

# Menu for Tomorrow

## *Summary*



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## Summary - Menu for Tomorrow

The food system, from production to consumption and waste treatment, makes a big contribution (20–30%) to global greenhouse gas emissions and a big claim on scarce natural resources. By 2050 we will have to provide 9 to 10 billion people with healthy and sustainably produced food. For the Dutch environmental organisation [Natuur & Milieu](#) (N&M) Blonk Consultants investigated what such a healthy and sustainable diet would be for the Netherlands. The study was based on the principle that everyone in the world has an equal right to a share of the global ‘environmental headroom’ or environmental footprint, which can be measured in terms of greenhouse gas emissions and land use. The optimisation program Optimeal was used to construct a Menu for Tomorrow for the Netherlands in 2030 that will keep the Dutch footprint within this national ‘headroom’. The study also provides a look ahead to 2050 and explores some alternative scenarios.

### Sustainable scenarios

The starting point for the sustainable scenarios for 2030 and 2050 is the current average diet as described in the most recent Netherlands National Food Consumption Survey for the period 2007–2010. The impact of this diet on the environment was calculated by first determining the environmental impact of a unit of each product over its whole life cycle and then multiplying these impacts by the amounts consumed.

### Principles

The scenarios were based on the following principles:

- **Fair Share:** Each person in the world has the right to an equal share of the global ‘environmental headroom’ (the Fair Share principle).
- **Greenhouse gas emissions:** We must limit greenhouse gas emissions to a level at which global warming does not exceed 2°C.
- **Land Use:** The total area of land used for food production must not exceed the area used today to prevent any natural areas being converted to agriculture for food production.
- **Sustainable fisheries:** Fish consumed in the Netherlands must come from sustainable fisheries.
- **Animal welfare:** Animal products must be produced in livestock husbandry systems that take much greater account of animal welfare.
- **Health:** The diet must of course be healthy and meet the nutritional requirements formulated by the Health Council of the Netherlands.
- **Productivity and food waste:** future improvements in productivity and reductions in food waste are taken into account.

### Optimeal: balance between nutritional value and environmental impact

[Optimeal®](#) was used to compile a diet that meets all nutritional standards and remains within the Fair Share environmental limits, while making as few changes as possible from the current diet. The most difficult factor proved to be the greenhouse gas emissions of the Dutch diet. In 2030 these must be 43% less than the emissions in 2010, and in 2050 the reduction should be no less than 67%. On land use the Dutch are already well below their Fair Share allocation.

The Optimeal® program was used to make two types of optimisation. Both represent an extreme situation. By presenting both sets of results we show the range of possible outcomes. Optimeal® assesses the balance between nutritional value and environmental impact: products with a relatively favourable balance are allocated an increased share in the diet, while the shares of those with a relatively unfavourable

balance are reduced. To keep the nutritional value of the menu within the nutritional standards, the new diet again contains less of certain products and more of others.

Table 1 shows the results for 2030 compared with the current national diet. The diet in 2010 was used as the benchmark. The price of this menu is more or less the same, based on current prices, although prices will of course increase in future.

### Increase of products

The product groups vegetables, pulses, nuts & seeds, fish, and soy products & vegetarian products take up a greater proportion of the diet in the Menu for Tomorrow than in the 2010 diet. The increase in fish comes entirely from sustainable fisheries.

### Reduction of products

These increases are matched by reductions in the product groups meat, cheese, drinks, and milk & milk products. These are all product groups that make a considerable contribution to the total greenhouse gas emissions of the current diet. The amounts of several product groups, such as eggs, remain more or less the same.

Table 1 Menu for Tomorrow 2030 compared with the current diet in the Netherlands

Group	Current diet 2010 (grams/day)	Menu for Tomorrow 2030 (grams/day)
Potatoes	98	99-101
Alcoholic and non-alcoholic drinks	1957	1791–1922
Bread	154	169–225
Eggs	12	12–13
Fruit	110	104–130
Cakes and pastries	48	25–52
Cereal products and thickeners	53	56–57
Vegetables	127	191–419
Savoury spreads	4	5–9
Cheese	36	21–24
Milk & milk products	373	223–346
Nuts, seeds & snacks	32	34–60
Pulses	3	22–32
Pre-cooked meals	3	5–6
Soups	61	16–42
Soy products & vegetarian products	5	10–14
Sugar, sweets, sweet spreads & sweet sauces	35	16–40
Fats, oils & savoury sauces	59	41–56
Fish	16	20–21
Meat, meat products & poultry	108	30–66
Greenhouse gases (kg CO <sub>2</sub> eq/day)	3.83	2.12
Price (€/day)	5.02	5.00–5.30

### **Changes within product groups**

The proportions of different products within product groups also change. For example, within the product group drinks the amount of tap water increases while the amounts of wine, soft drinks (including 'light' drinks) and apple juice decrease. The most striking changes are in the vegetables product group. Field vegetables (including some types of cabbage, carrots, leeks, onions and beetroot) increase at the expense of greenhouse vegetables (including tomatoes, sweet peppers, courgettes and cucumbers) and vegetables from far away (including French beans). This is because the last two sorts of vegetables require the use of much more fossil energy for their cultivation (natural gas) and transport (diesel, kerosene) and therefore produce higher greenhouse gas emissions.

### **Look ahead to 2050**

In the look ahead to 2050 the Dutch share of global carrying capacity is reduced further by the rising global population and stricter climate change requirements. As a result, the shifts apparent in the 2030 scenario become more pronounced: almost no meat, less cheese and other dairy products, and less alcoholic and non-alcoholic drink, except for tap water.

The Menus for Tomorrow for 2030 and 2050 are based on realistic expectations of productivity gains and reduced wastage. One of the factors in this is the use of more sustainable energy, which creates more latitude for a varied diet. However, when looking further into the future any expectations become more uncertain, which is why we present our findings for 2050 as a 'look ahead'.

### **Menu for Tomorrow: a varied menu**

In conclusion, we can say that with the Menu for Tomorrow in 2030 it will still be possible to enjoy a varied diet. The Menu is better for animal welfare and keeps the Dutch within their share of global carrying capacity based on the Fair Share principle. The most difficult factor is reducing greenhouse gas emissions to an extent that the probability of the global temperature rising by no more than 2°C is within the 66–100% range. The land use impact of Dutch food consumption is already well within the ceiling and in the Menu for Tomorrow it falls further still. The Menu stimulates the consumption of sustainable fish.

### **Optimistic and Pessimistic scenarios**

The study also examines a Pessimistic and an Optimistic scenario for both 2030 and 2050. The assumptions for the Menu for Tomorrow calculations lie in between these two extremes. The Pessimistic scenario does not include any future productivity improvements and wastage reductions; the Optimistic scenario assumes a lower population growth and a higher limit for greenhouse gas emissions. The outcomes are comparable within the given parameters. Pessimistic 2030 is similar to Menu for Tomorrow 2050, while Optimistic 2050 is similar to Menu for Tomorrow 2030. Pessimistic 2050 and Optimistic 2030 are the most extreme scenarios.

### **More information**

Do you have questions or want more information about this research?

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