

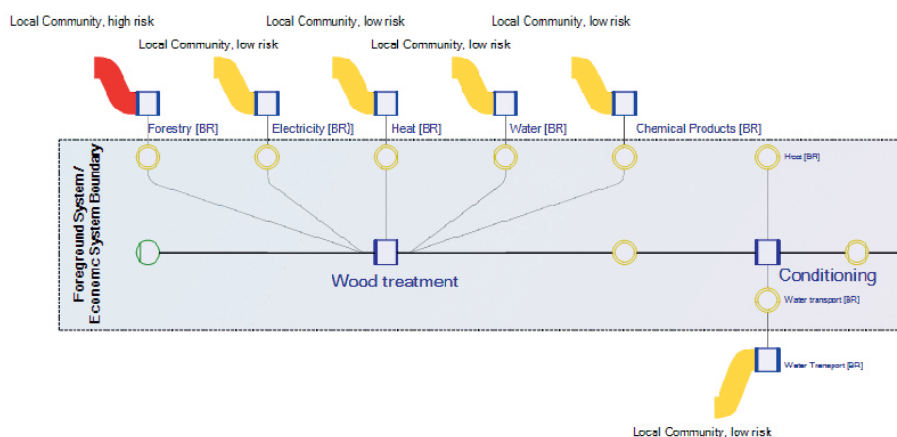
# EXPLOITABLE FOREGROUND

Development of 2nd Generation Biorefineries - Production of Dicarboxylic Acids and Bio-based Polymers Derived Thereof

## Integrated Life-Cycle-Sustainability-Assessment

### Explanation and Purpose

Life-Cycle-Sustainability-Assessment (LCSA) of product systems are currently performed in three separate assessments – environmental, economic and social. An approach is being developed to perform the LCSA in an integrated model (as shown in the following figure). All the information is gathered in the model to ensure easy comparison and assessment of the full sustainability impact of a product system. The integration of social data and the display of social results is the biggest challenge for the approach. It has been realised using the social hot spot database and Sankey diagrams.



bioREFINE-2G

#### Contact for Exploitable Result

ifu Hamburg GmbH, Germany  
Michael Bruns  
[m.bruns@ifu.com](mailto:m.bruns@ifu.com)

#### Project Coordination

The Novo Nordisk Foundation Center for Biosustainability, DTU, Denmark  
Dr. Irina Borodina  
[irbo@biosustain.dtu.dk](mailto:irbo@biosustain.dtu.dk)

#### Project Dissemination

WIP Renewable Energies, Germany  
Dr. Rainer Janssen  
[rainer.janssen@wip-munich.de](mailto:rainer.janssen@wip-munich.de)

[www.biorefine2g.eu](http://www.biorefine2g.eu)

### Exploitation Strategy

The integrated approach will be tested on further case samples. Furthermore, the social hot spot database, necessary for the LCSA, will be integrated into the standard software. The concept of the integrated model will be communicated to the relevant scientific community via conferences.

### IPR Measures

No trademark application is planned, but the software feature will be commercialised by ifu Hamburg GmbH together with interested companies.

### Further Research

The current approach is on a conceptual level and not implemented into the standard software. The social hot spot database needs to be harmonised with the existing data format of the Umberto software.

### Impact of Exploitation

Combination of three Sustainability Assessment types in one Model increases the efficiency of analyses compared to parallel implementation of the assessments.

