DTU National Food Institute

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Preface

This report was prepared at the National Food Institute (Technical University of Denmark) in collaboration with Aarhus University as part of a project commissioned by The Danish Council on Climate Change. The purpose of the report is to outline the methodology and present results from analyses on estimated Carbon Footprints of different dietary patterns in Denmark related to the "The Official Danish Dietary Guidelines – good for health and climate", launched in January 2021 by the Veterinary and Food Administration. Data and analyses presented in this report are partly based on a peer reviewed scientific article by Trolle et al. 2022[1] (work partly financed by the Ministry of Food, Agriculture and Fisheries). Carbon footprint data and methodology used in this report are described in detail in the article, as well as calculations of the carbon footprints of adults' diets. Calculations on children, elderly and vegetarian diets are additional contributions of the present report. Internal peer review of the report was carried out by senior researcher Anja Biltoft-Jensen.

National Food Institute, DTU, May 2022

[1] Trolle E, Nordman M, Lassen AD, Colley TA, Mogensen L. Carbon Footprint Reduction by Transitioning to a Diet Consistent with the Danish Climate-Friendly Dietary Guidelines: A Comparison of Different Carbon Footprint Databases. Foods. 2022;11(8):1119

Content

1. Introduction

In Denmark, as in many other countries, there has been a commitment to the common goal of reducing greenhouse gas emissions (GHGE) in order to mitigate climate change.

As part of the interventions to obtain an overall reduction of GHGE, “The Danish Official Dietary Guidelines – good for health and climate” were launched in January 2021 (1). As a part of developing the scientific basis for the new food-based dietary guidelines (FBDG) a reference diet was modelled for people aged 6-64 y, i.e. “The Danish Adapted Healthy Plant-Rich Diet” (2) (for simplicity referred to as “the plant-rich diet” in the present work). Further, plant-rich diets covering small children 2-5 y and elderly 65 y and above have been modelled based on the plant-rich reference diet 6-64 y (3,4). In addition, vegetarian diet models covering the three age groups have been developed (5).

Based on literature, it has been estimated that changing the current Danish diet to a diet following the new official FBDG would lead to a 30-35% diet-related reduction of GHGE (6). A transition to a vegetarian diet could warrant additional GHGE reductions (7).

The calculated reduction, however, depends to a large extent on the data used for the calculation. In Denmark, different sets of data of the Carbon Footprints (CF) of foods on the Danish market exist. In this report, we focus on two sets of data based on two different approaches to provide data.

One of the datasets, developed in collaboration between Aarhus University (AU) and the Technical University of Denmark (DTU), is based on life cycle assessment (LCA) studies and bottom–up analyses (8). The other one – the Big Climate Database (BCD), launched by CONCITO (9), and developed in collaboration with 2.-0 LCA Consultants – is based on a top-down approach in combination with LCA data (10). Different methods are used for LCA of food products, where one of the main differences is, that the AU-DTU table is based on attributional LCA studies, while the BCD mainly makes use of hybrid consequential LCA based on input-output analyses.

1.1 Objectives

The overall objective of the present project was to provide analyses of the climate impact of three diet types (current Danish diet, plant-rich diet and lacto-ovo vegetarian diet) in three age groups (adults, small children and older adults), using two different sets of CF data.

More specifically, the objectives were to:

- Compare CF reduction potentials associated with changing from the current Danish diet based on the Danish National Survey on Dietary habits and Physical Activity 2011-2013 (DANSDA 2011-2013) to the plant-rich diet - the basis for the official FBDG - and to a lacto-ovo-vegetarian diet, calculated with *(1)* CF data from the BCD by CONCITO, excluding and including indirect land use change (iLUC), and *(2)* the AU-DTU data.

- Determine the CF contribution of selected food groups to the total CF of the diets, and to the changes in CF, for all diets and both data sets
- Estimate the effects of changed energy intake on the CF of diets, based on the literature and intake data among adult Danes.

2. Methods

2.1 Current diet

The quantification of food intake in the current diet is based on results from DANSDA 2011-2013. In total, 3946 persons aged 4-75 years participated in the survey by completing a 7-day food record, registering their physical activity by pedometer, and answering a face-to-face background interview (11). Height and weight of the participants was also measured.

Participants recorded what they ate and drank, and the consumed quantities using a pre-coded food diary with household measures (cups, plates, etc.) and a picture booklet with images of 4-6 portion sizes for selected foods.

Recorded intakes were interpreted to ingredients, resulting in a list of 427 food items from the Danish food composition database (12), representing both raw (e.g. apples) and processed foods (e.g. cold cuts, bread). Intake of nutrients and energy was estimated using data from the Danish food composition database (12), along with newer analyses not yet incorporated into the database, i.e., the nutritional content of salmon and several cereals, seeds and nuts (13,14).

The results were aggregated into relevant food groups (see Supplementary Table 1). All dietary intake data were adjusted to a total energy intake level of 10 MJ in order to remove variation due to energy intake. 10 MJ corresponds approximately to the daily reference energy requirement of an average adult (across sex and age at a moderate physical activity level) (15). For each food group, the population average intake in grams per 10 MJ and the contribution of energy (kJ) was estimated.

For this study, data from adults aged 18-64 y (N=2492), young children aged 4-5 y (N=130), and older adults aged 65-75 y (N=524) were used.

2.2 Diet modelling

2.2.1 The Danish Adapted Healthy Plant-Rich Diet 6–64 y

In January 2021 “The Official Danish Dietary Guidelines – good for health and climate” were launched (1). The scientific evidence behind the guidelines was provided by the National Food Institute, DTU (6). Developing the scientific evidence included food pattern modelling - articulating the evidence on the relationship between diet, sustainability, health and nutrient adequacy. Since evidence from literature on both health and environmental sustainability pointed at more plant-based dietary patterns, the Danish plant-rich diet 6-64 y (per 10 MJ) was modelled in accordance with the EAT-Lancet Commission's global reference diet (16). The Danish plant-rich diet is an omnivorous diet that aims to limit - but not exclude - meat and other animal-based products.

The Danish plant-rich diet takes national food availability and culture into account, i.e. using Danish food composition data and food consumption data for 3189 adults aged 15-75 years (11,12), including e.g. processed foods, discretionary foods and beverages in the diet according to current consumption patterns. The modelled intake was adjusted to be in accordance with the scientific evidence on the relationship between food intake and disease risk from scientific background of the former national FBDG (17), including scientific updates, and in accordance with the Nordic Nutrition Recommendations (15). The recommended nutrient density and the recommended macronutrient composition for planning diets for heterogeneous groups (6-65y) were used as reference intakes. Lassen et al. 2020 describes the modelling of the plant-rich diet in detail (2).

2.2.2 The Danish Adapted Healthy Plant-Rich diet 2-5 y

The plant-rich diet 6–64 y was modified to fit the nutritional requirements of children aged 2–5 y according to the Nordic Nutrition Recommendations age-adapted nutrient density per 10 MJ (15). For example, more dairy products were included compared with the plant-rich diet 6–64 y to account for the increased calcium requirements for small children. Christensen et al. 2020 describes the modelling of The Danish Adapted Healthy Plant-Rich Diet 2-5 y in detail (3).

2.2.3 The Danish Adapted Healthy Plant-Rich Diet 65+ y

The plant-rich diet 6-64 y was modified to fit the nutritional requirements of older healthy adults aged 65+ y according to the Nordic Nutrition Recommendations age-adapted nutrient density per 10 MJ (15). For example, more protein-rich products, including protein-rich dairy products were included (per 10 MJ) compared with the Danish adapted healthy plant-rich diet 6–64 y to account for the increased protein requirements for older adults. Christensen et al. 2020 describes the modelling of The Danish Adapted Healthy Plant-Rich Diet 65+ y in detail (4). Separate recommendations exist for older adults that suffer from malnutrition or are at risk of malnutrition according to The Danish official recommendations regarding the food served in Danish institutions (18).

2.2.4 Lacto-ovo vegetarian diets

Lacto-ovo vegetarian diets, including eggs and dairy products, but eliminating meat, poultry, fish and seafood were modelled for all the age-groups from the plant-rich diet 6-64 y. The recommended nutrient density and the recommended macronutrient composition for planning diets for heterogeneous groups was used as reference intake (per 10 MJ) (15). Compared to the plant-rich diets, more eggs, dairy products, and legumes were included, as well as increased amounts of nuts and seeds, including walnuts and chia, known to be rich in n-3 fatty acids. In addition, oils rich in n-3 fatty acids (e.g. rapeseed oil) were increased. Christensen et al. 2021 describes the modelling of the Lacto-ovo vegetarian diets in detail (5).

2.3 Data on Carbon Footprints of foods

For the purpose of this study, CF data of foods were aligned with dietary intake data, which were estimated in grams of food in raw or processed state.

The CF for each food item in this study was converted to represent the GHGE associated with bringing forth 1 kg of edible share of food (e.g. without peel or bones) in raw or processed state. The system boundaries for the data were aligned for the two sets of data – to ensure comparability between calculations. The system boundary in this study is best described as “cradle to fork”, without taking food waste at household into account. The CF data in this study is primarily established at retail gate, and with addition of CF associated to cooking at home, i.e. accounting for emissions arising from primary production, processing, packaging, transportation, storage, cooking and food losses throughout. Cooking at home has been added to both datasets in the present study to capture and present as accurately as possible the total CF associated with different diets as they are consumed by the final consumer.

2.3.1 AU-DTU data

The compilation of CF data of food items for estimation of CF of different dietary patterns was not a part of the present study, but took place in a previous study, and is described in detail by Trolle et al. (8). In short, the data are based on literature reviews of existing LCA studies on the specific food items. This work was done as a collaboration between researchers from Aarhus University (AU) and Technical University of Denmark (DTU) two departments: National Food Institute (DTU Food) and Department of Technology, Management and Economics (DTU Man). AU and DTU Man have worked in the area of environmental sustainability for many years and have extensive experience in conducting LCA studies. AU has excellent knowledge of science within primary production and processing. DTU Food has long lasting experience with development of the Danish food composition database, gathering food intake data, compiling data and ensuring documentation.

CF from primary production and processing of foods was based on existing literature i.e. published LCA studies, reviews and existing databases. For Danish foods, LCA data on Danish food production systems were used, if available. Regarding imported foods, the LCA should ideally correspond to the exact production system and country that the product in the Danish market represents but this was not possible to achieve in the present study. Therefore, data from production systems corresponding to products in the Danish market were used for imported foods, if available. When CF from primary production of a product was not available, values were estimated from similar products, aiming at similarity in production system.

CF from packaging, transport, storage, cooking at home and losses (production, retail, unavoidable losses) were added. In most cases contribution to CF was estimated using standard values. Standard values for packaging were based on review of available literature and values were assigned based on overall estimates of the packaging material. As a simple estimate for climate impact from transport for each food item the CF contribution from transport was split into local transport (in Denmark for Danish-produced foods and in the production country for imported foods) and the contribution from import. The estimated proportion of local/imported food was based on Mogensen et al., 2020 (19). As some foods are purchased raw and then cooked at home, the CF from cooking at home was added. The CF from cooking was calculated from the proportion of each food that is cooked, the energy needed for cooking different types of foods, and the CF associated with energy use, using values from Mogensen et al 2020 (19), updated to resemble present-day electricity supply. A similar approach was used to estimate standard values for CF associated with storage.

The estimated proportion of each food that is cooked before eaten was based on expert knowledge and on data from DANSDA 2011-2013 (unpublished data).

The CF of foods may vary depending on whether losses (both unavoidable and avoidable) have been taken into account. Due to avoidable and unavoidable food losses the CF of 1 kg of the edible food is higher, since more food needs to be produced to account for losses. The factors of unavoidable losses which account for inedible parts e.g. peels and bones, are retrieved from the Danish food composition database (12) and from literature. To take losses in production and retail into account factors from Mogensen et al. 2020 were used (19). Household losses are not included. The methods are described in more detail in Trolle et al. (8).

2.3.2 CONCITO data matching

CONCITO was established in 2008 as a climate think tank (20). In 2021 CONCITO, in collaboration with 2.-0 LCA Consultants, launched “The big climate database” (BCD) (9) including the climate footprint of 500 foods as appearing at the retailer (supermarket) in the Danish market (10,21). As described by Trolle et al. (8), in order to calculate the climate impact of the diets using data from CONCITO, the food items in the dietary intake data were matched with the food items in the BCD. This was done stepwise by the following principle:

1. Direct match by name where the names match 100%. A match was found for 42% of the products.
2. Manual data enrichment. Products in the two databases were compared and where the products are deemed to have convincing similarity (i.e. essentially the same product), a manual match is made (e.g. “wiener sausage” in dietary intake data and “grilled sausages” in BCD). After steps 1 and 2 73% of products had been matched.
3. When the difference is deemed more considerable. Different considerations were made to find best fitting match or an average of similar products, aiming at similarity in production system. After steps 1, 2 and 3 96% of products had been matched.
4. When no similar product was available in the BCD and the intake is very limited (e.g. baking soda, sea weed, buckwheat flour etc.), the average of the BCD food category that the product belongs to was assigned e.g. "Seasonings/preservatives/extracts".

In the BCD, beef and pork are assigned widely different CF values depending on the cut of the meat (10). Since the dietary intake data is not suited to distinguish between different cuts of meat, all beef and pork cuts in the intake data were assigned average CF values for beef and pork, respectively, as reported by CONCITO (pers. commun). When no match was found for certain fish species, intake data was matched with a fish species in the BCD according to the product it is assumed to replace on the market.

BCD data represent CF of foods as they appear at the retailer. To make the data match the dietary intake data, unavoidable losses were taken into account for foods where relevant (e.g. fruit and vegetables are sold with peel etc.). The exception was fish, which according to documentation from CONCITO is sold as edible share (10), and therefore no factors for unavoidable losses were added. Finally, CF from cooking at home was added. For both unavoidable losses and cooking, the same data were used for BCD as for AU-DTU data. BCD data both including and excluding iLUC were used in the calculations.

2.4 Estimation of impact of changes in energy intake

The first guideline of the “Official Dietary Guidelines –good for health and climate” states: Eat plant-rich, varied and not too much (1). The calculations in this study are based on 10 MJ diets, and the effect of total energy intake is not calculated. Since under-reporting of dietary intake is relatively common in dietary surveys, the observed dietary intake will not reflect possible overconsumption of foods and drinks as the prevalence of overweight in the population might otherwise indicate.

Based on literature, the intake data among adult Danes per 10 MJ, and reference values on energy requirement, the effect of reducing energy intake was estimated to the extent that this was possible.

2.5 Strengths and limitations of data

There are several strengths and limitations to consider with regard to both the data used and the method for data compiling, as outlined in detail by Trolle et al. (8). Major strengths are the direct comparison of two data sets on CF values adjusted to match the dietary intake data, as well as the large level of detail with regard to food consumption and the impact on CF in each food category. The large volume of data makes it necessary to consider how the data are best presented, both the dimensions of the foods and beverages and the level at which the data are aggregated. Results can provide the basis for reflection on guidelines and advice that can promote the desired transformation towards a sustainable healthy diet and the results of using different databases on CF values.

A limitation is that each dietary pattern was represented in the present calculations by only one scenario, whereas healthy and sustainable diets can be achieved in multiple ways and with a wide variety both across food groups and within food groups, which impact final CF values.

A strength of the study is that the model is based on data from DANSDA, which builds on data from a simple representative sample of the Danish population and takes into account the food preferences of children and adults.

However, a limitation of the intake data is that they are up to ten years old and changes towards lower milk, lower or/and altered meat intake, and moderately higher intakes of legumes have probably occurred since the collection of data. In addition, the average intake of 4-5 year-olds is based on a limited number of subjects (N=130), increasing the uncertainty and risk of lower representativeness. Intake is estimated per 10 MJ to account for the under-reporting often seen in dietary surveys among adults (22), however, underreporting may be specific to certain food groups, which cannot be adjusted for.

For simplicity, the age group 18-64 y was chosen as reference for the current adult diet, while 15-75 y was used as a basis for modelling the plant-rich and vegetarian diet for 6-64 y olds (older children and adults). The modelled plant-rich diet and the vegetarian diet for 6-64 y and for 65+ y includes a reduced amount of alcoholic beverages and the same amount of coffee as the current dietary patterns. In the diet for school-age children, the alcoholic beverages should be converted to other foods, e.g. other discretionary foods or drinks (iso-calorically), and coffee can be excluded. A reduction in the amount of coffee and tea would also reduce the CF of the diets and the differences between estimations based on AU-DTU data and CONCITO/BCD data.

Although both sets of CF data are recently updated, there are uncertainties related to data, e.g. CF for a given food type can vary widely by production system and within regions, and depending on the choice of standard factors used in both approaches. As availability of LCA studies for certain products is scarce, especially processed and composite foods, the uncertainties in CF data are greater for these products. However, for most food commodities where consumption is considerable, literature is more abundant, thereby limiting the overall uncertainty.

The two CF datasets used in this study have fundamentally different approaches. Therefore, comparison of the results should be done with great caution. However, by aligning the system boundaries of both data sets to fit dietary data we have attempted to make data comparable and CF representative of real life. Still, there is the risk that systematic differences between data arise. For example for AU-DTU data, avoidable food waste in retail is included, which results in the total CF being approximately 5% higher than if losses in retail were not included. It is assumed that losses in production and retail are included in BCD data, but this might not necessarily be the case. In addition, the contribution from storage - which is estimated as overall for retail and household - may account for a systematically higher CF of the diets calculated with AU-DTU data.

The estimated CF of the current and the modelled diets are based on present-day (and past) CF values. If food consumption patterns change in the future, production systems are also expected to change, along with otherwise occurring technological advances and development of production systems. The possible effects of future developments on the CF of the diets are not reflected in the calculations in the present study.

The reduction potential associated with the vegetarian diet has been estimated as a shift from the current average diet to a theoretical vegetarian diet model. Assuming that the whole population would shift to a vegetarian diet, the CF values of dairy products would change, as current allocation of GHGE based on the co-production of beef and dairy would shift to dairy products alone.

3. Results

3.1 Potential reduction in CF of the Danish diet

3.1.1 From current to plant-rich diet and vegetarian diet

The total food weight and CF of the different dietary patterns and age groups are shown in Table 1-3. The weight represents a mixture of raw and processed products (bread and flour, raw meat and processed sausage), as these products exist in dietary data. Since all diets are adjusted to a total energy intake of 10 MJ, differences between age groups and dietary patterns reflect a changed composition of the diets, rather than a change in total amounts.

Consistently across dietary patterns and age groups, the CF reduction associated with a transition from the current diet to a plant-rich diet and to a vegetarian diet is relatively larger with CONCITO data than with AU-DTU data. This is the case when using CONCITO data both including and excluding iLUC. The relatively larger reduction potential attained with CONCITO data is especially prominent for the vegetarian diets.

With both sets of CF data, small children have a smaller CF reduction compared to adults and older adults, in part because the absolute CF in the current diet is lower for children than for other age groups. Adults have the largest relative reduction potentials with both the plant-rich diet and the vegetarian diet with both sets of CF data.

Table 1 Carbon footprints (CF) of total diets for adults per 10 MJ and % difference between current diet and plant-rich diet and vegetarian diet, respectively. iLUC: indirect land-use change. Results partly based on Trolle et al (8).

	Current diet 18-64 y (N=2492)	**Plant-rich diet 6-64 y**	***% diff.***	**Vegetarian diet 6-64 y**	***% diff.***
Weight total diet, kg	3.89	3.63		3.61	
CF AU-DTU, kg CO_2-eq	4.37	3.01	*-31%*	2.75	*-37%*
CF CONCITO excl iLUC, kg CO_2-eq	4.81	2.72	*-43%*	1.94	*-60%*
CF CONCITO incl iLUC, kg CO_2-eq	5.49	3.04	*-45%*	2.14	*-61%*

Table 2 Carbon footprints (CF) of total diets for small children per 10 MJ and % difference between current diet and plant-rich diet and vegetarian diet, respectively. iLUC: indirect land-use change.

	Current diet 4-5 y (N=130)	Plant-rich diet 2-5 y	*% diff.*	Vegetarian diet 2-5 y	*% diff.*
Weight total diet, kg	2.58	2.94		2.98	
CF AU-DTU, kg CO_2-eq	3.49	2.88	*-17%*	2.64	*-24%*
CF CONCITO excl iLUC, kg CO_2-eq	3.12	2.60	*-17%*	1.85	*-41%*
CF CONCITO incl iLUC, kg CO_2-eq	3.48	2.88	*-17%*	2.02	*-42%*

Table 3 Carbon footprints (CF) of total diets for older adults per 10 MJ and % difference between current diet and plant-rich diet and vegetarian diet, respectively. iLUC: indirect land-use change.

	Current diet 65-75 y (N=524)	Plant-rich diet 65+ y	*% diff.*	Vegetarian diet 65+	*% diff.*
Weight total diet, kg	3.86	3.60		3.63	
CF AU-DTU, kg CO_2-eq	4.38	3.35	*-23%*	3.05	*-30%*
CF CONCITO excl iLUC, kg CO_2-eq	4.47	2.87	*-36%*	2.02	*-55%*
CF CONCITO incl iLUC, kg CO_2-eq	5.05	3.21	*-36%*	2.22	*-56%*

3.1.2 Carbon Footprint contribution from selected food groups

The weights, energy, and CF contributions of selected food groups in all age groups and all diets are presented in Table 4-12 in Section 3.2-3.4. In the current diets, the largest CF contribution is attributed to red meat, especially beef and lamb. Although this is the case in both AU-DTU data and CONCITO data, the absolute contribution of red meat to the total CF is substantially larger in CONCITO data. In all other food groups AU-DTU data is higher than or similar to CONCITO data. For some food groups it is a marginal difference. The difference is especially prominent in dairy products and cheese.

3.1.3 Potential impact due to changes in energy intake

GHGE of the total diet has been shown to be highly related to energy intake (23–25). For every 100 kcal increase in the daily intake, GHGE increased with approximately 50 g. Further, the total energy intake explained 47% of the variance in total GHGE (23). A 200-kcal increase in total energy intake was associated with 9% higher daily GHGE (24).

However, dietary assessment methods commonly under-report energy intake (22). Therefore, there are examples of previous studies (23–28), that have either used the energy-adjusted intake, as was done in this study, excluded under-reporters, or made rough approximations to estimate GHGE from the diets.

Due to inherent problems with underreporting in dietary assessment, dietary intake data cannot quantify the energy surplus in the population that leads to increasing prevalence of overweight. Hall et al., 2011 estimated that maintaining the obesity epidemic in the US requires a daily energy surplus of 0,9 MJ (29). Knowing the CF per energy unit, it is possible to calculate different theoretical scenarios of overconsumption of energy. For example, if we assume an energy excess of 5% in the current adult diet and simultaneously change dietary composition to the plant-rich diet and reduce energy intake to meet requirement, it would result in a 34% CF reduction instead of the calculated 31% (Table 1). However, an increase in physical activity level is also recommended and this will increase energy expenditure. To take this into account, the EAT Lancet Commission has increased the energy level of the reference diet with approximately 5% which would balance out the effect of reducing overconsumption in the previous example. In conclusion, the estimated CF reduction from balancing energy intake and expenditure are in line with 0-10% as previously reported in literature (7,25).

3.2 Impact of food groups in current diets

Table 4 Weight, energy content and carbon footprint (CF) of selected food groups in the current diet of adults 18-64 y per 10 MJ. iLUC: indirect land-use change. Results partly based on Trolle et al. (8).

Current diet 18-64 y pr. 10 MJ					
Food category	**Weight, g**	**Energy, kJ**	**CF AU-DTU, kg CO_2-eq**	**CF CONCITO excl iLUC, kg CO_2-eq**	**CF CONCITO incl iLUC, kg CO_2-eq**
Bread and cereals, total	195	2248	0.25	0.16	0.17
Oats and breakfast cereals	21	330	0.03	0.02	0.02
Wheat bread	86	975	0.09	0.06	0.06
Rye bread	64	577	0.07	0.04	0.04
Rice	7	99	0.02	0.01	0.01
Pasta	8	124	0.02	0.02	0.02
Potatoes	85	329	0.05	0.06	0.06
Vegetables, total	226	350	0.24	0.17	0.18
Dark green	7	10	0.01	0.01	0.01
Red/orange - coarse	36	54	0.02	0.01	0.01
Red/orange - fine	58	63	0.07	0.05	0.05
Other - coarse	56	154	0.06	0.05	0.05
Other - fine	56	37	0.06	0.04	0.04
Fruits, berries and juice, total	243	641	0.29	0.28	0.28
Pome fruits	67	152	0.04	0.04	0.04
Citrus fruits	19	40	0.02	0.02	0.02
Tropical and subtropical fruits	64	188	0.11	0.09	0.09
Berries	15	75	0.02	0.02	0.02
Juice	59	112	0.08	0.08	0.09
Milk and dairy products, total	315	727	0.40	0.19	0.21
Whole milk, yoghurt and other	51	259	0.11	0.06	0.07
Semi-skimmed and skimmed milk	264	468	0.28	0.13	0.14
Cheese	45	544	0.42	0.29	0.31
Fats, animal-based	12	370	0.11	0.04	0.05
Fats, plant-based	23	660	0.06	0.06	0.07
Eggs	22	134	0.06	0.02	0.02
Red meat, total	139	1201	1.24	2.44	2.91
Beef and lamb (+game)	52	439	0.76	2.12	2.55
Pork	87	762	0.48	0.32	0.36
Poultry	29	177	0.16	0.07	0.09
Fish and seafood	36	232	0.26	0.28	0.32
Legumes	1	11	0.00	0.00	0.00
Nuts and seeds	6	163	0.02	0.02	0.02
Discretionary foods and beverages, total	1284	2242	0.75	0.70	0.76
Sugar	9	149	0.01	0.02	0.02
Ice cream, candy and cake	74	1178	0.18	0.17	0.19
Alcoholic beverages	241	544	0.26	0.24	0.25
Cordial	14	74	0.03	0.04	0.04
Carbonated soft drinks	176	173	0.08	0.10	0.10

Table 5 Weight, energy content and carbon footprint (CF) of selected food groups in the current diet of small children 4-5 y per 10 MJ. iLUC: indirect land-use change.

Current diet 4-5 y pr. 10 MJ					
Food category	**Weight, g**	**Energy, kJ**	**CF AU-DTU, kg CO_2-eq**	**CF CONCITO excl iLUC, kg CO_2-eq**	**CF CONCITO incl iLUC, kg CO_2-eq**
Bread and cereals, total	258	3037	0.33	0.21	0.22
Oats and breakfast cereals	34	528	0.05	0.04	0.04
Wheat bread	94	1061	0.10	0.07	0.07
Rye bread	82	735	0.09	0.05	0.05
Rice	9	144	0.03	0.01	0.01
Pasta	11	173	0.02	0.02	0.02
Potatoes	48	223	0.03	0.04	0.04
Vegetables, total	196	272	0.20	0.14	0.15
Dark green	3	4	0.00	0.00	0.00
Red/orange - coarse	44	66	0.02	0.02	0.02
Red/orange - fine	43	59	0.06	0.04	0.05
Other - coarse	27	78	0.03	0.03	0.03
Other - fine	71	43	0.07	0.05	0.05
Fruits, berries and juice, total	291	788	0.37	0.32	0.33
Pome fruits	88	201	0.05	0.06	0.06
Citrus fruits	12	25	0.01	0.01	0.02
Tropical and subtropical fruits	107	268	0.19	0.14	0.14
Berries	14	66	0.02	0.02	0.02
Juice	49	92	0.06	0.07	0.07
Milk and dairy products, total	571	1136	0.66	0.32	0.34
Whole milk, yoghurt and other	79	282	0.13	0.08	0.08
Semi-skimmed and skimmed milk	492	854	0.53	0.24	0.26
Cheese	25	284	0.23	0.16	0.17
Fats, animal-based	23	702	0.19	0.08	0.09
Fats, plant-based	27	743	0.07	0.07	0.08
Eggs	22	129	0.06	0.02	0.02
Red meat, total	104	996	0.79	1.24	1.47
Beef and lamb (+game)	25	235	0.35	0.97	1.17
Pork	79	760	0.44	0.26	0.30
Poultry	21	122	0.11	0.05	0.07
Fish and seafood	21	120	0.15	0.16	0.18
Legumes	0	5	0.00	0.00	0.00
Nuts and seeds	5	127	0.01	0.01	0.02
Discretionary foods and beverages, total	170	1302	0.26	0.27	0.28
Sugar	16	279	0.01	0.03	0.03
Ice cream, candy and cake	45	719	0.15	0.12	0.13
Alcoholic beverages	0	0	0.00	0.00	0.00
Cordial	27	148	0.06	0.07	0.07
Carbonated soft drinks	67	76	0.03	0.04	0.04

Table 6 Weight, energy content and carbon footprint (CF) of selected food groups in the current diet of older adults 65-75 y per 10 MJ. iLUC: indirect land-use change.

Current diet 65-75 y pr. 10 MJ					
Food category	**Weight, g**	**Energy, kJ**	**CF AU-DTU, kg CO_2-eq**	**CF CONCITO excl iLUC, kg CO_2-eq**	**CF CONCITO incl iLUC, kg CO_2-eq**
Bread and cereals, total	188	2070	0.23	0.14	0.15
Oats and breakfast cereals	16	250	0.02	0.02	0.02
Wheat bread	79	901	0.09	0.06	0.06
Rye bread	79	711	0.09	0.05	0.05
Rice	4	63	0.02	0.01	0.01
Pasta	3	47	0.01	0.01	0.01
Potatoes	114	390	0.06	0.07	0.07
Vegetables, total	212	320	0.23	0.16	0.17
Dark green	9	13	0.01	0.01	0.01
Red/orange - coarse	28	42	0.01	0.01	0.01
Red/orange - fine	56	54	0.07	0.05	0.05
Other - coarse	60	146	0.06	0.05	0.06
Other - fine	47	33	0.05	0.04	0.04
Fruits, berries and juice, total	307	814	0.35	0.34	0.35
Pome fruits	97	221	0.06	0.06	0.06
Citrus fruits	26	53	0.02	0.03	0.03
Tropical and subtropical fruits	67	185	0.11	0.09	0.09
Berries	24	128	0.03	0.03	0.03
Juice	69	130	0.09	0.10	0.10
Milk and dairy products, total	292	706	0.38	0.19	0.20
Whole milk, yoghurt and other	67	309	0.14	0.07	0.08
Semi-skimmed and skimmed milk	225	397	0.24	0.11	0.12
Cheese	47	588	0.45	0.31	0.33
Fats, animal-based	16	474	0.14	0.05	0.06
Fats, plant-based	22	617	0.05	0.06	0.07
Eggs	25	153	0.07	0.02	0.03
Red meat, total	127	1078	1.06	1.92	2.29
Beef and lamb (+game)	39	326	0.58	1.58	1.91
Pork	88	752	0.48	0.34	0.38
Poultry	24	155	0.14	0.06	0.07
Fish and seafood	52	365	0.36	0.38	0.43
Legumes	1	9	0.00	0.00	0.00
Nuts and seeds	5	123	0.01	0.01	0.02
Discretionary foods and beverages, total	1395	2177	0.81	0.73	0.79
Sugar	15	260	0.01	0.03	0.03
Ice cream, candy and cake	65	1036	0.14	0.15	0.16
Alcoholic beverages	277	710	0.37	0.34	0.35
Cordial	12	63	0.02	0.03	0.03
Carbonated soft drinks	41	31	0.02	0.02	0.02

3.3 Impact of food groups in the plant-rich diets

Table 7 Weight, energy content and carbon footprint (CF) of selected food groups in the Plant-rich diet 6-64 y per 10 MJ. iLUC: indirect land-use change. Results partly based on Trolle et al. (8).

Plant-rich diet 6-64 y pr. 10 MJ					
Food category	**Weight, g**	**Energy, kJ**	**CF AU-DTU, kg CO_2-eq**	**CF CONCITO excl iLUC, kg CO_2-eq**	**CF CONCITO incl iLUC, kg CO_2-eq**
Bread and cereals, total	306	3395	0.38	0.24	0.25
Oats and breakfast cereals	38	595	0.05	0.04	0.04
Wheat bread	97	1096	0.11	0.07	0.07
Rye bread	143	1274	0.15	0.08	0.09
Rice	10	146	0.03	0.01	0.01
Pasta	12	181	0.02	0.02	0.02
Potatoes	100	378	0.06	0.07	0.07
Vegetables, total	307	451	0.33	0.24	0.25
Dark green	100	138	0.11	0.08	0.09
Red/orange - coarse	38	57	0.02	0.01	0.01
Red/orange - fine	64	68	0.08	0.06	0.06
Other - coarse	48	129	0.05	0.04	0.05
Other - fine	47	31	0.05	0.03	0.04
Fruits, berries and juice, total	303	799	0.35	0.34	0.35
Pome fruits	90	205	0.05	0.06	0.06
Citrus fruits	25	52	0.02	0.03	0.03
Tropical and subtropical fruits	81	235	0.14	0.11	0.11
Berries	21	104	0.03	0.03	0.03
Juice	63	120	0.08	0.09	0.09
Milk and dairy products, total	250	577	0.32	0.15	0.16
Whole milk, yoghurt and other	42	208	0.09	0.05	0.05
Semi-skimmed and skimmed milk	208	368	0.22	0.10	0.11
Cheese	20	242	0.19	0.13	0.14
Fats, animal-based	4	121	0.03	0.01	0.02
Fats, plant-based	25	742	0.07	0.07	0.08
Eggs	15	89	0.04	0.01	0.02
Red meat, total	19	161	0.19	0.42	0.50
Beef and lamb (+game)	9	79	0.14	0.38	0.46
Pork	9	82	0.05	0.03	0.04
Poultry	38	230	0.21	0.10	0.12
Fish and seafood	63	449	0.30	0.46	0.52
Legumes	40	604	0.03	0.06	0.08
Nuts and seeds	38	992	0.10	0.09	0.12
Discretionary foods and beverages, total	923	738	0.36	0.30	0.34
Sugar	4	63	0.00	0.01	0.01
Ice cream, candy and cake	23	365	0.05	0.05	0.06
Alcoholic beverages	75	173	0.08	0.08	0.08
Cordial	5	24	0.01	0.01	0.01
Carbonated soft drinks	50	50	0.02	0.03	0.03

Table 8 Weight, energy content and carbon footprint (CF) of selected food groups in the Plant-rich diet 2-5 y per 10 MJ. iLUC: indirect land-use change.

Plant-rich diet 2-5 y pr. 10 MJ					
Food category	**Weight, g**	**Energy, kJ**	**CF AU-DTU, kg CO_2-eq**	**CF CONCITO excl iLUC, kg CO_2-eq**	**CF CONCITO incl iLUC, kg CO_2-eq**
Bread and cereals, total	282	3332	0.34	0.23	0.24
Oats and breakfast cereals	73	1132	0.08	0.07	0.07
Wheat bread	78	883	0.09	0.06	0.06
Rye bread	108	961	0.12	0.06	0.07
Rice	8	121	0.03	0.01	0.01
Pasta	10	149	0.02	0.02	0.02
Potatoes	100	378	0.06	0.07	0.07
Vegetables, total	307	455	0.33	0.24	0.25
Dark green	75	103	0.08	0.06	0.07
Red/orange - coarse	42	64	0.02	0.01	0.02
Red/orange - fine	71	76	0.09	0.07	0.07
Other - coarse	54	145	0.05	0.05	0.05
Other - fine	52	35	0.06	0.04	0.04
Fruits, berries and juice, total	303	799	0.35	0.34	0.35
Pome fruits	90	205	0.05	0.06	0.06
Citrus fruits	25	52	0.02	0.03	0.03
Tropical and subtropical fruits	81	235	0.14	0.11	0.11
Berries	21	104	0.03	0.03	0.03
Juice	63	120	0.08	0.09	0.09
Milk and dairy products, total	400	814	0.48	0.22	0.24
Whole milk, yoghurt and other	42	208	0.09	0.05	0.05
Semi-skimmed and skimmed milk	358	605	0.38	0.17	0.18
Cheese	20	242	0.19	0.13	0.14
Fats, animal-based	4	121	0.03	0.01	0.02
Fats, plant-based	25	742	0.07	0.07	0.08
Eggs	15	89	0.04	0.01	0.02
Red meat, total	19	161	0.19	0.42	0.50
Beef and lamb (+game)	9	79	0.14	0.38	0.46
Pork	9	82	0.05	0.03	0.04
Poultry	38	230	0.21	0.10	0.12
Fish and seafood	63	449	0.30	0.46	0.52
Legumes	30	453	0.03	0.05	0.06
Nuts and seeds	38	992	0.10	0.09	0.12
Discretionary foods and beverages, total	109	700	0.13	0.14	0.15
Sugar	5	84	0.00	0.01	0.01
Ice cream, candy and cake	30	485	0.07	0.07	0.08
Alcoholic beverages	0	0	0.00	0.00	0.00
Cordial	6	31	0.01	0.02	0.02
Carbonated soft drinks	66	66	0.03	0.04	0.04

Table 9 Weight, energy content and carbon footprint (CF) of selected food groups in the Plant-rich diet 65+ y per 10 MJ. iLUC: indirect land-use change.

Plant-rich diet 65+ y pr. 10 MJ					
Food category	**Weight, g**	**Energy, kJ**	**CF AU-DTU, kg CO_2-eq**	**CF CONCITO excl iLUC, kg CO_2-eq**	**CF CONCITO incl iLUC, kg CO_2-eq**
Bread and cereals, total	291	3224	0.36	0.23	0.24
Oats and breakfast cereals	36	565	0.05	0.04	0.04
Wheat bread	92	1041	0.10	0.07	0.07
Rye bread	136	1210	0.15	0.08	0.08
Rice	9	139	0.03	0.01	0.01
Pasta	11	172	0.02	0.02	0.02
Potatoes	100	378	0.06	0.07	0.07
Vegetables, total	304	446	0.32	0.24	0.25
Dark green	99	136	0.11	0.08	0.09
Red/orange - coarse	37	57	0.02	0.01	0.01
Red/orange - fine	63	67	0.08	0.06	0.06
Other - coarse	48	128	0.05	0.04	0.05
Other - fine	46	31	0.05	0.03	0.04
Fruits, berries and juice, total	300	790	0.35	0.33	0.34
Pome fruits	89	203	0.05	0.06	0.06
Citrus fruits	25	51	0.02	0.03	0.03
Tropical and subtropical fruits	80	232	0.14	0.11	0.11
Berries	20	103	0.03	0.03	0.03
Juice	62	118	0.08	0.09	0.09
Milk and dairy products, total	281	763	0.62	0.24	0.26
Whole milk, yoghurt and other	140	513	0.47	0.17	0.18
Semi-skimmed and skimmed milk	141	250	0.15	0.07	0.08
Cheese	22	269	0.21	0.14	0.15
Fats, animal-based	4	120	0.03	0.01	0.02
Fats, plant-based	25	734	0.07	0.07	0.08
Eggs	17	100	0.05	0.02	0.02
Red meat, total	21	178	0.21	0.46	0.56
Beef and lamb (+game)	10	87	0.15	0.42	0.51
Pork	11	91	0.06	0.04	0.04
Poultry	42	258	0.23	0.11	0.13
Fish and seafood	70	505	0.35	0.52	0.58
Legumes	44	672	0.04	0.07	0.09
Nuts and seeds	38	981	0.10	0.09	0.12
Discretionary foods and beverages, total	869	538	0.31	0.25	0.28
Sugar	3	45	0.00	0.01	0.01
Ice cream, candy and cake	16	261	0.04	0.04	0.04
Alcoholic beverages	54	124	0.06	0.06	0.06
Cordial	3	17	0.01	0.01	0.01
Carbonated soft drinks	36	36	0.02	0.02	0.02

3.4 Impact of food groups in the vegetarian diets

Table 10 Weight, energy content and carbon footprint (CF) of selected food groups in the vegetarian diet 6-64 y per 10 MJ. iLUC: indirect land-use change.

Vegetarian diet 6-64 y pr. 10 MJ					
Food category	**Weight, g**	**Energy, kJ**	**CF AU-DTU, kg CO_2-eq**	**CF CONCITO excl iLUC, kg CO_2-eq**	**CF CONCITO incl iLUC, kg CO_2-eq**
Bread and cereals, total	316	3557	0.37	0.25	0.27
Oats and breakfast cereals	45	693	0.04	0.04	0.04
Wheat bread	95	1074	0.11	0.07	0.07
Rye bread	140	1248	0.15	0.08	0.09
Rice	9	143	0.03	0.01	0.01
Pasta	12	178	0.02	0.02	0.02
Potatoes	97	367	0.05	0.06	0.07
Vegetables, total	323	484	0.40	0.25	0.27
Dark green	100	138	0.11	0.08	0.09
Red/orange - coarse	38	57	0.02	0.01	0.01
Red/orange - fine	64	68	0.08	0.06	0.06
Other - coarse	44	117	0.04	0.04	0.04
Other - fine	42	28	0.05	0.03	0.03
Fruits, berries and juice, total	305	828	0.36	0.34	0.35
Pome fruits	91	208	0.06	0.06	0.06
Citrus fruits	25	52	0.02	0.03	0.03
Tropical and subtropical fruits	82	238	0.14	0.11	0.11
Berries	21	105	0.03	0.03	0.03
Juice	60	114	0.08	0.09	0.09
Milk and dairy products, total	250	599	0.43	0.18	0.19
Whole milk, yoghurt and other	81	300	0.25	0.10	0.10
Semi-skimmed and skimmed milk	169	299	0.18	0.08	0.09
Cheese	30	363	0.28	0.19	0.21
Fats, animal-based	4	121	0.03	0.01	0.02
Fats, plant-based	25	632	0.07	0.07	0.08
Eggs	60	358	0.17	0.05	0.06
Red meat, total	0	0	0.00	0.00	0.00
Beef and lamb (+game)	0	0	0.00	0.00	0.00
Pork	0	0	0.00	0.00	0.00
Poultry	0	0	0.00	0.00	0.00
Fish and seafood	0	0	0.00	0.00	0.00
Legumes	50	745	0.04	0.08	0.10
Nuts and seeds	46	1179	0.12	0.11	0.16
Discretionary foods and beverages, total	923	738	0.36	0.30	0.34
Sugar	4	63	0.00	0.01	0.01
Ice cream, candy and cake	23	365	0.05	0.05	0.06
Alcoholic beverages	75	173	0.08	0.08	0.08
Cordial	5	24	0.01	0.01	0.01
Carbonated soft drinks	50	50	0.02	0.03	0.03

Table 11 Weight, energy content and carbon footprint (CF) of selected food groups in the Vegetarian diet 2-5 y per 10 MJ. iLUC: indirect land-use change.

Vegetarian diet 2-5 y pr. 10 MJ					
Food category	**Weight, g**	**Energy, kJ**	**CF AU-DTU, kg CO_2-eq**	**CF CONCITO excl iLUC, kg CO_2-eq**	**CF CONCITO incl iLUC, kg CO_2-eq**
Bread and cereals, total	284	3209	0.33	0.23	0.24
Oats and breakfast cereals	42	646	0.04	0.04	0.04
Wheat bread	85	956	0.09	0.06	0.06
Rye bread	125	1111	0.14	0.07	0.08
Rice	8	128	0.03	0.01	0.01
Pasta	10	158	0.02	0.02	0.02
Potatoes	97	367	0.05	0.06	0.07
Vegetables, total	321	484	0.39	0.25	0.26
Dark green	75	103	0.08	0.06	0.07
Red/orange - coarse	42	64	0.02	0.01	0.02
Red/orange - fine	71	76	0.09	0.07	0.07
Other - coarse	49	131	0.05	0.04	0.05
Other - fine	47	32	0.05	0.03	0.04
Fruits, berries and juice, total	305	828	0.36	0.34	0.35
Pome fruits	91	208	0.06	0.06	0.06
Citrus fruits	25	52	0.02	0.03	0.03
Tropical and subtropical fruits	82	238	0.14	0.11	0.11
Berries	21	105	0.03	0.03	0.03
Juice	60	114	0.08	0.09	0.09
Milk and dairy products, total	471	1087	0.60	0.29	0.31
Whole milk, yoghurt and other	78	391	0.17	0.09	0.10
Semi-skimmed and skimmed milk	393	696	0.42	0.19	0.21
Cheese	30	363	0.28	0.19	0.21
Fats, animal-based	4	121	0.03	0.01	0.02
Fats, plant-based	25	632	0.07	0.07	0.08
Eggs	60	358	0.17	0.05	0.06
Red meat, total	0	0	0.00	0.00	0.00
Beef and lamb (+game)	0	0	0.00	0.00	0.00
Pork	0	0	0.00	0.00	0.00
Poultry	0	0	0.00	0.00	0.00
Fish and seafood	0	0	0.00	0.00	0.00
Legumes	42	624	0.03	0.07	0.08
Nuts and seeds	46	1179	0.12	0.11	0.16
Discretionary foods and beverages, total	109	707	0.13	0.14	0.15
Sugar	5	85	0.00	0.01	0.01
Ice cream, candy and cake	31	488	0.07	0.07	0.08
Alcoholic beverages	0	0	0.00	0.00	0.00
Cordial	6	31	0.01	0.02	0.02
Carbonated soft drinks	66	66	0.03	0.04	0.04

Table 12 Weight, energy content and carbon footprint (CF) of selected food groups in the Vegetarian diet 65+ y per 10 MJ. iLUC: indirect land-use change.

Vegetarian diet 65+ y pr. 10 MJ					
Food category	**Weight, g**	**Energy, kJ**	**CF AU-DTU, kg CO_2-eq**	**CF CONCITO excl iLUC, kg CO_2-eq**	**CF CONCITO incl iLUC, kg CO_2-eq**
Bread and cereals, total	275	3109	0.32	0.22	0.24
Oats and breakfast cereals	41	633	0.04	0.04	0.04
Wheat bread	82	922	0.09	0.06	0.06
Rye bread	120	1072	0.13	0.07	0.08
Rice	8	123	0.03	0.01	0.01
Pasta	10	153	0.02	0.02	0.02
Potatoes	97	367	0.05	0.06	0.07
Vegetables, total	323	491	0.39	0.24	0.26
Dark green	100	138	0.11	0.08	0.09
Red/orange - coarse	53	81	0.03	0.02	0.02
Red/orange - fine	48	51	0.06	0.04	0.04
Other - coarse	44	117	0.04	0.04	0.04
Other - fine	42	28	0.05	0.03	0.03
Fruits, berries and juice, total	305	828	0.36	0.34	0.35
Pome fruits	91	208	0.06	0.06	0.06
Citrus fruits	25	52	0.02	0.03	0.03
Tropical and subtropical fruits	82	238	0.14	0.11	0.11
Berries	21	105	0.03	0.03	0.03
Juice	60	114	0.08	0.09	0.09
Milk and dairy products, total	319	839	0.77	0.28	0.30
Whole milk, yoghurt and other	179	589	0.62	0.21	0.22
Semi-skimmed and skimmed milk	141	249	0.15	0.07	0.08
Cheese	34	412	0.32	0.22	0.23
Fats, animal-based	4	121	0.03	0.01	0.02
Fats, plant-based	25	632	0.07	0.07	0.08
Eggs	67	400	0.19	0.06	0.07
Red meat, total	0	0	0.00	0.00	0.00
Beef and lamb (+game)	0	0	0.00	0.00	0.00
Pork	0	0	0.00	0.00	0.00
Poultry	0	0	0.00	0.00	0.00
Fish and seafood	0	0	0.00	0.00	0.00
Legumes	71	1061	0.06	0.11	0.14
Nuts and seeds	46	1179	0.12	0.11	0.16
Discretionary foods and beverages, total	878	538	0.31	0.25	0.28
Sugar	3	45	0.00	0.01	0.01
Ice cream, candy and cake	16	261	0.04	0.04	0.04
Alcoholic beverages	54	124	0.06	0.06	0.06
Cordial	3	17	0.01	0.01	0.01
Carbonated soft drinks	36	36	0.02	0.02	0.02

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Supplementary material

Supplementary Table 1 Overview and description of food groups.

Food group	Description
Bread and cereals, total	Mix of cooked (e.g. bread) and raw products (e.g. pasta, rice, flour)
Oats and breakfast cereals	Oats, cornflakes and müsli
Wheat bread	
Rye bread	
Rice	
Pasta	
Potatoes	
Vegetables, total	Both fresh and processed vegetables (frozen, canned)
Dark green	Broccoli, spinach and kale
Red/orange - coarse	Carrot and limited amount of pumpkin
Red/orange - fine	Tomato (raw, canned, sun dried and tomato ketchup), red pepper
Other - coarse	Dietary fibre content typically >2 g per 100g. Root vegetables (all), onion, cabbage (all), leek, aubergine, artichoke
Other - fine	Dietary fibre content typically <2 g per 100g. Cucumber, lettuce, asparagus, fresh herbs, green pepper, squash
Fruits, berries and juice, total	Both fresh and processed fruit and berries (frozen, canned, dried)
Pome fruits	Apple and pear
Citrus fruits	Orange, grapefruit, lemon, tangerine
Tropical and subtropical fruits	Banana, pineapple, fig, mango, melon (all), grape
Berries	All berries and marmalade
Juice	
Milk and dairy products, total	
Whole milk, yoghurt and other	Whole milk, yoghurt and yoghurt-like products, cream, crème fraiche
Semi-skimmed and skimmed milk	
Cheese	
Fats, animal-based	
Fats, plant-based	Incl. vegetable based fatty products (e.g. mayonnaise and margarine)
Eggs	
Red meat, total	
Beef and lamb (+game)	Very limited amount of game meat included
Pork	

Poultry	Chicken and limited amounts of turkey, duck and goose
Fish and seafood	Fish and shellfish (molluscs and crustaceans)
Legumes	Dried products only
Nuts and seeds	
Discretionary foods and beverages, total	Incl. coffee, tea and cocoa
Sugar	Sugar, syrup and honey
Ice cream, candy and cake	
Alcoholic beverages	
Cordial	Mix of concentrated and ready to drink products
Carbonated soft drinks	Not including carbonated water

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