Colombia, and Namibia using field residues\*\*\*

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\*\*\*General Introduction\*\*\*

This dataset contains data collected during simulations and assessments as part of Sivaramakrishnan Chandrasekaran's PhD project. The data was collected from 2021-2024.

It is being made public both to act as supplementary data for publications and the PhD thesis of Sivaramakrishnan Chandrasekaran, and in order for other researchers to use this data in their own work.

The data in this dataset were collected in the section Biotechnology and Society of the Delft University of Technology - Faculty of Applied Sciences, between June 2022 and December 2024.

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\*\*\*Purpose of the Simulation\*\*\*

The purpose of these Aspen simulations was to develop process models of the HTL process using Olive tree pruning in Spain, Coffee pulp in Colombia, and Acacia in Namibia. The Process simulations generated the mass and energy balances for steady-state operating conditions obtained from experimental data for the HTL process from the Literature. The mass and energy balances were further used to perform techno-economic analysis, as mentioned in “.xlsx” files. The characterisation factors for the e-LCA have been added as an “.xlsx” file for each case study.

\*\*\*Process simulations, Techno-economic analysis, and environmental assessment\*\*\*

All simulations were performed in Aspen Plus v12.0 software. The techno-economic analysis was performed in MS Excel. The characterisation factors were obtained from Simapro v9.3.4 with the Ecoinvent database.

\*\*\*Description of the data in this data set\*\*\*

The data included in this dataset has been organised per case study. The files follow the nomenclature system: Case study location folder name\_HTL feedstock type\_status of the Aspen file\_date recently modified\_processing capacity, TEA\_case study location feedstock\_status and Activities for e-LCA characterisation factors.