

# Dendromass4Europe.eu



Social Life Cycle Assessment: a forecasting approach to assess the socio-economic improvement potential during the R&D phase. A case study on agricultural wood-based innovations

Daniela FÜRTNER<sup>1\*</sup>, Franziska HESSER<sup>1</sup>

### Introduction

- Early stage Social Life Cycle Assessment (SLCA) provides several benefits in the R&D of new products or production processes.
- Negative social implications can be identified and consequently be eliminated or improved in the course of product development.
- Positive social effects can be also identified and may be strengthened.
- Scarcity of data in these early stages is limiting the results and makes SLCA challenging.
- A 4-tier SLCA in various depths supported by a continuous feedback loop throughout the R&D phase is explored to address the precautionary principle.
- Objective of the study is to apply the 4-tier SLCA on a wood-based value chain during R&D to assess socio-economic impacts on four levels, describing leveraging effects as basis for decision-making.

#### **Assessment Framework** 1. Goal and Scope 2. Inventory Analysis Qualitative Process and Stakeholder Mapping 3. Impact Assessment Set System Boundaries **Initial Data** 4. Interpretation Select Impact Categories Characterisation of Select Indicators Aggregation of Results Scenario Analysis Including Value Added Communication of Scenario Generation

# Method

Prioritization of social issues and indicators (Fuertner et al. 2021)

2<sup>nd</sup> Level

Level

Country- and sector-specific secondary data assessment

3<sup>rd</sup> Level Corporate data of production companies for primary data assessment

4<sup>th</sup> Level

Integrating stakeholderspecific data for a consequential assessment

## Case Study

**S0: Short Rotation Coppice** Dendromass (AGRI/SK)

Poplar Logs

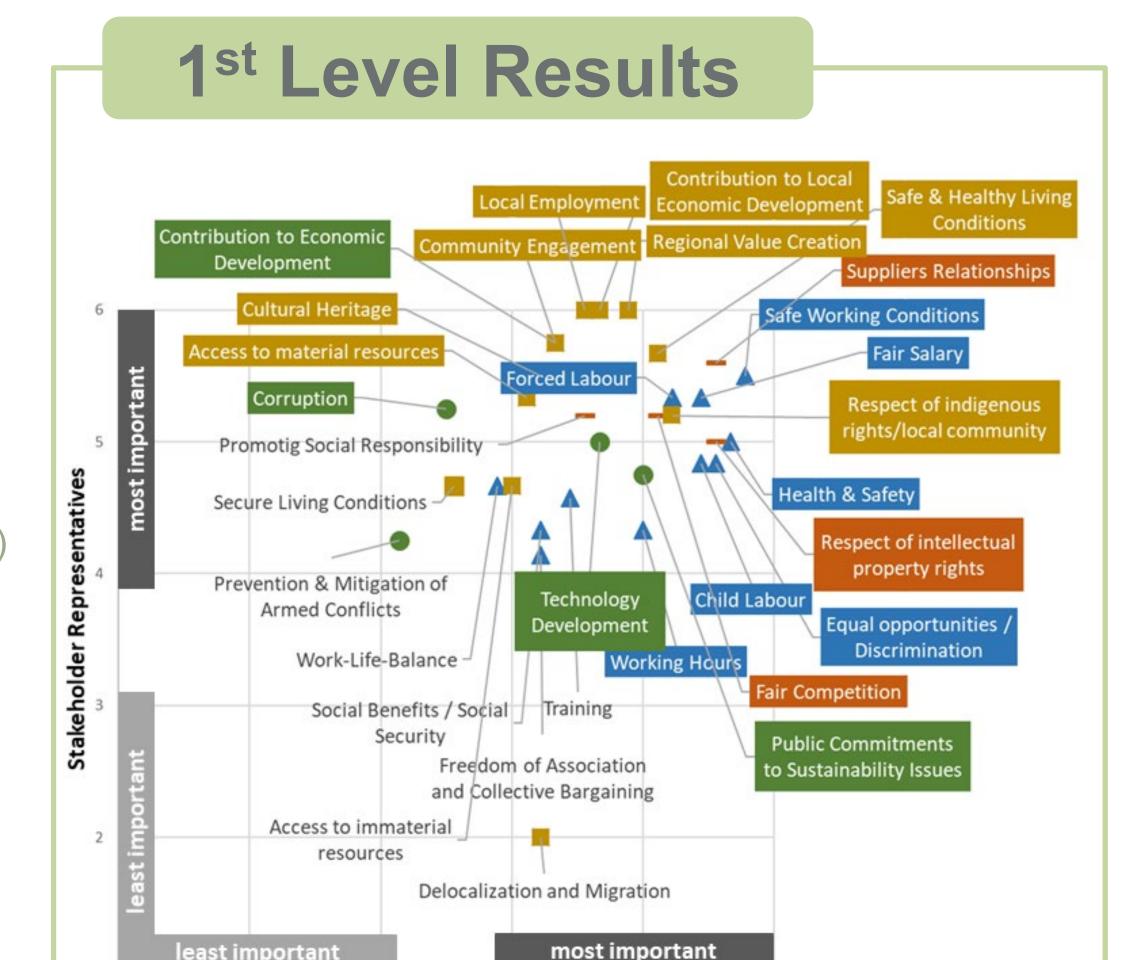
S1: Lightweight Boards (WO/SK)

Bark/Chips

S2: Eco-fungicidal moulded fibre parts (PP/PL)

S3 + 4: Wood Plastic Composite

Boards/Granulate (CH/SK) AGRI= Agriculture | WO = Wood Industry | PP = Pulp and Paper Industry | CH = Chemical Industry | SK = Slovakia | PL = Poland



Prioritization of social aspects by stakeholder Surveys (1 = not important at all -6 = very important)

#### 2<sup>nd</sup> Level Results: ,Workers' DALYs occupational risks ITUC Global Rights Index Fatal Accidents Vulnerability to modern Non-fatal Accidents Slavery Unemployment with Basic Government Response Rating to modern Slavery Education Unemployment in Roma Percentage of Forced Labor Community (Slovakia) Unemployment with Global Slavery Index Advanced Education Realization of Children's Global Gender Gap Index Rights Index Sector Average Wage lower Average usual working hours than Country's Living Wage Global Employee Sector Average Wage lower

Fair Wage Potential

### Outlook

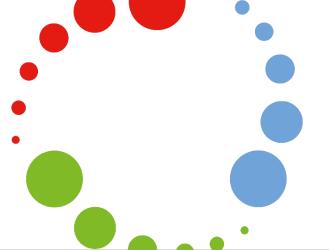
Different companies within the same sector or country can cause diverse impacts – the consideration of different levels in SLCA enables more accuracy.

Process Experts (D4EU Partner)

Quality and informational value of the results depends on the depth of the data basis (4 levels).

In this study, the following levers for minimizing the social risk potential could be identified so far:

- Creating job opportunities for people from Roma communities and less educated people
- Implementing measures to prevent accidents in agriculture
- Promotion of the equality of men and women in the workforce
- Giving priority to fair salaries especially in the agricultural context



<sup>1</sup> Wood K plus - Kompetenzzentrum Holz GmbH, Altenberger Straße 69, 4040 Linz, Austria | \* Presenter

info@dendromass4europe.eu

Engagement Index

Project Coordination: Technische Universität Dresden Forest Policy and Forest Resource Economics Pienner Straße 23 D-01735 Tharandt



than Country's Minimum...

\_\_\_\_S0 \_\_\_S1 \_\_\_S2 \_\_\_S3+S4







www.dendromass4europe.eu