

Food for thought

Dietary and health trends in the Netherlands

Foreword

The time that hunting for food accounted for a large part of our daily activity is now far behind us. The role of food in Dutch lives has also changed significantly in the period 1950–2012. While many older people still remember times of food shortage, today's supermarkets, specialist food shops and market stalls sell an unprecedented range of products. At the same time, partly as a result of increasing affluence, food accounts for a smaller and smaller part of household spending.

This book presents a number of important facts and trends in diet and health in the Netherlands. Although it focuses on developments in recent years, it also looks further back in time. The book starts by addressing foodstuffs produced domestically. Dutch farmers and fruit and vegetable growers are producing more and more food on smaller and smaller areas of land. Part of what they produce is sold abroad: in particular fruit, vegetables, meat and dairy products. At the same time, the Netherlands also imports a lot of food products, mostly from countries within the European Union, although non-EU countries such as Brazil and Russia are becoming increasingly significant suppliers. The book also presents an overview of where Dutch consumers buy their food. Three-quarters of money spent on fresh fruit, vegetables and potatoes now ends

up in a supermarket till. Ten years ago this was still only 69 percent, while shoppers bought more of these products from greengrocers or market stalls.

Developments in food prices are also examined, and food consumption is further placed in a macro-economic perspective.

Lastly, the relationship between food and health is examined. As a result of the broad and varied range of affordable food products, deficiencies and malnutrition hardly occur in the Netherlands. But the wide availability of food has led to new problems: people are now eating more than their bodies actually need. An increasing number of Dutch people – 6 million adults in 2011 – are overweight or obese.

The information on food and health in this book comes mainly from StatLine (www.statline.cbs.nl) and Statistics Netherlands surveys; some data were taken from trade and marketing boards. The Nutrition Centre also collaborated on the book.

Director General of Statistics
G. van der Veen

The Hague/Heerlen, December 2012

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What does the Netherlands produce?

Farmers and fruit and vegetable growers in the Netherlands produce large quantities of foodstuffs. In 2011, 70 thousand Dutch farms and horticultural businesses produced 25.4 billion euro worth of agricultural produce. Dairy farms are the most common, accounting for nearly one quarter of businesses in this sector, followed by arable farms, which make up 17 percent.

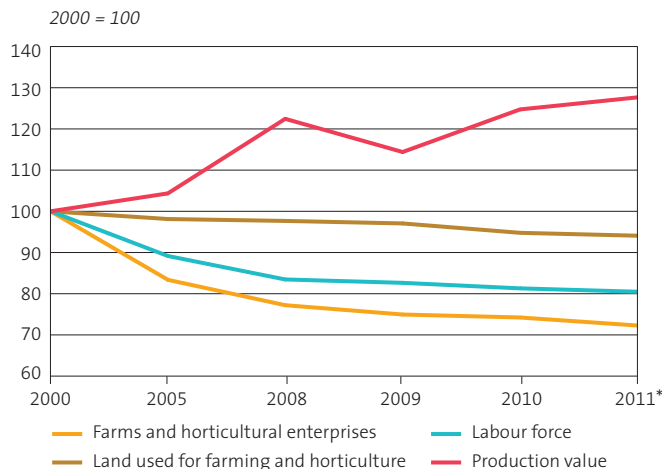
The Dutch agriculture and horticulture industry provides the equivalent of 139 thousand full-time

jobs and uses nearly 1.9 million hectares of land. One quarter of this land is taken up by arable farming, 44 percent by dairy farming.

Agricultural productivity up substantially

The area of agricultural land decreased by 6 percent from 2000 to 2011. The number of farms and horticultural businesses dropped by 28 percent in the same period, while the volume of labour fell by 20 percent.

Developments in Dutch agriculture and horticulture



Source: Statistics Netherlands and LEI.

* provisional figure.

In spite of these developments, the value of agricultural production was nearly 28 percent higher in 2011 than in 2000. The increase is mostly accounted for by output prices, which rose by 17 percent. But production also rose strongly, by 9 percent. Production growth was particularly strong in glasshouse horticulture and intensive livestock farming.

More and more fruit and vegetables per square metre

Horticultural fruit and vegetable production per square metre is still increasing. The yield per square metre for vegetables grown under glass is much larger than that for field vegetables, as growing conditions in glasshouses can be controlled more easily. Vegetables grown in open ground yield 5.8 kg per square metre, while greenhouse cucumbers yield an average 66 kg per square metre. In 2000, one square metre of cucumbers still only yielded 45 kg. Apple and pear crops have also increased sharply in the period 2000–2011. One hectare of apple trees produced a record 50 tonnes of apples in 2011, up from 39 tonnes in 2000. Pear trees produced just over 40 tonnes of fruit per hectare in 2011. This too was a top yield. In the first years of the century, pear yields fluctuated between 13 and 33 tonnes per hectare, partly as a result of weather conditions.

Increased productivity of dairy cows

In 2000, the average Dutch dairy cow produced 7.3 thousand litres of milk. In 2011 this had risen to 8.1 thousand litres, a substantial increase. Total production of cow's milk amounted to 11.9 billion litres

in 2011. Nearly all of this milk goes to dairy factories, where just over half ends up as cheese and one tenth as milk for consumers. The remainder is used to produce butter, cream, yoghurt, desserts, ice cream, condensed milk and milk powder.

A Dutch dairy cow produces 22 litres of milk per day

Just over 200 million litres of milk does not end up in the processing industry, but is used on farms to feed calves or to make regional products such as herb cheese and ice cream. In 2011, 746 million kg of cheese was made in factories, while 7 million was made on farms.

What does an average day yield?

Dutch chickens laid 10.6 billion eggs in 2011. This is the equivalent of 1.7 eggs per person per day. Just over half of these eggs are eaten in the Netherlands. Most are not boiled, fried or poached, but eaten indirectly in foods like biscuits, cakes, mayonnaise and advocaat.

In 2011, 3.9 billion kg of ware potatoes were lifted in the Netherlands: 0.63 kg per person per day. A wide range of varieties are grown in the Netherlands. The most well-known are Bildtstar, Bintje, Doré, Eigenheimer and Nicola.

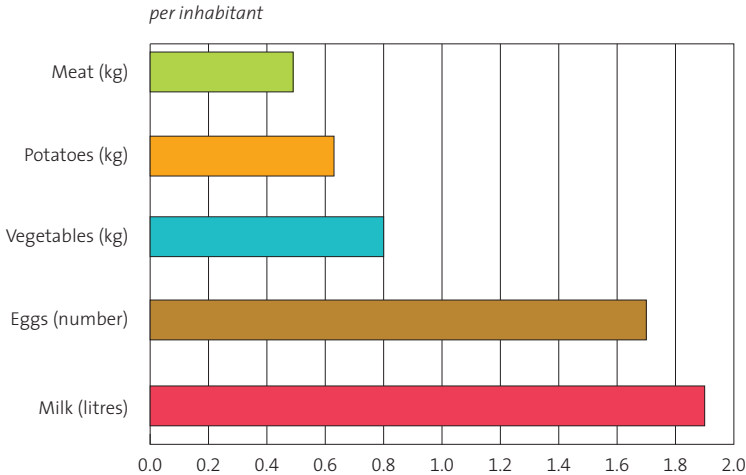
Vegetable growers produced a further 4.9 billion kg of vegetables, 810 grams per person per day. This is a lot more than the recommended daily amount of 200 grams. Most of these vegetables are in fact not eaten in the Netherlands but exported.

Livestock farming in the Netherlands produces 2.9 billion kg of meat per year. This is 485 grams of meat per person per day, around four times the recommended daily amount of high-protein foodstuffs.

Most of this—63 percent—is pork, chicken meat accounts for 23 percent and beef for 13 percent. Just over half of pork and chicken meat is exported.

The Dutch fishing industry also accounts for a substantial production. In 2011, 86 million kg of herring, 44 million kg of plaice and 13 million kg of shrimp were landed by the Dutch fishing fleet. This is the equivalent of 5.2 kg of herring, 2.6 kg of plaice and 0.8 kg of shrimp per inhabitant.

Agricultural production per person per day



Agricultural production today: five times production in 1950

Around 1950 bread, milk, butter, cheese and eggs were fixed constituents of cold meals in the Netherlands. Warm meals usually consisted of meat, vegetables and potatoes. Very few people ate rice and pasta.

Dutch agriculture and horticulture were on the brink of drastic reforms. The post-war reconstruction of the Netherlands focused on safeguarding the food supply. Aided by measures such as government subsidies in the 1960s and 1970s, agricultural production rose rapidly. In the period 1950–2011 production rose fivefold, while the number of businesses in agriculture and horticulture fell from 410 thousand to 70 thousand.

Carthorses disappeared from the fields as farms increasingly started to use tractors, and milking by hand became a thing of the past when milking machines, and later milking robots appeared on more and more farms. Glasshouse horticulture evolved into an innovative high-tech sector of global significance. Food production rose, in spite of the fact that 400 thousand hectares of agricultural land was given over to construction, infrastructure and nature.

The variety of crops grown was still quite limited in 1950. Pak-choi cabbage and bell peppers had hardly been heard of. Crop yields were also lower than today. In 1950, 53 million kg of cucumbers, 71 million kg of cauliflowers and 105 million kg of carrots were produced. This

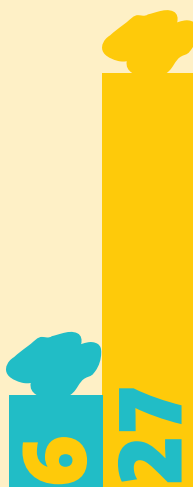
was the per capita equivalent of 5.3 kg of cucumbers, 7.1 kg of cauliflowers and 10.4 kg of carrots. In 1950 one square metre of cucumber cultivation yielded 10 kg of cucumbers. In 2011 the crop was 14 times as large, the result of decades of innovation in Dutch glasshouse horticulture.

Pork production was 240 million kg in 1950, compared with 1,840 million kg in 2011. Per person this was 23.5 kg in 1950 versus 110.5 kg in 2011. Per capita pork production has risen by a factor 4.7 in the space of 61 years. The number of pigs has increased by a factor 6.7 in the same period.

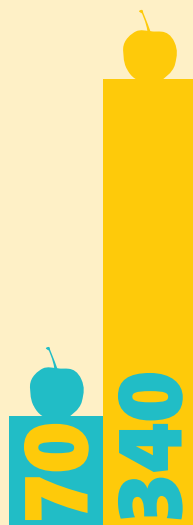
The Dutch fishing fleet landed 110 million kg of herring, 12 million kg of plaice and 3.3 million kg of shrimp; the equivalent of 11 kg of herring, just over 1 kg of plaice and 0.3 kg of shrimp per Dutch inhabitant. In 1950, too, most of the Dutch shrimp catch was exported, mainly to Belgium.

In 1950, an average dairy cow produced 4 thousand litres of milk. This annual yield per cow more than doubled in the period 1950–2011. Total milk production was about 5.8 billion litres in 1950, or 580 litres per inhabitant, while cheese makers produced 130 million kg of cheese, one sixth of what they produce today.

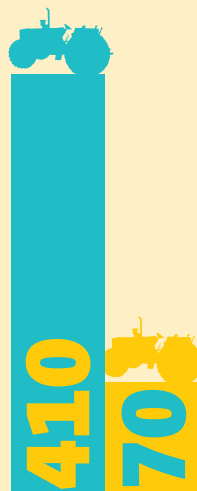
Average area per
agricultural/horticultural enterprise
(ha)



Volume of agricultural production
(1960=100)



Farms and horticultural enterprises
(x 1,000)



Labour force
(1,000 fte)



Agricultural and horticultural land
(1,000 ha)



1950 2011



Food from near and far

The farming and food industry in the Netherlands produces more than the Dutch themselves can eat. A considerable part of production is grown for export. In 2011, the total value of Dutch food exports (excluding livestock feed) was 42 billion euro, the equivalent of 115 million euro per day. In addition, large quantities of foodstuffs are imported from other countries: 28 billion euro worth in 2011.

Food trade surplus of 14 billion euro

Foodstuffs are an important factor in Dutch foreign trade. In 2011, more than 10 percent of all exported and re-exported goods consisted of food. For imports this share was 8 percent. With a trade surplus of 14 billion euro, food contributes substantially to the total surplus of 44 billion euro on the Dutch trade balance. Vegetables, cheese and pork are key products in this respect.

The value of Dutch food exports rose by 17 billion euro between 2000 and 2011, a growth of 68 percent. This is an impressive increase, but the rise in food exports is smaller than that in total goods exports. Imports of food rose by 13 billion euro in the same period. This 87 percent increase was larger than the total imports growth.

Fruit, meat and dairy most exported products

Although the Netherlands produces large quantities of foodstuffs, it is also an important distributor of these products. Fruit and vegetables accounted for nearly 30 percent of the total export value of food in 2011. Meat and dairy products accounted for 18 and 17 percent respectively. The remainder of food exports consists of a wide range of products such as fish, cereals and coffee. On the imports side, too, fruit, vegetables, meat and dairy products play a prominent role. Fruit and vegetables contribute 29 percent to the import value of food products, meat accounts for 15 percent and dairy products for 12 percent.

The Netherlands is a key player in agricultural exports

Export values of nearly all food products are higher than import values. Cereals and cereal products are an exception: for years now, more of these products have been imported than exported.

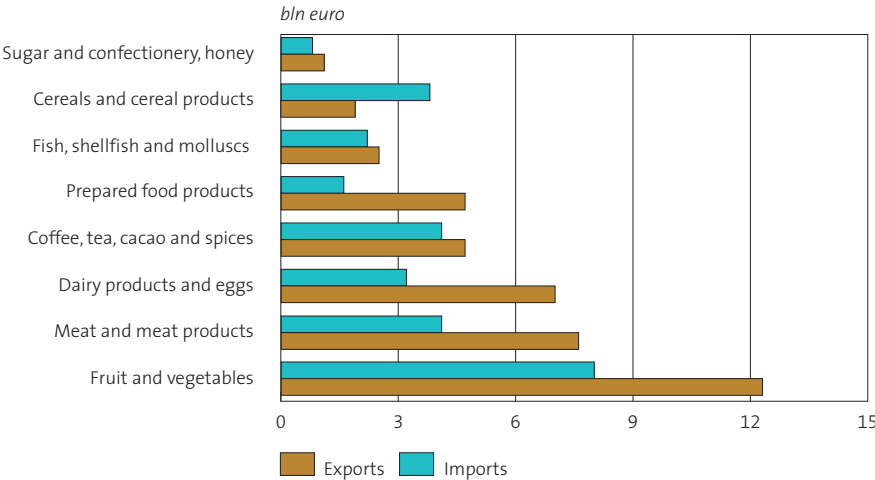
For foodstuffs that are hardly produced in the Netherlands – coffee, tea, cacao, spices – the value of exports is also higher than the value of imports. This is an effect of the Netherlands’ role as a distribution country. In 2011 more than a quarter of food exports consisted of re-exports, i.e. foodstuffs that are imported, undergo minor processing, and then exported again. Most re-exported products are fruit, processed fruit and vegetables, cacao, coffee, tea, dairy products and oleagines. Together these products account for around 70 percent of re-exported foodstuffs.

Germany main food trade partner

Over 60 percent of foodstuffs exported from the Netherlands go to five nearby countries: Germany, the United Kingdom, Belgium, France and Italy. Although this top five has hardly changed between 2000 and 2011, the share they account for in total food exports has diminished in this period.

Germany is by far the most important destination for Dutch food exports. In 2011, nearly 11 billion euro worth of food products were exported to Germany, the equivalent of one quarter of the total value of food exports. At the same time, Germany is the main country

Dutch food imports and exports, 2011



of origin for food imports. In 2011, food products worth 5.4 billion euro were imported from Germany, nearly one fifth of total Dutch food imports.

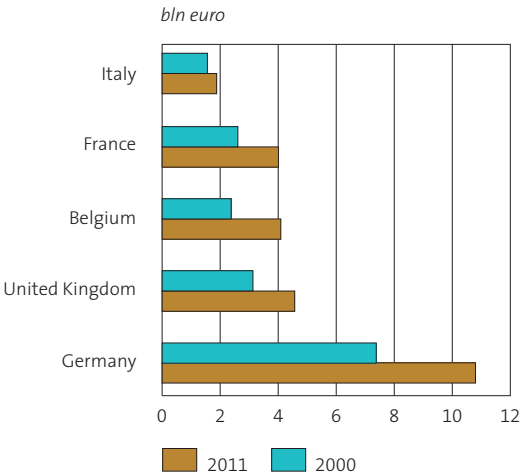
Belgium, France, Brazil and the United Kingdom join Germany in the top five countries supplying food to the Netherlands. Together they account for more than half of total food imports. Spain was also in this top five in 2000, but has been replaced by Brazil. Imports from Brazil consist mainly of meat and fruit. Countries nearer to home supply a much wider range of foodstuffs for Dutch consumers.

More food from farther afield

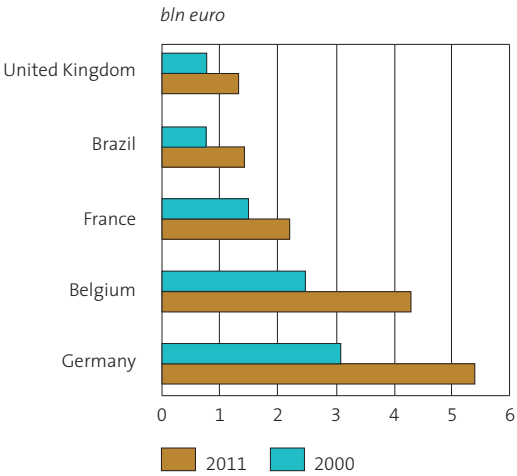
Although most Dutch food imports come from countries within the European Union, the proportion coming from outside the EU is increasing. Between 2000 and 2011 this share grew from 34 to 36 percent. The Netherlands now imports more food from Brazil and Russia in particular. Fish is the main food imported from Russia.

About one fifth of food exports go to countries outside the European Union. This share has hardly changed in recent years.

Top 5 destinations of Dutch food exports



Top 5 origins of Dutch food imports



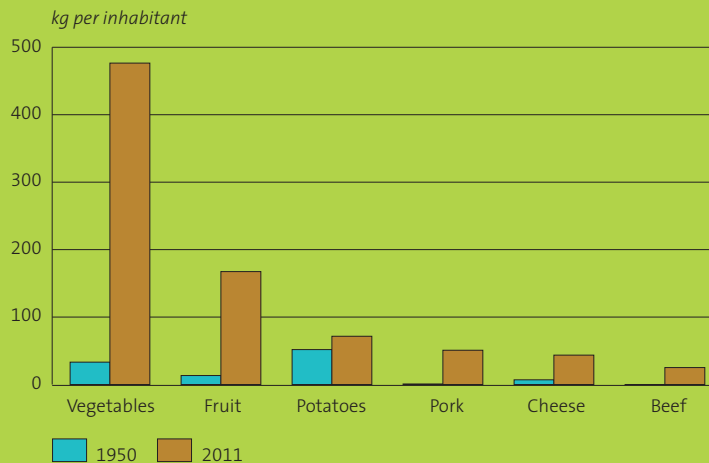
Exporter of cheese, fruit and vegetables

Dutch exports of vegetables rose from 0.3 billion to 7.9 billion kg in the period 1950–2011. In 1950 around 33 kg of vegetables per inhabitant were exported, compared with just over 475 kg per inhabitant in 2011. Exports of fruit, meat and cheese also rose explosively. The Netherlands exported nearly 7 kg of cheese per inhabitant in 1950, for example. Today this is 43 kg. Exports of ware potatoes rose much less spectacularly on the other hand. In 1950, 52 kg of potatoes per inhabitant were exported, compared with 72 kg in 2011. Statistics Netherlands exports statistics for 1950 also reveal that the export value of ‘slaughtered fowls’ was

only just under that of pork and beef combined. Today the value of beef exports alone is higher than that of exported of chicken meat.

The share of foodstuffs in total Dutch goods trade has more than halved from sixty years ago, from 23 to around 10 percent. The share of food in imports was 11 percent in 1950, and has now fallen to 8 percent. This decrease is related to the growing affluence of the Dutch population: in the course of time they spent less and less of their total budget on food, while demand for other goods, such as cars, washing machines and computers, rose.

Exports of some foodstuffs



Cheese exports: past and present





Supermarkets ousting specialist shops

Dutch consumers buy more and more of their food from supermarkets: 77 cents of every euro they spend on groceries ends up in a supermarket till. Bakers, butchers, greengrocers and cheesemongers have increasingly disappeared from Dutch high streets in recent years. The number of supermarkets has also fallen, but those remaining are increasing in size. One new development is the emergence of hypermarkets. And customers can also self-scan their purchases in a growing number of supermarkets.

Supermarkets account for more and more food sales

Data from the retail trade organisation *Hoofdbedrijfschap Detailhandel (HBD)* show that more than three-quarters of Dutch spending on fresh potatoes, fruit and vegetables was spent in supermarkets. In 2002 this was still 69 percent. Twelve percent of money spent on potatoes fruit and vegetables changed hands in greengrocers' shops, and 8 percent at market stalls. Consumers bought the remainder of their potatoes, fruit and vegetables from non-retailers and other outlets, such as farm shops, train stations or department stores. Consumers buy more fresh fruit than fresh vegetables from market vendors and greengrocers.

Shoppers are also more likely to buy meat, fish and eggs from supermarkets. In 2002 they spent 70 cents of every euro paid for meat and meat products in a supermarket, and 24 cents in a butcher's or poulterer's shop. By 2010 this had risen to 75 cents and 18 cents respectively. Chicken, in particular, is increasingly bought from supermarkets.

Organic products account for 2% of food purchases

The share of supermarket-bought fish rose to 77 percent in 2011. Both fishmongers and market fish stalls have lost ground to supermarkets. Compared with vegetables, meat and bread, fish is relatively often bought from market traders. In 2011, 10 percent of consumer spending on fish was paid to market vendors, and 9 percent to high street fishmongers.

For cheese and eggs, the increasing market share of supermarkets was completely at the expense of market traders. Specialist cheese shops have seen sales increase.

Only bakers have been able to reinforce their position with respect to supermarkets in recent years. Their share in total sales of bread and pastries rose from 28 percent in 2006 to 30 percent in 2010, while that of supermarkets fell: from 62 percent to 60 percent.

Increasing preference for organic products

Organic products such as organic milk and organic meat accounted for around 2 percent of total food spending in 2011. This is 17 percent more than in 2010. Spending per capita on organic food rose from 45 euro to 53 euro per year. Consumers bought more organic

products in supermarkets in particular. Supermarkets accounted for nearly half of spending on organic food in 2011. This share has grown substantially in recent years. Organic food shops, health food shops and organic butchers accounted for one third of spending. Another important sales channel for organic products are contract caterers: they provide food for via company canteens, education and care institutions, and airlines.

Fewer specialist shops and supermarkets

The number of specialist food shops has decreased substantially in recent decades. This trend has

Market shares of some food groups by sales channel



Source: HBD.

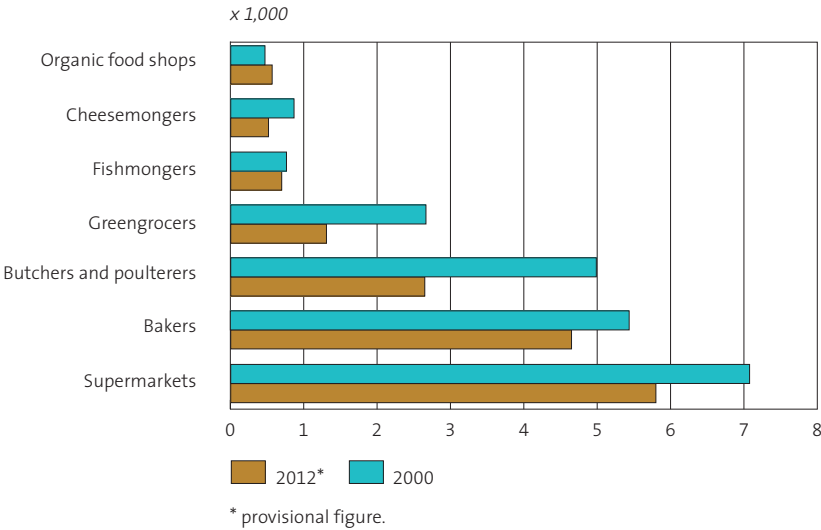
continued in the last decade, too. Many butchers and greengrocers in particular have closed their businesses between 2000 and 2012. The number of butcher's shops has almost halved, to 2.6 thousand, while the number of greengrocers also halved to just over 1.3 thousand. There are still relatively many local baker's shops: just over 4.6 thousand in 2012, although this is nearly 15 percent fewer than in 2000. Only the number of fishmongers remained stable in this period.

The number of supermarkets, too, has decreased substantially in recent years: by nearly one fifth

Number of butchers and greengrocers halved

between 2000 and 2012, from 7.1 thousand to 5.8 thousand. Supermarkets have been increasing in size, however. In 2005 the average shop surface area of a supermarket was 769 square metres, in 2011 it was 877 square metres. The turnover of an average supermarket rose from 8 thousand euro per day in 2000 to nearly 14 thousand euro in 2009. Higher prices accounted for nearly one quarter of this increase.

Supermarkets and specialist food shops



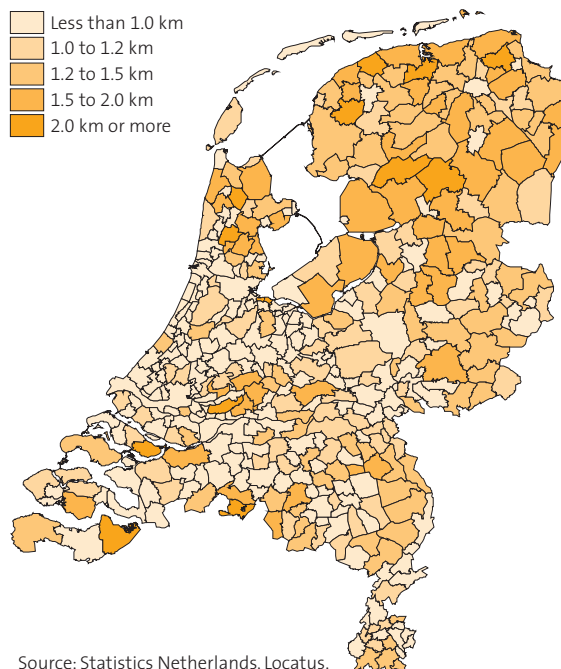
Large supermarket 900 metres away on average

On average, Dutch consumers live some 900 metres away from their nearest large supermarket (minimum 150 square metres). The distance to smaller food shops, such as greengrocers, Indonesian food shops, small supermarkets or butchers is smaller, 800 metres.

There are clear regional differences within these national averages. Residents in the relatively sparsely populated north of the country will usually have to travel a lot further to a large supermarket. And the degree of urbanisation is also significant: for someone living in Niedorp in the province North Holland the average distance to the nearest supermarket is 2.6 kilometres, while an inhabitant of Amsterdam or Haarlem has a journey of only 500 metres.

Although the national average distance to the nearest smaller food shops is only 100 metres less than that to a large supermarket, the number of local food shops is significantly larger. An average inhabitant of the Netherlands can choose from ten small food shops and just under two large supermarkets within a radius of one kilometre.

Distance to nearest large supermarket, 2011



Diversification

Today's hypermarkets with their vast range of products are a world away from the grocer's shops of the past. Grocers started out selling 'dry' goods, such as coffee, tea and herbs. Shoppers went to the greengrocer's to buy potatoes and to the dairy shop for milk.

Statistics Netherlands now counts the number of retail outlets on the basis of registers, such as the general register of companies and the trade register. It used to count the number of shops by hand.

In January 1941 a manual count of the number of grocer's shops was conducted in The Hague. This turned out to be more difficult than expected, as shopkeepers were already diversifying: they were expanding their merchandise with goods not originally found in their

stockrooms. The enumerators therefore visited a large number of shops to ascertain the category to which they belonged. The difference between grocers and dairy shops in particular was difficult to establish. The statistical office's report noted that the criterion used was: if the shop sold milk, it was categorised as a dairy shop, even if it sold a considerable range of grocery items. These shops were in fact the precursors of the supermarket.

According to the enumeration there were 816 grocers in The Hague; the equivalent of one grocer's shop per 638 inhabitants, which did not include grocer's shops selling milk. Today, The Hague has one supermarket per 1,850 inhabitants.

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The price of food

The price we pay for our food at the supermarket checkout or in butcher's, baker's or greengrocer's shops is affected by a variety of factors. In addition to the price of the raw ingredients, the costs of processing, packaging, intermediate trade, transport and taxes all play a part in this respect.

Commodity prices are established on the world market and show strong fluctuations. Obviously, demand affects these prices, but so does supply, which can suffer from the effects of external circumstances such as weather and plant and animal disease. In 2001, for example, meat prices in the Netherlands rose significantly following the outbreak of foot-and-mouth disease. And the dry July and wet August of 2006 pushed up the price of potatoes quite drastically.

Food prices fluctuate more than overall inflation

Prices of food and non-alcoholic drinks account for more than one tenth of total inflation in the Netherlands. The product groups 'bread and cereals' and 'meat and meat products' each account for one fifth of changes in food prices. About 14 percent can be attributed to dairy products, while vegetables and potatoes count for 11 percent. Other product groups, such as fruit, oils and fats, fish and shellfish, contribute less.

Prices of food usually fluctuate more than average prices. In the last two years, however, price changes have been close to total inflation of around 2 percent. Sharp rises in food prices, up to over 8 percent, were recorded in 2001 and 2008. In 2001 it was not only meat prices that went up, but prices of other main foodstuffs too, while in 2008 prices of dairy products in particular rose.

In 2005 and 2010, on the other hand, prices fell. One important reason for this was the price wars between the various Dutch supermarket chains in these years. In the last one and a half years, too, the battle for supermarket customers, who are pulling their purse strings tighter in times of crisis, has had a downward effect on prices. Although the cost price of food has increased strongly since 2010, price rises for consumers have remained limited.

Consumer price of dairy follows cost price with delay

The extent to which cost prices are passed on to consumers differs between product groups. Increases in cereal prices, for example, are reflected fairly quickly in shop prices of bread and other cereal products. But consumer prices of milk, cheese and eggs follow cost prices less closely and with a delay.

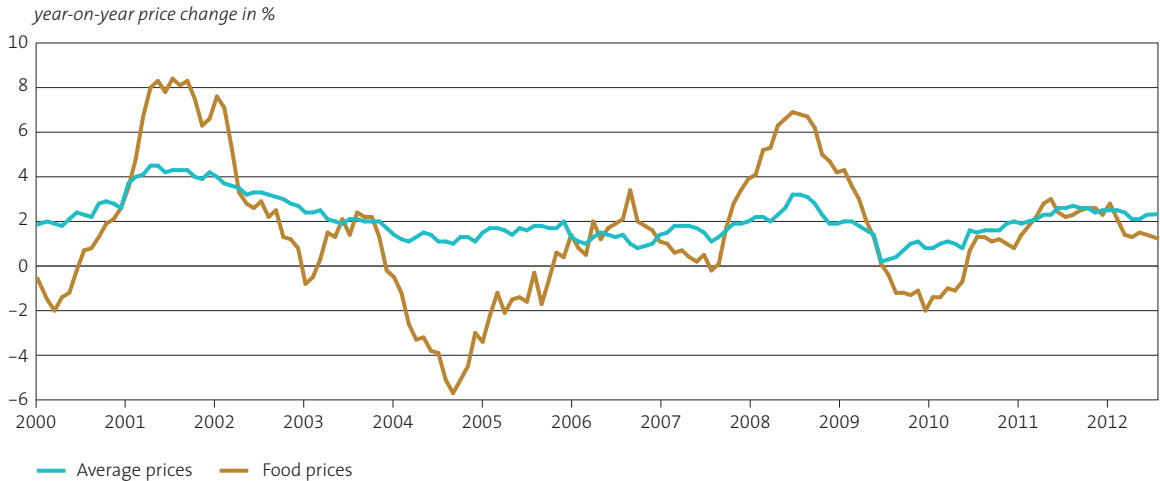
Cost prices of these items rose strongly in 2007 and 2008, pushed up by a greater demand as a result of the growing international economy. The melamine milk scandal in China also increased the demand for reliable milk. The subsequent economic crisis had downward effect on cost prices. Since 2010, cost prices of dairy products have risen sharply again, among other things as a result of a rising demand from Asia and northern Africa. Consumer prices fell somewhat until 2010, however, and only increased slightly thereafter. Supermarkets cannot respond quickly to higher cost prices of dairy products, as they are often

bound by long-term supplier contracts. Moreover, competitive considerations also play a part in food pricing: supermarkets keep prices low so as not to lose customers. Margins of intermediate trade and transport costs are a further reason for the smaller fluctuations in consumer prices compared with cost prices.

Daily groceries sometimes cost more, sometimes less

The average shop prices of a number of daily groceries show how prices can fluctuate from year to year. For an average loaf of bread for example, in the last ten years

Food prices



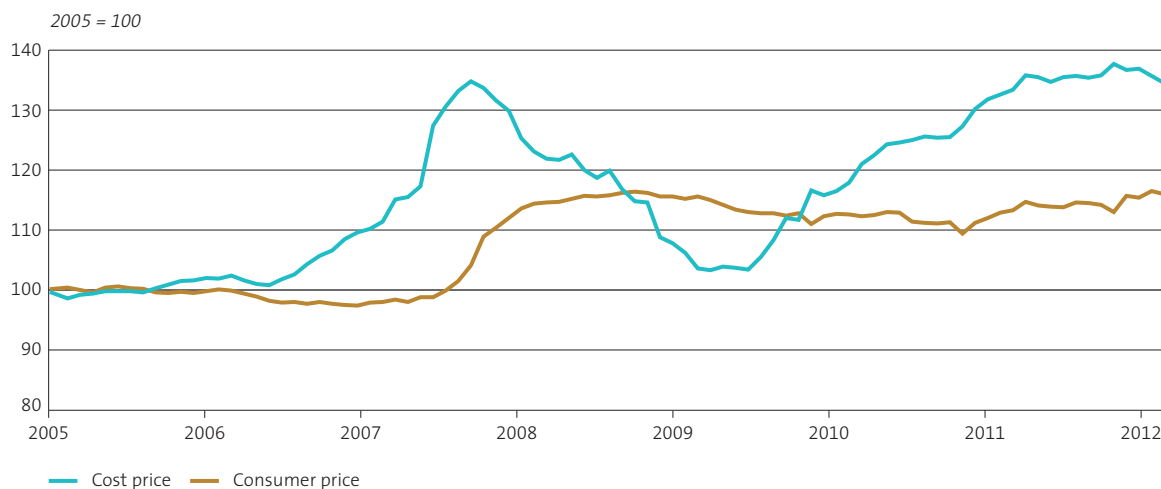
consumers have had to pay between 1.48 euro (in 2008) and 1.17 euro (in 2010). In 2011 a loaf cost 1.29, just as in 2000. The price of a litre of milk ranged from 51 cents (in 2000) to 71 cents (in 2009), and in 2011 was slightly lower again at an average 67 cents. Cheese prices have mostly risen, with the exception of a few small reductions. In 2011 shoppers paid 9.30 euro for one kg of cheese, nearly 2 euro more than ten years previously. Coffee reacts strongly to world market prices, and shows large price changes. In 2002, 500 grams of coffee cost 3.08 euro. The price subsequently dropped to 2.47 in 2004, to rise again to 4.08 euro in 2011.

Coffee prices liable to strong fluctuations

Packed lunch costs 20 cents more

A simple packed lunch consisting of a currant bun, two brown bread sandwiches with margarine, cheese and luncheon meat, quarter of a litre of milk, and a banana cost an average 1.27 euro in 2011. This is 20 cents more than in 2000, but 2 cents less than in 2009.

Cost prices and consumer prices of milk, cheese and eggs



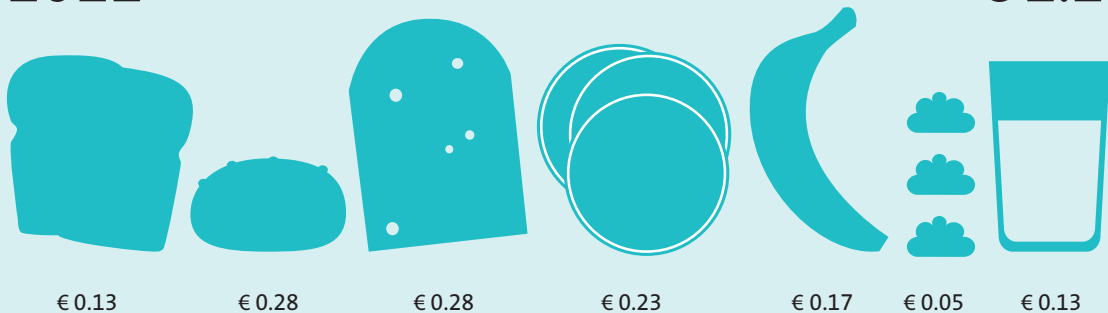
Price of a packed lunch

2 slices of bread, 1 currant bun, 1 portion of cheese, 1 portion of luncheon meat, 1 banana,
3 portions of margarine and 200 ml of milk

2000 = € 1.07



2011 = € 1.27



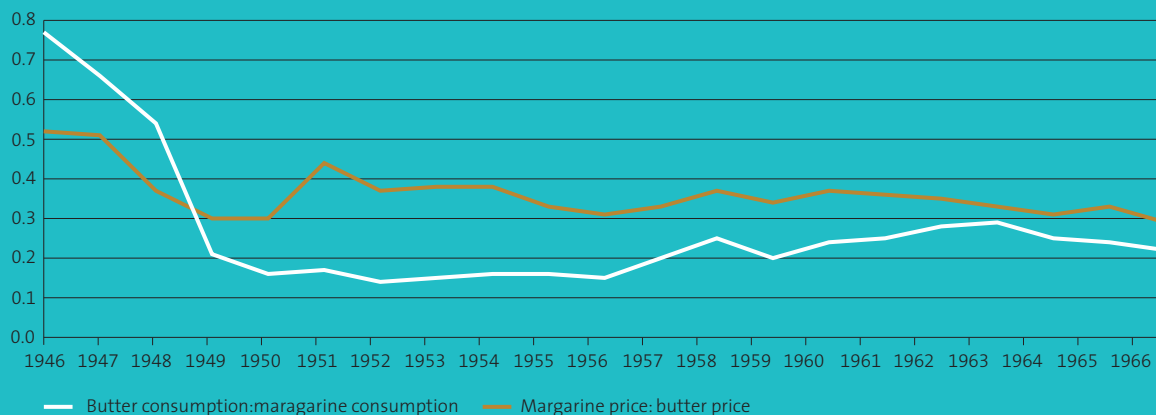
Poor man's butter

After the Second World War, butter was replaced more and more by margarine in the Dutch diet. The main reason for this was that butter had become much more expensive than margarine. In 1950, 500 grams of margarine cost an average 71 cents (32 eurocents) and butter 2.38 guilders (1.08 euro). Margarine thus cost less than one third of butter. In that year an average person in the Netherlands ate 2.7 kg of butter and 17 kg of margarine, a ratio of 0.16 to 1. When butter was 11 cents cheaper one year later and margarine cost 28 cents more, butter consumption rose again slightly. The same happened in 1958, when the price of butter plummeted as a result of cheaper cold-stored butter coming on the market.

In 1950 the strong decrease in butter consumption led to concerns about possible vitamin A deficiencies in labourers' families who could not afford real butter. When asked, Minister Mansholt of Agriculture, Fishery and Food Supply said that it had been brought to his attention that 'the price of butter, compared with that of other foodstuffs, is such that large groups of the population have replaced this product in their diet with alternative fats'. In 1961 under the Margarine Decree, the addition of vitamin A and D to margarine was made mandatory.

In other countries, too, consumption of margarine rose in the 1950s and 1960s, but nowhere as strongly as in the Netherlands. An average Belgian, for example, still ate 10.7 kg of butter and 7.4 kg of margarine in 1950.

Consumption and price ratios of butter and margarine





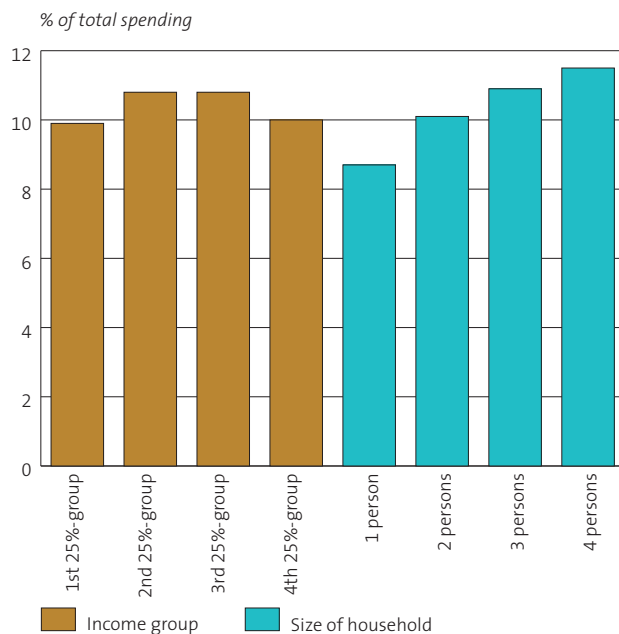
Changing diet

The Dutch diet has changed significantly in recent decades. Increased affluence has played a large part in this: people are now in a position to buy more and better quality food. At the same time, the supply of food has increased substantially as a result of increased agricultural production and developments in the food industry.

Relatively less of household budget spent on food

Until far into the nineteenth century, Dutch labourers needed the wages of a working wife or child to be able to provide the daily necessities for their families. In the years 1890–1910, the share of household income that city labourers spent on provisions fell to below 50 percent as a result of rising wages and the abolition

Household spending on food by income group and household size, 2010



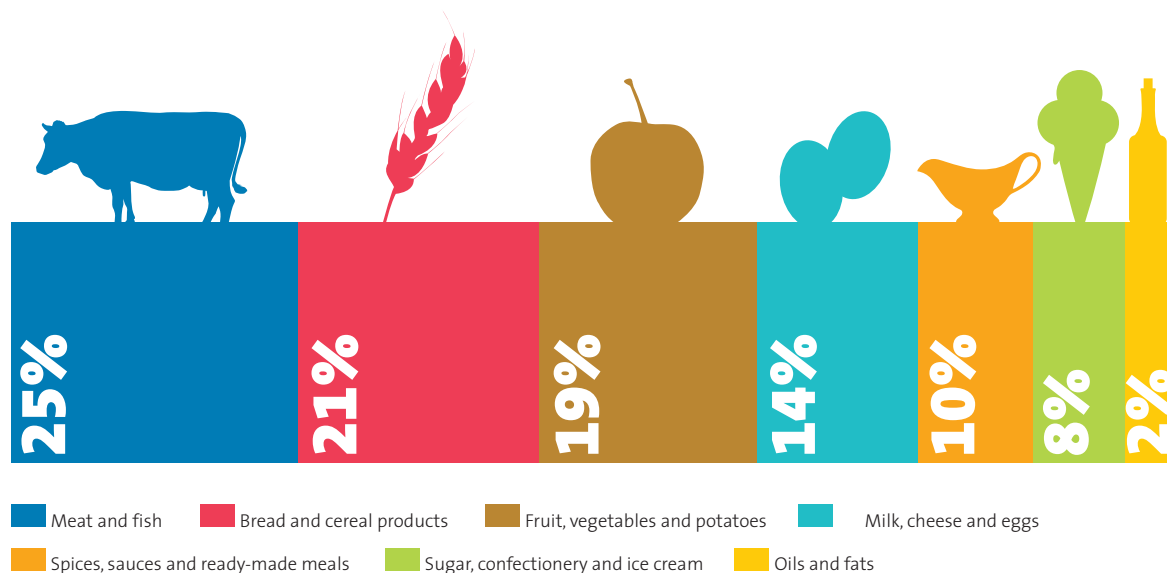
of excise duties on foodstuffs. After this period, the share fell further. In 1960 an average household spent just over 30 percent of its budget on food, by 1980 this had dropped to 16 percent and in 2011 it was 11 percent (excluding spending on alcoholic drinks and on dining out).

Although some households have a lot more to spend than others, in all income groups the share of their money they spend on food is about the same. The main

Food share in household budget around the same for all income groups

reason for this is that households in the higher income groups are usually larger than those in the lowest income group.

Household spending on food, 2011



Largest share of food spending on meat and fish

Although the Dutch are spending a smaller and smaller portion of their budget on food, they are eating more, and eating more varied. In terms of the distribution of the budget across food categories, the most obvious pattern when we compare past to present is the decreasing share of bread and potatoes, and the increasing share of animal products such as meat, fish and dairy products. Today, the largest share

of the food budget is spent on meat and fish: around 26 cents of every Dutch euro spent on food. Bread and cereal products account for 21 percent, followed by fruit, vegetables and potatoes (19 percent) and dairy products (14 percent). About 10 percent of the food budget is spent on spices, condiments, sauces and ready meals.

Production by the food industry



Food industry: 139 thousand jobs

In 2011, production by the Dutch food industry (including drinks and tobacco products) amounted to more than 14 billion euro. This is 20 percent of manufacturing output (value added) and 2.6 percent of the gross domestic product (GDP). If production by the hotels and restaurants sector is included – 9.5 billion euro in 2011 – the share of the food cluster in GDP is even larger, namely 4.4 percent.

More than 4.6 thousand companies were active in the food industry in 2012, providing 139 thousand jobs (2011). This is the equivalent of 9 percent of

companies and 16 percent of employment in the manufacturing industry. And accounting for 20 percent of manufacturing value added, the food sector also has a relatively high productivity and labour productivity. Small companies are predominant in this sector: 3.4 thousand (72 percent) employ fewer than 10 persons (including the owner), 1.3 thousand (29 percent) are one-man businesses. Over half of the companies are bakeries, many operating on a small scale. Abattoirs and meat-packing companies account for 12 percent, while dairy manufacturers account for 6 percent.

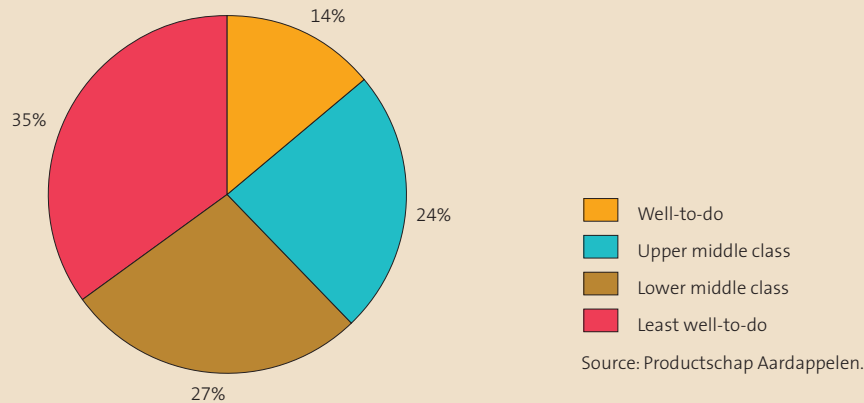
Pioneers for an innovative product: chips

Patates frites – French fries or chips in English – first appeared in the Netherlands in the 1920s, by way of Belgian markets and fairs. The first Dutch chip shop was established in Eindhoven in the 1930s, and was an immediate success.

The bag of chips turned out to be an economic lifesaver in the Netherlands. In the 1950s, the production of potatoes was much higher than domestic consumption, and farmers had enormous surpluses. To safeguard

their income, in 1962 a number of potato growers in the east of the country, calling themselves *Aardappel Verwerkende Industrie Keppel en Omstreken* (Aviko), united to start the industrial processing of potatoes to sliced, pre-fried, pre-packaged and deep freeze chips. Aviko supplied its chips in bulk and in smaller volumes to hotels, restaurants, cafeterias and snack bars. Later, when more households owned a fridge, they supplied them to supermarkets..

Eating chips outside the home, by wealth class, 1965



Who were the out-of-home fast-food pioneers? A survey by the potato marketing board in 1965 showed that the largest groups of chip-shop customers lived in the south of the country and belonged to the lowest income groups. Eating chips thus correlated with location and social class. In large cities the percentage of households eating at a snack bar was 21, in the southern provinces North Brabant, Limburg and Zeeland this was 46. Large families also ate more

chips and more often than smaller families. Small households (1 to 2 persons) ate 5 percent of all chips servings outside the home, the largest families (more than 5 persons) accounted for 63 percent. Snack bars introduced a drastic change in Dutch eating habits, although compared with the rest of Europe, the Dutch have never really been a great people for eating out.



Weight gain increases with age

With the wide range of foodstuffs available today, it is possible to eat a varied and healthy diet in the Netherlands. Although malnutrition and deficiencies are now mostly things of the past, many people could eat a lot more healthily if they kept to the official guidelines for a healthy diet. This would mean eating more fruit, vegetables and fish, and less fatty acids. Hardly anybody in the Netherlands eats the recommended 200 grams of vegetables per day and only 2 percent of young adults (19–29 years) eat 150 grams. Older age groups do slightly better, with the best scores for women over 50, of whom 17 percent comply with the guideline. Older people also eat the most fish.

Taller, but mainly heavier

As a result of healthy food and good health care, Dutch people have grown increasingly taller. However, by eating more than their bodies need, many people have also become overweight. Height and weight have grown at disproportionate rates: the height of an average Dutch person has increased by much less than the weight. Between 1991 and 2011 an average adult man (20 years and older) has grown 2.1 cm taller and 5.6 kg heavier. Women were 0.6 cm taller and 3.7 kg heavier in 2011.

An average adult Dutchman now weighs around 84 kg and is 180.9 cm tall: with a BMI of 25.7 he is therefore moderately overweight according to the commonly used definition. The average Dutch woman of 70 kg and 167.5 cm has a BMI of 24.9, just below the threshold of 25, which marks the difference between normal weight and overweight.

BMI

The Body Mass Index is calculated by dividing weight in kg by the square of height in metres. People with a BMI of 25 to 30 are moderately overweight, those with a BMI of 30 or higher are obese. The criteria differ for children.

More and more people overweight

The number of overweight people has increased substantially in the course of the years. In 2011, 54 percent of adult men and 43 percent of women were overweight. These are considerably higher proportions than twenty years ago, when 39 percent of men and 31 percent of women weighed too much. Today 6.0 million adults in the Netherlands are overweight, of whom 1.4 million are obese. An obese person is someone who is 1.81 metres tall and weighs 98.3 kg or more, or someone who is 1.68 metres tall and weighs

at least 84.7 kg. In an environment with an increasingly abundant supply of food and drink it is apparently becoming more and more difficult to keep the balance between eating and exercise.

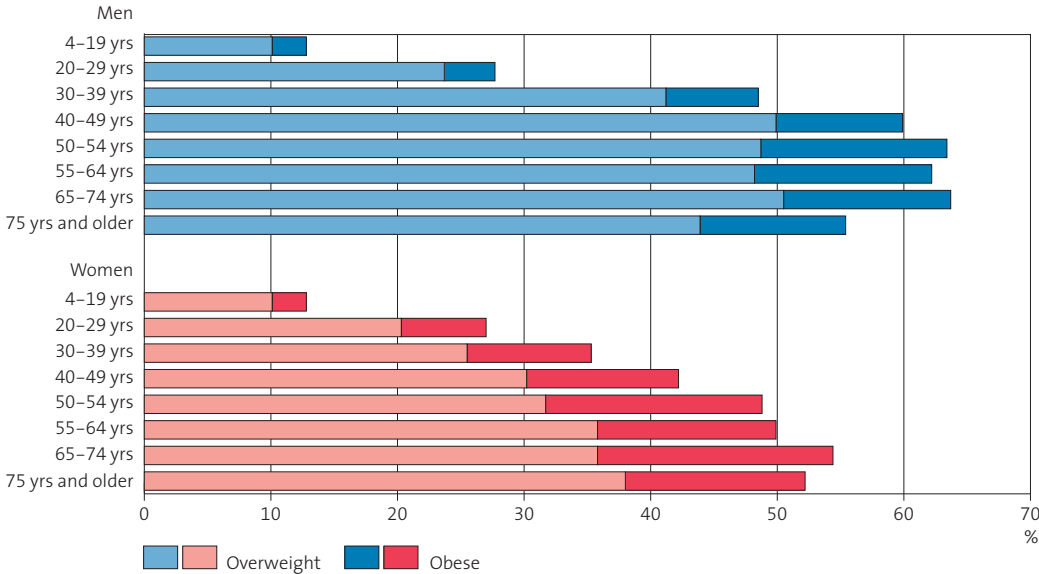
The older, the heavier

The process of putting on weight sometimes begins at an early age. In 2011, 13 percent of 4–19 year-olds weighed more than they should. This means that 400 thousand children in the Netherlands are overweight, of whom 85 thousand are obese.

**Average Dutch man
overweight, average Dutch
woman not quite**

For adults, being overweight increases with age. Sixty percent of men and 42 percent of women in their forties, for example, are overweight. At older ages the proportion of overweight men rises to 64 percent of 65–74 year-olds. Among women in this age group

Overweight and obese men and women, 2011



54 percent are overweight or obese. For over-75s the shares decrease again slightly for both sexes. Relatively fewer women than men are overweight, but more women are obese, especially at higher ages: 19 percent of women aged 65–74, for example, are obese, compared with 13 percent of their male peers.

More people with diabetes

A healthy diet and a healthy weight contribute to good health. One disease closely linked to obesity is diabetes. In 2011, 4.7 percent of the Dutch population

had diabetes, nearly twice as many as the 2.8 percent in 2001. The rise is not only related to the growing proportion of overweight people, but also to the fact that people are living to older and older ages. The risk of diabetes rises with age and weight. In 2011, 15.5 percent of 65–74 year-olds and 16.1 percent of over-75s had diabetes. Ten years previously this was still only 10.6 and 12.7 percent respectively.

Number of overweight adults (20 years and older) per 100 persons



Less potatoes and vegetables and more meat and cheese

According to statistics on per capita consumption, an average inhabitant of the Netherlands in 1950 ate more than 350 grams of potatoes per day. Today this is only about 230 grams. Daily cheese and meat consumption was very modest in the 1950s compared with the beginning of the 21st century. In the space of just over half a century, an average Dutchman has increased his cheese consumption by three and a half times, and his meat consumption by nearly two and a half times. The daily consumption of vegetables has changed much less drastically, and at 181 grams was nearly 20 grams higher in 1950 than today. As these consumption figures include an unknown amount of waste, they do

not show 'net' vegetable consumption, which – on the basis of these figures – would come quite close to the recommended consumption.

One favourable development in fat consumption can be seen in the case of milk, where full-fat milk has almost been ousted by alternatives containing less fat. On average everyone in the Netherlands drank one glass (200 ml) of full-fat milk and one tenth of a glass of semi-skimmed milk per day in 1970. Over thirty years later the average has become one small glass of semi-skimmed milk, and the consumption of buttermilk exceeds that of full-fat milk.

Per capita consumption of potatoes, vegetables, meat and cheese (grams per day)



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This publication is wholeheartedly supported by the Netherlands Nutrition Centre.



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2492 JP The Hague

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Statistics Netherlands
Delta3

Printed by

Tuijtel, Hardinxveld-Giessendam

Cover

Delta3, The Hague

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Email: verkoop@cbs.nl
Fax: +31 45 570 62 68

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www.cbs.nl

Price: € 3.00
ISBN: 978-90-357-2072-5
Print run: 900 copies

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