



Food Consumption Impact Datasets – Questions and Answers

Farm-to-Fork & Farm-to-Retail Datasets

Blonk Consultants helps companies, governments and civil society organisations put sustainability into practice. Our team of dedicated consultants works closely with our clients to deliver clear and practical advice based on sound, independent research. To ensure optimal outcomes we take an integrated approach that encompasses the whole production chain.

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Date	19-6-2020	
Place	Gouda, NL	
Authors	Mike van Paassen	Blonk Consultants
	Roline Broekema	Blonk Consultants
	Laura Wolf	Blonk Consultants

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The Food Consumption Impact Datasets – Q&A

This Q&A document is meant for (potential) users of the Food Consumption Impact Datasets, developed by Blonk Consultants. This Q&A document provides clarity on what these datasets are, what the different versions entail, the underlying methodology, limitations and which products are covered. Of course, Blonk Consultants is always happy to answer any other questions you might have after reading this Q&A document.

1. What are the Food Consumption Impact Datasets and what can I use them for?

The “Food Consumption Impact Datasets” is a collective name for the **Farm-to-Fork** and the **Farm-to-Retail** Life Cycle Assessment (LCA) datasets offered by Blonk Consultants. They entail data for ten environmental impact categories of a collection of consumer food products, either at the consumer’s home or at the retailer. Products include consumer foods, ranging from apples, carrots, wholemeal bread, mustard, prepared mixed salad and ready to eat soups to sunflower oil, yoghurt and meat burgers. We offer two datasets with a different geographical scope: The Netherlands (NL) and Europe (EU). The following versions are available:

- Farm-to-Fork, NL scope
- Farm-to-Fork, EU scope
- Farm-to-Retail, NL scope
- Farm-to-Retail, EU scope

For the lists of products covered in these datasets, see appendix 1-4.

The datasets are intended to provide information on the environmental impacts of common food products. The Food Consumption Impact Datasets can be used to assess this environmental impact, while being able to rely on a consistent, qualitatively sound set of data. This way, it is possible for companies, academics and others to estimate the impact of food.

1.1 How am I allowed to use the datasets?

The datasets are available for two different types of use.

1.1.1 Individual access

Firstly, they are available for individuals, for example to make calculations that are subsequently being shared with others in reports. Of course, if shared in reports there should always be a correct reference to the source. We would prefer to be referenced as following, with correct reference to the respective database (e.g. farm-to-fork here): “Blonk Consultants (2020) Food Dataset – farm-to-fork, Gouda, the Netherlands”. Access is strictly personal and any other use is restricted – which means that you are not allowed to distribute the datasets in any way to any other person or entity, and also that you are not allowed to use the data in an (interactive) model or tool you are developing.

1.1.2 Incorporation in tools or models

Secondly, it is possible to license the datasets for incorporating them in a tool or (interactive) model that you are developing. It does not matter if the datasets are directly visible for the user of the tool, or if they are only used in the background - using the dataset for a tool requires a different type of license. Please, contact us and share your idea if you are interested in this.

2. In which formats are the datasets available?

The datasets are available in Excel or CSV format. The Excel file is meant for users who do not have access to LCA software, or for users who want to have a quick overview of the environmental impact data of the food products. The CSV file is available for users who want to work with the datasets in LCA software (such as SimaPro or openLCA). Even though only the environmental impacts are available (this means, no detailed underlying unit processes are available), with this type of file it is possible to e.g. compare products with each other within the LCA software.

3. What are the differences between the Farm-to-Fork and Farm-to-Retail datasets?

Two important differences between the two datasets are the system boundaries and the covered products. Next to this, there are some differences related to the used methodology. You can find more information in section 1.7.

System Boundaries

The main difference between the Farm-to-Fork and Farm-to-Retail datasets are the system boundaries. The Farm-to-Fork dataset has a scope of “Cradle-to-End-of-life” and the Farm-to-Retail dataset has a scope of “Cradle-to-Retail”. More information on system boundaries can be found in section 1.6.

Upon request, also other system boundaries are available. For instance, Cradle-to-Processing, Cradle-to-Packaging, Cradle-to-Distribution, and Cradle-to-Preparation. Please contact us to discuss the possibilities.

Covered Products

The following number of products are covered in the various versions:

Table 1. Number of products available in the Food Consumption Impact Datasets.

	Farm-to-Fork	Farm-to-Retail
Scope: Netherlands	213	209
Scope: Europe	173	161

The number of products in the Farm-to-Fork dataset is slightly higher than in the Farm-to-Retail dataset because some food products are combinations of products put together in the consumer phase. For the exact lists of products covered in the datasets, see appendix 1-4.

4. Which environmental impact categories are included?

The environmental impacts of the food products are calculated in SimaPro by using the ReCiPe 2016 Midpoint (H) impact method (Huijbregts et al., 2016). To assure high quality and certainty of the environmental impact data, not all ReCiPe environmental impact categories are provided in the Food Consumption Impact Datasets.

The environmental impact categories included in the Food Consumption Impact Datasets:

1. Global warming - Including LUC (kg CO₂ eq/kg product)
2. Global warming - Excluding LUC (kg CO₂ eq/kg product)

3. Fine particulate matter formation	(kg PM2.5 eq/kg product)
4. Terrestrial acidification	(kg SO ₂ eq/kg product)
5. Freshwater eutrophication	(kg P eq/kg product)
6. Marine eutrophication	(kg N eq/kg product)
7. Land use	(m ² a crop eq/kg product)
8. Mineral resource scarcity	(kg Cu eq/kg product)
9. Fossil resource scarcity	(kg oil eq/kg product)
10. Water consumption	(m ³ /kg product)

5. What is the story behind the Food Consumption Impact Datasets? Are they reviewed?

Initially the farm-to-fork datasets were developed for our [Optimeal tool](#). Optimeal uses both nutritional properties and environmental properties to optimize future sustainable and healthy diets and assist companies in product development.

All datasets have been reviewed in detail by our internal experts. This is done by comparing the environmental performance of products compared with each other and with results from earlier studies. Dutch datasets have been reviewed by RIVM (National Institute for Public Health and the Environment) in an informal matter since these datasets are used by the institute for monitoring the environmental impact of the Dutch diet.

Most of the background data and cultivation and trade data were updated in 2019.

6. What are the system boundaries? What is in- and excluded in the Environmental Impact Data?

The main difference between the Farm-to-Fork and Farm-to-Retail datasets are the system boundaries. This means life cycle stages accounted for in the environmental impact data are different. The Farm-to-Fork dataset takes into account all life cycle stages, which means from cultivation towards consumption of the product. The Farm-to-Retail dataset includes the life cycle stages until retail stage. In LCA terms, the Farm-to-Fork dataset has a scope of “Cradle-to-End-of-life” and the Farm-to-Retail dataset has a scope of “Cradle-to-Retail”. Upon request, also other system boundaries are available. Examples include Cradle-to-Processing, Cradle-to-Packaging, Cradle-to-Distribution, and Cradle-to-Preparation. Please contact us to discuss the possibilities.

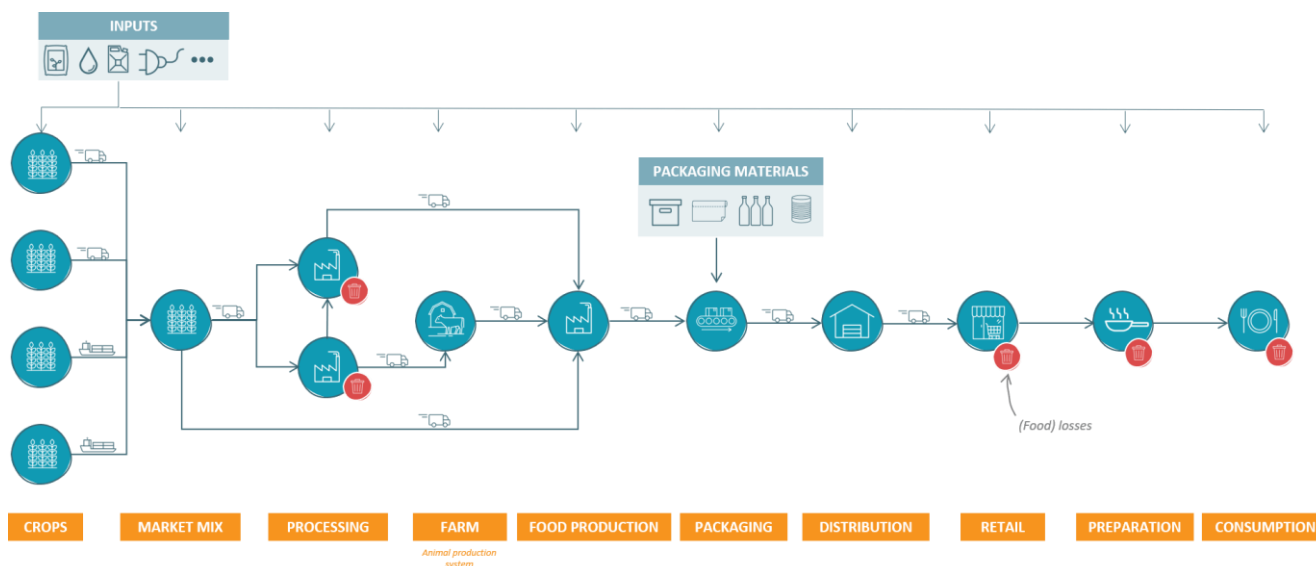


Figure 1 Overview of the life cycle stages of the datasets

Cut-off boundaries

For each life cycle stage, in principle all aspects were included, however there are some cut-off criteria that have been applied. The environmental impacts of the cut-offs are considered to be marginal and are therefore excluded from the analysis.

Sometimes, no statistics or defaults are available, making it impossible to determine the amounts based on crop or country specific information. An example of this are “Other organic fertilizers”. The amount of manure that is used for cultivation can be derived from global statistics, however there are no statistics available for “Other organic fertilizers” like compost, “champost”, feather meal, vinasse and/or digestate.

A brief overview of what is included and excluded in the datasets can be found in table 2.

Table 1: Overview of included and excluded items per product stage

Stage	Included	Excluded
Cultivation	Fertilizer use Manure use Pesticide use Lime use Energy use Water use Emissions from fertilizers, manure, pesticides and lime Capital goods: tractors Land use change and emissions	Other organic fertilizers Harvest losses (already included in the data)
Post harvesting	Energy Capital goods: silo's	
Market mix	Sourcing from different countries per FAO reported product. Impact of transportation from sourcing country to market, including different transportation modus.	No distinction between FAO items used for feed or food.
Processing	Processing energy (electricity, steam, diesel, HFO) Auxiliary materials (hexane, water, ethanol, mineral oil) Processing losses based on edible fraction of products.	Capital goods
Animal systems	Feed for animals Emissions on farm, including manure	Capital goods
Recipes	At least 95% of mass of recipes included in the product	Capital goods

	Energy use	
Packaging	Packaging material Energy use for forming or molding the packaging material	Tertiary packaging materials Capital goods
Distribution	Energy use Water use Refrigerant losses	Capital goods
Retail	Energy use Water use Refrigerant losses Product losses	Capital goods
Preparation	Energy use Water use Product losses	Capital goods
Consumption	Consumption losses	

7. What is the methodology used for the Food Consumption Impact Datasets?

Life Cycle Assessment Methodology

Life Cycle Assessment (LCA) methodology is used to study the environmental performance of food production and consumption. The most important advantage of the methodology is that it is product focused and all relevant life-cycle processes can be included. Another important feature of LCA is that the environmental impacts can eventually be translated into different impact categories, like climate change, eutrophication, acidification, water use, land use etc. This can be used to compare multiple production systems in terms of environmental performance. Besides that, it gives insights in possible burden shifts from certain impact categories to other impact categories. A main drawback of LCA is that it does not include any social aspects. There are also impacts which are not (yet) included very well LCA methodology, like marine resource depletion or biodiversity.

Life Cycle Inventory

For every Life Cycle Stage, data collection, methods and standards can differ. In case different data or methodology is used between the Dutch and European Food Consumption Impact datasets, it will be highlighted. For more information on any Life Cycle Stage's methodology, please contact us.

Agriculture

Crop cultivation is modelled on country level, using the Agri-footprint (AFP) 5.0 methodology (Van Paassen, Braconi, Kuling, Durlinger, & Gual, 2019a, 2019b). The methodology is compliant to the criteria for crop cultivation, defined by the European Commission (European Commission, 2018c).

Data collection for cultivation is elaborately discussed in Chapter 3.2 of the [Agri-footprint \(AFP\) data report](#) (Van Paassen et al., 2019b). This section covers issues with regards to land use change, water use for irrigation, artificial fertilizer application rates, manure application and emissions from managed soils. Chapter 3.3 of the AFP document describes how emissions are modelled and which standards are used.

Economic allocation is used to divide the environmental impact between the main and co-product in cultivation. How the amount of co-product is quantified, and the prices used in performing the allocation is mentioned in Chapter 3.2.1 of AFP methodology document.

For more information, e.g. on carbon storage in crops, CO₂ emissions from Land Use Change, and Horticulture Cultivations, please contact us.

Post-harvesting

For detailed information regarding post harvesting processes as drying cereals or deshelling nuts, see chapter 4 and chapter 5.2 of AFP 5.0 – part 2 methodology report (Van Paassen et al., 2019b).

Sourcing and Logistics

Detailed methodology and data on how sourcing from different countries are included in the Food Consumption Impact Datasets, see chapter 5 of AFP 5.0 – part 2 methodology report (Van Paassen et al., 2019b).

Combining the sourcing information of food items with default transportation distances between countries, which are specified in Annex 6 of the PEFCR for feed (European Commission, 2018a), the total transportation requirements can be determined. Transportation requirements within countries are also specified in the same document, which are used for transportation distances between various life cycle stages if no better data is available.

Processing

Detailed processing information can be found in chapter 6 of AFP 5.0 – part 2 methodology report (Van Paassen et al., 2019b). This mainly concerns processing data for products that are used in the feed industry. Additional processing data that is exclusively used for food can be found in Chapter 5.5.3 Optimeal EU documentation (Broekema, Blonk, & Koukouna, 2019). In both cases the following system boundaries are used:

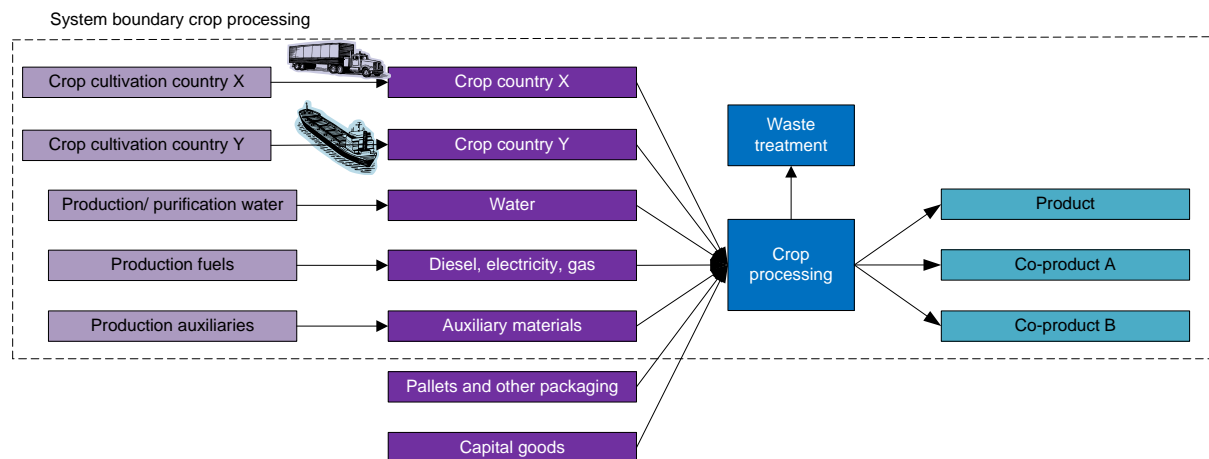


Figure 7-1: System boundary for crop processing (Van Paassen et al., 2019a)

Recipes

For assembled food products a wide range of recipes are used. Extensive list of various sources used for the European food dataset can be found in the Optimeal EU documentation (Broekema et al., 2019). Recipes that are used for the Dutch dataset are developed in the context of monitoring the environmental impact of the Dutch diet, written by Blonk Consultants on behalf of RIVM¹ (unfortunately not publicly available).

Packaging-to-mouth modelling

After the processing stage, the following stages are modelled:

- Packaging: different packaging materials are added as packaging material to include its impact.
- Distribution: mainly involves energy use and refrigerant losses if products are cooled or frozen.
- Retail: mainly involves energy use and refrigerant losses if products are cooled or frozen.
- Preparation: involved energy use for preparation, preserving and various preparation losses.
- Consumption: consumption losses of after preparation are included.

¹ <https://statline.rivm.nl/#/RIVM/nl/dataset/50060NED/table>

The same life cycle stages and structure are used between the different Food Consumption Impact Datasets, however different parameters and calculation methods are used between the datasets. For example, transportation distances, energy use and end-of-life modelling is different between the European and Dutch food database.

- European food dataset is largely based on default data specified in the “Product Environmental Footprint Category Rules Guidance” (European Commission, 2018c). An overview of how these are applied in the food dataset can be found in the [Optimeal EU report](#) (Broekema et al., 2019) (Chapter 5.5.4 till 5.5.8).
- Dutch food dataset is based on Dutch specific data and some European default data. An overview the datapoints used is provided in the most recent RIVM report: Chapter 7, packaging-to-mouth modelling (van Paassen, Braconi, & Kuling, 2019)

8. Which functional unit is used in the Food Consumption Impact Datasets?

The environmental impact of the food products in the Food Consumption Impact Datasets is expressed per kilogram. This means the functional unit is mass-based and nutritional composition of the food products is not accounted for. When comparing the environmental impact of food products, it is relevant to compare based on equal functions. It depends on the goal you are aiming for whether a mass-based functional unit is most appropriate.

9. What allocation methods are used in the Food Consumption Impact Datasets?

Allocation is applied when a process delivers multiple co-products, which leads to a division of the environmental impact between the co-products. In several guidelines and standards, e.g. in the PEFCR guidelines (European Commission, 2018c), the type of allocation method is formalized. An overview of multifunctional processes, allocation methods and standards used for the Food Consumption Impact Datasets are given in Table 2. If no standard or guideline is available, economic allocation is used by default in the Food Consumption Impact Datasets. If the economic value of a certain co-product is negligible, an economic value of zero is assumed.

Table 2: Overview of multifunctional processes in food chains, allocation method applied, and standards used

Stage	Multi-functional processes	Allocation method	Guideline/Standard
Cultivation	Co-production from cultivation	Economic allocation	(FAO, 2016), (European Commission, 2018a)
	Manure production (impact to the meat)	Cut-off	(FAO, 2016), (European Commission, 2018a)
	Co-production of electricity in greenhouses	Subdivision	(BSI, 2012)
Post harvesting	Co-production (nut/seed shells)	No economic value (cut-off)	
Market mix	Not applicable		
Processing	Crushing, dry milling, rendering	Economic allocation	(FAO, 2016), (European Commission, 2018a)
	Maize wet milling	Detailed economic allocation	(FAO, 2016), (European Commission, 2018a)
		Cut-off	

	Residues from food industry for feed	Dry matter allocation	(FAO, 2016), (European Commission, 2018a)
	Dairy processing	Economic allocation	(European Commission, 2018b)
	Other processing		
Animal systems	Slaughtering	Economic allocation	(European Commission, 2018b)
	Cow milk & meat co-production on farm	Biophysical (EU dataset) Economic allocation (NL dataset)	
Recipes	Not applicable		
Packaging	Recycled material used in packaging material	Circular footprint formula (not included yet -> next version)	(European Commission, 2018c)
Distribution	Not applicable		
Retail	Not applicable		
End-of-life packaging	Recycling and energy recovery of packaging material	Circular footprint formula (partially included)	(European Commission, 2018c)
Consumption	Not applicable		

For more information about allocation, please contact us.

10. What are the limitations of the Food Consumption Impact Datasets?

Some of the limitations of the Food Consumption Impact Datasets are:

- Variability and uncertainty are not captured for these datasets. This means for example that you will not be able to do an uncertainty analysis (e.g. Monte Carlo analysis).
- The LCA data do not take seasonality into account. This means the impacts are annual averages, even though the exact impacts may vary within the year.
- The difference between food and feed cultivations could not be determined with the statistics used for the Food Consumption Impact Datasets. This could result in different environmental impacts. For example for wheat, the dataset could give a lower environmental impact value than the actual value. Wheat used in a bread product has a higher protein content (thus higher environmental impact) than the average wheat product in this dataset. The average also includes wheat for animal feed.
- The EU datasets are only partly compliant to the PEF guidance and the PEFCRs per product category. Since the PEFCRs are not consistent in terms of allocation between them, using the PEFCRs as a starting point would lead to an internal inconsistent database. Consistency is valued more than compliance to the PEF guidance and PEFCRs.
- The functional unit of the dataset is mass-based. Nutritional composition of the food products is not accounted for in the functional unit.

References

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Appendix 1

List of products in Farm-to-Fork, EU scope

173 products

Almond, sweet	Custard	Margarine, normal fat
Apple	Dressing	Mayonnaise, > 50% oil
Bacon	Dry sausage	Meat and meat products
Bananas	Egg-based meal	Meat balls
Beans	Evaporated milk	Meat burger
Beans, green, without pods	Fats of mixed origin	Meat stew
Beans, with pods	Fermented milk products	Meat/poultry soup
Beef meat	Fish fingers	Meat-based meals
Beer and beer-like beverage	Fish products	Melons
Beer, regular	Fish roe	Milk chocolate
Beetroot	Fishcakes	Mixed beef and pork meat
Biscuits	Flavoured milk	Mixed wheat and rye bread and rolls
Bitter chocolate	French fries	Molasses and other syrups
Black tea, infusion	Fresh and lightly cooked sausage	Multigrain bread and rolls
Bottled water	Fruit and vegetable juices	Mustard, mild
Brown sauce	Fruit compote	Mutton / lamb meat
Butter	Fruit juice	Olive oil
Buttermilk	Fruit nectar	Onions, bulb
Carrots	Fruit sauce	Oranges
Cashew nuts	Hake	Parsley, herb
Cereal flakes	Ham, pork	Pasta, cooked
Cheese	Hazelnuts	Pasta, wheat flour, without eggs
Cheese, Camembert	Head cabbage	Pastries and cakes
Cheese, Cheddar	Herbal tea, infusion	Pate, pork liver
Cheese, Danbo	Herring	Peaches
Cheese, Edam	Honey	Peanut
Cheese, Gouda	Ice cream, milk-based	Peanuts butter
Cheese, Mozzarella	Iceberg-type lettuce	Pear
Cheese, processed spreadable	Ices and desserts	Peas
Chicken egg	Instant coffee, liquid	Peas, green, without pods
Chicken meat	Jam	Pepper, black and white
Chocolate (Cocoa) products	Juice, Apple	Peppers, paprika
Cider	Juice, Orange	Pizza and pizza-like pies
Cod and whiting	Juice, Tomato	Pork / piglet meat
Coffee	Kiwi	Pork liver
Cola beverages, caffeinic	Leaf vegetables	Pork meat loaf
Concentrated fruit juice	Leek	Potato based dishes
Condiment	Lentils	Potato boiled
Confectionery (non-chocolate)	Lettuce, excluding Iceberg-type lettuce	Potato crisps
Cooked smoked sausage	Liquorice candies	Potatoes and potatoes products
Cow milk	Main-crop potatoes	Prepared mixed vegetable salad
Cream	Mandarins	
Cucumbers	Margarine, low fat	
Cultivated mushroom		
Curry sauce		

Pretzels
Quark
Ready to eat soups
Rice
Rice-based meals
Rye bread and rolls
Salmon and trout
Salt, iodised
Sandwich and sandwich-like meal
Sausages
Savoury sauces
Shrimps
Snack food
Soft drink, flavoured

Soft drink, fruit content
Spinach (fresh)
Spirits
Squid
Starchy pudding
Still mineral water
Strawberries
Sunflower oil
Sunflower seed
Tap water
Tomato ketchup
Tomato purée
Tomatoes
Tree nuts
Tuna

Turkey meat
Veal meat
Vegetable oil
Vegetable sauce
Vegetable/herb soup
Vegetable-based meals
Vinegar, wine
Walnuts
Wheat bread and rolls
Wheat milling products
White sauce
White sugar
Wine, red
Wine, white
Yoghurt, cow milk, plain

Appendix 2

List of products in Farm-to-Fork, NL scope

214 products

Almond paste filled tarts	Celeriac boiled	Fruit drink concentrate
Apple pie Dutch w/ shortbread w/ marg	Cheese 20+	Roosvicee Origin
Apple sauce	Cheese 30+ average	Fruit drink concentrate undiluted
Apple sauce	Cheese Edam 40+	Grapes w skin
Apple, w skin	Cheese Gouda 48+	Ham lean
Bacon, streaky	Cheese spread 48+	Ham shoulder medium fat
Banana	Chicken fillet prepared	Herring, salted
Bean sprouts	Chicken fillet, sandwich meat	Honey
Beans french	Chicken, w skin	Honey
Beef frying steak	Chickpeas	Ice cream, dairy cream based
Beef rump steak	Chicory	Ice lolly/ Sorbet
Beef, smoked-dried	Chocolat, milk	Ice tea
Beer >7 vol% alcohol	Chocolate chip cookie	Jam without sugar
Beer, pilsner	Chocolate confetti averaged	Jam
Beetroot boiled	Chocolate plain	Juice drink, Dubbelfrisss
Biscuit spiced Speculaas	Chocolate spread, duo	Juice, apple
Biscuit, brown/wholemeal	Chocolate spread, hazelnut	Juice, orange fresh prepared
Biscuit, fruit	Chocolates filled/Belguim chocolate	Juice, orange pasteurized
Biscuit, sweet	Cod	Kale curly
Biscuits averaged	Coffee creamer full fat	Ketchup curry
Bread brown wheat	Coffee creamer half fat	Ketchup tomato
Bread rye dark	Coffee	Kiwi
Bread, white water based	Cola light soft drink w caffeine	Leek boiled
Bread, wholemeal	Cooking fat liquid 97% fat <17 g sat	Leek raw
Breakfast cereal Cornflakes	Courgettes	Lemonade, light
Broccoli	Crispbakes Dutch wholemeal	Lettuce head
Brown beans	Crispbakes Dutch	Liquorice Dutch type average
Brown beans	Crispbread	Liver pate
Brussel sprouts boiled	Crisps potato	Low fat margarine 40% fat <17 g sat
Bun, currant/raisin	Croquette meat ragout	Mackerel steamed
Butter product half fat	Cucumber w skin	Manderins
Butter, salted	Custard chocolate full fat	Margarine 80% fat 17-24 g saturates
Butter, unsalted	Custard several flavours, full fat	Margarine liq 80% fat < 17g sat unsalted
Buttermilk	Custard vanilla, full fat	Margarine liq 80% fat <17 g saturates
Cabbage oxheart boiled	Drink soya Fresh Light Alpro	Margarine product 60% fat <17 g sat
Cabbage sauerkraut cooked	Drink soya several flavours Alpro	Mayonaise, 25% fat
Cake Dutch spiced Ontbijtkoek	Eggs chicken	Mayonaise
Cake sponge Dutch Eierkoek	Endive boiled	Melon netted
Cake, wo butter	Endive raw	
Cappuccino w whole milk	Filet americain	
Carrots raw average	Fromage frais half fat w fruit	
Carrots		
Cashew nuts, unsalted		
Cauliflower		

Milk chocolate-, flavoured full fat
Milk chocolate-, flavoured semi-skimmed
Milk, semi-skimmed
Milk, skimmed
Milk, whole
Minced beef shallow fried
Minced beef/pork
Mince meat vegetarian unprepared
Mineral water
Muesli crunchy plain/w fruit
Mushrooms
Mussels boiled
Nuts mixed unsalted
Oil soy
Olive oil
Olives in brine
Olives in brine
Onions raw
Onions
Orange
Pancake prepared w whole milk and margarine
Pangasius
Pasta, white
Peanut butter
Peanut sauce jar prepared
Peanuts, unsalted
Pear with skin
Peas and carrots
Peas and carrots
Peas frozen
Peas marrowfat legumes boiled

Pineapple
Pork shoulder chop
Pork tenderloin prepared
Potatoes wo skins
Red wine
Rice, brown
Rice, white
Rocket raw
Roll brown hard
Roll, white soft
Salami
Salmon, fillet (aquaculture)
Salmon, fillet (wild caught)
Salmon, smoked (aquaculture)
Salmon, smoked (wild caught)
Sausage roll, puff pastry
Sausage smoked cooked average
Sausage, cooked beef
Sausage, dutch Frikandel
Sausage, luncheon, sandwich meat
Sausage, pork (braadworst)
Sausage, salami saveloy
Shrimps, Dutch peeled
Soft drink wo caffeine
Soft drink, cola w caffeine
Soft drink, light wo caffeine
Soup clear w meat vegetables and noodles
Soup clear with meat and vegetables
Soup main course w legumes and meat
Soup vegetable based dried packet prep

Spinach frozen
Stock from cube prepared
Strawberries
Sugar granulated
Sunflower oil
Sweet pepper green boiled
Sweet pepper red boiled
Sweet pepper red raw
Sweet pepper
Syrup, apple
Tea herbal instant sw prepared
Tea
Tomato puree concentrated tinned
Tomato sauce, ready-made
Tomato
Tomato
Tuna in oil
Vegetarian hamburger
Waffle, syrup
Walnuts, unsalted
Water, average
Whisky
White fish fillet, in batter
White wine, dry
Yoghurt drink
Yoghurt full fat with fruit
Yoghurt, full fat
Yoghurt, half fat
Yoghurt, low fat w fruit
Yoghurt, low fat

Appendix 3

List of products in Farm-to-Retail, EU scope

161 products

Almond	Cultivated mushroom (syn. Button mushroom)	Margarine normal fat
Apple	Curry sauce	Mayonnaise >50% oil
Bacon	Custard	Meat-based meals
Bananas	Dressing	Meat balls
Beans	Dry sausage	Meat burger
Beans green	Egg-based meal (e.g. omelette)	Meat stew
Beans with pods	Evaporated milk (milk evaporated down to 1/3 volume)	Meat/ poultry soup
Beef meat	Fish fingers	Melons
Beer regular	Fish roe	Milk chocolate
Beetroot	Fishcakes	Mixed beef and pork meat
Biscuits (cookies)	Flavoured milk	Mixed wheat and rye bread and rolls
Bitter chocolate	French fries	Molasses and other syrups
Black tea	Fresh and lightly cooked sausage	Multigrain bread and rolls
Bottled water	Fruit and vegetable juices	Mustard mild
Brown sauce (Gravy Lyonnais sauce)	Fruit compote	Mutton / lamb meat
Butter	Fruit juice	Olive oil
Buttermilk	Fruit sauce	Onions
Carrots	Hake	Oranges
Cashew nuts	Ham pork	Parsley
Cereal flakes	Hazelnuts	Pasta, dry
Cheese	Head cabbage	Pasta, fresh
Cheese Camembert	Herbal tea	Pastries and cakes
Cheese Cheddar	Herring	Pate, pork liver
Cheese Danbo	Honey	Peaches
Cheese Edam	Ice cream milk-based	Peanut
Cheese Gouda	Iceberg-type lettuce	Peanuts butter
Cheese Mozzarella	Instant coffee liquid	Pear
Cheese processed spreadable	Jam	Peas
Chicken egg	Juice apple	Peas, green
Chicken meat	Juice orange	Pepper, black and white
Chocolate (Cocoa) products	Juice tomato	Peppers, paprika
Cider	Kiwi	Pizza and pizza-like pies
Cod and whiting	Leaf vegetables	Pork / piglet meat
Coffee (Beverage)	Leek	Pork liver
Cola beverages	Lentils	Pork meat loaf
Concentrated fruit juice	Lettuce	Potato based dishes
Cooked smoked sausage	Liquorice candies	Potato boiled
Cow milk	Main-crop potatoes	Potato crisps
Cream	Mandarins	Potatoes and potatoes products
Cucumbers	Margarine low fat	Prepared mixed vegetable salad

Pretzels
Quark
Ready to eat soups
Rice-based meals
Rice
Rye bread and rolls
Salmon and trout
Salt, iodised
Sandwich and sandwich-like meal
Sausages
Savoury sauces
Shrimps
Soft drink, flavoured
Soft drink, fruit

Spinach (fresh)
Spirits
Squid
Starchy pudding
Still mineral water
Strawberries
Sunflower oil
Sunflower seed
Tomato ketchup
Tomato purée
Tomatoes
Tuna
Turkey meat
Veal meat

Vegetable-based meals
Vegetable oil
Vegetable sauce
Vegetable/herb soup
Vinegar, wine
Walnuts
Wheat bread and rolls
Wheat milling products
White sauce (Bechamel sauce, cheese sauce)
White sugar
Wine, red
Wine, white
Yoghurt

Appendix 4

List of products in Farm-to-Retail, NL scope

209 products

Almond paste filled tarts	Cauliflower	Fromage frais half fat w fruit
Apple pie Dutch w shortbread w marg	Celeriac boiled	Fruit drink concentrate Roosvicee Origin
Apple sauce	Cheese 20+	Fruit drink concentrate undiluted
Apple sauce	Cheese 30+ average	Grapes w skin
Apple w skin	Cheese Edam 40+	Ham lean
Bacon streaky	Cheese Gouda 48+	Ham shoulder medium fat
Banana	Cheese spread 48+	Herring salted
Bean sprouts	Chicken fillet prepared	Honey
Beans french	Chicken fillet sandwich meat	Honey
Beef frying steak	Chicken w skin	Ice cream dairy cream based
Beef rump steak	Chickpeas	Ice lolly/ Sorbet
Beef smoked-dried	Chicory	Ice tea
Beer >7 vol% alcohol	Chocolat, milk	Jam without sugar
Beer pilsner	Chocolate chip cookie	Jam
Beetroot boiled	Chocolate confetti averaged	Juice drink Dubbelfriss
Biscuit spiced Speculaas	Chocolate plain	Juice apple
Biscuit brown/wholemeal	Chocolate spread, duo	Juice orange pasteurized
Biscuit fruit	Chocolate spread, hazelnut	Kale curly
Biscuit sweet	Chocolates filled/Belguim chocolate	Ketchup curry
Biscuits averaged	Cod	Ketchup tomato
Bread brown wheat	Coffee creamer full fat	Kiwi
Bread rye dark	Coffee creamer half fat	Leek boiled
Bread white water based	Coffee	Leek raw
Bread wholemeal	Cola light soft drink w caffeine	Lemonade light
Breakfast cereal Cornflakes	Cooking fat liquid 97% fat <17 g sat	Lettuce head
Broccoli	Courgettes	Liquorice Dutch type average
Brown beans	Crispbakes Dutch wholemeal	Liver pate
Brown beans	Crispbakes Dutch	Low fat margarine 40% fat <17 g sat
Brussel sprouts boiled	Crispbread	Mackerel steamed
Bun currant/raisin	Crisps potato	Manderins
Butter product half fat	Croquette meat ragout	Margarine 80% fat 17-24 g saturates
Butter salted	Cucumber w skin	Margarine liq 80% fat < 17g sat unsalted
Butter unsalted	Custard chocolate full fat	Margarine liq 80% fat <17 g saturates
Buttermilk	Custard several flavours full fat	Margarine product 60% fat <17 g sat
Cabbage oxheart boiled	Custard vanilla full fat	Mayonaise 25% fat
Cabbage sauerkraut cooked	Drink soya Fresh Light Alpro	Mayonaise
Cake Dutch spiced Ontbijtkoek	Drink soya several flavours Alpro	Melon netted
Cake sponge Dutch Eierkoek	Eggs chicken	Milk chocolate-flavoured full fat
Cake wo butter	Endive boiled	Milk chocolate- flavoured semi-skimmed
Carrots raw average	Endive raw	Milk semi-skimmed
Carrots	Filet americain	Milk skimmed
Cashew nuts unsalted	Flour wheat white	Milk whole

Minced beef shallow fried	Soft drink wo caffeine
Minced beef/pork	Soft drink cola w caffeine
Mincemeat vegetarian unprepared	Soft drink light wo caffeine
Mineral water	Soup clear w meat vegetables and noodles
Muesli crunchy plain/w fruit	Soup clear with meat and vegetables
Mushrooms	Soup main course w legumes and meat
Mussels boiled	Soup vegetable based dried packet prep
Nuts mixed unsalted	Spinach frozen
Oil soy	Stock from cube prepared
Olive oil	Strawberries
Olives in brine	Sugar granulated
Olives in brine	Sunflower oil
Onions raw	Sweet pepper green boiled
Onions	Sweet pepper red boiled
Orange	Sweet pepper red raw
Pangasius	Sweet pepper
Pasta white	Syrup apple
Peanut butter	Tea herbal instant sw prepared
Peanut sauce jar prepared	Tea
Peanuts unsalted	Tomato puree concentrated tinned
Pear with skin	Tomato sauce ready-made
Peas and carrots	Tomato
Peas and carrots	Tuna in oil
Peas frozen	Vegetarian hamburger
Peas marrowfat legumes boiled	Waffle syrup
Pineapple	Walnuts unsalted
Pork shoulder chop	Whisky
Pork tenderloin prepared	White fish fillet in batter
Potatoes wo skins	White wine dry
Red wine	Yoghurt drink
Rice brown	Yoghurt full fat with fruit
Rice white	Yoghurt full fat
Rocket raw	Yoghurt half fat
Roll brown hard	Yoghurt low fat w fruit
Roll white soft	Yoghurt low fat
Salami	
Salmon fillet (aquaculture)	
Salmon fillet (wild caught)	
Salmon smoked (aquaculture)	
Salmon smoked (wild caught)	
Sausage roll puff pastry	
Sausage smoked cooked average	
Sausage cooked beef	
Sausage dutch Frikandel	
Sausage luncheon	
Sausage pork (braadworst)	
Sausage salami saveloy	
Shrimps Dutch peeled	