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Vermeidung von Nahrungsmittelkonkurrenz: Tiere als sinnvolle Verwerter

Adrian Müller
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Visionen für die Tierhaltung, Agrarbündnis
Kassel, 13. Juli 2023

«Es geht darum,
eine Vision für die Tierhaltung in einer

klimafreundlichen,

gleichzeitig aber auch
multifunktionalen

Land- und Ernährungswirtschaft zu formulieren.»

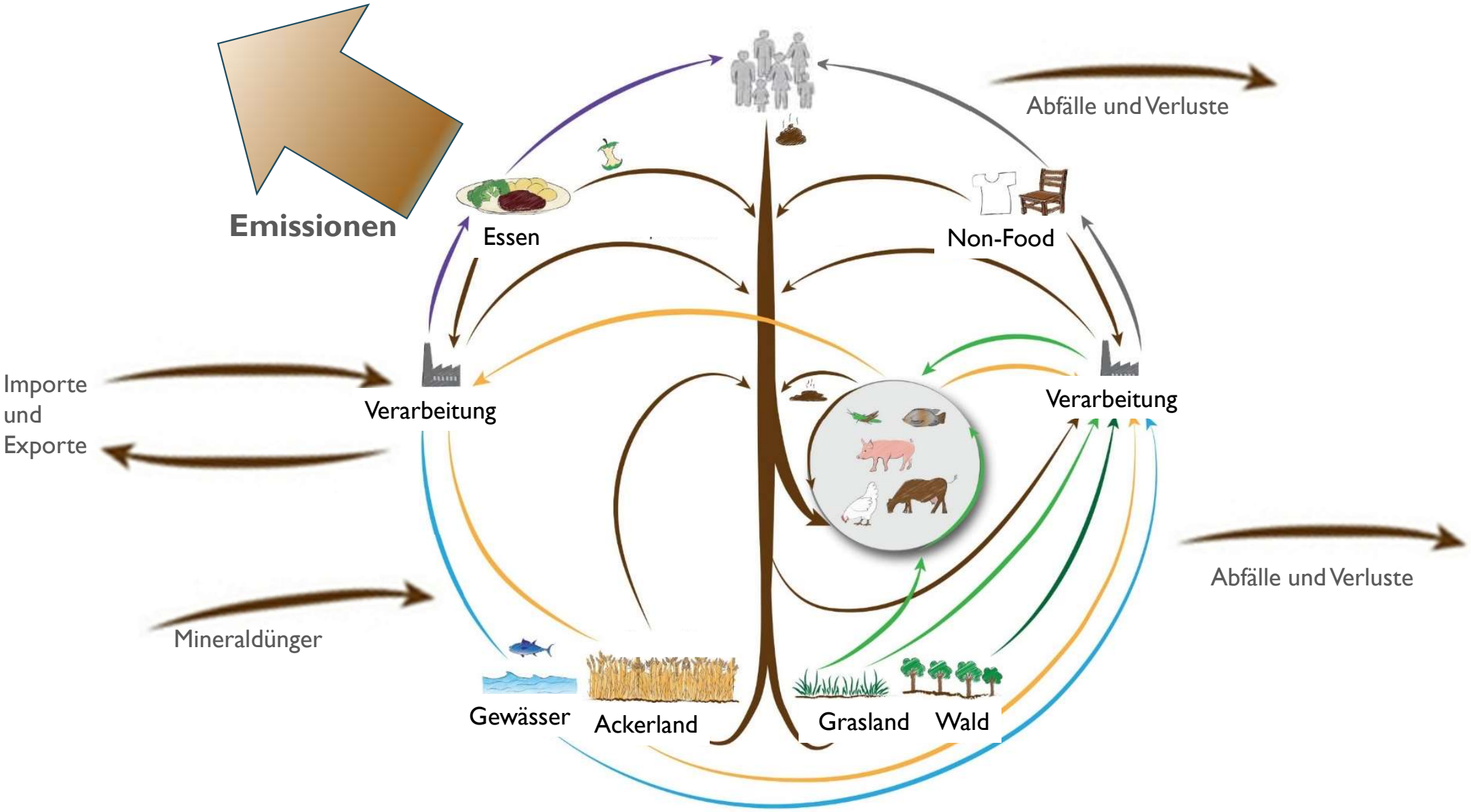
Nahrungsmittelkonkurrenz

lässt sich nicht

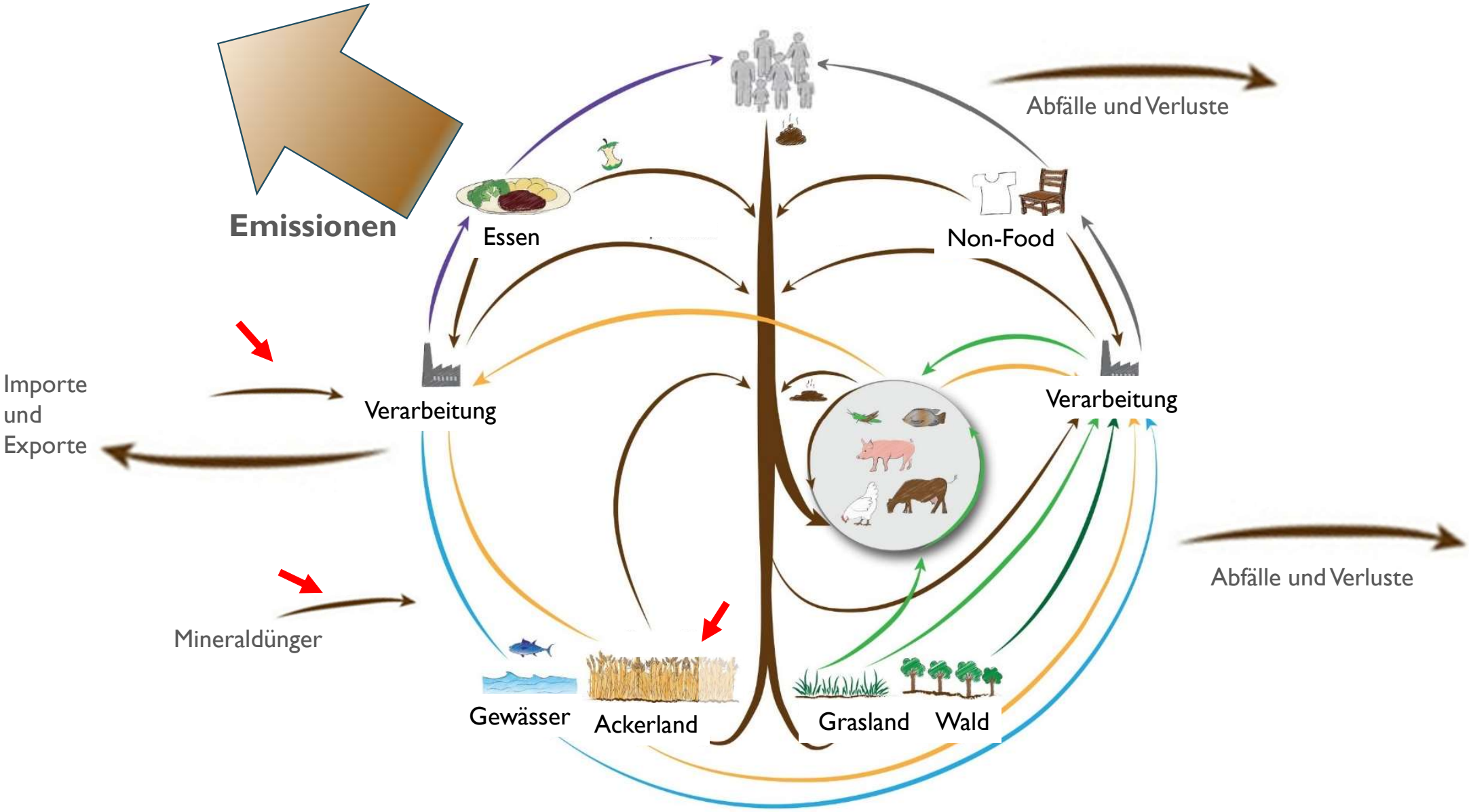
vermeiden

Wir MÜSSEN produzieren,
was wir konsumieren WOLLEN

Wie WOLLEN konsumieren,
was wir produzieren KÖNNEN



Muscat et al. 2021



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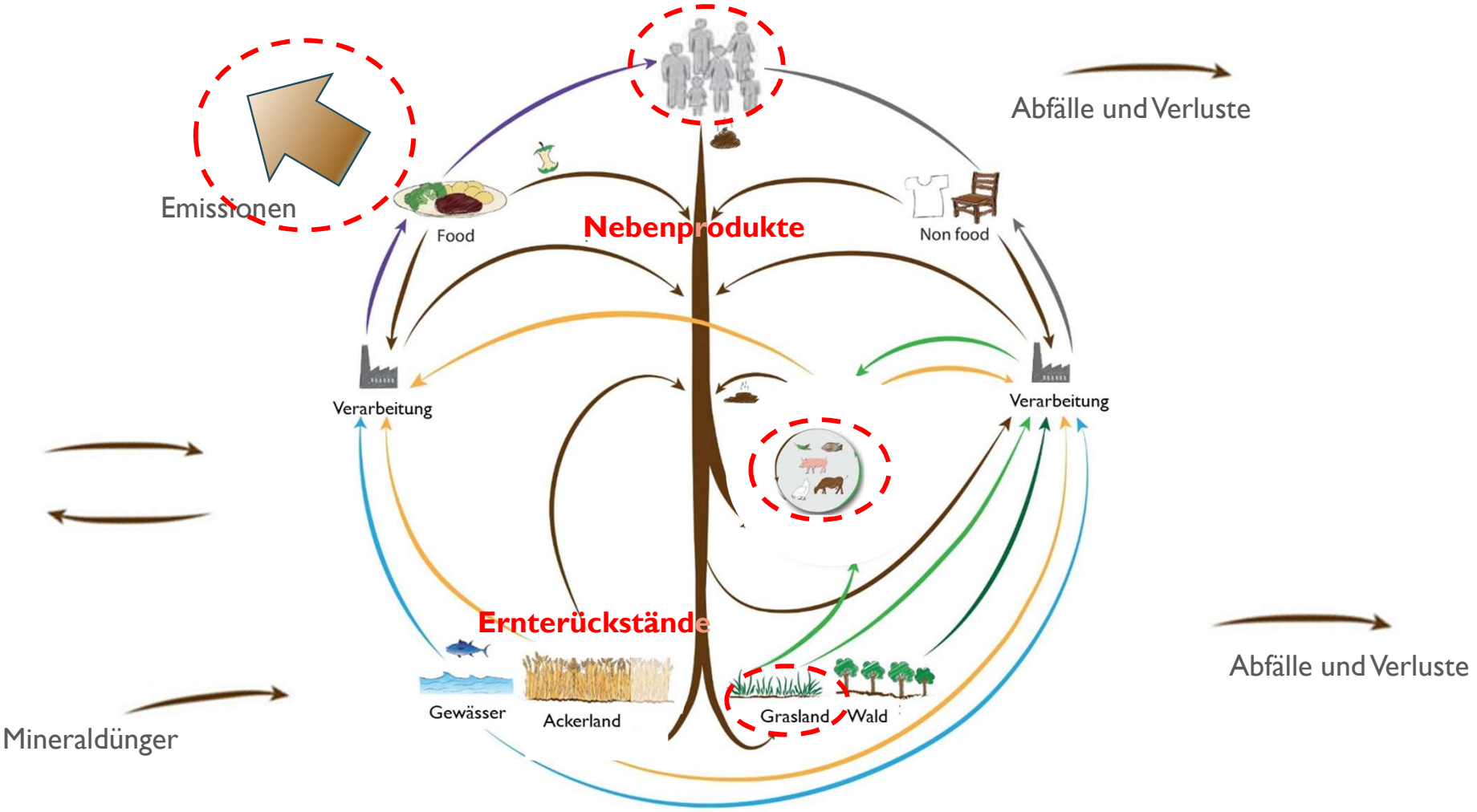
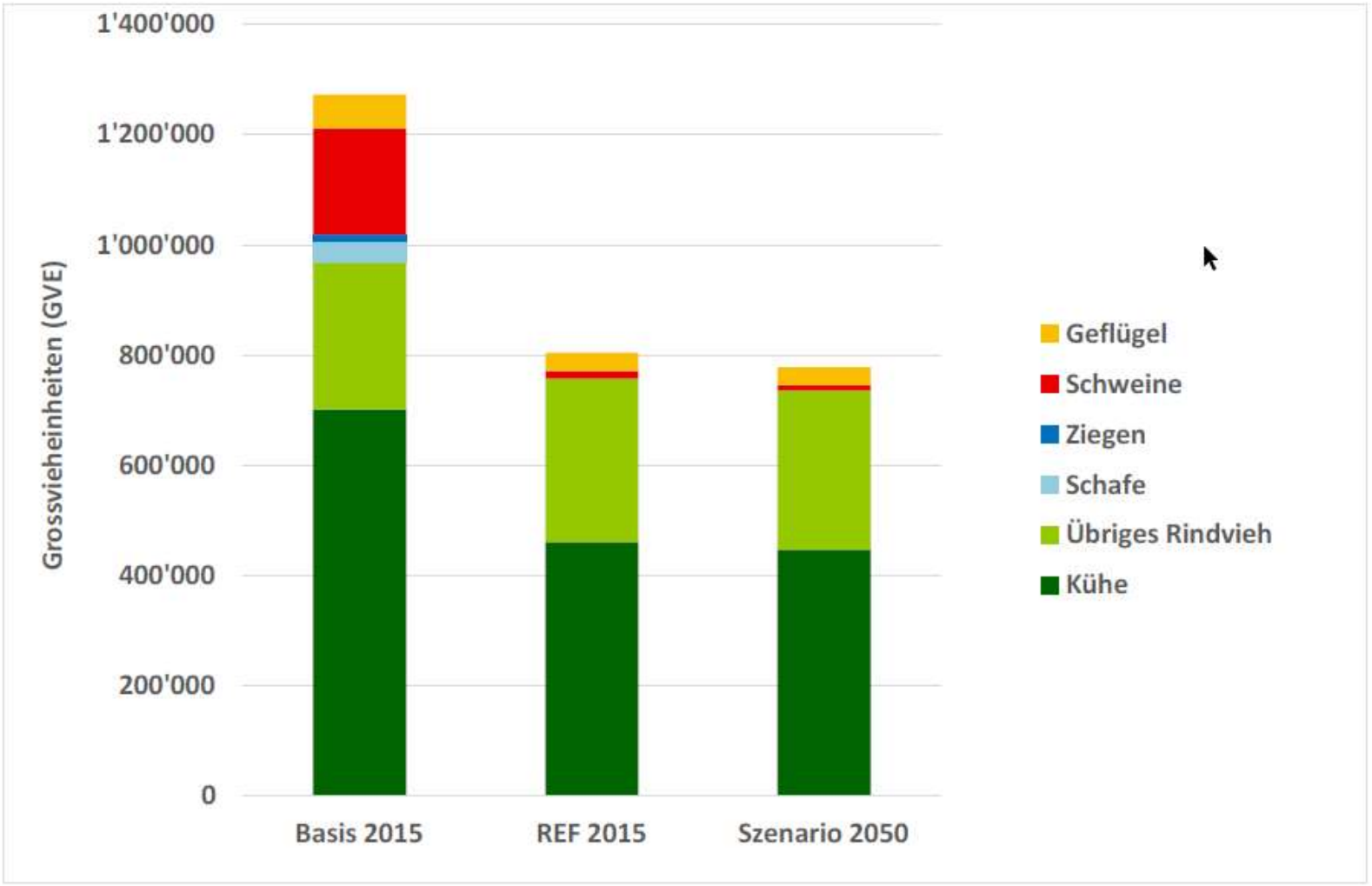


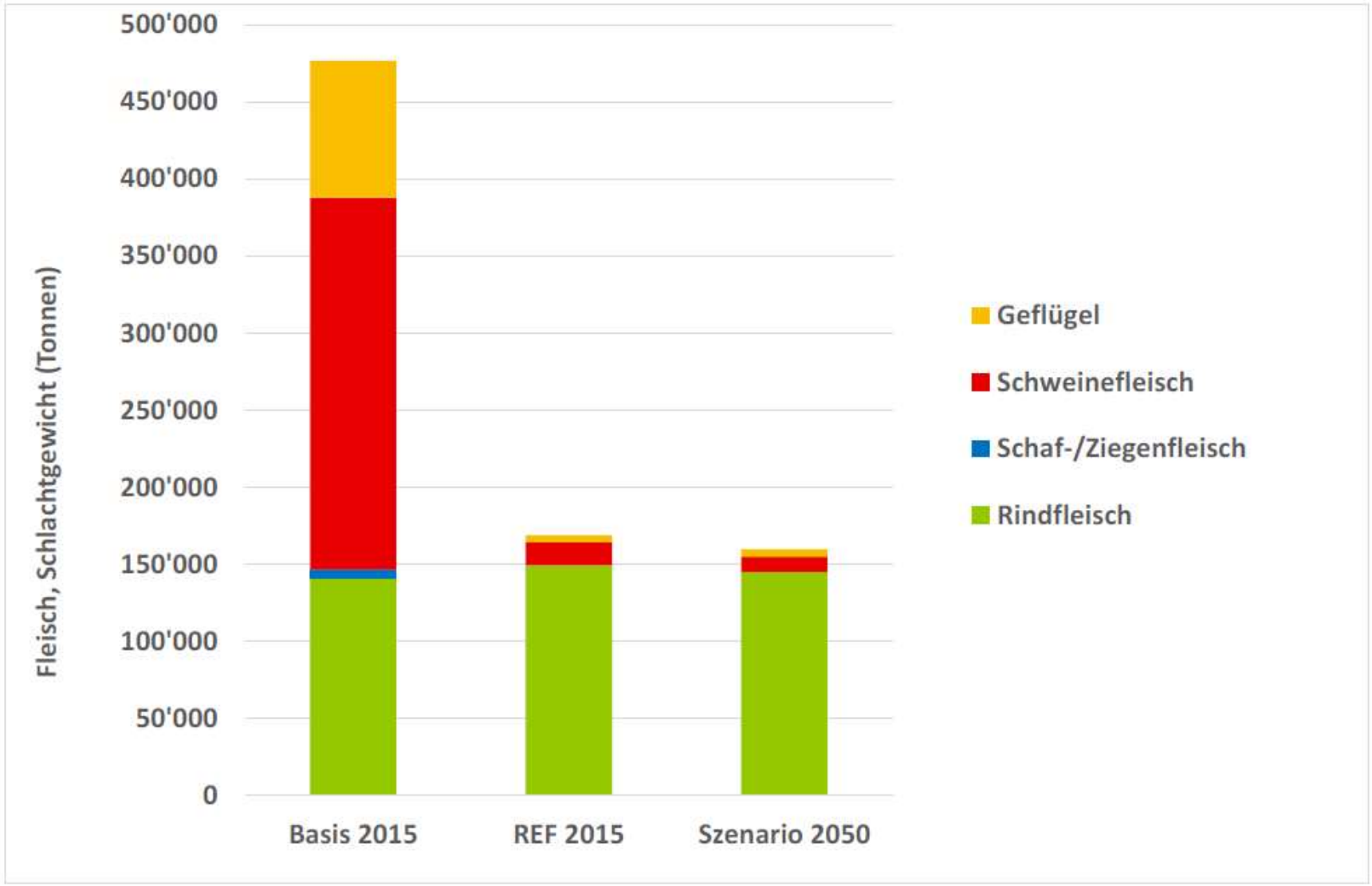
Muscat et al. 2021

Abbildung 11 Tierbestände in Grossvieheinheiten (GVE)

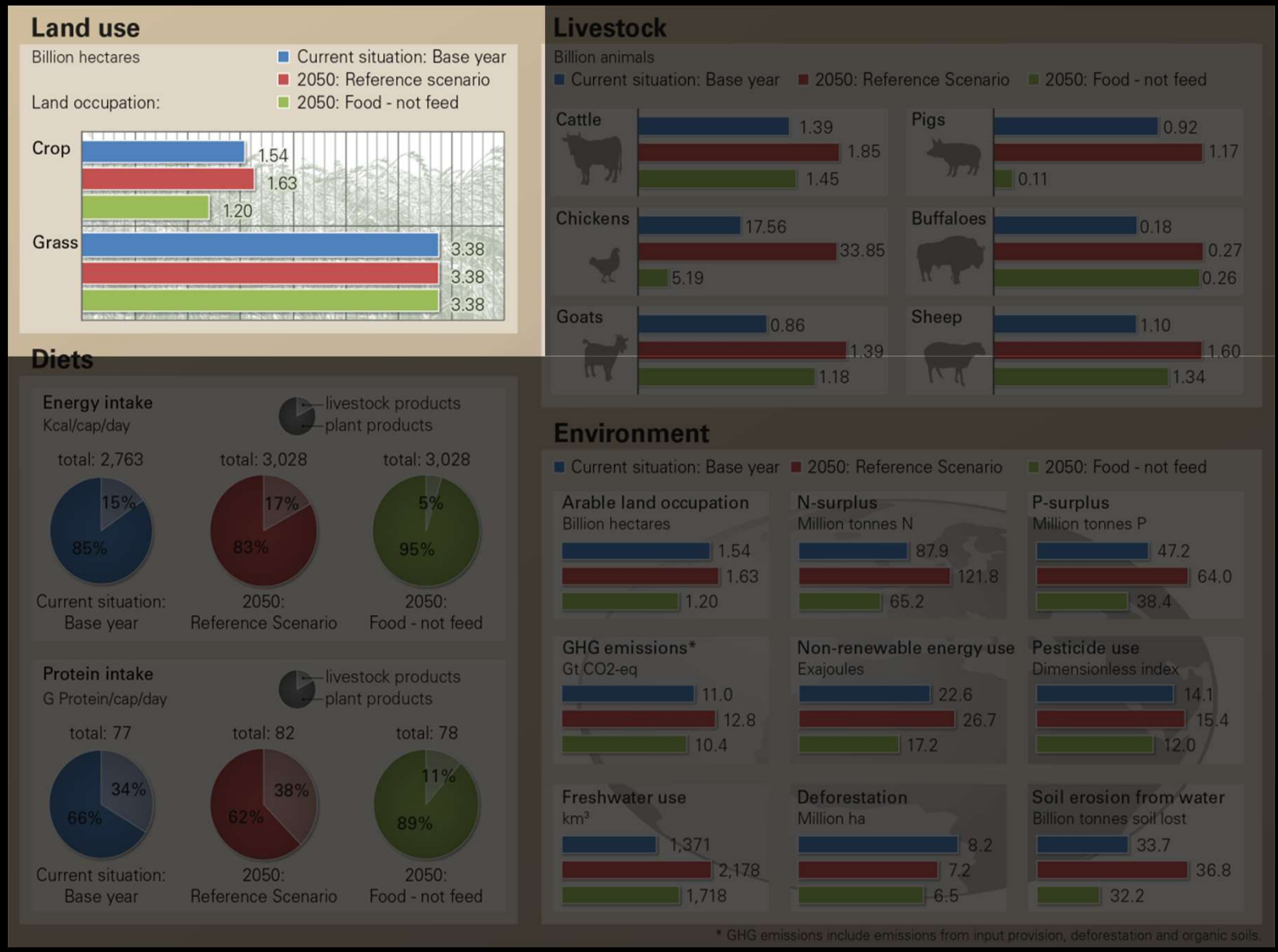


Baur und Flückiger 2018

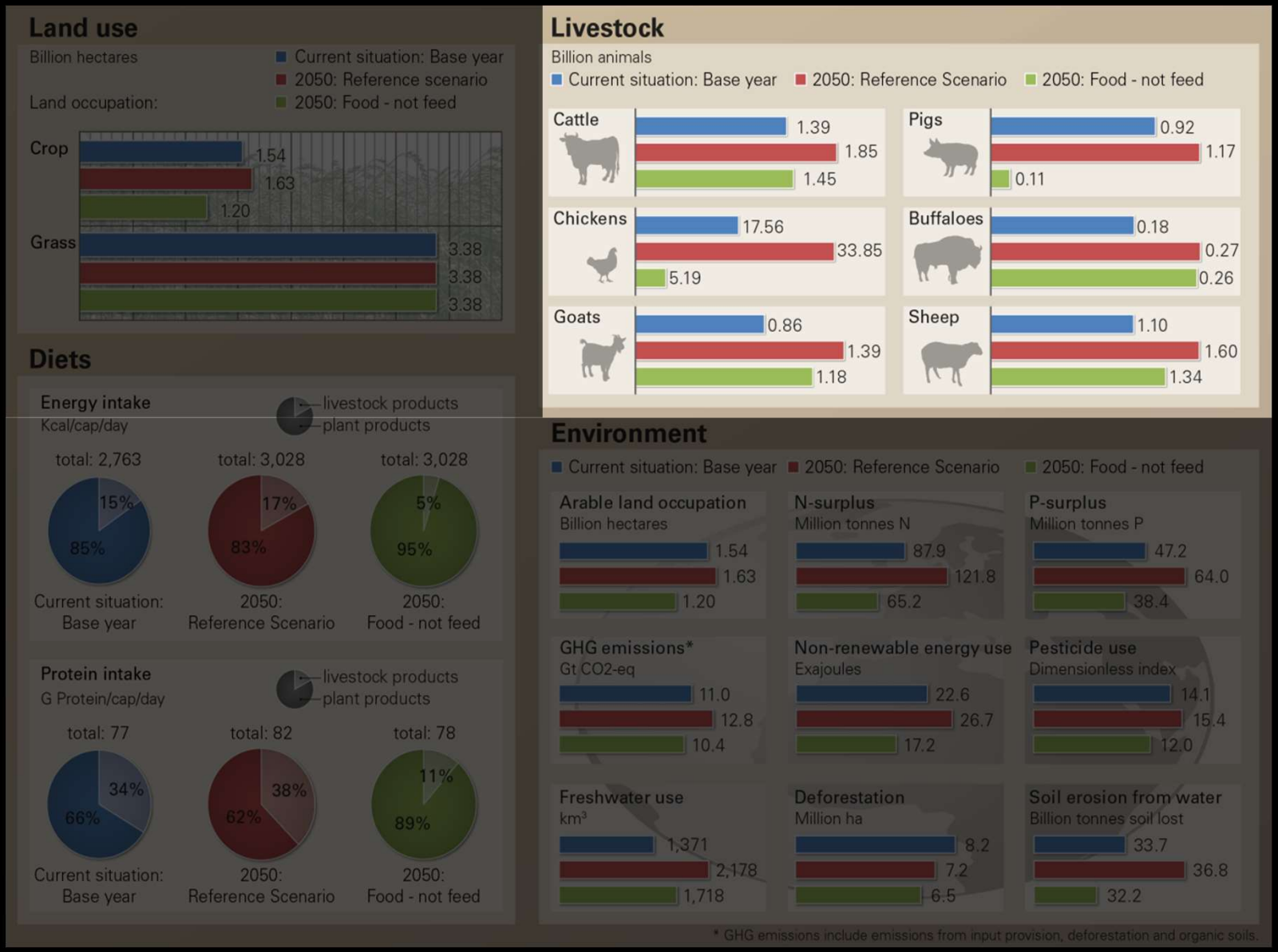
Abbildung 13 Fleischproduktion (Schlachtgewicht)



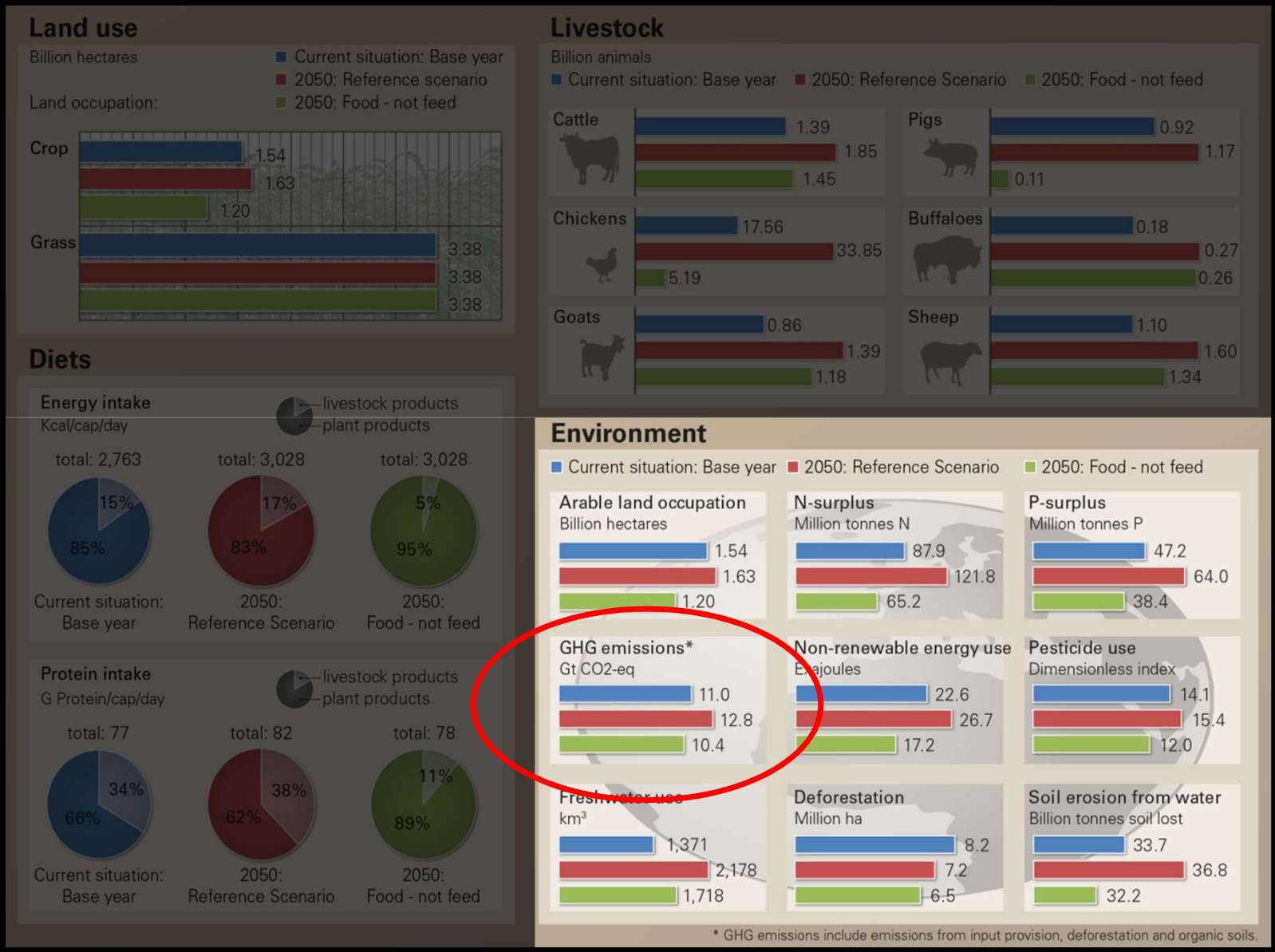
Baur und Flückiger 2018



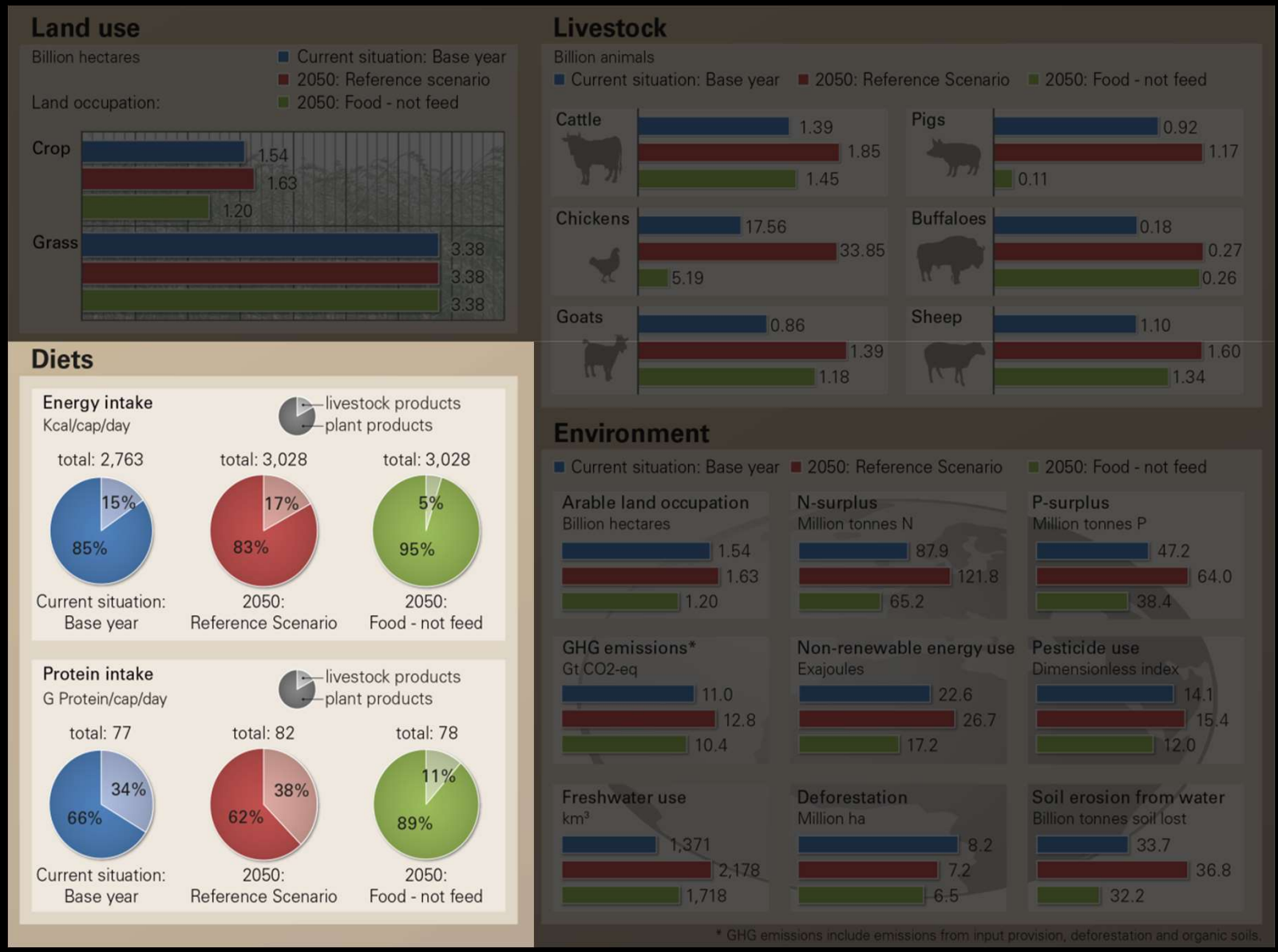
Schader et al. 2015



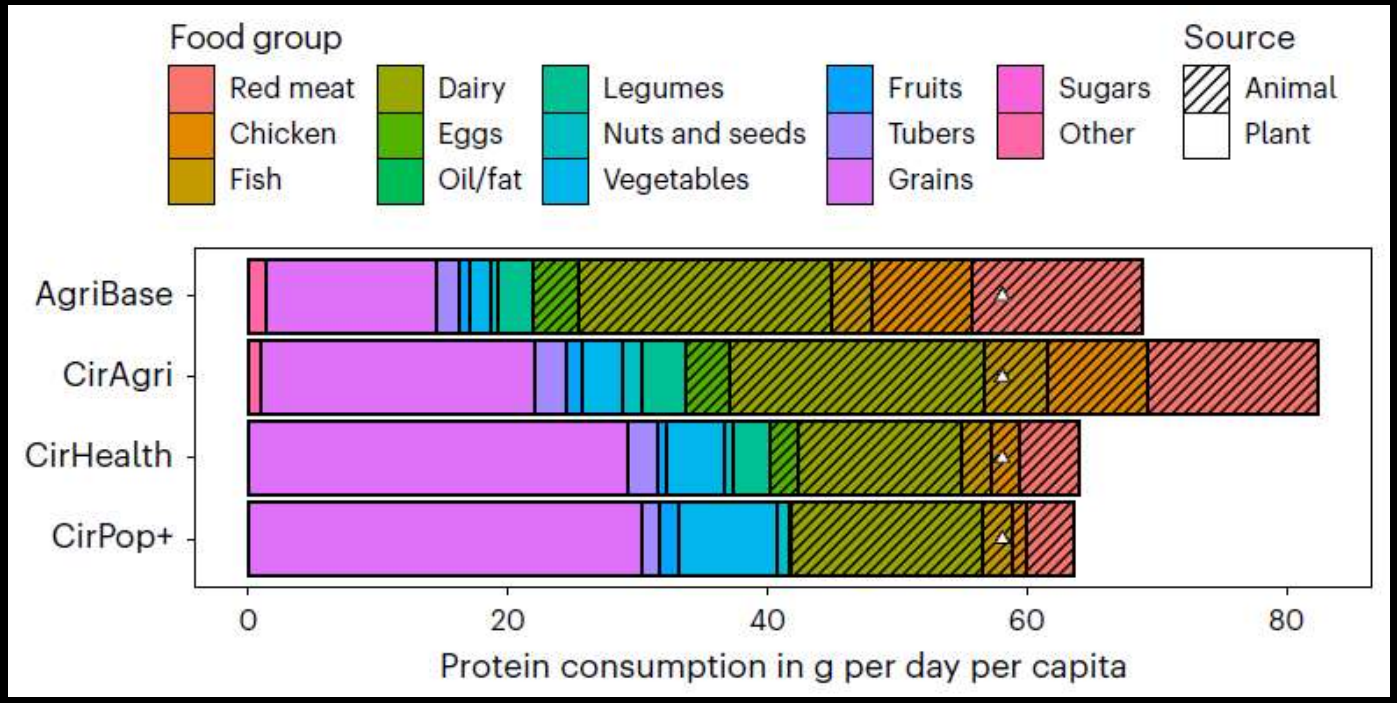
Schader et al. 2015



Schader et al. 2015



Schader et al. 2015



Van Zanten et al. 2023

Articles

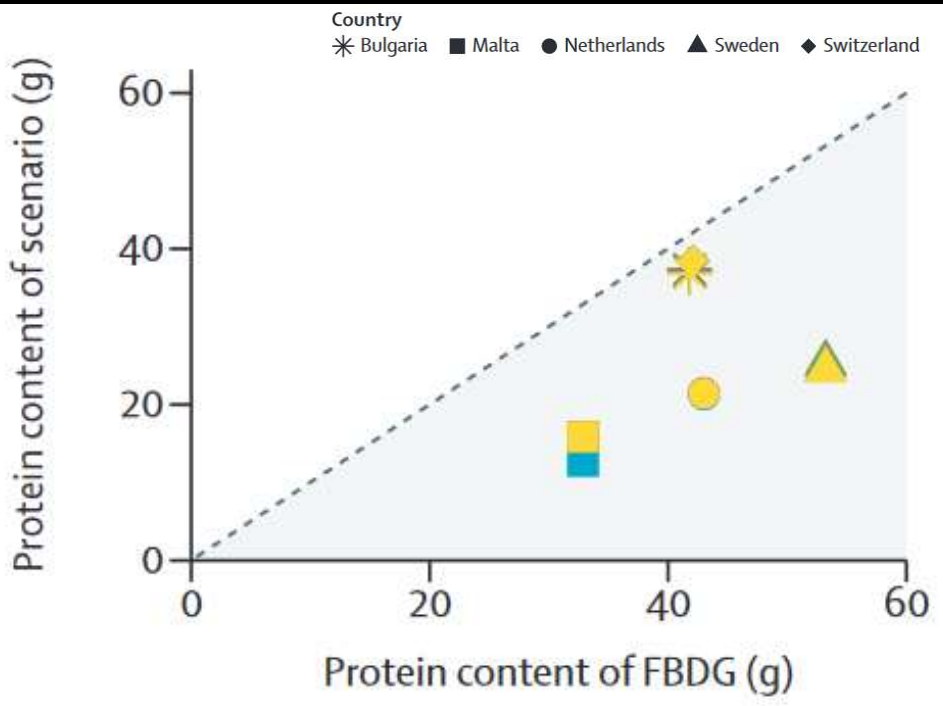
The compatibility of circularity and national dietary recommendations for animal products in five European countries: a modelling analysis on nutritional feasibility, climate impact, and land use

Anita Frehner, Renée P M Cardinaals, Imke J M de Boer, Adrian Muller, Christian Schader, Benjamin van Selm, Ollie van Hal, Giulia Pestoni, Sabine Rohrmann, Mario Herrero, Hannah H E van Zanten

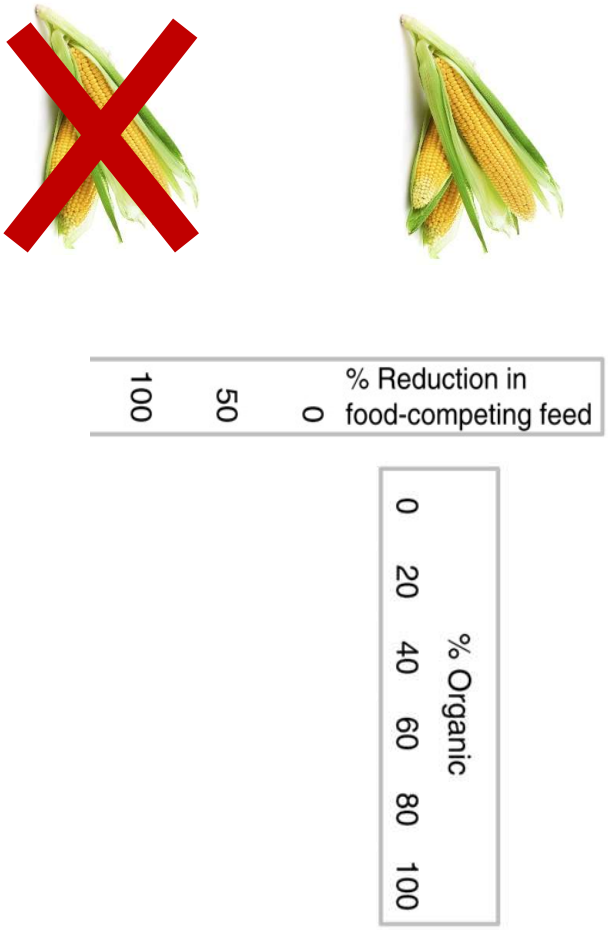
Lancet Planet Health 2022; 6: e475-83

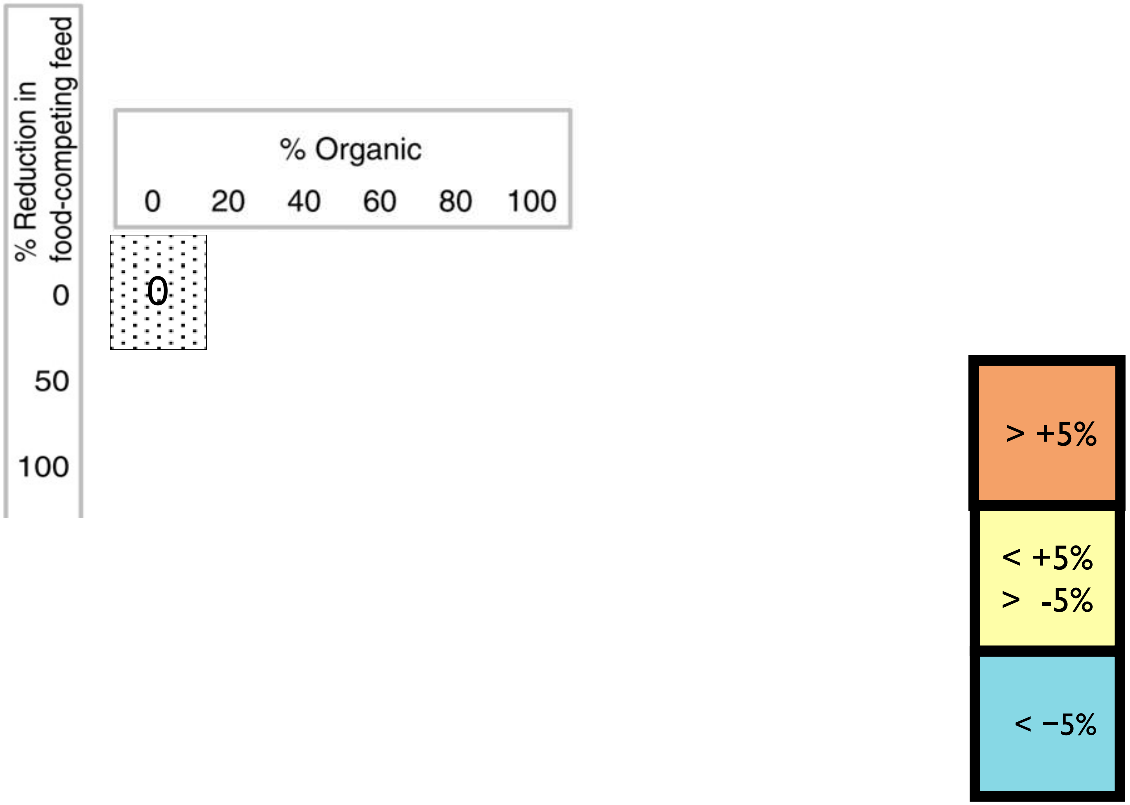
Summary

Background National food-based dietary guidelines (FBDGs) are generally designed from a human health perspective and often disregard sustainability aspects. Circular food production systems are a promising solution to achieve

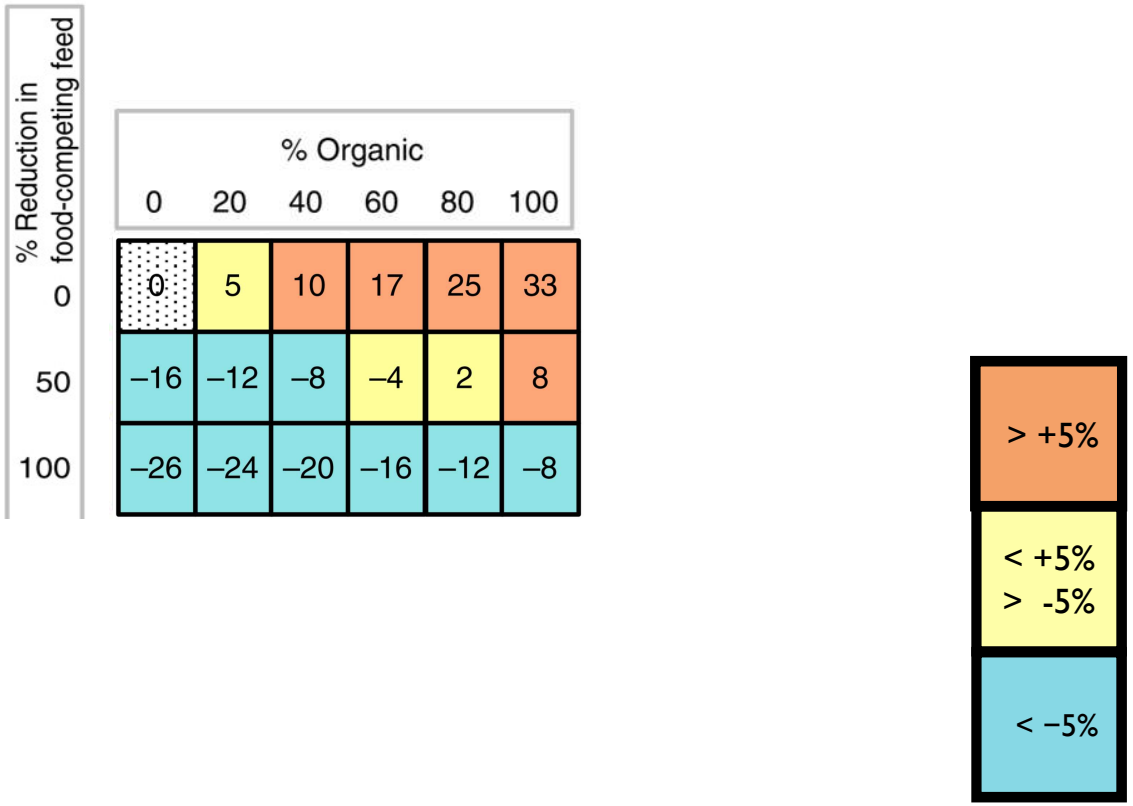


Muller et al. 2017; Courtesy: R. Zürcher





Muller et al. 2017; Courtesy: R. Zürcher



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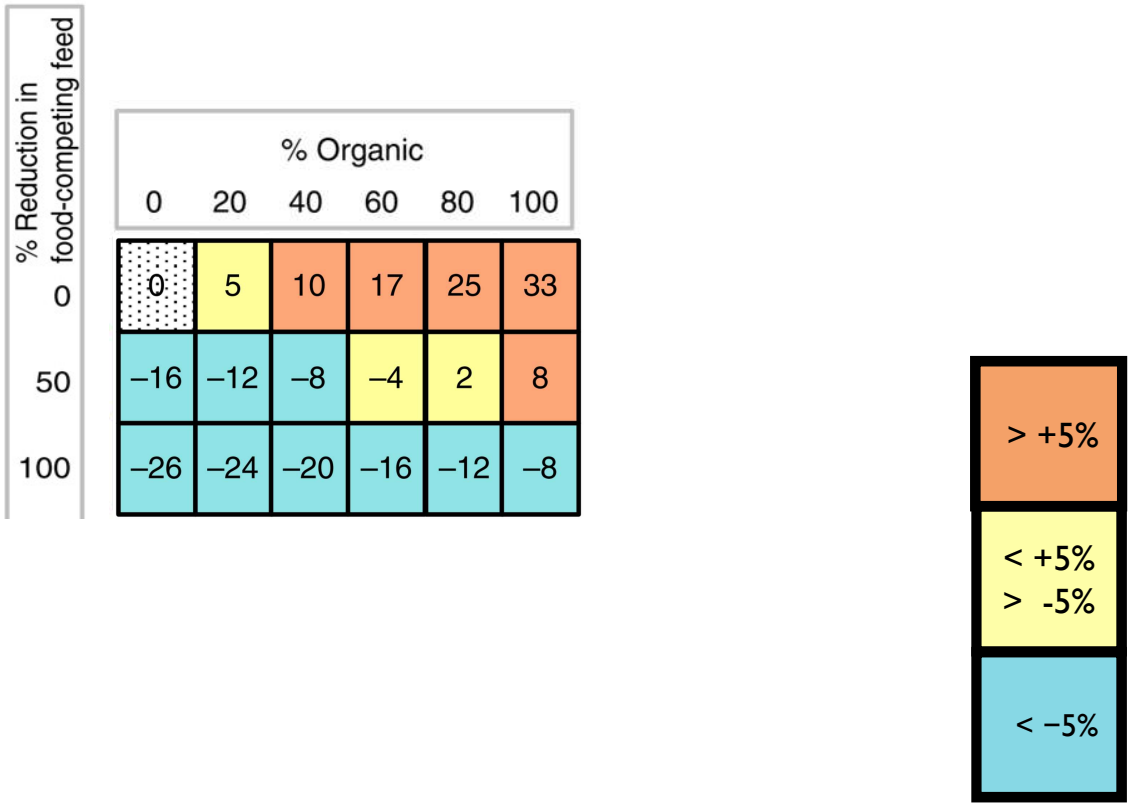

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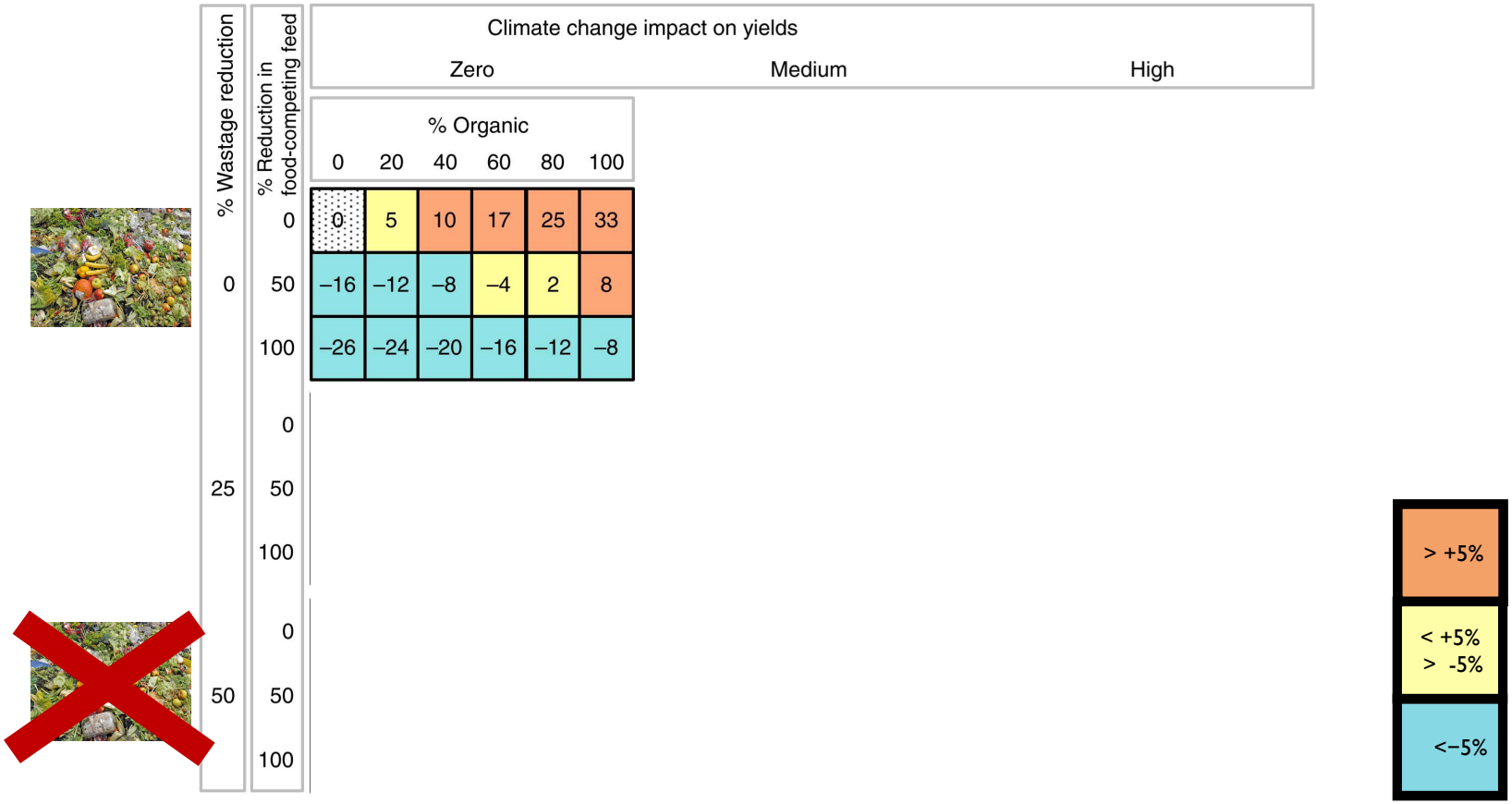

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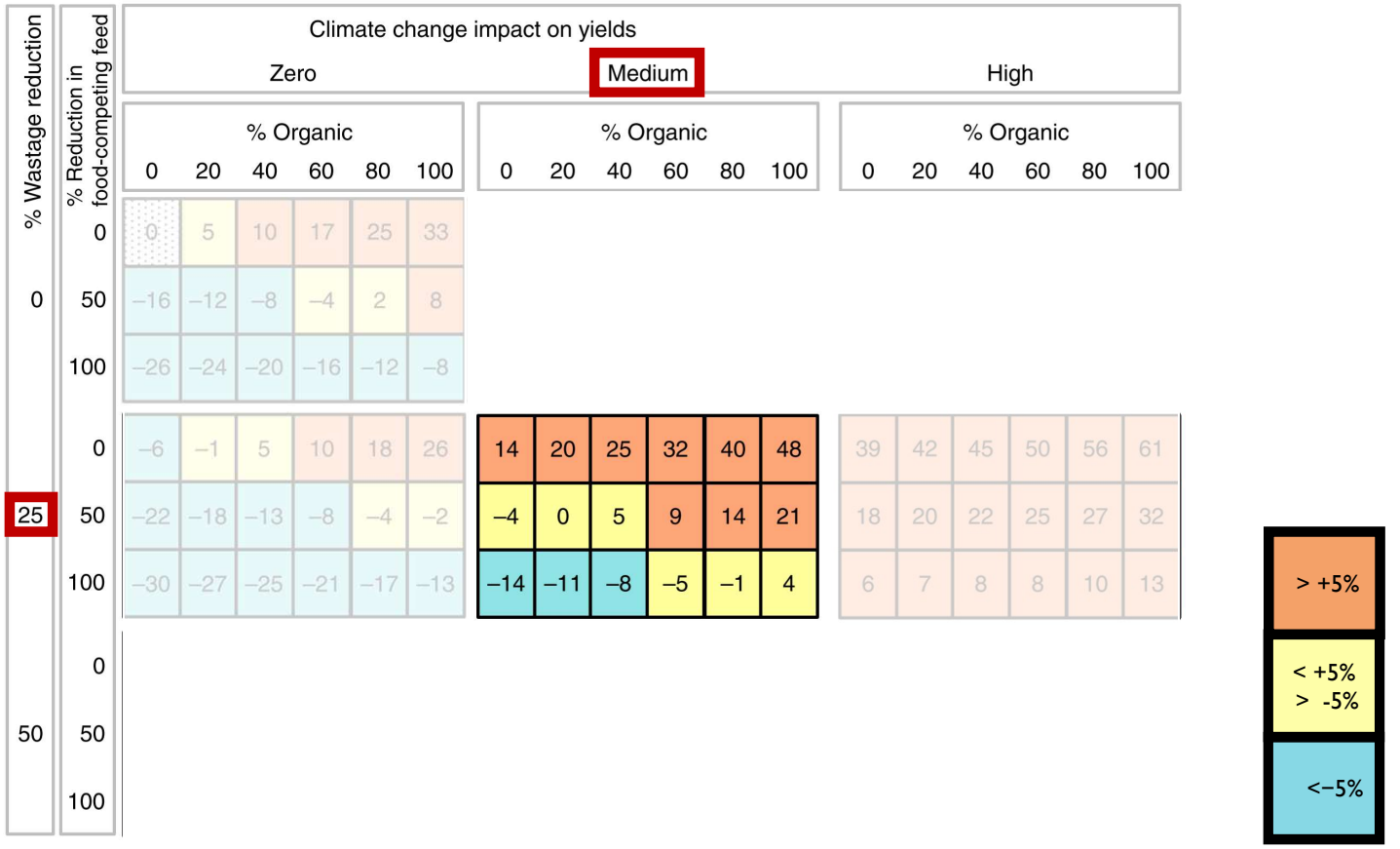

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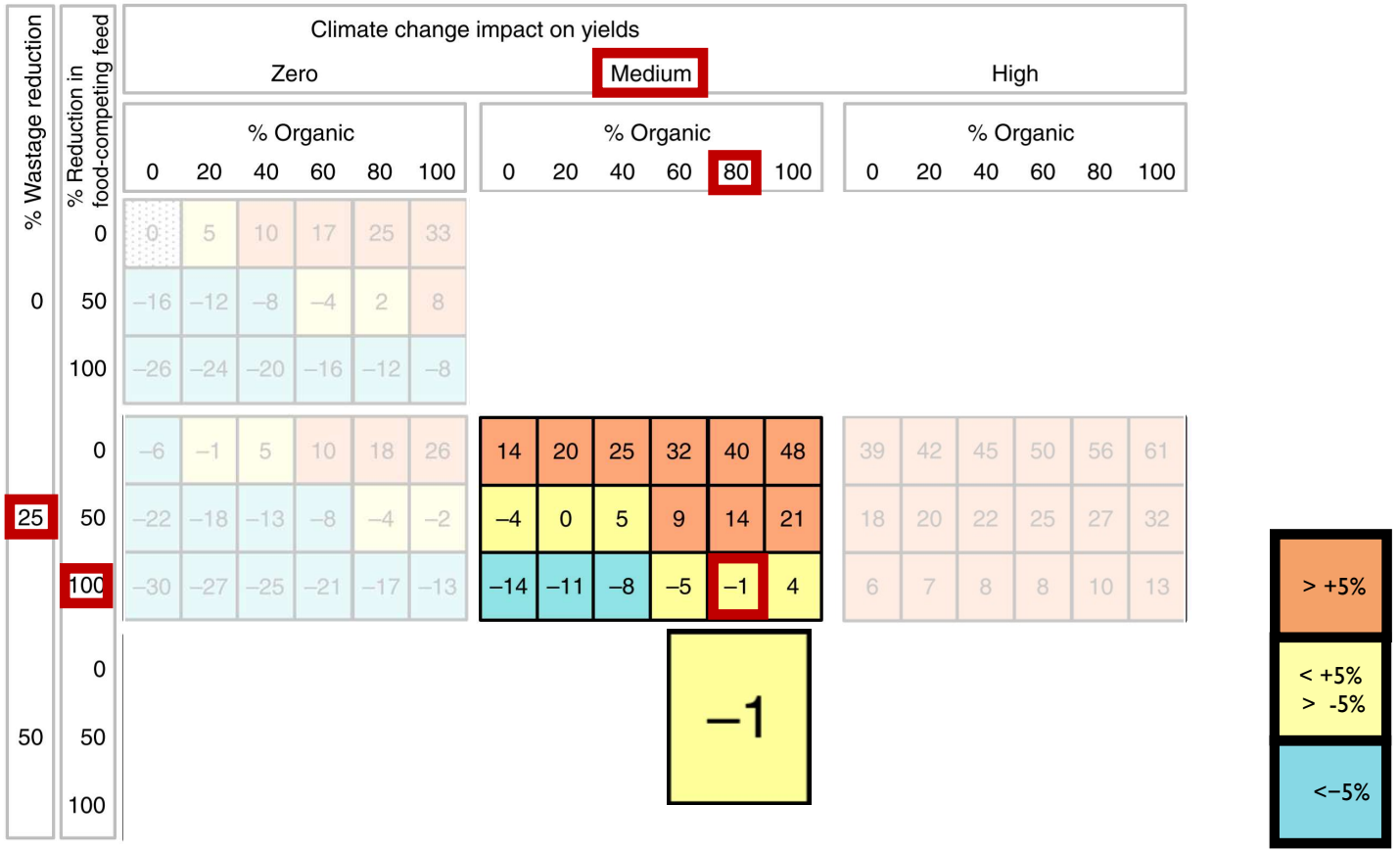

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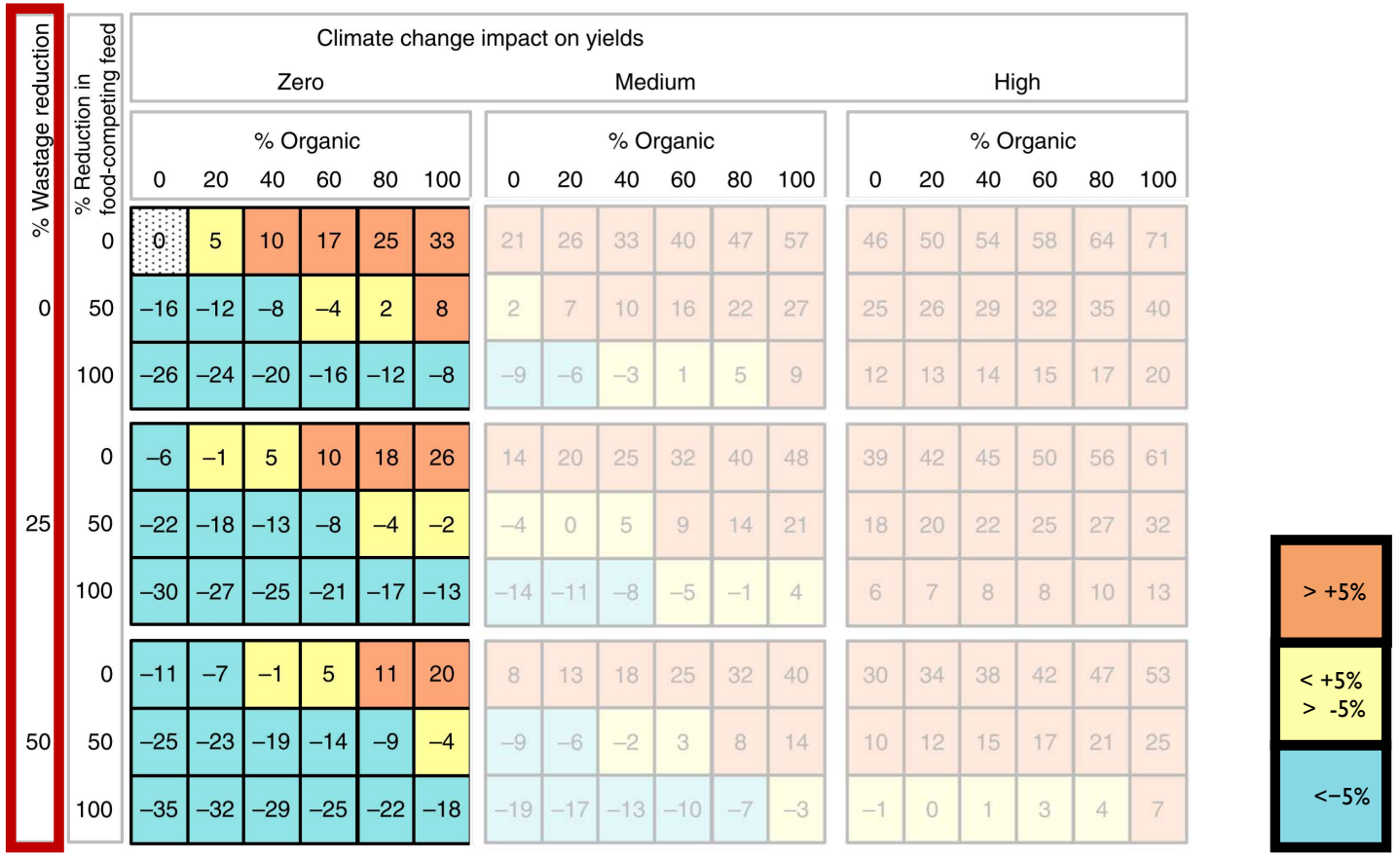

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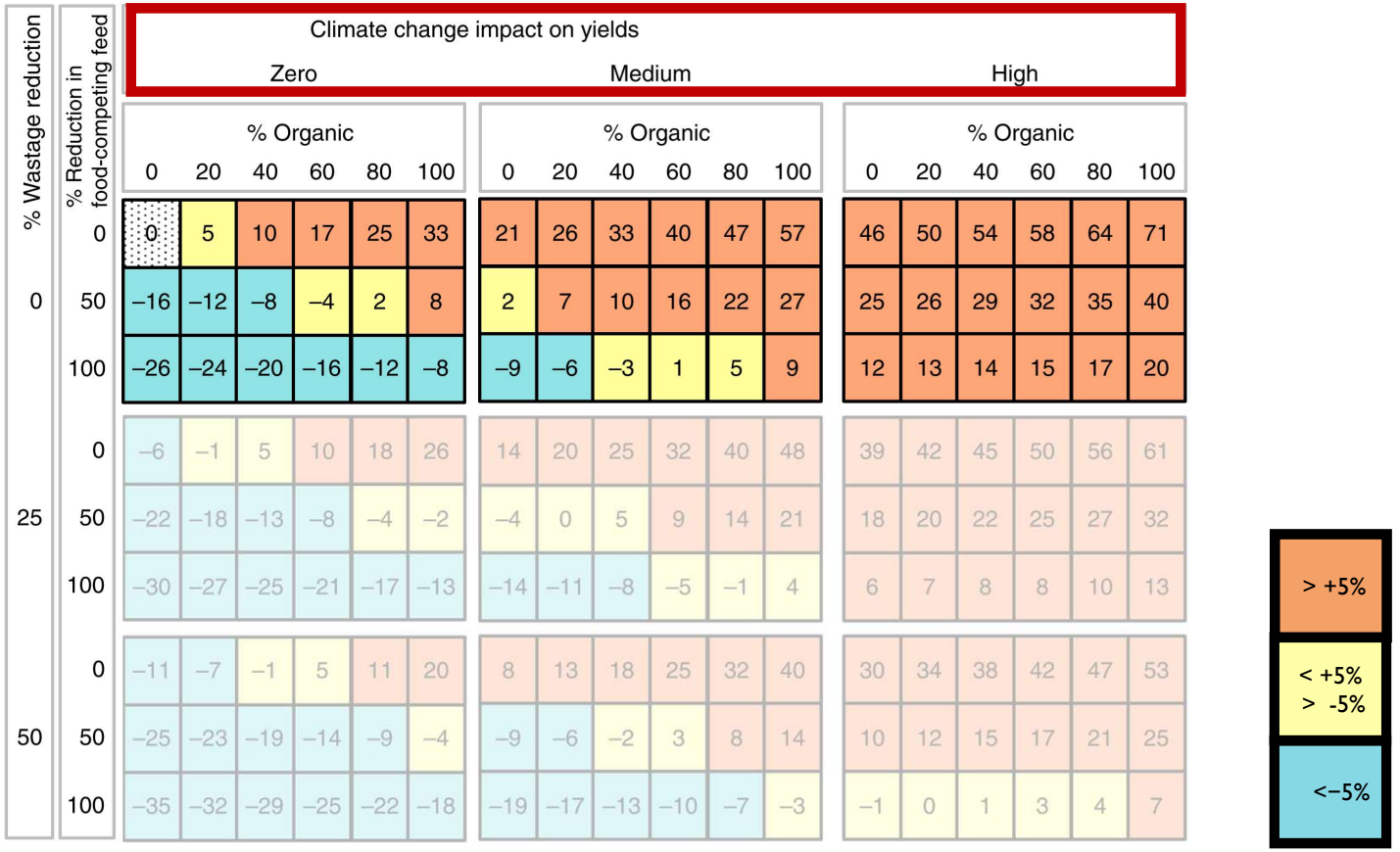
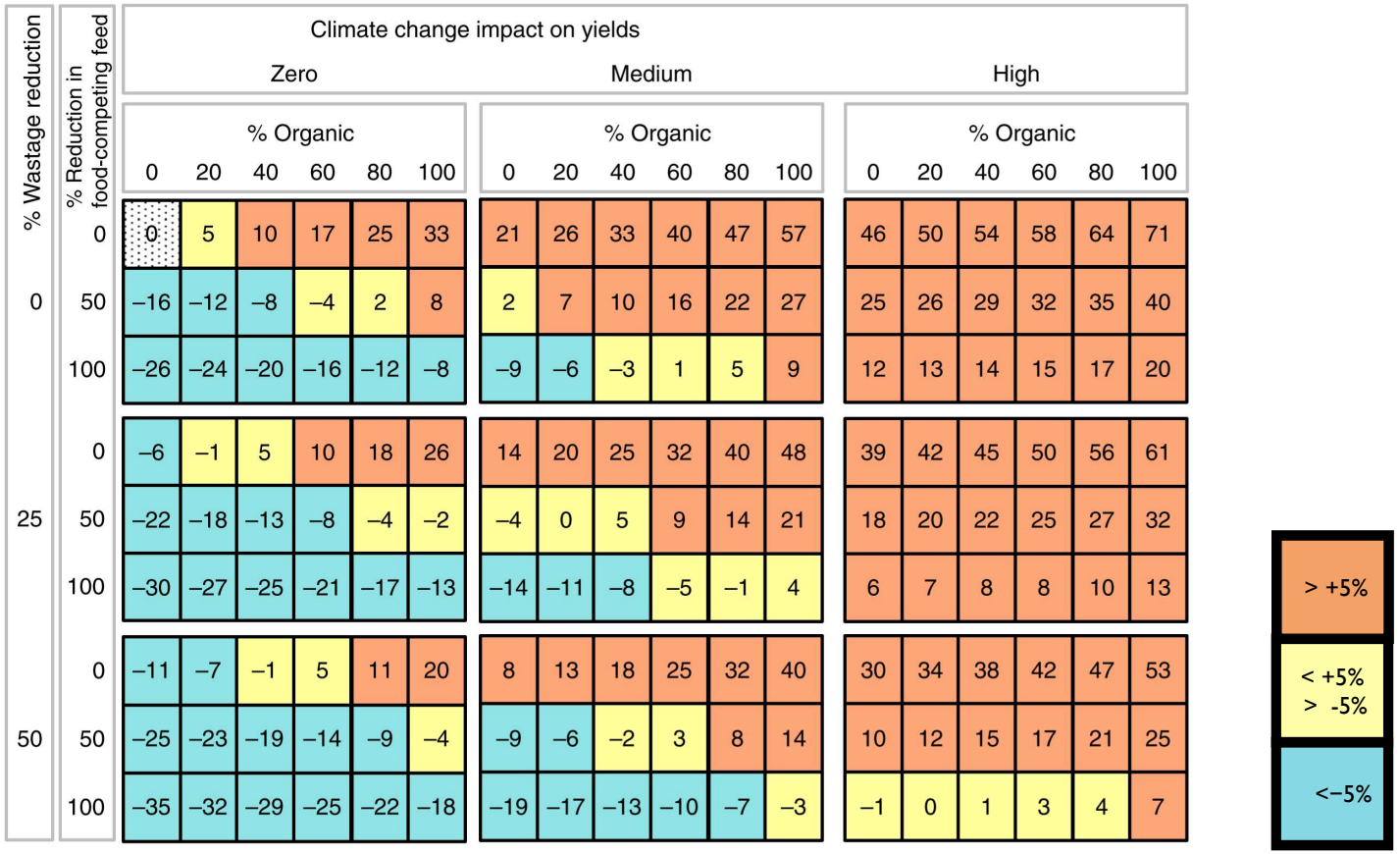


Muller et al. 2017; Courtesy: R. Zürcher

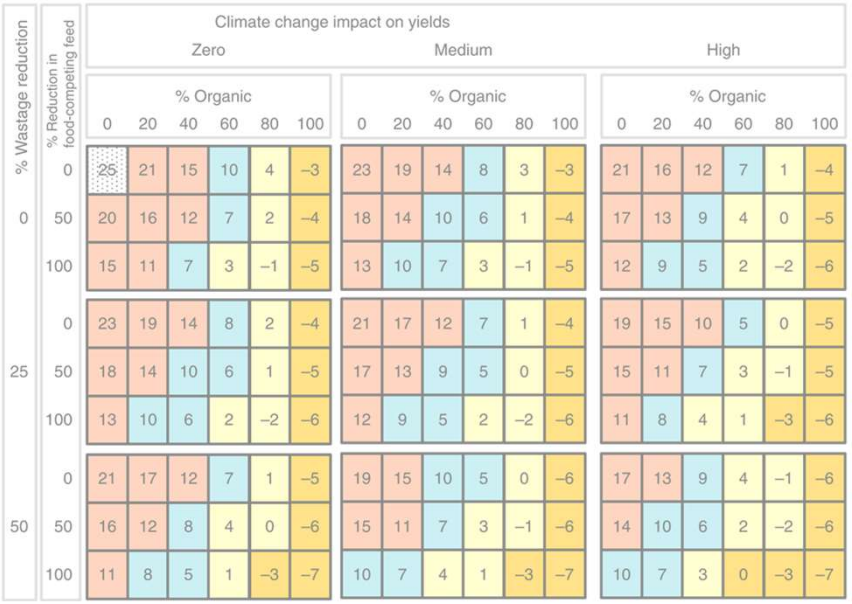


Muller et al. 2017; Courtesy: R. Zürcher

Stickstoffversorgung im Biolandbau

- Nicht nur die Produkte, sondern auch der Dünger warden auf der Fläche produziert.

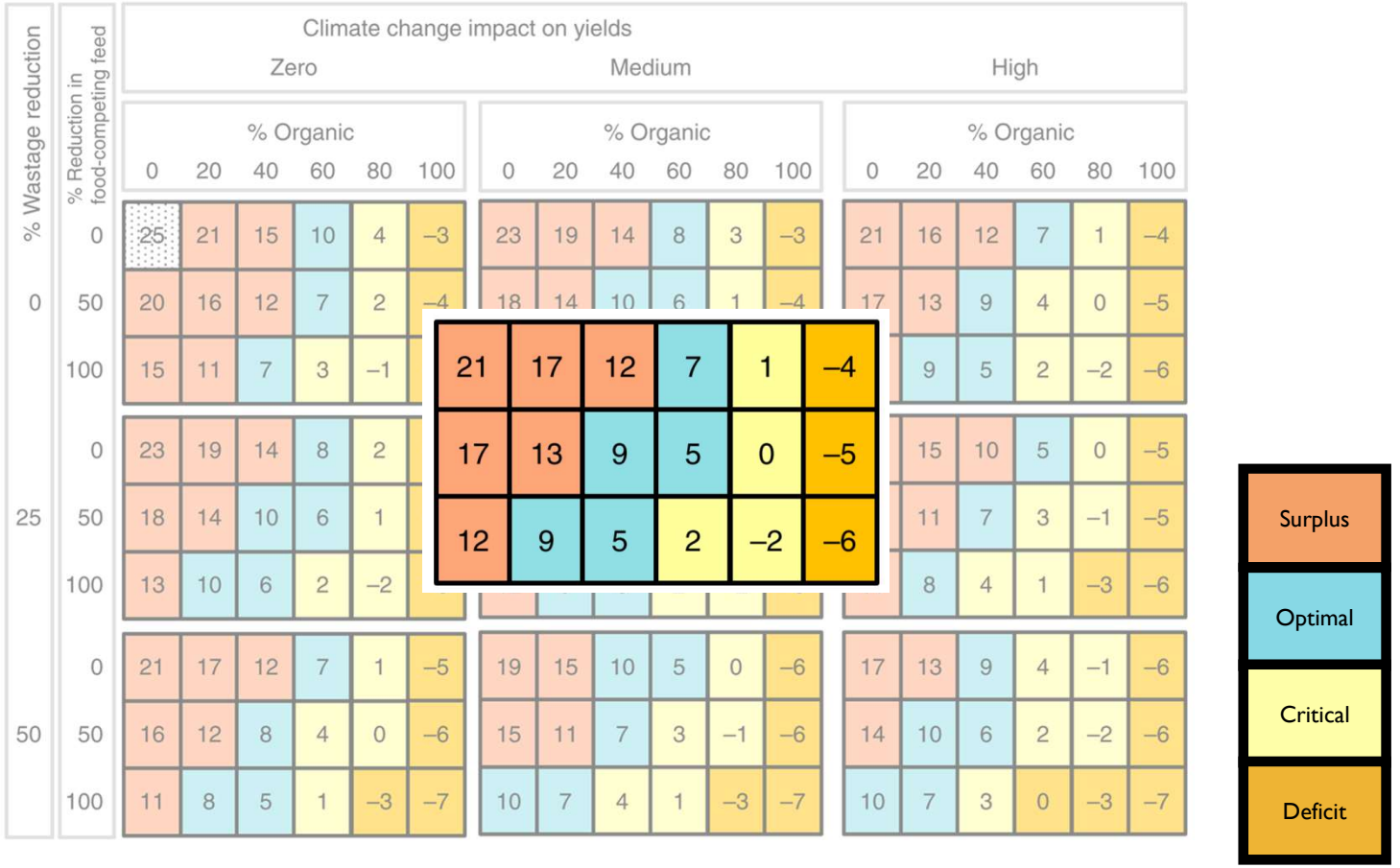
- Herausforderung, genügend Nährstoffe bereitzustellen



> 10kg/ha	Surplus
between 10 and 5kg/ha	Optimal
between +5 and -5 kg/ha	Critical
<-5kg/ha	Deficit

Muller et al. 2017; Courtesy: R. Zürcher

Muller et al. 2017; Courtesy: R. Zürcher



Muller et al. 2017; Courtesy: R. Zürcher

% Wastage reduction	% Reduction in food-competing feed	Climate change impact on yields: Zero						Medium						High					
		% Organic: 0	20	40	60	80	100	0	20	40	60	80	100	0	20	40	60	80	100
0	0	0	5	10	17	25	33	21	26	33	40	47	57	46	50	54	58	64	71
	50	−16	−12	−8	−4	2	8	2	7	10	16	22	27	25	26	29	32	35	40
	100	−26	−24	−20	−16	−12	−8	−9	−6	−3	1	5	9	12	13	14	15	17	20
25	0	−6	−1	5	10	18	26	14	20	25	32	40	48	39	42	45	50	56	61
	50	−22	−18	−13	−8	−4	−2	−4	0	5	9	14	21	18	20	22	25	27	32
	100	−30	−27	−25	−21	−17	−13	−14	−11	−8	−5	−1	4	6	7	8	8	10	13
50	0	−11	−7	−1	5	11	20	8	13	18	25	32	40	30	34	38	42	47	53
	50	−25	−23	−19	−14	−9	−4	−9	−6	−2	3	8	14	10	12	15	17	21	25
	100	−35	−32	−29	−25	−22	−18	−19	−17				−3	−1	0	1	3	4	7

3

% Wastage reduction	% Reduction in food-competing feed	Climate change impact on yields: Zero						Medium						High					
		% Organic: 0	20	40	60	80	100	0	20	40	60	80	100	0	20	40	60	80	100
0	0	25	21	15	10	4	−3	23	19	14	8	3	−3	21	16	12	7	1	−4
	50	20	16	12	7	2	−4	18	14	10	6	1	−4	17	13	9	4	0	−5
	100	15	11	7	3	−1	−5	13	10	7	3	−1	−5	12	9	5	2	−2	−6
25	0	23	19	14	8	2	−4	21	17	12	7	1	−4	19	15	10	5	0	−5
	50	18	14	10	6	1	−5	17	13	9	5	0	−5	15	11	7	3	−1	−5
	100	13	10	6	2	−2	−6	12	9	5	2	−2	−6	11	8	4	1	−3	−6
50	0	21	17	12	7	1	−5	19	15	10	5	0	−6	17	13	9	4	−1	−6
	50	16	12	8	4	0	−6	15	11	7	3	−1	−6	14	10	6	2	−2	−6
	100	11	8	5	1	−3	−7	10	7				−7	10	7	3	0	−3	−7

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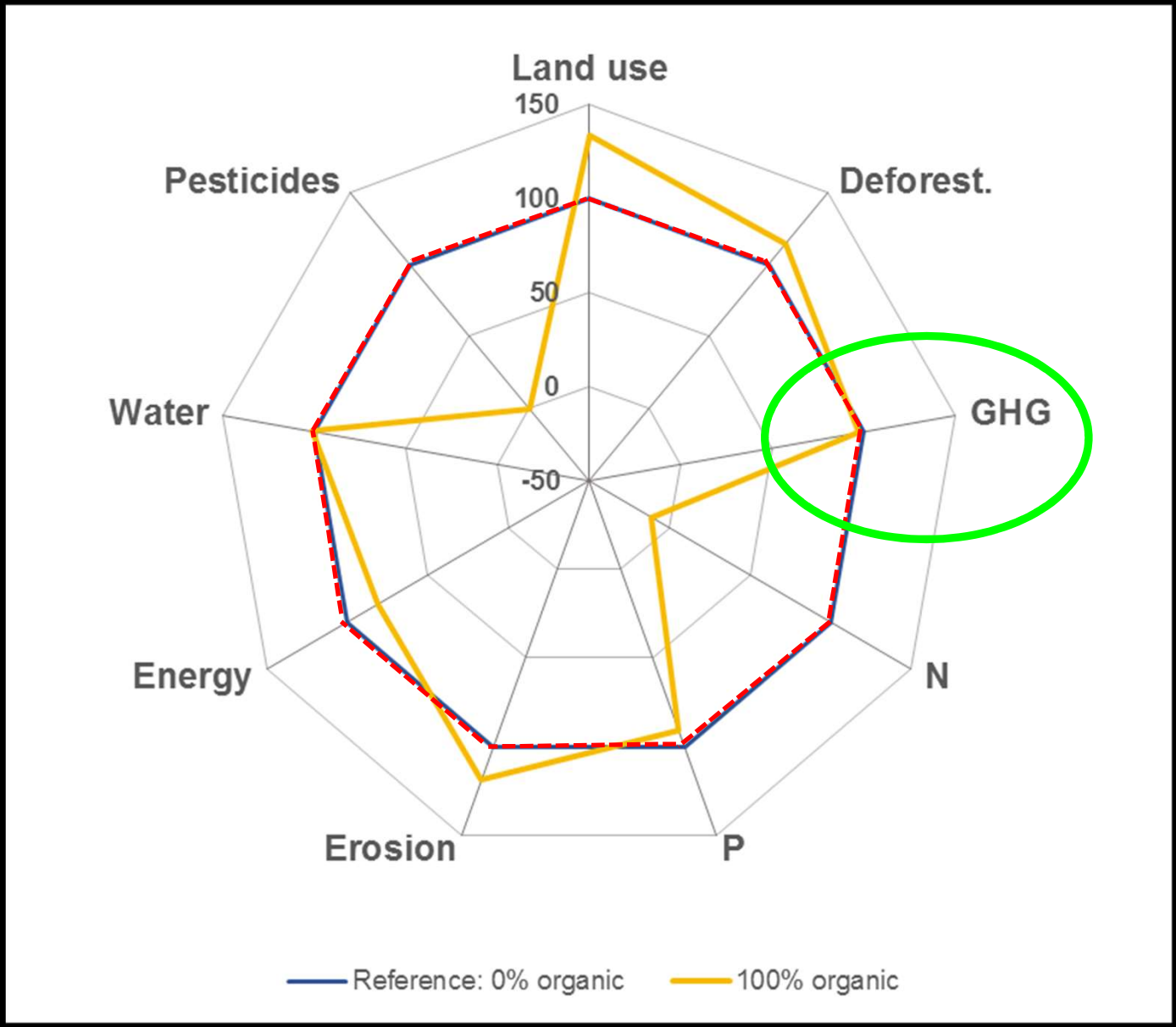
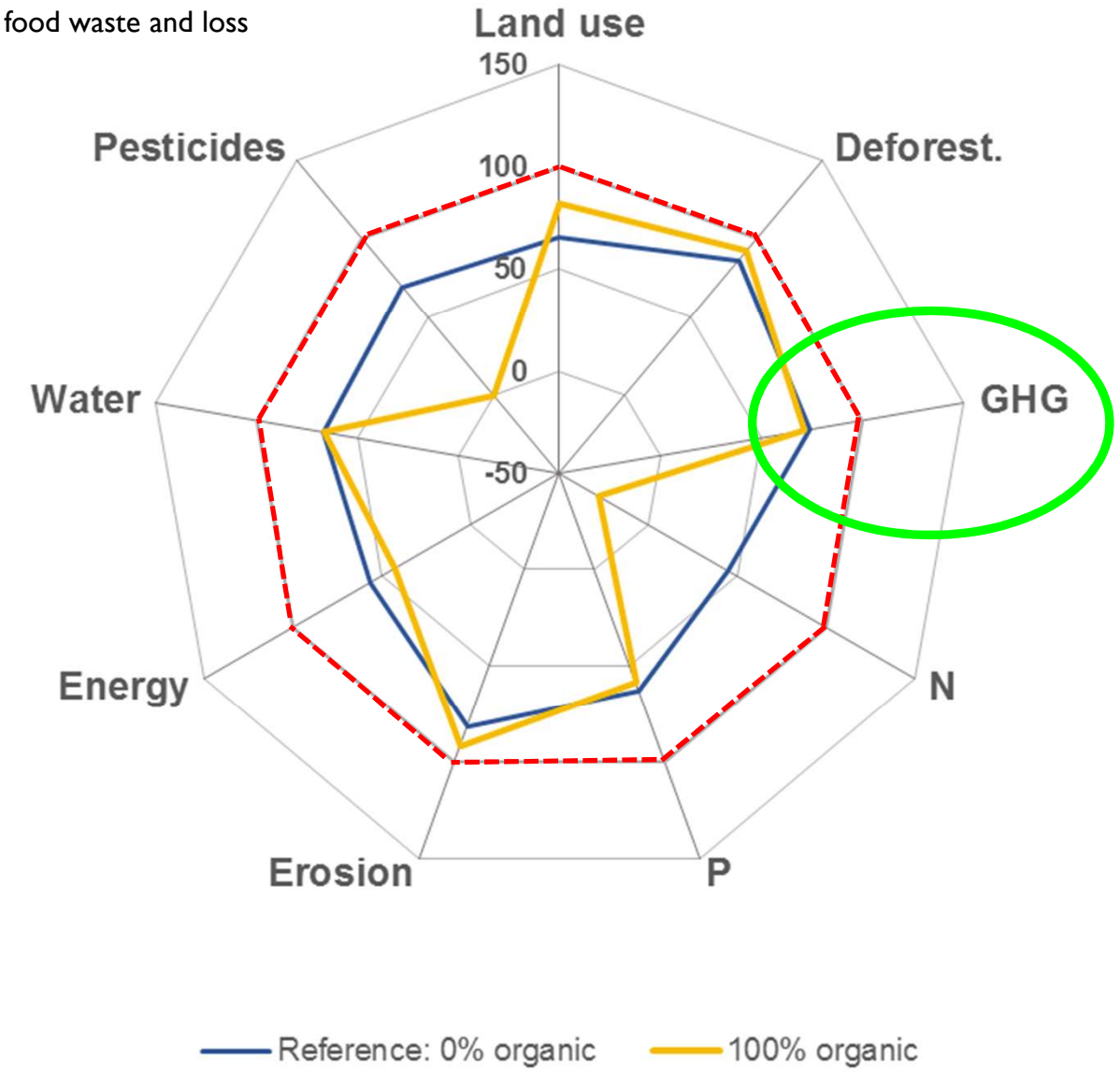
Muller et al. 2017; Courtesy: R. Zürcher



Muller et al. 2017

100% food competing feed reduction
50% less food waste and loss



Muller et al. 2017

nature climate change

https://doi.org/10.1038/s41558-023-01721-5

Article

Soil organic carbon stocks potentially at risk of decline with organic farming expansion

Ulysse Gaudaré[1], Matthias Kuhnert[2], Pete Smith[2], Manuel Martin[3], Pietro Barbieri[1], Sylvain Pellerin[1] & Thomas Nesme[1]

Received: 2 September 2022

Accepted: 30 May 2023

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Check for updates

Organic farming is often considered a strategy that increases croplands' soil organic carbon (SOC) stock. However, organic farms currently occupy only a small fraction of cropland, and it is unclear how the full-scale expansion

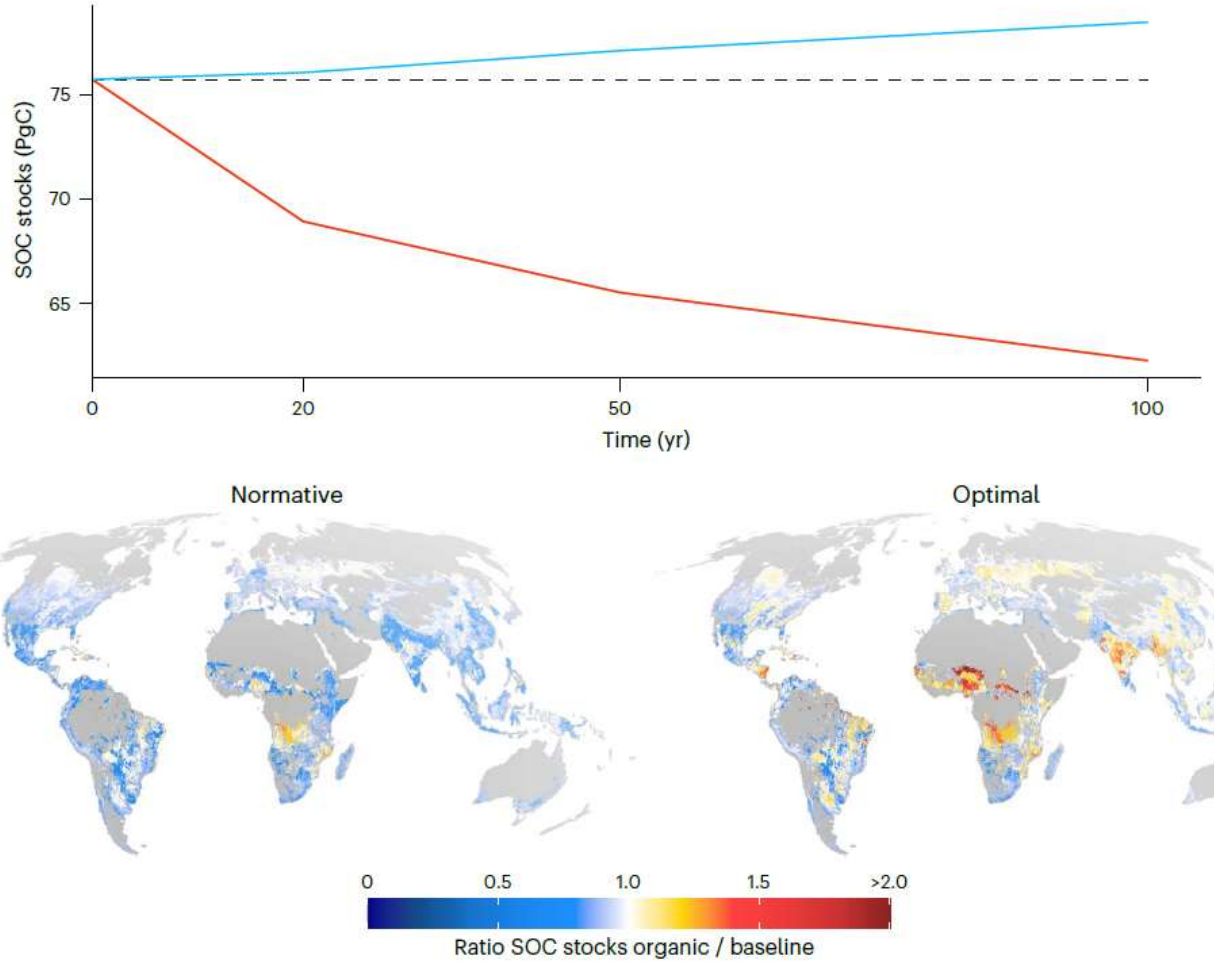

Fig. 2 | Global changes in SOC stocks and SOC stock ratios between the 100% organic scenarios and the baseline at 20 yr. Changes in global SOC stocks (Pg C) in croplands (top) and spatial distribution of ratios (bottom) are reported for the normative (red line) and optimal (blue line) 100% organic scenarios. The black dashed line represents the baseline's global SOC stocks for croplands.

Gaudere et al. 2023

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Research

Cite this article: Ponisio LC, M'Gonigle LK, Mace KC, Palomino J, de Valpine P, Kremen C. 2015 Diversification practices reduce organic to conventional yield gap. *Proc. R. Soc. B* **282**: 20141396.
http://dx.doi.org/10.1098/rspb.2014.1396

Received: 6 June 2014
Accepted: 12 November 2014

Diversification practices reduce organic to conventional yield gap

Lauren C. Ponisio[1], Leithen K. M'Gonigle[1,2], Kevi C. Mace[1], Jenny Palomino[1], Perry de Valpine[1] and Claire Kremen[1]

[1]Department of Environmental Science, Policy, and Management, University of California, Berkeley, 130 Mulford Hall, Berkeley, CA 94720, USA
[2]Department of Biological Science, Florida State University, Tallahassee, FL 32306, USA

Agriculture today places great strains on biodiversity, soils, wa
atmosphere, and these strains will be exacerbated if current tre
lation growth, meat and energy consumption, and food w
Thus, farming systems that are both highly productive and mi
mental harms are critically needed. How organic agriculture
world food production has been subject to vigorous de
decade. Here, we revisit this topic comparing organ
yields with a new meta-dataset three times larger tha
studies containing more than 1000 observations)
analytical framework that can better account for th
ture in the data. We find organic yields are only

nature COMMUNICATIONS

ARTICLE

DOI: 10.1038/s41467-018-05956-1 OPEN

A global meta-analysis of yield stability in organic and conservation agriculture

Samuel Knapp[1,2] & Marcel G.A. van der Heijden[1,3]

One of the primary challenges of our time is to enhance global food production and security. Most assessments in agricultural systems focus on plant yield. Yet, these analyses neglect temporal yield stability, or the variability and reliability of production across years. Here we perform a meta-analysis to assess temporal yield stability of three major cropping systems:

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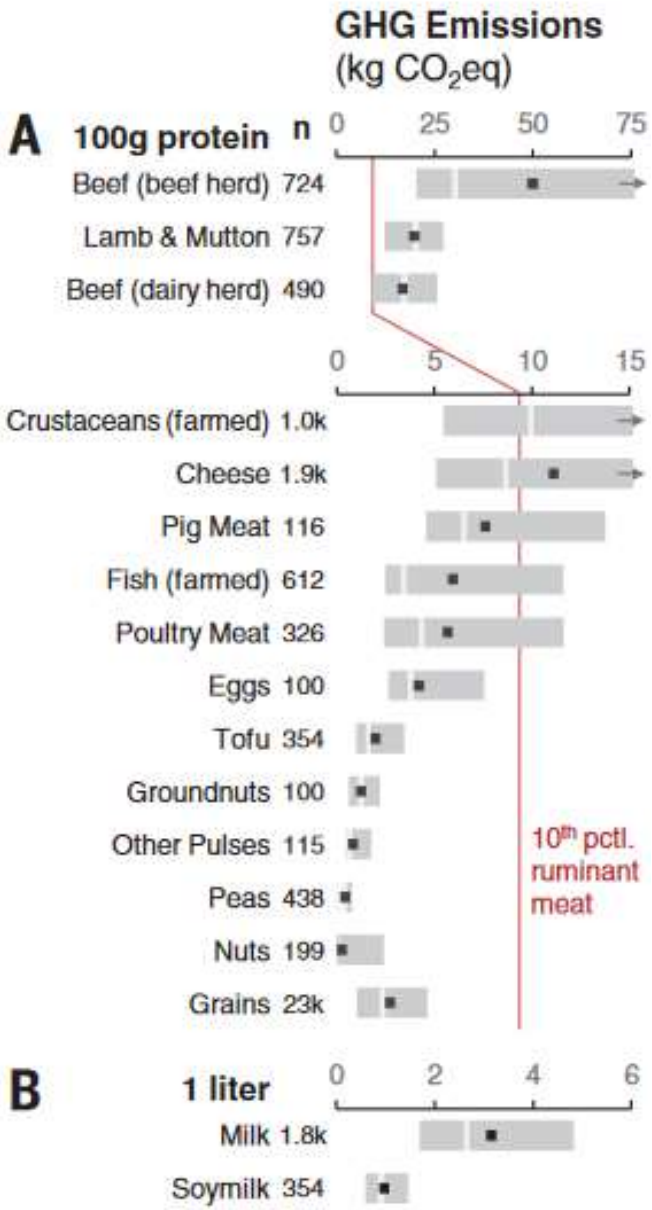
klimafreundlichen,

gleichzeitig aber auch
multifunktionalen

Land- und Ernährungswirtschaft zu formulieren.»

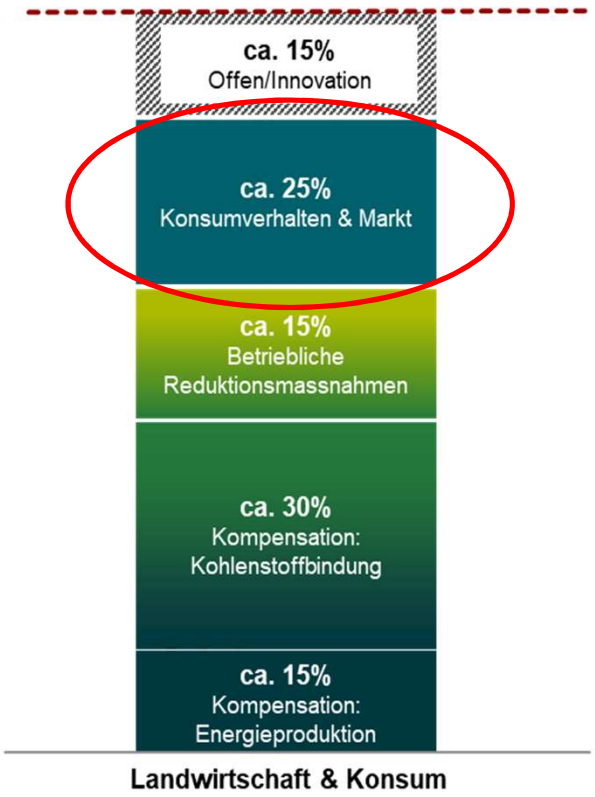
Fokus auf Effizienzmasse, fehlende Systemsichtweise



Poore and Nemecek 2018

Beispiel klimaneutraler Biolandbau 2040

Einsparpotenziale der Handlungsebenen
Annahmen gemäss aktuellem Wissensstand

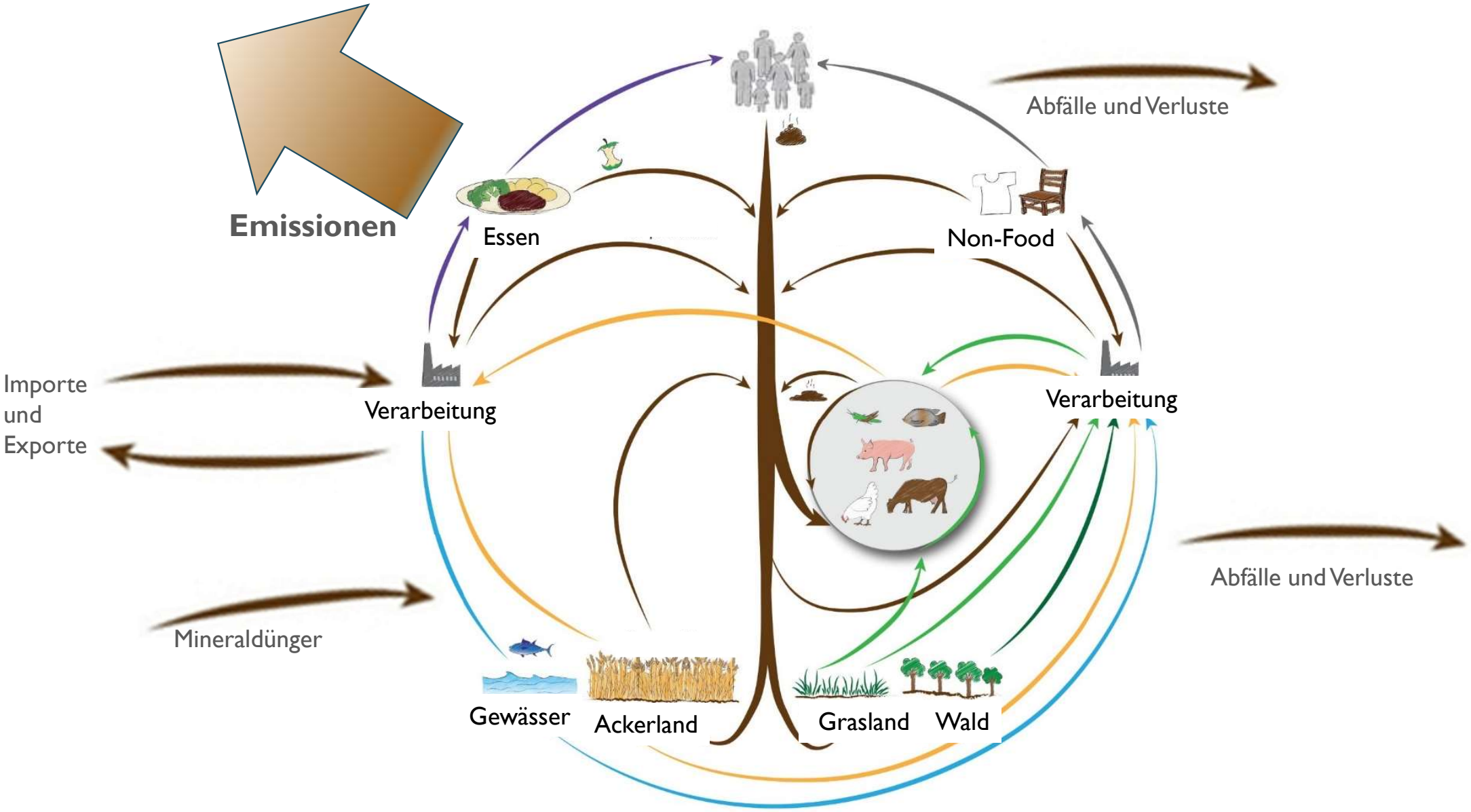


1,5 Mio t CO_2
THG-Emissionen Biolandbau 2040 ohne Massnahmen

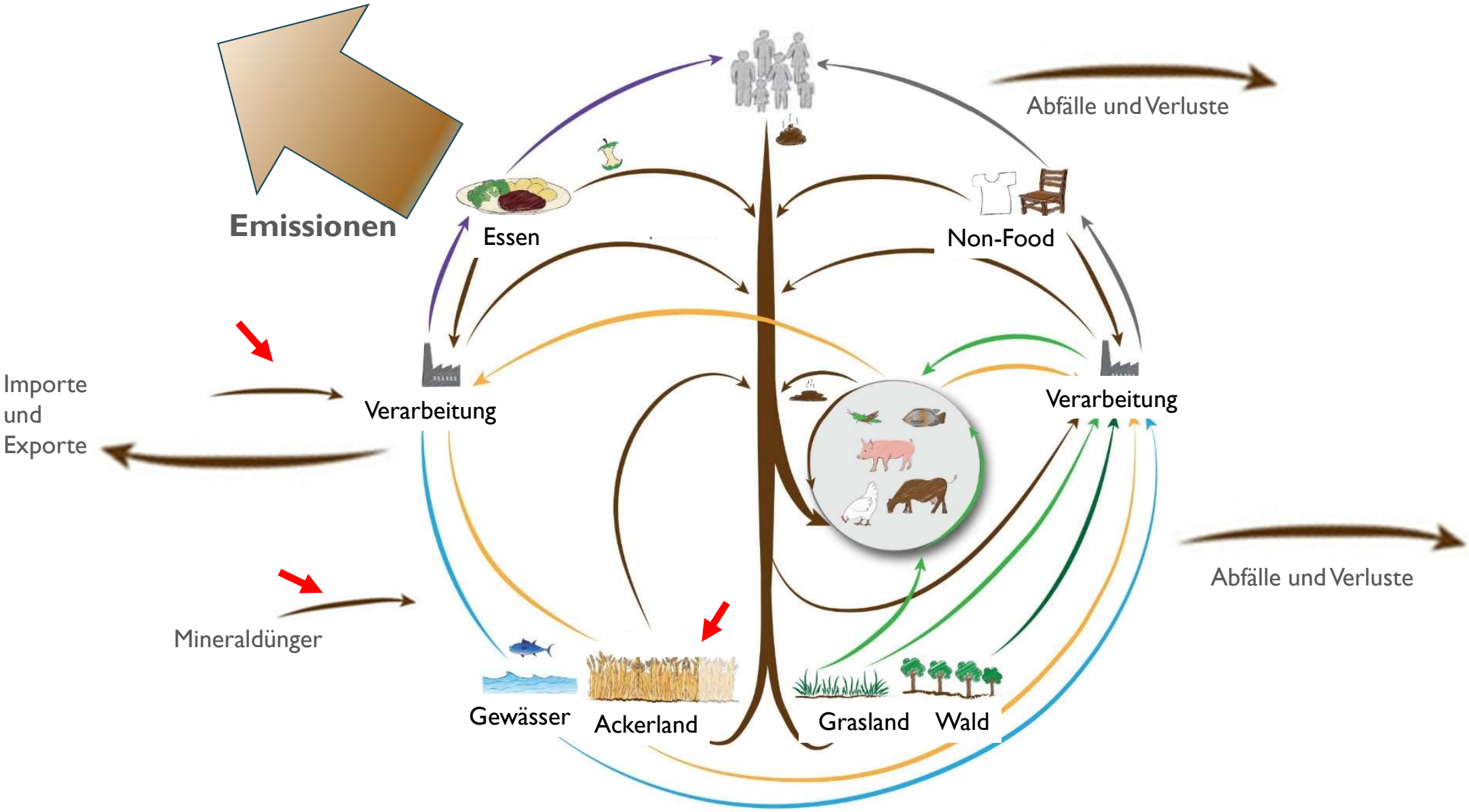
Konsumverhalten bei Ernährung gemäss Ernährungspyramide, entspricht den Zielen, die im Kontext der Klimastrategie Ernährung und Landwirtschaft des BLW diskutiert werden.

Wir MÜSSEN produzieren,
was wir konsumieren WOLLEN

Wie WOLLEN konsumieren,
was wir produzieren KÖNNEN



Muscat et al. 2021



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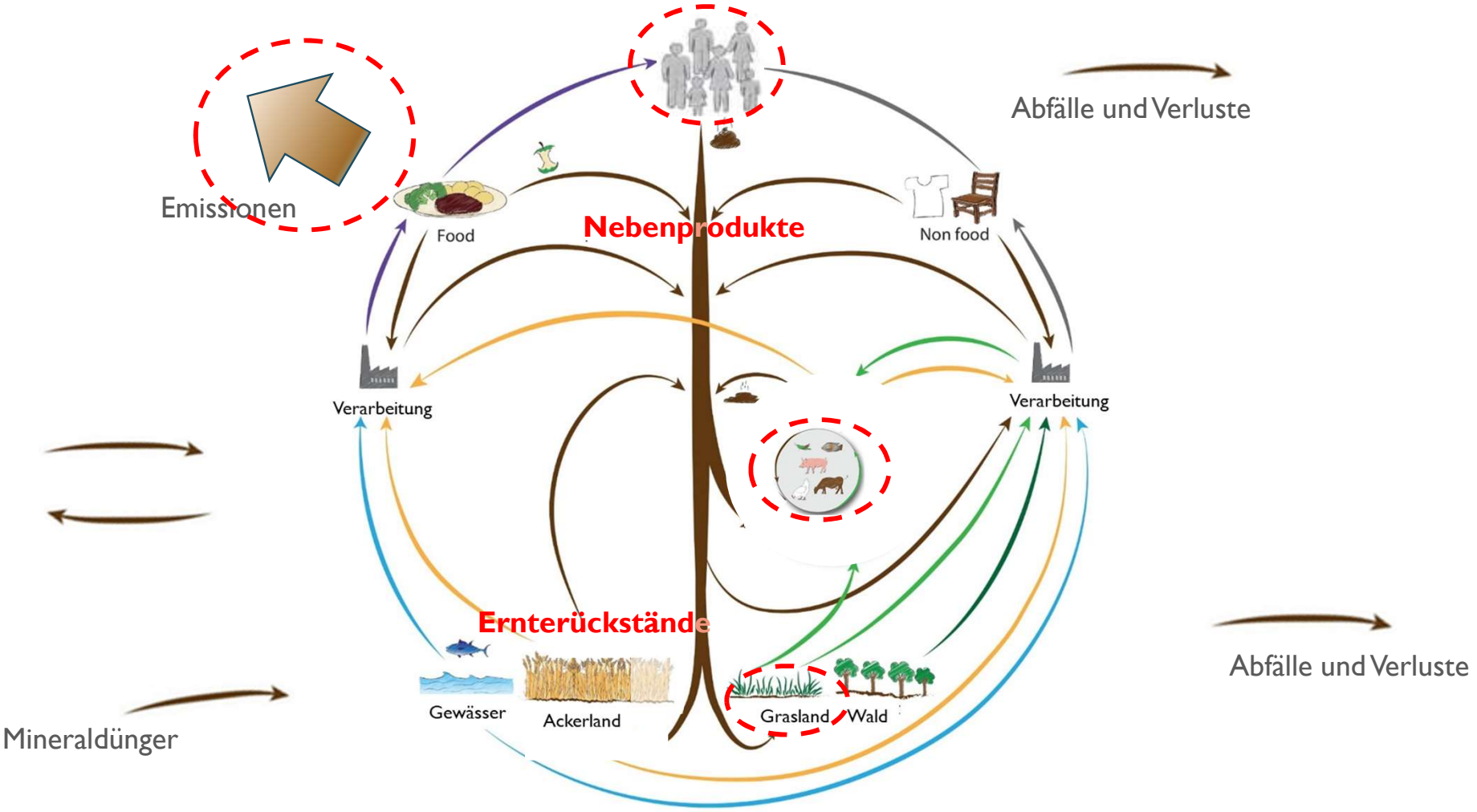

Muscat et al. 2021

Eurogroup for Animals / BEUC / epha 2023

Schlussfolgerungen

- **Eine multifunktionale Land- und Ernährungswirtschaft ist wichtiger als – und umfasst – eine klimafreundliche Land- und Ernährungswirtschaft**

- **Nahrungsmittelkonkurrenz ist unvermeidlich – aber in kleineren zirkulären agrarökologischen Ernährungssystemen mit wirklich gut aufgesetzter Produktion (Fruchtfolgen, etc.) kein zentrales Problem**
  - **In diesem Kontext ist sie dann Grundlage für eine nachhaltige systemisch konsistente Tierhaltung und nicht verbunden mit übermässiger hochintensiver Tierproduktion**

- **Wir müssen Ernährungsumgebungen aktiver gestalten**
  - **Dies ist insbesondere eine Chance bei all denen, die sich nicht für nachhaltige Ernährung interessieren**

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Schlussfolgerungen

- **Verbände, etc.: rennt nicht den Unternehmen hinterher, sondern setzt die Agenda selbst!**

- **Produktion: wirklich gute Biosysteme/Agrarökologie sind nötig**
  - **Arbeitet gegen die Konventionalisierung (v.a. im Hinblick auf die EU-Ziele)**
  - **Wichtige Hebel:**
    - **Stickstoffreduktion (Mineraldünger, Futtermittelimporte),**
    - **Steigerung der systemischen N-Effizienz (Tierhaltung, Futter vom Acker, Abfall)**

- **Wir müssen ernsthaft über die zukünftigen Businesspläne der Unternehmen diskutieren**
  - **Kein Greenwashing, sondern wirklicher Wandel**

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