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<u>Supplementary Information 2</u> to the publication "Environmental and nutritional implications of replacing meat and dairy with alternatives"

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Sheet	Content description
T1 Diet composition	This sheet provides the composition of the six investigated dietary patters. Daily consumption amounts per capita are listed for each considered food item. The colour code is the same as in the main manuscript.
T2 Food item characteristics	The environmental impacts and nutrient contents per kilogram of each food item considered in the analyses at diet level are provided in sheet T2. Data is aggregated at the level of the food item. Hence, e.g., the production in Switzerland and imports are not differentiated. Relevant weighting of individual data sets is presented in the SI1 chapters 1.3.3 and 1.4.8. For consistency reasons, only complete nutrient composition data is considered for this data set. In some cases, nutrient composition data of individual food items had to be complemented from other sources, as explained in SI1 chapter 1.3.4. In general, the references for each data point are provided in the manuscript or SI1.
T3 Alt. product characteristics	The environmental impacts and nutrient contents of the alternative as well as reference product groups are provided in sheet T3. This data was the basis for the product level analyses. On top of the mid-point environmental impact categories and the nutrient contents, the nutrient density and single score impact are reported. Production in Switzerland is assumed for the reference products. Incomplete nutrient composition data is included in the analysis to depict a larger variety of products. In all cases, averages are only calculated for the nutrients available.
T4 Diet characteristics	In sheet T4 the environmental impacts and nutrient contents of the different dietary patterns are presented. Three types of values are reported for the dietary patterns incorporating alternative products (as visualized in Figure 3 of the manuscript), namely the maximum and minimum value observed as well as the results of incorporating the two average product groups.
T5 Alt. products in Switzerland	A search of the available alternative products in the Swiss retail was performed. For this purpose, the online catalogues of the five largest retailers in Switzerland, namely Migros (www.migros.ch), Coop (www.coop.ch), Denner (www.denner.ch), Aldi (www.aldi-suisse.ch) and Lidl (www.lidl.ch), were scanned for alternative products. The search was facilitated by the fact that all retailers had separate categories for vegan and vegetarian alternative products. The results are shown in sheet T5.
T6 NRF11.3 reference values	The nutrient content of the products and dietary patterns is compared to the recommended daily reference intakes (DRI). Moreover, the nutrient density is calculated in form of the NRF11.3 index, based on Fulgoni et al. (2009), incorporating DRI values. Where reference values differ by sex, the average of female and male intakes was used to reflect population-level requirements. The utilized reference intake values and their sources are provided in sheet T6.
T7 Soy alternatives	For the visualization of the variety observed within product groups, the individual data points collected for the mechanically texturised soy meat alternatives are depicted in sheet T7. Values are provided for the nutrient density and the global warming impact.
T8 Soy alternatives composition	As a sensitivity analysis, T8 shows the effect of the product recipe on the nutrient density and global warming impact at the example of the mechanically texturised soy meat alternatives. The effect size is compared to the values received for the reference products. Only the datasets that could be matched between the nutrient and the ennvironmental data are included. The total mass of agricultural raw materials needed for each recipe is presented in relation to the wet weight of the product.
T9 Soy alternatives origin	The second sensitivity analysis investigates the influence of the raw material origin on the environmental impacts of alternative products, using the mechanically texturised soy meat alternative with the highest theoretical raw soybean content as an example (soy alternative (environmental data) 4, selected from the products shown in sheet T8). In the original inventory and its background processes the soybeans (originally from France) are replaced with soybeans from six different countries. The global warming impact is calculated for each scenario and then compared to the original one.
T10 Ratio dom. prod. to import	The proportion of domestic production to total consumption of the investigated foods was obtained from a report by the Swiss Farmers' Union (SBV, 2023). As the groups in the report were not identical to the foods investigated in the study, a matching step was performed, which is reported in sheet T10. Values above 100% were capped.

References	DOI/URL
BLV, 2014	https://www.blv.admin.ch/blv/de/home/lebensmittel-und-ernaehrung/ernaehrung/menuCH.html
BLV, 2025	https://www.blv.admin.ch/blv/de/home/lebensmittel-und-ernaehrung/ernaehrung/empfehlungen-informationen/naehrstoffe/naehrstoffzufuhr-dynamische-tabelle.html
Douziech et al., 2024	https://doi.org/10.34776/as183e
EFSA, 2025	https://multimedia.efsa.europa.eu/drvs/index.htm
Fulgoni et al., 2009	https://doi.org/10.3945/jn.108.101360
Huijbregts et al., 2017	https://doi.org/10.1007/s11367-016-1246-y
SBV, 2022	https://www.sbv-usp.ch/fileadmin/user_upload/SES_2022-99.pdf "Statistische Erhebungen und Schätzungen über Landwirtschaft und Ernährung Statistiques et évaluations concernant l'agriculture et l'alim
SGE, 2020	https://www.sge-ssn.ch/ich-und-du/essen-und-trinken/ausgewogen/schweizer-lebensmittelpyramide/

T1 Diet composition

	Diet	Self-selected diet	Self-selected diet, no meat	Self-selected diet, no meat and no dairy	Recommended diet	Recommended diet, no meat	Recommended diet, no meat and no dairy
	Reference	BLV (2014)	BLV (2014)	BLV (2014)	SGE (2020)	SGE (2020)	SGE (2020)
	Unit	[g/(day*person)]	[g/(day*person)]	[g/(day*person)]	[g/(day*person)]	[g/(day*person)]	[g/(day*person)]
Food group	Food item						
Meat products	veal, unprocessed	3.3			1.3		
	beef, unprocessed	19.6			8.0		
	pork, unprocessed	15.5			6.3		
	poultry, unprocessed	30.9			15.7		
	veal, processed	2.3			0.7		
	beef, processed	9.2			2.6		
	pork, processed	37.4			10.7		
	poultry, processed	5.9			1.7		
Meat alternatives	meat alternatives		124.1	124.1		47.1	47.1
Dairy products	hard and semi-hard cheese	30.0	30.0		26.8	26.8	
	soft cheese	7.6	7.6		12.1	12.1	
	cream cheese	20.7	20.7		32.9	32.9	
	yoghurt	59.9	59.9		156.3	156.3	
	milk	98.9	98.9		150.0	150.0	
	milk drinks	13.3	13.3		0	0	
	cream	11.0	11.0		2.5	2.5	
	milk-based dessert	17.5	17.5		6.7	6.7	
Dairy alternatives	milk alternatives			112.2			150.0
	cream alternatives			11.0			2.5
	yoghurt alternatives			77.4			162.9
	cheese alternatives			58.3			71.8
Non-alcoholic beverages	softdrink	229.3	229.3	229.3	20.8	20.8	20.8
	apple juice	86.2	86.2	86.2	86.2	86.2	86.2
	coffee	328.8	328.8	328.8	328.8	328.8	328.8
	black tea	91.5	91.5	91.5	91.5	91.5	91.5
	green tea	71.4	71.4	71.4	71.4	71.4	71.4
Alcoholic beverages	beer non alcoholic	5.8	5.8	5.8	5.8	5.8	5.8
	beer	96.0	96.0	96.0	16.5	16.5	16.5
	mixed alcoholic drink	14.2	14.2	14.2	2.4	2.4	2.4
	spirit	79.3	79.3	79.3	13.6	13.6	13.6
	red wine	51.7	51.7	51.7	8.9	8.9	8.9
	white wine	19.7	19.7	19.7	3.4	3.4	3.4
	rosé wine	5.8	5.8	5.8	1.0	1.0	1.0
Oils and fats	butter	10.1	10.1	10.1	2.5	2.5	2.5
	margarine	2.0	2.0	2.0	2.5	2.5	2.5
	olive oil	6.6	6.6	6.6	10.1	10.1	10.1
	rapeseed oil	1.7	1.7	1.7	12.5	12.5	12.5
	sunflower oil	1.6	1.6	1.6	2.4	2.4	2.4
Seafood	salmon	9.8	9.8	9.8	4.3	4.3	4.3
	tuna	6.3	6.3	6.3	2.8	2.8	2.8
	cod	5.2	5.2	5.2	2.3	2.3	2.3
	trout	2.3	2.3	2.3	1.0	1.0	1.0
	perch	4.0	4.0	4.0	1.8	1.8	1.8
	sardine	2.3	2.3	2.3	1.0	1.0	1.0
	crustaceans	4.7	4.7	4.7	2.1	2.1	2.1
	mussels	1.5	1.5	1.5	0.7	0.7	0.7
Eggs	egg (chicken)	16.0	16.0	16.0	21.4	21.4	21.4
Fruits	strawberry	11.9	11.9	11.9	11.1	11.1	11.1
	pineapple	4.5	4.5	4.5	4.2	4.2	4.2
	apple	69.2	69.2	69.2	65.0	65.0	65.0
	apricot	6.6	6.6	6.6	6.2	6.2	6.2
	banana	21.3	21.3	21.3	20.1	20.1	20.1
	pear	11.8	11.8	11.8	11.1	11.1	11.1
	cherry	4.4	4.4	4.4	4.2	4.2	4.2
	kiwi	4.3	4.3	4.3	4.1	4.1	4.1
	mandarin	9.3	9.3	9.3	8.8	8.8	8.8
	mango	5.0	5.0	5.0	4.7	4.7	4.7
	melon	9.3	9.3	9.3	8.8	8.8	8.8
	nectarine	4.7	4.7	4.7	4.5	4.5	4.5
	orange	14.5	14.5	14.5	13.6	13.6	13.6
	peach	6.7	6.7	6.7	6.3	6.3	6.3
	grape	8.4	8.4	8.4	7.9	7.9	7.9
	plum	8.3	8.3	8.3	7.8	7.8	7.8
Vegetables	chicory	8.0	8.0	8.0	15.6	15.6	15.6
	iceberg lettuce	6.7	6.7	6.7	13.0	13.0	13.0
	head lettuce	6.9	6.9	6.9	13.4	13.4	13.4
	spinach	6.3	6.3	6.3	12.3	12.3	12.3
	asparagus	11.8	11.8	11.8	22.9	22.9	22.9
	eggplant	4.6	4.6	4.6	9.0	9.0	9.0
	avocado	4.8	4.8	4.8	9.3	9.3	9.3
	beans	5.9	5.9	5.9	11.4	11.4	11.4
	peas	4.9	4.9	4.9	31.1	31.1	31.1
	lentils	5.6	5.6	5.6	53.0	53.0	53.0
	cucumber	18.2	18.2	18.2	35.3	35.3	35.3
	bell pepper	8.3	8.3	8.3	16.2	16.2	16.2
	tomato	34.7	34.7	34.7	67.5	67.5	67.5
	courgette	9.7	9.7	9.7	18.8	18.8	18.8
	beetroot	4.9	4.9	4.9	9.6	9.6	9.6
	carrot	20.3	20.3	20.3	39.4	39.4	39.4
	broccoli	20.1	20.1	20.1	39.2	39.2	39.2
	onion	8.6	8.6	8.6	16.7	16.7	16.7
	button mushroom	3.1	3.1	3.1	6.0	6.0	6.0
Cereal products	wheat bread	89.2	89.2	89.2	92.0	92.0	92.0
	rye bread	4.5	4.5	4.5	4.6	4.6	4.6
	pasta	79.5	79.5	79.5	82.0	82.0	82.0
	rice	40.6	40.6	40.6	41.8	41.8	41.8
	polenta, cornmeal	5.8	5.8	5.8	6.0	6.0	6.0
	breakfast cereal	7.7	7.7	7.7	8.0	8.0	8.0
	dough and pastry	12.7	12.7	12.7	13.1	13.1	13.1
Potato and tubers	potato	82.2	82.2	82.2	120.0	120.0	120.0
Nuts and seeds	peanut	4.1	4.1	4.1	11.4	11.4	11.4
	chestnut	2.5	2.5	2.5	7.1	7.1	7.1
	almond	2.3	2.3	2.3	6.4	6.4	6.4
Other foods	chips	16.6	16.6	16.6	8.3	8.3	8.3
	vegetable soup	65.4	65.4	65.4	0	0	0
	pumpkin soup	13.4	13.4	13.4	0	0	0
	sweet pastry	41.6	41.6	41.6	1.7	1.7	1.7
	jam	10.9	10.9	10.9	0.5	0.5	0.5
	honey	3.5	3.5	3.5	0.2	0.2	0.2
	chocolate	13.7	13.7	13.7	0.6	0.6	0.6
	sweets	3.8	3.8	3.8	0.2	0.2	0.2
	sugar	6.3	6.3	6.3	0.3	0.3	0.3
	vinegar	2.5	2.5	2.5	2.5	2.5	2.5
	mustard	2.1	2.1	2.1	2.1	2.1	2.1
	tomato sauce	27.1	27.1	27.1	27.1	27.1	27.1
	mayonnaise	3.1	3.1	3.1	2.5	2.5	2.5
	salad dressing	18.1	18.1	18.1	0	0	0
	salt	0.5	0.5	0.5	0.5	0.5	0.5
	chives	1.1	1.1	1.1	1.1	1.1	1.1

Variable / Characteristic	Total	Age								Sex		Ethnicity					Citizenship				Region of birth								Region of residence								Religion							
		0 to 14	15 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65 to 74	75 and over	Male	Female	White	Black	Asian	Mixed	Other	UK	EU	Non-EU	Europe	Africa	Middle East and Asia	Americas and Caribbean	Oceania	Antarctica and Outlying Islands	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	East of England	London	South East	South West	Wales	Scotland	Northern Ireland	Christian	Buddhist	Hindu	Jewish	Muslim	Sikh	Other religion
Total	5,703,600	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	2,851,800	2,851,800	4,555,000	570,400	285,200	142,600	142,600	4,555,000	570,400	570,400	1,140,800	1,140,800	1,140,800	1,140,800	1,140,800	1,140,800	285,200	570,400	427,800	427,800	570,400	570,400	1,140,800	570,400	285,200	570,400	285,200	2,281,600	1,140,800	1,140,800	1,140,800	1,140,800	1,140,800	1,140,800
Age																																										
0 to 14	1,000,000	1,000,000	0	0	0	0	0	0	0	513,000	487,000	800,000	100,000	50,000	25,000	25,000	800,000	100,000	100,000	200,000	200,000	200,000	200,000	200,000	200,000	50,000	100,000	75,000	75,000	100,000	100,000	200,000	100,000	50,000	100,000	50,000	400,000	200,000	200,000	200,000	200,000	200,000	200,000
15 to 24	1,000,000	0	1,000,000	0	0	0	0	0	0	513,000	487,000	800,000	100,000	50,000	25,000	25,000	800,000	100,000	100,000	200,000	200,000	200,000	200,000	200,000	200,000	50,000	100,000	75,000	75,000	100,000	100,000	200,000	100,000	50,000	100,000	50,000	400,000	200,000	200,000	200,000	200,000	200,000	200,000
25 to 34	1,000,000	0	0	1,000,000	0	0	0	0	0	513,000	487,000	800,000	100,000	50,000	25,000	25,000	800,000	100,000	100,000	200,000	200,000	200,000	200,000	200,000	200,000	50,000	100,000	75,000	75,000	100,000	100,000	200,000	100,000	50,000	100,000	50,000	400,000	200,000	200,000	200,000	200,000	200,000	200,000
35 to 44	1,000,000	0	0	0	1,000,000	0	0	0	0	513,000	487,000	800,000	100,000	50,000	25,000	25,000	800,000	100,000	100,000	200,000	200,000	200,000	200,000	200,000	200,000	50,000	100,000	75,000	75,000	100,000	100,000	200,000	100,000	50,000	100,000	50,000	400,000	200,000	200,000	200,000	200,000	200,000	200,000
45 to 54	1,000,000	0	0	0	0	1,000,000	0	0	0	513,000	487,000	800,000	100,000	50,000	25,000	25,000	800,000	100,000	100,000	200,000	200,000	200,000	200,000	200,000	200,000	50,000	100,000	75,000	75,000	100,000	100,000	200,000	100,000	50,000	100,000	50,000	400,000	200,000	200,000	200,000	200,000	200,000	200,000
55 to 64	1,000,000	0	0	0	0	0	1,000,000	0	0	513,000	487,000	800,000	100,000	50,000	25,000	25,000	800,000	100,000	100,000	200,000	200,000	200,000	200,000	200,000	200,000	50,000	100,000	75,000	75,000	100,000	100,000	200,000	100,000	50,000	100,000	50,000	400,000	200,000	200,000	200,000	200,000	200,000	200,000
65 to 74	1,000,000	0	0	0	0	0	0	1,000,000	0	513,000	487,000	800,000	100,000	50,000	25,000	25,000	800,000	100,000	100,000	200,000	200,000	200,000	200,000	200,000	200,000	50,000	100,000	75,000	75,000	100,000	100,000	200,000	100,000	50,000	100,000	50,000	400,000	200,000	200,000	200,000	200,000	200,000	200,000
75 and over	1,000,000	0	0	0	0	0	0	0	1,000,000	513,000	487,000	800,000	100,000	50,000	25,000	25,000	800,000	100,000	100,000	200,000	200,000	200,000	200,000	200,000	200,000	50,000	100,000	75,000	75,000	100,000	100,000	200,000	100,000	50,000	100,000	50,000	400,000	200,000	200,000	200,000	200,000	200,000	200,000
Sex																																										
Male	2,851,800	513,000	513,000	513,000	513,000	513,000	513,000	513,000	513,000	2,851,800	0	2,279,000	285,200	142,600	71,300	71,300	2,279,000	285,200	285,200	570,400	570,400	570,400	570,400	570,400	570,400	142,600	285,200	213,900	213,900	285,200	285,200	570,400	285,200	142,600	285,200	142,600	1,140,800	570,400	570,400	570,400	570,400	570,400	570,400
Female	2,851,800	487,000	487,000	487,000	487,000	487,000	487,000	487,000	487,000	0	2,851,800	2,276,000	284,800	142,400	71,300	71,300	2,276,000	284,800	284,800	569,600	569,600	569,600	569,600	569,600	569,600	142,400	284,800	213,600	213,600	284,800	284,800	569,600	284,800	142,400	284,800	142,400	1,141,600	570,400	570,400	570,400	570,400	570,400	570,400
Ethnicity																																										
White	4,555,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	2,279,000	2,276,000	4,555,000	0	0	0	0	4,555,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Black	570,400	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	285,200	284,800	0	570,400	0	0	0	0	570,400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asian	285,200	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	142,600	142,400	0	0	285,200	0	0	0	0	285,200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mixed	142,600	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	71,300	71,300	0	0	0	142,600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	142,600	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	71,300	71,300	0	0	0	0	142,600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Citizenship																																										
UK	4,555,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	2,279,000	2,276,000	4,555,000	0	0	0	0	4,555,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EU	570,400	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	285,200	284,800	0	570,400	0	0	0	0	570,400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-EU	570,400	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	285,200	284,800	0	0	285,200	142,600	142,600	0	0	285,200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Region of birth																																										
Europe	1,140,800	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	570,400	569,600	0	0	0	0	0	0	0	0	1,140,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Africa	1,140,800	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	570,400	569,600	0	0	0	0	0	0	0	0	0	1,140,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Middle East and Asia	1,140,800	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	570,400	569,600	0	0	0	0	0	0	0	0	0	0	1,140,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Americas and Caribbean	1,140,800	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	570,400	569,600	0	0	0	0	0	0	0	0	0	0	0	1,140,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oceania	1,140,800	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	570,400	569,600	0	0	0	0	0	0	0	0	0	0	0	0	1,140,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Antarctica and Outlying Islands	285,200	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	142,600	142,400	0	0	0	0	0	0	0	0	0	0	0	0	0	285,200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Region of residence																																										
North East	570,400	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	285,200	284,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	570,400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North West	570,400	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	285,200	284,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	570,400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yorkshire and The Humber	427,800	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	213,900	213,600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	427,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East Midlands	427,800	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	213,900	213,600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	427,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0
West Midlands	570,400	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	285,200	284,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	570,400	0	0	0	0	0	0	0	0	0	0	0	0	0
East of England	570,400	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	285,200	284,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	570,400	0	0	0	0	0	0	0	0	0	0	0	0
London	1,140,800	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	570,400	569,600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,140,800	0	0	0	0	0	0	0	0	0	0	0
South East	570,400	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	285,200	284,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	570,400	0	0	0	0	0	0	0	0	0	0
South West	285,200	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	142,600	142,400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	285,200	0	0	0	0	0	0	0	0	0
Wales	570,400	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	285,200	284,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	570,400	0	0	0	0	0	0	0	0
Scotland	285,200	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	142,600	142,400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	285,200	0	0	0	0	0	0	0
Northern Ireland	142,600	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	71,300	71,300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	142,600	0	0	0	0	0	0
Religion																																											
Christian	2,281,600	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	1,140,800	1,141,600	2,281,600	0	0	0	0	2,281,600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,281,600	0	0	0	0	0	0
Buddhist	1,140,800	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	570,400	570,400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,140,800	0	0	0	0	0
Hindu	1,140,800	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	570,400	570,400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,140,800	0	0	0	0
Jewish	1,140,800	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	570,400	570,400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,140,800	0	0	0
Muslim	1,140,800	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	570,400	570,400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,140,800	0	0
Sikh	1,140,800	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	570,400	570,400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,140,800	0
Other religion	1,140,800	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	570,400	570,400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,140,800

An example of a small synthetic dataset for testing validation and visualisation tools

73 ab. product characteristics

| | Environmental impacts (Douzounoff et al., 2024) | | |

T4 Diet characteristics

| | | Environmental impacts (Douzlech et al., 2024) | | |

TV Ads production in Switzerland

Period of report: 01.01.2022

Advertisements for tobacco products and electronic cigarettes are prohibited in Switzerland, with only a few exceptions.

Name	Gender	Age	Ethnicity	Occupation	Setting	Product	Brand	Emotion	Message	Visuals	Audio	Duration	Target audience
Ben Fischer	Male	30s	White	Chef	Kitchen	Cooking oil	Olivella	Joy	Health	Close-up	Upbeat	30s	Adults

T6 NRF11.3 reference values

Sub-score	Nutrient	Reference value as average for adult population (18-65)	Unit of intake per person and day	Nutrient characteristic in NRF11.3 index	Type of value	Source
NR11	protein, total	61	g	qualifying	PRI	EFSA (2025)
	iron, total	13.5	mg	qualifying	PRI	EFSA (2025)
	fibre, total dietary	30	g	qualifying	AI	BLV (2023)
	vitamin A in retinol equivalents f	700	µg RE	qualifying	PRI	EFSA (2025)
	vitamin C	102.5	mg	qualifying	PRI	EFSA (2025)
	vitamin E in alpha-tocopherol eq	12	mg	qualifying	AI	EFSA (2025)
	vitamin B12	4	µg	qualifying	AI	EFSA (2025)
	calcium	1000	mg	qualifying	PRI	EFSA (2025)
	magnesium	325	mg	qualifying	AI	EFSA (2025)
	potassium	3500	mg	qualifying	AI	EFSA (2025)
	iodide	150	µg	qualifying	AI	EFSA (2025)
LIM3	fatty acids, total saturated	25	g	disqualifying	RUL	BLV (2023)
	sodium	2000	mg	disqualifying	AI	EFSA (2025)
	sugars, free	56	g	disqualifying	RUL	BLV (2023)
other	energy, total metabolisable	2246	kcal		AR	BLV (2023)
	carbohydrate	295	g		RI	EFSA (2025)
	fat, total	69	g		RI	EFSA (2025)
	fatty acids, total monounsaturat	31	g		RI	BLV (2023)
	fatty acids, total polyunsaturate	N/A				
	protein, total	48.44	g		AR	EFSA (2025)
	calcium	860	mg		AR	EFSA (2025)
	iron, total	6.5	mg		AR	EFSA (2025)
	phosphorus	550	mg		AI	EFSA (2025)
	zinc	11.49	mg		PRI	EFSA (2025)
	zinc	9.18	mg		AR	EFSA (2025)
	folate, total	330	µg DFE		PRI	EFSA (2025)
	niacin, preformed	15	mg		PRI	EFSA (2025)
	pantothenic acid (vitamin B5)	5	mg		AI	EFSA (2025)
	riboflavin	1.6	mg		PRI	EFSA (2025)
	thiamin	0.94	mg		PRI	EFSA (2025)
	vitamin A in retinol equivalents f	530	µg RE		AR	EFSA (2025)
	vitamin B-6, total	1.65	mg		PRI	EFSA (2025)
	vitamin C	85	mg		AR	EFSA (2025)

PRI	Population reference intake
AI	Adequate intake
AR	Average requirement
RI	Reference intake range
RUL	Recommended upper intake lev

DFE	Dietary folate equivalents
N/A	Not available
RE	Retinol-equivalents

T7 Soy alternatives

	NRF11.3 (based on Fulgoni et al., 2009)		IPCC 2021 - GWP100 (fossil & LULUC) (Douziech et al., 2024)
Data points, nutrient density	score/kg	Data points, environmental single score	kg CO2-eq/kg
Soy alternative (nutrient data) 1	3.52	Soy alternative (environmental data) 1	0.565
Soy alternative (nutrient data) 2	7.03	Soy alternative (environmental data) 2	0.643
Soy alternative (nutrient data) 3	7.04	Soy alternative (environmental data) 3	0.892
Soy alternative (nutrient data) 4	7.58	Soy alternative (environmental data) 4	0.902
Soy alternative (nutrient data) 5	7.84	Soy alternative (environmental data) 5	0.938
Soy alternative (nutrient data) 6	8.77	Soy alternative (environmental data) 6	1.002
Soy alternative (nutrient data) 7	8.84	Soy alternative (environmental data) 7	1.083
Soy alternative (nutrient data) 8	9.41	Soy alternative (environmental data) 8	1.046
Soy alternative (nutrient data) 9	9.43	Soy alternative (environmental data) 9	1.044
Soy alternative (nutrient data) 10	9.59		
Soy alternative (nutrient data) 11	9.61		
Soy alternative (nutrient data) 12	9.66		
Soy alternative (nutrient data) 13	9.74		
Soy alternative (nutrient data) 14	10.14		
Soy alternative (nutrient data) 15	10.15		
Soy alternative (nutrient data) 16	10.18		
Soy alternative (nutrient data) 17	10.97		
Soy alternative (nutrient data) 18	13.73		
Soy alternative (nutrient data) 19	13.74		
Soy alternative (nutrient data) 20	20.86		
Mean	9.89	Mean	0.902
Median	9.60	Median	0.938
Mean absolute deviation	2.05	Mean absolute deviation	0.134
Standard deviation	3.32	Standard deviation	0.172
Deviation from unprocessed beef	3.07	Deviation from unprocessed beef	16.010
Deviation from unprocessed chicken	3.16	Deviation from unprocessed chicken	1.107

T8 Soy alternatives composition

Soy alternatives		Raw soy content	Raw oilseed content	Raw wheat content	Raw other content	Total raw material content	IPCC 2021 - GWP100 (fossil & LULUC)		NRF11.3	
								difference to average of		difference to average of
Nutrient data	Matching environmental data	%ww	%ww	%ww	%ww	%ww	kg CO2-eq/kg	soy alternatives	score/kg	soy alternatives
soy alternative (nutrient data) 7	soy alternative (environmental data) 8	34%	10%	73%	9%	126%	1.046	+ 16%	8.84	- 11%
soy alternative (nutrient data) 12	soy alternative (environmental data) 9	25%	10%	96%	0%	131%	1.044	+ 16%	9.66	- 2%
soy alternative (nutrient data) 10	soy alternative (environmental data) 3	23%	11%	50%	0%	84%	0.892	- 1%	9.59	- 3%
soy alternative (nutrient data) 8	soy alternative (environmental data) 5	27%	10%	61%	3%	101%	0.938	+ 4%	9.41	- 5%
soy alternative (nutrient data) 11	soy alternative (environmental data) 8	34%	10%	73%	9%	126%	1.046	+ 16%	9.61	- 3%
soy alternative (nutrient data) 13	soy alternative (environmental data) 6	34%	13%	0%	7%	54%	1.002	+ 11%	9.74	- 1%
soy alternative (nutrient data) 14	soy alternative (environmental data) 4	44%	5%	0%	16%	65%	0.902	- 0%	10.14	+ 3%
soy alternative (nutrient data) 17	soy alternative (environmental data) 1	15%	10%	0%	0%	25%	0.565	- 37%	10.97	+ 11%
						average (see T7)	0.902		9.89	
	not a perfect fit according to product description					beef, unprocessed	16.912	+ 1775%	12.96	+ 31%
						veal, unprocessed	17.051	+ 1791%	9.07	- 8%
						pork, unprocessed	5.927	+ 557%	6.72	- 32%
						poultry, unprocessed	2.009	+ 123%	6.73	- 32%
						beef, processed	13.171	+ 1361%	1.36	- 86%
						veal, processed	7.451	+ 726%	-1.67	- 117%
						pork, processed	6.783	+ 652%	4.46	- 55%
						poultry, processed	2.235	+ 148%	2.89	- 71%

T9 Soy alternatives origin

Origin of soybeans	IPCC 2021 - GWP100 (fossil & LULUC) [kg CO2-eq/kg], ecoinvent v3.10	ratio [%]
Argentina	1.442	+ 60%
Brazil	1.024	+ 14%
Switzerland	0.921	+ 2%
Canada	0.907	+ 1%
France	0.902	
USA	0.888	- 2%
India	0.871	- 3%

T10 Ratio dom. prod. to import

Food item	Food category in SBV (2023)	domestic production [%]
almond	almonds	0%
apple	pome fruits	92%
apple juice	pome fruits	92%
apricot	stone fruits	24%
asparagus	root vegetables	108%
avocado	tropical fruits	0%
banana	tropical fruits	0%
beans	legume vegetables	58%
beef, processed	beef	84%
beef, unprocessed	beef	84%
beer	beer	0%
beer, non-alcoholic	beer	0%
beetroot	root vegetables	108%
bell pepper	fruit vegetables	20%
black tea	tea	5%
breakfast cereal	oat	15%
broccoli	cabbage vegetables	64%
butter	butter	75%
button mushroom	mushrooms	36%
carrot	root vegetables	108%
cherry	stone fruits	24%
chestnut	chestnuts	4%
chicory	cabbage vegetables	64%
chips	N/A	N/A
chives	N/A	N/A
chocolate	cocoa	0%
cod	fish sea	0%
coffee	coffee	0%
courgette	fruit vegetables	20%
cream	cream	99%
cream cheese	fresh cheese	73%
crustaceans	crustaceans	0%
cucumber	fruit vegetables	20%
dough and pastry	wheat	72%
egg (chicken)	eggs	61%
eggplant	fruit vegetables	20%
grape	grapes	0%
green tea	tea	5%
hard and semi-hard cl	semi-hard cheese	113%
head lettuce	cabbage vegetables	64%
honey	honey	35%
iceberg lettuce	cabbage vegetables	64%
jam	N/A	N/A
kiwi	tropical fruits	0%
lentils	legumes	3%
mandarin	citrus fruits	0%
mango	tropical fruits	0%
margarine	plant fats	1%
mayonnaise	N/A	N/A
melon	berries	23%
milk	milk	94%
milk drinks	milk specialties	115%
milk-based dessert	milk specialties	115%
mixed alcoholic drink	spirit	9%
mussels	crustaceans	0%
mustard	N/A	N/A
nectarine	stone fruits	24%
olive oil	olive oil	0%
onion	onion and garlic	66%
orange	citrus fruits	0%
pasta	hard wheat	2%
peach	stone fruits	24%
peanut	peanuts	0%
pear	pome fruits	92%
peas	legume vegetables	58%
perch	fish fresh water	4%
pineapple	tropical fruits	0%
plum	stone fruits	24%
polenta, cornmeal	maize	3%
pork, processed	pork	95%
pork, unprocessed	pork	95%
potato	potato	80%
poultry, processed	poultry	59%
poultry, unprocessed	poultry	59%
pumpkin soup	N/A	N/A
rapeseed oil	rapeseed oil	68%
red wine	wine	41%
rice	rice	0%
rosé wine	wine	41%
rye bread	rye	87%
salad dressing	N/A	N/A
salmon	fish sea	0%
salt	N/A	N/A
sardine	fish sea	0%
soft cheese	soft cheese	40%
softdrink	drinks	0%
spinach	leafy vegetables	66%
spirit	spirit	9%
strawberry	berries	23%
sugar	saccharose	60%
sunflower oil	sunflower oil	9%
sweet pastry	wheat	72%
sweets	N/A	N/A
syrups	N/A	N/A
tomato	fruit vegetables	20%
tomato sauce	fruit vegetables	20%
trout	fish fresh water	4%
tuna	fish sea	0%
veal, processed	veal	96%
veal, unprocessed	veal	96%
vegetable soup	N/A	N/A
vinegar	N/A	N/A
wheat bread	wheat	72%
white wine	wine	41%
yoghurt	yogurt	98%