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SUSTAINABLE DEVELOPMENT IN GERMANY

Indicator Report 2012

Federal Statistical Office of Germany

Nachhaltigkeits-
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für Deutschland

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The National Strategy for Sustainable Development is celebrating its tenth anniversary this year. The Federal Statistical Office presents its fourth review on the development of the sustainability indicators in the Indicator Report 2012.

"Sustainability" has become increasingly established as a central principle in politics and society. Successes and failures in the implementation of the political strategy are measured using selected indicators, most of which are provided with quantitative targets. Tasks are distributed between politicians and statisticians so that the Federal Government determines the content of the strategy, the indicators and the target values, while the Federal Statistical Office reports independently on the indicators by way of data and statistical analyses, calculates target achievement levels, and advises the Federal Government on matters of methodology. The Federal Statistical Office operates on the principle of neutral, transparent and independent reporting and insists on upholding this principle when working together with the Federal Government. Most of the data on the indicators is derived from official statistics, especially from national and environmental-economic accounts.

Sustainability policy requires a long-term approach. It should not be influenced by short-term day-to-day politics. Continuity is a priority in every respect. However, this does not rule out any possible further development of the indicators. The number of individual indicators rose to 38 in the Indicator Report 2012. Three new indicators were added on the subjects of national debt and conservation of resources, and three existing indicators in the areas of renewable energies, education and crime were redefined. The Federal Government has also changed its targets for two indicators (Innovation, 18–24 year olds without school leaving certificates).

As a means of providing at-a-glance information on the status of the sustainability indicators, every indicator is assigned one of four possible "weather symbols". This symbol is neither a political appraisal nor – if the target year has not yet been reached – a forecast. It is merely the result of a simple forward projection to the target year on the basis of development in the past. Although the symbols also show changes in status over the course of time, only limited comparison with the results of the previous Indicator Report 2010 is possible. This is due to changes in definitions and targets. It should also be noted that the reporting periods for the various indicators differ and so the indicators may be influenced by different economic phases. For this reason, the symbols are not intended as a substitute for a detailed study of the text with its background information and analyses.

Roderich Egeler

President of the Federal Statistical Office

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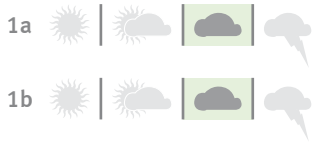
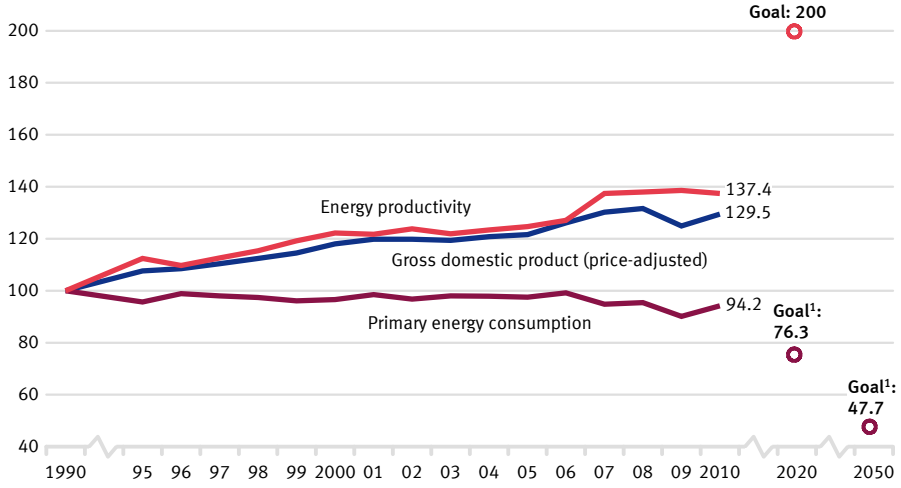
Using resources economically and efficiently



Energy productivity and economic growth
1990 = 100



1 These goals correspond to a reduction of primary energy consumption from 2008 levels of 20% (76.3) in 2020 and 50% (47.7) in 2050 (Energy Concept).

Source: Federal Statistical Office, Working Group on Energy Balances

1a Energy productivity

1b Primary energy consumption

The use of energy occupies a key position in the economic process because almost every production activity is either directly or indirectly associated with the consumption of energy. Private households use energy particularly for heating their homes and providing hot water, using electrical appliances as well as to run motor vehicles. The consumption of energy has a number of environmental effects, such as a detrimental impact on landscapes, ecological systems, the soil, water bodies and ground water due to the depletion of natural energy resources, emissions of harmful substances and greenhouse gas emissions. Last but not least, the consumption of non-renewable resources is of great importance with regard to safeguarding the livelihood of future generations.

The aim of the Sustainability Strategy is to double energy productivity (price-adjusted GDP per unit of primary energy consumption) by 2020 compared to that of 1990. A new goal added to the Sustainability Strategy is to lower the primary energy consumption seen in 2008 by 20 % between

2008 and 2020 (corresponds to the 76.3 % figure in the chart, indexed to 1990=100) and by 50 % by 2050 (corresponding to 47.7 %, 1990=100).

Energy productivity increased by 37.4 % in Germany between 1990 and 2010. While this productivity increase reflects a more efficient use of energy, in absolute terms primary energy consumption has fallen by only a modest 5.8 %. Most of this increase in efficiency was sapped by the expanding economy, which grew by 29.5 % during this period. A continuation of the previous average pace of development would not be sufficient to achieve the goals set for 2020 for either energy productivity or primary energy consumption.

In 2010 energy productivity rose by 0.9 % compared to the previous year. Energy consumption, on the other hand, climbed 4.6 %, roughly paralleling GDP growth. This was primarily due to the very cold weather experienced in 2010. A record of the temperatures during the heating period shows that it was around 17 % colder in Germany in 2010 than it was in 2009. When adjusted for temperatures, consumption would have risen much more modestly, namely by 1.6 %.

In private households, energy consumption (excluding motor fuels) rose by 8.4 % between 1990 and 2010. Between 2000 and 2010 it remained virtually unchanged. Inducing this rise in consumption was the increased demand for energy services. With regard to indoor heating, the decisive factor is the increase in living area. On the other hand, savings by private households and better insulation in buildings has resulted in a sharp decrease in heating fuel consumption. With regard to electricity, the greater number of electrical devices in households has led to a rise in consumption. Starting in 2007, consumption here fell slightly for the first time, probably due to savings by consumers following the strong jump in electricity prices at this time.

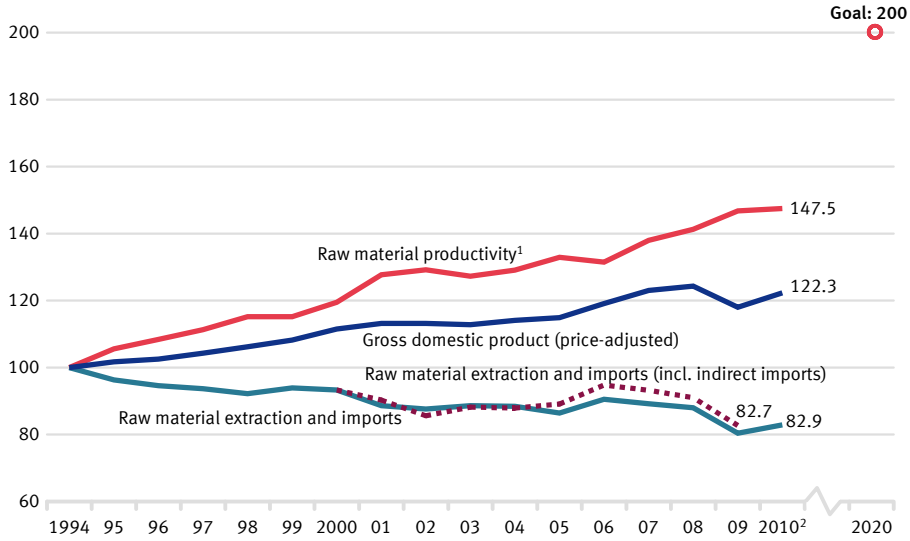
Energy consumption in the industrial sector rose by 5.0 % between 2000 and 2010. The economic situation in 2010 brought about a very sharp 10.2 % rise in consumption. The year before was marked by the financial crisis and consumption fell by 8.8 %. The increase in energy efficiency was not enough to compensate for the increase in consumption due to the growing economy. Consumption of energy in the transport sector rose by a total of 7.5 % between 1990 and 2010. On the other hand, consumption declined by 7.1 % between 2000 and 2010. A downward trend in the energy consumed by road vehicles has been observed (–11.5 % from 2000 to 2009; see also Indicators 11a and 11b), while the air traffic sector has shown a large increase (+23.3 % between 2000 and 2009).

The domestic energy industry is characterised by a high dependency on energy imports. The percentage of net imports (imports minus exports minus bunkering) in primary energy consumption rose significantly between 1990 and 2010 from 56.8 % to 70.7 %.

Resource conservation

Using resources economically and efficiently

Raw material productivity and economic growth
1994 = 100



1 Abiotic. 2 Preliminary results.

1c Raw material productivity

The use of raw materials is indispensable to economic development. However it also has environmental implications. Moreover, the non-renewable natural resources consumed today will no longer be available to future generations. For many companies, raw materials represent important input factors and hence cost factors. The economical and efficient use of raw materials therefore lies in the interest of all social groups. The Federal Government is pursuing the target of doubling raw material productivity by 2020 from the level recorded in the base year of 1994.

Raw material productivity expresses how much gross domestic product (in euros, adjusted for price) is obtained per tonne of abiotic primary material used. Abiotic primary materials include the raw materials taken from domestic natural sources – excluding agricultural and forestry products – as well as all imported abiotic materials (raw materials, semi-finished and finished products).

Raw material productivity increased by 47.5 % between 1994 and 2010. While

material usage decreased (–17.1 %), the gross domestic product went up by 22.3 %. After seeing a relatively sharp increase in productivity between 2008 and 2009 (+5.4 %), this indicator rose only slightly in 2010 (+0.7 %). Although on the whole this indicator moved in the right direction, its rate of increase over the past five years would not be enough to achieve the goal set. If this pace is maintained, the indicator would in 2020 have covered around 82 % of the distance needed to meet the goal set for it, enough to give it level 2 status ('partly cloudy').

The rise in raw material productivity between 1994 and 2010 can be traced primarily to a drop of 34.4 % (corresponding to 274 million tonnes) in the amount of raw materials used in construction. The amount of fossil-based energy sources used has decreased only slightly (–2.8 %) since 1994. In contrast, the use of ores and ore products increased significantly during this period (by 45 % or 39 million tonnes). The described increase in productivity was a result of an overall decrease in material usage at a time of rising gross domestic product.

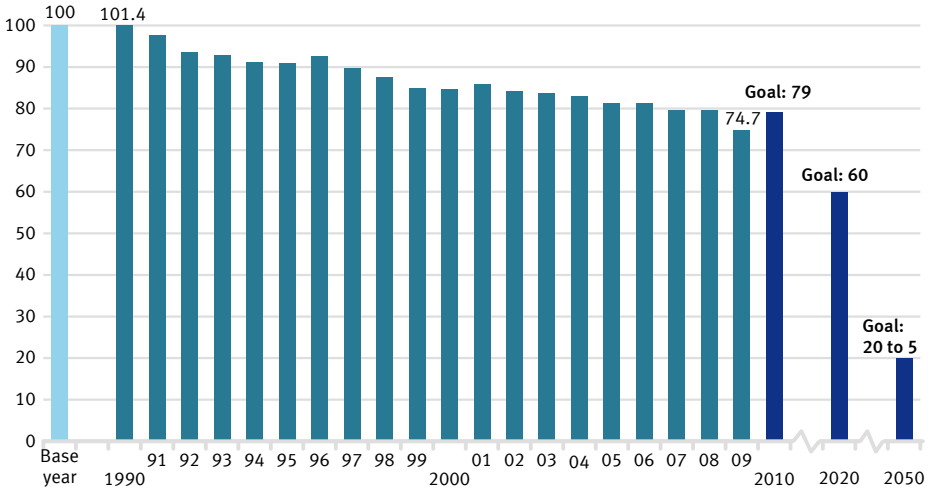
One important factor in interpreting the trend in the resource indicator is that the demand for materials is increasingly being covered by imports, the weight of which is used in the indicator formula (so-called direct imports). While the extraction of raw materials in Germany decreased by 349 million tonnes (–32 %) between 1994 and 2010, imports of raw materials, of semi-finished, and of finished goods increased by 93 million tonnes (+24 %). This means that the share of imported goods in all primary materials used increased from 26 % in 1994 to 39 % in 2010. In terms of quantity, the most important factors in this shift were the increased imports of metallic semi-finished and finished products (+96 %) and of fossil-based energy sources.

This development warranted supplementing the raw material indicator with information on 'indirect imports' to complement the data on raw material extraction in Germany and on direct imports. Together, direct and indirect imports comprise all raw materials used abroad to manufacture goods imported into Germany (e.g. metal ore for manufacturing machines, crude oil for making synthetic fibre, energy sources for producing steel). In 2009, for example, 538 million tonnes of goods were imported directly, the manufacture of which required around 1,600 million tonnes of raw materials in the producing countries. Between 2000 and 2009, the raw material input as defined above (broken line) also declined (–11.3 %), though at a slower pace than the raw material input that only includes direct imports (–13.8 %). The overall result is an improvement in raw material productivity, albeit less than if indirect imports were not taken into account.

Climate protection

Reducing greenhouse gases

Greenhouse gas emissions (six Kyoto gases) in CO_2 equivalents
Base year = 100



Source: Federal Environment Agency

2 Greenhouse gas emissions

Climate change is an enormous challenge for mankind. Germany has thus committed itself to an average reduction of 21 % in its emissions of the six greenhouse gases and greenhouse gas groups referred to under the Kyoto Protocol between 2008 and 2012 compared with 1990. Beyond this, the Federal Government has set itself the goal of cutting emissions by 40 % from 1990 levels by the year 2020. Looking to the long term, the Federal Government wants to see greenhouse gases slashed by 80 to 95 % compared to 1990 by 2050 as part of the Energy Concept.

According to the Kyoto Protocol, greenhouse gases include the following substances: carbon dioxide (CO_2), methane (CH_4), nitrous oxide = laughing gas (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6). In terms of quantity, these gases are emitted chiefly during the burning of fossil energy sources, such as coal, oil and natural gas. But they are also produced during other, non-energy related activities, for example in the production of iron and steel, during the application of solvents, in the

use of mineral fertilisers, in the field of animal husbandry and at waste disposal sites.

Since 1990 Germany has substantially reduced its greenhouse gas emissions. Compared to the base year set out in the Kyoto Protocol (1990/1995; not including emissions from land use changes and forestry), aggregate CO_2 equivalent emissions had fallen by approximately 312 million tonnes, or 25.3 %, by 2009. This means that Germany had already attained its emissions reduction goal in the first year of the commitment period. By far the greatest share (85.7 %) of total greenhouse gas emissions in 2009 came in the form of carbon dioxide, with methane contributing 5.3 %, laughing gas 7.3 % and the fluorocarbons 1.3 %. Between 1990 and 2009, carbon dioxide emissions declined by 252.9 million tonnes of CO_2 equivalents, or 24.3 %. A large share of this reduction (111 million tonnes) was primarily due to the industrial shutdowns that took place in the first five years after 1990. According to a near real-time forecast by the German Federal Environment Agency (UBA), greenhouse gas emissions rose again in 2010 following a disproportionate drop in 2009 as a consequence of the economic crisis.

The Overall Environmental Economic Accounting report revealed that the majority of greenhouse gases produced in Germany in 2009 stemmed from manufacturing industries (58.0 %), followed by private household consumption (20.6 %), the service sector (13.2 %) and agriculture (8.2 %). Strictly speaking, private households actually account for more emissions than is indicated here, since the electricity they use makes up part of the high emissions included in the production sector for the 'generation and distribution of power and gas'. Between 2000 and 2009, 72 % of the greenhouse gas reduction fell to the production sector and 28 % to private household consumption (not including emissions from the use of biomass). The calculations applied here take account of the emissions produced by German nationals residing abroad but not by foreign nationals residing in Germany.

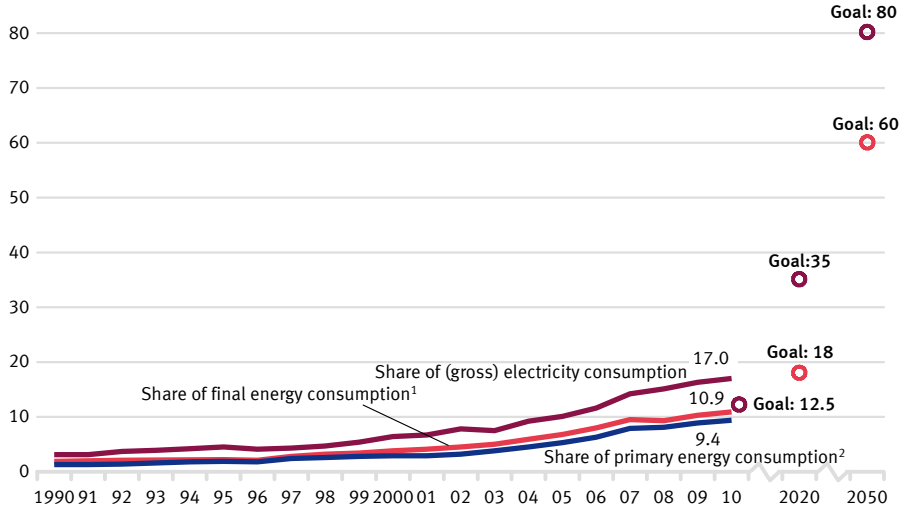
According to data provided by the European Environment Agency, greenhouse gas emissions in the EU 15 between 2009 (3.7 billion tonnes CO_2 equivalents) and the base year fell by 12.7 % (–0.5 billion tonnes CO_2 equivalents). The striking drop of 6.9 % seen between 2008 and 2009 was due primarily to the overall economic situation. Reports by the United Nations Framework Convention on Climate Change (UNFCCC) citing greenhouse gas emissions in 2009 in industrial countries listed Germany behind the United States (6.6 billion tonnes CO_2 equivalents), Russia (2.2 billion tonnes) and Japan (1.2 billion tonnes) as the fourth largest emitter with 0.9 billion tonnes of CO_2 equivalents and thus still near the top of the list of industrialized nations. The indicator is related to many other indicators, for example, to Indicators 1a,b, 3, 4, 5, 8, 11 and 12.

Renewable energy sources

Strengthening a sustainable energy supply

3a 3b

Share of renewable energy sources in total energy consumption
in %



1 Gross final energy consumption. 2 Based on efficiency method.

Source: Working Group on Renewable Energies - Statistics, Working Group on Energy Balances, Centre for Solar Energy and Hydrogen Research Baden-Württemberg, Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, July 2011

3a Share of renewable energy sources in final energy consumption

3b Share of renewable energy sources in electricity consumption

The reserves of important fossil energy sources such as oil and gas are limited, and their use is associated with greenhouse gas emissions. Switching to renewable energies (natural energy sources that constantly regenerate) serves to reduce energy-related carbon dioxide emissions and hence the extent of climate change. It makes the economy less dependent on energy imports, reduces the consumption of resources, improves the security of supply, promotes technical innovation and leads to gains in efficiency.

The goal of the Federal Government's Sustainability Strategy is to promote the development of renewable sources of energy. Renewable energies include hydropower, wind power, solar energy and geothermal energy, but also biomass and the biodegradable portions of domestic refuse.

The development of the use of renewable energy is measured in the Sustainability Strategy by means of the indicators 'Share

of renewable energy in final energy consumption' (3a) and 'Share of renewable energy sources in electricity consumption' (3b). The indicator previously used, 'Share of renewable energy in total primary energy' will continue to be charted for informational purposes. The aim as stated in EU Directive 2009/28/EC is for the share of renewable energy in the total gross final energy consumption in the EU to rise to 20 % by the year 2020. Based on this total, Germany's target is set at 18 %, and this goal has been incorporated in the Sustainability Strategy. By 2050 this share is supposed to rise to 60 %. With respect to electricity generation, the Federal Government's goal was to achieve a 12.5 % share of renewable energy sources by 2010. By 2020 it wants to achieve a share of at least 35 % and by 2050 of at least 80 %.

Between 1990 and 2010 the share of renewable energy in final energy consumption rose from 1.9 % to 10.9 %. If the trend continues at the pace seen in the past five years, the goal for 2020 will be significantly exceeded. The share of renewables in electricity consumption rose from 3.1 % to 17.0 % between 1990 and 2010, clearly surpassing the target set for 2010. This positive development was supported by a series of legislative measures (European Directive 2001/77/EC on the promotion of electricity produced from renewable energy sources in 2004, the revised Renewable Energies Act (EEG) and the Renewable Energies Heat Act (EEWärmeG)). The EEG requires that producers of electricity give precedence to renewable energy sources when buying electricity. Since January 2007 all businesses that market fossil fuels have been and are still obliged to also market a specified minimum quantity of biofuels.

In 2010 the shares of the different renewable energy sources to the total final energy consumption produced from renewable energies varied greatly. 71 % came from bio-energies, 13 % from wind power and 7 % from hydropower. Of the total energy produced from renewable energies in 2010, 38 % was used for electricity generation, 49 % for heat generation and 13 % for biogenic fuels.

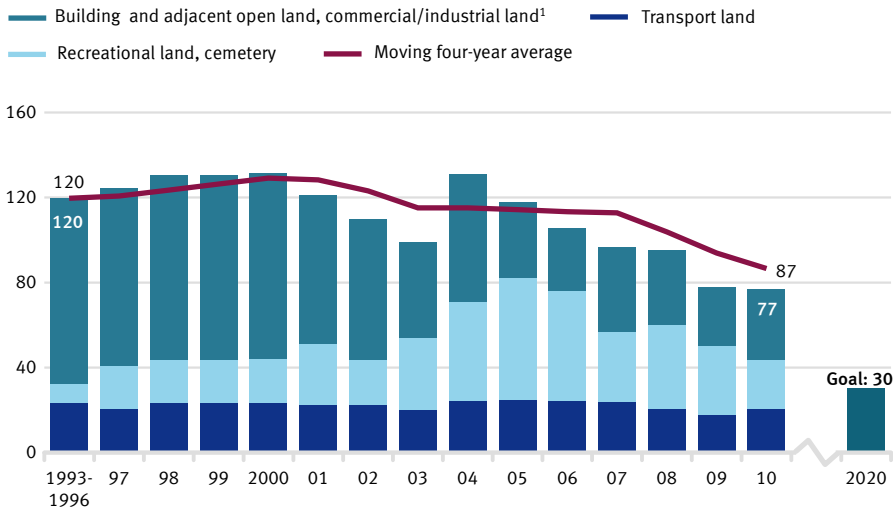
The accelerated increase of the share of renewable energies in electricity generation since 2000 is due among other things to the growing significance of wind power. For example, electricity generation from wind power increased from 7,550 gigawatt hours (GWh) in 2000 (20 % of total electricity from renewables) to 37,793 GWh in 2010 (37 % of total electricity from renewables). Electricity generation from biomass increased nearly tenfold between 2000 and 2010. Heat generation from renewable energies from the total biomass reached at last 92 %.

Given the associated reduction in emissions, this indicator has a positive correlation to Indicator 2 (greenhouse gas emissions). The Federal Environment Agency has calculated that some 118 million tonnes of CO_2 equivalents of greenhouse gas emissions were avoided due to the use of renewable energy sources in 2010. The actual growing of biomass for energy use can, however, lead to competition for agricultural land and have negative consequences for the quality of the landscape and for biodiversity (see Indicator 5). The renewable energy indicator is related to a variety of other indicators, including some used in the Strategy.

Land use

Sustainable land use

Built-up area and transport infrastructure expansion
in ha per day



1 Except mining land.

4 Built-up area and transport infrastructure expansion

Undeveloped, unfragmented and unspoilt land is a limited resource and therefore in very high demand. A variety of interests are competing for such land, including those of agriculture and forestry, settlement and transport, nature conservation, resource extraction and energy generation. Of these, the greatest increase in land use is being seen in the area of settlement and transport.

The direct environmental consequences of built-up area and transport infrastructure expansion include the loss of natural soil functions through sealing, the loss of fertile land or areas still close to their natural state and the associated loss of biodiversity. In addition to this, each new instance of land development near urban areas and outside existing settlement centres brings with it more traffic and more land fragmentation. Such activity leads to increased noise and pollution, but also to increased expense to provide the needed infrastructure.

The Federal Government's goal is, therefore, to limit the use of new areas for settle-

ment and transport purposes to an average of 30 hectares (ha) a day by 2020.

Recent years have seen a noticeable slowing in the increase in the amount of land used for settlement and transport. The moving four-year average for first-time land use for settlement and transport purposes was placed at 87 ha per day in 2010. Continuing the average annual trend of the last few years would, however, still not be sufficient to reach the proposed reduction goal by 2020.

Settlement and transport land includes 'building and adjacent open land', 'commercial/industrial land (except mining)', 'recreational land and cemetery' and 'transport land'. The land used for settlement and transport cannot all be counted as sealed land, since such areas may also include spaces that are not built upon and not sealed. According to estimates, 43 to 50 % of settlement and transport land is impermeable. Sealed land is also found in recreational areas (e.g. sports grounds).

The method of calculating the increase in settlement and transport land use as a moving four-year average (shown as a curve) currently delivers more robust information than the figures obtained for each year individually (columns). The reason for this is methodological reorganisation of the public land survey registers on which the area statistics are based. The moving four-year average shows an on-going reduction in the rate of land use expansion for settlement and transport between 2000 (129 ha per day) and 2010 (87 ha per day). This development corresponds with the price-adjusted drop of 15.8 % in the amount of money invested in building projects over this period. A more detailed look at the figures reveals a continuous drop in the years to 2005 followed by an up and down fluctuation in building investment. It remains to be seen whether this will affect the pace of built-up area and transport infrastructure expansion.

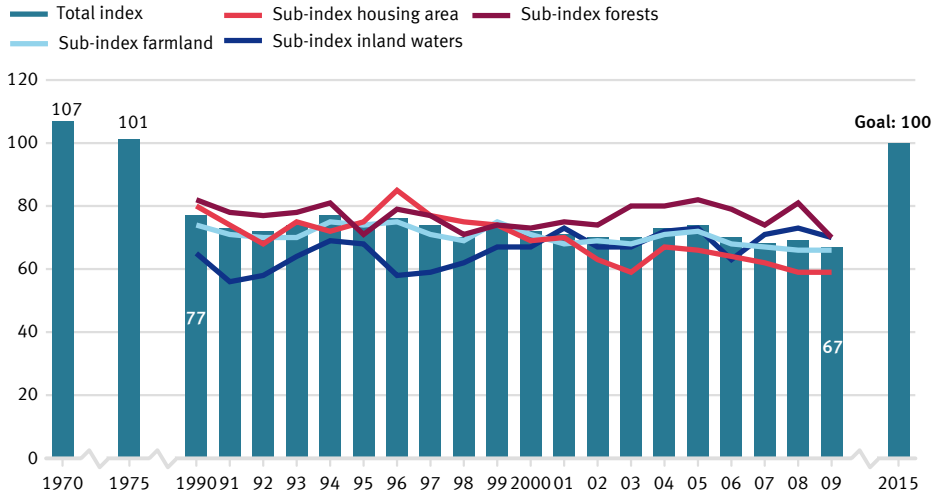
In the year 2000, the expansion of settlement and transport land use (131 ha per day) was distributed in percentage terms between the three components of 'building and adjacent open land, commercial/industrial land', 'recreational land, cemetery' and 'transport land' at a ratio of 66:16:18. By 2010, overall expansion had fallen to 77 ha per day and the distribution had changed to 43:30:27. Alongside the significant reduction in the contribution made by buildings and adjacent open land and commercial/industrial land to the growth of land used for settlement and transport, the increase in the proportion of recreational land and cemeteries is also noteworthy. One of the reasons for this latter trend was the aforementioned reorganisation in the public land survey registers. Independent of the land use growth figures, the actual share of recreational and cemetery land in the total settlement and transport land was only 9.1 % in 2010.

In 2008, about 53 % of all settlement land was used by private households, mainly for residential purposes. Between 1992 and 2008 the amount of settlement land used by private households went up by 28.3 %, a rate far faster than the number of residents (+ 1.3 %). A major reason for this is the sharp increase in living space per capita, which rose by 18.5 % (from 36 m^2 to 43 m^2 per capita) between 1993 and 2006.

Species diversity

Conserving species – protecting habitats

Species diversity and landscape quality
Index 2015 = 100



Source: Federal Agency for Nature Conservation, 2011

5 Species diversity and landscape quality

Having a wide diversity of animal and plant species is a fundamental prerequisite for a healthy natural environment and an essential basis for our human livelihood. Nature and landscapes in Germany bear the marks of centuries of use. Small-scale protection of species and habitats alone will not be sufficient to preserve the diversity which has been created by such use and through wholly natural processes. What is required instead are sustainable forms of land use throughout the entire landscape, restrictions on emissions and a more gentle hand in dealing with nature. In this way species diversity can be preserved and at the same time the quality of human life can be secured.

The indicator supplies information on species diversity, on the quality of the landscape and on the sustainability of the various land uses. The calculation of the indicator is based upon changes in the populations of 59 bird species, which together represent the most important types of landscape and habitat in Germany (farmlands, forests, settlements, inland waters, coasts

and seas and the Alps). The size of the bird populations (based on the numbers of territories and/or breeding pairs) reflects the suitability of the landscape as a habitat for the bird species. This indicator also reflects the development of a number of other species in the landscape and the sustainability of land use, since besides birds there are also other species that rely on a richly structured landscape with intact, sustainably used habitats. A body of experts has determined population targets for each bird species for 2015, targets that could be reached if the European and national legal provisions relating to nature conservation and the guidelines on sustainable development are implemented quickly. Every year a value for the overall indicator is calculated based on the degree to which the goals for all 59 bird species have been achieved.

In 1990, the indicator for species diversity and landscape quality was significantly lower than the reconstructed values for 1970 and 1975. In the last ten years of observation (1999 to 2009) the indicator value has worsened to a statistically significant degree. In 2009, it stood at just under 67 % of the target value. If this trend continues unchanged, then the goal of 100 % in 2015 cannot be reached without considerable additional efforts by the Federal Government, the *Länder* and the municipalities in as many policy areas as possible which are related to nature and landscape conservation.

Over the ten years to 2009, the sub-indicators for farming land (66 % of the target in 2009), for settlements (59 %), for coasts and seas (56 %) and for the Alps (77 %) moved further away from their respective goals to a statistically significant degree. For forests and inland waters (each at 70 %), no statistically significant trend was evident.

The chief causes of the decline in species diversity are – with regional differences – the intensive use of land for farming and forestry, the fragmentation and over-development of the countryside, the sealing of land surfaces and the introduction of substances such as acidifiers and nutrients into the environment. In settlement areas the loss of near-natural areas and village structures because of building activities and soil sealing is having a negative effect. Endangering factors for habitats on the coast include disturbances due to increased recreational use and overbuilding, for example through coastal protection measures.

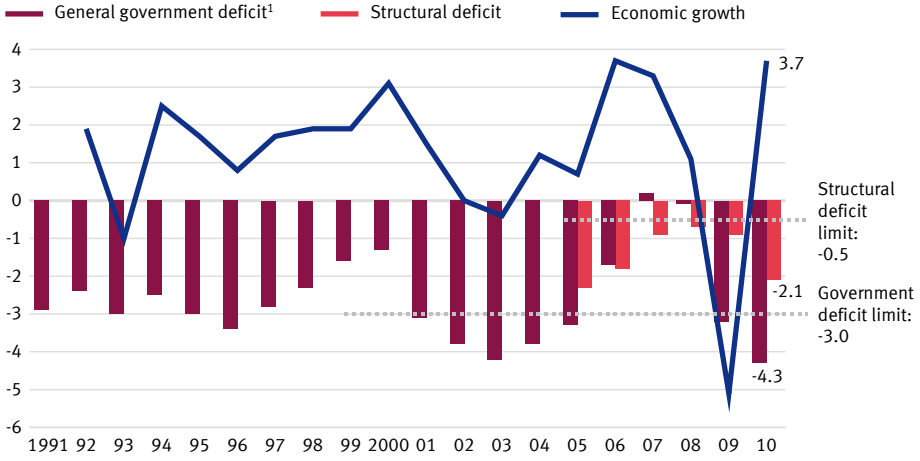
The climate change caused mainly by greenhouse gas emissions is today already leading to a shift in the geographic distribution of many species and is beginning to alter landscapes in Germany. Climate change caused by human activity could in the future considerably alter both species diversity and the range of species as new species enter the area while others die off. Grassland ploughing and the increasing cultivation of fuel crops can also have negative effects on the quality of the landscape and on biodiversity. As yet it remains to be seen in what ways the demographic changes in those parts of the country with declining populations will affect species diversity and landscape quality. This indicator is directly and indirectly related to many other indicators used in the Strategy, including 1c, 2, 3, 4, 11, 12, 13.

Government debt

Consolidating the budget – creating intergenerational equity

6a
6b

Ratio of government deficit
to gross domestic product in %



1 Overall balance of public finances in % of GDP.

Source: Federal Statistical Office, Federal Ministry of Finance

6a General government deficit

6b Structural deficit

Sound public finances represent an essential element of a sustainable financial policy. A policy that relies too heavily on borrowing to fund current public expenditures and then passes this debt on to future generations is simply not sustainable.

The indicator for the general government deficit is oriented to the 'Maastricht criteria' instituted on the European level. They provide that every member of the Euro zone must consistently limit its annual general government deficit to the reference value of 3 % of GDP. The aim is to achieve a balanced budget or a surplus within the medium term. For this reason, an indicator for the structural deficit has been added to the Sustainability Strategy. The structural financial deficit serves as a benchmark for the funding gap in public budgets and reflects the budget deficit of a country over the economic cycle. In line with the Stability and Growth Pact as reformed in 2005, the goal is to achieve a budget that is nearly structurally balanced. Germany will comply with this mid-term goal by maintaining a

general government structural deficit (i.e. adjusted for cyclical and one-off effects) of no more than 0.5 % of GDP. Besides the debt-to-GDP ratio, future pressures on public financing arising from demographic ageing have also been taken into account in setting this limit.

The balanced-budget provision that is anchored in Germany's Basic Law and that applies to both the Federal and *Länder* governments works to ensure that the Maastricht treaty rules for the member states will in fact be implemented on the national level. This provision states that neither spending increases nor tax decreases are to be paid for through borrowing. The Federal Government intends to reduce net structural borrowing in regular stages to a maximum of 0.35 % of GDP by 2016 and to keep within this limit thereafter. As of 2020, the *Länder* must show no structural deficit whatsoever.

The financial and economic crisis has placed a noticeable dent in Germany's public finances. Following a small surplus in 2007 and a marginal deficit in 2008, the general government balance worsened in 2009, with the deficit rising to 3.2 % of GDP. The Maastricht reference value was exceeded in 2010, with the deficit ratio climbing to 4.3 % (EUR 105.9 billion). This deficit was shared by the various levels of government as follows: EUR 79.7 billion for the Federal Government, EUR 22.8 billion for the *Länder* and EUR 5.7 billion for the municipalities. Only the social insurance system was able to record a positive funding balance of EUR 2.3 billion.

The structural deficit in 2010 stood at 2.1 % of GDP. The primary reason that the structural deficit exceeded the mid-term goal of 0.5 % of GDP was the worsening structural situation in the budgets that was in turn due to the expansionary fiscal policies implemented to deal with financial crisis. During the first half of 2011, government revenues rose sharply (+6.0 % compared to the first six months of 2010), while public expenditure increased only slightly (+0.3 %). The country's funding deficit dropped to EUR 7.2 billion. The deficit ratio for the first half of 2011 was 0.6 %.

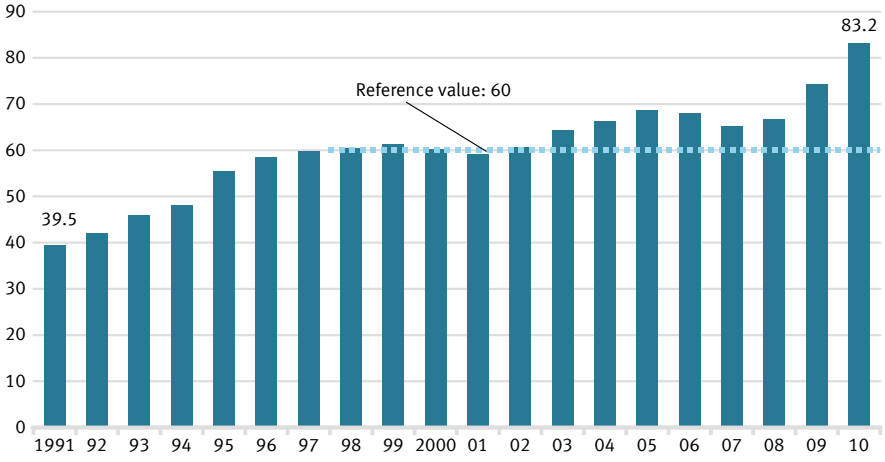
The government revenue ratio fell to 43.6 % in 2010. The reasons for this included taxation measures (more deductions allowed for insurance contributions, plus stimulus packages) and the lowering of the premium rates for statutory health insurance. Though government expenditures in 2010 also dropped compared to the previous year, this decrease was relatively modest, amounting to just 0.2 percentage points.

Expenditures associated with asset transfers jumped to nearly EUR 30 billion in 2010. This was closely connected with the (one-time) transfer of risk exposures from the WestLB bank and the Hypo Real Estate group to public institutions within the Federal Agency for Financial Market Stabilisation (FMSA). By contrast, other expenditures (such as social benefits or employee salaries) rose at a much lower rate than the GDP. In fact, the amount of property income payable, which mainly includes the government's interest expenses, fell in absolute terms from EUR 63.8 billion (2009) to EUR 61.9 billion (2010).

Government debt

Consolidating the budget – creating intergenerational equity

Ratio of government debt to GDP
Government debt (Maastricht) in % of GDP



Source: German Central Bank, November 2011

6c Government debt

Besides the general government deficit, government debt is also an important indicator of how sound public finances truly are. Among other things, the amount of money that the government has to pay for interest expenses is dependent upon the level of government debt. The question as to how much debt the public finances can sustainably bear cannot be answered definitively. There may be great variations between countries so that the answer will depend for one thing on the long-term development of each country's economic strength in terms of its potential for economic growth. The most decisive factor regarding the sustainability of the public finances is the debt-to-GDP ratio, i.e. the level of public debt as a percentage of gross domestic product (see also the Sustainability Reports issued by the Federal Ministry of Finance). The debt-to-GDP ratio indicates the amount of relative debt burden borne by the government budget and is a new indicator being added to the Sustainability Strategy.

The European Union's Stability and Growth Pact specifies a reference value of 60 % as

the maximum debt-to-GDP ratio. This also serves as the national target for the indicator in the report. The balanced budget provision anchored in Germany's Basic Law is intended to guarantee a sustained reduction of the debt-to-GDP ratio.

Since 2002, the debt-to-GDP ratio in Germany has continuously been above, and in some years far above, the limit set on the European level. Following public budget consolidation efforts in the middle of the last decade, the ratio had fallen to 65.2 % in 2007, only to rise again steadily in the years that followed. At the end of 2010, the public budgets in Germany were burdened with a debt totalling EUR 2,062 billion. This is the equivalent of EUR 25,219 per person. This rise must be seen in the light of the financial and economic crisis. The sharp rise between 2009 and 2010 (from 74.4 % to 83.2 %, a jump of EUR 294 billion) was primarily due to the fact that the new resolution agencies established for the Hypo Real Estate and WestLB banks were assigned to the public sector, meaning that their liabilities were factored into the government debt. This made up EUR 213 billion of the total rise in government debt in 2010. At the same time, however, this effected an increase in the government's financial assets. No expenditure has yet been made from the public purse for this purpose. This component of new debt therefore has not increased the interest burden in the budgets.

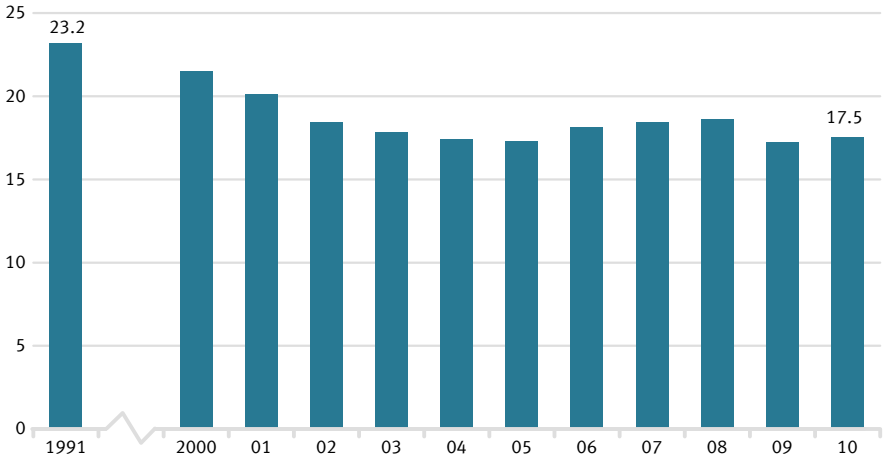
The debt of the Federal Government rose between 2009 and the end of 2010 by EUR 242 billion to reach approximately EUR 1,308 billion. The main cause for this high jump was the aforementioned increase in debt associated with the founding of the resolution agency for Hypo Real Estate. The debt owed by the Länder increased in 2010 by EUR 49 billion to EUR 620 billion, largely due to the establishment of the resolution agency for the WestLB bank. The debt owed by municipal governments in Germany climbed by EUR 5 billion in 2010 to reach EUR 134 billion. The social insurance programmes recorded a surplus of over EUR 1 billion in 2010. So in the final tally for 2010, 63.5 % of the total debt was owed by the Federal Government, 30.1 % by the *Länder* and 6.5 % by the municipalities. The share of debt borne by the Federal Government and the municipalities declined steadily between 2000 and 2009 (before the resolution agencies were established), while that of the *Länder* rose during the same period.

In the national balance of assets, the debts owed by government are balanced by its assets, both tangible and financial. It is only after this balancing of debts and assets that we can draw any economically reliable conclusions concerning the burden that will be inherited by future generations. The biggest asset owned by the state is its infrastructure (roads, schools, public buildings). According to the physical asset accounts maintained by the Federal Statistical Office, these assets were valued at EUR 1,067 billion in 2009. Due to the interests held in the resolution agencies mentioned above, securities now represent the second most highly valued asset. The indicator for the Maastricht debt-to-GDP ratio is directly related to Indicators 6a, b and 10 and also has many links to other sustainability indicators from the economic, social and environmental fields.

Provision for future economic stability

Creating favourable investment conditions – securing long-term prosperity

Gross fixed capital formation in relation to GDP
in %



7 Gross fixed capital formation in relation to GDP

The investments made by both the private and public sectors are decisive in creating a strong and competitive economy. In particular, investments in new equipment and in intangible assets lead to innovations being realised and to markets – and thus also jobs – being secured or expanded. At the same time, investment can contribute to increasing the energy and resource efficiency of the economy, for example, via energy saving measures in buildings, introducing more environmentally efficient production technologies or manufacturing more environmentally efficient goods. On the other hand, certain types of investment, most notably in new construction, consume large amounts of material. In the case of expansion projects, such investment also involves the exploitation of previously unused land for settlement or transport (see the environment-related indicators, e.g. 1c and 4).

Gross fixed capital formation includes investments in buildings (dwellings and non-dwellings), equipment (machinery, vehicles, tools) and other assets (intangible

assets such as software and copyrights, property transfer costs, production livestock).

On average over the last five reporting years, the investment ratio (the ratio of gross fixed capital formation in current prices to the gross domestic product) has risen slightly, although no statistical trend can be identified. Between 1991 and 2005, the investment ratio dropped from 23.2 % to 17.3 %. Until 2008, gross fixed capital formation grew faster than GDP and the ratio climbed to 18.6 % (2008). But this upward trend came to a halt in 2008. In 2010, the investment ratio reached 17.5 %. In the previous year it had fallen to just 17.2 % following the sharp drop in investment activity in 2009. While building investment in 2010 had nearly regained the level seen prior to the financial and economic crisis, investments in equipment were, at 14.7 %, still far below pre-crisis levels.

Investment activity in 2009 was seriously affected by the fallout from the worldwide financial and economic crisis. Equipment investment (price-adjusted) literally collapsed, plummeting 22.8 % from the year before. Building investment fell by 3.0 %. Public sector investment in building activity had a stabilising effect, though, managing to rise by 2.8 % during the crisis year of 2009. This increase, combined with the investment boosting effect of the various stimulus programmes (such as the building refurbishment programme) between November 2008 and January 2009, served to prevent an even larger drop in building investment. 2010 saw a recovery in investment activity. Equipment investment (price-adjusted) experienced a strong increase, climbing 10.5 % over the year, while building investment rose by 2.2 %.

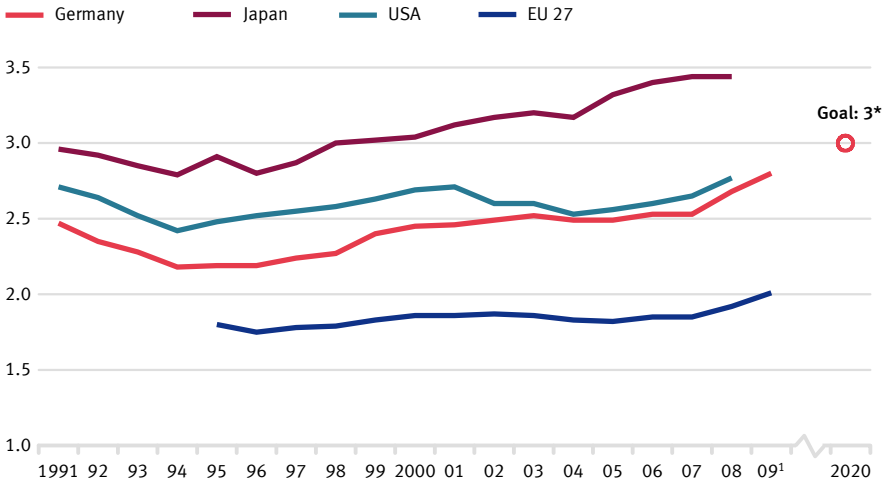
The period stretching from 1991 to 2010 witnessed a strong shift in investment activity from the manufacturing sector to the service sector. In 1991, 27.5 % of investments in new plant and equipment were still being made by manufacturing companies. By 2010, this figure had fallen to just 18.7 %. In 2010, 79.6 % of investments were made in the service sector, up from 70.7 % in 1991. The largest single investment area was that of property and housing. This sector accounted for 32.6 % of investments in all new buildings and equipment in 2010. This rise in the service sector's share of capital spending was seen throughout the period with the exception of 2007 and 2008, when above-average economic and investment growth in manufacturing again led to a short-term rise in this sector's share of total investments.

Total net fixed capital (sum of fixed investments minus depreciation) amounted to around EUR 8,012 billion in 2009. Of this total, EUR 6,807 billion belonged to the private sector and EUR 1,097 billion were held by public sector. In calculating the total assets, the value of land and of financial assets must be added to the tangible assets (for information on the national balance of assets, see Indicator 6b).

Innovation

Shaping the future with new solutions

Private and public spending on research and development
Spending as % of GDP



* New goal / new evaluation; no comparability to the previous period. For detailed comments see text.
1 Partially estimated.
Source: Organisation for Economic Co-operation and Development (OECD)

8 Private and public spending on research and development

Spending on research and development (R&D) can be counted among the most important parameters in determining the pace of innovation of an economy. The higher the spending, the better the prospects of more dynamic gains in productivity, stronger economic growth, improved competitiveness and, not least, the chance that our production and consumption patterns will move further in the direction of sustainability.

This present indicator includes spending on R&D by the private and public sectors and by institutions of higher education as a percentage of gross domestic product (GDP). In 2002 the Barcelona Council set a European goal for the share of expenditure on R&D of 3 % by 2010, and the Federal Government incorporated this goal for Germany early on as part of its National Sustainability Strategy. In accordance with the goal set by the EU, the R&D spending target of 3 % of GDP is now envisioned for 2020 (instead of 2010) as part of the Europe 2020 strategy.

According to provisional figures, overall R&D expenditure in Germany in 2009 amounted to EUR 67.0 billion, equivalent to 2.8 % of GDP. By comparison, this value stood at 2.8 % in the USA in 2008 and at 3.4 % in Japan. The EU 27 region, however, had a significantly lower proportion of R&D expenditure in the GDP (2.0 % in 2009). Since 2000 the proportion in Germany has risen by about 0.35 percentage points. In the 1990s it initially fell, dropping to its lowest point in 1995/96 and not surpassing the 1991 level again until 2002. If the average annual trend of the last five years were to continue unchanged, it might be possible to attain the 2020 goal, but not the target originally sighted for 2010.

Internal research within industry accounted for by far the largest share of R&D expenditure in 2009 at around 68 %, with 18 % spent by institutions of higher education and another 15 % by both public and private non-profit research institutions. Staff employed in R&D in 2009 comprised around 534,600 full-time equivalents, a figure that only includes the proportion of their working hours actually spent on R&D work. Some 62 % of these employees work in the private sector, 22 % in institutions of higher education and 16 % in public and private non-profit research institutions.

A comparison of research fields shows that in both public and private non-profit research institutions the natural and engineering sciences played a particularly important role (with 46 % and 27 % of 2009 R&D expenditure spent in these areas, respectively). Research in the humanities and social sciences accounted for 13 % of expenditure, human medicine for 8 % and agricultural sciences for 6 %.

R&D activities in private industry focused on the sectors of vehicle construction, data processing, electrical engineering, chemicals and pharmaceuticals, and mechanical engineering – altogether comprising around 72 % of expenditure in private enterprise. In 2009 the automotive industry alone spent about EUR 13.8 billion on R&D. (Source: *Stifterverband Wissenschaftsstatistik*)

Education and training

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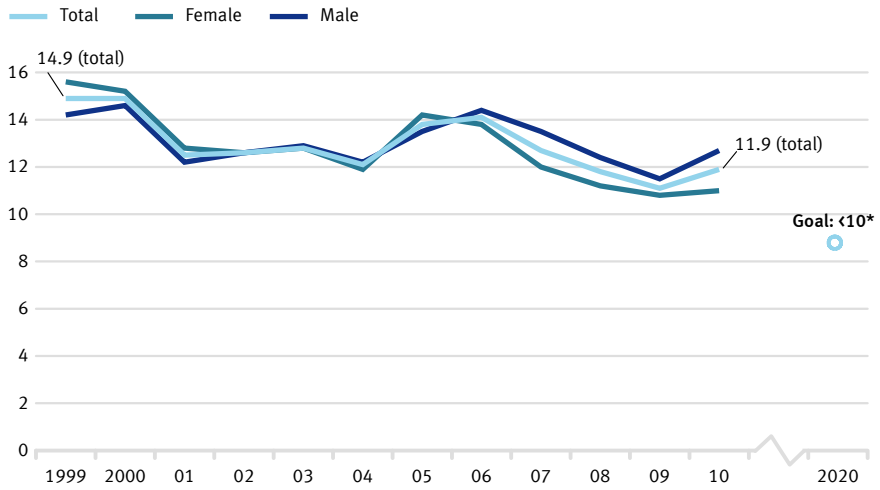
Continuously improving education and vocational training

18- to 24-year-olds without a leaving certificate from post-16 education and not in training
Share of all 18- to 24-year-olds in %



* New goal / new evaluation; no comparability to the previous period. For detailed comments see text.

9a 18- to 24-year-olds without a school leaving certificate

The state educational system and the dual system of vocational training are the cornerstones of future-orientated qualifications for young people in Germany. Failure to complete school or vocational training poses a risk of poverty and places a strain on the social welfare systems. The Federal Government's declared aim is to ensure that all young people finish school and go on to get an apprenticeship or a higher education degree.

This education indicator describes education deficits by showing the proportion of early school leavers. This is understood as the percentage of all 18- to 24-year-olds who currently do not attend any school or institution of higher education, who are not attending any further education programmes and who have not completed second-stage secondary school (ISCED level 3 – university entrance level or completed course of vocational training). This means that even those young people who, for example, have successfully completed the *Hauptschule* or the *Realschule* (lower secondary education, ISCED level 2) but

did not go on to qualify for university or to complete vocational training and are no longer participating in the education process are also counted as early school leavers. Moving in line with the EU2020 Strategy, the Federal Government retracted its 2010 goal for the indicator (9 %) and revised its goal for 2020. The aim is for the share of early school leavers to not exceed 10 % in 2020 (previous goal: 4.5 %). In 2010 the indicator stood at 11.9 % and therefore missed the previous goal. If the current average trend continues, however, the new goal for 2020 will be met. The improvement seen since the last report must be viewed in connection with the changes made to both goals.

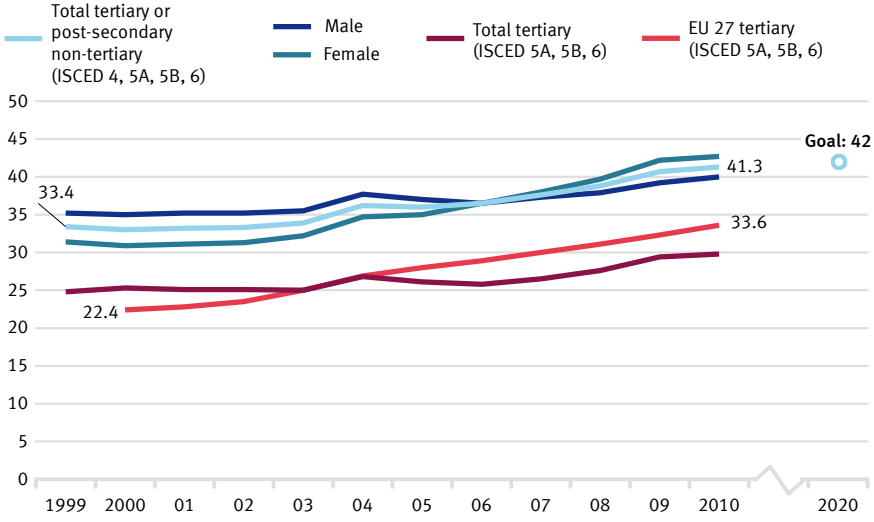
In 2010 a total of 784,000 young people did not have an apprenticeship or had not completed upper secondary education. Between 1999 and 2010, the share of this total attributed to 18- to 24-year-olds fell from 14.9 % to 11.9 %. In 2006 it stood at 14.1 % and in 2009 at 11.1 %. Since 1999 the gender-specific figures for the indicator have deviated from the total values to differing extents. In 2010 the proportion of young women stood at 11.0 %, lower than that of young men at 12.7 %. Looking at the share of school drop-outs (not shown in chart), school statistics show that in 2010 a total of around 53,000 young people (6.6 % of the graduating class) left school without a *Hauptschulabschluss* (general school leaving certificate). Their share has dropped by 36.7 % compared to 1999. In the case of young women the proportion continues to be markedly lower (5.3 %) than that of young men (7.8 %). In 2010, 22.3 % (179,753) of all school leavers with a school leaving certificate obtained a *Hauptschulabschluss* (general school leaving certificate), some 43.5 % (350,856) a *Realschulabschluss* (intermediate school leaving certificate), 1.4 % (13,455) the *Fachhochschulreife* (applied sciences university entrance qualification) and 28.4 % (268,194) the *allgemeine Hochschulreife* (general higher education entrance qualification). The proportion of school leavers with a *Hauptschulabschluss* has declined since 1999 by 3.8 percentage points, while the proportions of school leavers with a *Realschulabschluss* rose by 2.7 percentage points, with the *Fachhochschulreife* by 0.4 percentage points and with the *Hochschulreife* by 3.6 percentage points.

Family and social background and one's knowledge of the German language play an important role in school and professional development. There continues to be a large discrepancy between the educational success of Germans and that of foreign young people (see Indicator 19). According to vocational education statistics, the number of new apprenticeship contracts dropped to 558,100 in 2010, a decline of 0.6 % compared with the preceding year (preliminary results as at 31 December.). Here, the slight rise (1.4 %) seen in the former West German *Länder* was more than offset by the sharp drop in the eastern *Länder* and in Berlin (–9.7 %), where demographic trends play a role along with the greater tendency of those who qualify to actually go on to attend university. In the case of unsuccessful applicants – apart from unrealistic job preferences and a lack of openings in apprenticeships regionally – a lack of qualifications often played a significant role. But due to demographic changes and the associated drop in the number of young people applying for apprenticeships, companies are experiencing increasing difficulty in filling trainee slots, a problem that is particularly (though not solely) found in the eastern *Länder*. At the end of 2010, 1.508 million young people were receiving education and training within Germany's dual education system, 4 % less than during the previous year.

Education and training

Continuously improving education and vocational training

30- to 34-year-olds with a tertiary or post-secondary non-tertiary level of education
Share of all 30- to 34-year-olds in %



9b 30- to 34-year-olds with a tertiary or post-secondary non-tertiary level of education

Advanced economies like Germany's, in which the service and knowledge/expertise sectors are becoming increasingly important in comparison to industrial manufacturing, need a highly skilled and qualified labour force. Based on the core target of the Europe 2020 Strategy drafted in 2010, the National Sustainability Strategy indicator as revised by the Federal Government in 2012 specifies the share of all young people aged 30 to 34 (previously: 25-year-olds) who have completed a programme of tertiary education (as per International Standard Classification of Education/ISCED levels 5/6) or comparable education (ISCED 4).

Tertiary degrees include degrees from traditional universities and universities of applied sciences (ISCED 5A/6), as well as from public administration colleges, professional and vocational colleges, technical schools and health care schools (ISCED 5B). In addition, the new indicator also includes qualifications awarded from post-secondary non-tertiary schools (ISCED 4; see definition in Annex). The distinguish-

ing feature here is that two upper secondary degrees are obtained consecutively or even simultaneously. For example, one can obtain university-entrance qualifications (the *Abitur*) from an evening school, adult high school or vocational/technical high school (in each of these cases, students must first have completed a programme of vocational education), or one can complete a course of teacher education after receiving the *Abitur*, or after completing two consecutive programmes of vocational education. The Federal Government and the Länder want to see this national indicator rise to 42 % by the year 2020. The Europe 2020 Strategy cites a goal of 40 % for tertiary degrees or comparable qualifications.

Starting at 33.4 % in 1999, this national strategy indicator had by 2010 climbed eight percentage points to a level of 41.3 %, just short of the target set by the Cabinet for 2020. At 42.7 %, the figure for women had already exceeded the goal, while the figure for men (40.0 %) was still well below the target. These favourable figures must be seen in connection with the fact that the international community does not normally include post-secondary non-tertiary degrees in this indicator for the simple reason that such degrees do not exist in many other countries. For the EU 27 countries, the more narrowly defined indicator (limited to ISCED 5/6) has risen steadily since 2002 to reach a total of 33.6 % in 2010. If we were to apply the EU definition for the indicator to Germany (i.e. share of 30- to 34-year-olds with a tertiary degree) the numbers would have risen from a baseline of 24.8 % in 1999 by five percentage points to 29.8 % in 2010, nearly four per cent below the EU figure. In 2010, there were no noteworthy differences between the percentage figures for men and women.

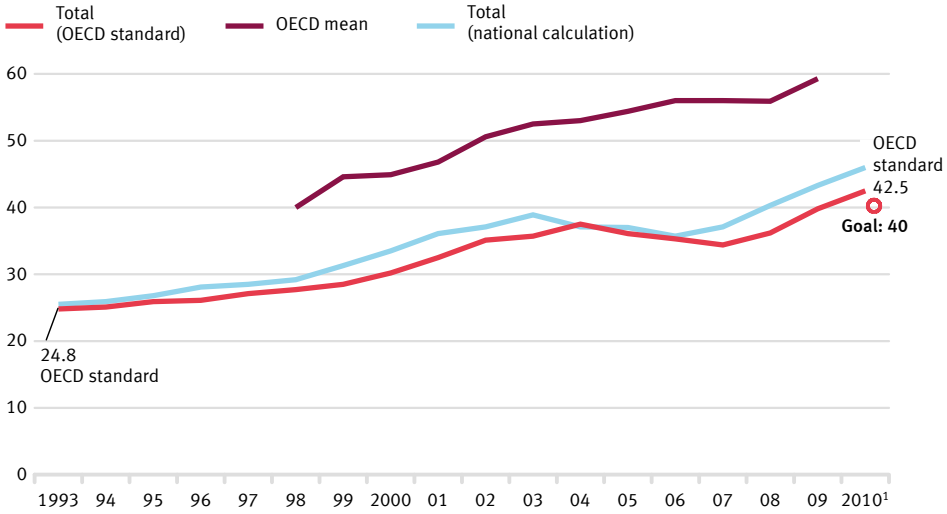
The number of graduates from institutions of higher education in 2010 totalled 361,697, 63 % more than in 1999. These included 59,249 engineering graduates (40 % more than in 1999) and 63,497 mathematics graduates, almost twice the 1999 total.

The European-wide restructuring of university programmes (Bologna process) has the goal of introducing bachelor's and master's courses in order to encourage international mobility among students and graduates and to enhance the attraction of European universities for foreign students. In 2010, 69.7 % of all those commencing their studies in Germany chose a bachelor's degree programme (previous year: 69.4 %) and 3.6 % chose a course leading to a master's degree (previous year: 3.0 %). By comparison, the numbers of students taking the traditional state examinations and other programmes declined (18.0 %, from 19.3 % the year before), while the figures for those working towards *Diplom* and *Magister* degrees barely moved (8.6 % compared to 8.3 % in the previous year). Another intended effect of introducing the Bachelor's degree was to reduce the period of study. In 2010 the average age of graduates completing their first degree was 26.9 years and thus slightly lower than in 1999 (28.3 years). This figure is connected with a child's age at the time of starting school, the period of time spent at school and the duration of the transition from school to higher education, but also of course with the length of time spent in higher education. On average in 2010, graduates obtaining the Bachelor's degree did so at the age of 25.4 (previous year: 25.5), while the age of Master's recipients remained unchanged at 28.0, slightly more than those graduating with a *Diplom* (27.8, compared to 27.7 the year before).

Education and training

Continuously improving education and vocational training

Share of students starting a degree course
Share in %



1 Preliminary results.

9c Share of students starting a degree course

An educational policy which enables as many young people as possible to acquire educational qualifications is a prerequisite for our society's ability to meet the challenges of the future. The indicator for the share of students starting a degree course measures the number of first-semester students from Germany and abroad enrolled at institutions of higher education (excluding public administration colleges) expressed as a percentage of the relevant age group. The Federal Government's goal was to increase the share of students starting a degree course to 40 % by 2010, and in subsequent years to increase and stabilise this figure at a high level. When discussing what measures need to be taken to achieve this goal, we must keep in mind that the Länder are primarily responsible for education policy.

Between 1993 and 2004 the share of students starting a degree course in Germany (determined according to the OECD standard) rose from 24.8 % to 37.5 %. After a drop in the years 2005 to 2007, it has in recent years risen sharply to reach 42.5 % in 2010, topping the goal set for that year. At

43.4 % the percentage of women was above the target value and again over the percentage seen for men (41.7 %).

The average rate among the OECD countries was much higher than this, with 59 % of young people entering higher education programmes in 2009. The proportions of students starting a university course were well above average for the relevant age group in Australia (94 %), Poland (85 %), Portugal (84 %), New Zealand (78 %), Iceland and Norway (77 % each) and Korea (71 %), while Germany, together with Switzerland, Turkey, Mexico, was at the lower end of the scale. The differing structure of the educational systems in the OECD countries must be taken into consideration here. The below-average value for Germany is influenced by the fact that most vocational education and training is provided within a dual-track system, whereas in other countries it takes place primarily at university level.

During the 2010 academic year (summer semester 2010 and winter semester 2010/2011), 443,035 new students enrolled at German institutions of higher education (preliminary results). This number corresponds to a first-year student quota of 46.0 % when calculated based on national classifications (blue line). With an increase of 18,800 (4.4 %) compared with 2009, the number of new students in 2010 exceeded the previous record achieved the year before (424,273 new students). This marked rise is connected to some extent with the peculiarity that certain *Länder* have mandated a reduction in the number of school years (2007 in Saxony-Anhalt, 2008 in Mecklenburg-Western Pomerania and 2009 in Saarland), which then led to two classes graduating in the same year. It is expected that the suspension of the military draft combined with overlapping graduating classes in further *Länder* will result in another steep climb in the number of students enrolled in higher education institutions.

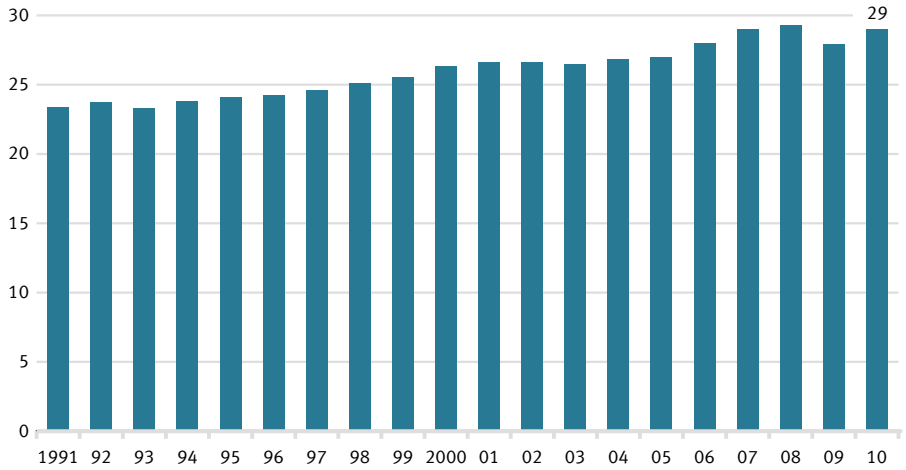
2010 saw around 456,000 young people obtain their university entrance qualification (the *Abitur* or *Fachhochschulreife*), up 1.6 % from the previous year (preliminary results, including those graduating after eight years at *Gymnasium*). 47.2 % of those obtaining university qualifications were young men. Young people who were eligible to go to university increasingly chose vocational training instead of attending a university. The proportion of those starting an apprenticeship who were eligible to go to university rose from 14.0 % in 2003 to 20.9 % in 2010. Reasons for the increasing preference for vocational training among those qualified for university include the desire for more practical types of training not offered by university as well as the enrolment restrictions that apply to certain subjects.

First-year students who acquired their university entrance qualifications in Germany were on average 21.6 years old in 2010. 15.3 % of all new enrolees came to Germany from abroad to study. Since most of these had already studied in their home country, on average they were two years older than domestic students. This meant that the average age for starting university studies was 22.0 years. Looking at examples from other European countries, first-year students in Belgium, Spain and Ireland were the youngest enrolees in 2009 (around 19 years), while new students in Iceland (22.8), Denmark and Sweden (22.1 each) were the oldest. But there are also broad age differences within Germany itself, with the age ranging from 20.8 years in Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt and Thuringia to 22.2 years in Hamburg.

Economic output

Combining greater economic output with environmental and social responsibility

GDP per capita
Price-adjusted, at 2005 prices in EUR 1,000



10 Gross domestic product per capita

Gross domestic product (GDP) expresses the total economic output produced within the country. It is considered an important indicator of a nation's economic strength and growth. Changes in GDP are related in a variety of ways to other topics included within the National Sustainability Strategy. Social factors such as the population structure, the labour supply, the educational system and social cohesion play an important role in society with regard to international economic competitiveness. Increasing economic output is, of course, desirable from a welfare perspective. Sufficient economic growth can enable structural change, safeguard and create jobs and stabilise social systems against the background of the 'ageing society' and the desired intergenerational equity. On the other hand, growth of the GDP tends to have an adverse effect on the environment. The continued decoupling of economic growth and environmental degradation is therefore an important prerequisite for a sustainable economy.

Between 1991 and 2010 price-adjusted GDP per capita increased by a total of

23.7 %. Following vigorous GDP growth in the period 2005 to 2008 averaging 2.8 % per year, the GDP per capita dropped by 4.9 % in 2009 compared with the previous year in the wake of the financial and economic crisis. Economic output recovered in 2010 and the GDP rebounded to an average of EUR 29,000 per capita, nearly equalling the 2008 level. Over the last five years, GDP per capita rose by an average of 1.4 % per year.

Economic growth varied considerably by sector. The price-adjusted gross value added in the industrial sector (manufacturing industry excluding construction) experienced real growth of just 7.4 % between 1991 and 2010. The service sectors enjoyed a very much sharper rise of 46.1 %. In 2009 industry suffered a severe drop in economic output, which fell by 17.9 % compared with the previous year. The drop in the service sector on the other hand was very much lower at –1.1 %. Although economic output bounced back in 2010, the industrial sector has not yet managed to return to the production levels seen in 2008. While in 1991 the industrial sector still accounted for a 30.2 % share of total gross value added (at current prices), by 2010 this figure had declined to less than 24.7 %. By contrast, the share attributed to the service sector increased from 62.5 % (1991) to 70.1 % (2010). 73.9 % of the labour force worked in the service sector in 2010, 24.5 % in the manufacturing industry and 1.6 % in agriculture and forestry. These changes to the structure of the economy – marked by the increasing importance of services and the decreasing significance of the production, mining, and construction industries – contributed to a decoupling of economic growth and environmental degradation (see Indicators 1 and 2).

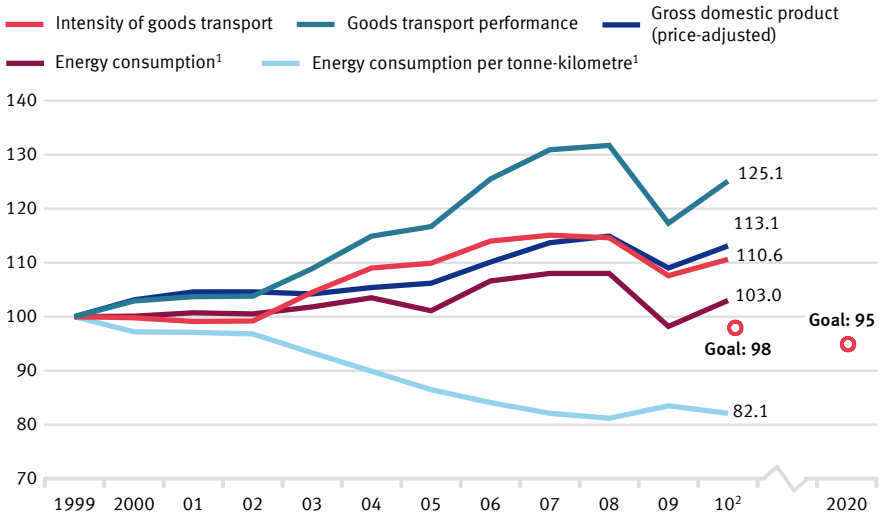
Economic output also varied from region to region. The eastern *Länder* (except Berlin) were able to more than double their per capita economic output between 1991 and 2010 (+105 %). The GDP increased by 81 %, while population figures dropped by 11.9 % (1.549 million people). In the former West Germany (excluding West Berlin), per capita GDP increased by only 17.1 % to 2010, with a 23.9 % increase in total GDP and 5.7 % increase in population. Despite these high growth rates, per capita GDP in the eastern *Länder* still lagged some 31 % behind the figures seen in the western part of the country in 2010.

The total number of gainfully employed people in Germany increased by about 1.9 million persons between 1991 and 2010. Nevertheless, parts of the population are still threatened by poverty. The EU Statistics on Income and Living Conditions (SILC) for 2008 showed that 15.3 % of the total population in Germany was threatened by poverty. This was up from the 12.3 % figure seen in 2005. Being a relative value, this statistic shows that growth in per capita GDP does not necessarily reduce poverty. A comparison with the other EU countries places Germany below the EU average of 16.5 %. However, Germany finds itself above the European average when it comes to the number of people living in households with very low work intensity. The figure for 2008 was 12 % of all persons between the ages of 0 and 59. The EU average here was 9 %.

Mobility

Guaranteeing mobility – protecting the environment

Intensity of goods transport
1999 = 100



1 Excluding air transport, transport via pipelines and by light commercial vehicles (< 3.5 t gross vehicle weight). 2 Preliminary results.
Source: Federal Ministry of Transport, Building and Urban Development, Federal Environment Agency

11a Intensity of goods transport

The Federal Government monitors the sustainability of goods transport development by means of the indicator 'Intensity of goods transport'. The intensity is measured as the ratio between domestic goods transport performance (road, railway, inland waterways, pipelines and air) in tonne-kilometres and the price-adjusted GDP. The goal of the Federal Government is to reduce the intensity by 2 % compared to the 1999 base value by 2010, and by an additional three percentage points by 2020.

Between 1999 and 2010, the intensity of goods transport moved opposite to the desired direction and increased by 10.6 %. The goal set for 2010 was not achieved. The indicator's movement over the past five years reveals no statistically significant trend.

The only year that the indicator moved in the desired direction was 2009. This was primarily due to the drop in economic output (price-adjusted gross domestic product). The same year also saw steep downturn in goods transport performance (in tonne-kilometres) that was in part the

result of a reduced vehicle capacity utilisation rate in the road transport sector due to the economic crisis. This also explains the slight increase in average energy consumption per tonne-kilometre even though overall energy consumption dropped. As the economic recovery took hold in 2010, goods transport performance began to rise again, reaching a level 25 % above that of 1999. One side effect was an increase in energy consumption, which rose by 3 % in the period between 1999 and 2010. The energy consumption per tonne-kilometre dropped during this same period, with the 2010 value amounting to 82.1 % of the 1999 amount.

Besides the presumably short-term effect of the economic crisis, a number of long-term factors also influenced developments in transport intensity in the 1999 to 2009 period. In industry, the vertical range of manufacture has decreased, something that is normally associated with greater transport requirements because companies procure more intermediate goods from both domestic and international suppliers. This so-called technical division of labour is approximately described by the ratio of the total volume of goods (both domestically produced and imported goods and services) to the GDP. This factor accounted for a calculated increase of 10.0 percentage points in transport intensity. In addition, the average distance between the place of production and the place of use of the goods increased, working to raise transport intensity by a further 10.0 percentage points. On the other side of the balance sheet is the shift in demand to less material-intensive goods (e.g., an increasing share of services). The resulting change in the composition of transported goods served to cut 11.9 percentage points from the calculated total transport intensity. All three factors described above result in the cited aggregate rise in the intensity of goods transport of 8.1 % between 1999 and 2009.

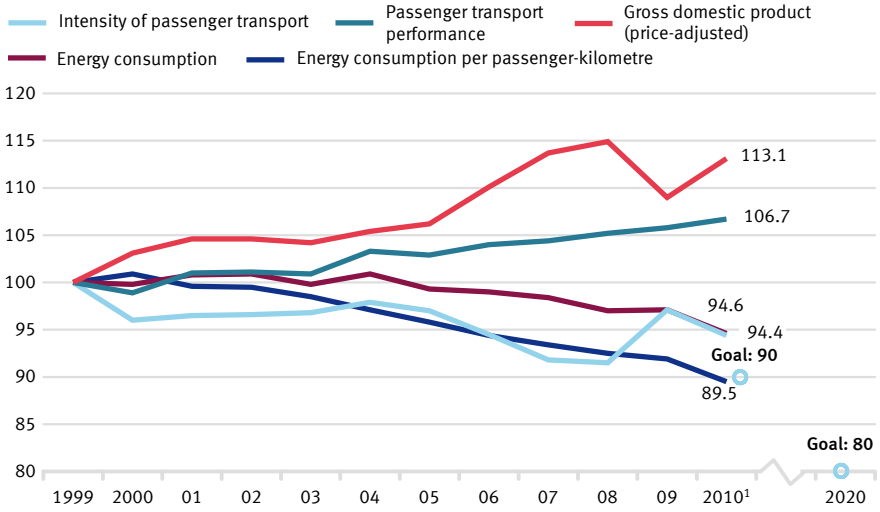
The indicator on goods transport performance refers by definition to transport within Germany. It does not therefore sufficiently reflect the influence of the growing integration into foreign trade of the German economy (globalisation). Globalisation causes significant traffic flows outside of Germany as well. 960 million tonnes of German imports and exports were moved outside of Germany in 2008, making for a transport performance of 2,855 billion tonne-kilometres (including sea and pipeline transport). By comparison: Domestic goods transport performance in 2009 came to 583 billion tonne-kilometres with a transport volume of 3,702 million tonnes.

The indicator is directly and indirectly related to indicators 1, 2, 4, 10, 12, 13 and 16 (with regard to the transport services industry and the automobile industry), and others.

Mobility

Guaranteeing mobility – protecting the environment

Intensity of passenger transport
1999 = 100



1 Preliminary results.
Source: Federal Ministry of Transport, Building and Urban Development, Federal Environment Agency

11b Intensity of passenger transport

The availability of adequate, flexible and inexpensive passenger transport is important both with regard to social welfare (especially personal mobility) and for the functioning and the international competitiveness of a modern economy based on the principle of division of labour. Passenger transport activities can, however, also lead to substantial environmental burdens, especially through the use of fossil energy sources, atmospheric emissions, land use and noise pollution. For this reason the Federal Government is pursuing the goal of decoupling economic growth from an increase in passenger transport performance and the environmental burden caused by transport.

The sustainability of passenger transport trends is measured by the 'intensity of passenger transport' indicator (ratio between passenger transport performance in passenger-kilometres and price-adjusted gross domestic product). The goal of the Federal Government is to reduce the intensity of passenger transport by 10 % compared to 1999 by the year 2010, and by an additional ten percentage points by 2020.

After moving in the right direction for a long period, the indicator jumped sharply in 2009 compared to the previous year. This was not, however, due to a corresponding rise in passenger transport performance, but rather to the plunge in economic output (price-adjusted GDP) in the wake of the economic crisis of 2008/2009. As the economy recovered, the indicator resumed its movement in the desired direction in 2010, but did not reach the goal set for 2010. The end result is that the indicator fell only by 5.6 % since 1999. The past five years have revealed no statistically significant trend.

Despite the rise in passenger transport performance between 1999 and 2010 (up 6.7 %), the total energy consumption declined. For all modes of transport, energy consumption per passenger-kilometre decreased by 10.5 %, to 1.75 megajoules per passenger-kilometre (MJ/pkm). This reduction was particularly achieved through efficiency gains in private motorised transport, since it is responsible for the largest proportion of total passenger transport performance and hence for the energy used to transport passengers.

The transport performance attributable to private motorised transport rose by a relatively modest 4.4 % since 1999. By contrast, the passenger transport performance for railway and public road transport (which until 2003 comprised only enterprises with at least six buses) increased overall by 7.7 %. The performance of domestic air transport increased by 21.2 %.

Private motorised transport accounted for 80.2 % of total passenger transport performance in 2010. This type of transport serves various purposes. Recreational traffic accounted for the biggest share in transport performance (35.3 %) in 2009. The share of commuter traffic amounted to 19.4 %, followed by shopping traffic at 17.9 % and business trips at 13.9 %. These share figures have remained more or less constant over the years.

Between 1999 and 2009, fuel consumption per kilometre in passenger and estate vehicles fell by 11.8 %. This was chiefly due to technological improvements and the growing share of diesel vehicles.

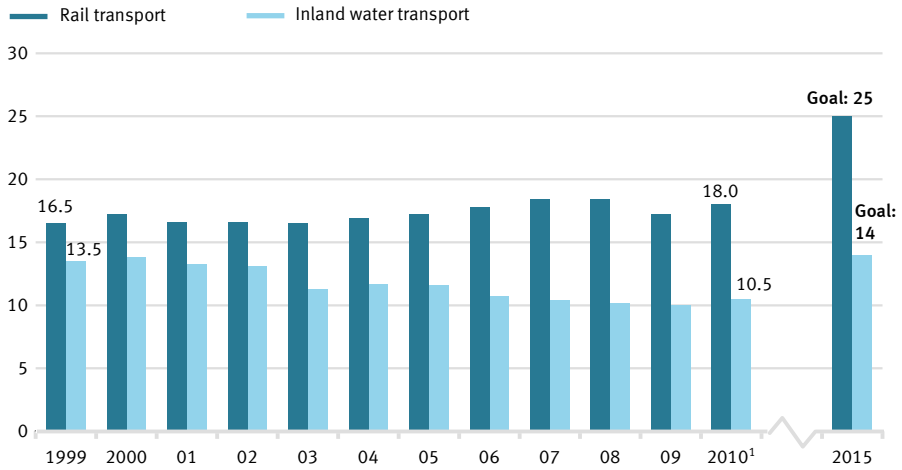
This indicator is related to, among others, indicators 1a,b (as concerns energy consumption), 2 (as concerns climate-damaging fuel emissions), 3, 4, 10, 12a, 13 (as concerns atmospheric deposition of nitrogen compounds from the combustion of fuels), 14a, b (as concerns traffic accidents) and in some cases 16 (as concerns the transport services industry and the automobile industry).

Mobility

Guaranteeing mobility – protecting the environment

11c
11d

Share of rail and inland freight water transport in goods transport performance
in %



Excluding local haulage by German lorries (up to 50 km).
1 Preliminary results.
Source: Federal Ministry of Transport, Building and Urban Development

11c, d Share of rail transport and inland freight water transport

Goods transport by rail or inland waterways has a distinctly lower environmental impact per tonne-kilometre than has transport by road or air. For this reason the Federal Government aims to significantly increase the share of domestic rail (11c) and inland freight water transport (11d) in overall goods transport performance. The goal is to increase the share of rail transport by 2015 to 25 %, and of inland freight water transport to 14 %.

Total domestic goods transport performance went up by 27.9 % to 595.0 billion tonne-kilometres between 1999 and 2010. The market share of rail transport improved slightly, from 16.5 % to 18.0 %, but did not increase significantly. The share of inland freight water transport actually declined from 13.5 % to 10.5 %. Looking at the absolute figures between 1999 and 2010, goods transport performance for rail increased from 76.8 billion to 107.3 billion tonne-kilometres. On the other hand, goods transport performance for inland freight water transport, at 62.3 billion tonne-kilometres in 2010, had barely changed from the 62.7

billion tonne-kilometres recorded in 1999. Despite the positive trend in rail transport, the average rate of change over the last five years does not allow us to expect the goal set by the Federal Government for this mode of transport to be achieved in time. For inland freight water transport it is, in fact, evident from the development of the indicator that the Federal Government's goal cannot be achieved.

Compared to domestic road transport performance (excluding foreign lorries) rail transport was able to increase its market share for most types of goods in 2009. This applied both to those goods that are largely transported by rail, such as coal, ore and iron, as well as to the majority of other types of goods. A particularly clear increase in rail transport was recorded for crude oil (12 % to 22 %), stone (8 % to 13 %) and ore (37 % to 43 %) in the period 1999 to 2009.

The share of goods transport performance handled by foreign lorries climbed from 19 % to 24 % during the 1999 to 2009 period. This means that the gains in market share achieved by the rail sector will be that much smaller when measured against overall transport performance. Figures on the road transport performance of foreign carriers broken down by types of goods are not available.

In contrast to rail, inland freight water transport suffered losses in market share in the period 1999 to 2009, especially for the transportation of those types of goods where it had traditionally had a large share. For example, the market share for chemical products (including fertilisers) decreased from 19 % to 15 %, crude oil from 27 % to 21 % and ore from 41 % to 34 %.

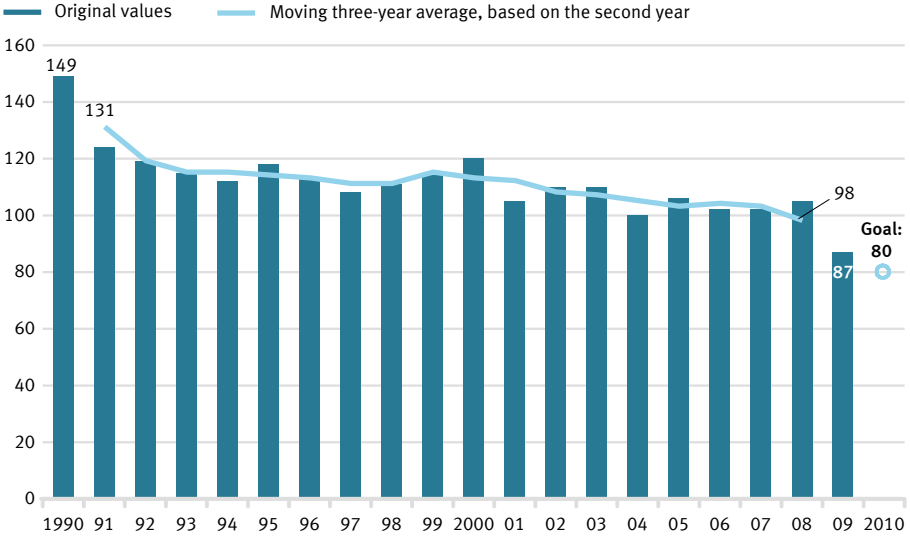
Goods transport performance on inland waterways dropped by 7.0 billion tonne-kilometres between 1999 and 2009. A sharper but short-lived decline also occurred due to the economic crisis of 2008/2009. By contrast, the total goods transport performance increased between 1999 and 2009. This should have meant an increase in transport performance of inland freight water transport of 6.1 billion tonne-kilometres. However, this calculation was countered by two longer-term developments. On the one hand the composition of the goods being transported changed. There was an increase in those goods that were less suitable for transportation by water, so that other carriers had to be used. As a result of this the increase in inland freight water transport turned out to be 5.1 billion tonne-kilometres less than should have been expected. On top of this, the losses in market share for various goods categories mentioned above reduced the increase by a further 8.0 billion tonne-kilometres. This explains the cited decrease in goods transport performance by inland freight water transport of 7.0 billion tonne-kilometres.

This indicator relates to a number of other indicators, including indicator 1 (as concerns consumption of energy and resources), 2 (as concerns climate-damaging fuel emissions) and 13 (air pollution from fuels).

Farming

Environmentally sound production in our cultivated landscapes

Nitrogen surpluses in Germany's overall balance
kg per ha of agricultural land



Source: Federal Research Centre for Cultivated Plants - Julius Kühn-Institut and Institute of Landscape Ecology and Resources Management, University of Gießen

12a Nitrogen surplus

Nitrogen is one of the most important plant nutrients. In farming, nitrogen is used as fertiliser in order both to replace the nutrients in the soil used up in production, and to maintain yield levels, the quality of harvests and soil fertility. For ecological and economic reasons particular importance is attached to using the nutrient efficiently. In addition, other sources (such as livestock farming, transport, private households and biological nitrogen fixation) contribute to adding nitrogen to the soil via the atmosphere. An excess nitrogen input into the environment causes far-reaching problems: pollution of ground water, eutrophication of inland water, oceans and land ecosystems, and the formation of greenhouse gases and acidifying air pollutants, with all their consequences for the climate, species diversity and landscape quality (see Indicators 2, 5 and 13).

The nitrogen indicator for agriculture in Germany depicts the overall nitrogen surplus in Germany in kilograms per hectare of utilised agricultural land per year. The nitrogen indicator is calculated by comparing nitrogen input to nitrogen output. It takes

account of the input of nitrogen from fertilisers, atmospheric deposition, biological nitrogen fixation, seed and plant material along with feedstuffs from domestic production and from imports. Nitrogen output takes place via plant and animal products. The total balance is calculated based on the farm-gate model, meaning that nitrogen flows within the farming operation – with the exception of domestic feed production – are not shown. The surpluses revealed cannot be generally equated with environmental degradation, since a certain amount of nitrogen is necessary to maintain soil fertility. Nevertheless the overall surplus can be used as a measure of the environmental burden caused by nitrogen.

The method used for calculating the nitrogen indicator has again been revised at the national level and the data for the entire reporting period has been recalculated on this basis. The relevant time series is that of the moving three-year average, with reference to the second (calendar) year in each series. Calculating this mean value balances out various factors, such as the yearly fluctuations in the weather and the markets that cannot be influenced.

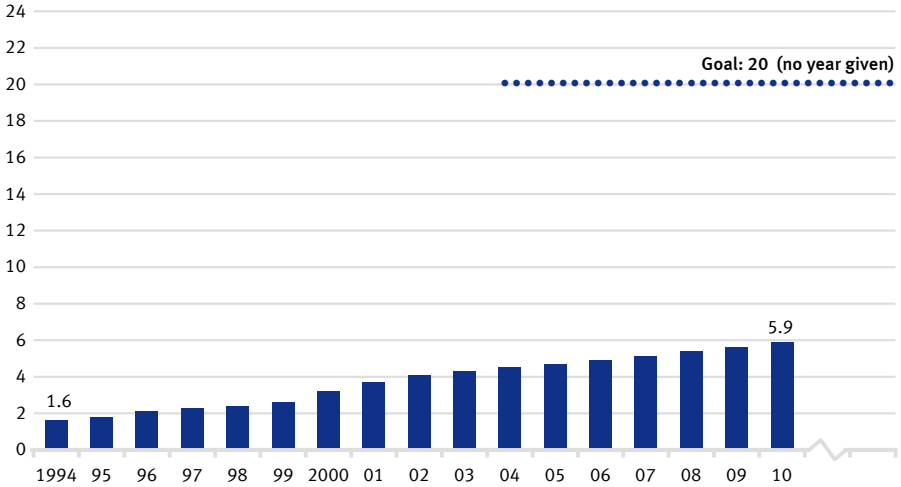
The fertiliser regulation of 2007 placed limits on the input of fertiliser, in particular nitrogen. The Federal Government's goal was to reduce the agricultural nitrogen surplus to 80 kg of nitrogen per hectare and year by 2010. Since 1991 the balance (three-year average) of 131 kg/ha per year has declined to 98 kg/ha per year in 2008 (–25 %). If the trend seen during this period continues, 71 % of the distance to the goal will have been covered by the target year.

The significant reduction at the beginning of this time series resulted from lower fertiliser usage and a decreasing number of livestock in the eastern *Länder*. Since 1993 the rate of decrease has been quite slow and was due a slight reduction in mineral fertiliser input, improved harvests resulting from changes to the rotation of the cultivated crops (more efficient use of nitrogen fertiliser) and to better feed conversion by livestock. In 2008 (all values are moving three-year averages) fertiliser input still represented the most important factor for nitrogen input (54 %, or 102 kg/ha) within the overall balance sheet. Feedstuffs from domestic sources contributed 21 %, feed imports just under 14 %, biological nitrogen fixation 6 %, atmospheric deposition from non-agricultural sources 5 % and seed and plant material just under 1 %. Whereas nitrogen input fell by just 6 % between 1991 and 2008 (to 189 kg/ha), nitrogen output has risen by 30 % since 1991 (to 91 kg/ha). In 2008 just over three-quarters of the nitrogen output left the sector with marketed plant products and just over a quarter with marketed animal products.

Farming

Environmentally sound production in our cultivated landscapes

Land used for organic farming
Share of total farming land in %



Source: Federal Ministry of Food, Agriculture and Consumer Protection

12b Organic farming

Organic farming is specifically geared towards sustainability. This kind of farming preserves and protects natural resources to a particularly high degree. It has a range of positive effects upon nature and the environment, and provides for the production of high quality foodstuffs. Moreover, it also makes a contribution to the maintenance and preservation of the cultivated landscape and employment in rural areas. The rules for organic farming particularly include keeping processing cycles as closed as possible and foregoing the use of highly soluble mineral fertilisers, synthetic chemical pesticides and genetically modified organisms. From an economic point of view, the fact that organic farming yields a smaller amount of produce per land unit is partially balanced out by the higher price of eco-products and by agri-environmental payments.

The indicator shows the share of total utilised agricultural land in Germany that is cultivated by organically managed farms subject to the inspection system prescribed by the EU legislation on organic farming (Regulation (EC) No 834/2007 and the

implementing rules). It includes land that has been fully converted to organic farming as well as areas still undergoing conversion. The decision to switch to organic farming is one made by individual farms. The Federal Government welcomes farm conversions as being desirable for protecting the environment and meeting demand, and it intends to create conditions that will allow the share of farmland used for organic farming to reach 20 % in the next few years.

From 1994 to 2010 the share of farmland used for organic farming increased from 1.6 % to 5.9 % (990,702 hectares). Compared to the previous year, organically managed farmland grew by 4.6 %. In 2010, 43,587 hectares was added to the total area of organic farmland, a good 4,200 hectares more than had been added the previous year. If this modest pace of conversion to organic farming continues, many years will be needed before the target value is achieved.

According to Eurostat statistics from March of 2011, a total of 8.6 million hectares was managed organically in the EU 27 countries in 2009. This amounts to an (estimated) 4.7 % share of all agricultural land in the EU 27 and represents an increase of 0.8 million hectares over the previous year. With Spain (18.6 %), Italy (12.9 %), Germany (11.0 %) and Great Britain (8.4 %) just four countries contributed more than 51 % to the total organically managed farmland in the EU. Looking at the individual EU 27 countries, the highest shares of utilised agricultural land that used for organic farming in 2009 were reported for Austria (18.5 %) and Sweden (12.8 %).

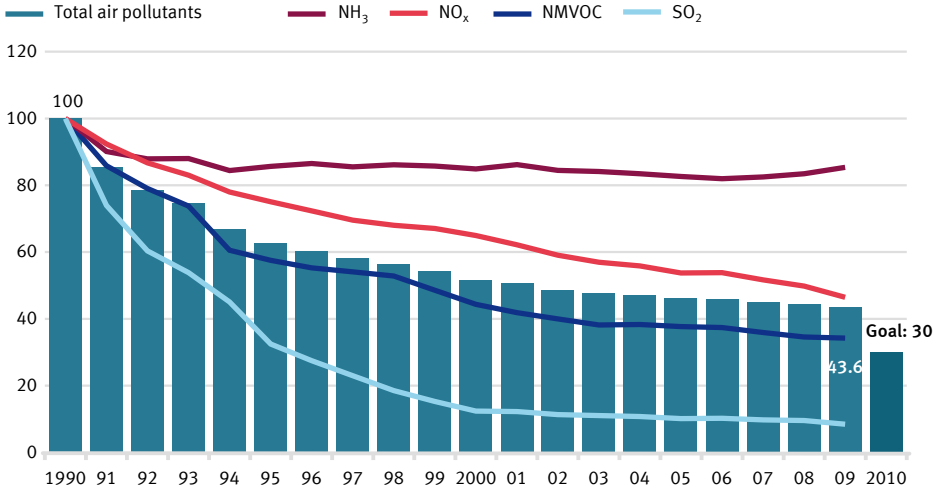
Organic farming in Germany focuses on certain kinds of production. The share of land for grain cultivation is smaller than in conventional farming, whereas the area for feed and forage crops and for legumes is larger. According to official statistics, 45.4 % of organically managed farmland was used as crop land in 2010, while such land made up 70.9 % of the utilised agricultural land of all farming operations, clearly demonstrating the much greater importance of crop land outside the organic sector. Not surprising given the high share of permanent pasture on their farms, 74.8 % of organic farms with livestock raised (organic) cattle and 17.5 % raised (organic) sheep in 2010. Organic chicken farming was practised at 28.8 % and organic pig farming at 15.1 % of organic animal farms. The average area of utilised agricultural land on organic farms in 2010 was 59.3 hectares, somewhat more than the average of farms overall (55.8 hectares), and they were particular large in the eastern *Länder* (226.8 hectares).

Sales of organic products in Germany rose nearly threefold between 2000 and 2010, from EUR 2.1 billion to EUR 5.9 billion (according to Agrarmarkt Informations-Gesellschaft mbH AMI). The growth of organic farming in Germany is not sufficient to meet the domestic demand for organic food products. To meet this demand, it is becoming increasingly necessary to import products from other EU countries or from countries outside the EU, with imports in 2010 covering an estimated 50 % of total demand. This indicator is related to Indicators 1, 2, 3, 4, 5, 12a, 13 and others.

Air quality

Keeping the environment healthy

Air pollution
Index 1990 = 100



Sulphur dioxide (SO_2), nitrogen oxide (NO_X), ammonia (NH_3) and non-methane volatile organic compounds (NMVOC), averaged index of measurement data.

Source: Federal Environment Agency

13 Air pollution

The protection of human health was the starting point of the environmental protection movement. A correlation between respiratory diseases and air pollutants was established early on, and protective measures were initially directed at reducing the emission of air pollutants. But air pollutants also damage ecosystems and species diversity, especially through acidification and eutrophication of the soil. Although the integration of desulphurisation and denitrogenisation units in power plants and the wide application of catalytic converter technology in petrol engines have served to reduce emissions in Germany significantly since the 1980s, further efforts are still needed. The Federal Government's National Sustainability Strategy's indicator for air pollution combines four primary pollutants: sulphur dioxide (SO_2), nitrogen oxides (NO_X), ammonia (NH_3) and the volatile organic compounds (NMVOC).

It is the aim of the Federal Government to reduce total emissions of these air pollutants by 70 % by 2010, compared with the base year of 1990. Air pollution decreased by 56.4 % by 2009, so the indicator has

been moving in the right direction. There were significant reductions in the first half of the 1990s. By 2000 the emission of air pollutants had virtually halved (–48 %). In the last five years up to 2009 the index in Germany has only fallen slightly by an average of 1.5 % per year. This pace of progress is not sufficient to achieve the set goal in 2010. At this rate, the indicator would cover around 82 % of the distance needed to meet the goal by the target year, enough to give it level 2 status ('partly cloudy').

The contribution of each type of emission to the progress made between 1990 and 2009 varied. The greatest reductions were in the emissions of sulphur dioxide, which were reduced by 91.6 % (–1.1 percentage points compared with the preceding year). A reduction of 70 % had already been achieved by the middle of the 1990s and since then the decline has slowed significantly. Since 2000 any further reductions have been marginal at best. Contributing to this overall trend was the desulphurisation of the exhaust gases of power plants, the partial replacement of high-sulphur domestic lignite with low-sulphur fuels, and the legal limitations placed on the sulphur content in liquid fuels.

Emissions of non-methane volatile organic compounds (NMVOCs) were also significantly reduced, dropping 65.8 % by 2009 (–0.3 percentage points from the previous year). This means that a reduction of 70 % has nearly been achieved. In 2009, 79.1 % of emissions were produced by businesses and 20.9 % by private households. The increasing use of catalytic converters in automobiles has proved decisive in the sharp reduction of NMVOC emissions in the transport sector.

The emissions of nitrogen oxides dropped steadily until 2009, falling by 53.5 % (down 3.3 percentage points from the year before) to less than half the 1990 level, but this will probably still not be enough to reach the target value. In 2009, 12.0 % of these emissions were produced by the manufacturing industry and 18.5 % by the energy industry. The share produced by transport services was placed at 23.4 %, while private household consumption accounted for 15.7 % of NO_X emissions. 12.0 % of all nitrogen oxide emissions came from the agricultural sector. The increased use of exhaust gas denitrogenisation installations in power plants has resulted in a pronounced decrease over the years.

The emissions of ammonia, 95 % of which still comes from farming, persist at a high level. They have only dropped by 14.7 % since 1990 and even increased by 1.9 percentage points compared with the previous year. The initial decrease was mainly due to the reduction in livestock numbers in eastern Germany after 1990. Ammonia emissions are primarily associated with milk and meat production. This indicator is directly and indirectly related to Indicators 1, 3, 4, 5, 11, 12, 14a, b and 14e.

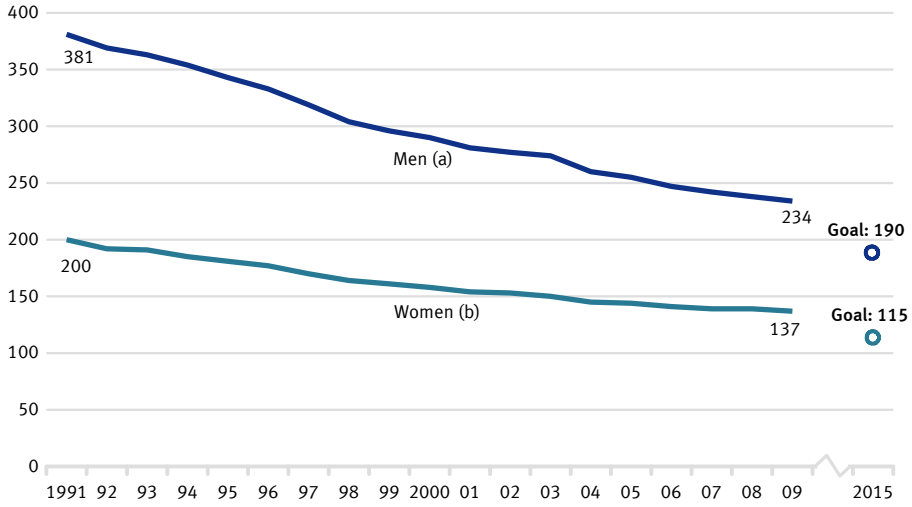
Health and nutrition

Living healthy longer

14a

14b

Premature mortality
Deaths per 100,000 population below the age of 65



14a, b Premature mortality

Health and life expectancy are determined by a variety of factors, including social status, educational level, personal lifestyle and habits (consumption of tobacco, alcohol, physical exercise, nutrition), working conditions, environmental factors and medical prevention and care. When a high number of deaths in a population occur at an age distinctly below the average life expectancy, this is an indication of an increase in avoidable health risks. The Federal Government's National Sustainability Strategy has set the goal of limiting premature mortality for men (14a) to 190 cases and for women (14b) to 115 cases per 100,000 inhabitants by the year 2015.

The indicator presented here shows the number of deaths of people below 65 years of age in Germany. The values refer to the number per 100,000 inhabitants of the population in 1987 under 65 years of age. The method of computing the figures takes account of the fact that demographic developments in Germany mean that there is an ever-increasing number of people above the age of 65 and provides for a time series that is comparable over the years.

Between 1991 and 2009 premature mortality steadily decreased, and did so more for men (–38.4 %) than for women (–31.7 %). The gender gap for premature mortality has narrowed again slightly between men and women. According to the calculation, 234 men and 137 women per 100,000 inhabitants died in 2009 at a premature age, i.e. before they reached the age of 65. As the pace of decrease has slowed somewhat, a continuation of this trend would mean that the indicator for both sexes will fall just short of the targets for the year 2015.

Life expectancy in Germany has risen further. Between 2008 and 2010 the average life expectancy for new-born girls was 82.6 years of age and for boys 77.5. Between 2007 and 2009 the average was 82.5 and 77.3 years of age, respectively.

Today, 60-year-old women can, statistically, expect to live another 24.9 years and 60-year-old men another 21.2. In the western *Länder* (excluding West Berlin) life expectancy is still somewhat higher than in the eastern *Länder* (excluding East Berlin). For new-born males the difference is still 1.3 years, for females only 0.2 years.

In 2009, cardiovascular diseases were in general the most common cause of death (41.7 %), followed by malignant tumours (25.3 %), diseases of the respiratory system (7.4 %) and the digestive tract (4.9 %) and deaths due to external causes (3.7 %). The significance of the causes of death varies depending on age and gender. Whereas cardiovascular diseases are the primary cause of death in older people, malignant tumours (cancers) represent the principal cause among 40- to 64-year-olds. Among 1-to 39-year-olds, the majority of deaths occurred due to non-natural causes (injuries and poisoning). Despite progress in the field of accident prevention, death by accident is still the main cause of death among 18- to 25-year-olds.

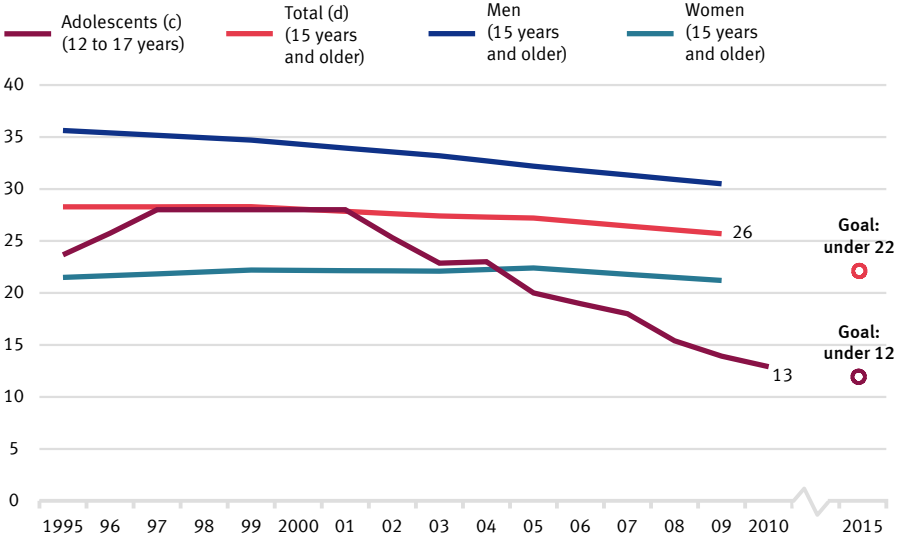
Besides factors such as health behaviour (see also Indicators 14c, d for the smoker rate or 14e for obesity), medical care also plays an important role in the mortality rate. The amount of money spent on health care totalled EUR 278 billion in 2009. That was a rise of EUR 13.8 billion or 5.2 % compared with the preceding year. This expenditure corresponded to 11.6 % of the GDP (previous year: 10.7 %) or EUR 3,400 per inhabitant (2008: EUR 3,220).

Health and nutrition

Living healthy longer

14c 14d

Smoking rate
Share in % of those polled



Source: Federal Statistical Office, Federal Centre for Health Education

14c, d Smoking rates amongst young people and adults

Smoking poses a risk of serious health impairment and premature death. And this risk is not confined to smokers themselves. Non-smokers exposed to tobacco smoke do not just suffer annoyance but can also fall ill from it. It can be observed that adolescents are guided by social role models in their smoking behaviour, in order to appear more grown up. The two sub-indicators on smoking behaviour show the percentage of polled adolescents between 12 and 17 years of age (14c) and those 15 years and older (14d), who occasionally or regularly smoke. The Federal Government is pursuing the goal of reducing the percentage of juvenile and adolescent smokers to under 12 % by 2015, and that of smokers of 15 years of age and older to under 22 %.

In the group of adolescents between 12 and 17 years of age, the proportion of smokers increased from 24 % (1995) to 28 % (1997 and 2001), but then dropped to 13 % (14 % male, 12 % female) by 2010 (data from Federal Centre for Health Education). No significant differences were seen

in the smoking rates of males and females. In 2009, 26 % of the total 15 and above population stated that they occasionally or regularly smoked (microcensus). In 1995 and 1999, 28 % of people in this group smoked. This meant that the rate for adult smokers had dropped only slightly. In order to reach the goal for adults (15 years of age and older), a more concerted effort on the part of all stakeholders must be made. Among adolescents (12 to 17 years of age), however, the target value will be achieved if the trend seen over the past years continues.

In 2009, 22 % of respondents 15 years or older considered themselves regular smokers, while 4 % smoked occasionally. The rate among men (31 %) was significantly higher than for women (21 %). While the proportion of male smokers had decreased by five percentage points since 1995, the proportion of female smokers remained virtually unchanged. The amount of tobacco smoked is important when considering the individual threat to health. In 2009, 96 % of the smokers surveyed preferred cigarettes. Fourteen per cent of regular cigarette smokers were in the category of heavy smokers (1995: 17 %) with a consumption of more than 20 cigarettes a day, whereas 80 % smoked 5 to 20 cigarettes a day. Differences between the genders were also apparent with regard to daily cigarette consumption.

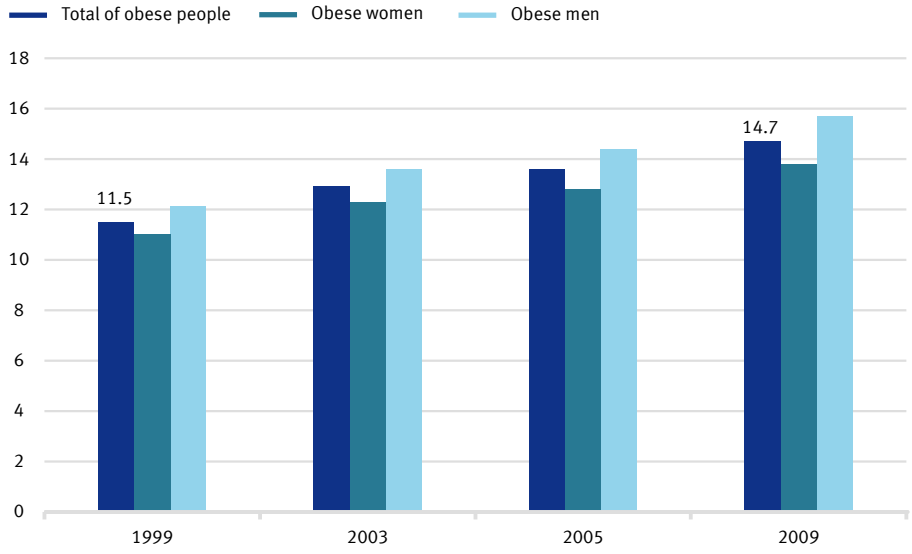
One in six of the regular male smokers (17 %) were heavy smokers, but only one in ten (10 %) of the female smokers. Besides the amount smoked, the age at which people start smoking also has an influence on the health risk. In the last 50 years the starting age has dropped significantly. In 2009 those men aged 65 to 69 at the time of polling stated that they had begun smoking at the age of 18.5, whereas women of the same age had begun at 21.9 years of age. Male adolescents aged 15 to 19 stated that they started at the age of 15.6 years, and their female counterparts at the age of 15.2. There is an inverse relationship between net household income and the proportion of smokers. In households with a monthly income of up to EUR 1,300, 33 % of those polled reported being smokers in 2009. In households with incomes of EUR 2,600 to EUR 4,500 per month, 24 % said they were smokers, and in households with over EUR 4,500 per month, 19 % of those polled said they smoked.

Smoking poses a high and at the same time avoidable risk to health. A reduction in the number of smokers would help to reduce premature mortality (see Indicator 14 a, b). In 2009, 5.1 % of all fatalities (43,638 people, of whom 30,373 were men and 13,265 women) could be traced to diseases typical of smokers (lung, laryngeal and tracheal cancer). Compared to 2000, this is an increase of 7.6 %, which is primarily due to an increase in the number of deaths among women. Since 2000 their share has gone up by 5.7 percentage points from 24.7 % to 30.4 %. The average age of those who died from lung, laryngeal and tracheal cancers in 2009 was 70.1 years of age – seven years lower than the average death rate (77.1 years). Apart from individual suffering and personal tragedy, from an economic perspective, diseases and premature deaths caused by the consumption of tobacco place a major burden on the social security and health care systems.

Health and nutrition

Living healthy longer

Proportion of obese people
in % of adults (18 years and older)



14e Proportion of adults suffering from obesity

Surplus body weight plays a major role in the development of diseases of civilisation such as cardiovascular diseases, diabetes and joint injuries. Being overweight is directly caused by an unbalanced diet and lack of exercise, and is indirectly related to social causes, such as educational background or social integration. Besides the consequences to health, excess weight is also a burden on the national economy and has a negative impact on social life. People are classified as 'overweight' based on their body mass index (BMI), that is, an individual's body weight in kilograms divided by the square of his or her height in metres. People with a BMI of 25+ are classified according to the WHO as 'overweight' (with age and sex-specific differences not taken into consideration). When the overweight condition goes beyond a certain point (a BMI of 30+), it is classified as 'obesity' and is as a rule connected to impairments to health.

It is the goal of the Federal Government to see a reduction in the proportion of adults suffering from obesity in Germany by 2020.

In 2009, 14.7 % of the German population over the age of 18 was classified as obese. In 1999 this figure still stood at 11.5 %. The trend for obesity in the population has since 1999 moved steadily away from the goal envisioned in the Sustainability Strategy.

At 15.7 %, the percentage of obese men was higher than that of obese women (13.8 %). In 2009, 51.4 % of the 18 and over population was classified as overweight. Again, the share of men (60.1 %) was higher than that of women (42.9 %).

The proportion of adults suffering from obesity increases with age, although the trend reverses sharply among people of very advanced age. In 2009, 2.6 % of 18- to 20-year-old women were obese. By the age of 30 to 35, 8 % of women were obese, and 15.2 % had become obese by the time they were between 50 and 55. The highest proportion of obese women (21.6 %) was found in the age group between 70 and 75 years of age; after this age the figures fell sharply.

In men, some 11.5 % had become obese by the time they were between 30 and 35, while the highest proportion of obese men was found in the 60 to 65 age group (22.3 %). Compared to 1999, the rise in the share of obese people in the advanced age group is striking. In 1999 about 16 % of the women between 70 and 75 were obese, but in 2009 the figure was 21.6 %.

The German Health Interview and Examination Survey for Children and Adolescents 2007 – KiGGS (Robert Koch Institute) provided specific results for the 3- to 17-year-old age group. According to these figures for the years 2003 to 2006, 2.9 % of 3- to 6-year-olds, 6.4 % of 7- to 10-year-olds and a whopping 8.5 % of 14- to 17-year-olds were obese. No significant differences were seen between boys and girls here. An increased risk of being overweight or obese was found among children from families of a lower social status and among children whose mothers were also overweight. The causes of the spread of obesity can be found, among other things, in a diet too rich in calories and in too little physical exercise. As yet, no continuous time series data are available on obesity in children and adolescents, so it is not possible to depict any trend.

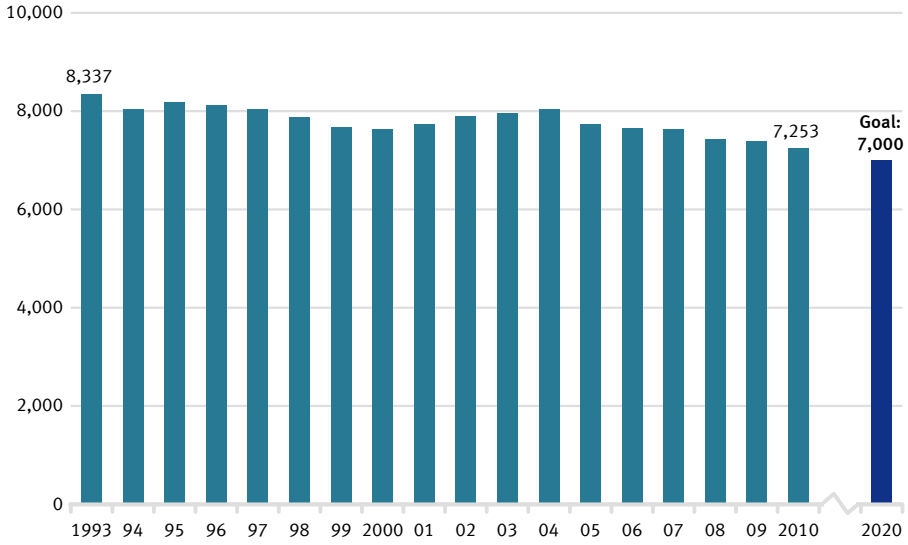
Being underweight, i.e. having a BMI lower than 18.5, is the opposite phenomenon to that of obesity and represents an equally important health risk. In 2009, the share of women who were underweight (3 %) was considerably greater than the share found in men (1 %). In fact, 12.5 % of young women between 18 and 19 years of age were underweight, and 9.4 % were still underweight at age 20 to 24.

This indicator is related to Indicators 9, 14a, 14b, 16, 17 and others.

Crime

Further increasing personal security

Criminal offences
Reported cases per 100,000 population



Source: Federal Criminal Police Office

15 Criminal offences

A safe environment that permits the citizens of a country to live without fear of ruthlessness and crime is an essential prerequisite for a properly functioning social system and social sustainability. The previous Indicator 15 for 'Burglaries in homes' placed a particular crime at the focal point of the survey. It has now been replaced by the 'Criminal offences' indicator, which looks at overall crime trends. This indicator serves as a more comprehensive benchmark for personal security while still allowing particular crimes to be examined in detail and hence for a targeted broadening of the perspective.

The indicator covers all criminal offences reported to the police and recorded in the Police Crime Statistics. The goal as set foresees a reduction in the number of recorded cases per 100,000 population (the frequency) to under 7,000 by the year 2020.

The number of criminal offences committed per 100,000 population decreased by a total of 13 % between 1993 and 2010. This trend, however, has not been a continuous one. It was in some years interrupted by temporary increases in case numbers.

On average over the last five years, however, this indicator has moved in the right direction, meaning that a continuation of this trend would allow us to reach the goal set for 2020.

In 2010, the number of criminal offences totalled around 5.9 million. Looking at examples from various subcategories, 2.0 % of the offences registered by the police involved burglaries in homes, 16 % involved cases of fraud and 2.4 % involved serious and grievous bodily harm. This last category accounted for a good two thirds of all registered violent crimes.

While the number of burglaries in homes fell 47 % between 1993 and 2010, cases of fraud climbed 83 % and cases of serious and grievous bodily harm rose by 63 %. But if we look at developments over the last five years only, a deviation from these trends was seen for the crimes of burglaries in homes and serious bodily harm. Starting in 2005, the number of burglaries in homes stagnated initially but then rose again between 2008 and 2010 by a total of 12.1 %, while the number of cases of serious and grievous bodily harm declined between 2007 and 2010 by a total of 7.7 %.

Changes in Police Crime Statistics do not, however, always reflect changes in the actual number of crimes committed, as they only cover what is called the 'bright field', i.e. criminal offences that come to the knowledge of the police. Since statistical data on the 'dark field' – the crimes that remain unknown to the police – does not exist, such crimes cannot be represented in the Police Crime Statistics. If, for example, the population changes their behaviour with respect to reporting criminal offences, or if the intensity with which the police pursue particular crimes changes, the boundary between the bright and dark fields can shift without there necessarily being any change to the amount of actual crime committed.

The clear-up rate for all offences registered by the police in 2010 was about 56 %. Significant differences were apparent here depending on the type of criminal offence. The clear-up rate for burglary in homes, for example, was only about 16 %. By contrast, 80 % of fraud offences and 82 % of cases of serious and grievous bodily harm cases were cleared up. The relatively low clear-up rate for burglaries in homes is related on the one hand to the high rate of reporting (small dark field), since such cases must normally be reported to the police in order for victims to submit insurance claims. On the other hand, the police rarely find solid leads to point them to the perpetrators. This is in sharp contrast to the cases of fraud and bodily injury. These crimes have high clear-up rates because in most cases the identity of the suspect becomes known to the police at the time the crime is reported.

Relationships exist with Indicators 6, 9, 10, 16, 19 and others.

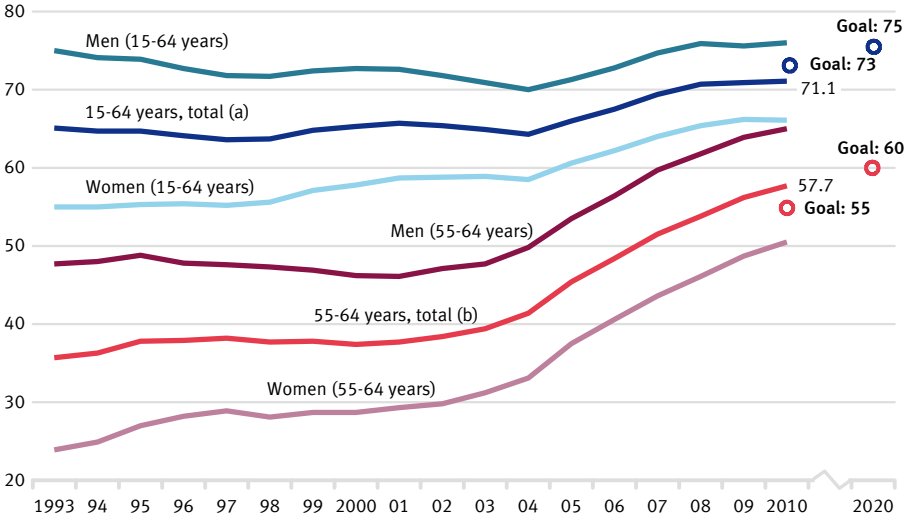
Employment

Boosting employment levels

16a

16b

Employment rate
Share in %



Source: Federal Statistical Office, Statistical Office of the European Union (Eurostat)

16a, b Employment rate

Demographic changes (in particular our 'ageing society') may over the long term result in a shortage of labour in Germany. Moreover, the social security system is threatened by an increasing lack of funds due to the shifting ratio of people drawing pensions to people in work. It is therefore necessary to exploit our labour potential more effectively in the future.

The goal of the Federal Government is to increase the share of people in work in the employable age group (15 to 64 years of age) to 73 % by 2010, and to 75 % by 2020. In addition, the government hopes to see the employment rate among older people (55 to 64 years of age) increase to 55 % by 2010 and to 60 % by 2020. Compared to the last indicator report, the 2020 employment rate target for older people has been raised by three percentage points.

The employment rate rose by six percentage points between 1993 and 2010 from 65.1 % to 71.1 %, short of the target mark of 73 % set for 2010. At the same time the employment rate for older people rose by 22.0 percentage points from 35.7 % to

57.7 % and was thus well above the goal of 55 %. If the trend seen in recent years continues, there should be no problem attaining the goals defined for 2020.

The significant rise in the employment rate seen in 2005 is partly based on methodological changes to the survey. The change introduced in 2005 meant that the microcensus would start supplying results in the form of annual averages. But such figures are only roughly comparable to the results used up to 2004, which were taken for a single reporting week. At the same time there was an improvement in recording employment data in the survey and a new extrapolation procedure was introduced.

The employment rates of men and women have developed very differently since 1993. The rate for men in the period under review only rose by 1.0 percentage point to 76.0 %, whereas in the case of women it rose by 11.1 percentage points to 66.1 %. In evaluating the increase in the employment rate of women it must be taken into consideration that this was accompanied by a clear increase in part-time employment (+3.3 million), while the number of womenemployed full-time went down by 0.5 million.

If we break down the employment rate into age groups we find that there have been various development trends between 1993 and 2010. Among 15- to 24-year-olds the share went down by 5.7 percentage points to 46.2 %. One of the reasons for this is the fact that the qualifications requirements placed on young people are growing, meaning that they are on average spending longer at school and university and therefore entering the workforce later than was previously the case. In contrast, a slight rise was noted in the employment rate for 25- to 54-year-olds (+4.7 percentage points). After falling in 2008, the employment rate among 15- to 24-year-olds stabilised again at the same level between 2009 and 2010. Among 25- to 54-year-olds, however, the decline slowed, with a 0.1 % drop compared to the previous year‘s 0.2 %.

Among older people (55- to 64-year-olds) the employment rate has been rising, with a particularly sharp climb of 18.3 % seen since 2003. Starting from a lower level, female employment rates in this age group have risen 26.6 percentage points since 1993, a rate much greater than was seen for men (+17.3 %).

Relationships exist with Indicators 6, 9, 10, 17, 18 and others.

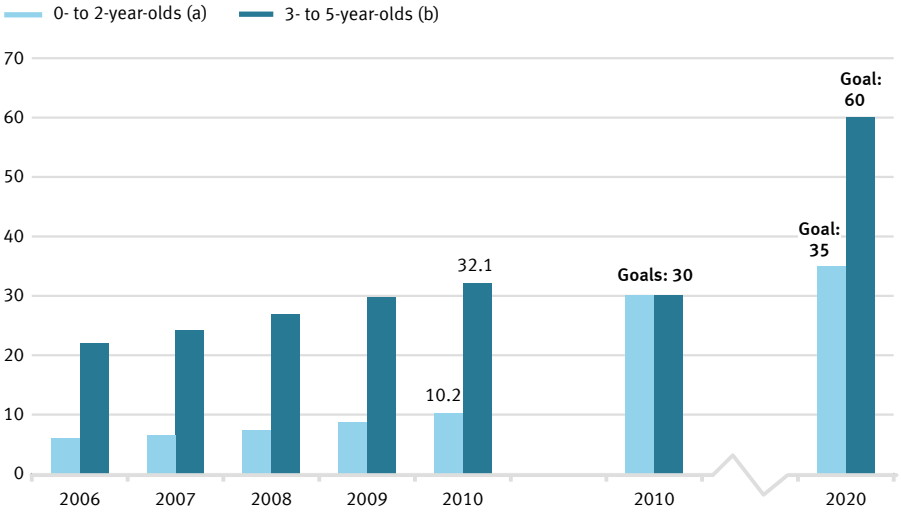
Prospects for families

Improving the compatibility of work and family life

17a

17b

Share of children in all-day care in each age group
in %



More than 7 hours of care in day-care facilities, excluding publicly funded care in private homes.

17a, b All-day care provision for children

The availability of childcare options to meet the demands of today's families serves to improve the compatibility between family life and work. Women in particular continue to be prevented from taking up employment due to a lack of childcare, or couples decide against starting a family because they cannot be sure of obtaining childcare. A better balance between family and job might also contribute to increasing the birth rate in Germany. In addition, promoting child development within a needs-oriented environment, particularly including all-day care facilities, is an important contribution to creating equal opportunity and to the integration of foreign children and adolescents.

The goal of the Sustainability Strategy was to enable at least 30 % of the children in both age groups to have all-day care by 2010. By 2020 the aim is to see these percentages increase to 35 % for 0- to 2-year-olds (17a) and to 60 % for 3- to 5-year-olds (17b). In 2010, parents of 32.1 % of the 3- to 5-year-olds (kindergarten age) took advantage of institutional all-day care, while for children under 3 years of age

(nursery age) this figure was 10.2 %. Compared with 2006, for which comparable figures are available for the first time, there has been significant progress in the area of all-day care in day care facilities. In the case of the 3- to 5-year-olds, the proportion of children receiving all-day care rose by 10.1 percentage points, slightly exceeding the 2010 goal set for all-day kindergartens. Although all-day nursery care rose by 4.3 percentage points from 2006 to 2010, this was not nearly enough to achieve the 30 % goal set for 2010. The 2020 targets for both age groups may however yet be reached if the trend seen in recent years continues.

In 2010, approximately 874,500 children received all-day care in nurseries and kindergartens. Some 33,000 further children under six years of age are cared for in publicly subsidised day care in private homes. The number of children in this age group who were in part-time care was around 1.49 million. A quarter of the children receiving full-time or part-time care in nurseries and kindergartens in 2010 had an immigration background, meaning that at least one of the parents was of foreign origin. The care rate for these children was just under 49 %, while for children with no immigration background the rate was around 62 %.

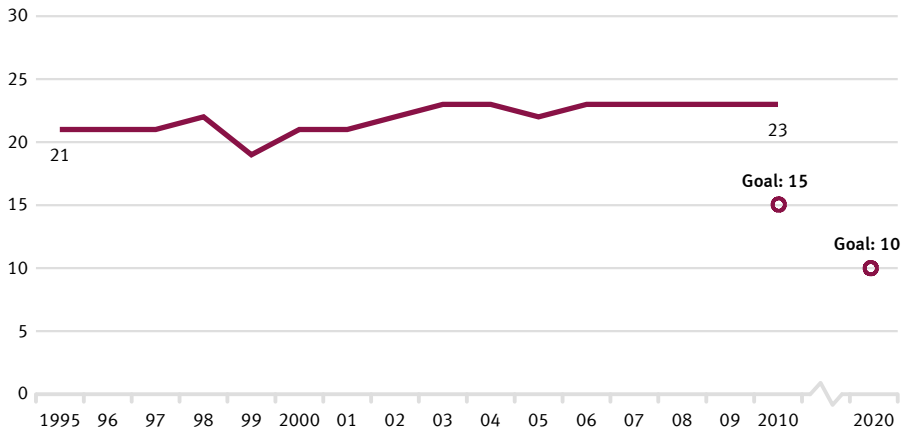
In terms of childcare opportunities, after-school care programmes and all-day schools also play a significant role. In 2010 just under 131,700 children between 6 and 13 years of age were cared for on an all-day basis in after-school care programmes and 644,000 children received part-time care. The proportion of pupils attending all-day schools (out of all pupils in general education schools) during the 2009/2010 school year was 26.9 %. This figure, however, includes pupils from all school types, meaning that it also includes pupils who are older than 13. In *Grundschulen* (primary schools) in the same school year, 21.5 % of the children received all-day care. Since 2002, the number of all-day school pupils has risen markedly, from 874,000 to almost 2.1 million (in all general education schools) and from 134,000 to around 625,500 in the *Grundschulen*. (Source: Standing Conference of the Ministers of Education and Cultural Affairs, 2011).

With respect to the availability of both all-day care facilities and all-day care slots in, for example, primary schools, a clear gap exists between the *Länder* in the east and west of Germany. In all the eastern *Länder* as well as in Berlin and Hamburg, the all-day care rate for 0- to 2-year-olds (percentage of children in all-day care in relation to all the children in this age group) was well above the national average, while in all the other *Länder* the rate was below the average. The highest percentage of all- day care for 3- to 5-year-olds was found in Thuringia at 87.1 %; the lowest in Baden-Württemberg at 12.9 % (both 2010). The share of all-day pupils in *Grundschulen* ranged from 72.4 % in Berlin to 4.3 % in Mecklenburg-Western Pomerania (2007/2008). At the 'nursery summit' held between the Federal Government, the Länder and the municipalities in 2007, it had been agreed to offer day-care throughout the country for 35 % of the children under three years of age by 2013 (irrespective of the scope of care). Measured against this target, day-care slots were available for about 23 % of under three-year-olds in 2010, with the rate in the west German *Länder* at just over 17 % and in the east of Germany at around 48 %.

Equal opportunities

Promoting equal opportunities in society

Difference between average gross hourly earnings of women and men
in % of men's earnings



Because of changes to the applied method made in 2002 and 2006, the gender pay gap probably rose by one percentage point in each of these years.

18 Gender pay gap

'Men and women shall have equal rights. The state shall promote the actual implementation of equal rights for women and men and take steps to eliminate disadvantages that now exist.' This statement of principle in the constitution is also one goal of a sustainable society. Gender-related disadvantages in politics, business and society must be avoided in order to create equal opportunities.

Differences in pay between men and women in a modern business-oriented society are a sign of social inequality. A narrowing of pay disparities is an indicator of progress on the road to equality. The goal of the Sustainability Strategy of 2002 is a reduction in the pay gap to 15 % by 2010 and to 10 % by 2020.

In 2010 the gender pay gap was on average 23 %, which means that the average gross hourly wage for women was more than a fifth lower than that of the men. This was far off the goal set for 2010. Since 1995 the gender pay gap has scarcely changed. Should this development continue the goal set for 2020 might also not be achieved.

The past five years have revealed no statistically significant trend.

Differences in pay between men and women are due to a number of factors. For example, women are under-represented in certain professions, sectors and on the higher rungs of the career ladder. They interrupt their careers and cut back their hours more often than men and do so for longer periods due to family reasons, something that hinders their subsequent professional development. The result is that women, even if they have the same formal qualifications as men, frequently earn less. Another factor is that the earnings potential in typical female professions is in general still lower than in the traditional male professions. Sectors with a high percentage of female employees include the clothing industry, retail sales, and the health and social services sectors (each with a proportion of women employees of between 70 % and 80 %). On the other hand, men more frequently work in areas with comparably higher earnings, such as mechanical engineering and automobile manufacturing. Women represent less than 20 % of the employees in these areas. In 2010, for example, the average gross monthly earnings of women with full-time employment in retail sales was EUR 2,211, while in automobile manufacturing it was EUR 3,335. Men in these sectors on average earned EUR 2,809 or EUR 3,948 per month, respectively.

Since 2007 it has also been possible to compare the gender pay gap in private industry and in the public sector. Results for 2007 and 2010 show that the difference in earnings in private industry is about three times as high as in the public sector (23 % and 7 % – note that the computation method used here is slightly different than the one used for the gender pay gap above).

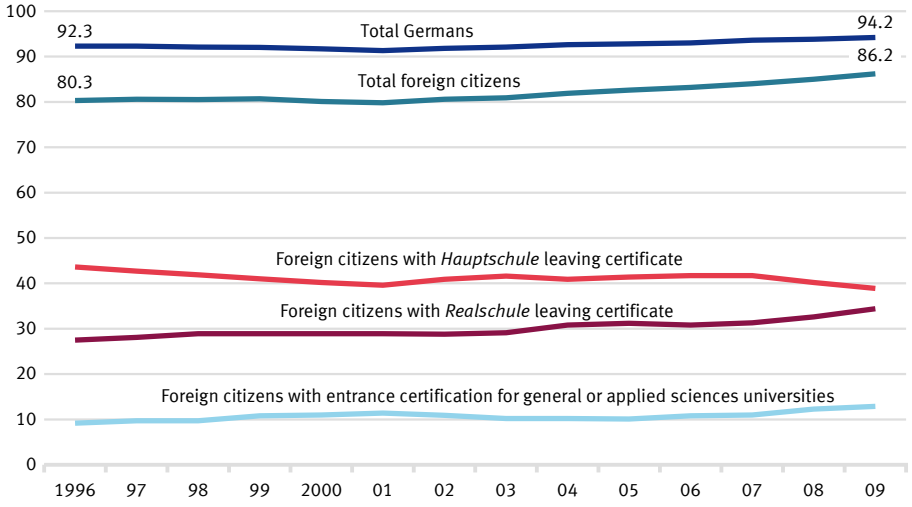
Although the availability of childcare facilities (all-day nurseries, kindergartens and schools) has improved in recent years (see Indicator 17), in West Germany at least it is still by no means sufficient to enable women to easily combine job, family and child rearing so that mothers at least avoid interruptions in their professional careers. On the other hand, the introduction of *Elterngeld* (paid parental leave) in 2007 should do much to help women cut down on the number of breaks they have to take in their careers.

At 23 %, the gender pay gap in Germany in 2009 was significantly above the European Union average (17 %). Of the 27 countries in the EU, only Estonia (2007: 30 %), the Czech Republic (26 %) and Austria (25 %) had a gender pay gap greater than Germany‘s. The EU country with the smallest gap in gross earnings between men and women was Slovenia (3 %), followed by Italy (6 %), Malta (7 %) and Romania (8 %).

Integration

Integration instead of exclusion

General school leavers with a school leaving certificate
in % of all school leavers by year



19 Foreign school leavers with a school leaving certificate

The integration of foreigners living in Germany is an important prerequisite for cohesion within our society. A necessary condition for successful integration is the acquisition of sufficient qualifications at school to open up further educational and professional opportunities later on. For this reason the National Sustainability Strategy pursues the goal of increasing the percentage of young foreign school leavers who obtain at least a school leaving certificate from a *Hauptschule* (lower secondary school), and of bringing this share into line with the corresponding percentage of German pupils by 2020.

The indicator shows the share of foreign school leavers who leave general education schools with at least a *Hauptschule* certificate as a percentage of all foreign school leavers within one school year. In the period 1996 to 2009 this share rose from 80.3 % to 86.2 %, and thus represents progress for these young people. Nevertheless, the percentage of graduates from this group was in 2009 still far lower than the 94.2 % share of German young people who

obtained a school leaving certificate. To attain the desired goal, further efforts are still necessary, particularly in light of the simultaneous goal to increase the proportion of all school leavers who achieve certificates (see Indicator 9a).

If we look at the certificates achieved, we find that just under 38.9 % of the foreign school leavers from general schools achieved a *Hauptschule* certificate in 2009, 34.4 % achieved a certificate from a *Realschule*, and 12.9 % earned entrance qualification for general or applied sciences universities. For German graduates the corresponding figures were 20 %, 41 % and 34 %, respectively. Foreign young people are thus substantially under-represented in comparison to Germans, especially when it comes to the higher level school leaving certificates. 13.8 % of foreign school-leavers failed to obtain a school leaving certificate from general schools, compared to 5.8 % of German school leavers. Comparing the genders, we find that foreign young women – like their German counterparts – obtain a better overall level of school education than do young men. In 2009, only 11.5 % of foreign young women leaving the general school system had no school leaving certificate, whereas for foreign young men the figure was 16.1 %.

Besides school education, vocational training and education plays an important role in the integration of foreign residents into our society. In 2010, 41 % of the 30- to 34-year-olds of foreign origin had no vocational qualification or university degree. The figure for Germans of the same age was 12 %. Of the members of this age group who reside in Germany and who have an 'immigration background' (i.e. people who themselves or whose parents immigrated to Germany after 1949, or who do not possess German citizenship or were not naturalised), just under 37 % had no recognised vocational qualification. Despite their better education, 44 % of foreign women aged 30 to 34 had no vocational or university qualification in 2010, compared to 37 % of young men of foreign origin.

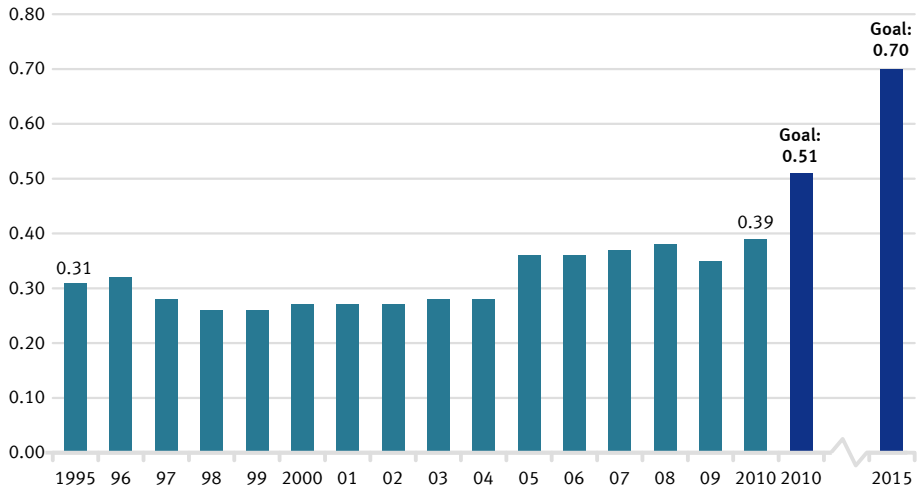
A sound knowledge of German is also of decisive importance for social integration. It is a prerequisite for obtaining a higher-level school leaving certificate, as well as for participation in society generally. For this reason integration courses for immigrants were introduced in 2005. By the end of 2010, some 420,000 people had attended such courses. Approximately 54 % of all those taking the final exam attained the B1 level of the Common European Framework of Reference (CEFR) for describing language abilities. If we include the next lower level (A1 CEFR), more than 85 % of all course participants have obtained a language certificate since mid-2009. (Source: Federal Ministry of the Interior)

In 2009, around 7.1 million foreign citizens had residence in Germany (8.7 %) and 15.7 million residents (19.2 %) had an immigration background. In the 2009/2010 school year around 766,000 foreign pupils attended general education schools (8.6 % of total) and 202,000 pupils of foreign descent attended vocational schools (7.3 %).

Development cooperation

Supporting sustainable development

Share of expenditure for official development assistance (ODA) in gross national income
in %



Sources: Federal Statistical Office, Federal Ministry for Economic Cooperation and Development

20 Share of expenditure for official development assistance in gross national income

Through their development policies, industrialised nations contribute to reducing poverty worldwide, securing peace, achieving democracy, shaping globalisation equitably and protecting the environment. In the context of these responsibilities, German development policy is guided by the principle of achieving global sustainable development as expressed equally through economic output, social justice, ecological sustainability and political stability.

The indicator comprises public expenditure for development cooperation (Official Development Assistance or ODA) as a percentage of gross national income (GNI). ODA mainly includes expenditure for financial and technical cooperation with developing countries as well as contributions to multilateral institutions for development cooperation (such as the United Nations, European Union, World Bank and regional development banks). Furthermore, waivers of debt as well as costs for specific development assistance provided in the donor country, such as the cost of studies

for students from developing countries or expenditure for development-related research, are also counted as ODA. The Sustainability Strategy target set for 2006 to spend 0.33 % of the gross national income on development cooperation had already been reached in 2005. In a joint commitment, the EU member states have agreed to incrementally increase expenditure for ODA. For German development policy, this means raising the country's share of ODA spending to 0.51 % by 2010 and to 0.7 % by 2015. In a recorded statement on the decision of the European Council, the Federal Government has stated that in light of the extremely difficult German financial situation, innovative funding instruments will need to make a major contribution towards this goal. Thus in 2008 revenues derived from the public sale of emissions certificates were for the first time used for international climate projects in the context of development policy measures.

In 2010, ODA accounted for 0.39 % of GNI, which was slightly up from the 2008 level following a drop in 2009. ODA payments in 2010 amounted to EUR 9.8 billion compared to EUR 8.7 billion a year before. This was far below the 0.51 % ODA target set for 2010. If the trend of the past five years (2006 – 2010) remains unchanged and no additional efforts are made, it will also not be possible to reach the Sustainability Strategy goal of 0.70 % of gross national income being dedicated to development cooperation.

The largest portion of ODA funds (just under 60 % in 2009) is being used for technical or financial cooperation with selected partner countries, for food aid, development-oriented emergency and refugee aid and for waivers of debt. Funds are also being used to support non-governmental development cooperation (e.g. NGOs, political foundations, church relief organisations and the private sector). Further funding is provided to multilateral institutions.

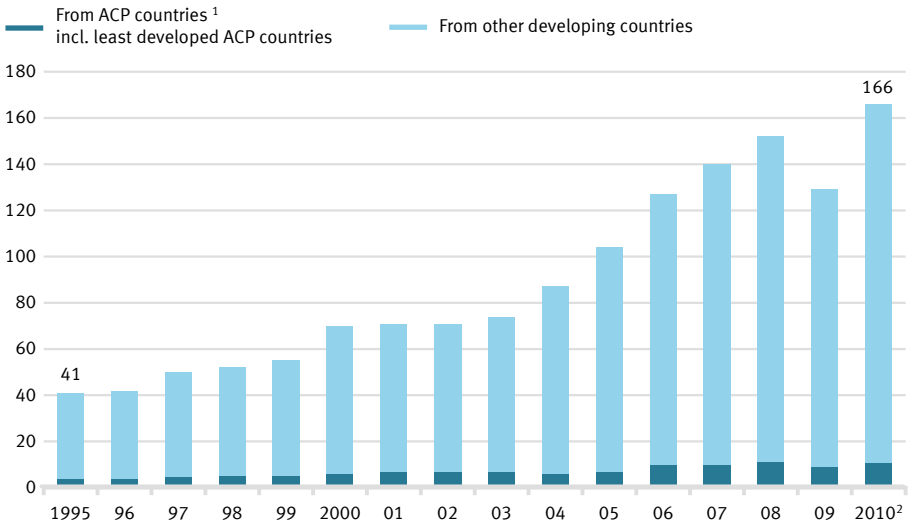
In an international comparison, Germany was in 2010 the fourth largest donor of ODA funds in absolute terms after the USA, the UK and France and before Japan (preliminary results). When comparing shares of GNI, however, it was primarily the smaller countries which contributed a higher proportion to development cooperation. In 2010 Norway, Luxembourg, Sweden, Denmark and the Netherlands clearly exceeded the 0.7 % mark, as they have for many years.

In addition to official development cooperation, private organisations (including churches, foundations and associations) also make contributions from donations and from their own resources. The amount spent on private development cooperation remained roughly constant between 1999 and 2004 at around EUR 900 million a year. In 2005 it increased to around EUR 1.23 billion and in 2009 amounted to EUR 983 million, equivalent to a 0.04 % share of GNI (in 2009). Private direct investment in developing countries totalled to EUR 9.3 billion in 2009.

Opening markets

Improving trade opportunities for developing countries

German imports from developing countries
in billion EUR



Excl. advanced developing countries.
1 ACP = Africa, the Caribbean and the Pacific. 2 Preliminary results.

21 German imports from developing countries

For their economic and social development, the developing countries are dependent upon an open and fair system of trade that enables them to sell both raw materials and processed products in the markets of the industrial and emerging countries. The figures for German imports from the developing countries serve as an indicator of how far this goal has been achieved. The so-called advanced developing countries, such as South Korea, Israel and Singapore are not included.

At the end of the 1990s and again between 2004 and 2008, imports rose significantly from EUR 41 billion in 1995 to EUR 152 billion in 2008. Following a sharp downturn in 2009 (16 %), these figures began to rise again. In 2010, the value of goods imported from developing countries totalled some 166 billion euros. This amounts to a four-fold increase in such imports between 1995 and 2010, which was considerably higher than the increase in total imports into Germany (+137 %). The share of total imports that came from developing countries increased from 12.0 % to 20.6 % during this period.

Approximately two-thirds of the imports from developing countries in 2010 came from Asian countries (including China), 13.1 % from Central and South America and 10.2 % from Africa. The remainder came from European developing countries and from countries in the Middle East and Oceania.

In terms of imports to Germany, the most important developing country was China. In 2010 the value of Chinese imports stood at around EUR 77 billion and was thus approximately nine times as high as in 1995. Changes to this indicator are therefore strongly influenced by the amount of imports from China. If these are excluded from total developing country imports for the period from 1995 to 2010, we find that the share of imports to Germany from these countries has scarcely changed, climbing only by 1.5 percentage point (to 11.1 % in 2010). To this extent a greater participation of these countries in trade with Germany is hardly recognisable.

This also applies to imports from the countries of Africa, the Caribbean and the Pacific (the ACP countries), with which the EU cultivates a special relationship. The value of the imports from these countries went up from EUR 4.2 billion to EUR 11.2 billion between 1995 and 2010. Their share in the total German imports has however remained virtually the same and stood at 1.4 % in 2010. The group of the fifty least developed countries (LDCs), which for the most part also belong to the ACP states, increased their share of imports from 0.37 % in 1995 to 0.53 % in 2010.

As an EU member state, Germany offers the ACP states and LDC group market access virtually free from customs duties and quotas in the context of various preference systems. Nevertheless, most of these countries have not been able to increase their export share to Germany to the same degree as has been possible for a country such as China. This suggests that in addition to the openness of markets there are other factors which influence the export opportunities of developing countries. These include the capacity to produce goods in sufficient quantity and quality, a functioning infrastructure and, not least, political stability.

It is also interesting to look at which categories of goods made up an especially high percentage of total imports (more than 25 %) in 2009. These include clothing products (74 %), ores (70 %), leather and leather goods (61 %), data processing equipment and electronic and optical products (37 %), textiles (36 %) and agricultural products (35 %).

This indicator is directly and indirectly related to many other indicators used in the Strategy, including 1, 2, 3, 10, 11 and 20.

Indicator status summary

The following summary shows the mathematically calculated status of the indicators in the target year in simplified form. The basis for the calculation is the average annual change over the last five years (last ten years for Indicator 5) up to the last year of the relevant time series. Assuming that the given trend continues unchanged, the value which would have been (or actually has been) achieved in the next target year was calculated statistically. Based upon this value, the indicators are then subdivided into four groups:

The target value for the indicator has been achieved or the remaining "distance" to the target will be covered by the target year (deviation less than 5 %) if the trend continues unchanged.

The indicator is moving in the right direction, but a gap of 5 to 20 % to the target remains or will remain for the target year if the average annual trend continues unchanged.

The indicator is moving in the right direction, but a gap for more than 20 % to the target remains for the target year if the average annual trend continues unchanged.

The indicator is moving in the wrong direction and the distance to the goal will become even greater if the average annual trend continues unchanged.

The status descriptions given here are not forecasts. They do not take account of the effect of measures implemented towards the end of the observation period or of additional efforts taken in subsequent years. The actual trend of the indicators in the target year can thus differ from the projected value depending upon changes in the political, economic and other basic conditions.

Note: For 11 of the indicators, no statistical trend could be recognised or calculated over the last five years (10 years for Indicator 5) until the last year of each indicator's time series (see identifier "nt" in the following summary). There is therefore a high degree of uncertainty associated with the classification of these indicators into the different status groups.

No.	Indicator areas Sustainability axiom	Indicators	Goals	Status	5 year trend[1]
	I. Intergenerational equity				
1a	**Resource conservation** *Using resources economically and efficiently*	Energy productivity	To be doubled between 1990 and 2020		t
1b new		Primary energy consumption	To be reduced by 20 % by 2020 and 50 % by 2050 compared to 2008		t
1c		Raw material productivity	To be doubled between 1994 and 2020		t
2	**Climate protection** *Reducing greenhouse gases*	Greenhouse gas emissions	To be reduced by 21 % by 2008/2012, 40 % by 2020 and 80 to 95 % by 2050, in each case compared to 1990		t
3a amen-ded	**Renewable energy sources** *Strengthening a sustainable energy supply*	Share of renewable energy sources in final energy consumption	To be increased to 18 % by 2020 and 60 % by 2050		t
3b		Share of renewable energy sources in electricity consumption	To be increased to 12.5 % by 2010, to at least 35 % by 2020 and to at least 80 % by 2050		t
4	**Land use** *Sustainable land use*	Built-up area and transport infrastructure expansion	Increase to be reduced to 30 hectares a day by 2020		t
5	**Species diversity** *Conserving species – protecting habitats*	Species diversity and landscape quality	Increase to the index value of 100 by 2015		t[2]

1 t = Trend, nt = no trend. – 2 10 year trend.

No.	Indicator areas Sustainability axiom	Indicators	Goals	Status	5 year trend[1]
6a	**Government debt** *Consolidating the budgets – creating intergenerational equity*	General government deficit	Ratio of government deficit to GDP less than 3 %		t
6b new		Structural deficit	Structurally balanced public spending, total national structural deficit of no more than 0.5 % of GDP		t
6c new		Government debt	Ratio of government debt to GDP no more than 60 %		t
7	**Provision for future economic stability** *Creating favourable investment conditions – securing long-term prosperity*	Gross fixed capital formation in relation to GDP	Increase in gross fixed capital formation share in GDP		nt
8	**Innovation** *Shaping the future with new solutions*	Private and public spending on research and development	To be increased to 3 % of GDP by 2020	 *	t
9a	**Education and training** *Continuously improving education and vocational training*	18- to 24-year-olds without a school leaving certificate	To be reduced to less than 10 % by 2020	 *	t
9b amended		30- to 34-year-olds with a tertiary or post-secondary non-tertiary level of education	To be increased to 42 % by 2020		t
9c		Share of students starting a degree course	To be increased to 40 % by 2010, followed by further increase and stabilisation at a high level		t

1 t = trend, nt = no trend, * New goal / new evaluation; cannot be compared to previous period; see indicator description for explanation.

No.	Indicator areas Sustainability axiom	Indicators	Goals	Status	5 year trend[1]
	II. Quality of life				
10	**Economic output** *Combining greater economic output with environmental and social responsibility*	Gross domestic product per capita	Economic growth		nt
11a	**Mobility** *Guaranteeing mobility – protecting the environment*	Intensity of goods transport	To be reduced to 98 % by 2010 and to 95 % by 2020, compared to 1999 levels		nt
11b		Intensity of passenger transport	To be reduced to 90 % by 2010 and to 80 %by 2020, compared to 1999 levels		nt
11c		Share of rail transport in goods transport performance	To be increased to 25 % by 2015		nt
11d		Share of inland freight water transport in goods transport performance	To be increased to 14% by 2015.		t
12a	**Farming** *Environmentally sound production in our cultivated landscapes*	Nitrogen surplus	To be reduced to 80 kg/hectare of agricultural area by 2010, further reduction by 2020		t
12b		Organic farming	Share of organic farming on land used for agriculture to be increased to 20 % in coming years		t
13	**Air quality** *Keeping the environment healthy*	Air pollution	To be reduced to 30 % by 2010, compared to 1990 levels		t

1 t = trend, nt = no trend.

No.	Indicator areas Sustainability axiom	Indicators	Goals	Status	5 year trend[1]
14a	**Health and nutrition** *Living healthy longer*	Premature mortality (cases of death per 100,000 residents under 65): Men	To be reduced to 190 cases per 100,000 by 2015		t
14b		Premature mortality (cases of death per 100,000 residents under 65): Women	To be reduced to 115 cases per 100,000 by 2015		t
14c		Smoking rate amongst young people (12- to 17-year-olds)	To be decreased to under 12 % by 2015		nt
14d		Smoking rate amongst adults (15 years and older)	To be decreased to under 22 % by 2015		nt
14e		Proportion of adults suffering from obesity (18 years and older)	To be reduced by 2020		nt
15 amen-ded	**Crime** *Further increasing personal security*	Criminal offences	To be reduced in number of recorded cases per 100,000 inhabitants to under 7,000 by the year 2020		t
	III. Social cohesion				
16a	**Employment** *Boosting employment levels*	Employment rate (total) (15- to 64-year-olds)	To be increased to 73 % by 2010 and 75 % by 2020		t
16b		Employment rate (older people) (55- to 64-year-olds))	To be increased to 55 % by 2010 and 60 % by 2020		t

1 t = trend, nt = no trend.

No.	Indicator areas Sustainability axiom	Indicators	Goals	Status	5 year trend[1]
17a	**Prospects for families** *Improving the compatibility of work and family life*	All-day care provision for children (0- to 2-year-olds)	To be increased to 30 % by 2010 and 35 % by 2020		nt
17b		All-day care provision for children (3- to 5-year-olds)	To be increased to 30 % by 2010 and 60 % by 2020		nt
18	**Equal opportunities** *Promoting equal opportunities in society*	Gender pay gap	To be reduced to 15 % by 2010 and to 10 % by 2020		t
19	**Integration** *Integration instead of exclusion*	Foreign school leavers with a school leaving certificate	Proportion of foreign school leavers with at least a *Hauptschule* certificate (lower secondary schooling) is to be increased, with their diploma rate to be raised to that of German school leavers by 2020		t
IV. International responsibility					
20	**Development cooperation** *Supporting sustainable development*	Share of expenditure for official development assistance in gross national income	To be increased to 0.51 % by 2010 and 0.7 % by 2015		nt
21	**Opening markets** *Improving trade opportunities for developing countries*	German imports from developing countries	Further increase		t

1 t = trend, nt = no trend.

Definitions of the indicators

No.	Indicator (Unit)	Definition
1a	**Energy productivity** Index, 1990 = 100	Energy productivity = gross domestic product / domestic primary energy consumption. Energy productivity expresses how much gross domestic product (in euros adjusted for price changes) is generated per unit of primary energy used (in petajoules).
1b	**Primary energy consumption** Index, 2008 = 100	Domestic primary energy consumption is calculated from the sum of all primary energy sources generated domestically and all imported energy sources less energy exports (and excluding offshore bunkering). In terms of use, this is equivalent to total energy used for energy purposes (final energy consumption and own consumption by energy sectors) and for non-energy purposes (e.g. in the chemical industry), losses incurred through domestic energy conversion, losses from flaring and distribution, as well as statistical differences reported in energy balance sheets.
1c	**Raw material productivity** Index, 1994 = 100	Raw material productivity = gross domestic product / domestic abiotic primary materials. Raw material productivity expresses how much gross domestic product (in euros, adjusted for price changes) is obtained per tonne of abiotic primary material used. The (non-renewable) raw materials withdrawn from the domestic environment – not counting agricultural and forestry products – as well as all imported abiotic materials (raw materials, semi-finished and finished products) are considered to be abiotic primary material.
2	**Greenhouse gas emissions** Index, base year = 100	Emissions of the following greenhouse gases (substances or substance classes) according to the Kyoto Protocol: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), partly halogenated hydrofluorocarbons (HFC), perfluorocarbons (PFC) und sulphur hexafluoride (SF_6). The base year is 1990 for CO_2, CH_4, N_2O and 1995 for HFC, PFC, and SF_6. Calculations are based on the database Zentrales System Emissionen (Central System of Emissions – ZSE) of the Federal Environment Agency taking additional statistical energy information into account.

No.	Indicator (Unit)	Definition
3a	**Share of renewable energy sources in final energy consumption** %	Share of renewable energies in total final energy consumption. Renewable energies include, among others, hydropower, wind power, photovoltaics, solar energy and geothermal energy, as well as biomass and biodegradable portions of domestic refuse. Final energy is generated subject to energy losses through conversion from primary energy (see Indicator 1b) and is directly available to the consumer.
3b	**Share of renewable energy sources in electricity consumption** %	Share of electricity from renewable energy sources (see Indicator 3a) in (gross) electricity consumption (comprising net electricity supply of the country, exchange balance with other countries, own electricity consumption of power plants and grid losses).
4	**Build-up area und transport infrastructure expansion** ha/day	Average daily build-up area und transport infrastructure expansion. Determination by the division of the build-up area und transport infrastructure expansion (in hectares) in a defined period of time (one year or four years) by the number of days (365/366 or 1,461). The moving four-year average is determined in each case by the development of this area in the relevant year and the preceding three years. The data for one year is currently influenced by external effects (the public land survey registers are being reorganised), so that the moving four-year average gives a better picture.

No.	Indicator (Unit)	Definition
5	**Species diversity and landscape quality** Index, 2015 = 100	With reference to the projected target value of 100 that is to be reached by 2015, the indicator shows the state of development as an index (percentage of target value). The index is calculated from the level of target achievement, laid down for a total of 59 bird species for target year. The bird species on which the indicator is based represent the most important types of landscape and habitat in Germany (farmland, forests, settlements, inland waters, coasts and seas and the Alps). The size of the bird population reflects the suitability of the landscape as a habitat for the bird species chosen. This indicator also indirectly reflects the development of a number of other species in the landscape and sustainability of land use, since there are also other species besides birds that rely on a richly structured landscape with intact, sustainably used habitats. The historical values for 1970 and 1975 have been reconstructed. For some bird species in coastal/marine habitats, inland waters and in the Alps, values have been extrapolated in individual years.
6a	**National deficit** %	Annual national deficit (or national financing balance), calculated from national revenue less national expenditure (by the Federal Government, the *Länder*, municipalities and social security funds), itemised under national accounts as a percentage of the nominal gross domestic product. Proceeds from UMTS auctions in the year 2000 are not included.
6b	**Structural deficit** %	Annual structural deficit as a percentage of GDP. This is the part of annual national deficit which cannot be attributed to economic fluctuations and temporary effects. The principle of the structurally balanced budget (debt brake) is laid down in German Basic Law (Grundgesetz) (Articles 109 and 115) and relates to the European Stability and Growth Pact.
6c	**Government debt** %	The national debt level as defined in the Maastricht Treaty as a measure of government debt in relation to the nominal GDP.

No.	Indicator (Unit)	Definition
7	**Gross fixed capital formation in relation to GDP** %	Gross fixed capital formation (at current prices) in relation to the nominal gross domestic product (GDP) also referred to as investment ratio. This includes investments in buildings (dwellings and non-dwellings), equipment (machinery, vehicles, tools) and other assets (intangible assets, such as software and copyrights, property transfer costs, production livestock).
8	**Private and public spending on research and development** %	Spending on research and development by industry, government and institutions of higher education expressed as a percentage of gross domestic product.
9a	**18- to 24-year-olds without a school leaving certificate** %	Share of 18- to 24-year olds (of all 18- to 24-year olds) who currently do not attend any school or institution of higher education and are not in training and hold no qualifications from post-16 education or from the dual system of vocational training. Graduates of *Sekundarstufe* I (level 2 of the International Standard Classification of Education) who subsequently did not complete vocational training or did not qualify for university entrance or are no longer involved in the process of education are included. This incorporates those with and without a leaving certificate from a *Hauptschule* (the lowest of the three-tiered German secondary school system).

No.	Indicator (Unit)	Definition
9b	**30- to 34-year olds with tertiary or post-secondary non-tertiary certificate** %	Share of 30- to 34-year olds (of all 30- to 34- year olds) who have a university or college education (tertiary education according to International Standard Classification of Education (ISCED) Levels 5 and 6) or a comparable certificate (ISCED 4). Included among tertiary certificates are those attained from universities and universities of applied sciences (ISCED 5A/6) as well as from universities of applied administrative sciences, vocational and specialist academies, technical colleges and health care colleges (ISCED 5B). The indicator includes post-secondary non-tertiary certificates (ISCED 4). These are characterised by the fact that two certificates from post-16 education or from the dual system of vocational training can be acquired consecutively or simultaneously, e.g. *Abitur* (A-Level equivalent) from a night school, college or vocational/technical schools (this presupposes that a vocational certificate has already been attained) or a teacher training certificate following *Abitur* or two consecutive vocational training certificates.
9c	**Share of students starting a degree course** %	Number of first-semester students (from Germany and abroad, enrolled at institutions of higher education, excluding universities of applied administrative sciences) expressed as a percentage of the population of the appropriate university-entrance age. The indicator shows how high the proportion of a demographic age group is that takes up studies at an institution of higher education. The quota is calculated according to the OECD standard in order to allow an international comparison.
10	**Gross domestic product per capita** Euro	GDP (price-adjusted, reference year 2005) per capita.
11a	**Intensity of goods transport** Index, 1999 = 100	Intensity of goods transport = domestic goods transport performance (in tonne kilometres) / gross domestic product (price-adjusted). The term transport covers any conveyance of items and all supplementary domestic services (including air transport). In addition to the freight transport performance, energy efficiency is considered (absolute energy consumption and energy consumption per tonne kilometre).

No.	Indicator (Unit)	Definition
11b	**Intensity of passenger transport** Index, 1999 = 100	Intensity of passenger transport = passenger transport performance (in passenger kilometres) / gross domestic product (price-adjusted). The term transport covers any conveyance of persons and all supplementary domestic services (including air transport). In addition to the passenger transport performance, energy efficiency is considered (absolute energy consumption and energy consumption per passenger kilometre).
11c, d	**Share of rail transport and inland freight water transport** %	Share of rail transport (11c) as well as share of inland freight water transport (11d) in the total domestic goods transport performance excluding local haulage by German lorries up to 50 km.
12a	**Nitrogen surplus** kg/ha	Nitrogen surplus in kilogram per hectare of land used for agriculture, calculated from nitrogen input (from fertilisers, atmospheric deposition, biological nitrogen fixation, seed and plant material, feedstuff from domestic production and from imports) minus nitrogen output (through crop and animal market products leaving the agricultural sector). The overall balance is calculated on the basis of the "farm-gate model". Nitrogen flows in the domestic cycle – with the exception of domestic feed production – are not shown. The moving three-year average is calculated from the total balance of the given year, the previous year and the following year.
12b	**Organic farming** %	Farmland of organic farms subject to the control procedure of the EU regulations on organic farming (EC Regulation No. 834/2007 and the implementing rules), as a proportion of all the land used for agriculture in Germany. It includes both the areas completely devoted to organic farming as well as those still under conversion.
13	**Air pollution** Index, 1990 = 100	The following substances or substance classes are considered to be air pollutants for the purpose of this indicator: sulphur dioxide (SO_2), nitrogen oxides (NO_X), ammonia (NH_3), non-methane volatile organic compounds (NMVOC). Unweighted average of the indices of the four air pollutants referred to.

No.	Indicator (Unit)	Definition
14a, b	**Premature mortality** Number of cases per 100,000 inhabitants	Cases of death in the male (14a) and female (14b) under-65 year old population in relation to 100,000 inhabitants of the standardised population (of 1987) under 65 years, including those younger than one year. The calculation takes into account the fact that through demographic change in Germany there is an ever increasing number of people older than 65 and provides a comparable time series over the years.
14c, d	**Smoking rates amongst young people and adults** %	Proportion of polled 12- to 17-year olds (proportion of adolescents who smoke, 14c) and the proportion of polled 15-year olds and older (proportion of adults who smoke, 14d), who answered the questions in the microcensus on smoking behaviour and occasionally or regularly smoke.
14e	**Proportion of adults suffering from obesity** %	Proportion of obese adults (18 years and older), who have answered the questions on body weight and height and have a BMI (body mass index) of 30 and above, in the population of the same age. The BMI is calculated from the ratio of body weight in kilograms to height in metres squared. People with a BMI of 30+ are classified as obese according to the classification of the World Health Organisation (WHO). Age and gender are not taken into consideration.
15	**Criminal offences** Number of cases per 100,000 inhabitants	Number of criminal offences reported each year to the police and recorded in the Police Crime Statistics (Polizeiliche Kriminalstatistik) per 100,000 inhabitants (the frequency).
16a, b	**Employment rate** %	Share of the persons employed between 15 and 64 years (16a), and 55 and 64 years (16b) in the total population of the respective age group. The EU Labour Force Survey covers the population living in private households, but excludes persons in shared housing. The working population consists of people who, during the week under survey engaged in some kind of activity for at least one hour for which they received compensation or who did not work because they were absent from their workplace temporarily.

No.	Indicator (Unit)	Definition
17a, b	**All-day care provision for children** %	Share of children in all-day care (more than seven hours without publicly funded care in private homes) as percentage of all children from the respective age groups: 0- to 2-year-olds (17a) as well as 3- to 5-year-olds (17b). Date of survey: 1 March.
18	**Gender pay gap** %	Difference between average gross hourly wages of women and men expressed as percentage of men's earnings.
19	**Foreign school leavers with a school leaving certificate** %	Share of foreign school leavers from general schools with school leaving certificates (at least the *Hauptschule* certificate) in all foreign school leavers in the year under review.
20	**Share of expenditure for official development assistance in gross national income** %	Share of the expenditure for official development assistance (ODA) in gross national income. ODA mainly includes expenditure for financial and technical cooperation with developing countries as well as contributions to multilateral institutions for development cooperation (such as the United Nations, European Union, World Bank, regional development banks). Furthermore, waivers of debt as well as costs for specific development assistance provided in the donor country, such as cost of studies for students from developing countries or expenditure for development-specific research are attributable to ODA. The data are taken from the yearly report to the Development Assistance Committee of the OECD.
21	**German imports from developing countries** Euro	Value of the imports from developing countries into Germany excluding imports from the so-called advanced developing countries, but including the European developing countries, such as Albania, Belarus or Turkey. The classification of developing countries is based on the DAC List of Aid Recipients prepared by the Development Assistance Committee of the OECD.

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