

# FABIO and FORBIO: A family of physical MRIO databases











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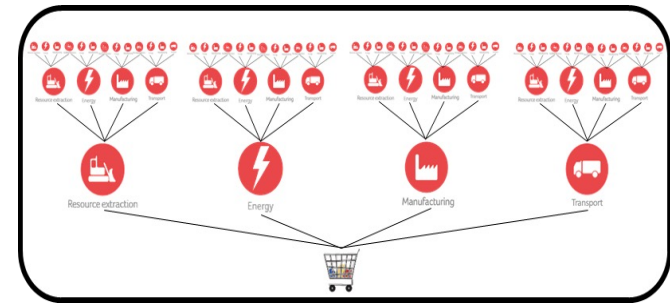


# Multi-Regional Input-Output (MRIO)

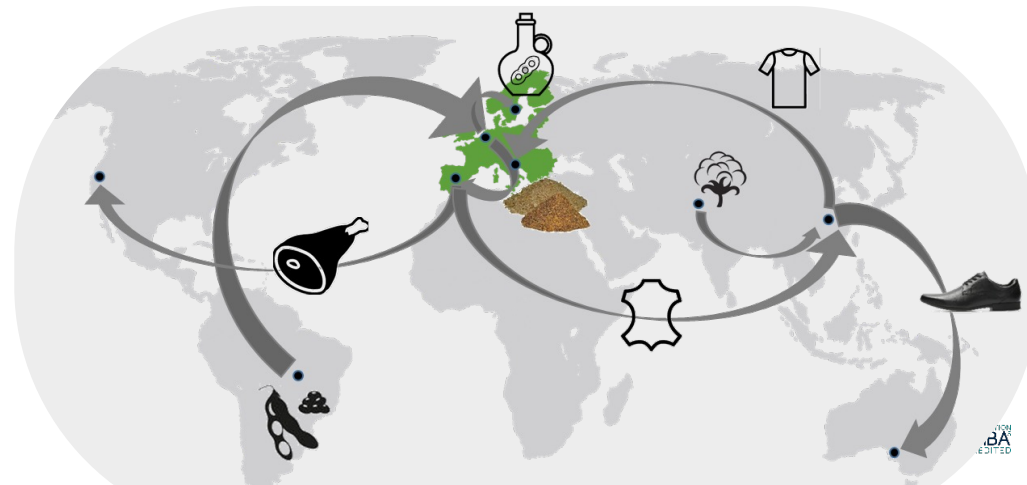
- MRIO tables provide detailed product flows, mapping out the "product trees" within and across regions.

	 Food	 Energy	 Restaurant	 Final Demand	$\Sigma$ Total Output
 Food	0.07	0	0.4	10	15
 Energy	0.13	0.1	0.3	4	10
 Restaurant	0	0	0	10	10
 CO <sub>2</sub> emissions	2	5	1.5		

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- MRIO tables enable tracking of goods and their associated impacts throughout international supply chains.





# FABIO and FORBIO

- **FABIO: Food and Agriculture Biomass Input-Output database**


-  130 agriculture products
-  100 aquatic products
-  30 biofuels & biochemicals
-  190 countries
-  1986-2022
-  tonnes, heads

- **FORBIO: Forestry Biomass Input-Output database**

-  23 forestry & wood products
-  220 countries
-  1997-2017
-  tonnes, m<sup>3</sup>

## ■ EXIOBASE

 200 products and services

 44/189 countries

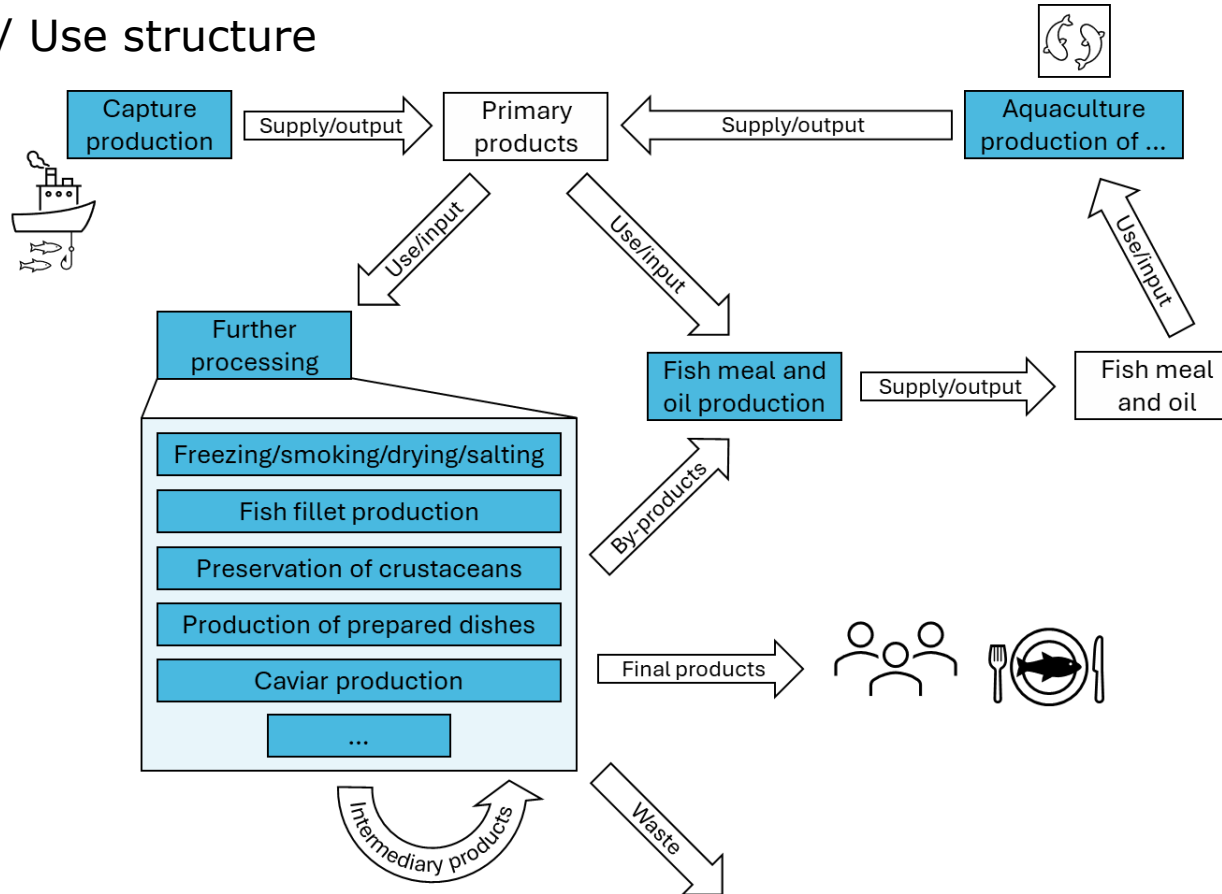
 Million Euros

## ■ Environmental data

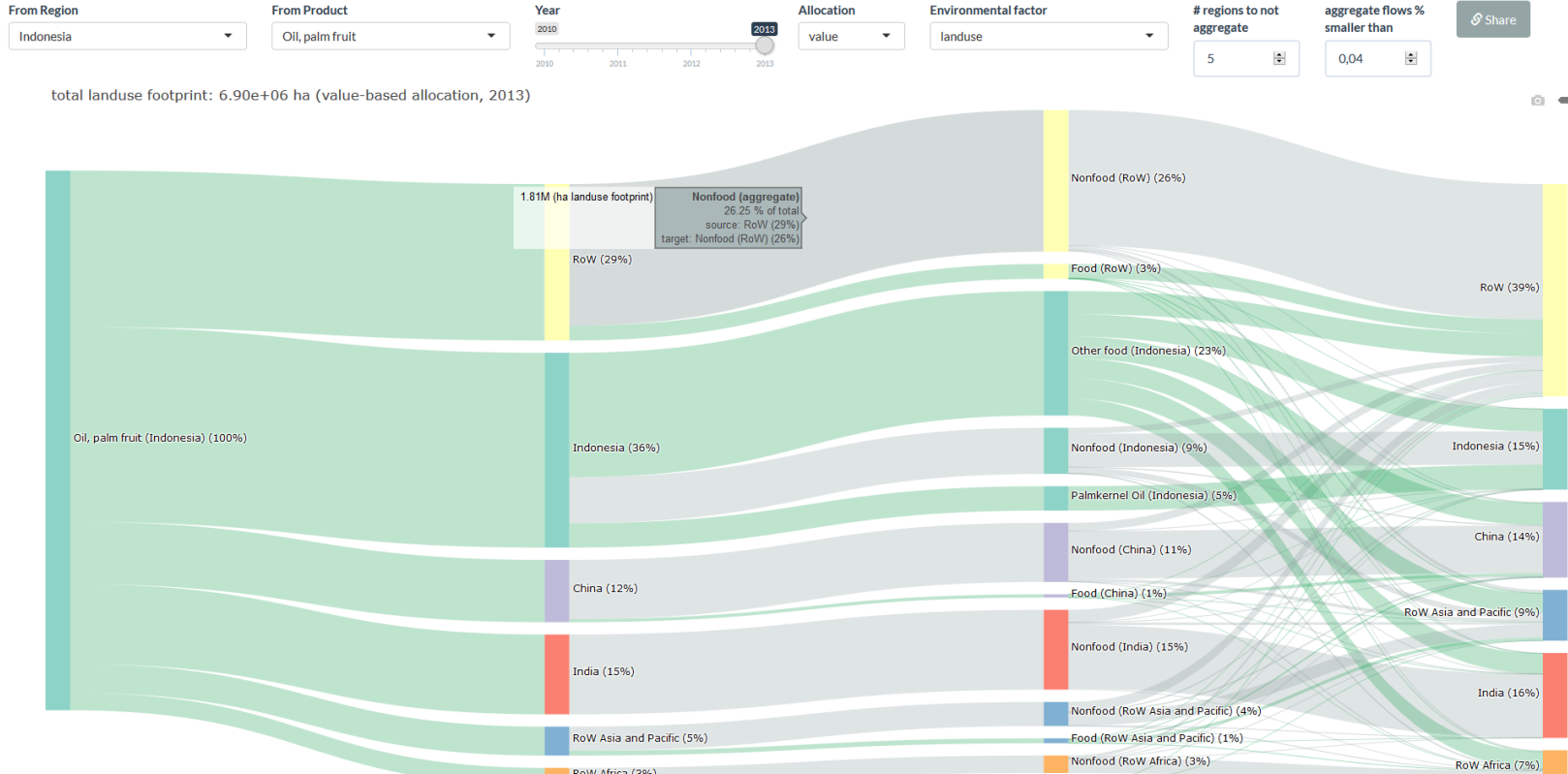
- Land use and land use change
- Water use (green and blue)
- GHG emissions (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O)
- N/P application and emissions
- Biodiversity loss

# FABIO and FORBIO

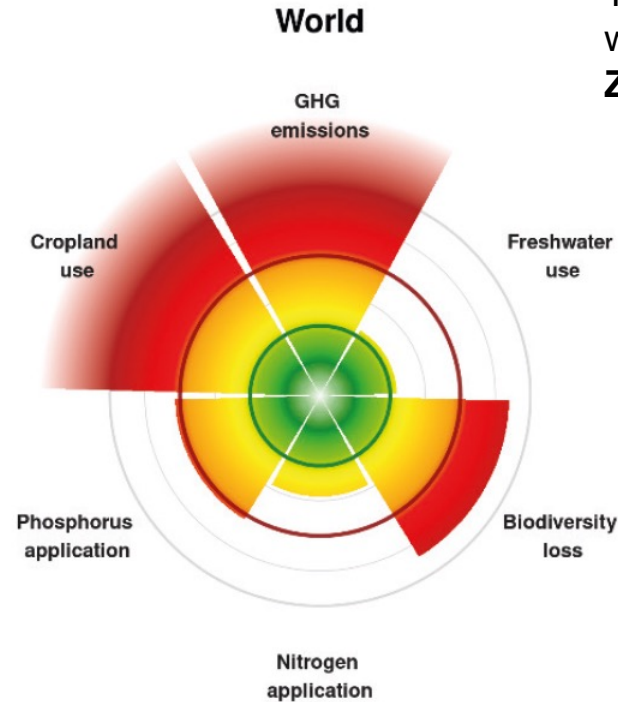
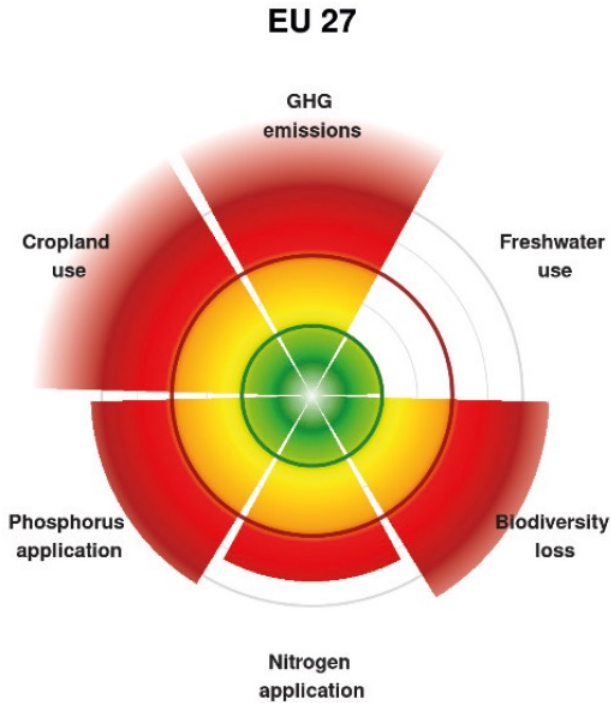
- Supply / Use structure



# Applications – Product supply chains

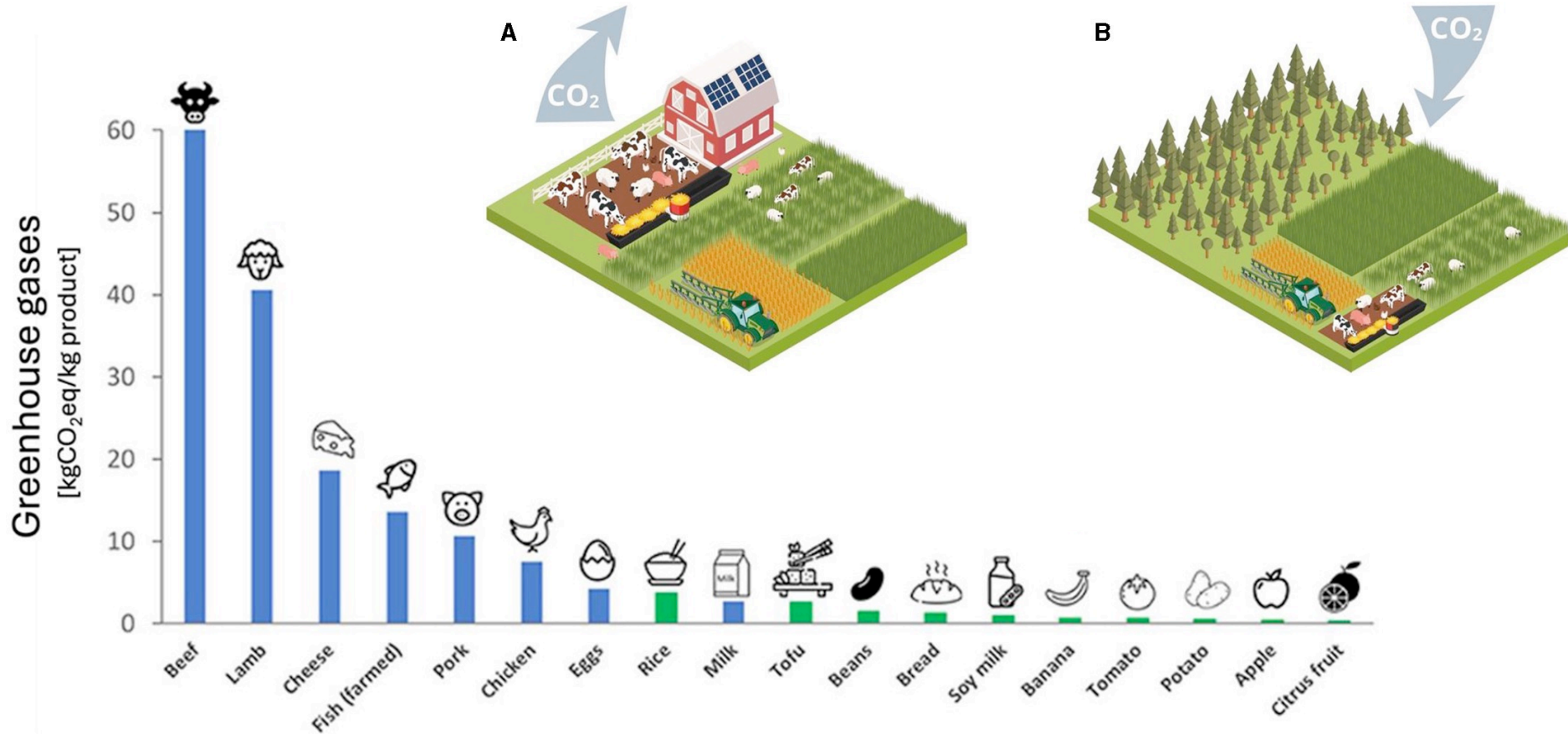


# Applications – Bioeconomy assessment



Miranda et al., 2023.  
Towards a Bioeconomy  
within Planetary Boundaries.  
**ZEF Policy Brief No 45**

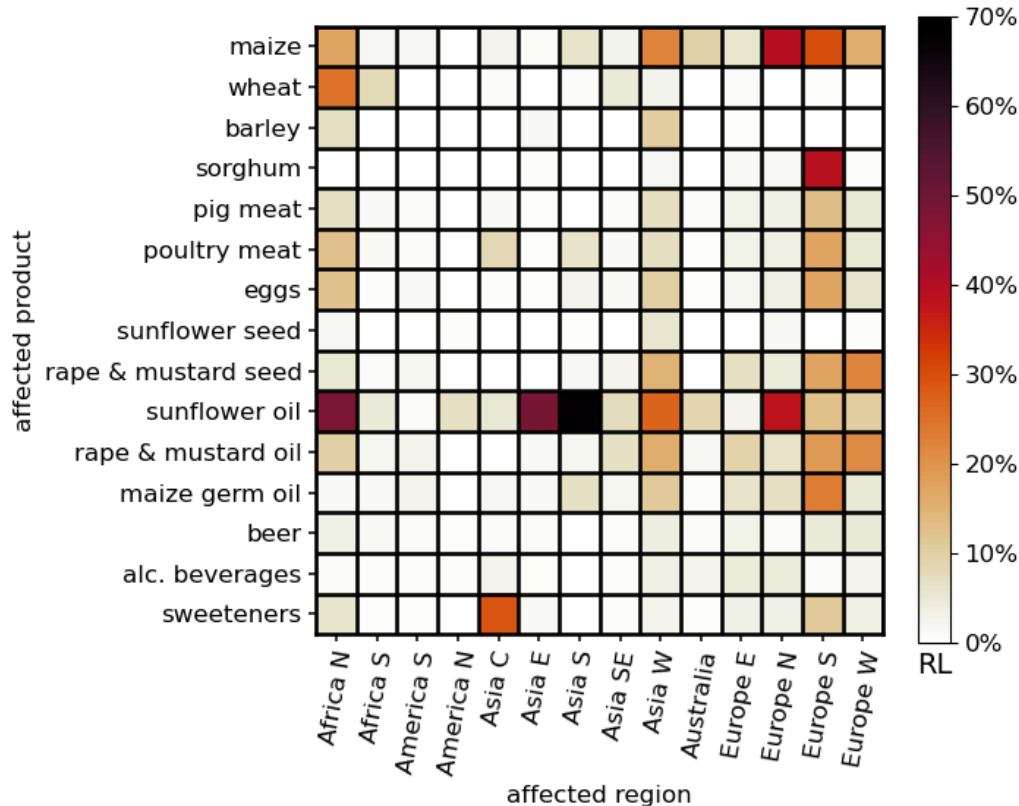
# Applications – Diets



Sun et al., 2022. Dietary change in high-income nations alone can lead to substantial double climate dividend. *Nature Food* 3(1), 29–37, <https://doi.org/10.1038/s43016-021-00431-5>



# Applications – Supply risks



Laber et al., 2023. Shock propagation from the Russia–Ukraine conflict on international multilayer food production network determines global food availability. **Nature Food** 4(6), 508–517, <https://doi.org/10.1038/s43016-023-00771-4>

# Thank you for your attention!



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Global Resource Use