

Carbon footprinting of soy

Development and issues on methodologies, commitments, offsetting

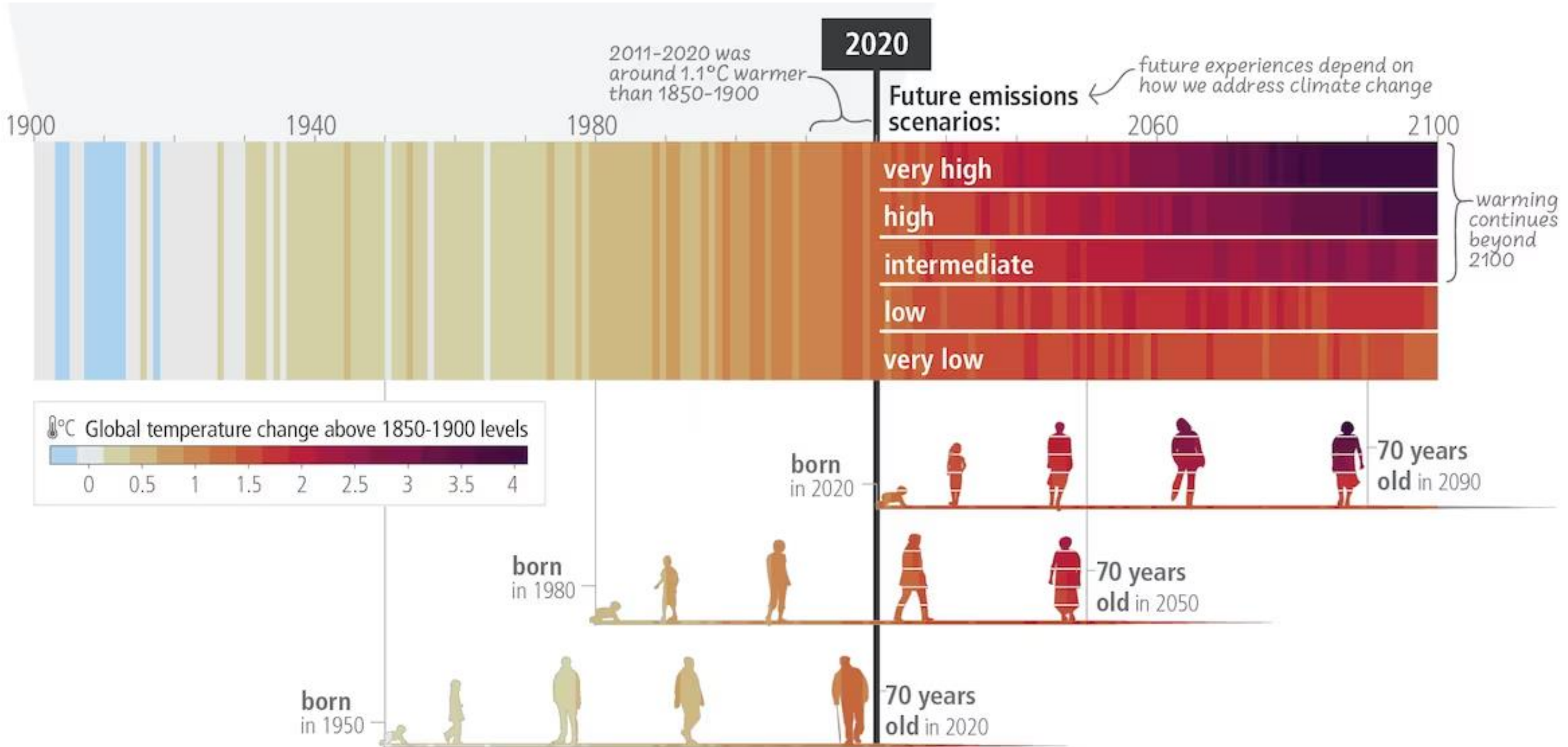
March 28 2024, Theun Vellinga, Frank Gort



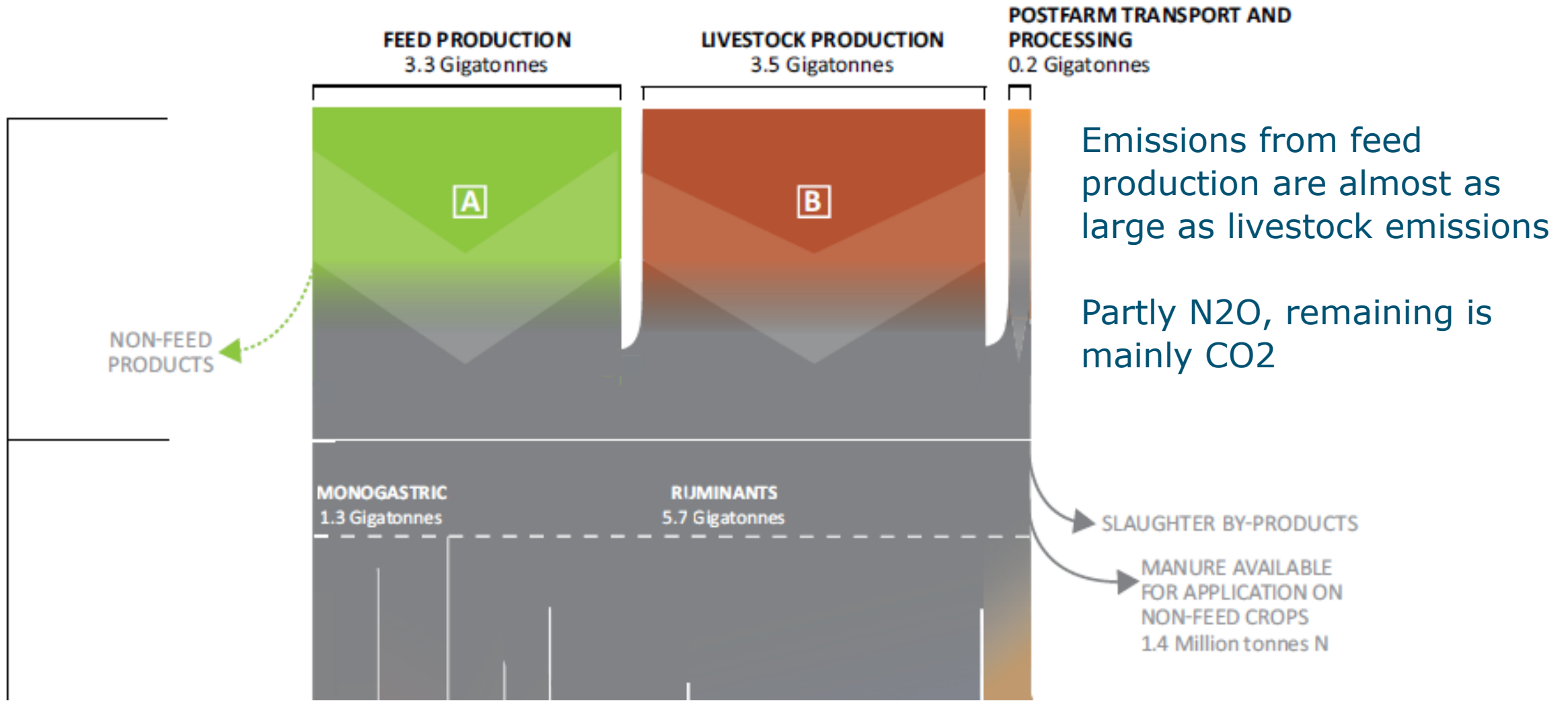
Overview

- Rules of the game: calculating footprints
- Allocation?
- Land use Change?
- The long feed chain and the options for mitigation
- The need for primary data versus the aggregated footprint approach

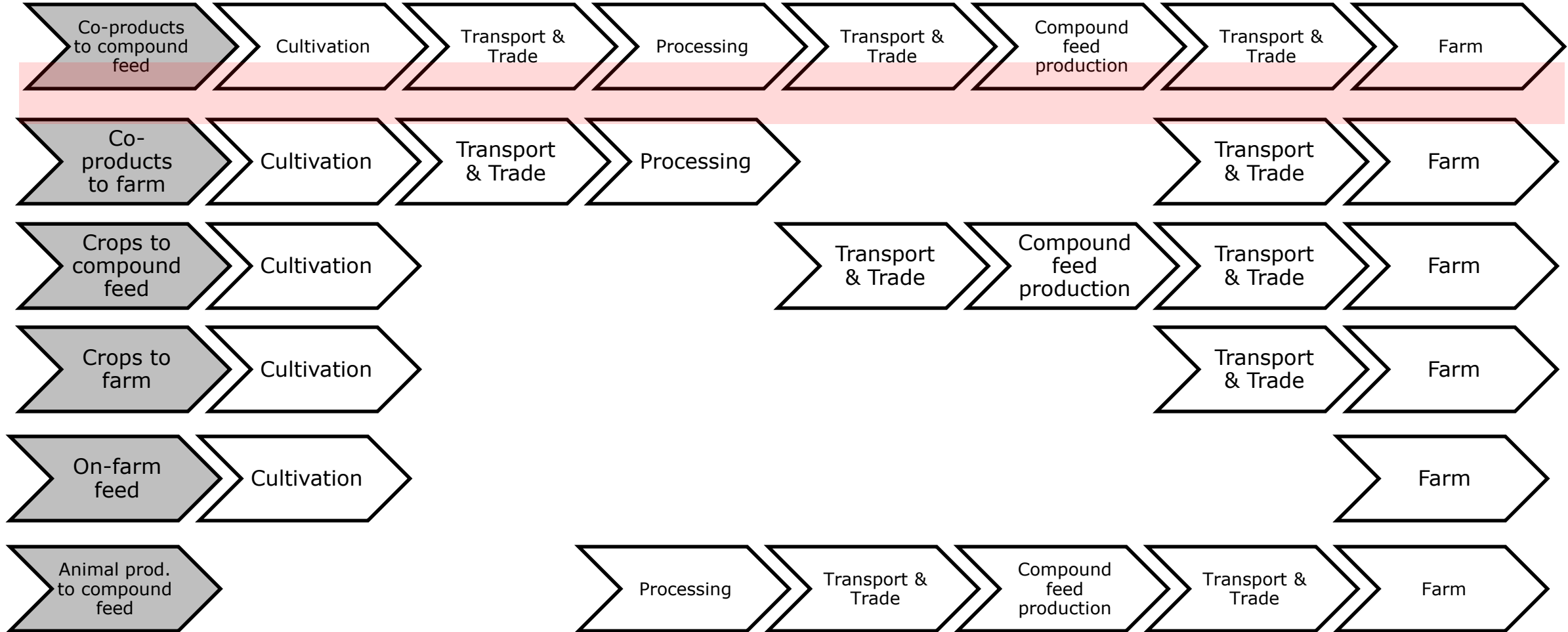
Climate change affects our (grand)children



Feed Production is a large fraction



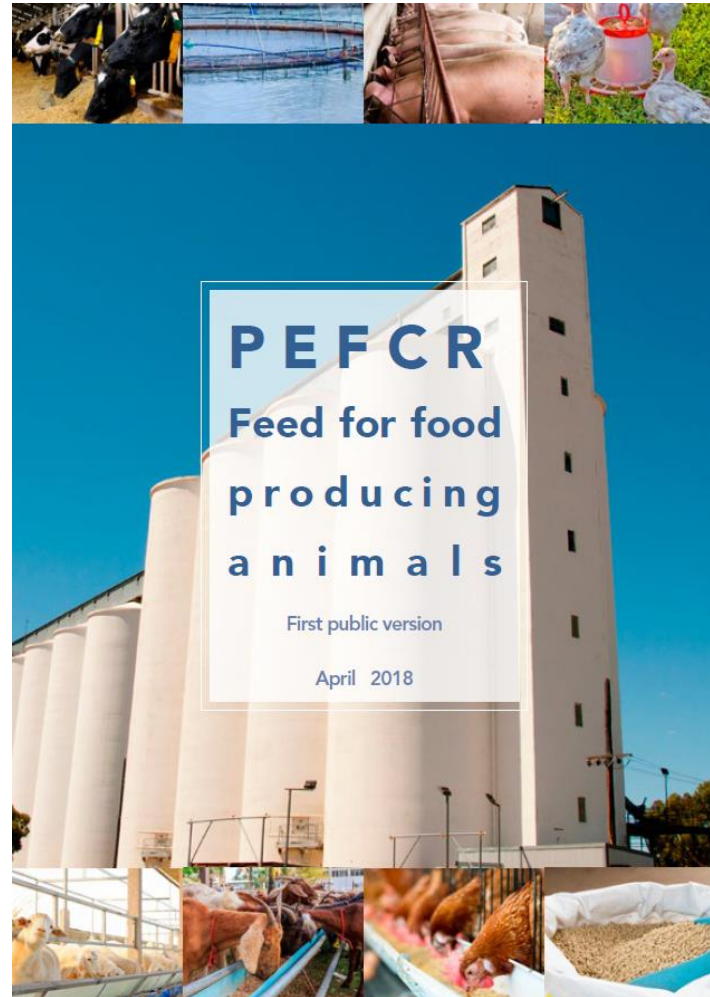
It's a long way from field to farm (sometimes)



Calculating footprints of soy are well defined



VERSION 1



Are they?

LCA approach based on ISO Data Quality

What about:

- Allocation
- Land Use Change
- Primary data use

Much attention for allocation

The Soy Conversion factors (RTRS) are helpful in allocation

Allocation is driven by a mix of business interests and ease of calculation

Science cannot provide a solution, but only an accepted approach

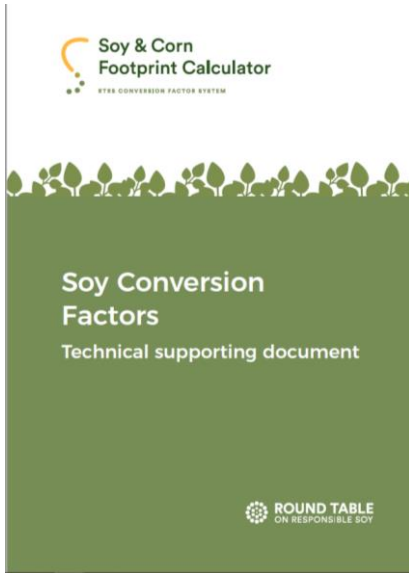
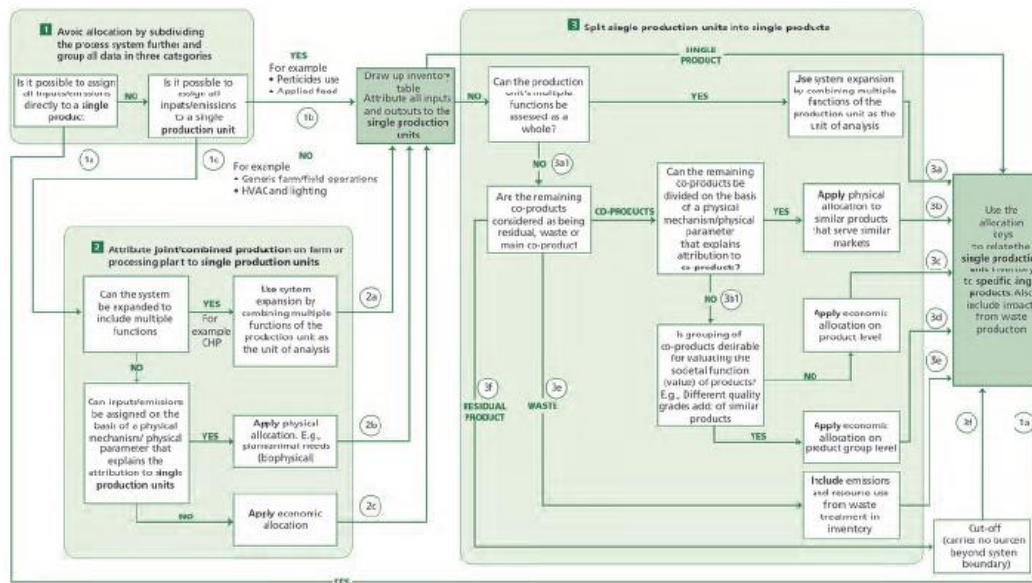
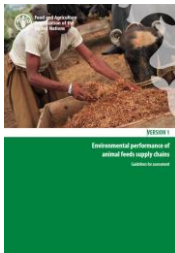


FIGURE 7: THE DECISION TREE FOR ALLOCATION IN THE FEED PRODUCTION CHAIN




Allocation always adds up to 100 %



Land Use Change

Guide to PAS 2050
How to assess the carbon footprint of goods and services



CARBON TRUST
defra
Department for Environment
Food and Rural Affairs

BSI
British Standards

LUC impact
a Blonk solution


2023

Documentation
LUC Impact Tool

Methodology and basic principles

Blonk
CONSULTANTS

www.blonksustainability.nl



Methodology is developed,
consensus

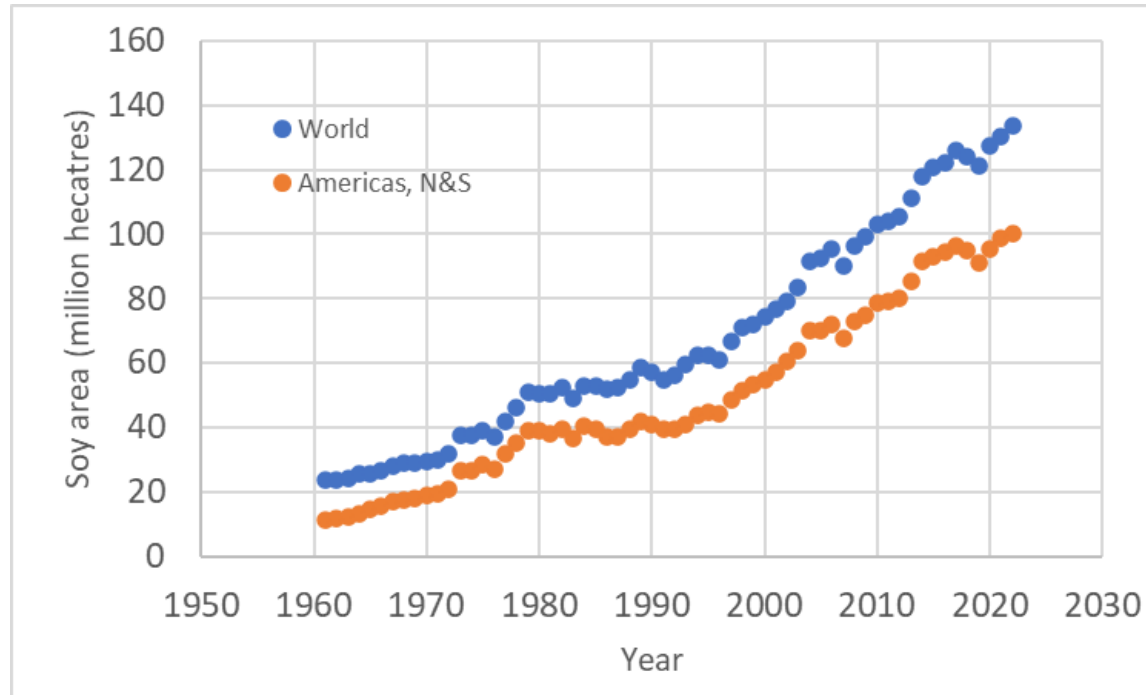
Discussion is about LUC free
soy (RTRS and others)

The total **demand** for soy is
driving land use change

LUC free soy is just green
washing

Finding alternatives is shifting
to other (worse) products

Soy area since 1960



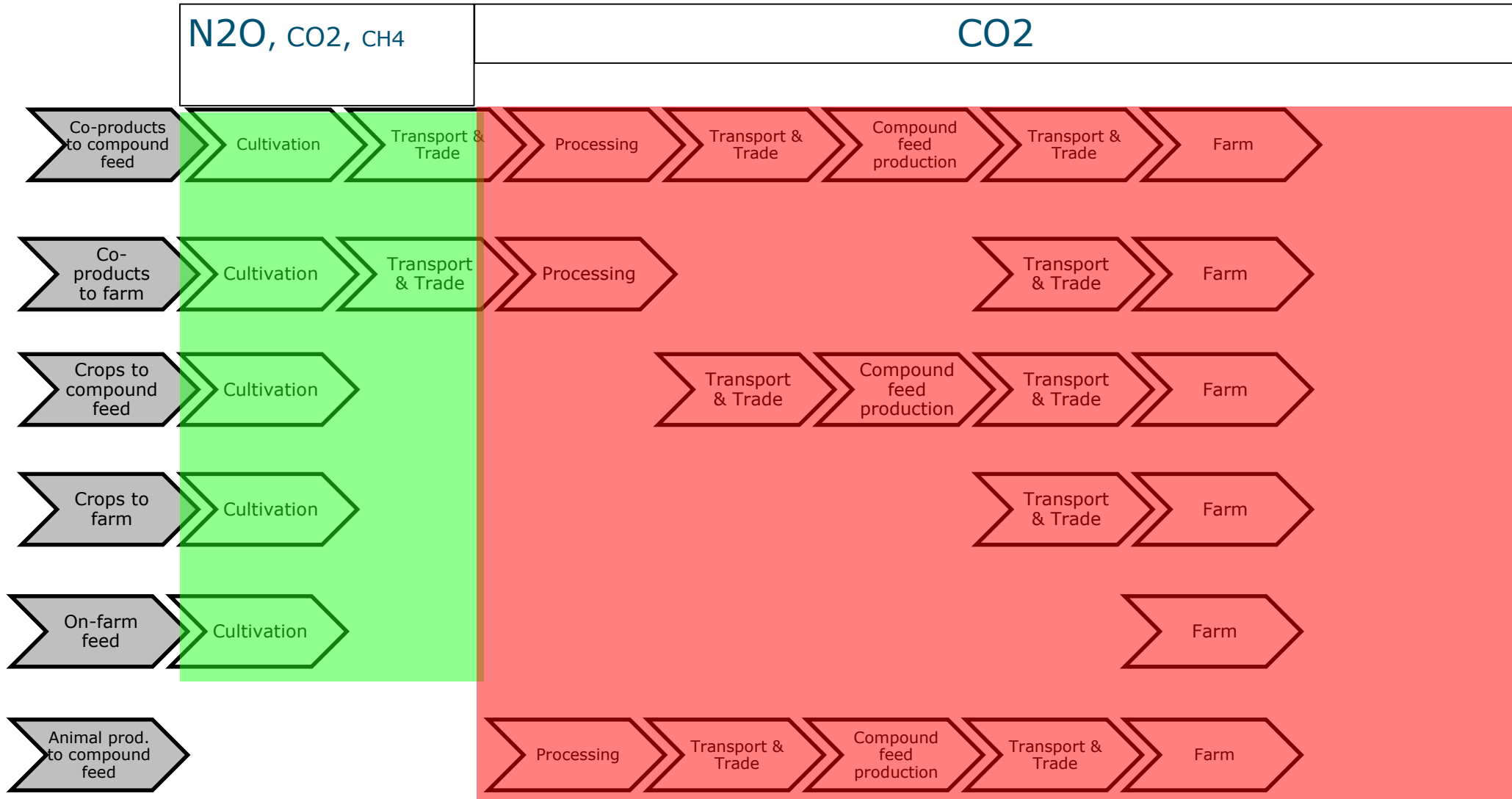
Source FAOstat, 25-03-2024

- Land Use Change is driven by the global demand for feed protein
- Growth in soy area takes place in America, mainly South America
- LUC free soy is not a solution, reducing demand for feed protein is.

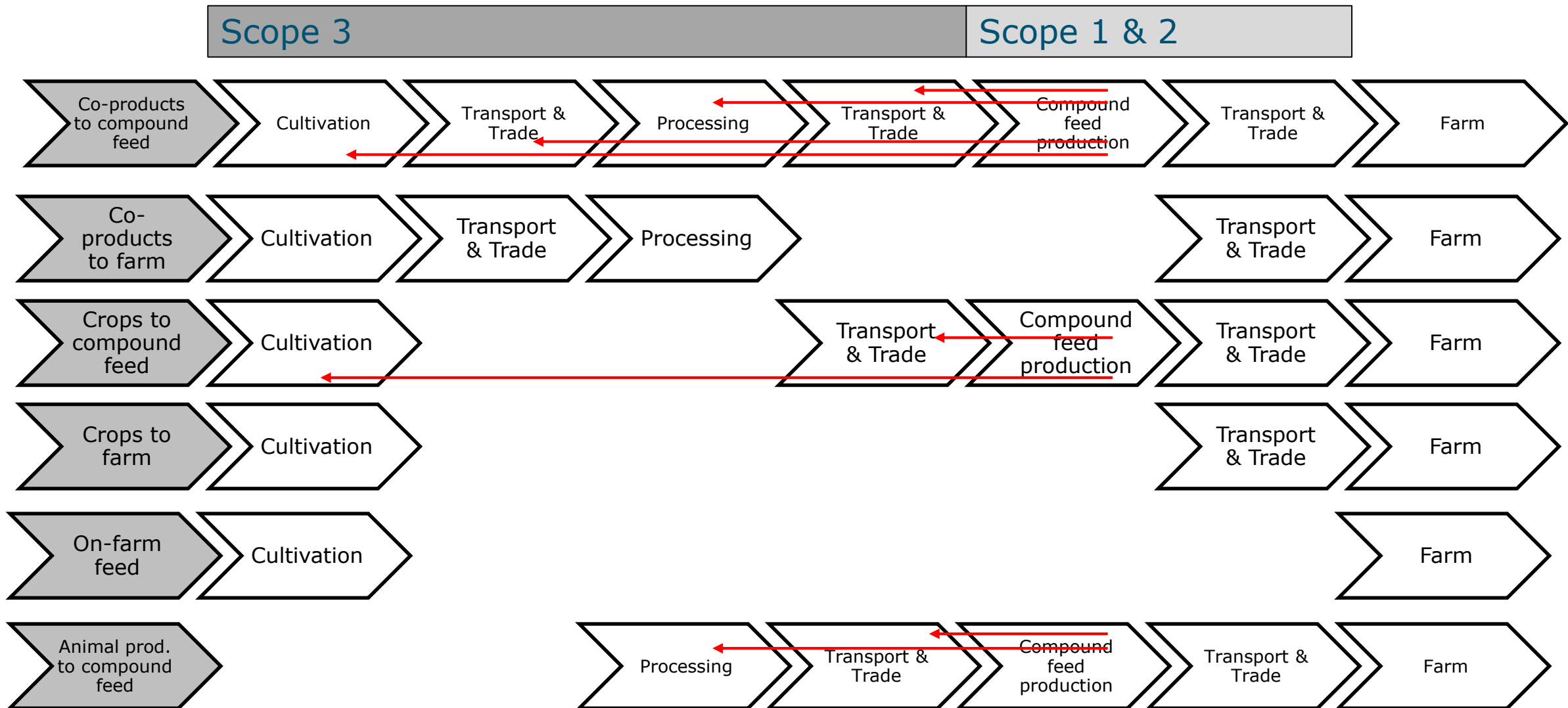
How to reduce demand for feed protein?

- Reduce consumption of animal protein by consumers
- Reduce protein in animal's rations,
 - Reduce the "insurance fee", the surplus for "just in case"
 - More use of synthetic amino acids
 - Go for the best protein crop (soy?)
- Finding alternatives for soy is not the solution:
 - Soy is an excellent and leguminous crop
 - It will shift land pressure to another crop

It's a long way from field to farm (sometimes)




Actions to be taken, energy transition



The need for primary data

globalfeedlca.org/available-now-unit-process-level-data/



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Available now: unit process level data

/ Article / By Laura Nobel / January 11, 2024 / announcement, database, unitprocess

Unit process level data is a disaggregated form of LCA data with insight on how a dataset is composed, which is comprised of inventory data and the unit processes behind it (e.g., background data, flows). This in-depth level allows for details on how a dataset is formed i.e. resource input and emissions, and the interconnections between different processes. This includes type and amount of input and relative contribution of each input and allocation percentage.

The unit process level data can be used to analyse the representativeness of the dataset in a particular situation, analysing the hotspots, supply chain optimisation and production optimisation. With the additional level of detail that the impact assessment or system levels do not provide, this research may therefore be more insightful.

Outputs to technosphere Products and co-products									
Amount	Unit	Quantity	Allocation %	Waste type	Category	Comment			
1000	kg					[Elaborate this market mix is covered]			
Outputs to technosphere Avoided products									
Amount	Unit	Distribution	SD2 or 2D0	Min	Max	Comment			
Inputs									
Inputs from nature									
Sub-compartment	Amount	Unit	Distribution	SD2 or 2D0	Min	Max	Comment		
Inputs from technosphere materials/ fuels									
Amount	Unit	Distribution	SD2 or 2D0	Min	Max	Comment			
521	kg	Undefined							
2128	kg	Undefined							
8740	kg	Undefined							
184	kg	Undefined							
248.4	Item	Undefined							Transport from Brazil to Brazil
451.7	Item	Undefined							Transport from Brazil to Brazil
16.89	Item	Undefined							Transport from Brazil to Brazil
29.02	Item	Undefined							Transport from Argentina to Argentina
1620	Item	Undefined							Transport from Argentina to Argentina
3.709	Item	Undefined							Transport from Argentina to Argentina
1000	Item	Undefined							Transport from Argentina to Brazil
74.21	Item	Undefined							Transport from United States of America to United States America

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Carbon footprinting or all impact categories?

Aggregated data don't provide the opportunity to show improvements in the chain:

- You don't get insight in the breakdown of emissions
- No insight in potential action in the (long) feed chain
- Selecting other feed materials is the only action to be taken

All feed databases should have:

- The option to incorporate primary data
- Facilitate and stimulate the use of primary data for all phases in the feed chain

See example GFLI

Thank you

Responsible soy?

- Reduce demand for feed protein
- Energy transition
- Primary data

Contact/questions:

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