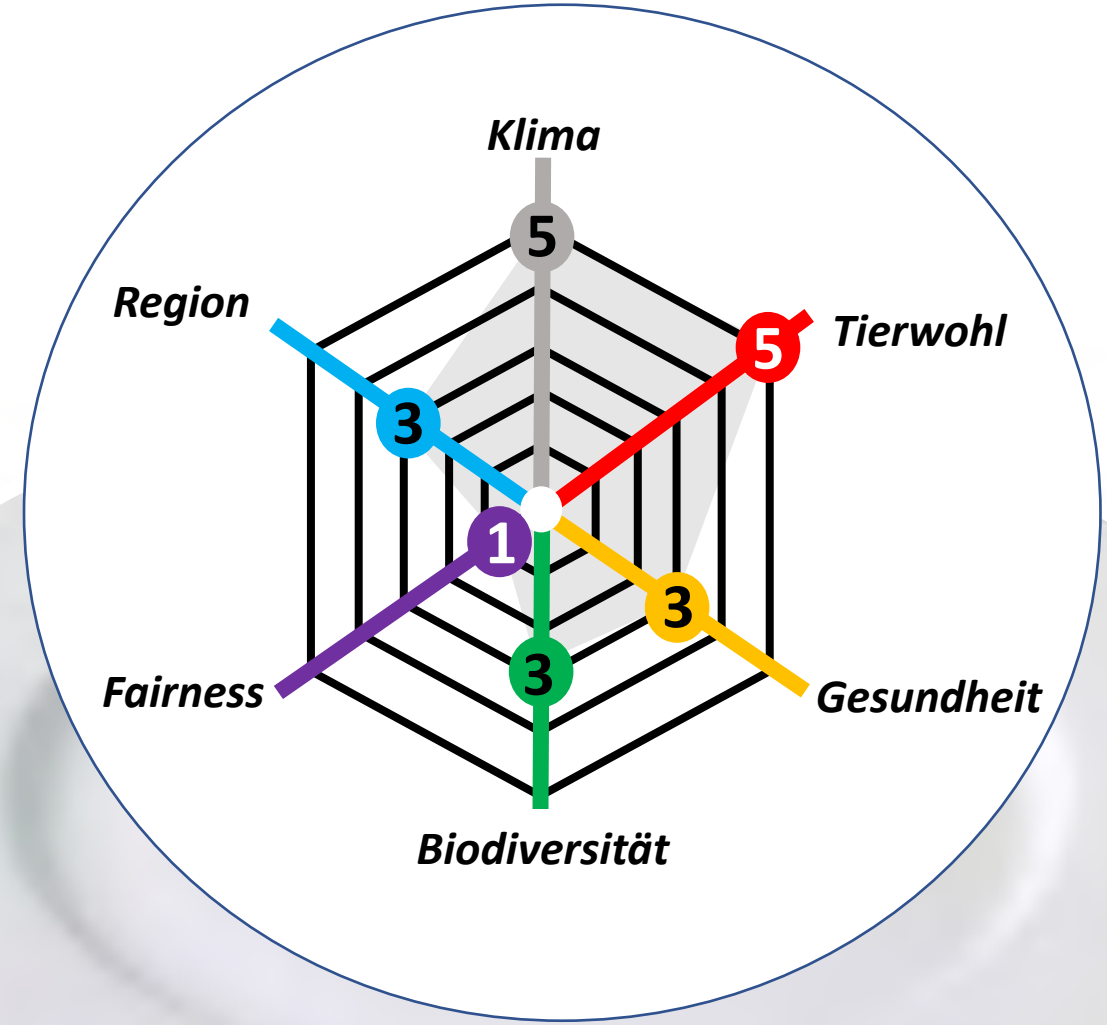
Hannelore Daniel

Wendungen, Wahrnehmungen und Wahrheiten

Diese Folien/Inhalte sind nur für persönlichen Gebrauch und dürfen
Nicht an DRITTE weitergegeben werden.


Klima
5
Tierwohl
5
Gesundheit
3
Biodiversität
3
Fairness
1
Region
3

“Nachhaltig ist eine Entwicklung, die die Bedürfnisse der Gegenwart befriedigt, ohne zu riskieren, dass zukünftige Generationen ihre eigenen Bedürfnisse nicht befriedigen können”
(Brundtlandbericht “Our common future”, 1987)

Effizienz	Suffizienz	Konsistenz
Einen entsprechenden Nutzen mit einem geringeren Aufwand produzieren	Verhaltensänderung, weniger produzieren und konsumieren	Anders produzieren, Kreislaufwirtschaft

…. the road is paved with good intensions ……

and

for every complex problem there is an answer that is

clear, simple, and wrong!

H. L. Mencken

DER PREIS MODERNER LANDWIRTSCHAFT

klimawirksame Emissionen

Was kostet die Natur ?

The value of the world's ecosystem services and natural capital

The services of ecological systems and the natural capital stocks that produce them are critical to the functioning of the Earth's life-support system. They contribute to human welfare, both directly and indirectly, and therefore represent part of the total economic value of the planet. We have estimated the current economic value of 17 ecosystem services for 16 biomes, based on published studies and a few original calculations. For the entire biosphere, the value (most of which is outside the market) is estimated to be in the range of US $ 14 – 46 Trillion per year, with an average of

ca. **20.000.000.000.000 (Billionen) € pro Jahr**

Because of the nature of the uncertainties, this must be considered a minimum estimate.

Robert Constanza et al. Changes in the global value of ecosystem services. Global Environmental Change26:152-158

3 Milliarden → **8 Milliarden**

……. die „Ernährungswende“ …..

…. wohin wollen wir ?

EAT Lancet Commission: DIE KOSTFORM FÜR EINE GESUNDE WELT

Was nach der Planetary Health Diet auf den Teller kommt

Gemüse	300 Gramm
Milchprodukte	250 Gramm
Vollkornprodukte, Reis, Mais	232 Gramm
Obst	200 Gramm
Hülsenfrüchte	75 Gramm
Nüsse	50 Gramm
Kartoffeln	50 Gramm
Ungesättigte Fette	40 Gramm
Zucker	31 Gramm
Geflügel	29 Gramm
Fisch	28 Gramm
Rotes Fleisch (Rind, Lamm, Schwein)	14 Gramm
Eier	13 Gramm
Gesättigte Fette	11,8 Gramm

Planetary Health Diet: Gesund für Mensch und Klima | #BeatYesterday

Food in the Anthropocene: the EAT–*Lancet* Commission on healthy diets from sustainable food systems

www.thelancet.com Published online January 16, 2019 http://dx.doi.org/10.1016/S0140-6736(18)31788-4

Die Zeit · 6d

Milchkonsum

Welchen Schaden der Milchmythos anrichtet

Fachleute streiten darüber, wie viel Milchprodukte zu einer gesunden Ernährung gehören. Klar ist: Fürs Klima wären mehr Pflanzenproteine gut.

Aktualisiert am 27. Februar 2023, 10:40 Uhr / 167 Kommentare

Planetary Health Diet [6]		Wholesome diet according to the German Nutrition Society [19]		National Nutrition Survey II [41, 42][b]	
Food group	Quantity (g/d) (energy intake of 2,500 kcal/d)	Food group	Approximate value (g/d) (energy intake of 1,600–2,400 kcal/d)	Food group	Average intake (g/d) (energy intake of 1,968 kcal/d)
Vegetables and legumes	440 (200–905)	**Vegetables incl. legumes**	**≥ 400**	Vegetables incl. legumes	134
Vegetables	**300 (200–600)**			Vegetables	126
Legumes, cooked[c]	140 (0–305)	Legumes, cooked	125	Legumes, cooked	8
Beans, lentils, peas; dried	**50 (0–100)**				
Beans, lentils, peas; cooked[c]	90 (0–180)			Legumes excl. peanuts, cooked	7
Soy	**25 (0–50)**				
Peanuts	**25 (0–75)**			Peanuts	1
Fruit incl. tree nuts	225 (125–325)	**Fruit incl. nuts**	**≥ 250**	Fruit incl. nuts	175
Fruit	**200 (100–300)**			Fruit	172
Tree nuts	**25**	Nuts	25	Nuts	3

Planetary Health Diet [6]		Wholesome diet according to the German Nutrition Society [19]		National Nutrition Survey II [41, 42][b]	
Food group	Quantity (g/d) (energy intake of 2,500 kcal/d)	Food group	Approximate value (g/d) (energy intake of 1,600–2,400 kcal/d)	Food group	Average intake (g/d) (energy intake of 1,968 kcal/d)
Whole milk or equivalents based on whole milk	**250 (0–500)**	Milk and dairy products (MEq/d)[c]	596–728	Milk and dairy products in MEq/d[c]	464
		Milk and dairy products (g/d)	250–310	Milk and dairy products (g/d)	199
		Cheese (g/d)	**50–60**	Cheese (g/d)	38
		Milk/milk products except cheese/quark (g/d)	**200–250**	Milk/milk products except cheese/quark (g/d)	161

Peer-Review | German Nutrition Society Statement

The Planetary Health Diet in contrast to the food-based dietary guidelines of the German Nutrition Society (DGE)

A DGE statement

Christina Breidenassel*, Anne Carolin Schäfer*, Melanie Micka, Margrit Richter, Jakob Linseisen, Bernhard Watzl on behalf of the German Nutrition Society (DGE)

Ernaehrungs Umschau *international* | 5/2022

Hannelore Daniel

Estimated micronutrient shortfalls of the EAT–Lancet planetary health diet

Ty Beal, Flaminia Ortenzi, Jessica Fanzo

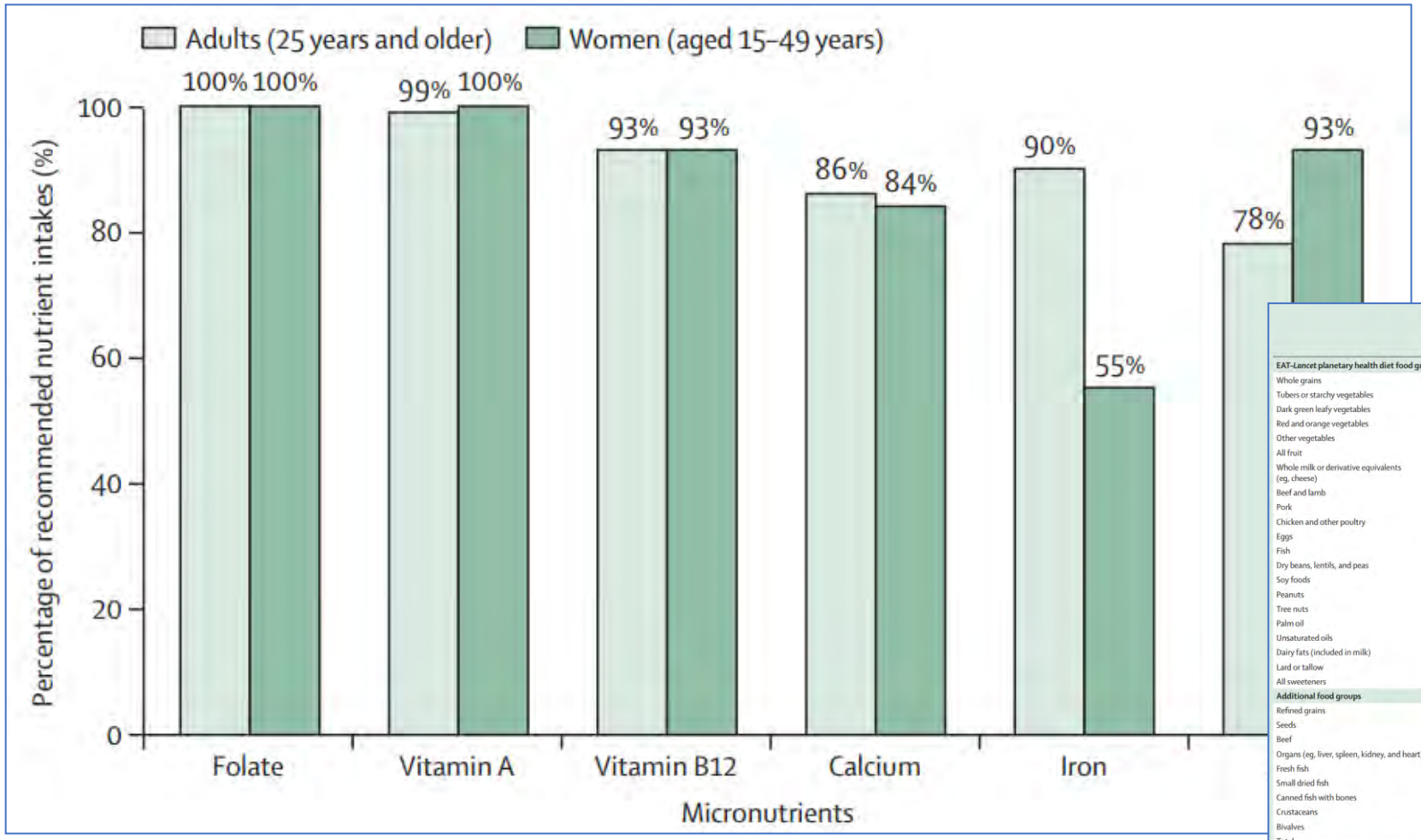
oa OPEN ACCESS

Lancet Planet Health 2023; 7: e233–37

Global Alliance for Improved Nutrition, Washington, DC, USA (T Beal PhD); Global Alliance for Improved Nutrition, Geneva, Switzerland (F Ortenzi MS); Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD, USA (Prof J Fanzo PhD)

Percentage of recommended nutrient intakes for six micronutrients in the EAT–Lancet healthy reference diet

Estimates are based on target values (within a possible range) that were adjusted for the energy requirements of a moderately active individual



	EAT-*Lancet* healthy reference diet*		Adequate diet for adults (25 years and older)†		
	Macronutrient intake (possible range), g per day	Caloric intake, kcal per day	Macronutrient intake, g per day	Caloric intake, kcal per day	Difference, kcal per day (g per day)
EAT-*Lancet* planetary health diet food groups					
Whole grains	232 (0–60%‡)	811	171	300	−511 (−291)
Tubers or starchy vegetables	50 (0–100)	39	181	200	+161 (+146)
Dark green leafy vegetables	100§	23	77	23	–
Red and orange vegetables	100§	30	89	30	–
Other vegetables	100§	25	85	25	–
All fruit	200 (100–300)	126	222	126	–
Whole milk or derivative equivalents (eg, cheese)	250 (0–500)	153	239	153	–
Beef and lamb	7 (0–14)	15	7	15	–
Pork	7 (0–14)	15	12	30	+15 (+6)
Chicken and other poultry	29 (0–58)	62	40	92	+30 (+13)
Eggs	13 (0–25)	19	50	79	+60 (+38)
Fish	28 (0–100)	40	39	40	–
Dry beans, lentils, and peas	50 (0–100)	172	27	36	−136 (−102)
Soy foods	25 (0–50)	112	61	100	−12 (−7)
Peanuts	25 (0–75)	142	4	25	−117 (−19)
Tree nuts	25§	149	4	25	−124 (−20)
Palm oil	7 (0–7)	60	7	60	–
Unsaturated oils	40 (20–80)	354	40	354	–
Dairy fats (included in milk)	0	0	0	0	–
Lard or tallow	5 (0–5)	36	4	36	–
All sweeteners	31 (0–31)	120	30	120	–
Additional food groups					
Refined grains	–	–	68	100	+100 (+68)
Seeds	–	–	17	100	+100 (+17)
Beef	–	–	19	45	+45 (+19)
Organs (eg, liver, spleen, kidney, and heart)	–	–	6	8	+8 (+6)
Fresh fish	–	–	16	20	+20 (+16)
Small dried fish	–	–	3	10	+10 (+3)
Canned fish with bones	–	–	15	30	+30 (+15)
Crustaceans	–	–	34	30	+30 (+34)
Bivalves	–	–	17	15	+15 (+17)
Total	–	2503	–	2227	−276

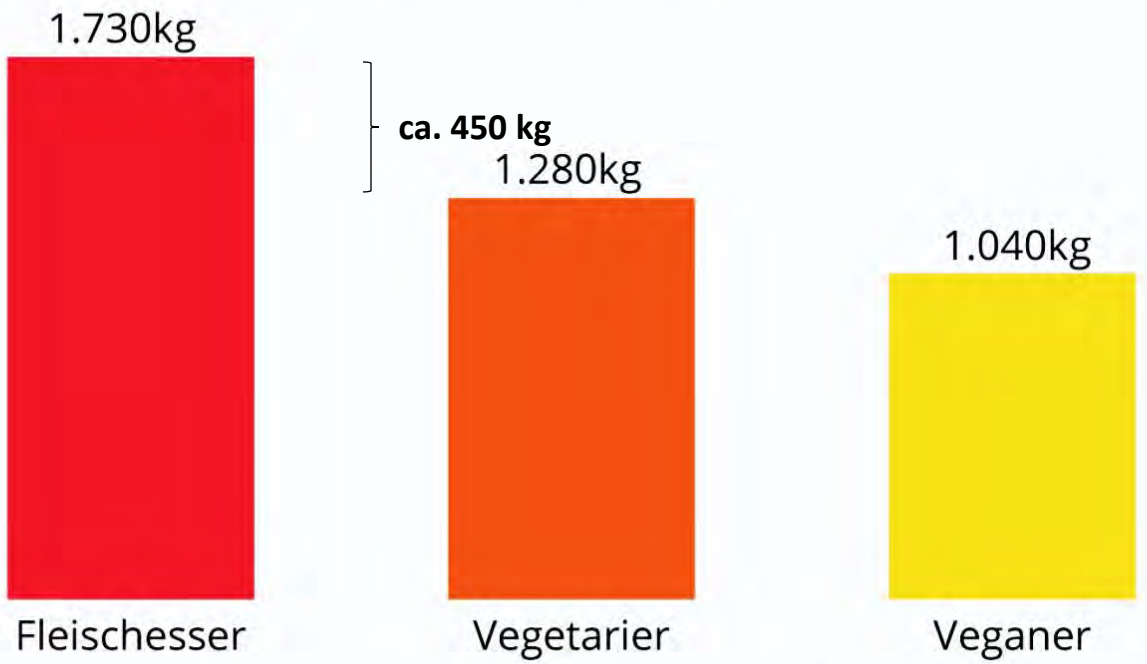
*Details on the food composition data are available in the appendix (p 2). †Details on the food composition data are available in the appendix (p 3). ‡Of total dietary energy. §No range recommended in the EAT-*Lancet* planetary health diet.

The Planetary Health Plate
EAT

CO2

Fleischesser belasten das Klima stärker

Durchschnittlicher CO_2-Ausstoß verschiedener Ernährungsweisen pro Person und Jahr*

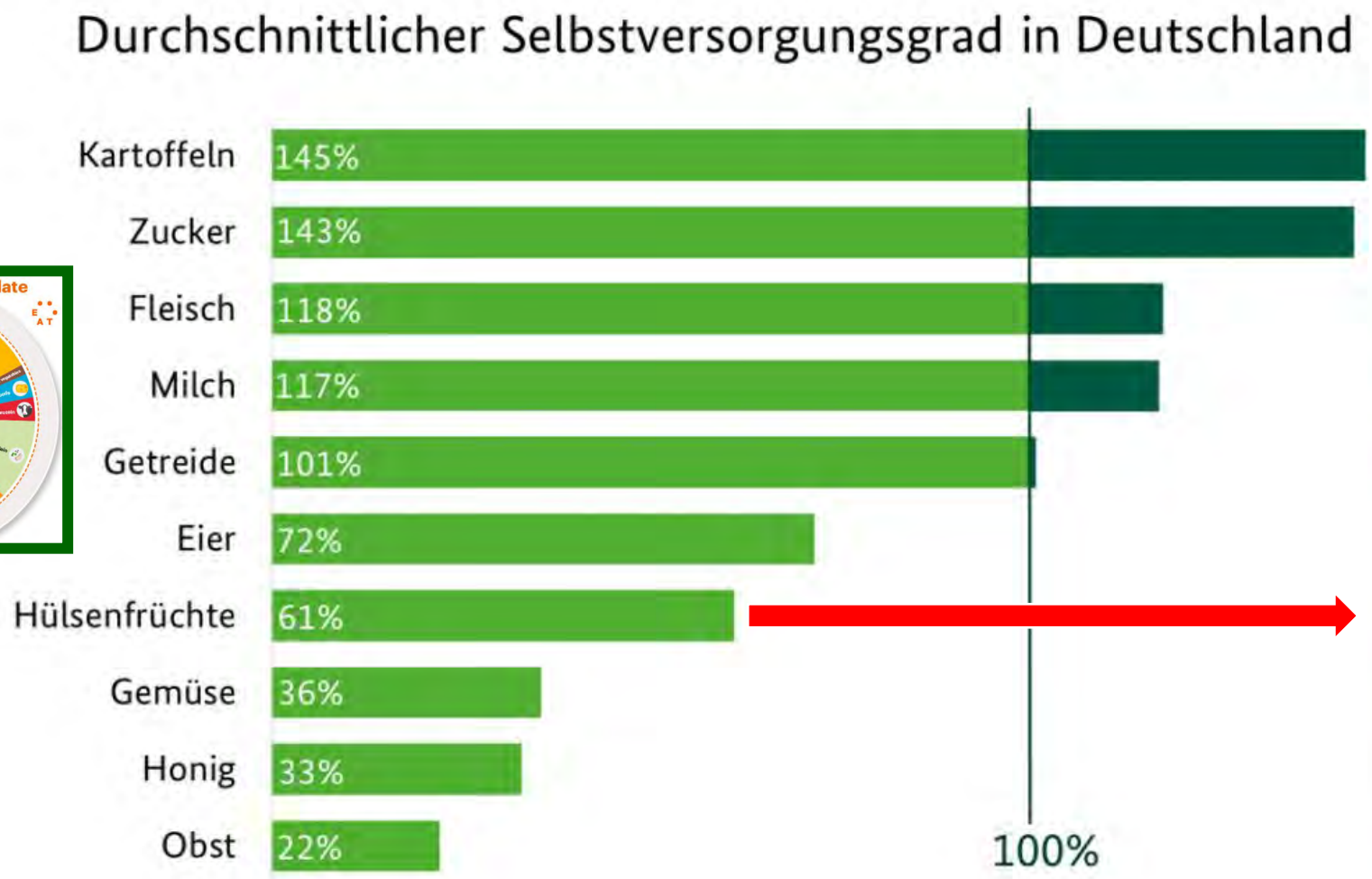


* männliche Person im Alter von 30-59, gelegentlicher Konsum von regionalen, tiefgekühlten, saisonalen und Bio-Produkten; Stand: 14.01.2020

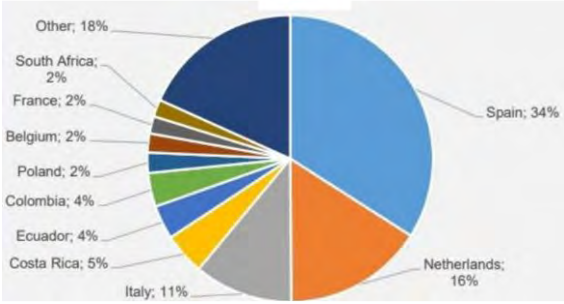
Quellen: Umweltbundesamt, Statista-Berechnung

statista

Versorgungsgrade mit Lebensmitteln in Deutschland



Anmerkung: Angaben zum Selbstversorgungsgrad Obst Wirtschaftsjahr 2018/19
Quelle: Statistisches Jahrbuch über Ernährung, Landwirtschaft und Forsten.



+ ca. 80.000 ha Erntefläche benötigt

nature

COMMENT | 28 November 2022

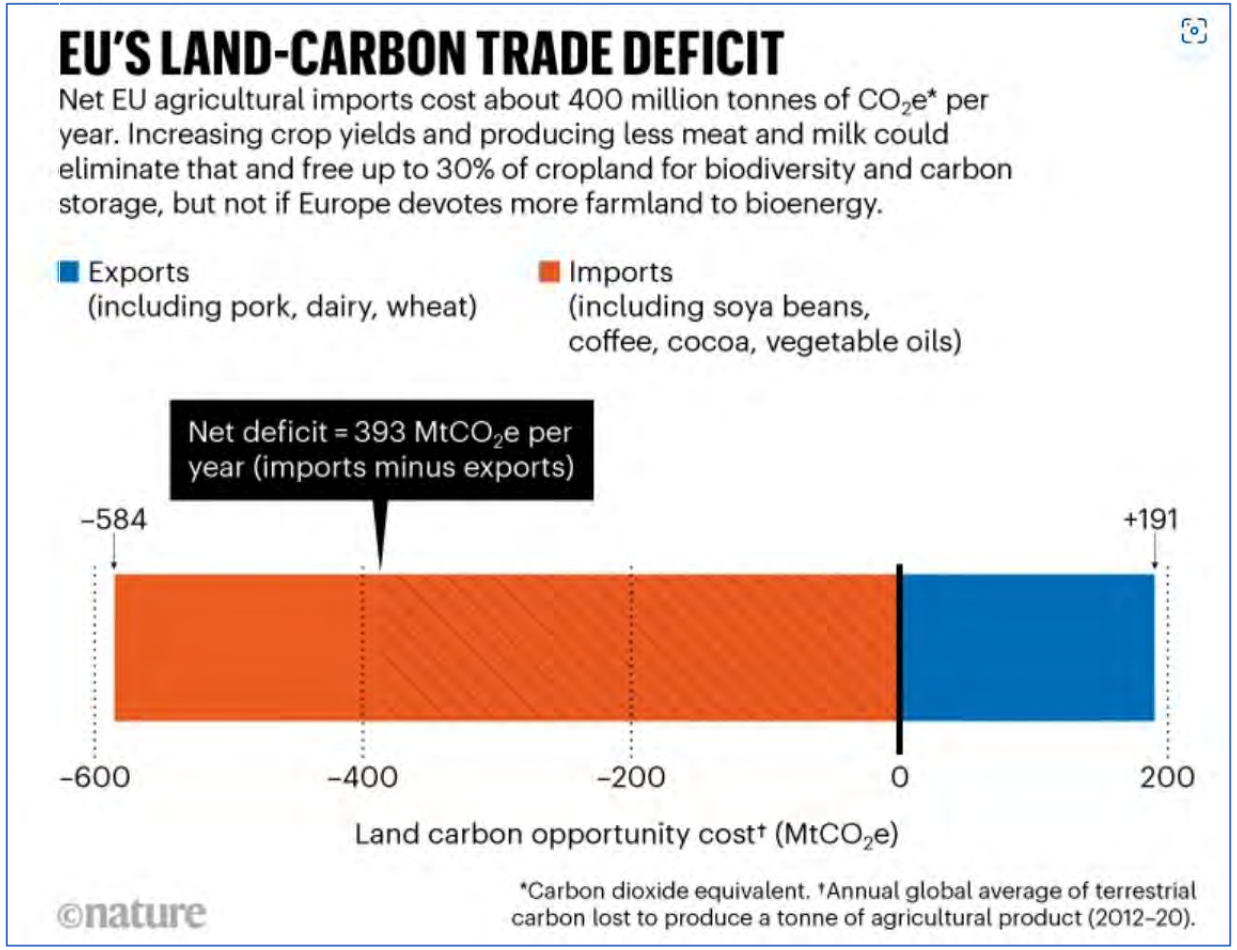
EU climate plan sacrifices carbon storage and biodiversity for bioenergy

Incoming policies will cause the European Union to harvest more wood, shift one-fifth of cropland to bioenergy and outsource deforestation, analysis shows.

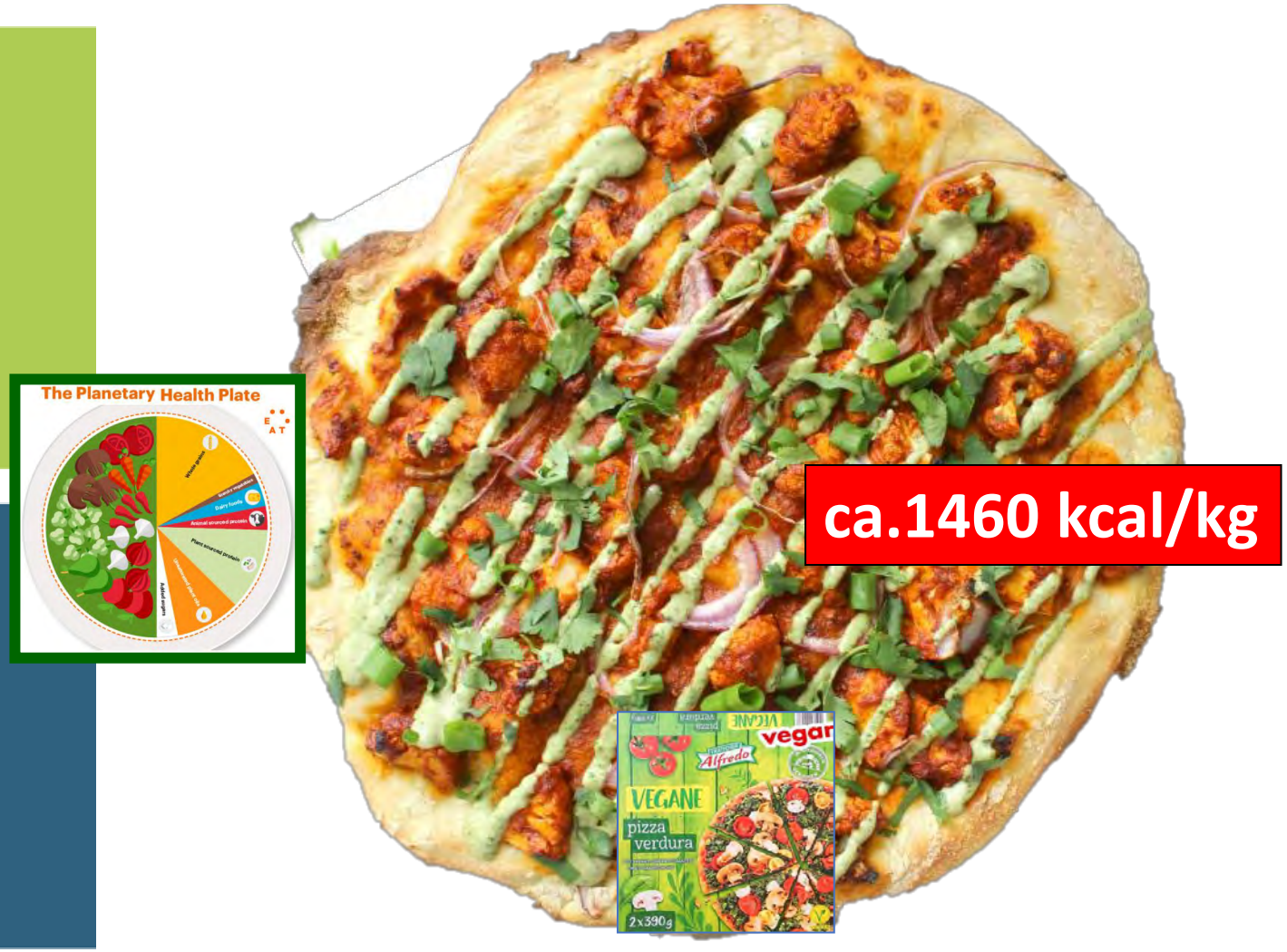
Timothy Searchinger, Oliver James, Patrice Dumas, Thomas Kastner & Stefan Wirsenius

"Modelling by the commission projects large effects on forests and land use: by 2050, Europe will devote 22 Mha of cropland to energy crops, or roughly 20% of cropland " .....

"Europe could grow more food, export more or import less, and turn its land-carbon trade deficit into a surplus".



1 kg vegane Pizza



1 Liter Vollmilch (H-Milch)

1 kg vegane Pizza = ca. 2,0 kg CO_2 Äquivalente

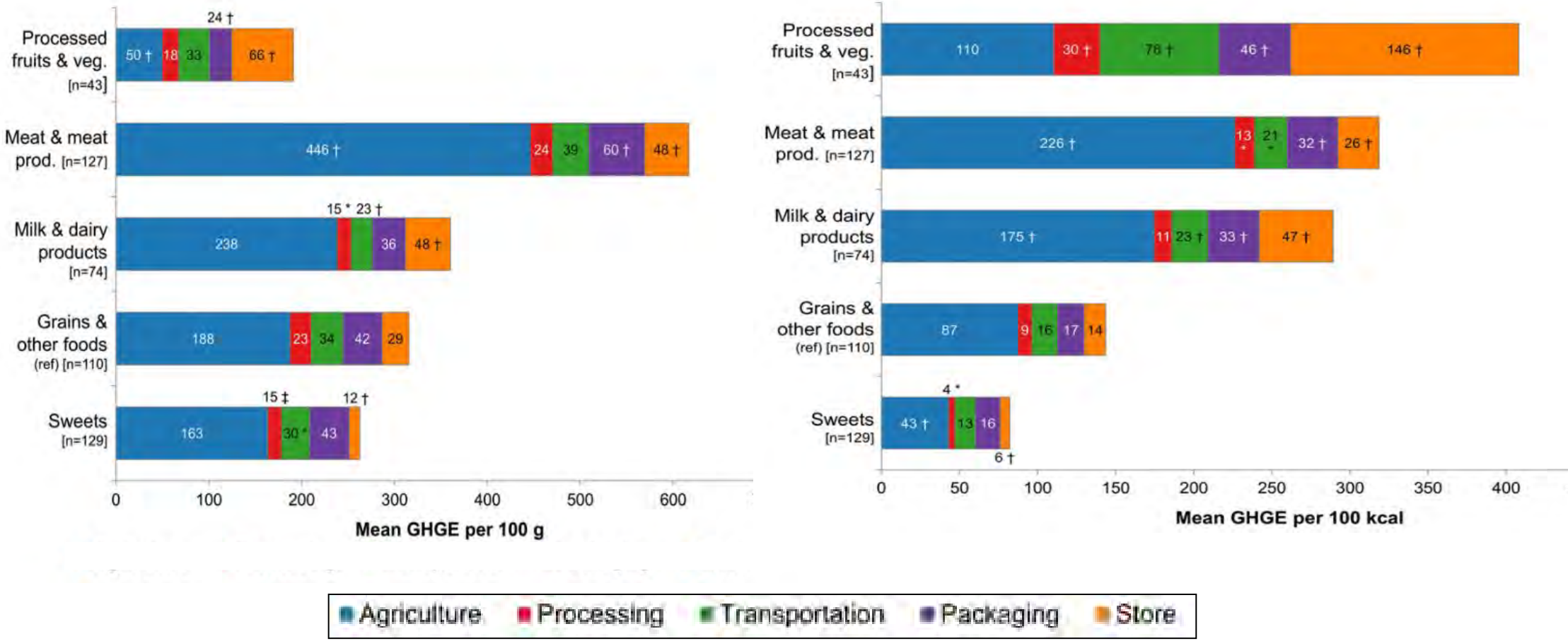
Ökoinstitut Freiburg

1 Liter Vollmilch (H-Milch) = ca. 1,3 kg CO_2 Äquivalente

Statista

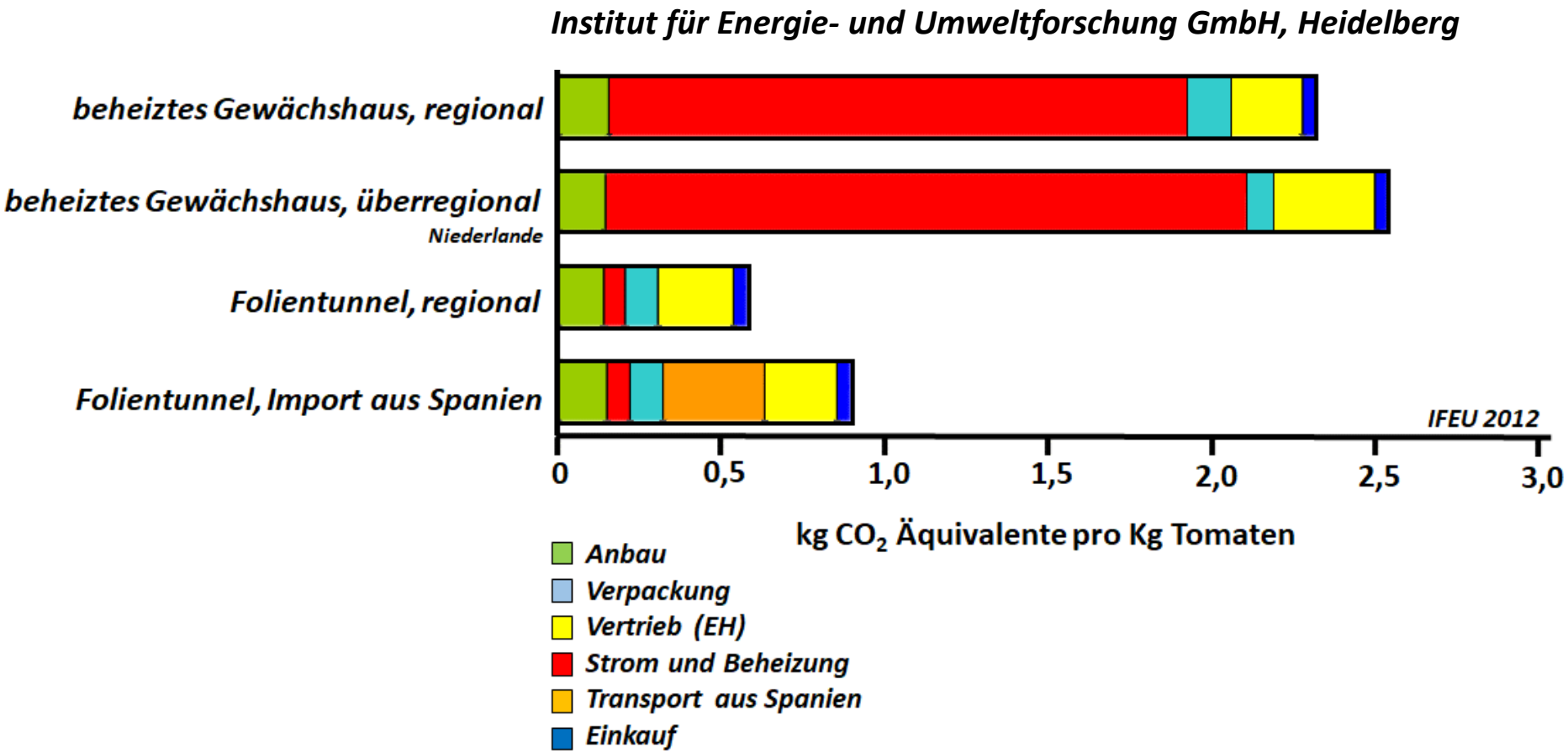
Umweltkosten von Lebensmittelproduktion und Lebensstilen

Mean GHGEs for broad food groups by GHGE origin.
GHGE values are expressed per 100 g and 100 kcal.



Energy and nutrient density of foods in relation to their carbon footprint. Am J Clin Nutr 2015;101:184-91.

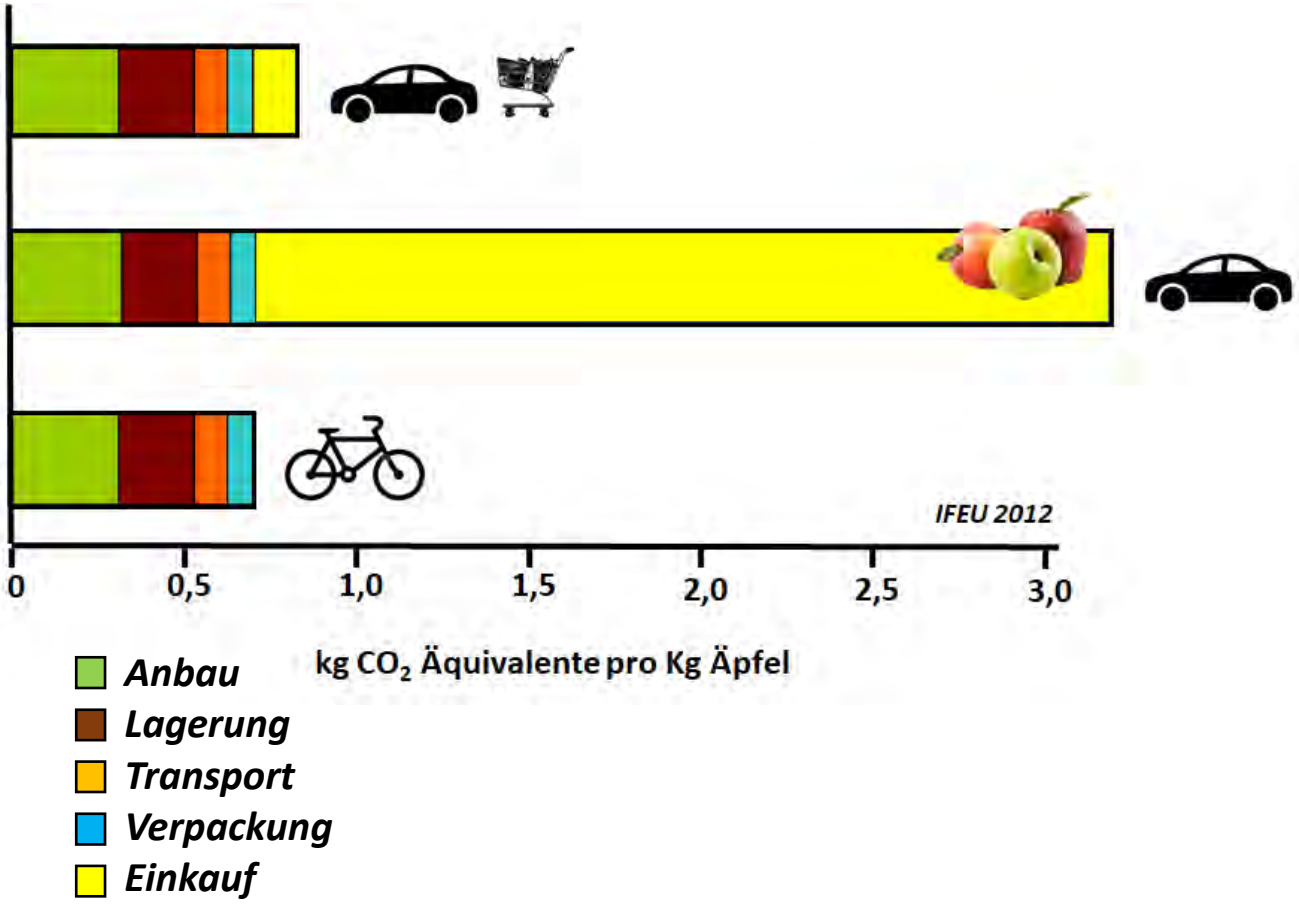
Umweltkosten von Lebensmittelproduktion und Lebensstilen



fileadmin/uploads/landwirtschaft/ /pdf/IFEU_Umwelt_Regionale_Lebensmittel_2012_final_handout.pdf

Umweltkosten von Lebensmittelproduktion und Lebensstilen

Institut für Energie- und Umweltforschung GmbH, Heidelberg



Proc Nutr Soc. 2010 Nov;69(4):582-91. doi: 10.1017/S0029665110002004.
Epub 2010 Aug 10.

Does eating local food reduce the environmental impact of food production and enhance consumer health?

Gareth Edwards-Jones [1]

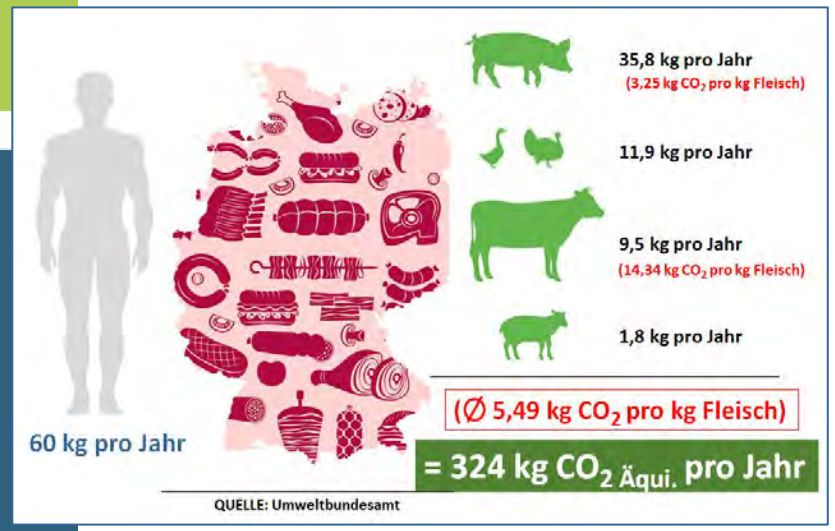
CONCLUSION

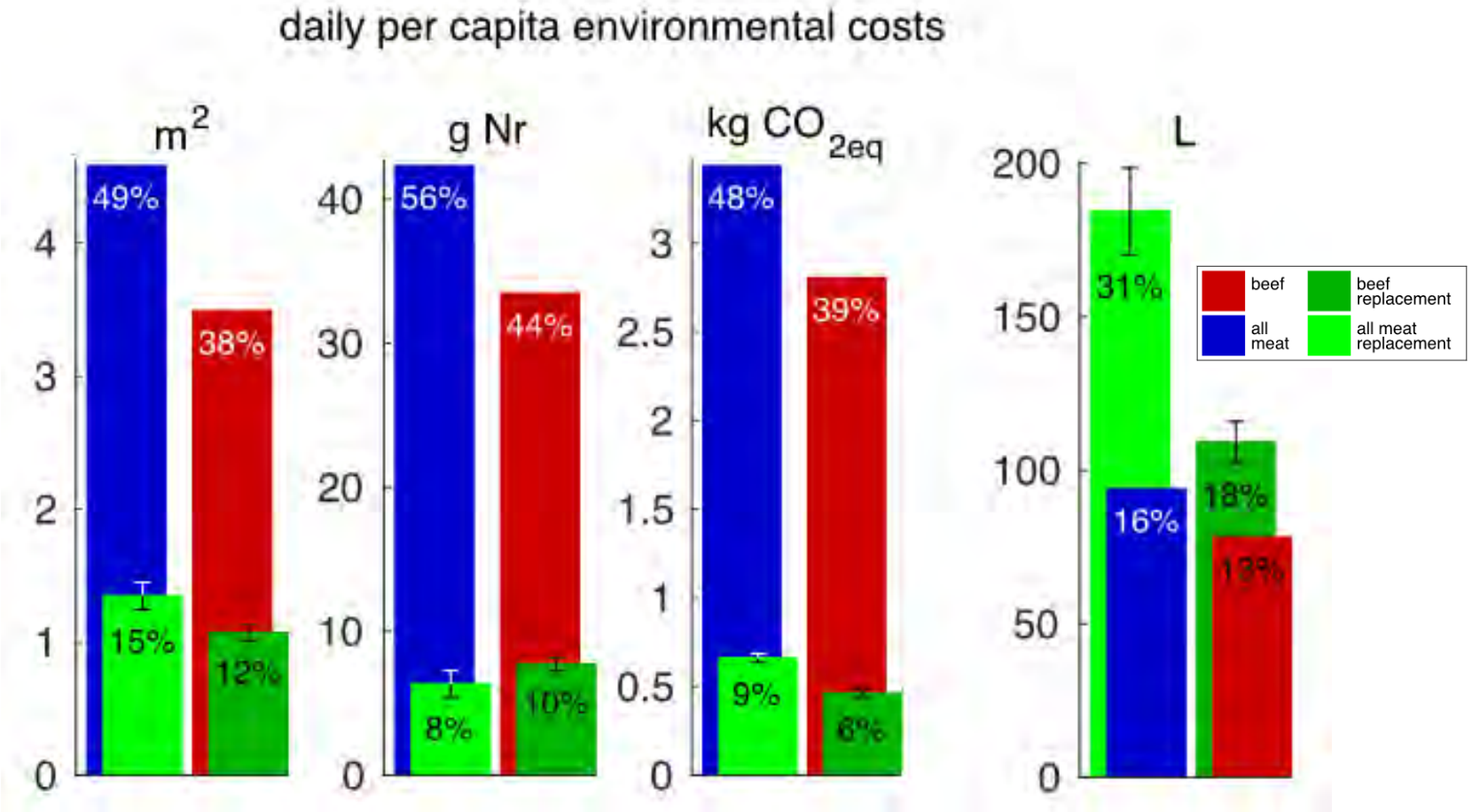
The review does not identify any generisable or systematic benefits to the environment or human health that arise from the consumption of local food in preference to non-local food.

fileadmin/uploads/landwirtschaft/ /pdf/IFEU_Umwelt_Regionale_Lebensmittel_2012_final_handout.pdf

Umweltkosten von Lebensmittelproduktion und Lebensstilen

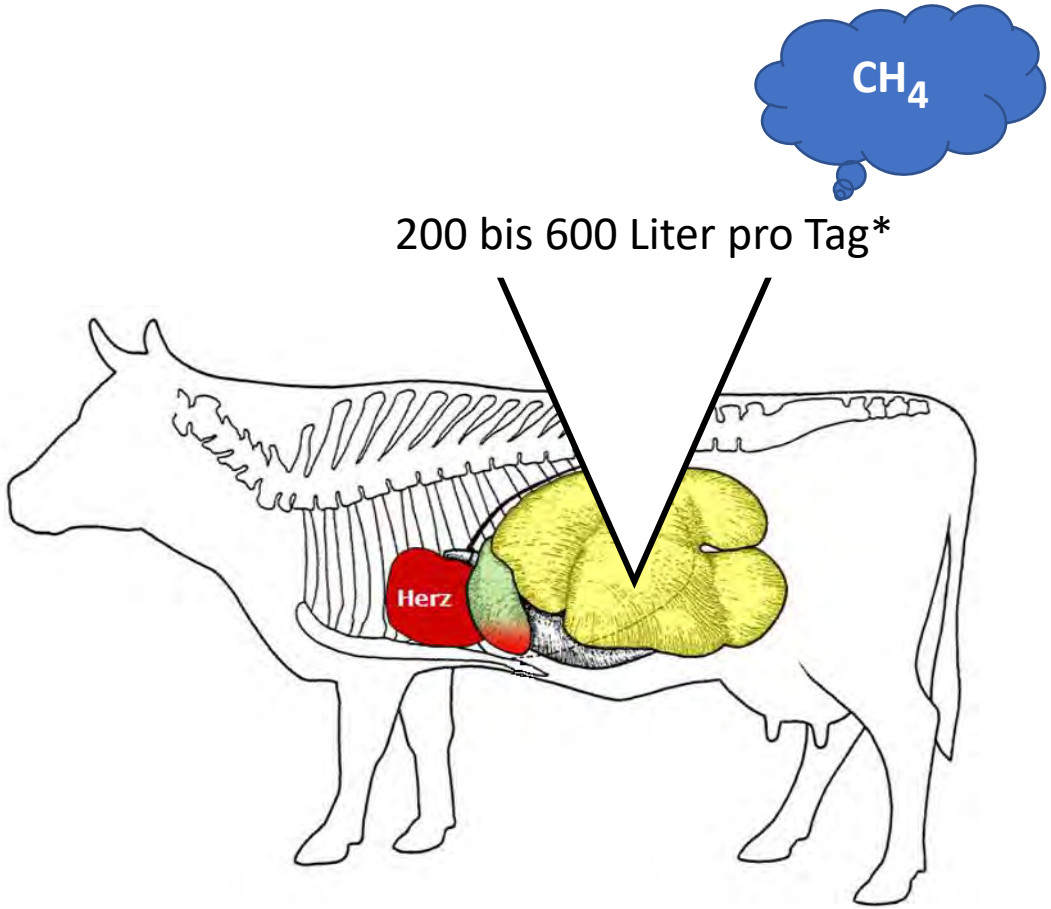
Environmentally optimal, nutritionally sound, protein and energy conserving plant-based alternatives to U.S. meat

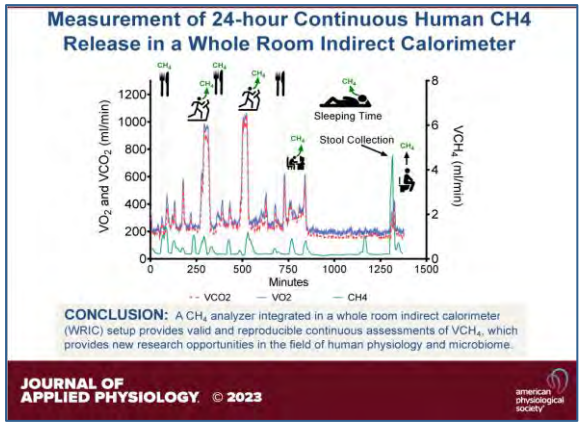


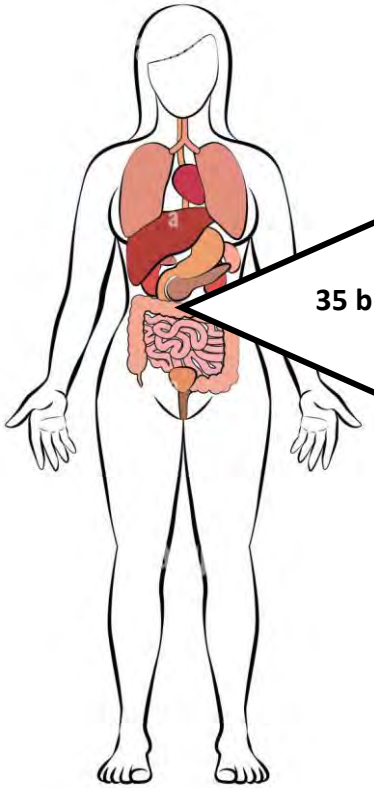


SCIENTIFIC REPORTS | (2019) 9:10345 | https://doi.org/10.1038/s41598-019-46590-1

…. und das METHAN …..



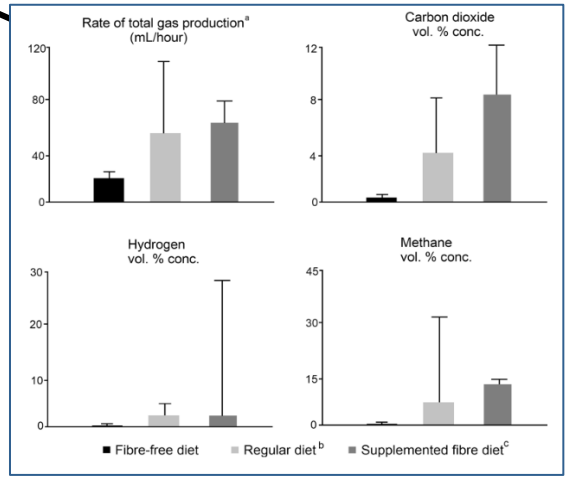




CH_4

35 bis 60% der Bevölkerung sind Methan-Produzenten

ca. 180 ml pro Tag**



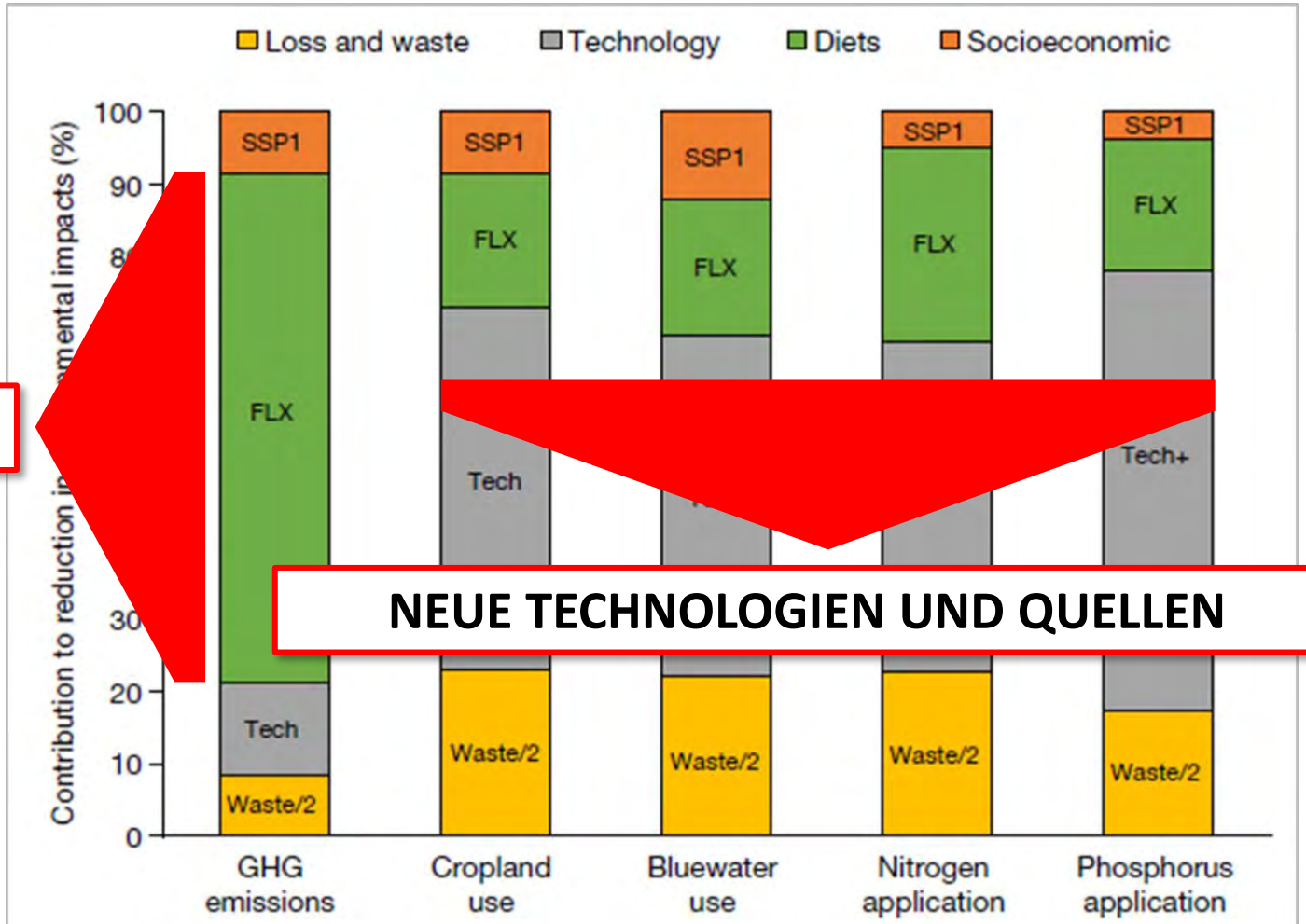
*FBN Dummerstorf in Agronomy for Sustainable Development (2018) 38: 27

**Modesto A et al. Meta-Analysis of the Composition of Human Intestinal Gases. Dig Dis Sci. 2022 Aug;67(8):3842-3859.

Options for keeping the food system within environmental limits

Marco Springmann[1,2*], Michael Clark[3], Daniel Mason-D'Croz[4,5], Keith Wiebe[4], Benjamin Leon Bodirsky[6], Luis Lassaletta[7], Wim de Vries[8], Sonja J. Vermeulen[9,10], Mario Herrero[5], Kimberly M. Carlson[11], Malin Jonell[12], Max Troell[12,13], Fabrice DeClerck[14,15], Line J. Gordon[12], Rami Zurayk[16], Peter Scarborough[2], Mike Rayner[2], Brent Loken[17,14], Jess Fanzo[17,18], H. Charles J. Godfray[1,19], David Tilman[20,21], Johan Rockström[6,17] & Walter Willett[22]

Nature 562(7728):501-502, October 2018



VERHALTEN

NEUE TECHNOLOGIEN UND QUELLEN

Combination and relative contributions of mitigation measures that simultaneously reduce environmental impacts below the mean values of the planetary-boundary range.

NEUE TECHNOLOGIEN und QUELLEN

Beispiele

Neue Technologien – neue Rohwaren

Nebenströme

Insekten

Algen

Quallen

in vitro Fleisch
Fisch, Milch, Leder

Pfl. Zellkulturen

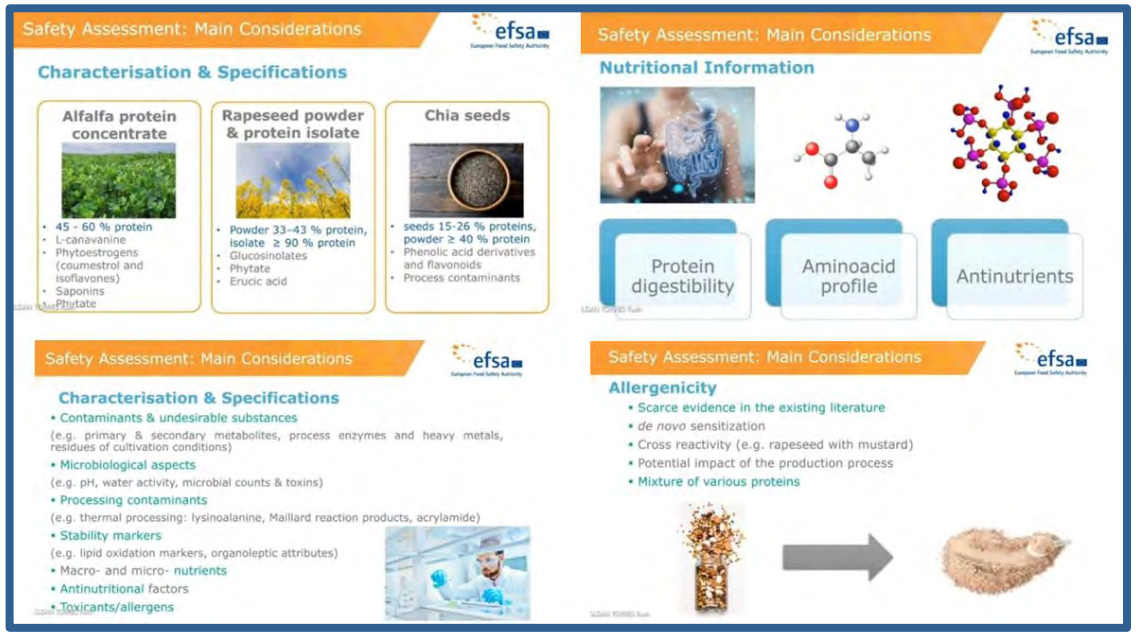
Bakterielle Biomasse

Zellfreie Synthese

Indoorfarming

Seefischproduktion an Land

..... und dann ist da noch die EFSA ....



GASTKOMMENTAR

Wir müssen heute die Proteine der Zukunft fördern

Andere Länder investieren bereits in moderne Proteine als Fleischersatz. Deutschland sollte den Anschluss dabei nicht verpassen, mahnen Renate Künast und Godo Röben.

Die Autoren

Renate Künast (Bündnis 90/Die Grünen) ist Mitglied des Bundestags und ehemalige Bundesministerin für Verbraucherschutz, Ernährung und Landwirtschaft. Godo Röben ist Berater und Investor. Bis 2021 war er Geschäftsführer des Lebensmittelherstellers Rügenwalder Mühle.

….. von „alternativen Proteinen“ ……

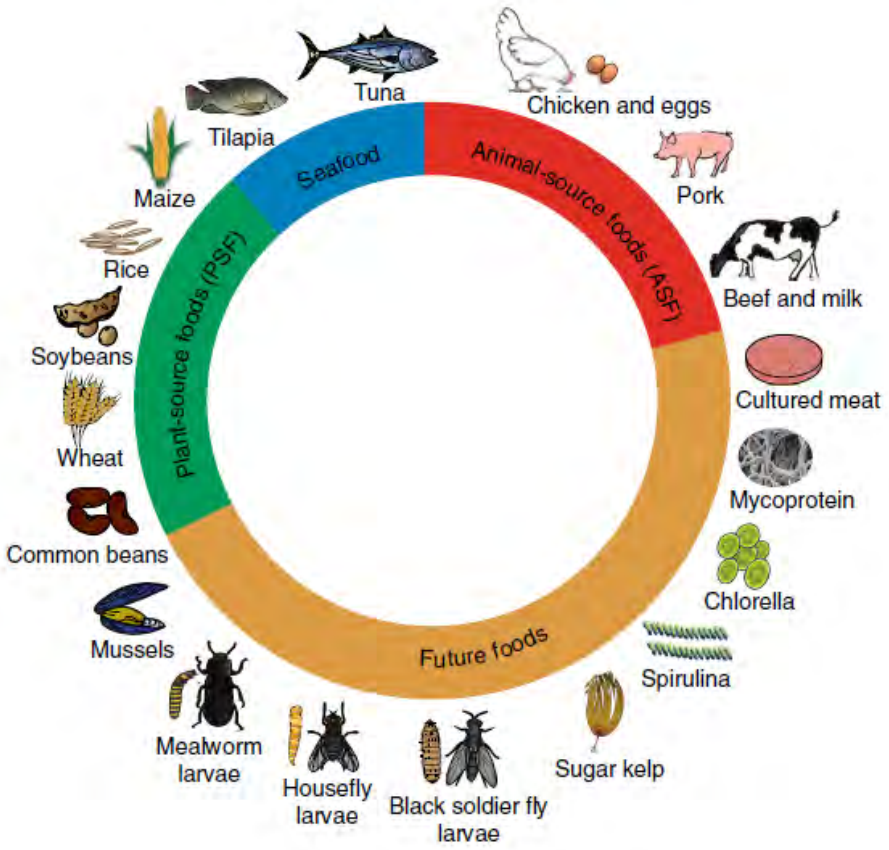
…….. *alternativ zu WAS ?*

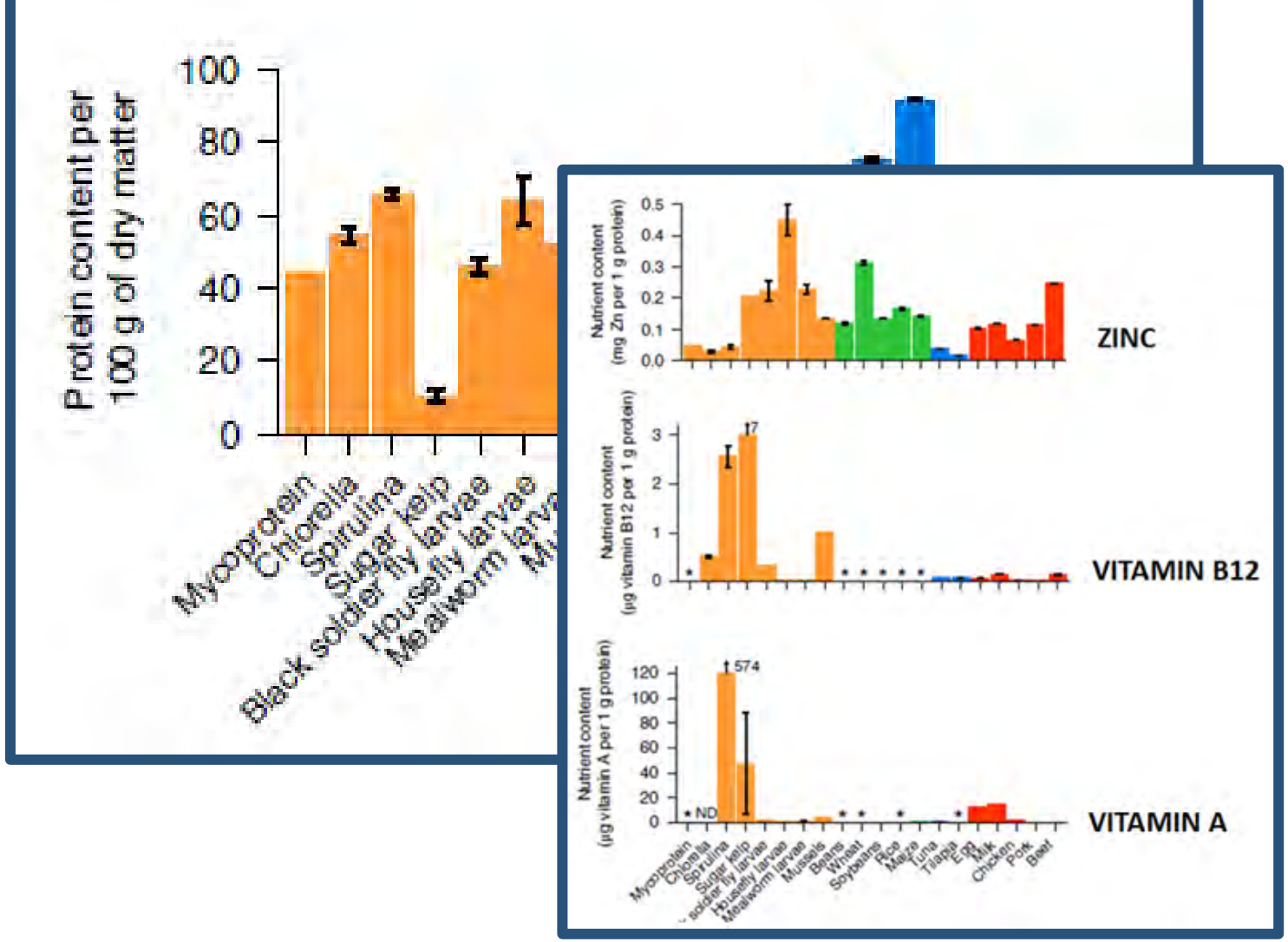
… alternativ zu Soja, um Importe und Abhängigkeiten zu reduzieren!

… alternativ zu Fleisch und anderen tierischen Produkten (für Substitute) und besserer Umweltbilanz!

… alternativ – eigentlich zusätzlich - zu konventionellen Quellen für wachsende Weltbevölkerung!

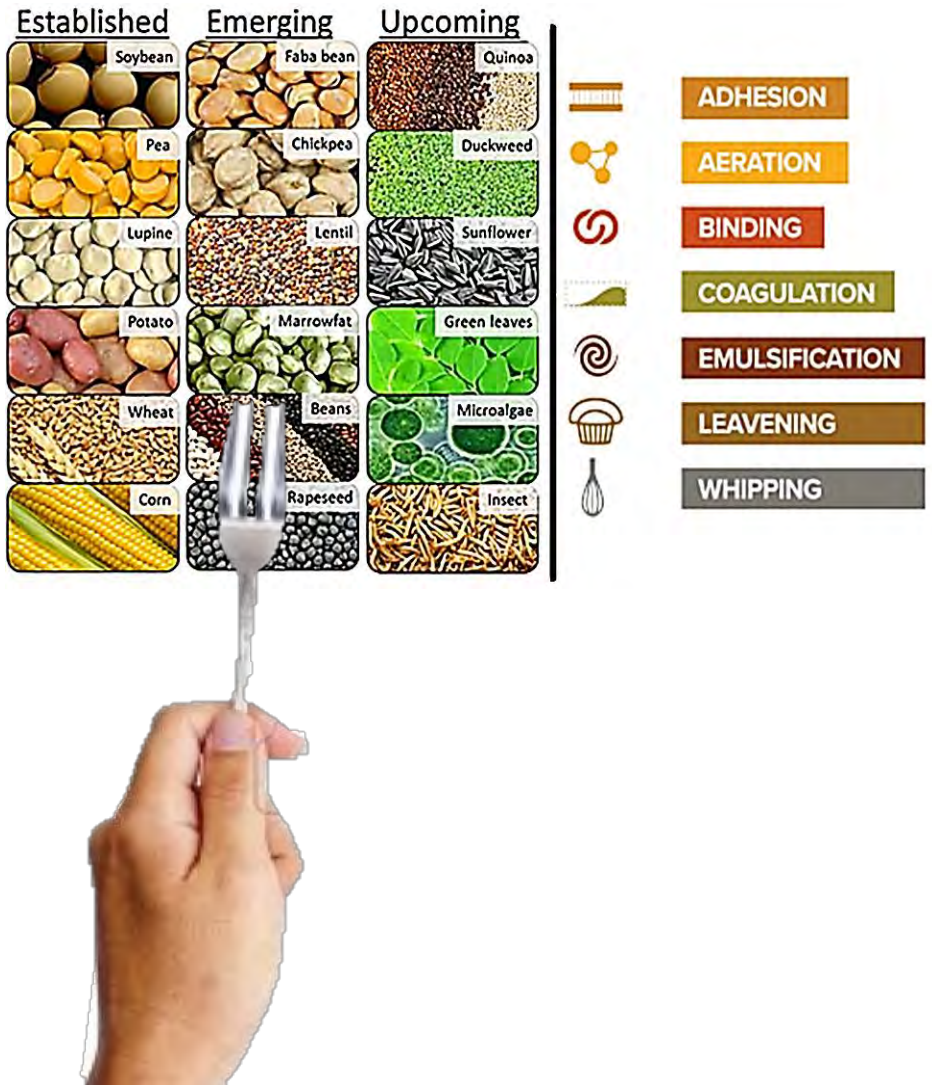
NEUE PROTEINQUELLEN

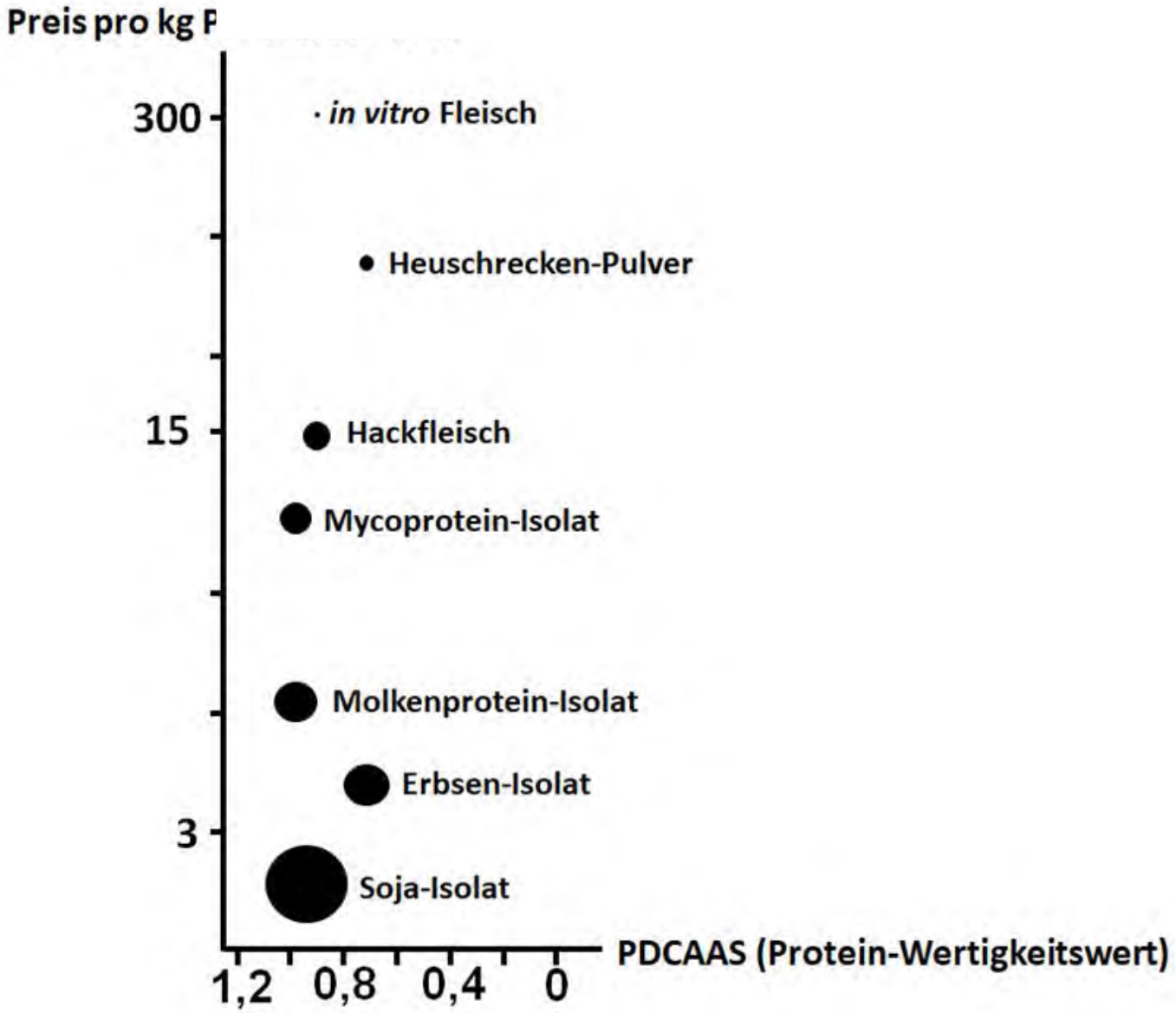




The potential of future foods for sustainable and healthy diets
Parodi, A, et al. *Nature Sustainability* volume 1, pages782–789(2018)

NEUE PROTEINQUELLEN
… alles geht; NUR:





McKinsey & Company

NEUE PROTEINQUELLEN

… alles geht; NUR:

Hackfleisch (Regional)

9,96 Euro per kg

planzl. Alternative

19,95 Euro per kg

in vitro Fleisch-lternative

ggeschätzt: 100 Euro per kg

nature COMMUNICATIONS

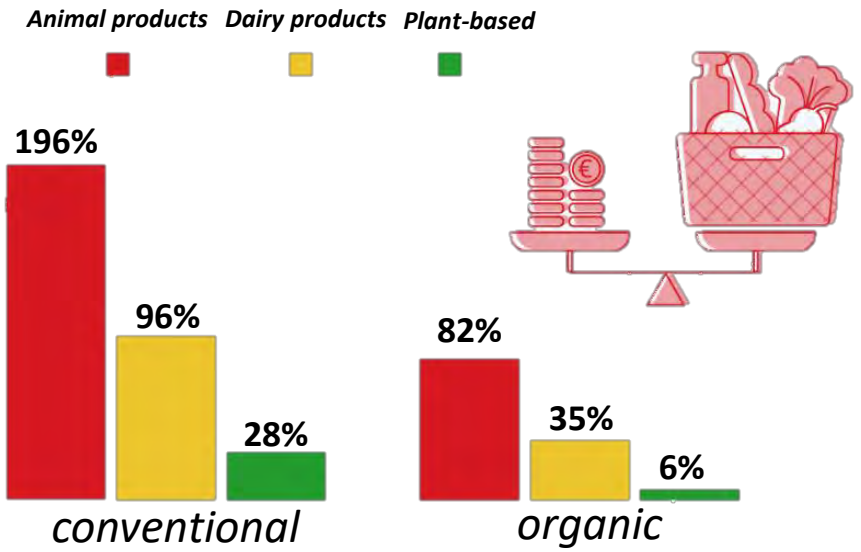
https://doi.org/10.1038/s41467-020-19474-6 OPEN

Calculation of external climate costs for food highlights inadequate pricing of animal products

Maximilian Pieper[1✉], Amelie Michalke[2] & Tobias Gaugler[3]

Although the agricultural sector is globally a main emitter of greenhouse gases, thorough economic analysis of environmental and social externalities has not yet been conducted. Available research assessing agricultural external costs lacks a differentiation between farming systems and food categories. A method addressing this scientific gap is established in this paper and applied in the context of Germany. Using life-cycle assessment and meta-analytical approaches, we calculate the external climate costs of foodstuff. Results show that external greenhouse gas costs are highest for conventional and organic animal-based products (2.41€/kg product; 146% and 71% surcharge on producer price level), followed by conventional dairy products (0.24€/kg product; 91% surcharge) and lowest for organic plant-based products (0.02€/kg product; 6% surcharge). The large difference of relative external climate costs between food categories as well as the absolute external climate costs of the agricultural sector imply the urgency for policy measures that close the gap between current market prices and the true costs of food.

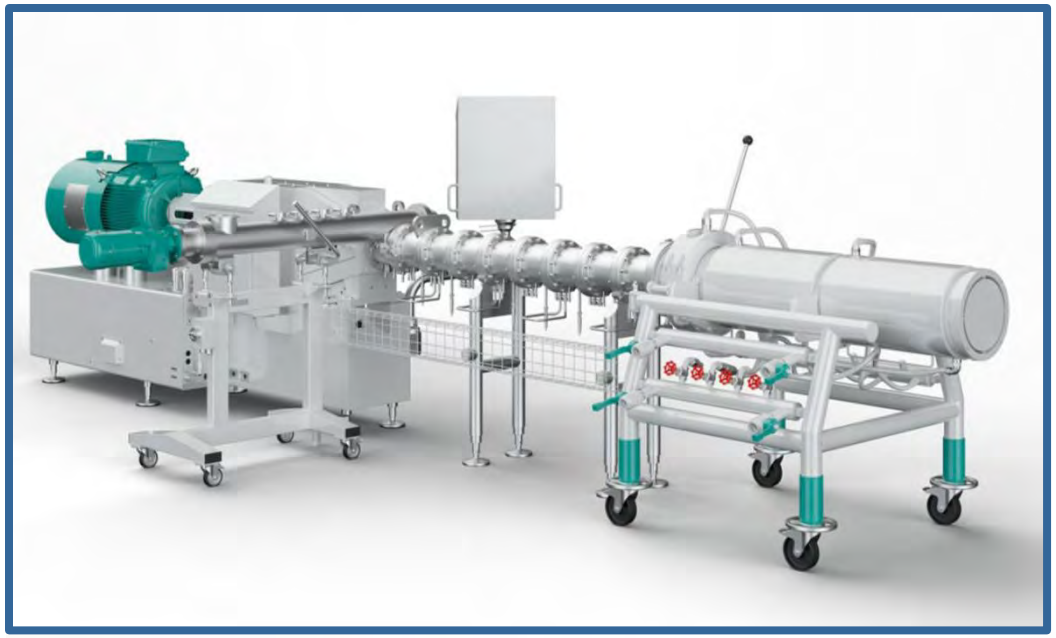
Predicted increase in consumer prices when environmental costs are internalized



Environmental costs by nitrogen and GHG emmission (reference 2016)

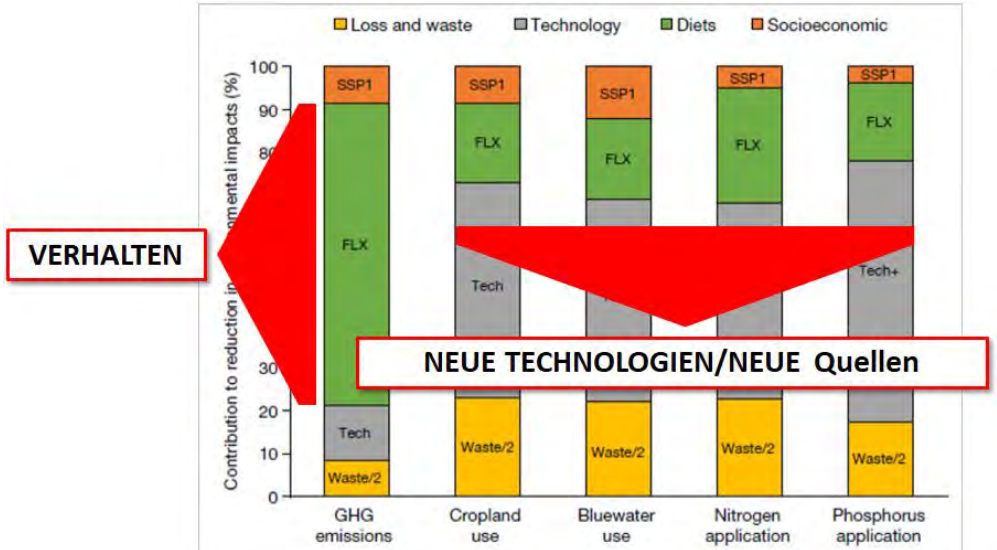
…. (do) we need to incorporate environmental externalities into food prices ?

Der Siegeszug der pflanzlichen Substitute - und nun BEDENKLICH !



ERNÄHRUNGSVERHALTEN

ERNÄHRUNGSSTILE



Combination and relative contributions of mitigation measures that simultaneously reduce environmental impacts below the mean values of the planetary-boundary range.

Ernährungsstile und Emissionen

The neglected potential of red and processed meat replacement with alternative protein sources: simulation modelling and systematic review

Andrew N. Reynolds,[a,b,c,*] Cliona Ni Mhurchu,[d,e] Zi-Yi Kok,[a,c] and Christine Cleghorn[f]

SCENARIOS	total greenhouse gas emission ($kgCO_2$ equivalents)	Percentage change from current diet
Current diet	*5.00*	*-*
Following Heart Foundation red and processed meat recommendations	*4.05*	*-19%*
Following EAT-Lancet red and processed meat recommendations	*3.77*	*-25%*
Replacing red & processed meats with minimally processed plant-based alternatives	*3.28*	*-34%*
Replacing red & processed meats with ultra-processed plant-based alternatives	*3.43*	*-31%*
Replacement with cellular meat	*4.01*	*-20%*

Interpretation All meat replacement scenarios considered indicated appreciable health gains and GHGe reductions. Replacement with minimally-processed plant-based foods appeared consistently superior than other scenarios. Evidence of real-world population strategies to achieve these benefits however is currently lacking.

www.thelancet.com Vol 56 February, 2023

Ernährungsstile und Emissionen: ein gesellschaftliches MUSS!

Aldi USA Going 100% Plant-Based By 2024

2 minute read

By The FARM Buzz - April 1, 2023

1 Share

Breaking News from Aldi USA's Batavia, Illinois, headquarters was released today when the grocery chain announced that all 1,400 U.S. stores in 32 states will undergo a massive restocking this summer to replace all meat, dairy, and eggs on their shelves with 100% plant-based, vegan, options. This groundbreaking move will set Aldi apart from all other national chain grocers, making them the first to cater exclusively to the rapidly growing plant-based market.

NEW YORK CITY STARTET KAMPAGNE FÜR PFLANZLICHE ERNÄHRUNG

New York City startet eine Kampagne für gesündere, pflanzliche Ernährung Bild: Pixabay.com (bearb.)

Die Stadt New York City hat eine Kampagne gestartet , um ihre Bürger zu ermutigen, mehr pflanzliche Lebensmittel zu konsumieren.

NUDGES zur subtilen Beeinflussung des Konsum-/Eßverhaltens

Reduktion der Portion

Promotion der gesunden Option

Kauf die krummen Dinger

Interaktive Lebensmittel-Info

Reste mitnehmen

KERNiG

CO2 Fußabdruck zeigen

Wahl der pfl. Alternative

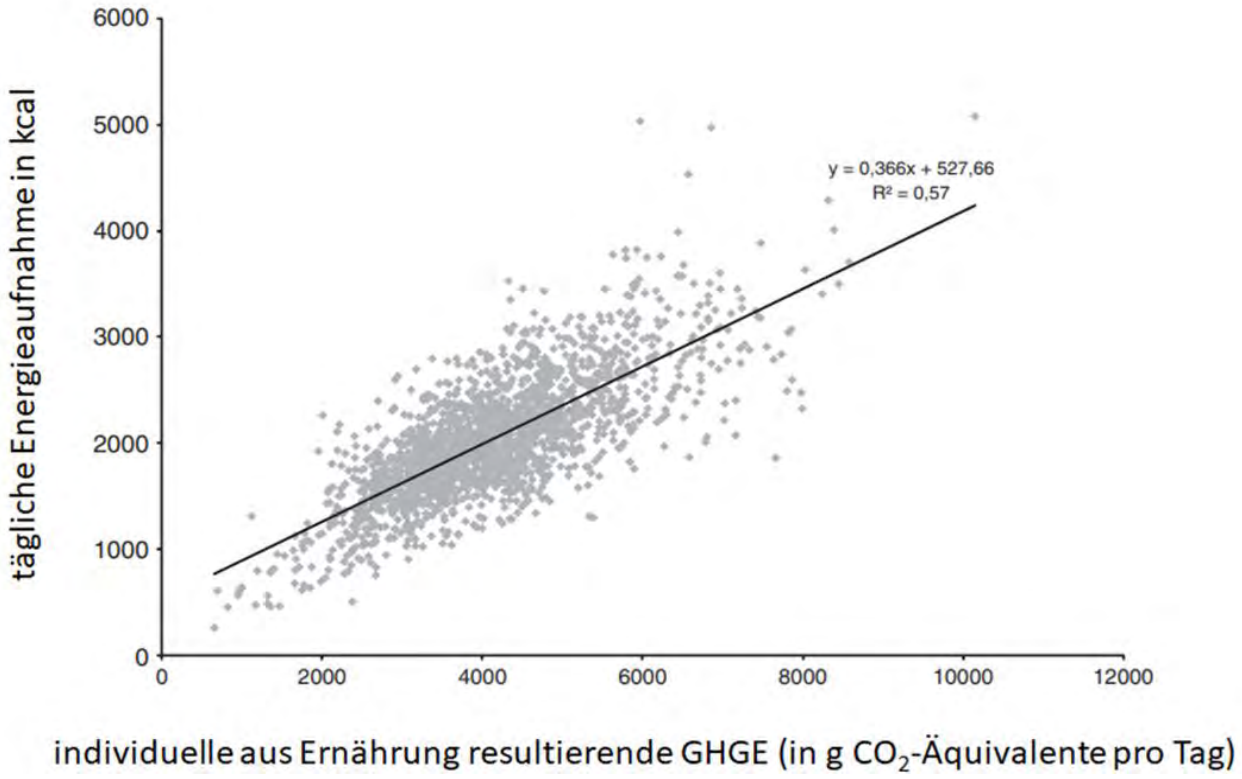
Mit freundlicher Genehmigung von Prof. Lucia Reisch

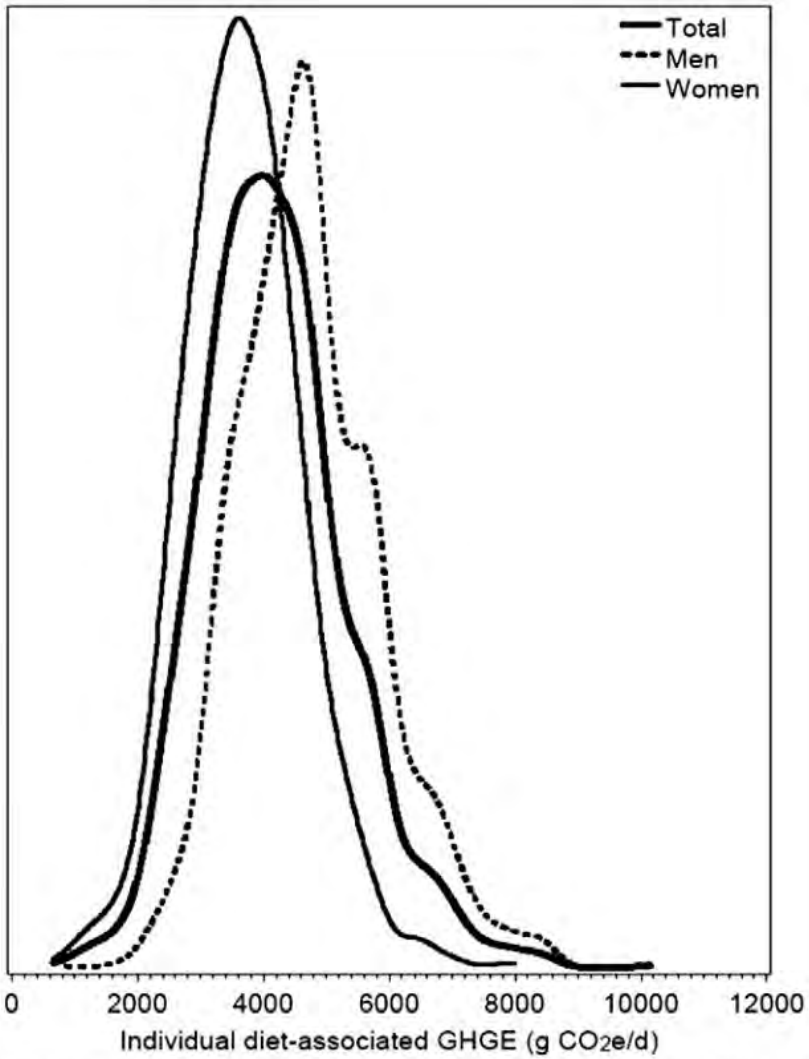
Änderung des Ernährungsverhaltens

Gottlieb Duttweiler Institut

Änderung des Ernährungsverhaltens

Assoziation der täglichen Kalorienaufnahme (in kcal/Tag) und der resultierenden Rate der GHGE aus einer Stichprobe von 1918 Konsumenten (nach Vieux F et al., 2012).





Density of individual diet-associated greenhouse gas emissions (GHGE) within the whole sample and subsamples of men (n = 776) and women (n = 1142).

Vieux F et al. (2012) Greenhouse gas emissions of self-selected individual diets in France: Changing the diet structure or consuming less? Ecological Economics 75, 91-101

Änderung des Ernährungsverhaltens

«Epicurean Nudging» steht im Einklang mit den Lehren des griechischen Philosophen Epikur. Dieser schrieb vor 2300 Jahren an seinen Freund Menoeceus, dass der weise Mensch nicht die grösste Menge an Nahrungsmitteln wähle, sondern die, die ihm am besten schmecke.

Pierre Chandon: L'Oréal-Professor für Marketing, Innovation und Kreativität an der INSEAD Universität

WENIGER IST MEHRWERT

Meine TAKE HOME MESSAGE

- *Es gibt viele gute Gründe das Ernährungs-/Konsumverhalten zu verändern und eine Ernährungsweise dominiert durch pflanzliche Lebensmittel anzustreben.*
- *Allerdings sind die Erwartungen (Effektgrößen) an eine „pflanzenbasierte Kost“ (ggf. gar vegan) im Hinblick auf Nachhaltigkeit und hier vor allem auf die klimawirksamen Emissionen oft überzogen & unrealistisch.*
- *Den größten Einzelposten mit entsprechender Effektgröße bei den Emissionen hätte die Minderung des Verzehrs von Rindfleisch. Allein eine Reduktion um 50% würde so viel Landfläche (Futtergetreideanbau) freisetzen, dass wir mit Anbau von Leguminosen fast von Sojaimporten unabhängig wären.*
- *Die „Ernährungswende“ sollte auch die Portionsgrößen zum Ziel haben (nicht nur die LM-Verluste). Hier wäre der Mehrwert sogar größer als nur durch die Reduktion der tier. Lebensmittel (und höherer Gesundheitsnutzen).*
- *Die „Ernährungswende“ muss den GENUSS in den Vordergrund stellen – da Entscheidungen vorwiegend hedonisch getrieben sind.*