



TRansition paths to sUustainable
legume-based systems in Europe

Pathfinder

**Decision support system for assessment and
management of sustainability of legume agri-food
chains**

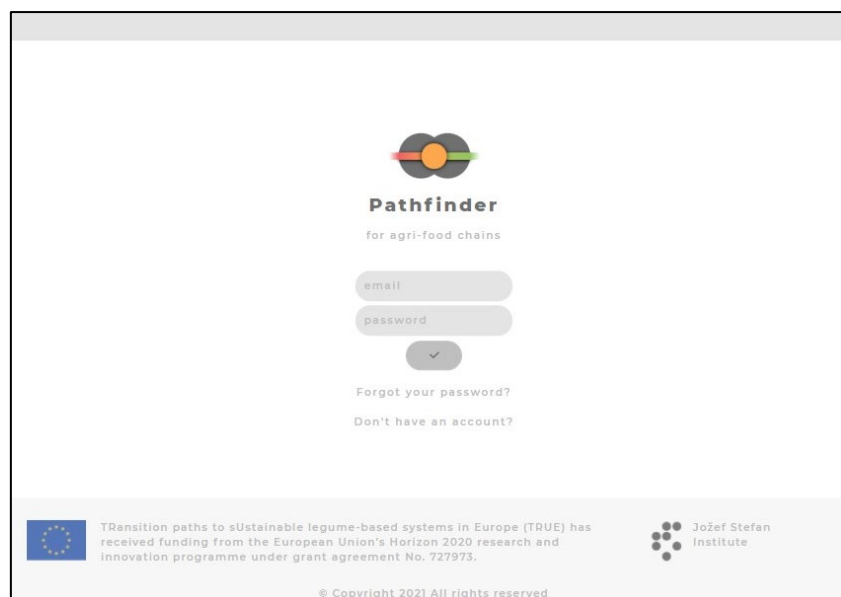
User Manual


Introduction

The **PathFinder** (<http://pathfinder.ijs.si/>) is a Decision Support System (DSS) for the assessment and management of sustainability of legume agri-food value chains and has been developed within the Horizon 2020 TRUE project (<https://www.true-project.eu/>). It assesses the sustainability according to the 'three pillars of sustainability': **environmental**, **economic**, and **social**, as well as their intersections: **equitability**, **bearability** and **viability**. The system provides partial sustainability assessments for individual links in the agri-food chain (production, processing, transport and distribution, market and retailers, and consumers) and individual sustainability pillars, as well as an overall sustainability assessment and management of the whole chain. It enables the users to modify the input variables, so as to ascertain optimal combination of input variables of the individual links in the agri-food chain that lead to satisfactory partial or overall sustainability. It also offers suggestions for changes in certain areas of the agri-food chain to improve its overall or partial sustainability.

The DSS is developed primarily for policy makers and researchers, who are responsible for development of sustainability strategies, polices and regulations towards reaching the Sustainable Development Goals 2030. The PathFinder could be used also as an education tool that allows students to learn about those factors, and their functional relationships, which determine the sustainability of agri-food value chains.

To start using the PathFinder, the users must first register and create their own account. This enables them a personalised experience of the use of the DSS, as well as privacy security regarding the input data and the results obtained. By registering, the user can revisit the input data and the obtained results and work on them continuously for a longer period, without having to input the data repeatedly.






Pathfinder
for agri-food chains

email
password

✓

[Forgot your password?](#)
[Don't have an account?](#)

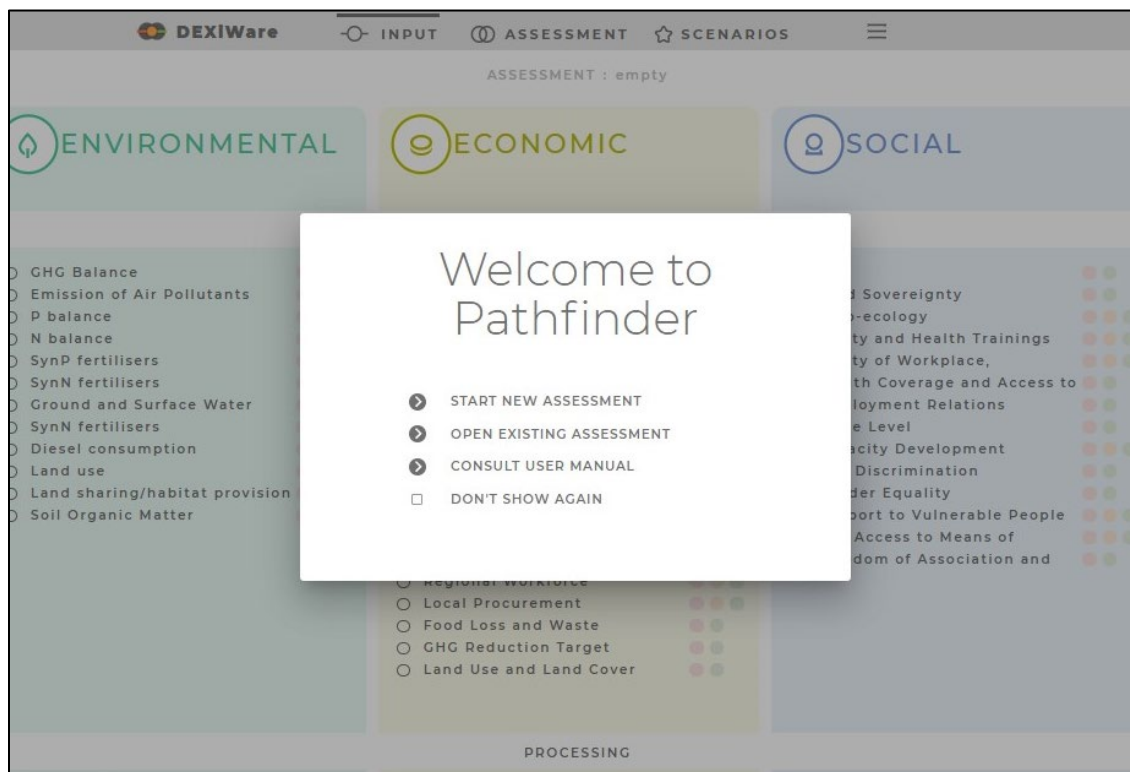
 Transition paths to sUustainable legume-based systems in Europe (TRUE) has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 727973.

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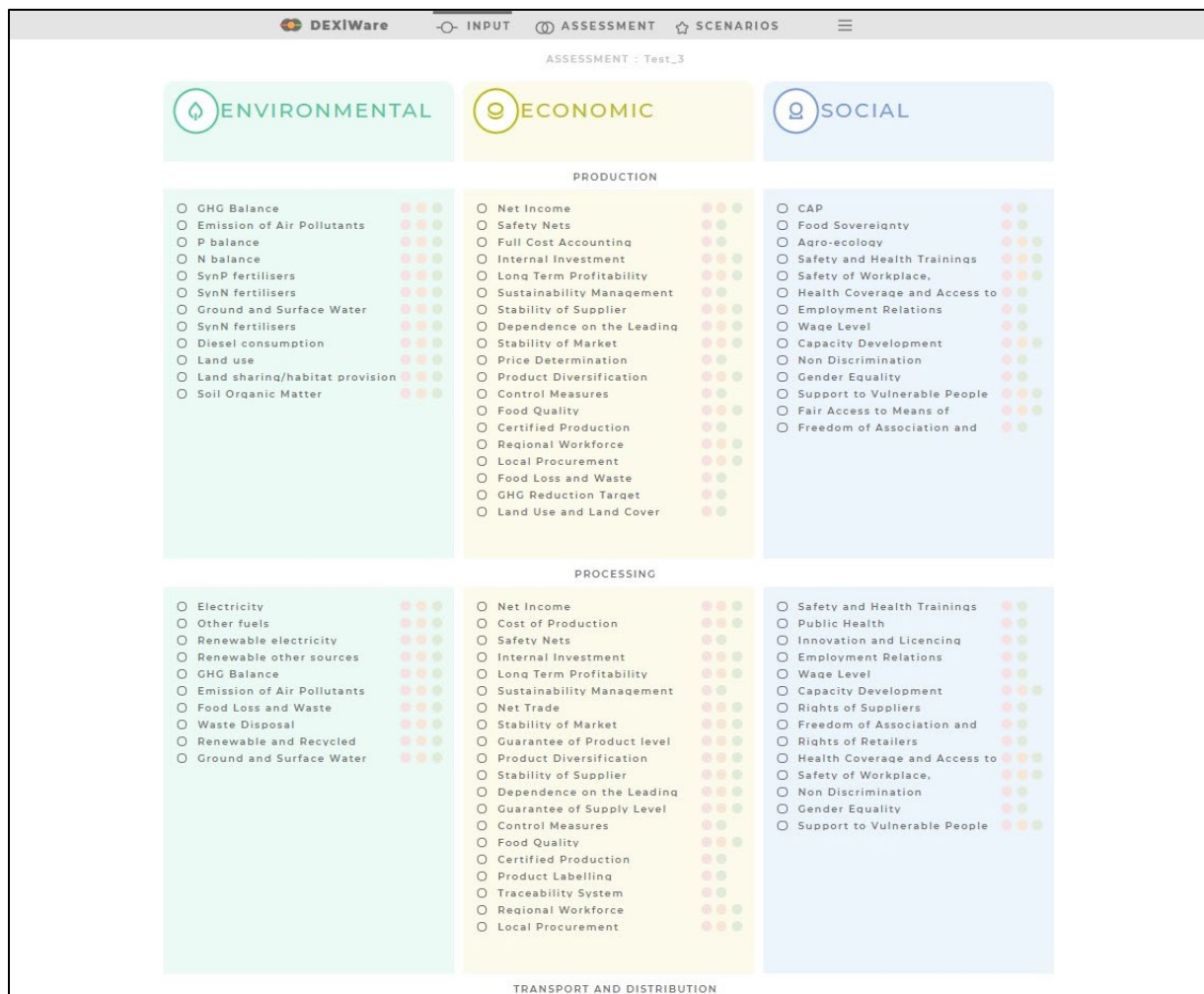
1. Starting the PathFinder

When the user starts the PathFinder, a window opens where a choice should be made about whether to create a new assessment, open a previously created assessment or consult the user manual for instructions about the use of the DSS. If the user has already used the system before, they can revisit the data and results of their previous assessments.



2. Input data

The next step when using the PathFinder is to insert data about the links in the agri-food chain for the three pillars of sustainability: **environmental**, **social**, and **economic**. They represent three categories of input data, which are represented in different sections with different colours. Each of these three categories of input data are further divided into subcategories, representing the links in the agri-food chain (from production to consumers). By clicking on one of the categories (pillars), the user will be guided through the list of input data to insert their values and populate the DSS with the required data for assessment of the environmental, economic, and social sustainability pillars in the agri-food chain.



The screenshot displays the 'INPUT' section of the DEXIWare software. The interface is organized into three main pillars: ENVIRONMENTAL (green), ECONOMIC (yellow), and SOCIAL (blue). Each pillar is further divided into subcategories: PRODUCTION and PROCESSING. The 'TRANSPORT AND DISTRIBUTION' section is partially visible at the bottom. Each input item has a radio button and three colored circles (red, yellow, green) indicating its status or priority.

Pillar	Subcategory	Item	Red	Yellow	Green		
ENVIRONMENTAL	PRODUCTION	GHG Balance	●	●	●		
		Emission of Air Pollutants	●	●	●		
		P balance	●	●	●		
		N balance	●	●	●		
		SynP fertilisers	●	●	●		
		SynN fertilisers	●	●	●		
		Ground and Surface Water	●	●	●		
		SynN fertilisers	●	●	●		
		Diesel consumption	●	●	●		
		Land use	●	●	●		
		Land sharing/habitat provision	●	●	●		
		Soil Organic Matter	●	●	●		
		ECONOMIC	PRODUCTION	Net Income	●	●	●
				Safety Nets	●	●	●
				Full Cost Accounting	●	●	●
Internal Investment	●			●	●		
Long Term Profitability	●			●	●		
Sustainability Management	●			●	●		
Stability of Supplier	●			●	●		
Dependence on the Leading	●			●	●		
Stability of Market	●			●	●		
Price Determination	●			●	●		
Product Diversification	●			●	●		
Control Measures	●			●	●		
Food Quality	●			●	●		
Certified Production	●			●	●		
Regional Workforce	●			●	●		
ECONOMIC	PROCESSING	Net Income	●	●	●		
		Cost of Production	●	●	●		
		Safety Nets	●	●	●		
		Internal Investment	●	●	●		
		Long Term Profitability	●	●	●		
		Sustainability Management	●	●	●		
		Net Trade	●	●	●		
		Stability of Market	●	●	●		
		Guarantee of Product level	●	●	●		
		Product Diversification	●	●	●		
		Stability of Supplier	●	●	●		
		Dependence on the Leading	●	●	●		
		Guarantee of Supply Level	●	●	●		
		Control Measures	●	●	●		
		Food Quality	●	●	●		
Certified Production	●	●	●				
SOCIAL	PRODUCTION	CAP	●	●	●		
		Food Sovereignty	●	●	●		
		Agro-ecology	●	●	●		
		Safety and Health Trainings	●	●	●		
		Safety of Workplace	●	●	●		
		Health Coverage and Access to	●	●	●		
		Employment Relations	●	●	●		
		Wage Level	●	●	●		
		Capacity Development	●	●	●		
		Non Discrimination	●	●	●		
		Gender Equality	●	●	●		
		Support to Vulnerable People	●	●	●		
		Fair Access to Means of	●	●	●		
		Freedom of Association and	●	●	●		
		SOCIAL	PROCESSING	Safety and Health Trainings	●	●	●
Public Health	●			●	●		
Innovation and Licencing	●			●	●		
Employment Relations	●			●	●		
Wage Level	●			●	●		
Capacity Development	●			●	●		
Rights of Suppliers	●			●	●		
Freedom of Association and	●			●	●		
Rights of Retailers	●			●	●		
Health Coverage and Access to	●			●	●		
Safety of Workplace	●			●	●		
Non Discrimination	●			●	●		
Gender Equality	●			●	●		
Support to Vulnerable People	●			●	●		

3. Inserting data

The input data takes the form of qualitative indicators for which the user chooses one of its qualitative values (*e.g.*, low, medium, high). Both the indicator and its values are provided with short and understandable descriptions that help the user to choose the right input values. By clicking on one of the input data categories (pillars), a page will open, where the first indicator from the list of input data for the chosen category (pillar) will be shown.

1

This part represents the subcategories of input data (*e.g.*, Production) within the selected category (*e.g.*, Environmental). The dots on the horizontal line next to the subcategory title navigate the user through the list of indicators, showing how many indicators have already been inserted and for how many indicators are there left. A dot coloured in grey represents an indicator for which a value has been inserted. A white dot represents an indicator, for which a value has not been inserted yet. If the user scrolls over a dot, the name of the indicator is shown. The user can “jump” to an indicator by clicking on a dot representing the indicator.

2

A description of the indicator.

3

This is the part where the user chooses one among the proposed and described qualitative values for the chosen indicator that belongs to the production system that is being evaluated.

4

Navigation buttons to the next or previous indicator.

DEXIWare
INPUT
ASSESSMENT
SCENARIOS

ASSESSMENT : Test_3 - PILLAR : ENVIRONMENTAL

ENVIRONMENTAL

ECONOMIC

SOCIAL

1

- PRODUCTION
- PROCESSING
- TRANSPORT AND DISTRIBUTION
- MARKETS AND RETAILERS
- CONSUMERS

Ground and Surface Water Withdrawals

2

THEME Abiotic
SUB-THEME Resource depletion
SUB-SUB-THEME Resource use
LINK Production (En1)

DESCRIPTION

Globally, agriculture is responsible for over 70% of freshwater abstraction, often at rates in excess of natural recharge, leading to lowering of water tables and representing a fundamentally unsustainable practice. This challenge is likely to be exacerbated by climate change. However, data on water abstraction are often not collated, and here we propose a simple indicator of potential water stress based on irrigation practice. Where no irrigation is needed, water stress induced by cropping is assumed to be minor. Where irrigation is required, practices are differentiated into “advanced” methods that maximise water use efficiency, such as drip irrigation and deficit (control) irrigation, and less efficient (basic) irrigation methods such as flood irrigation and sprinkler irrigation.

3

METRICS

Type of irrigation practice implemented for the crop (Antonopoulos et al. 2014).

RATINGS

<input type="radio"/>	Sprinkler/flood irrigation employed	High
<input type="radio"/>	Advanced irrigation employed (e.g. drip irrigation, deficit...)	Medium
<input type="radio"/>	None	Low

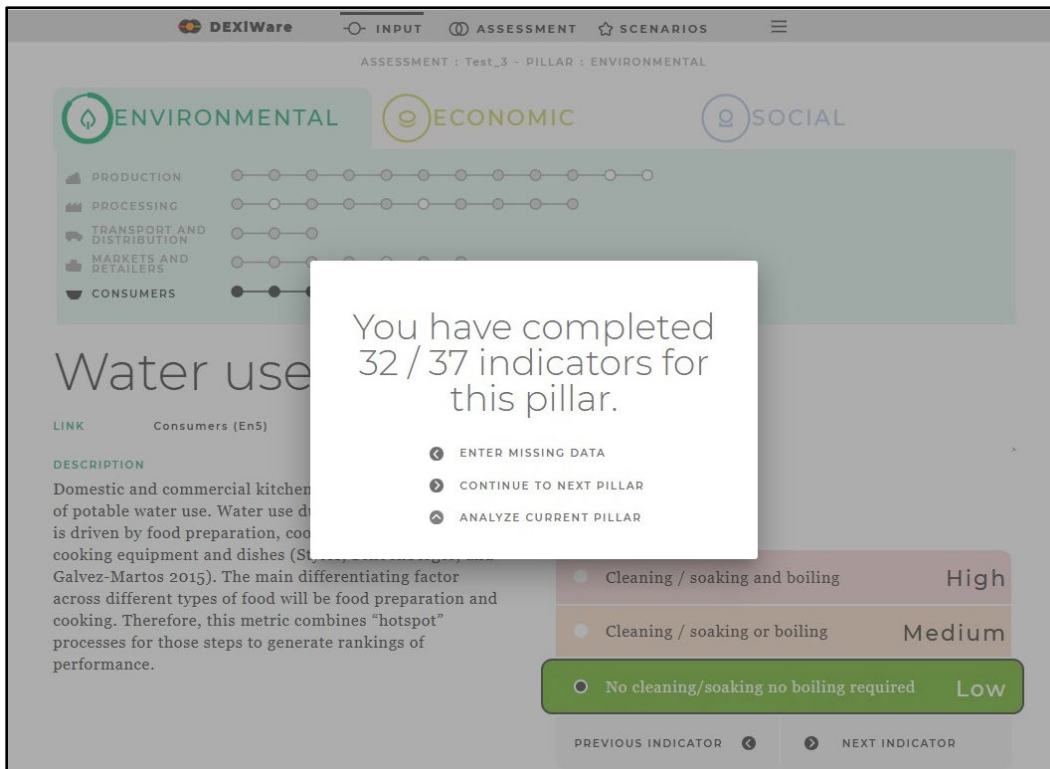
4

PREVIOUS INDICATOR ← → NEXT INDICATOR

Transition paths to sustainable legume-based systems in Europe (TRUE) has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 727973.

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After coming to an end inserting data for a category (pillar), a window opens informing the user whether all the required data were entered (note that if the user does not have all required data available, he/she can leave the indicator empty). If all data were entered, the system informs you about the transition to the next pillar. However, the user is advised to enter as much data as possible. The tool assesses each pillar of sustainability for each link in the agri-food chain separately, so data for only one of these aspects/categories can be inserted to get an assessment for that aspect/category only.



The screenshot shows the DEXiWare software interface. At the top, there are navigation tabs: INPUT, ASSESSMENT, and SCENARIOS. The current view is 'ASSESSMENT: Test_3 - PILLAR: ENVIRONMENTAL'. Below this, there are three main pillars: ENVIRONMENTAL (highlighted in green), ECONOMIC, and SOCIAL. Under the ENVIRONMENTAL pillar, there are five sub-categories: PRODUCTION, PROCESSING, TRANSPORT AND DISTRIBUTION, MARKETS AND RETAILERS, and CONSUMERS. A progress bar shows that 32 out of 37 indicators for this pillar have been completed. A white pop-up window in the center of the screen displays the message: 'You have completed 32 / 37 indicators for this pillar.' Below this message are three options: 'ENTER MISSING DATA', 'CONTINUE TO NEXT PILLAR', and 'ANALYZE CURRENT PILLAR'. The 'ANALYZE CURRENT PILLAR' option is selected. In the background, the 'Water use' indicator for the 'Consumers (En5)' link is visible. It includes a description and a table of assessment levels:

<input type="radio"/>	Cleaning / soaking and boiling	High
<input type="radio"/>	Cleaning / soaking or boiling	Medium
<input checked="" type="radio"/>	No cleaning/soaking no boiling required	Low

At the bottom of the interface, there are buttons for 'PREVIOUS INDICATOR' and 'NEXT INDICATOR'.

By clicking on **INPUT** in the upper menu bar, the page with the list of all indicators for all categories of input data will be shown, where the user can check which indicators have already been inserted (coloured dot next to the indicator) and which are still empty. In this way, the user can have an additional overview of the input data before running the analyses.

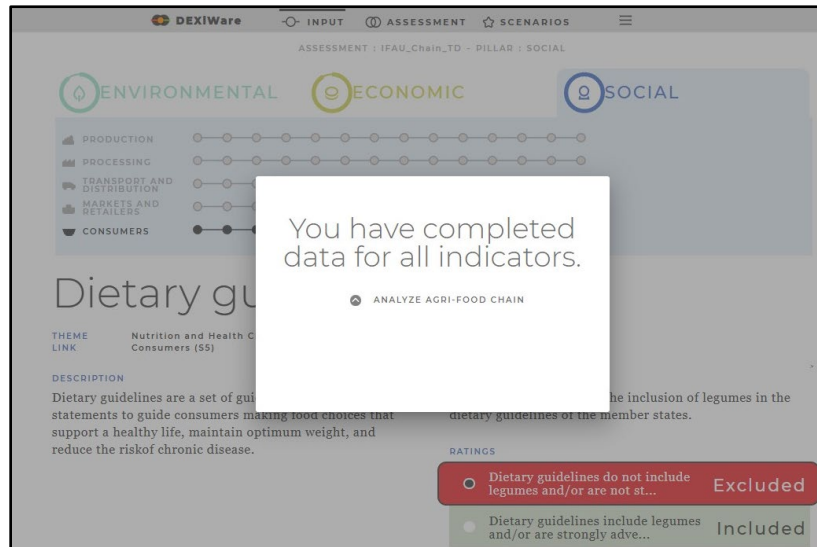


The screenshot shows the DEXiWare software interface with the 'INPUT' menu selected. The assessment is titled 'ASSESSMENT: IFAU_Chain_TD'. The interface is organized into three main columns: ENVIRONMENTAL (green), ECONOMIC (yellow), and SOCIAL (blue). Each column contains a list of indicators, with colored dots (red, orange, green) indicating their status. The indicators are grouped into 'PRODUCTION' and 'PROCESSING' sections.

Category	Sub-Category	Indicator	Status		
ENVIRONMENTAL	PRODUCTION	GHG Balance	Green		
		Emission of Air Pollutants	Green		
		P balance	Green		
		N balance	Green		
		SynP fertilisers	Green		
		SynN fertilisers	Green		
		Ground and Surface Water	Green		
		SynN fertilisers	Green		
		SynN fertilisers	Green		
		Diesel consumption	Green		
		Land use	Green		
		Land sharing/habitat provision	Red		
		Soil Organic Matter	Green		
		ECONOMIC	PRODUCTION	Net Income	Green
				Safety Nets	Green
Full Cost Accounting	Green				
Internal Investment	Green				
Long Term Profitability	Green				
Sustainability Management	Green				
Stability of Supplier	Green				
Dependence on the Leading	Green				
Stability of Market	Green				
Price Determination	Green				
Product Diversification	Green				
Control Measures	Green				
Food Quality	Green				
Certified Production	Green				
Regional Workforce	Green				
Local Procurement	Green				
Food Loss and Waste	Green				
GHG Reduction Target	Green				
Land Use and Land Cover	Green				
SOCIAL	PRODUCTION	CAP	Green		
		Food Sovereignty	Green		
		Agro-ecology	Green		
		Safety and Health Trainings	Green		
		Safety of Workplace	Green		
		Health Coverage and Access to	Green		
		Employment Relations	Green		
		Wage Level	Green		
		Capacity Development	Green		
		Non Discrimination	Green		
		Gender Equality	Green		
		Support to Vulnerable People	Green		
		Fair Access to Means of	Green		
		Freedom of Association and	Green		
		ENVIRONMENTAL	PROCESSING	Electricity	Green
Other fuels	Green				
Renewable electricity	Green				
Renewable other sources	Green				
GHG Balance	Green				
Emission of Air Pollutants	Green				
Food Loss and Waste	Green				
Waste Disposal	Green				
Renewable and Recycled	Green				
Ground and Surface Water	Green				
ECONOMIC	PROCESSING			Net Income	Green
				Cost of Production	Green
				Safety Nets	Green
				Internal Investment	Green
				Long Term Profitability	Green
		Sustainability Management	Green		
		Net Trade	Green		
		Stability of Market	Green		
		Guarantee of Product level	Green		
		Product Diversification	Green		
		Stability of Supplier	Green		
		Dependence on the Leading	Green		
		Guarantee of Supply Level	Green		
		Control Measures	Green		
		Food Quality	Green		
Certified Production	Green				
Product Labelling	Green				
Traceability System	Green				
Regional Workforce	Green				
Local Procurement	Green				
SOCIAL	PROCESSING	Safety and Health Trainings	Green		
		Public Health	Green		
		Innovation and Licencing	Green		
		Employment Relations	Green		
		Wage Level	Green		
		Capacity Development	Green		
		Rights of Suppliers	Green		
		Freedom of Association and	Green		
		Rights of Retailers	Green		
		Health Coverage and Access to	Green		
		Safety of Workplace	Green		
		Non Discrimination	Green		
		Gender Equality	Green		
		Support to Vulnerable People	Green		

4. Assessment

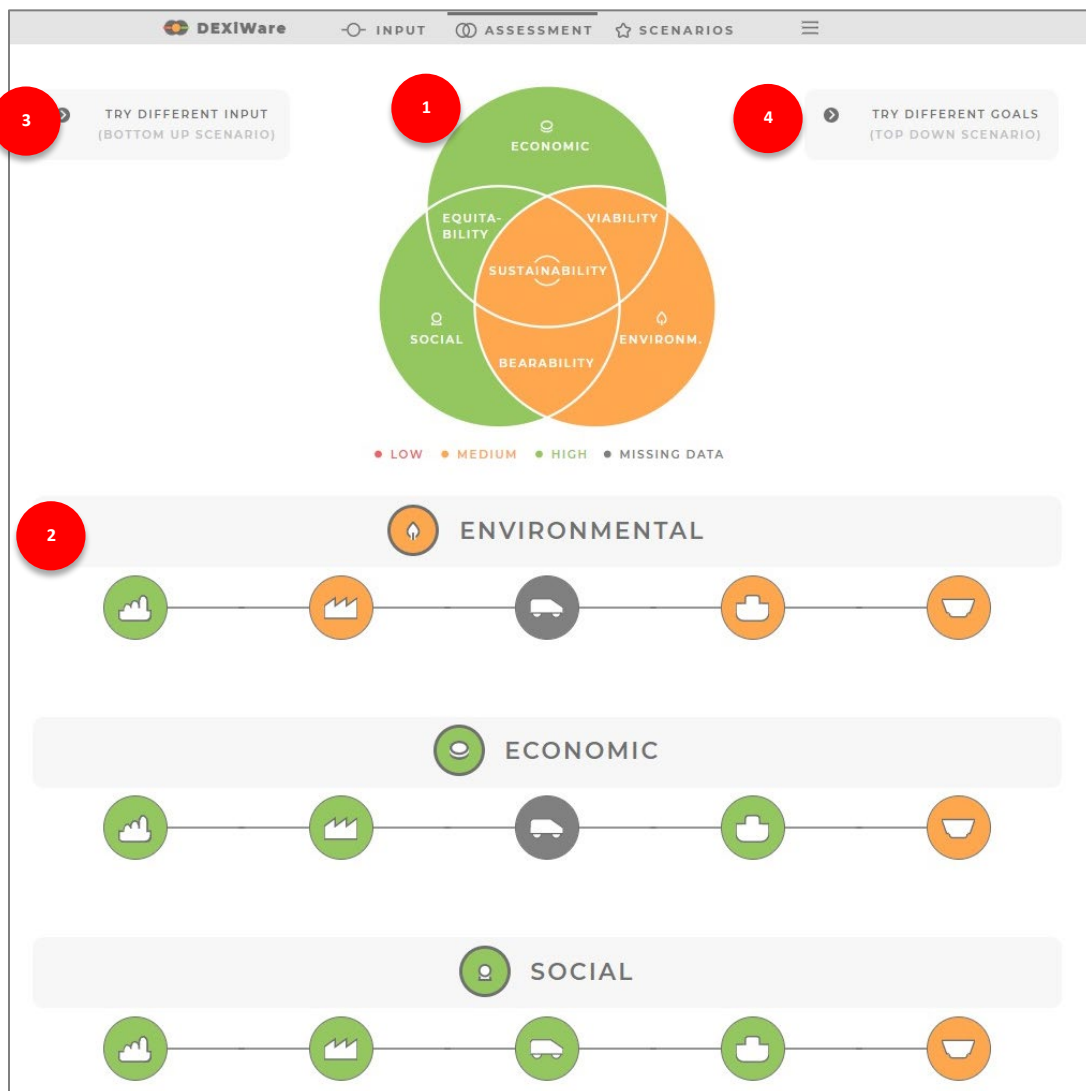
Once the values of the indicators in all three pillars are entered, a window opens informing the user that they have completed the entries and can proceed with the analysis to obtain a sustainability assessment of the entire agri-food chain.



The results of the sustainability assessment of the chosen agri-food chain are visually presented:

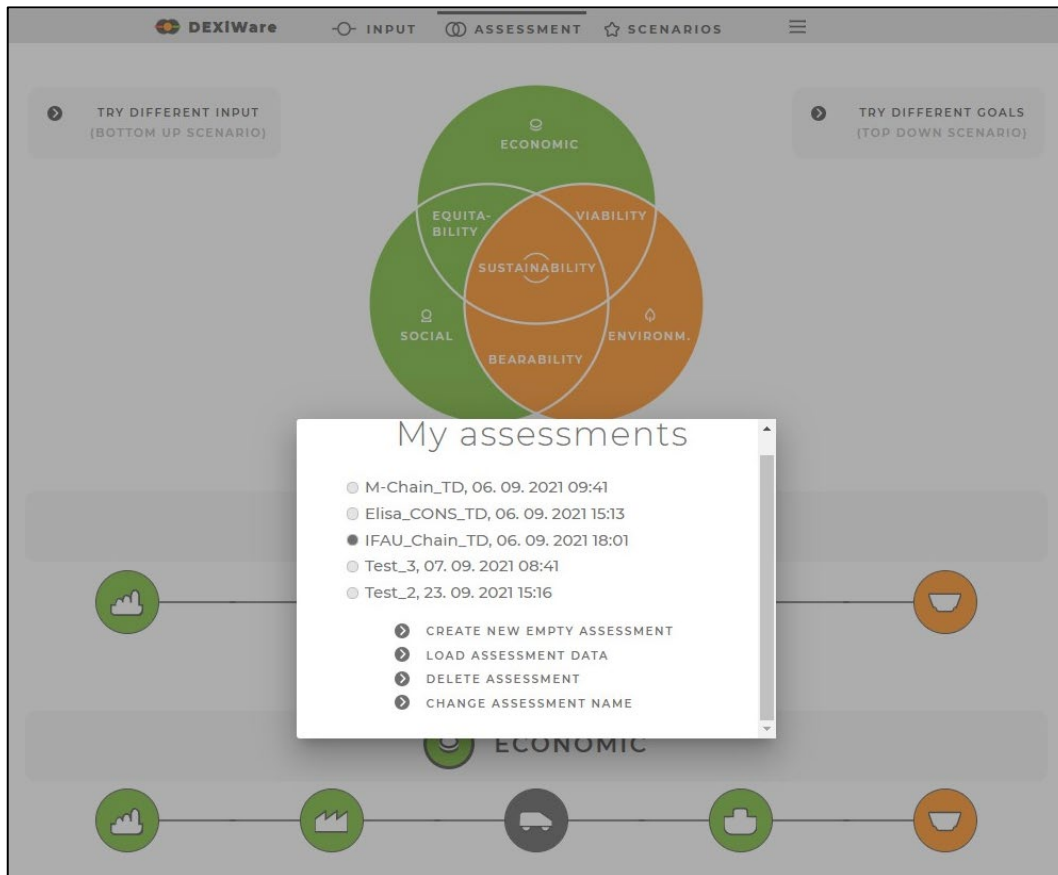
- 1 The colours of the large circles and their intersections represent the results of the sustainability assessment. The overall sustainability level of the entire agri-food chain is shown in the centre of the rose where all three sustainability pillars overlap. The three circles represent the three sustainability pillars (environmental, economic, and social) and their intersections: bearability, viability and equitability, of the agri-food chain. When data for a certain pillar are completely missing (not inserted), the circle representing that pillar is coloured in grey, which would mean that there is no assessment for that pillar.
- 2 This part shows the results of the assessments for the individual links in the agri-food chain for each sustainability pillar (environmental, economic, and social). In case that some input data are missing, two possible outcomes/assessments can be equally probable. In that case, the circle can be one of two colours, representing the combination of possible outcomes.

- 3 This button (**BOTTOM UP SCENARIO**) enables the user to explore in what way the changes at the lower level (input data or link level) influence the sustainability on higher levels (link in the agri-food chain, or the entire chain). In this way, the user can perform what-if analysis and see the differences the changed input makes to the final outcome, compared to the original assessment.
- 4 This button (**TOP DOWN SCENARIO**) allows the user to choose a desired partial or overall level of sustainability. The system then searches for options that would lead to the desired sustainability level and provides the user with scenarios in which the desired sustainability level is achieved. This would give the user advice in which parts of the agri-food chain changes should be made so that the desired sustainability is achieved.



5. Saving the assessment

By clicking on **SELECT ASSESSMENT** in the navigation bar ('hamburger button', three short stacked parallel horizontal lines) in the upper right corner, the user can name and save the current assessment. In addition, the user can also open, rename or delete already saved assessments.



6. Bottom-up scenario

By clicking on the **TRY DIFFERENT INPUT** button, the users can explore what impact would the changes of the input data have on the sustainability performance of the agri-food system being assessed. If the users are not satisfied with the assessed level of sustainability, this option will help them to find which parts of the agri-food chain should be improved to enhance the overall sustainability of the agri-food chain. The users must change the values of the input data (indicators) and observe how these changes affect the sustainability performance at the different levels of the assessed agri-food system.

- 1 The circles on the upper left side represent the assessed overall sustainability and its pillars and their intersections for the chosen scenario.
- 2 To see what impact changes of the input data would have on the sustainability performance of the agri-food system being assessed, the user first changes the value of the indicator(s) or sets the desired value for the selected link or pillar by clicking on the corresponding circle. Note that it is not possible to change the values at all levels at the same time.
- 3 After changing the input values of the indicators, links, or pillars, click on **EVALUATE CHANGES** button and the DSS will make a new assessment of all sustainability aspects of the selected agri-food system.
- 4 A new sustainability assessment of all links and pillars of the selected agri-food system is provided.
- 5 Clears all changes made to the values of the indicators and the links and shows the original values of the input data. New changes of the input data or links goals can be made.
- 6 Saves the current assessment scenario for further use and inspection. The user can choose a name for the scenario for easier navigation through them.

DEXIWare INPUT ASSESSMENT SCENARIOS

ASSESSMENT : IFAU_Chain_TD

1 BEFORE

4 AFTER

→

REVEAL LINKS

5 CLEAR CHANGES

3 EVALUATE CHANGES

6 SAVE SCENARIO

ENVIRONMENTAL

- GHG Balance
- Emission of Air Pollutants
- P balance
- N balance
- SynP fertilisers
- SynN fertilisers
- Ground and Surface Water
- SynN fertilisers
- Diesel consumption
- Land use
- Land sharing/habitat provision
- Soil Organic Matter

ECONOMIC

- Net Income
- Safety Nets
- Full Cost Accounting
- Internal Investment
- Long Term Profitability
- Sustainability Management
- Stability of Supplier
- Dependence on the Leading
- Stability of Market
- Price Determination
- Product Diversification
- Control Measures

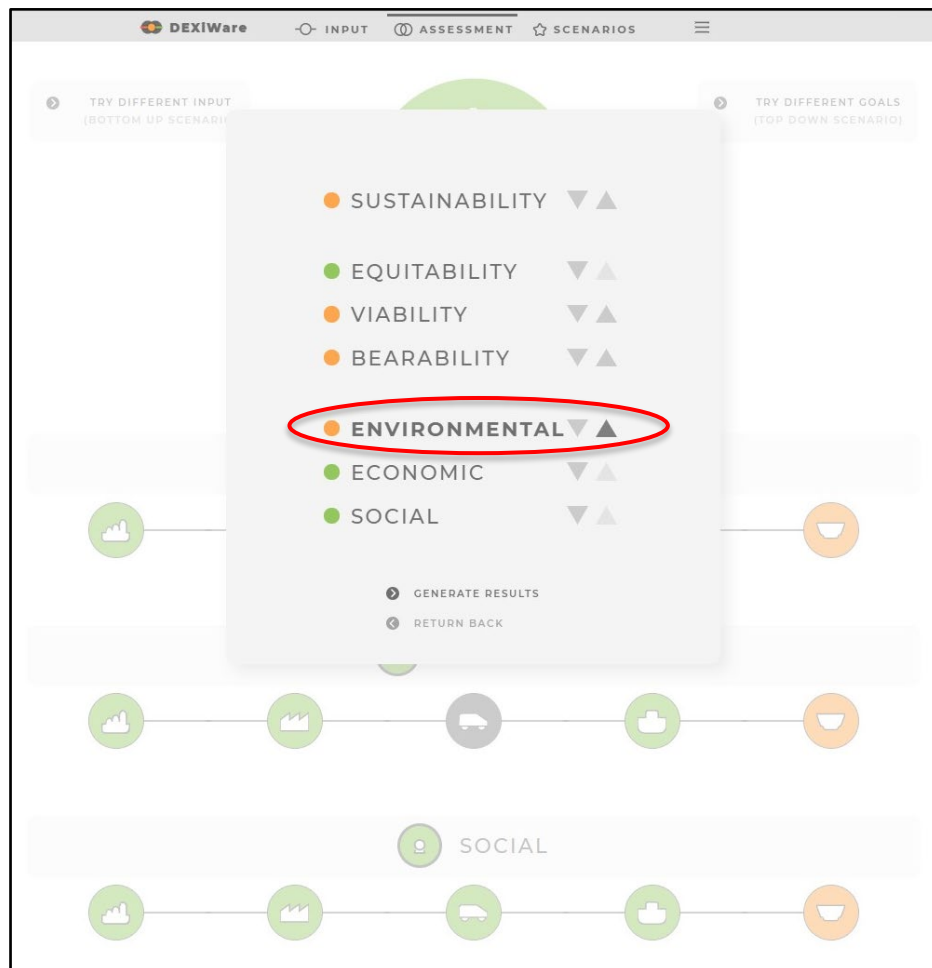
SOCIAL

- CAP
- Food Sovereignty
- Agro-ecology
- Safety and Health Trainings
- Safety of Workplace, Health Coverage and Access to
- Employment Relations
- Wage Level
- Capacity Development
- Non Discrimination
- Gender Equality
- Support to Vulnerable People

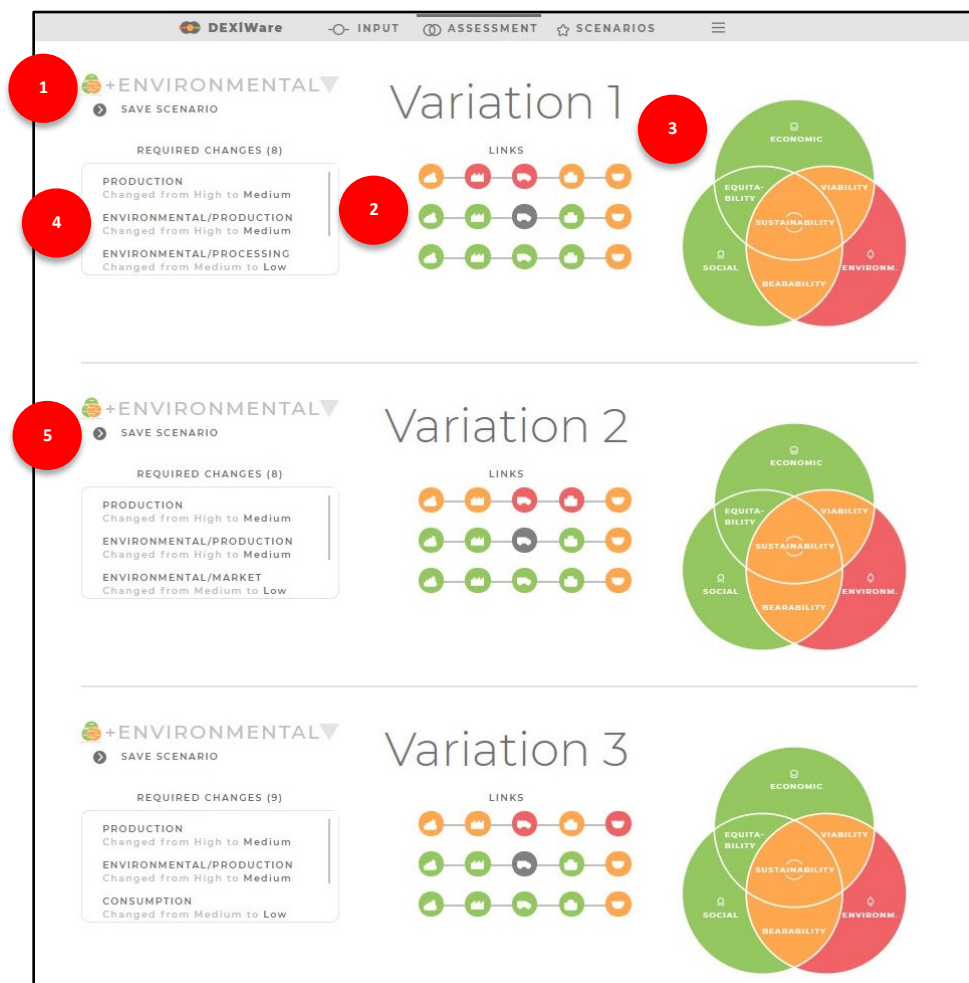
PRODUCTION ^

7. Top-down scenario

By clicking on the **TRY DIFFERENT GOALS** button, the user can explore the pathways that will lead them to the desired sustainability level of the agri-food chain and will provide advises about the necessary changes of the current situation that would lead to the desired sustainability performance of the entire chain or its parts. Once the user sets the goals about the desired level of the sustainability performance, they must change the assessed sustainability levels to the desired levels. By clicking on the triangle button next to the sustainability pillar or pillars' intersections, the user increases or decreases the sustainability levels according to their goals. The DSS then provides pathways (scenarios) that lead the user to the desired sustainability levels. The scenarios give detailed information of the needed changes that will provide the desired sustainability levels. This would give the user advice in which parts of the agri-food chain changes should be made so that the desired sustainability is achieved. The user can save the optimal scenario for further inspection.



- 1 Visualization of the results of the currently assessed agri-food chain.
- 2 Sustainability levels of the links under the changes proposed by Pathfinder.
- 3 Sustainability levels of the agri-food chain, its pillars and their intersections under the changes proposed by Pathfinder.
- 4 A list of changes proposed by PathFinder that should be made in the agri-food chain in order to achieve the desired sustainability level.
- 5 Save the proposed scenario for further use and inspection. The user can choose a name for the scenario for easier navigation through them.



The screenshot displays the DEXiWare software interface, which is divided into three sections for different variations of an agri-food chain assessment. Each section includes a list of required changes, a diagram of links, and a Venn diagram of sustainability pillars. Red circles 1-5 highlight specific UI elements:

- 1:** The top navigation bar and the 'ENVIRONMENTAL' dropdown menu.
- 2:** The 'LINKS' diagram, which shows a sequence of nodes connected by arrows.
- 3:** The Venn diagram, which consists of three overlapping circles labeled 'ECONOMIC', 'SOCIAL', and 'ENVIRONN.', with sub-labels 'EQUITA-BILITY', 'VIABILITY', and 'BEARABILITY' at the intersections.
- 4:** The 'REQUIRED CHANGES' list, which details changes in production, environmental/production, and environmental/processing levels.
- 5:** The 'SAVE SCENARIO' button.

8. Review of saved scenarios

The saved scenarios for both bottom-up and top-down analysis are shown by clicking **SCENARIOS** in the upper menu bar. Since the user has the option to create and save several scenarios in the bottom-up analysis and to select and save several variations in the top-down analysis, this option provides a transparent way to review all saved scenarios/variation.

- 1 Click on **BOTTOM-UP SCENARIOS** or **TOP-DOWN SCENARIOS** to visualize the scenarios.
- 2 This button allows the user to see the saved scenarios for the bottom-up analyses. The saved scenarios include the before and after results of the analyses, names of the scenarios/assessments and list of all input changes that the user made.
- 3 This button allows the user to see the saved scenarios for the top-down analyses. The saved scenarios include the before and after results of the assessment of the whole chain and its links and a list of all needed changes that should be made in the agri food chain.

1 BOTTOM-UP SCENARIOS TOP-DOWN SCENARIOS

BEFORE AFTER

Result 1 Test_Chain

ASSESSMENT : IFAU_Chain_TD
23. 09. 2021 23:59

INPUT CHANGES (15)

- ENVIRONMENTAL - PROCESSING
Changed from Medium to High
- ENVIRONMENTAL - TRANSPORTATION - TRANSPORT INTENSITY
Changed from to
- ENVIRONMENTAL - TRANSPORTATION - ATMOSPHERIC EMISSIONS

↑ BOTTOM-UP SCENARIOS **2** TOP-DOWN SCENARIOS

Variation 1 Test_Chain

ASSESSMENT : IFAU_Chain_TD

+ENVIRONM.

REQUIRED CHANGES (8)

- PRODUCTION
Changed from High to Medium
- ENVIRONMENTAL/PRODUCTION
Changed from High to Medium
- ENVIRONMENTAL/PROCESSING
Changed from Medium to Low

LINKS

Diagram showing a grid of colored icons representing links between different components.



9. Exporting the results

The PathFinder enables an export of the report of the analysis in a PDF file. The report contains the input data, the assessment results, and the saved scenarios of what-if and top-down analysis. The PDF document is the only export from the Pathfinder, which can be used for exploitation and communication purposes. The export option is in the navigation bar (hamburger button) in the upper right corner.



10. User management

The user management functionality of PathFinder, found in the upper right corner, enables all the registered users to invite collaborators to help gather all the needed data and give them different permissions about the input of data. The permissions can be fine-tuned for each data input section (indicator, pillar, link). Due to the complexity of the agri-food chain and large amount of required input data, the user management will facilitate the involvement of data providers for different links or the agri-food chain in obtaining high quality data.

- 1 By clicking on one of the three pillars, the user selects the pillar to which he invites collaborators to help him collect the data they need.
- 2 Invite collaborators to use the system, by entering their name and email. Collaborators get an invitation on their email, which allows them to work on the assigned example.
- 3 List of invited collaborators added to the system. In addition to the collaborators name, it also shows the assigned permissions and how much of it has been completed.
- 4 List of indicators in the selected pillar, for each link in the agri-food chain. This allows the user to have a better overview of the input data needed and assignments of different collaborators.
- 5 By clicking on the sign (), the user assigns the collaborator permission to input data or modify the value of the indicator. The collaborator can input data or modify only the indicators assigned to them by the user.
- 6 By clicking on the sign (), the user assigns a read-only permission to a collaborator. The collaborator now has no permission to input data and is therefore participating only as an observer.

DEXIWare INPUT ASSESSMENT SCENARIOS

1 ENVIRONMENTAL **2** ECONOMIC **3** SOCIAL

2 + ADD NEW

3 Tanja D. 22 Assigned 0 Done **5** John S. 37 Assigned 0 Done **6** Katie P. 37 Assigned 0 Done Emma S. 0 Assigned 0 Done

4

	Tanja D.	John S.	Katie P.	Emma S.
PRODUCTION				
GHG Balance	●●	●●	●●	●●
Emission of Air Pollutants	●●	●●	●●	●●
P balance	●●	●●	●●	●●
N balance	●●	●●	●●	●●
SynP fertilisers	●●	●●	●●	●●
SynN fertilisers	●●	●●	●●	●●
Ground and Surface Water Withdrawals	●●	●●	●●	●●
SynN fertilisers	●●	●●	●●	●●
Diesel consumption	●●	●●	●●	●●
Land use	●●	●●	●●	●●
Land sharing/habitat provision	●●	●●	●●	●●
Soil Organic Matter	●●	●●	●●	●●
PROCESSING				
Electricity	●●	●●	●●	●●
Other fuels	●●	●●	●●	●●
Renewable electricity	●●	●●	●●	●●
Renewable other sources	●●	●●	●●	●●
GHG Balance	●●	●●	●●	●●
Emission of Air Pollutants	●●	●●	●●	●●
Food Loss and Waste Reduction	●●	●●	●●	●●
Waste Disposal	●●	●●	●●	●●
Renewable and Recycled packaging	●●	●●	●●	●●
Ground and Surface Water Withdrawals	●●	●●	●●	●●
TRANSPORT AND DISTRIBUTION				
	●●	●●	●●	●●

Pathfinder
was developed by

Jozef Stefan Institute



with project partners
from

True project



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For further information about the PathFinder please contact us:
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