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SUSTAINABLE DEVELOPMENT IN GERMANY

Indicator Report 2010

Federal Statistical Office of Germany

Nachhaltigkeits-
strategie
für Deutschland

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Preface

In April 2002 the Federal Government published a National Strategy for Sustainable Development entitled "Perspectives for Germany". Since that time, sustainability has been considered a major political principle in Germany. To permit measuring the effectiveness of that strategy, that is both successes and failures, suitable indicators have been selected at the political level. Most of them have quantitative targets and, for 21 different areas, they show the extent to which the development in the economy, the environment and the society meets the expectations and goals set.

With the Indicator Report 2010 the Federal Statistical Office takes stock for the third time of the situation and development of the sustainability indicators for Germany. The handy "green booklet", which is updated and published every two years, has already achieved a certain tradition.

In the reporting of sustainable development, i.e. in a very long-term field of political activity, there is a great deal of interest in continuity. However, we cannot and must not rule out the possibility of appropriately enhancing and adjusting indicators and objectives to new questions. On the other hand questions of sustainability should not be determined by short-term, day-to-day politics. The set of indicators in the Indicator Report 2010 has remained unchanged compared with its predecessor, not least for this reason.

Most of the data of the indicators come from official statistics. With the system of Environmental-Economic Accounting and the National Accounts, statisticians have a tool to be able to systematically particularly examine interrelations between economic, environmental and social indicators of the strategy. This facilitates a holistic, integrative approach. It enables us to keep track of all the different – sometimes conflicting – objectives formulated in the Sustainability Strategy.

In order to provide information on the status of the national sustainability indicators, every indicator is assigned one of four possible "weather symbols" and appears both in the text and in a summary

in the Annex. The sustainability reporting of the European Union also uses these symbols. They illustrate the status of the indicators in terms of the success of the past development and of the projected development up to the target year. This is neither a political assessment nor a forecast but just the results of a simple calculatory continuation of the past trend.

Comparison with the Indicator Report 2008 shows changes in status for six indicators. These are predominantly improvements. In the context of the current economic development we must refer to the fact that the reporting period for about half of the indicators ends in 2008. An initial glance at the symbols should not replace a study of the texts with the information they provide on context, analyses and links in terms of the development of the indicators.

Over and above the figures referred to in the report the Federal Statistical Office publishes the "Data for Indicator Report 2010" under www.destatis.de in parallel, with complete time sequences of indicator values along with other important background data. In the years between the reports a selected set of environmental-economic indicators ("Indicators on the environment and the economy") has been regularly updated.

The Indicator Report 2010 has been compiled by the Federal Statistical Office under its own responsibility. It is based on the principle of neutral and independent reporting. The Federal Statistical Office supports fact-based sustainability policy by providing data and statistical analyses on the status of the German sustainability indicators and support for further developments in terms of methodology.

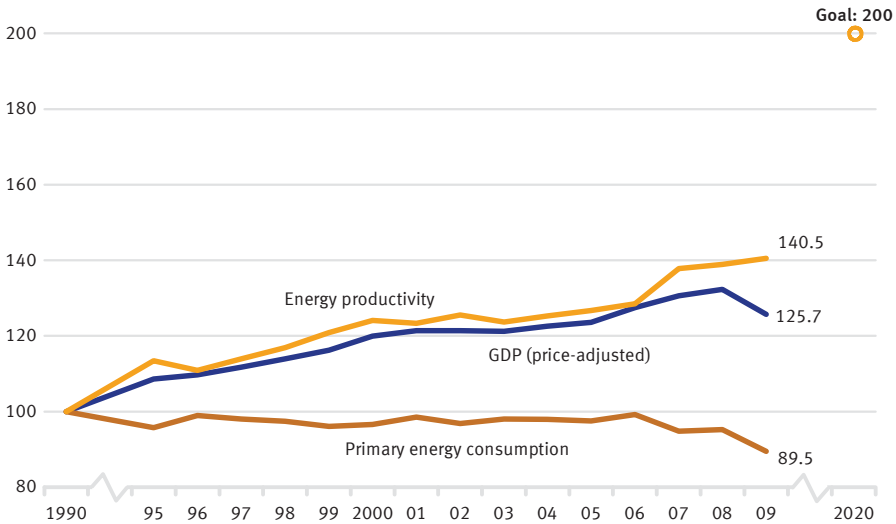
Roderich Egeler

President of the Federal Statistical Office

Resource Protection

Using resources economically and efficiently

Energy productivity and economic growth
1990 = 100



Source: Federal Statistical Office, Working Group on Energy Balances (AGEB)

1a Energy productivity

The use of energy occupies a key position in the economic process because almost every production activity is associated with the consumption of energy. Private households use energy particularly for heating their homes and providing hot water, for electrical appliances and 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 with an effect on climate, the production of waste as well as the use of cooling water involved in converting and consuming energy sources. And, last but not least, the consumption of non-renewable resources is of special importance with regard to safeguarding the livelihood of future generations.

The Sustainability Strategy of the Federal Government takes into consideration the major importance of energy, both from an

economic and environmental perspective, by including the 'Energy productivity' indicator (gross domestic product, adjusted for price, per unit of primary energy consumption). The aim of the sustainabity strategy is to double energy productivity by 2020 compared to that of 1990.

Energy productivity increased by 40.5 % in Germany between 1990 and 2009. Although this rise in productivity does indicate a more efficient use of energy, it has only been associated with a comparatively modest reduction in energy consumption of 10.5 %, as the increased efficiency has been largely eroded by economic growth of 25.7 %. In the period from 2000 to 2009 energy productivity rose by an average of 1.4 % annually, in the preceding period of 1995 to 2000 the rise still averaged 1.8 %. In order to achieve the target figure it would be necessary to increase energy productivity in the remaining period up until 2020 by an average of 3.3 %. A continuation of the previous average pace of development would therefore not be sufficient to achieve the goal of doubling energy productivity by 2020.

In private households final energy consumption (excluding petrol and diesel for motor vehicles) rose by 5.0 % between 1990 and 2008, but dropped by 3.2 % in the period from 2000 to 2008. The increased consumption in households between 1990 and 2008 is the result of rising demand for energy services. Relating to heating this increase is due to an increase in living space. Nevertheless, savings by private households and improvements in buildings insulation in recent years have led to significant savings and reductions in fuel consumption. In the case of electricity consumption increases in the equipment of private households with electrical appliances has tended to increase consumption. From 2007 onwards a slight drop in consumption can be observed, which is probably due to savings resulting from the sharp price rises for electricity (2000 to 2008: +13.8%).

In the industry, energy consumption went up by 9.3 % between 2000 and 2008. Increases in efficiency in the use of energy only partly compensated for the growth-related increased consumption – economic growth in industry amounted to 16.5 % between 2000 and 2008.

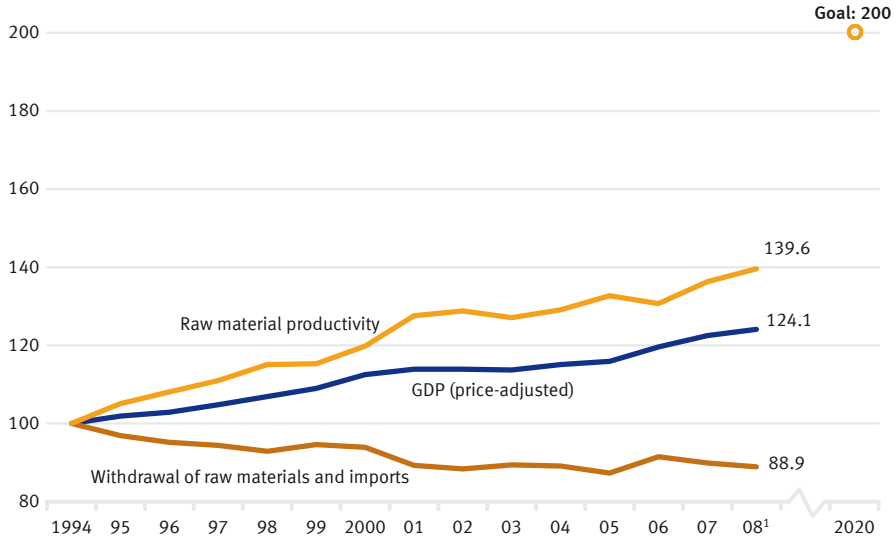
Consumption of energy in the transport sector rose by a total of 8.3 % between 1990 and 2008. On the other hand, domestic sales (excluding fuel purchased abroad by German residents) declined by 6.4 % between 2000 and 2008. A downward trend in the use of petrol and diesel for road traffic is evident (by – 9.2 % from 2000 to 2007; see also indicators 11a and 11b), while the consumption of aviation fuel shows a large increase (of 25.8 % between 2000 and 2007).

The domestic energy industry is characterised by an increasing import dependency. The percentage of imports in energy produced rose significantly between 1991 and 2007 from 64.6 % to 72.8 %.

Resource Protection

Using resources economically and efficiently

Raw material productivity and economic growth
1994 = 100



1 Preliminary results.

1b 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 this reason resources should be used sparingly. The Federal Government is pursuing the target of doubling raw material productivity by 2020 (based on the rates 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 are the materials withdrawn domestically – excluding agricultural and forestry products – as well as all imported abiotic materials (raw materials, semi-finished and finished products).

Raw material productivity increased by 39.6 % between 1994 and 2008. While use of materials decreased (– 11.1 %), the

gross domestic product went up by 24.1 %. Following a slight decline in productivity from 2005 to 2006, it increased again in 2007 and 2008. In 2008 the use of materials decreased slightly by comparison with the previous year (– 1.2 %), while the gross domestic product grew by 1.3 %. Although this indicator shows a trend in the right direction, its previous growth rate would not be sufficient to achieve the goal set.

The increase in raw material productivity between 1994 and 2008 is to be attributed chiefly to a structural change towards less resource-intensive industries: these industries have expanded (especially the service sector), while industries with high material consumption, such as the construction industry (which accounts for 44% of total primary material use) or other manufacturing fields, have tended to shrink (see Indicator 10). The use of raw materials for construction decreased by 27 % or 215 million tonnes between 1994 and 2008. In contrast the use of ores and their products increased significantly during this period (by 54% or + 47 million tonnes). The amount of fossil energy sources used has increased only slightly (+ 0.9 %) since 1994. The increase in overall productivity mentioned above was caused by this decrease in the use of materials and a rise in the gross domestic product.

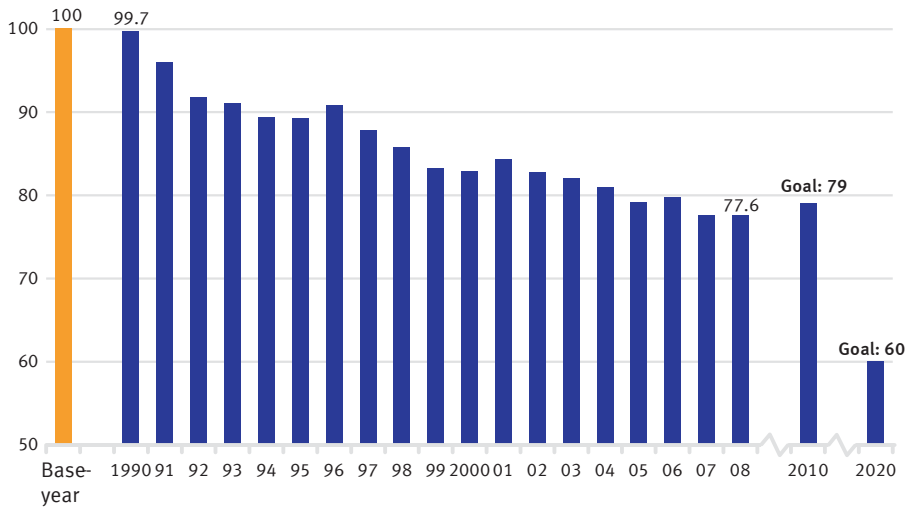
An important factor in interpreting the trend in the resource indicator is also that the demand for materials is increasingly covered by imports. Whereas the import of raw materials as well as that of semi-finished and finished products went up by 106 million tonnes (+ 27 %) between 1994 and 2008, withdrawal of raw materials in Germany dropped by 273 million tonnes (– 25 %) in the same period. Thus, the share of the overall use of primary materials made up by imported goods increased from 26 % in 1994 to just over 37 % in 2008. Of quantitative importance in this shift are particularly the increased imports of metallic semi-finished and finished products (+ 105 %) and the replacement of domestic coal by imported sources of energy.

In order to be able to evaluate the impact of such shifts on raw material productivity, the imported goods were traced back mathematically to the raw materials used abroad to manufacture them (so called raw material equivalents) as part of a study by the Federal Statistical Office. These results also show clearly the global raw material requirements of the German economy. For Germany the studies showed that in the period between 2000 and 2007 the weight of imports in raw material equivalents was about five times the weight of imports actually registered. It was also evident that the advance in productivity with such a calculation would be significantly less than for the results presented above.

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 by 2008 to 2012 compared with 1990. As Germany's contribution to an international climate protection agreement, the Federal Government is offering from 2012 onwards to cut these emissions to 40 % below 1990 levels by 2020.

According to the Kyoto Protocol, the following are included as greenhouse gases: carbon dioxide (CO_2), methane (CH_4), nitrous oxide = laughing gas (N_2O), partly halogenated hydrofluorocarbons (HFCs), perfluorocarbons (PFC) and sulphur hexafluoride (SF_6). These gases are mainly emitted on a quantity basis during the combustion of fossil energy sources, such as coal, crude oil and natural gas. Furthermore, they occur in other activities not involving energy sources, such as when

producing iron and steel, in the use of solvents, in the employment of minerals as fertilisers, in animal husbandry and on waste dumps.

Since 1990 Germany has substantially reduced its greenhouse gas emissions. Compared to the base year set out in the Kyoto Protocol (1990/1995), aggregate carbon dioxide equivalent emissions had fallen by approximately 277 million tonnes or 22.4 % by 2008. This meant that Germany had already achieved the reduction in emissions aspired to by Kyoto in the first year of its commitment period. Emissions in 2008 were similar to those of 2007. By far the largest proportion of the total discharge of greenhouse gases in 2008 was carbon dioxide at 86.9 %, while methane contributed 5%, laughing gas 6.3 % and fluorinated hydrocarbons 1.9 %. From 1990 to 2008 carbon dioxide decreased by 203.6 million tonnes or by 19.6%. More than half of the reduction (111 million tonnes) took place in the first five years after 1990.

According to a short-range forecast by the Federal Environment Agency for 2009 greenhouse gas emissions, as a result of the economic crisis, shrank disproportionately by 8.4 % compared with the preceding year, a reduction of just under 29 % compared with the base year.

In Germany greenhouse gas emissions occur mainly in manufacturing industries followed by those occurring in private households, service industries and farming. In 2007, 82.6 % of the three most important greenhouse gases (CO_2, laughing gas and methane) came from economic activity and 17.4 % from consumption by private households. However, it should be noted that electricity consumption by private households makes an additional contribution to the high emissions of the production sector in the “Generation and distribution of electricity and gas”. Between 2000 and 2007, the reduction in these greenhouse gases was quite overwhelmingly achieved by private households (– 48.5 million tonnes CO_2 equivalents), while the emissions in the production sectors only dropped by 7.8 million tonnes CO_2 equivalents.

According to information provided by the European Environment Agency greenhouse gas emissions in EU 15 only dropped by 6.9% (– 294 million tonnes CO_2 equivalents) by comparison with Germany between 2008 and the base year. According to reporting by the UNFCCC (United Nations Framework Convention on Climate Change) Germany, among the signatories to the Kyoto protocol, occupied fourth place in 2007 at just under 1 billion tonnes CO_2 equivalents and continued to be one of the greatest emitters of greenhouse gases among the industrial countries (USA 7.1 billion, Russia 2.2 billion, Japan 1.4 billion tonnes CO_2 equivalents).

The indicator has many cross-references, for example, to Indicators 1a, 3, 4, 5, 8, 11 and 12.

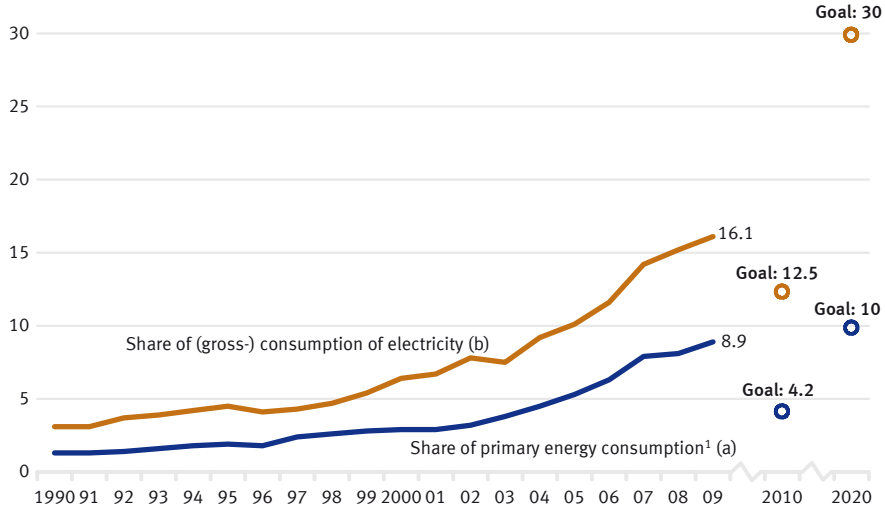
Renewable energies

Strengthening a sustainable energy supply

a 

b 

Share of renewable energy sources in total energy consumption
in %



1 Based on efficiency method.

Source: Working Group on Renewable Energies – Statistics (AGEE-Stat), Working Group on Energy Balances (AGEB), Centre for Solar Energy and Hydrogen Research Baden-Württemberg (ZSW), Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU); March 2010, preliminary figures

3a, b Share of renewable energy sources in total energy consumption

The reserves of important fossil energy sources such as oil and gas are limited, and their use is associated with greenhouse gas emissions. A switch to renewable energies as natural energy sources that constantly regenerate, reduces energy-related carbon dioxide emissions and consequently the extent of climatic change. It makes the economy independent of 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 Sustainability Strategy is therefore to promote the development of renewable sources of energy. Renewable energies include hydropower, wind power, solar energy and geothermal energy, but also biomass such as firewood 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 total primary energy

consumption' (3a) and 'Share of electrical power from renewable sources in total power generation' (3b). The aim of the Federal Government was to increase the share of renewable energy in primary energy consumption to 4.2 % and the share in electricity production to 12.5 % by 2010. In addition, the share in primary energy consumption should increase to 10 % by 2020 and the share in gross electricity consumption to at least 30 %. After 2020 the share in electricity consumption is to be expanded on an ongoing basis. According to EU provisions for promoting the use of renewable energies, the proportion of renewable energies in the EU of total gross final energy consumption must exhibit a binding rise to 20 % by 2020. For Germany a national objective of 18 % is envisaged.

Between 1990 and 2009 the share of renewable energy in primary consumption rose from 1.3 % to 8.9 %. The share in electricity consumption increased from 3.1 % to 16.1 %. These results meant that the objectives for 2010 had already been reached in 2004 and 2007 respectively and since then significantly exceeded. Particularly marked was the upward trend according to the European Parliament guidelines introduced in 2004 to promote electricity generation from renewable energies. According to the amended German Renewable Energy Sources Act (EEG) and the German Renewable Energies Heat Act (EEWärmeG) 2009 producers of electricity are obliged to give precedence to renewable energy sources when buying electricity.

In 2009 the share of the individual renewable energy sources in the total amount of energy produced from renewable energies varied greatly. 69 % came from bio-energies, 16 % from wind power and 8 % from hydropower. In line with the structure of the total energy produced from renewable energies in 2009, 39 % related to electricity generation, 46 % to heat generation and 14 % to biogenic fuels. Since January 2007 all businesses which place fossil fuels into circulation are obliged to release a specified minimum quantity of biofuels.

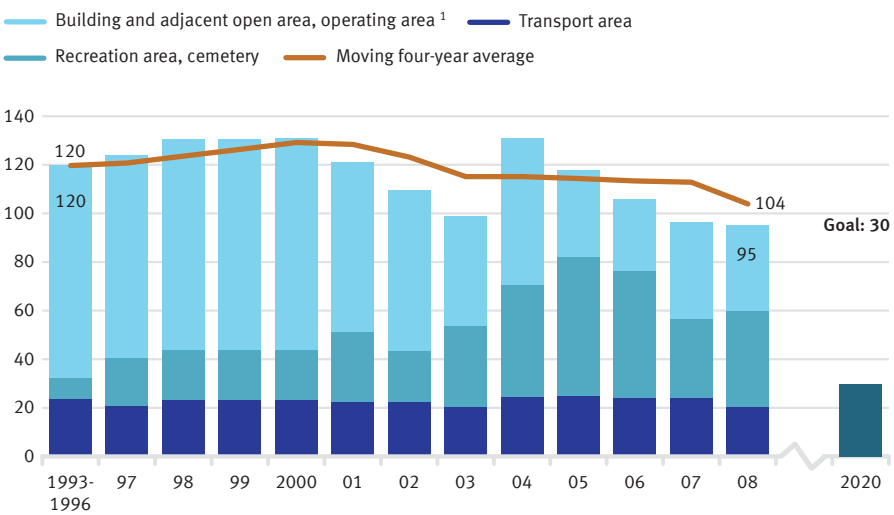
The accelerated increase of the share of renewable energies in electricity generation since 2000 is due among other things to the growing significance of wind energy. For example, electricity generation from wind power increased from 7,550 gigawatt hours (GWh) in 2000 (proportion of total renewable energy electricity: 20 %) to 37,809 GWh in 2009 (proportion of total renewable energy electricity: 40 %). Electricity generation from the entire biomass increased more than sixfold between 2000 and 2009. Heat generation from renewable energies from the total biomass reached 91 %.

Renewable energies contribute significantly to cutting emissions; thus the indicator displays a positive correlation to Indicator 2 'Greenhouse gas emissions'. According to calculations by the Federal Environment Agency the use of renewable energies in 2009 avoided greenhouse gas emissions of approximately 109 million tonnes CO_2 equivalents (all renewable energy data, March 2010). The demand for biomass from renewable raw materials can lead, however, to competition for land used in the cultivation of foodstuffs and fodder on farmland or have negative consequences for land use and species diversity (Indicator 5).

Land use

Sustainable land use

Increase in land use for housing and transport
in ha per day



1 Excluding exploitation area.

4 Increase in land use for housing and transport

Undeveloped land, which is intact and not affected by large-scale housing development, is a limited but very much sought-after resource. There is competition for its use by agriculture and forestry for example, housing and transport, conservation, recovery of raw materials and energy generation, with a constant increase in land used for housing and transport.

The direct environmental consequences of the increase in land used for housing and transport include the loss of natural soil functions through sealing, the loss of fertile agricultural land or the loss of areas still close to their natural state with their biodiversity. In addition to this each new instance of the preparation for development of land abutting urban areas or land outside present settlement clusters entails further traffic and area fragmentation. This leads to consequential damage such as noise and pollutant emissions, and also to an increased expenditure for providing the necessary infrastructure.

The Federal Government's goal is to limit the use of new areas for housing and transport purposes to thirty hectares a day by 2020.

The increasing development of land for housing and transport has slowed down in recent years with a recognisable trend. Continuing the average annual trend of the last few years would still not be sufficient, however, to reach the proposed reduction goal by 2020.

The areas included in the indicator comprise „building and adjacent open area, operating area (excluding explotation area)", „recreation area, cemetery" and "transport area". "Land used for housing and transport" and sealed areas cannot be treated as equivalent, as the land used for housing and transport also includes undeveloped and unsealed areas. Estimates based on current studies indicate that land used for housing and transport is subject to a sealing level of 43 to 50 %. Recreation areas may also be sealed (such as sports grounds).

Calculating the rise in the land used for housing and transport as a moving four-year average (represented as a curve) currently supplies more solid information than that related to details for individual years (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 ongoing reduction in the growth of land used for housing and transport between 2000 (129 hectares per day) and 2008 (104 hectares per day). This development in the period 2000 to 2005 corresponds to the investments in construction, which showed a total (price-adjusted) decrease of 18 %. How far the subsequently slow renewed increase in building investments (see Indicator 7) will also affect the increase in areas used for housing and transport remains to be seen.

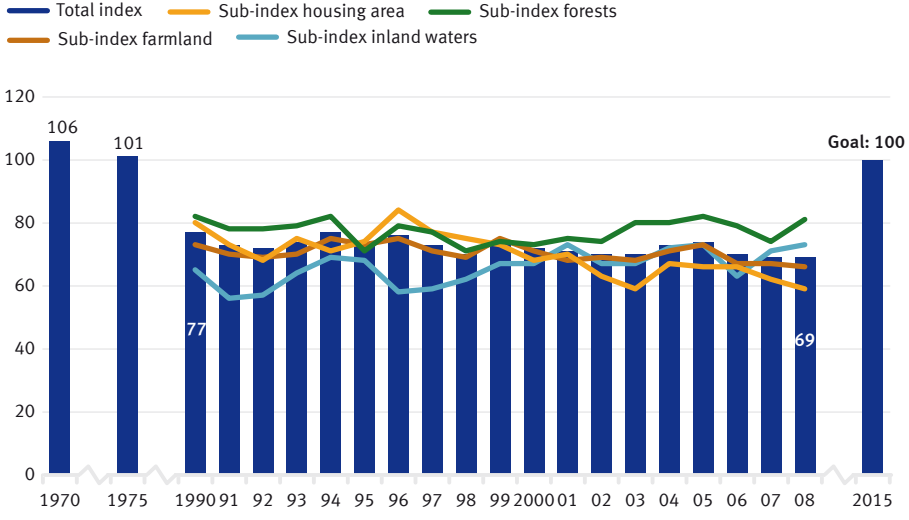
Whereas in 2000 the increase in land used for housing and transport (131 hectares per day) was distributed in percentage terms in the ratio 66 : 16 : 18 between the three components "building and adjacent open area, operating area", "recreation area, cemetery" and "transport area", in 2008 with an increase of 95 hectares per day the corresponding ratio was 37 : 41 : 22. Alongside the significant reduction in the proportion of building and adjacent open areas and operating areas in the growth of land use for housing and transport, the increase in the proportion of recreation areas and cemeteries is noteworthy. The latter is in recent years due among other things to the aforementioned reorganisation in the public land survey registers. Notwithstanding a consideration of the growth in area, the proportion of recreation areas and cemeteries in the housing and transport area in 2008 came only to just under 9 %.

In 2008, about 53 % of the overall housing area was taken up by private households, mainly for residential purposes. Between 1992 and 2008 the housing area used by private households went up by 28.3 %. Thus it increased considerably more than the number of residents (+ 1.3 %). A major reason is the clear 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, 2010

5 Species diversity and landscape quality

A wide diversity of animal and plant species is a fundamental prerequisite for an efficient natural environment and is an essential basis for our human livelihood. Nature and the landscape 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 use and has also arisen naturally. What is required instead are sustainable forms of land use throughout the entire landscape, restrictions on emissions and a gentle way of 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, landscape quality and on the sustainability of land use. The calculation of the indicator is based upon the development of the stocks of 59 bird species which 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 (based on the numbers of territories 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 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 target population values for 2015 for each individual species, which 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.

The value of the indicator for biodiversity in 1990 lay clearly below the reconstructed values for 1970 and 1975. In the last ten years under consideration (1998 to 2008) the indicator value has hardly changed and has shown no statistically significant trend. In 2008, it stood at 69 % of the target value. If development remains at this level, 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 affected as possible.

The sub-indicators in 2008 for farming land were 66%, for housing areas 59 %, and for coasts and seas 56 % of the target figure for 2015. In the last ten years under consideration they moved significantly away from the target from a statistical point of view. For inland waters (73 %) and the Alps (57 %) no significant trend was evident. Only the sub-indicator for forests has shown any positive trend. At 81 % of the target value the situation in the forests was the most favourable by comparison.

The chief causes of the decline in species diversity are – with regional differences – the intensification of farming use, the fragmentation and over-development of the countryside, the sealing of areas and the depositing of substances such as acidifiers or nutrients. In housing areas the loss of near-natural areas and village structures because of building activities and soil sealing is having a negative effect.

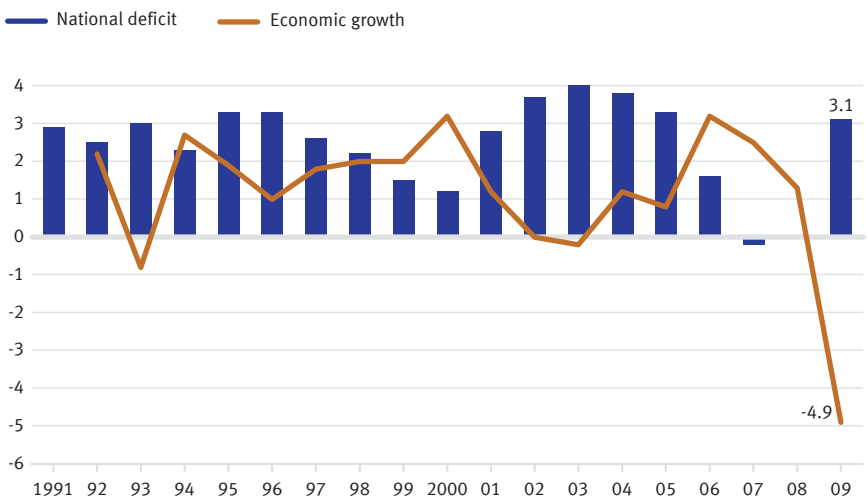
Endangering factors for habitats on the coast include disturbances due to increased recreational use and overbuilding, such as from coastal protection measures. In forests the encouragement of forest management in harmony with nature should have a positive impact.

The climate change caused mainly by greenhouse gas emissions is today already leading to a shift in the distribution areas 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 through the migration and extinction of animal and plant species. The increasing cultivation of fuel crops can also have an effect on the quality of the landscape and biodiversity. As yet it remains to be seen in what ways the demographic changes in migration areas will affect species diversity and the quality of the landscape. This indicator has cross-references to many indicators of the strategy, including 1b, 2, 3, 4, 11, 12 and 13.

National debt

Consolidating the budget – creating intergenerational equity

National deficit
in % of gross domestic product



6 National deficit

Sound public finances serve to provide intergenerational equity and promote growth and employment by means of a sustainable and fair system of taxes and charges. An essential element of a sustainable financial policy is the consolidation of public finances. In 2009 new rules were laid down in the constitution for the maximum permissible borrowing by Federal Government and *Länder* budgets. The *Länder* must no longer show any structural deficits from 2020. In the case of Federal Government the so-called "debt brake" applies immediately: from 2016 the adjusted ("structural") net borrowing by Federal Government must no longer as a matter of principle exceed 0.35 % of the gross domestic product (GDP). In the transitional period from 2011 to 2015 the ceiling for structural new borrowing will drop in equal steps from the position in 2010. For the Federal budget the new debt ceiling means a consolidation requirement of almost 60 billion euros until 2016 or about 10 billion euros per year.

The amount of national debt is limited on a European level by, amongst others, the

so-called “Maastricht criteria”, which the Member States of the Euro zone have agreed to observe. They provide for a reference value of a maximum of three percent of the gross domestic product for the annual national deficit (expenditure less revenue).

After two years with a practically balanced national budget the budget for 2009 again showed a high deficit of 75.3 billion euros. Measured against the gross domestic product in relevant prices this produces a deficit ratio for the government of 3.1 %. This means that the reference value of 3 % referred to in the Maastricht Treaty has again been exceeded for the first time for four years. The government’s financing deficit in 2009 is closely connected to the international financial and economic crisis. It arises from a drop in revenue of 2.4 % compared with the preceding year coupled with a simultaneous sharp rise in expenditure of 5.0 %. There has been a particularly sharp drop of 5 % in tax revenues.

Between 2002 and 2005 the deficit limit permissible under the Maastricht Treaty was exceeded every year. An important reason for the unfavourable development was the persistent recession and insufficient growth in this period. In 2006 there was an economic turnaround associated with a reduction in the debt on all levels (national level, regional level, municipalities and social security). In 2008 only the Federal budget was showing a deficit of 14.2 billion euros, whereas the budgets of the Länder, municipalities and social insurance had surpluses. Small budget surpluses were still achieved for the government as a whole in 2007 and 2008.

Between 2004 and 2007 revenues increased more strongly than expenditure. In 2006 and 2007 in particular a strong increase in tax revenues was recorded, by 7.6 % and 8.6 % compared with the previous year. Total State revenues increased to 1,066 billion euros in 2009. Of these, tax covered a share of 52.8 %. Expenditure only went up by a small amount by 2007. Not until 2008 did expenditure again rise more strongly than revenue with + 2.8 % and especially in 2009 with + 5.0 %. The largest section of expenditure, monetary social security benefits totalling 444.0 billion euros (pensions and annuities, health insurance payments and unemployment insurance amongst others) accounted for 38.8 % of overall expenditure. In 2009 compensation of employees amounted to 177.0 billion euros, corresponding to a share of 15.5 %. In 2009 gross investment came to 40.0 billion euros. This meant that it rose +7.0 % by comparison with the preceding year.

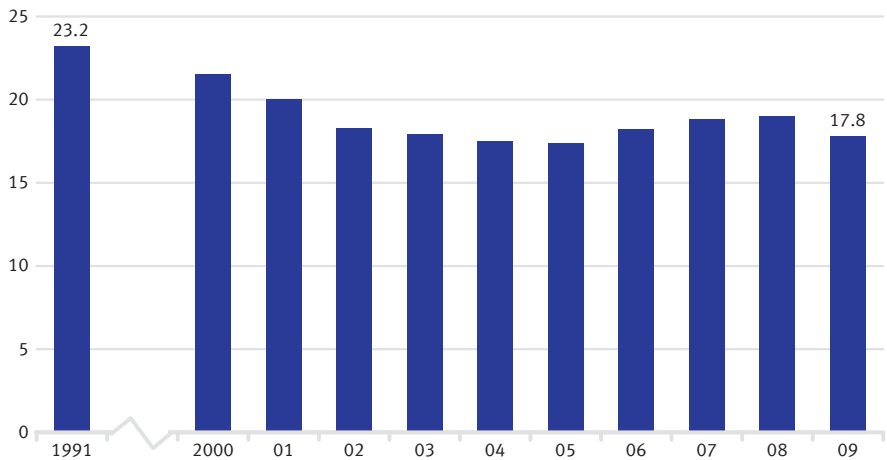
The proportion of expenditure in the GDP dropped from a maximum of 48.5 % in 2003 to 43.7 % in 2008 and again rose to 47.6 % in 2009.

In 2009, 56.2 % of public spending was accounted for by social security benefits, such as payments from the statutory pension, health and unemployment insurance providers, and social welfare. This expenditure item rose by 20.3 % between 2000 and 2009. Of this an above-average rise was recorded for social non-cash benefits, such as for example health care benefits with a rise of 28.6 %. On the other hand the rise in compensation of employees in this period of + 6.6 % were well below-average.

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

Economic performance and the competitiveness of the national economy crucially depend on business and State investment. In particular, investments in new equipment and intangible assets lead to innovations being implemented and markets – and thus also jobs – being secured or expanded. At the same time investments 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, investments in building, insofar as they are expansion investments, involve considerable use of materials and additional exploitation of housing and transport areas (see the environment-related indicators, e. g. 1b and 4).

Gross fixed capital formation includes investments in buildings (residential and non-residential), equipment (machinery, vehicles, tools) and other assets (intangible assets, such as software and copyrights, property transfer costs, production livestock).

The indicator has risen slightly over the last five years under review, although no statistical trend can be identified. The investment ratio (ratio of gross fixed capital formation in current prices to the gross domestic product) dropped from 23.2 % to 17.4 % between 1991 and 2005. On the other hand gross fixed capital formation rose more quickly than the GDP in the period from 2006 to 2008 and the ratio rose to 19 % in 2008. In investment activity the upturn was evident in machinery and equipment – investment price-adjusted has risen strongly here since 2004: in 2004 by 4.5 %, in 2005 by 5.4 %, in 2006 by 11.8 % and in 2007 by 11.0 % (in each case in comparison to the previous year). In particular, it was dynamic developments in investments in data processing equipment and vehicles which contributed to this trend. Since 2004 investments in machinery have also displayed an increase compared with previous years. The rise as a whole came to a standstill at the beginning of 2008 however.

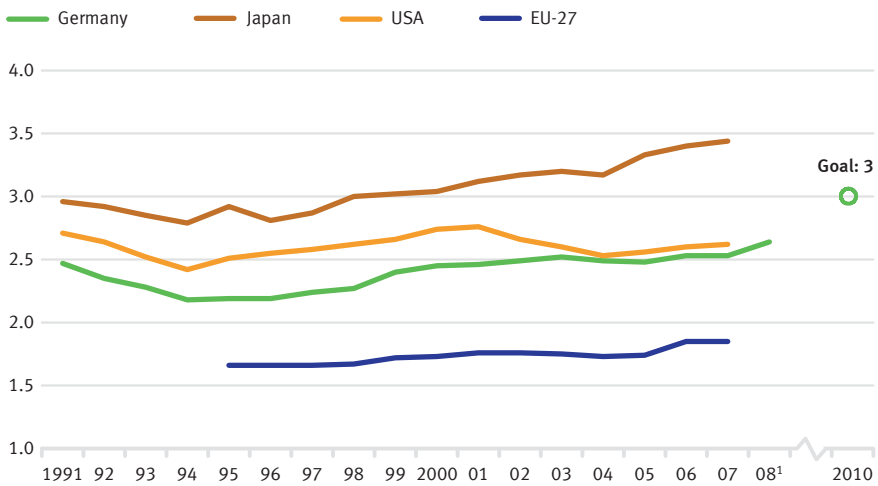
In 2006 construction investments also displayed an upward trend for the first time since 1999. Investments in both residential and commercial property contributed to this increase. Whereas the rise in non-residential building continued into 2008, residential building showed a slight drop as early as 2007. Intangible fixed assets enjoyed a vigorous growth from 2005, which lasted into 2009.

Investment activity in 2008 was already marked by the consequences of the worldwide financial and economic crisis. In the last quarter of 2008 gross fixed capital formation price-adjusted already suffered a slight drop compared with the same quarter in the preceding year. This decline strengthened drastically with figures of 11.3 % and 11.1 % in the first and second quarters of 2009. There was a decline of 9.0 % for 2009 compared with the preceding year, while there was a downright collapse in investments in machinery and equipment at – 20.5 %. Construction investments on the other hand only dropped slightly, by 1.1 %. The very much stronger drop in gross fixed capital formation compared with the development of the GDP gave rise to a drop in the investment ratio in 2009 to 17.8 %.

Innovation

Shaping the future with new solutions

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



1 Estimate.

Source: OECD, 2009

8 Private and public spending on research and development

Spending on research and development (R&D) is a significant parameter in determining the pace of innovation of an economy, although not the only one. The higher the spending, the better the prospects of a more dynamic development of productivity, stronger economic growth, improved competitiveness and, last but not least, the chances of our production and consumer patterns developing further in the direction of sustainability.

This present indicator includes spending on R&D by industry, public institutions and institutions of higher education as a percentage of gross domestic product (GDP). In 2002 the Council of Barcelona set a European goal for the share of expenditure for R&D of 3 % by 2010, and the Federal Government incorporated this goal for Germany early on as part of its national sustainability strategy. After 2010 the efforts of all involved need to continue in order to guarantee Germany's innovative capacity.

According to provisional figures, overall R&D expenditure in Germany in 2008 amounted to 65.9 billion euros, equivalent to 2.6 % of GDP. By comparison this value stood at 2.6 % in the USA in 2007 and at 3.4 % in Japan. The EU 27 region however had a significantly lower proportion of R&D expenditure in the GDP (1.9 % in 2007). Since 2000 the proportion in Germany has risen by about 0.2 percentage points. In the 1990s it initially fell and then went back up again to the 1991 level. If the average annual trend of recent years were continued the objective of the strategy for 2010 would not be achieved.

Internal research within industry accounted for by far the largest share of R&D expenditure at around 70 %, 16 % was spent by institutions of higher education and 14 % by public and private research institutions. Staff employed in R&D in 2008 comprised around 521,900 full-time equivalents (FTE), with only the proportion of their working hours attributable to the area of R&D being taken into consideration. Some 64 % of the human resources are attributable to business, 21 % to institutions of higher education and 16 % to public and private non-profit-making research institutions.

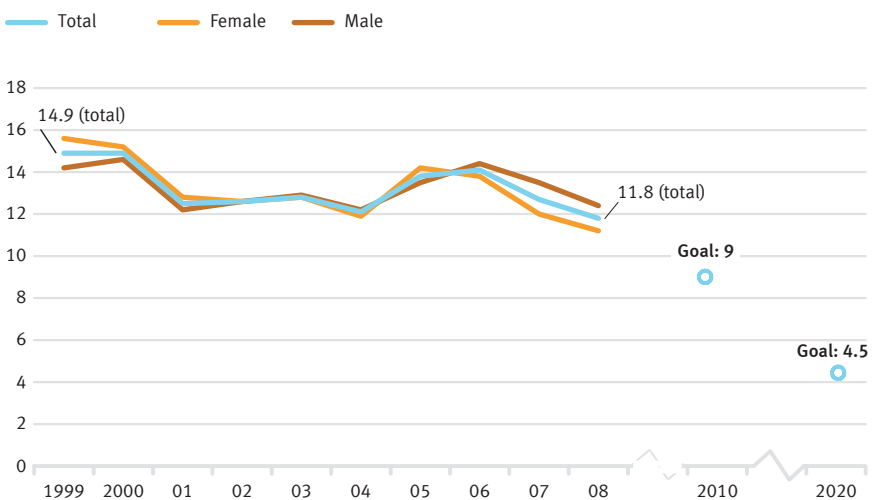
With regard to disciplines, in both the public and private non-profit research institutions the natural and engineering sciences were particularly important (47 % and 28 % respectively of the R&D expenditure for 2007 in this area). Research in the humanities and social sciences accounted for 13 % of expenditure, human medicine for 7 % and agricultural sciences for 5 %.

R&D activities in business focus on the sectors of vehicle construction, electrical and electronic engineering, the chemical industries (including the pharmaceutical industry) and mechanical engineering – altogether comprising around 90 % of the expenditure by private enterprise. The automotive industry alone in 2008 spent about 15.1 billion euros on R&D (source: *Stifterverband* scientific statistics).

Education and training

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 %



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. A lack of school leaving and vocational qualifications means a risk of poverty and a strain on the social system. The Federal Government's declared aim is to ensure that all young people leave school with qualifications and go on to obtain an apprenticeship or complete a university degree course.

This education indicator describes education deficits by showing the proportion of early school leavers. This means the proportion of all 18- to 24-year-olds who currently do not attend any school or institution of higher education and are also not involved in any further education and hold no qualifications from post-16 education (university entrance level or completed vocational training). This means that young people who for example have successfully completed the *Hauptschule* or the *Realschule* (Level 2 of the International Standard Classification of Education) but did not subsequently complete vocational training, did not qualify for university entrance or are no longer involved in the

education process are counted as being early school leavers. Together with the *Länder* the Federal Government has adopted the goal of reducing the proportion of early school leavers to 9 % by 2010 and to 4.5 % by 2020. The view of the EU is that by 2010 the proportion of early school leavers should not exceed 10 %. If the average annual developments remain unchanged as in the five years leading up to 2008, (no identifiable statistical trend) and efforts are not increased, then the goal which has been set under the German strategy will not be reached.

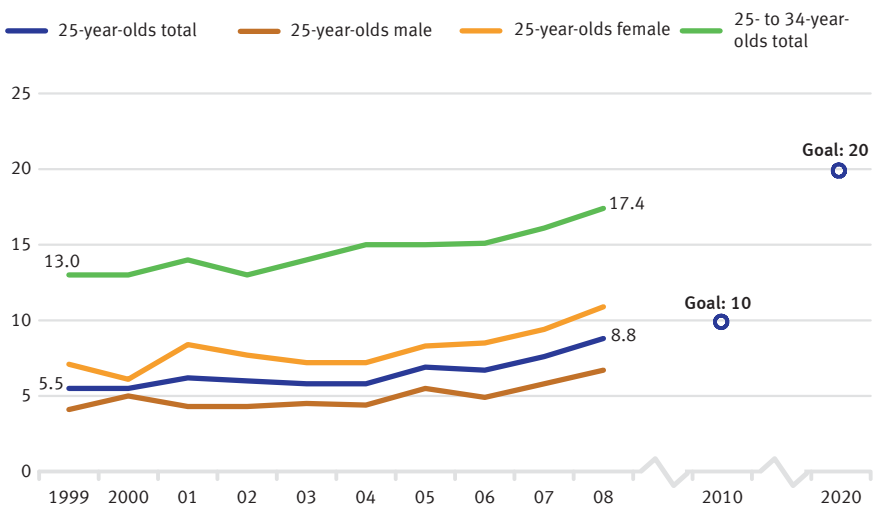
In 2008 altogether there were 791,000 young people without an apprenticeship or an equivalent school leaving certificate. Between 1999 and 2008 the proportion of such young people amongst 18- to 24-year-olds decreased from 14.9 % to 11.8 %, but in 2006 it still stood at around 14 %. Since 1999 the gender-specific figures of the indicator have deviated from the total values to differing extents. In 2008 the proportion of young women stood at 11.2 %, lower than that of young men at 12.4 %. In terms of the proportion of early school leavers, the school statistics show that in 2008 a total of around 64,900 young people (7.5 % of the graduating year) left school without a *Hauptschulabschluss* (general school leaving certificate). This proportion has dropped by 17.6 % compared to 1999. In the case of young women the proportion continues to be markedly smaller (6.0 %) than that of young men (9.0 %). In 2008 just under 24.3 % (210,300) of all school leavers with a school leaving certificate obtained a *Hauptschulabschluss*, some 43.2 % (373,500) a *Realschulabschluss* (intermediate certificate), 1.6 % (14,179) a *Fachhochschulreife* (advanced technical college entrance qualification) and 30.8 % (266,550) an *allgemeine Hochschulreife* (general higher education entrance qualification). The proportion of school leavers with a *Hauptschulabschluss* has declined since 1999 by 4.3 percentage points and those with a *Realschulabschluss* by 0.6 percentage points, while the proportions of school leavers with a *Fachhochschulreife* has risen by 0.6 percentage points and of those with a *Hochschulreife* by 4.4 percentage points.

Both family and social background and knowledge of the German language play an important role in school and professional development. There continues to be a large discrepancy between the educational successes of Germans and those of young foreigners (see indicator 19). Furthermore, the declining willingness of employers to provide vocational training has had a negative impact on this indicator. According to results of the vocational education statistics the number of new apprenticeship contracts concluded dropped to 607,570 in 2008 or 2.6 % compared with the preceding year (cut-off date: 31.12.). The drop in the old Länder (– 0.6 %) was significantly less than in the new Länder and Berlin (– 10.6 %). In the case of unsuccessful applicants – apart from unfulfillable job preferences and a lack of openings in apprenticeships regionally – a lack of qualifications often played a significant role. While the number of all trainees in industry and trade rose by 11.5 % (+ 96,300) in 2008 compared to 2004 and in agriculture by 4.5 % (+ 1,800), it dropped by 3.7 % (– 18,100) for craftsmen and by 13.6 % (– 5,980) in the public service sector. In the top tiers of the newly concluded contracts were the professional groups of retail trade operatives, salesmen and -women as well as office and industrial operatives (together 16.7 %). Men were particularly interested in training as Motor vehicle electronics technician, while women preferred training for retail or office positions.

Education and training

Continuously improving education and vocational training

25-year-old university graduates
Share of all 25-year-olds in %



9b 25-year-old university graduates

Highly developed economies, such as that of Germany, in which the service sector and the need for knowledge and expertise sectors are becoming increasingly prominent in comparison to production industries, require a highly qualified workforce. For this reason, the period spent at a university and the average age of graduates are central themes in discussion about higher education policy. As an indicator the Federal Government has chosen the share of all young people who have completed a university degree by the age of twenty-five. The goal is to increase this number to 10 % by 2010 and 20 % by 2020.

Between 1999 and 2008 this value went up from 5.5 % in total to 8.8 % and thus gained 1.2 percentage points in comparison to the previous year. In a comparison between the sexes, in 2008 the proportion of 25-year-old women who had completed a university degree (10.9 %, 1.5 percentage points more than 2007) was distinctly higher than that of men (6.7 %, 0.9 percentage points more than 2007) which partly has to do with military service or the equivalent civilian

service. The trend of the indicator in the last five years has been positive. Continuing the average speed of development would mean achieving the target value for 2010. The information value of the indicator is limited because it is based upon a very small age cohort of the population for statistical purposes.

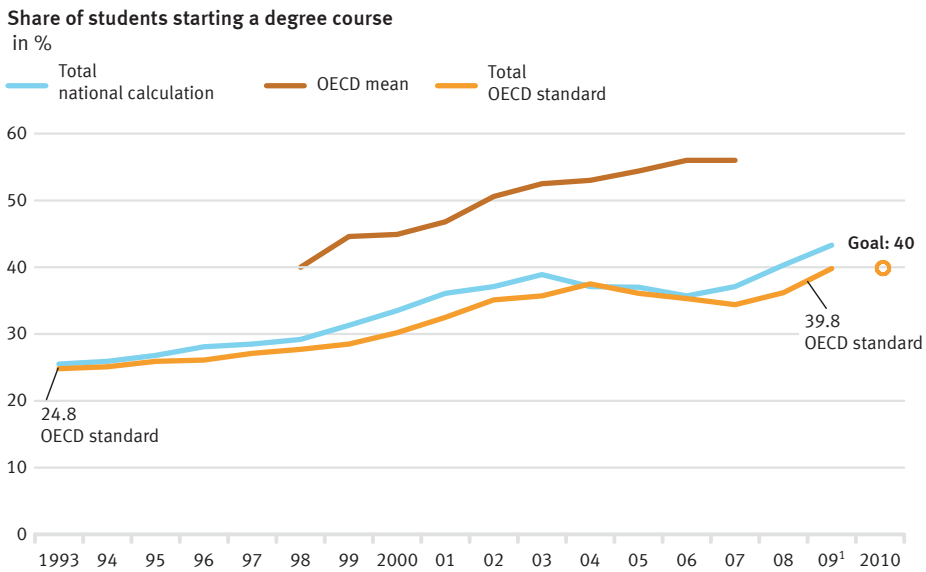
In 2008 the average age of graduates completing their first degree was twenty-eight and was thus unchanged in comparison to 1999. This figure is connected with a child's age at the time of starting school, the period of time spent at school until *Abitur* (university entrance qualification), the duration of the transition from school to the higher education system and the length of time spent at university. Analysis of an extended age group of 25- to 34-year olds shows that the proportion of young people who have completed a university degree increased from a total of 13.0 % in 1999 to 17.4 % in 2008. The average value for 25- to 34-year-olds in the OECD countries in 2007 was 26 %. Among the graduates in Germany in this age group there were an increasing number of women. In the comparison between the sexes, young male graduates (16.6 %) have been overtaken by women graduates (18.3 %).

The number of university graduates in 2008 was about 309,400, 40 % more than in 1999. These included 48,750 engineering graduates (15 % more than in 1999) and 53,600 mathematics graduates (65 % more than in 1999). While in 2008, 32 % of all degrees were completed in the fields of law, business and social sciences, 19 % in language and cultural sciences and 17 % in mathematics/natural sciences, engineering sciences occupied fourth place with 16 % of degrees. On the other hand in 1999 engineering graduates still accounted for 19 %; as a result of the significantly weaker trend in examination passes compared with graduates as a whole the proportion dropped by 3 percentage points. The proportion of women studying engineering sciences rose from 17 % in 1999 to 23 % in 2008, but remained well below the average of women across all subjects of 51 %.

The European-wide revision of university programmes (in the so-called 'Bologna' process) has the goal of introducing bachelor's and master's courses in order to encourage international mobility of students and graduates and enhance the attractiveness of European universities for foreign students. In 2008 two thirds of all those commencing their studies in Germany chose a course leading to a bachelor's degree (previous year: 57 %) and 9 % of those in the first semester at university chose a course leading to a master's degree (previous year: 2 %). The traditional diploma and master's programmes (14 %, compared with 17 % the previous year) as well as state examinations and miscellaneous (11 %, previous year: 24 %), on the other hand, are declining in numbers. The average age of students taking their first degree has tended to rise rather than fall as a result of the Bologna process. In the 2008 examination year, graduates taking their first degree on diploma programmes at universities finished their studies on average at the age of 28.1 years (previous year: 27.9 years), while in universities of applied sciences it was 27.9 years of age (as in the previous year). Just as in the previous year first-degree graduates obtained bachelor's degrees at 25.8 years and their master's at 30 years (previous year: 28.0 years).

Education and training

Continuously improving education and vocational training



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 rate of students starting a degree course measures the 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 Federal Government's goal by 2010 was to increase the number of students starting a university course to 40 %, and in subsequent years to develop and stabilise this at a high level. In terms of the necessary measures, the responsibility of the Länder for matters of education policy must be taken into consideration.

Between 1993 and 2004 the share of students in Germany starting a university course (according to the OECD standard) improved from 24.8 % to 37.5 %. After a drop in the years 2005 to 2007 it finally rose sharply until 2009 and at 39.8 % very nearly achieved the desired goal for 2010.

At 40.3 % the percentage of women was already above the target value and again over the percentage for men (39.2 %). There is however no evidence of any trend for the last years from a statistical point of view.

On average among the OECD countries the quota was clearly higher. In 2007, 56 % of young people started a university course. The proportions of students starting a university course were above average for the age-specific population in Australia (86 %), Poland (78%), New Zealand (76 %), Slovakia (74 %), Iceland and Sweden (each 73 %) and Finland (71 %), while Germany, together with Turkey, Belgium, Mexico, Switzerland and Austria, was at the lower end of the scale. The differing structure of the educational systems in the OECD countries must be taken into consideration. The below-average value for Germany is influenced by the fact that the system of vocational training mainly encompasses a dual system, whereas in other countries it takes place primarily at university level.

In study year 2009 (summer semester 2009 and winter semester 2009/2010), 423,400 new students (provisional results) registered at German institutions of higher education. This number corresponds to a first-year student quota of 43.3 % in the calculation according to national classifications. With an increase of 26,600 (7 %) compared with 2008, the number of new students in 2009 exceeded the maximum figure achieved in the previous year (396,800 new students). The sharp rise is connected to some extent with the peculiarity of doubled Abitur years resulting from the reduction in school time (2007 in Saxony-Anhalt, 2008 in Mecklenburg-Western Pomerania and 2009 in Saarland). Because of a series of baby-boom years who are completing their schooling, a clear increase in student numbers continues to be expected until 2010.

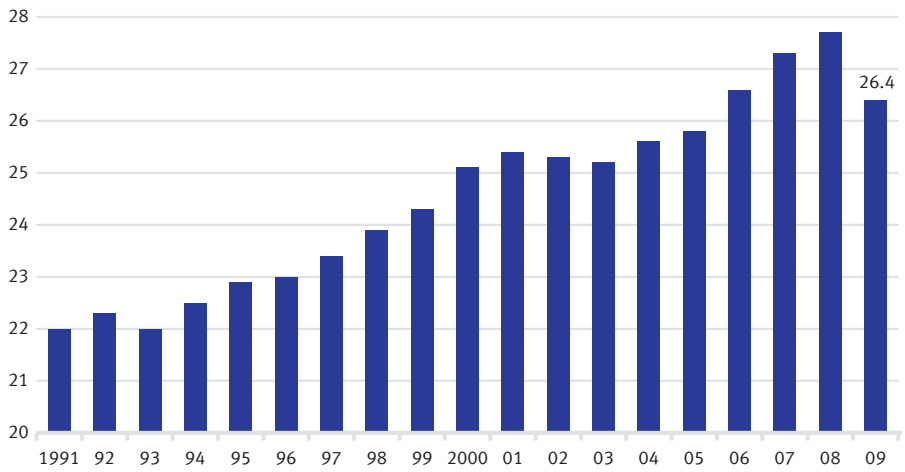
While the first-year student quotas declined between 2004 and 2007, the number of those who acquired qualifications granting them eligibility to go to university (*Abitur* or *Fachhochschulreife*) rose in 2008 by 1.7 % in comparison to the previous year, to 442,100 (preliminary results, including school leavers after eight years at *Gymnasium* (grammar school equivalent)). 46.6 % of those entitled to study were young men. Young people who were eligible to go to university increasingly chose vocational training instead of going to university. The proportion of those starting an apprenticeship who were eligible to go to university rose from 14.0 % in 2003 to 19.1 % in 2008. Reasons for the increasing preference for the vocational training among those qualified for university include the desire for more practice-orientated training, which is not covered by university courses, or restrictions on entrance to certain subjects.

First-year students who acquired their university entrance qualifications in Germany were on average 21.6 years old in 2008. 15 % of all students matriculating for the first time 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 students who grew up in Germany. This meant that the average age for starting university studies was 21.9 years. On a European comparison, first-year students in 2007 for example in Greece, Spain, Belgium and Ireland (around 19 years old for each) were the youngest, and first-year students in Iceland (23.0), Sweden (22.4), or Denmark (22.3) the oldest. But there were already clear differences in age within Germany: the ages ranged from 20.7 years in Saxony-Anhalt and Thuringia to 22.3 years in Hamburg.

Economic prosperity

Raising economic performance by environmentally and socially compatible means

Gross domestic product per capita
Price-adjusted, at 2000 prices in EUR 1,000



10 Gross domestic product per capita

Gross domestic product (GDP) expresses the total domestically generated economic performance. It is considered an important indicator of the economic cycles and growth of a national economy, but does not constitute a general measure of economic welfare. A variety of aspects link the development of the GDP with other areas within the national sustainability strategy. Thus 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 performance is, of course, desirable from a welfare perspective. Sufficient economic growth can enable structural change, safeguard jobs and create new ones, and stabilise social systems against the background of the "ageing society" and the generational equity which is desired. On the other hand, insofar as it is associated with increasing consumption of natural resources, a growing GDP tends to have an adverse

effect on the environment. The challenge posed to the sustainability strategy is to balance these conflicting goals by adopting appropriate measures.

Between 1991 and 2009 price-adjusted GDP per capita increased by a total of 20.0 %. Following a vigorous growth of the GDP in the period 2006 to 2008 averaging 2.4 %, the GDP per capita dropped by 4.7 % in 2009 compared with the previous year. This reflects the drop in economic performance resulting from the worldwide financial and economic crisis.

Economic growth has varied considerably by sector. The price-adjusted gross value added in industry (manufacturing industry excluding construction) experienced real growth of just under 18 % between 1991 and 2008 – i.e. before the most recent economic crisis. The service sectors enjoyed a very much sharper rise of 46 %. In 2009 industry suffered a sharp drop in economic performance of a good 17 % compared with the previous year. The drop in services on the other hand was very much lower at – 1.7 %. While in 1991 industry still accounted for a 30.6 % share of total gross value added (at current prices), by 2008 this figure had declined to less than 25.6 % and in the crisis year of 2009 to 22 %. The share of services on the other hand increased from 62 % (1991) to 72.6 % (2009). Well above average growth in the services sector was achieved between 1991 and 2008 in the health and social services sector (+ 99 %), transport and communication (+ 76 %), and real estate and business services (+ 74 %). The structural change to the economy — marked by the increasing importance of the services and the decreasing significance of the production, mining, and construction industries — contributed to a decoupling of economic growth and environmental pollution. The more efficient use of raw materials and energy in individual sectors also contributed to environmental relief (see Indicators 1a, 1b, and 2).

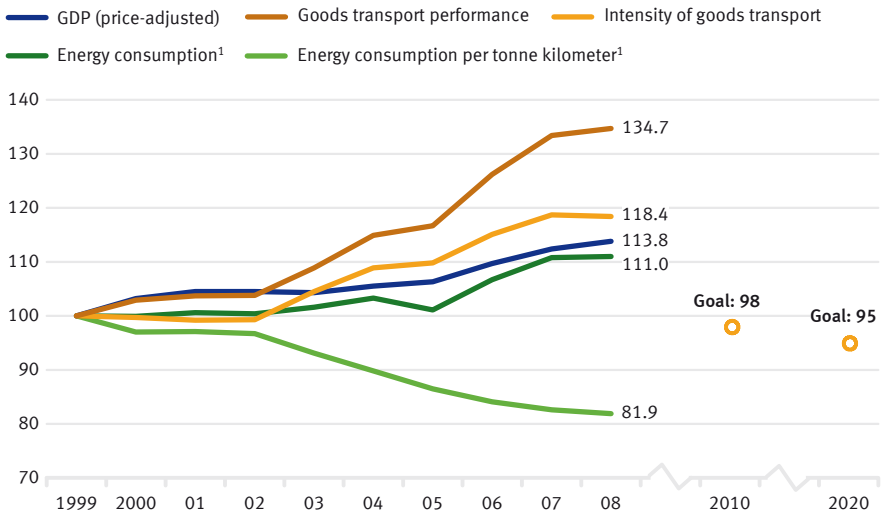
Economic output varied considerably from region to region. Starting from a low level by comparison with the former West Germany, economic output per capita was almost doubled by the new *Länder* (excluding Berlin) between 1991 and 2008 (106 %). The GDP of the new *Länder* (excluding Berlin) increased by 84 % in the same period, despite a 10.6 % lower population (– 1,549,000 individuals). In the former West Germany (excluding Berlin), on the other hand, real economic output per head increased by only 18.4 % up until 2008, with a 25.4 % increase in GDP and 6.0 % increase in population. Nevertheless, the new *Länder* still continue to lag behind the old *Länder* in 2008 by around 31 % in terms of GDP per capita.

The number of employed people in Germany increased in total by about 1.6 million persons between 1991 and 2009 (see Indicator 16). Nevertheless, large parts of the population are still threatened by poverty. The EU survey SILC (LEBEN IN EUROPA) 2008 established that in 2007 15 % of the total population in Germany was threatened by poverty. In 2004 the quota was 12 %. Thus on a European comparison Germany lies below the EU average of 16 %.

Mobility

Guaranteeing mobility – protecting the environment

Intensity of goods transport
1999 = 100



1 Excluding air transport, transport via pipelines and by lorries with gross vehicle weight up to 3.5 tonnes.

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 base value of 1999 by 2010, and by an additional 3 percentage points by 2020.

In the period between 1999 and 2008, the intensity of goods transport increased by 18.4 %. Thus the indicator showed a development contrary to the desired trend. The clear increase in intensity is the result of a relatively strong increase in goods transport performance (tonne kilometres) by 34.7 % combined with an increase in economic performance of 13.8 % (price-adjusted).

The increase in goods transport performance in this period was, however, achieved

with a decreasing use of energy. This decline can be ascribed to technical advances. The average energy consumption declined by 18.1 % to 1.07 megajoules per tonne kilometre (MJ/tkm) between 1999 and 2008. Despite technical improvements the enormous growth in goods transport performance since 2005 has led to an increase in total energy consumption.

The intensification of the technical division of labour has become a burden on transport intensity. This division of labour has an impact on the vertical integration of companies. Declining vertical integration is, as a rule, accompanied by increasing transport volume of deliveries. The degree of the technical division of labour can be approximated by means of the ratio of the total volume of goods (domestically produced, as well as imported goods and services) to the GDP. An increase in this ratio shows that companies increasingly buy semi-finished products from other companies in Germany or abroad. This factor accounted for a calculated increase of 14.2 percentage points in transport intensity. In addition, the distances between the places of production and the places of use of the goods increased on average. This increasing geographical separation of production and consumption activities led to a further increase of 11.1 percentage points.

On the other hand, the change in the composition of the goods volume due to the change in demand to less material-intensive goods (for example, an increasing share of services) relieved freight intensity by 6.8 percentage points.

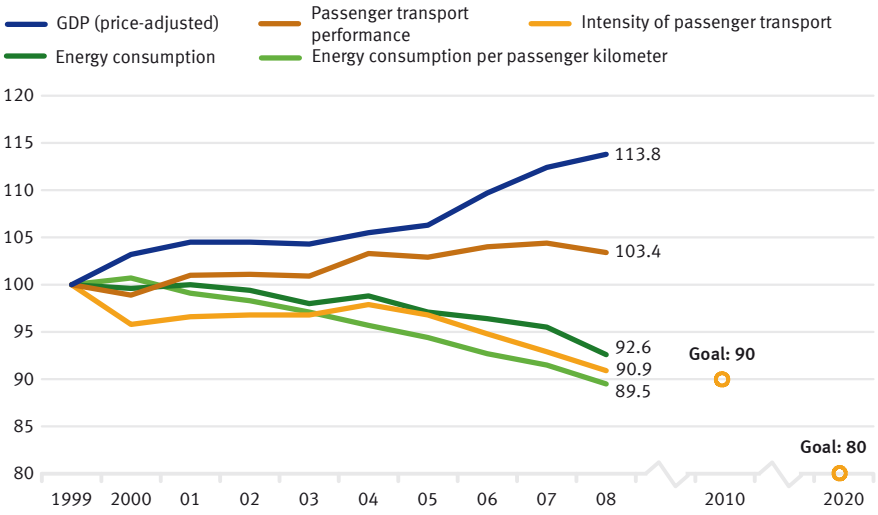
The indicator on goods transport performance refers by definition to transport within Germany. For this reason it reflects to only an insufficient degree the influences of the growing integration into foreign trade of the German economy. And so domestic goods transport performance in 2008 came to 669 billion tonne kilometres with a transport volume of 4,162 million tonnes. The increasing integration into foreign trade of the German economy (globalisation) has however resulted in substantial traffic flows abroad. In 2008 German imported and exported goods with a total weight of 960 million tonnes were shipped outside Germany with a transport performance of 2,855 billion tonne kilometres. This includes sea transport and transport by pipeline which are not integrated into domestic transport figures.

The indicator has cross references to, among others, the indicators 1a, 2, 4, 12a (with reference to the atmospheric deposition of nitrogen compounds from the combustion of fuels), 13, with regard to traffic accidents to 14a, b and 16 where applicable (with reference to the transport service industry and the automobile industry).

Mobility

Guaranteeing mobility – protecting the environment

Intensity of passenger transport
1999 = 100



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 government monitors the sustainability of passenger transport development by means of the indicator 'Intensity of passenger transport'. The intensity is measured as the ratio between passenger transport performance in passenger kilometres and the price-adjusted GDP. The Federal Government's goal is to reduce the

intensity by 10 % by 2010, and by an additional 10 percentage points by 2020, compared to the base value of 1999.

Since passenger transport performance in the period in question has increased only slightly (by 3.4 %) and the GDP has increased more significantly (by 13.8 %), intensity has dropped by 9.1 %. The indicator has thus been moving in the right direction towards achieving the goals set. The relatively favourable development of the indicator has probably been caused mainly by the distinct rise in fuel prices (petrol + 63 %, diesel + 109%).

The increase in passenger transport performance between 1999 and 2008 was accompanied by a decline in energy consumption. In terms of carriers as a whole average consumption of energy per passenger kilometer decreased in the period under review by nearly 10.5 %, to 1.77 megajoules per passenger kilometre (MJ/Pkm). This reduction was particularly influenced by the development in individual motorised transport as it is responsible for the largest proportion of energy consumed in passenger traffic.

The transport performance of individual motorised traffic, which in 2008 had a share of 79.6 % in overall passenger transport performance, has increased only moderately since 1999 (by 0.3 %). On the other hand, the passenger transport performance of railway and public road transport (which until 2003 comprised only enterprises with at least six omnibuses) increased overall by 8.2 %. The performance of domestic air transport increased by 22.9 %.

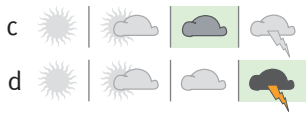
Individual motorised transport serves various purposes. In the year 2007 recreational traffic accounted for the biggest share in transport performance, with 35.2 %. The share of commuter traffic amounted to 19.5 %, followed by shopping traffic at 18.2 % and business trips at 13.6%.

Chiefly because of technological improvements and the growing share of diesel vehicles, the consumption of fuel (by passenger cars and estate cars) per kilometre went down by 10.6 % between 1999 and 2007.

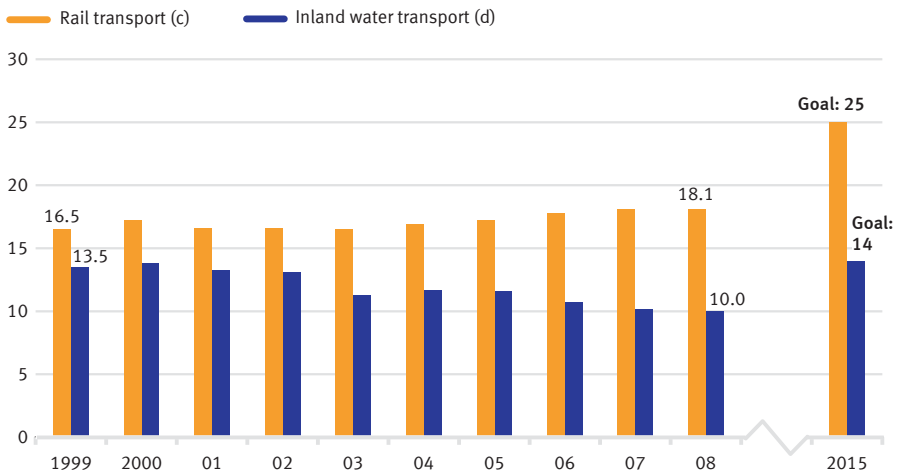
The indicator has cross references to, among others, the following indicators: as far as energy consumption is concerned to indicator 1a, as far as environmentally harmful emissions from fuels are concerned to 2, with regard to the atmospheric deposition of nitrogen compounds from the combustion of fuels to 3, 4, 12a and 13, with regard to traffic accidents to 14a, b and, where appropriate, with regard to the transport service industry and the automobile industry to 16.

Mobility

Guaranteeing mobility – protecting the environment



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



Excluding local transport of German lorries (up to 50 km).

Source: Federal Ministry of Transport, Building and Urban Development

11c, d Share of rail transport and inland 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 water transport (11d) in goods transport performance. The goal is to increase the share of rail transport by 2015 to 25 %, and of inland shipping to 14 %.

Total domestic goods transport went up by 37.7 % to 640.3 billion tonne kilometres between 1999 and 2008. The market share of rail transport improved slightly, from 16.5 % to 18.1 %, but did not increase significantly. The share of inland water transport actually declined from 13.5 % to 10.0 %. Looking at the absolute figures between 1999 and 2008, the freight transport performance of rail increased from 76.8 billion to 115.7 billion tonne kilometres, and that of inland water transport from 62.7 billion to 64.1 billion tonne kilometres. Despite the positive

trend in rail transport, it is not to be expected that, given the average rate of change in the last few years, the goal set by the Federal Government for this sector will be achieved in time. For inland 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. This applies to the goods 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 24 %), stone (8 % to 12 %) and ore (37 % to 44 %) in the period 1999 – 2008.

The share of foreign lorries in freight transport performance grew in the period under review from 19 % to 26 %, i.e. the increase in market share of the railways mentioned above could well be correspondingly smaller when looking at the overall transport performance. Figures on the road transport performance of foreign carriers broken down by types of goods are not available.

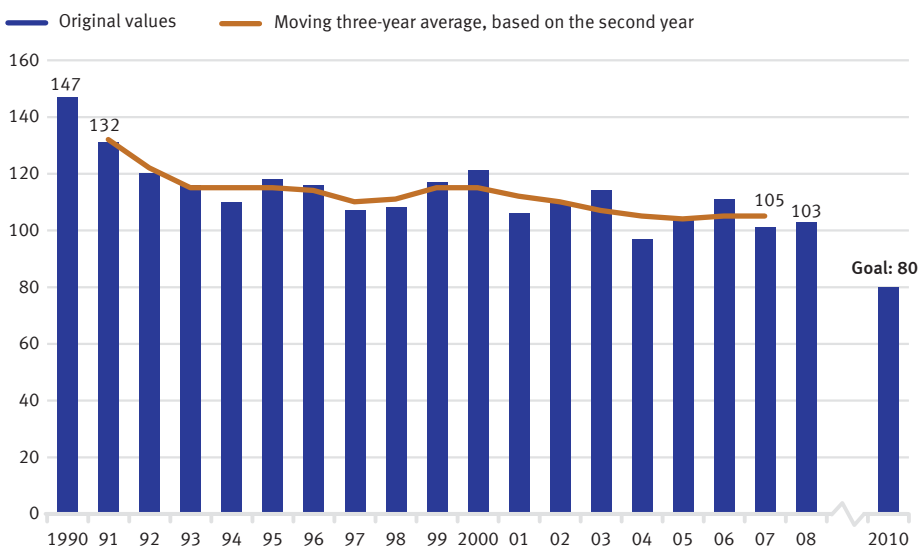
In contrast to rail, inland shipping suffered losses in market shares in the period 1999 to 2008, especially for the transportation of those types of goods where it had traditionally had a large share. For example, the market share relating to chemical products (including fertilisers) decreased from 19 % to 16 %, crude oil from 27 % to 21 % and ore from 41 % to 36 %.

Goods transport performance in inland water transport went up by 1.4 billion tonne kilometres from 1999 to 2008. The growth in goods transport performance overall was however substantially greater in this period. Transferred to the inland water transport this would have meant a calculated increase in transport performance of 13.1 billion tonne kilometres. This was however countered by two factors. On the one hand the composition of the goods being transported changed during the period under consideration. 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 water transport turned out to be less by 4.9 billion tonne kilometres. On top of this the losses in market share for individual groups of goods mentioned above reduced the increase by a further 6.9 billion tonne kilometres. This explains the comparatively modest rise in goods transport performance in inland water transport of 1.4 billion tonne kilometres.

Farming

Environmentally sound protection in our cultivated landscapes

Nitrogen surpluses in Germany
kg per ha agricultural land



Source: Federal Research Centre for Cultivated Plants - Julius Kühn-Institut (JKI) 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 on the land 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, traffic, private households and biological nitrogen fixation) contribute to the adding nitrogen to the soil via the atmosphere. An excess nitrogen input into the environment leads to far-reaching problems: pollution of ground water, eutrophication of inland bodies of water, oceans and ecosystems on land, and the formation of greenhouse gases and acidifying air pollutants, with all their consequences for the climate, biodiversity and the quality of the landscape (see Indicators 2, 5 and 13).

The nitrogen indicator for agriculture in Germany gives the nitrogen surplus for the overall balance sheet in Germany in

kilograms per hectare of farmland per year. The nitrogen indicator can be calculated by means of the comparison of 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 feedstuff 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, i.e. nitrogen flows in the domestic cycle – with the exception of domestic feed production – are not shown. The surpluses that have been discovered must not be equated across the board with environmental loss, as a certain amount of nitrogen is necessary to maintain soil fertility. Nevertheless the surpluses on the balance sheet can be used as a measurement for the environmental pollution by nitrogen.

The method used for calculating the nitrogen indicator has been revised at 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 instance. Calculating this mean value balances out, for example, the yearly fluctuations caused by the weather and the market that cannot be influenced.

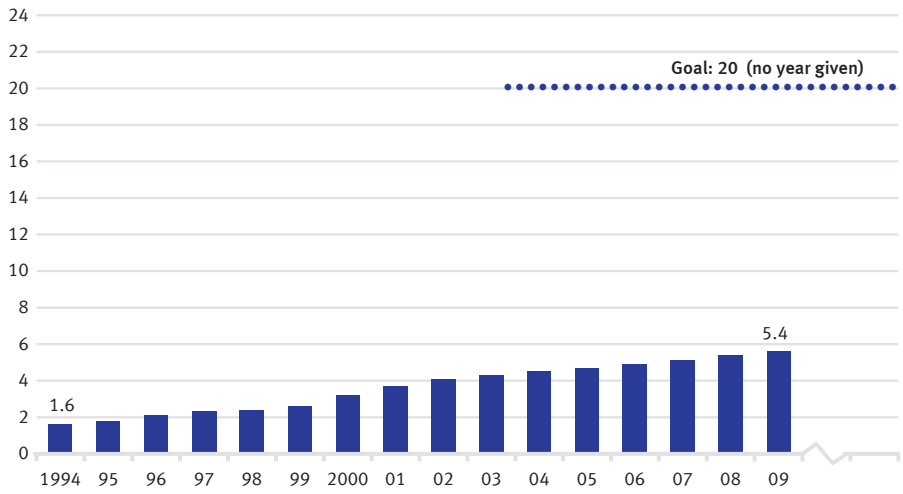
The Federal Government limited the use of nitrogen in particular by the fertiliser regulation of 2007. The Federal Government's goal is to reduce the agricultural nitrogen surpluses to 80 kg of nitrogen per hectare and year by 2010. Since 1991 the balance (three-year average) of 132 kg/ha per year has declined to 105 kg/ha per year in 2007 (– 21%). By 2007 a little less than two-thirds of the necessary distance to the target value had been covered. During the last five years the average annual reduction was only 1%. If the objective is still to be achieved, the annual reduction up to the target year must average 9 %.

The significant reduction at the beginning of this time series resulted from the decreasing number of livestock in the new Länder. The still weak ongoing reduction in the course of the time series since 1993 is based on efficiency gains in nitrogen use (increases in yield in crop production and higher feed conversion for farm animals). In 2007 fertiliser input at 55 % (106 kg/ha, moving average) was the most important component of nitrogen input into the overall balance sheet. Feedstuff from domestic sources contributed 21 %, feed imports 12%, biological nitrogen fixation 6 %, atmospheric deposition from non-agricultural sources 5 % and seed and plant material 1 %. Whereas nitrogen input only lessened slightly between 1991 and 2007 (to 193 kg/ha or by – 4.5%), nitrogen output has risen by 27 % since 1991 (to 88 kg/ha). In 2007 three-quarters of the nitrogen discharge left the sector with plant market products and a quarter with animal market products.

Farming

Environmentally sound protection in our cultivated landscapes

Land used for organic farming
Proportion 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.

The indicator shows the share of land cultivated by organically producing farms that is subject to the inspection system of the EU Regulation on Organic Farming, as part of the total area under cultivation in

Germany. It includes both the areas completely devoted to organic farming as well as those still under conversion. The decision to switch to organic farming is one made by individual farms. The Federal Government welcomes the desirable conversion of farms from environmental and demand aspects and intends to create framework conditions that will allow organic farming to achieve a 20 % share of the sector over the next few years.

From 1994 to 2008 the share of organic farming in the arable land increased from 1.6 % to 5.4 % (907,786 hectares). The land used for organic farming rose by 5 % compared with the preceding year. In 2008 the newly converted area of 42,500 hectares was about 2,700 hectares more than the increase of the previous year. If the so far moderate course of the conversion to organic farming moves at its current rate many years will be needed before the target value is achieved.

According to details provided by Eurostat an area of 7.8 million hectares was managed organically in EU 27 in 2008. The proportion of land used for organic farming as a percentage of the farmland in EU 27 rose by 7.4 % compared with the previous year. With Spain (17.0 %), Italy (12.9 %), Germany (11.7 %) and Great Britain (9.4 %) just four countries contributed more than 50 % to the total farmland cultivated organically in the EU. In terms of the farmland of individual EU countries the highest proportions of land used for organic farming in 2007 were given for Austria (15.7 %) and Sweden (9.9 %).

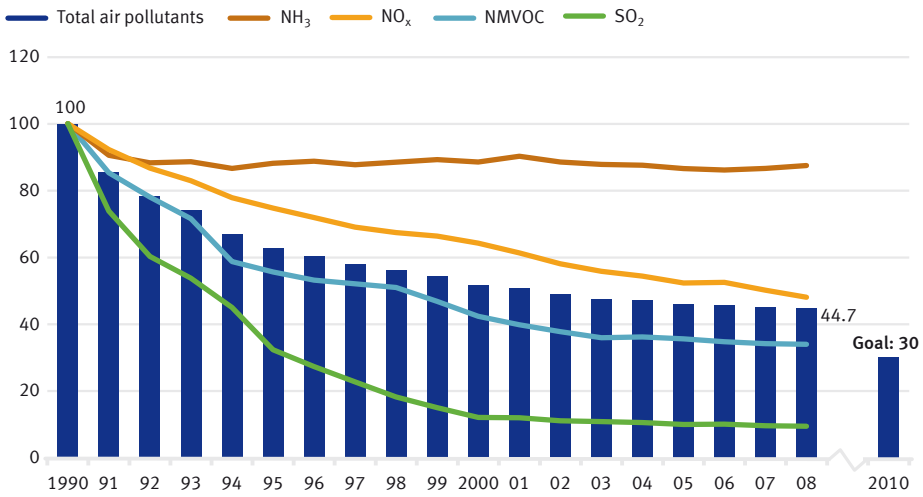
Organic farming in Germany focuses on certain kinds of production: the share of land for grain cultivation is smaller than in conventional farming, whereas the area for forage crops and pulses is larger. According to the data provided by official statistics, in Germany in 2007 the share of land used for permanent pasture in organic farming was 50.9 %, with 47.8 % of the land being used for arable farming. Of the total farmland, however, arable land dominated with 70.1 %, while permanent pasture accounted for only 28.8 % (+ 1.2 % for permanent crops). In keeping with the high share of permanent pasture, organic farms with livestock in 2007 ran mainly beef cattle (75.3 %), but also sheep (18.6 %). Organic pig farming was of minor importance. The average size of organic farms in 2007 was 59.5 hectares, larger than that of the average of farms overall (45.3 ha), and they were particular large in the new *Länder* (179.2 ha).

The volume of organic products sold increased by 2.2 % in 2009 compared with the preceding year. Because of price reductions totalling 3.2 % the sales of organic food (approximately 5.8 billion euros) has however dropped slightly by comparison with 2008 (according to *Agrarmarkt Informations-Gesellschaft mbH AMI*). The demand for organic food must also continue to be met by imports from other EU Member States or non-EU countries. There are cross references to Indicators 2, 3, 4, 5, 12a and 13.

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, so at first protective measures were 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 National Strategy for Sustainable Development's indicator 'Air pollution' combines four essential pollutants: sulphur dioxide (SO_2), nitrogen oxides (NO_x), ammonia (NH_3) and the non-methane volatile organic compounds (NMVOC).

It is the aim of the Federal Government to reduce the emission of these air pollutants as a whole by 70 % compared with the base

year of 1990 by 2010. Air pollution decreased by 55.3 % until 2008; the indicator has thus 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 until 2008 the index has only reduced on average slightly, by 1.2 % per year. This rate of change is insufficient to achieve the goal that has been set by 2010; only 80 % of the distance to the target would be covered.

The contributions to the development between 1990 and 2008 by individual types of emission varied. The greatest reductions were in the emissions of sulphur dioxide which were reduced by 90.6 % (– 0.2 percentage points compared with the preceding year). A reduction of 70 % had already been achieved by the middle of the 1990s and since then it had been significantly exceeded. But since 2000 the additional reduction has been only marginal. Part of this reduction was accomplished by the desulphurisation of the exhaust gases of power plants, by the partial replacement of high-sulphur domestic brown coal with low-sulphur fuels, as well as according with legal limits for sulphur contents in liquid fuels.

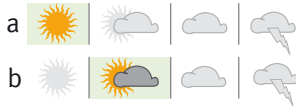
Emissions of non-methane volatile organic compounds (NMVOC) were also successfully reduced by 66.1 % by 2008 (– 0.2 percentage points compared with the preceding year). This means that a reduction of nearly 70 % has been achieved. The increasing use of catalytic converters in automobiles has proved decisive in the sharp reduction of NMVOC emissions in the transport sector.

The emissions of nitrogen oxides dropped on an ongoing basis until 2008 and at – 52.0% (– 2.2 percentage points compared with the preceding year) by a good half compared with 1990, but have failed to reach the target value. The most important source of emissions in 2007 was transport with 48.6 %, 90.1 % of which was caused by road traffic alone. The use of catalytic converters in road traffic also contributed to the reduction. In second place were the emissions from the energy industry, which contributed 22.9 % to total pollution in 2007. The increased use of exhaust gas denitrogenisation installations in power plants has resulted in a pronounced decrease over the years.

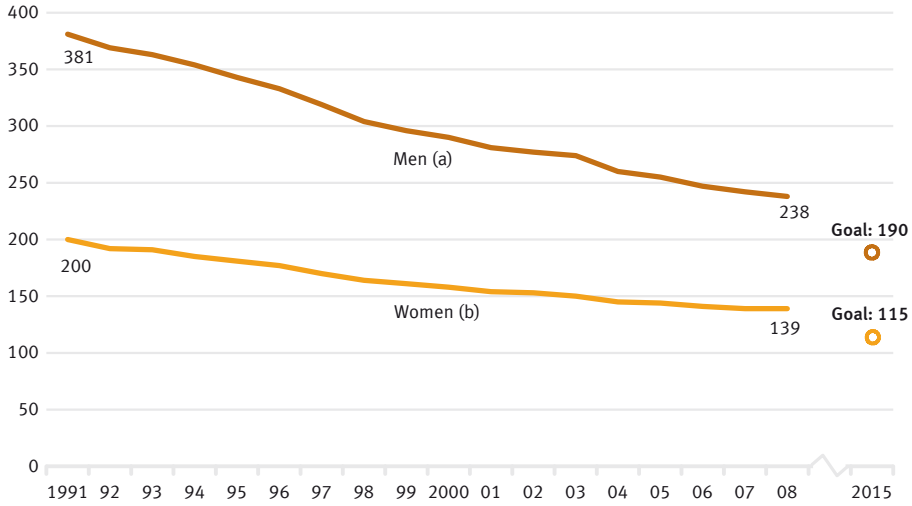
The emissions of ammonia, 95 % of which come from farming, persist at a high level. They have only dropped by 12.6 % compared with 1990. The initial decrease was mainly due to the reduction of livestock in Eastern Germany after 1990. Ammonia emissions are primarily connected with the scope of milk and meat production. The indicator has direct and indirect cross-references to the Indicators 1, 3b, 4, 5, 11, 12a, 12b,14a, b and 14e.

Health and nutrition

Living more healthily for longer



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



14a, b Premature mortality

Health and life expectancy are determined by a number of factors, including social status, educational level, personal lifestyle and habits (consumption of tobacco, alcohol, physical exercise, nutrition), working conditions, environmental factors and medical care and disease prevention measures. When a high number of fatalities in a population occur at an age distinctly below the average life expectancy, this is an indication of increased health risks that could well be avoided. The National Strategy for Sustainable Development has as its goal that by 2015 premature mortality for men (14a) should not exceed 190 and for women (14b) 115 per 100,000 inhabitants.

The indicator presented here shows the deaths of under 65-year-olds in Germany. The values refer to 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 comparable over the years.

Between 1991 and 2008 premature mortality steadily decreased – more for men (– 38 %) than for women (– 31 %). Thus the gender-specific difference in premature mortality for men and women diminished. According to the calculation, in 2008 238 men and 139 women per 100,000 inhabitants died prematurely, i.e. before they reached the age of 65. If the present trend continues, the goals for men could be achieved, whereas for women the figures would fall short by a narrow margin.

Life expectancy in Germany has risen further. Between 2006 and 2008 the average life expectancy for newborn girls was 82.4 years of age and for boys 77.2. Between 2005 and 2007 the average was still 82.3 and 76.9 years of age respectively.

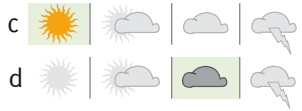
Today 60-year-old women can, statistically, expect an additional 24.7 years of life, and men an additional 20.9. In the old *Länder* (excluding West Berlin) life expectancy is still somewat higher than in the new *Länder* (excluding East Berlin): for newly born males the difference was 1.3 years, for females still only 0.3 years.

In 2008, cardiovascular diseases were in general the most common cause of death (42.2 %), followed by malignant tumours (25.6 %), diseases of the respiratory system (7.0 %) and the digestive tract (5.2 %), along with deaths due to external causes (3.7 %). The significance of the causes of death varies depending on age and gender. Whereas cardiovascular diseases were the principal causes of death in older people, malignant tumours (cancers) were the principal cause among 40- to 64-year-olds. The principal causes of death in 1- to 39-year-olds had non-natural causes (injuries and poisoning). Despite progress in combating fatal accidents, death by accident is still the main cause of death among 18- to 25-year-olds.

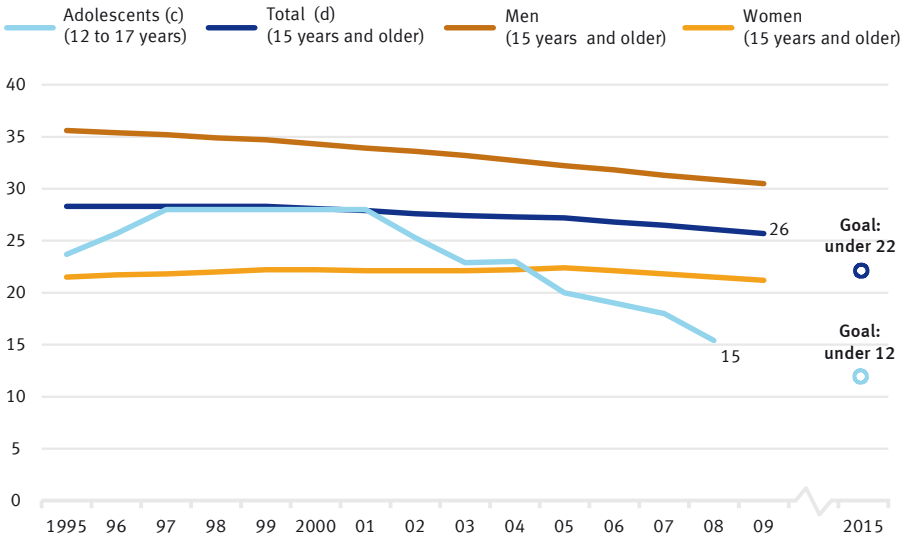
Besides factors such as health behaviour (see also Indicators 14c, d for the smoker ratio or 14e for obesity), medical care also plays an important role in the mortality rate. Health expenditure totalled 263 billion euros in 2008. That was a rise of 9.9 billion euros or 3.9 % compared with the preceding year. This expenditure corresponded to 10.5 % of the GDP or 3,210 euros per inhabitant (2007: 3,080 euros).

Health and nutrition

Living more healthily for longer



Proportion of persons who smoke
Share in % of those polled



Source: Federal Statistical Office, Federal Centre for Health Education (BZgA)

14c, d Proportion of adolescents and adults who smoke

Long-term tobacco smoking involves a definite risk of considerable damage to health, and not just to smokers; non-smokers exposed to tobacco smoke do not just suffer annoyance but can 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 partial indicators on smoking behaviour show the percentage of polled adolescents between 12 and 17 years of age (14c) and those 15 years old 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, smokers increased from 24 % (1995) to 28 % (1997 and 2001), but then dropped to 15 % by 2008 (data from Federal Centre for Health Education). These are the lowest figures since measure-

ments began in 1979. In the general population over the age of 15 a total of 26 % said that they smoked occasionally or regularly (microcensus) in 2009. 28 % smoked in 1995 and 1999. This meant that the figures for adult smokers had only dropped slightly. In order to reach the goals for adults (15 years of age and older), a more concerted effort on the part of all stakeholders must be made. Among young people (12 to 17 years of age) on the other hand the target value will be achieved if the current positive trend continues.

In 2009, 22 % of all those polled that were 15 years or older considered themselves regular smokers, while 4 % smoked occasionally. Clearly more men (31 %) smoked than women (21 %). While the proportion of men who smoke had decreased by 5 percentage points since 1995, the proportion of women smokers remained virtually unchanged. The amount of tobacco smoked is important relative to the individual threat to health. 96 % of the smokers questioned in 2009 preferred cigarettes. 14 % of regular cigarette smokers (1995: 17 %) were in the category of heavy smokers with more than 20 cigarettes a day, whereas 80 % smoked 5 to 20 cigarettes a day. With regard to the number of cigarettes consumed per day, differences per gender were also apparent; one in six of the regular male smokers (17 %) were heavy smokers, but only one in ten (10 %) of the female smokers.

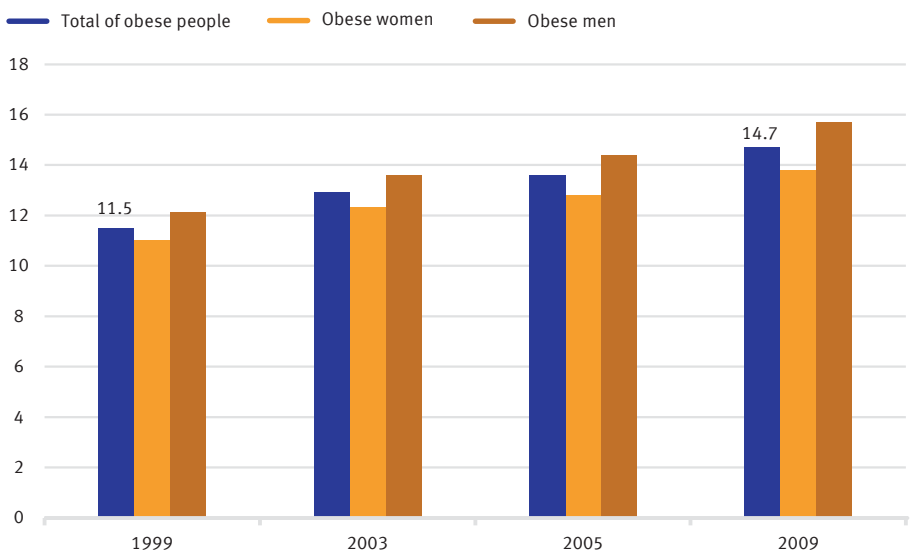
Besides the amount smoked, the age at which smoking is started also has an influence on the health risk. In the last fifty years the entry age has become drastically younger. In 2009 those men aged 65 to 69 at the time of polling stated that they had begun smoking at the age of 18.5, whereas women of 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 2009, in households with a low monthly income, of up to 1,300 euros, 33 % of those polled reported being smokers. In households with 2,600 to 4,500 euros per month 24 % said they were smokers, and in households with over 4,500 euros 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 2008, 5.2 % of all fatalities (43,830 people, of whom 30,780 were men and 13,050 women) could be traced to diseases typical of smokers (lung, laryngeal and tracheal cancer). In comparison to 2000, this is an increase of 7.4 %, which is primarily due to an increase in the number of female deaths. Since 2000 their share has gone up by 5.1 percentage points from 24.7 % to 29.8 %. The average age of those who died from lung, laryngeal and tracheal cancers in 2008 was 69.9 years of age – seven years lower than the average death rate (76.9 years). Apart from individual suffering and personal tragedy, from an economic perspective, diseases and premature deaths caused by the consumption of tobacco led to a high burden on the social security and health care systems.

Health and nutrition

Living more healthily for longer

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



14e Proportion of obese people

Surplus body weight plays a major role in the development of diseases of civilisation such as cardiovascular diseases, diabetes and joint injuries. 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, overweight is also a burden on the national economy and has a negative impact on social life. Categorisation as 'overweight' is made on the basis of the 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 overweight goes beyond a definite point (a BMI of 30+), it is classified as 'obesity' and is as a rule connected to certain impairments to health.

It is the goal of the Federal Government for the number of obese people in Germany to

be reduced by 2020. In 2009 14.7 % of the German population over the age of 18 was classified as obese. In 1999 this proportion still amounted to 11.5 %. Obesity in the population has moved steadily counter to the objectives of the Sustainability Strategy since 1999.

At 15.7 %, the percentage of obese men was higher than that of obese women (13.8 %). In 2009, 51.4 % of the adult population was deemed overweight; again, the share of men (60.1 %) was higher than that of women (42.9 %).

The proportion of obese people increases directly with age, although this trend reverses suddenly and emphatically among older retired people. In 2009, 2.6 % of 18- to 20-year-old women were obese. About 8 % of women between 30 and 35 years of age were already obese, and 15.2 % of those between 50 and 55. The highest proportion of obese women was found in the age group between 70 and 75 years of age at 21.6 %; after this age the figures fell sharply.

In men, some 11.5 % between 30 and 35 were obese, and the highest proportion of obese men was found in 60- to 65-year-olds (22.3 %). In comparison to 1999, the shift in proportion of the obese in advanced age is conspicuous: 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 age-specific results for 3- to 17-year-olds. According to these figures, between 2003 and 2006, 2.9 % of the 3- to 6-year-olds, 6.4 % of the 7- to 10-year-olds and, moreover, 8.5 % of the 14- to 17-year-olds were obese. There were no obvious differences between boys and girls. 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 increasing prevalence of obesity can be found, among other things, in a diet too rich in calories and a restricted programme of physical activity.

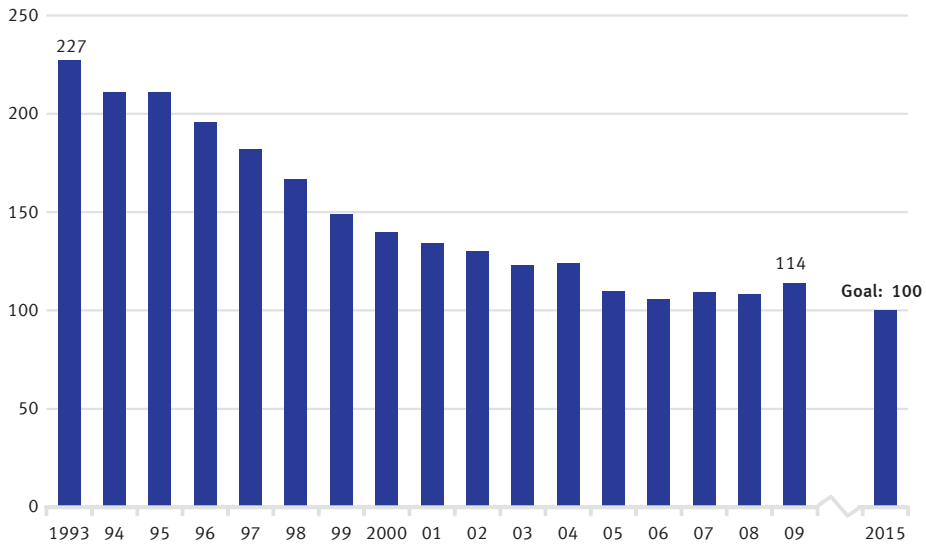
Underweight, with a BMI lower than 18.5, is the opposite phenomenon to that of obesity, and represents an equally important health risk. In 2009 women were considerably more often (3 %) underweight than men (1 %). It needs to be mentioned that 12.5 % of young women between 18 and 19 years of age were underweight, and in those between 20 and 24 there were still 9.4 % underweight.

The indicator has, among others, relevance to Indicators 9, 14a, 14b, 16 and 17.

Crime

Further increasing personal security

Burglaries in homes
Reported cases (in 1,000)



Source: Federal Criminal Police Office, 2010

15 Burglaries in homes

A safe environment that permits the citizens of a country to live without fear of crime or threats to their sense of well-being is an essential prerequisite for a properly functioning social system and social sustainability. An important indicator of personal protection against crime is the number of burglaries to private homes. Involving as it does the invasion of the personal sphere of its victims, this crime is regarded as particularly threatening. At the same time citizens can, by means of appropriate security precautions, actively contribute to the prevention of burglary.

This indicator includes all the burglaries in homes that were reported to the police. As a goal, it was established that by 2015 the number of burglaries per year is to be reduced to under 100,000.

The number of burglaries in homes initially dropped in the course of the last decade, and has stagnated since 2005. Since 1993 the number of reported cases has dropped

by a half. At about 114,000 cases in 2009, burglaries amounted to 1.9 % of the total of 6.1 million criminal offences registered by the police.

Despite a slight increase in the number of burglaries in 2009, the above-mentioned goal could be achieved if the average annual trend since 2004 were to continue.

The general decrease is presumably based on increased public awareness. Citizens have raised their security against burglaries by having alarm systems or particularly secure windows or doors installed.

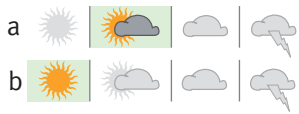
Burglaries in homes are only a portion of those offences that threaten personal security. Aggravated theft (including breaking and entering) accounted for 18 % of the offences recorded in 2009, cases of fraud accounted for 16 %, and bodily injury, 9 %.

However, in contrast to the generally declining number of burglaries in the period under consideration (as for other forms of theft) the reported cases of fraud and bodily injury have increased. The cases of fraud went up by 81 %, the cases of bodily injury registered by the police increased by 85 %, while the cases of burglaries in homes decreased by 50 % in the period between 1993 and 2009. Changes to the number of offences known to and registered by the police do not however make it possible to determine actual changes: research into unreported violent crime show that the increases are largely due to changes in reporting behaviour.

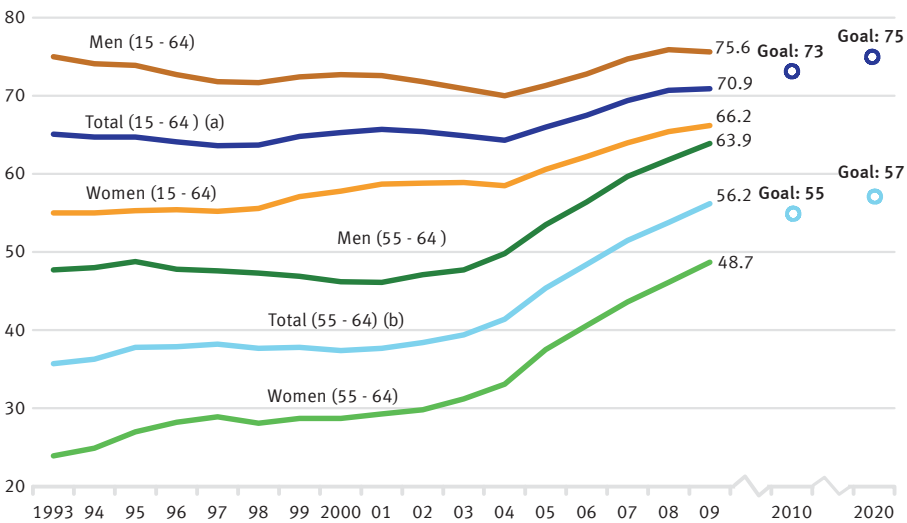
The clear-up rate for all offences registered by the police in 2009 was about 56 %. But there is a significant differentiation however depending on the offence. So that the clear-up rate for burglary in homes is only about 17 %. In the case of fraud about 81 % and in the case of bodily injury about 88 % of all registered offences are cleared up. The comparatively low clear-up rate for burglary in homes should be seen in the following context: victims are usually insured and any claim that is made means that the burglary has to be reported, so that we can assume that a very large proportion of the offences are recorded. Furthermore, only very rarely are there concrete pointers to the perpetrators. This is in sharp contrast to the cases of fraud and bodily injury, for which a well-known offender or at least clear detection procedures lead to higher clear-up figures.

Employment

Boosting employment levels



Employment rate
Share in %



16a, b Employment rate

Because of demographic changes in Germany ('an ageing society'), there can be a labour shortage in the long term. 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. Therefore, it is necessary to exploit our labour potential more effectively in the future.

The goal of the Federal Government is thus 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 employment rate among older people (55 to 64 years of age) is to be increased to 55 % by 2010 and to 57 % by 2020.

The employment rate rose by 65.1 % in 1993 by 5.8 percentage points to 70.9 % in 2009. At the same time the employment rate for older people of 35.7 % rose by 20.5 percentage points to 56.2 %. While a continuation of the overall employment rate trend over the last few years is not suffi-

cient to achieve the 2010 goal, the target value of the employment rate for the older workforce was already reached and overtaken in 2009. From 2008 to 2009 the general employment rate for men suffered a slight drop for the first time since 2005, by 0.3 percentage points to 75.6 %. In the context of the present economic crisis the short-time worker provision prevented a general slump in the employment rate.

The significant rise in the employment rate observable in 2005 is partly based on methodological changes to the survey. With this change from 2005 the microcensus has supplied average annual results for the first time, but these are only comparable to a limited extent to the results prior to 2004, which were obtained in reporting periods of a single week. At the same time there was an improvement in recording employment data in the survey and a new extrapolation procedure was introduced.

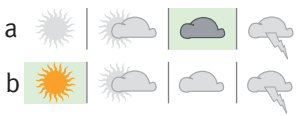
The employment rates of men and women have developed very differently since 1993. The rate for men in the period under review only rose by 0.6 percentage points to 75.6 %, whereas in the case of women it rose by 11.2 percentage points to 66.2 %. In evaluating the increase in the employment rate of women it must be taken into consideration that this was accompanied by a clear increase in part-time employment (3.2 million), while the number of women employed full-time went down by 0.6 million. For the correlation between the employment of women, childcare and women‘s income see also Indicators 17 and18.

If we break down the employment rate into age groups there have been various development trends between 1993 and 2009. Among 15- to 24-year-olds the share went down by 5.7 percentage points to 46.2 %. This is also connected to the fact that with increasing qualification requirements the average educational periods at school and university are getting longer with the result that the transition into professional life has shifted (see Indicators 9b, 9c). A slight rise was noted on the other hand in the rate for 25- to 54-year-olds (+ 4.8 percentage points). From 2008 to 2009 the employment rate for the aforementioned age groups has suffered a slight drop for the first time since 2005, which can presumably also be seen in the context of the present economic crisis.

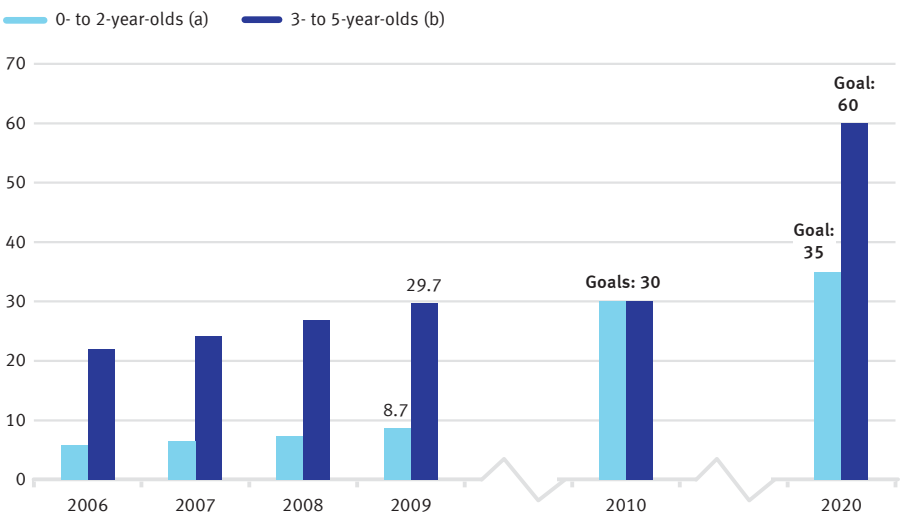
Among older people (55- to 64-years-olds) a particularly sharp rise in the employment rate can be seen at 16.8 percentage points since 2003. Starting from a lower level, female employment rates in this age group have risen 24.8 percentage points since 1993, which is much greater than it was for men (+16.2 percentage points).

Perspectives for families

Improving the compatibility of work and family life



Share of children in all-day care as percentage of age groups



Care of more than 7 hours in nurseries or crèches, excluding publicly funded care in private homes.

17a, b All-day care provision for children

The provision of childcare in line with demand improves the balance 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. But support for children in the context of all-day care provision is also an important contribution to equal opportunities and to the integration of foreign children and adolescents.

The goal of the Sustainability Strategy is to enable 30 % of the children in both age groups to have all-day care by 2010. By 2020 the proportions are to be increased to 35 % for 0- to 2-year-olds (17a) and to 60 % for 3- to 5-year-olds (17b). In 2009, parents of 29.7 % of the 3- to 5-year-olds (kindergarten age) took advantage of institutional all-day care in addition to their own educational activities, while for children under 3 years of age (nursery age) this

figure was 8.7 %. By comparison 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 nurseries. In the case of the 3- to 5-year-olds the proportion of children receiving all-day care rose by 7.7 percentage points, which means that the objective of all-day kindergartens set for 2010 has already been achieved ahead of time. Although all-day nursery care rose by 2.8 percentage points from 2006 to 2009, this would not be enough to achieve the 30 %-objective in 2010.

The number of children receiving all-day care in nurseries and kindergartens was around 802,900 in 2009. A further number of approximately 28,300 children under six years old are cared for in publicly subsidised day-care facilities. The number of children in this age group in part-time care was around 1.52 million. A quarter of the children cared for full-time or part-time in nurseries and kindergartens in 2009 had a background in migration, i.e. at least one of the parents was of foreign origin. The care rate for these children was just under 47 %, for children with no background in migration it was around 61 %.

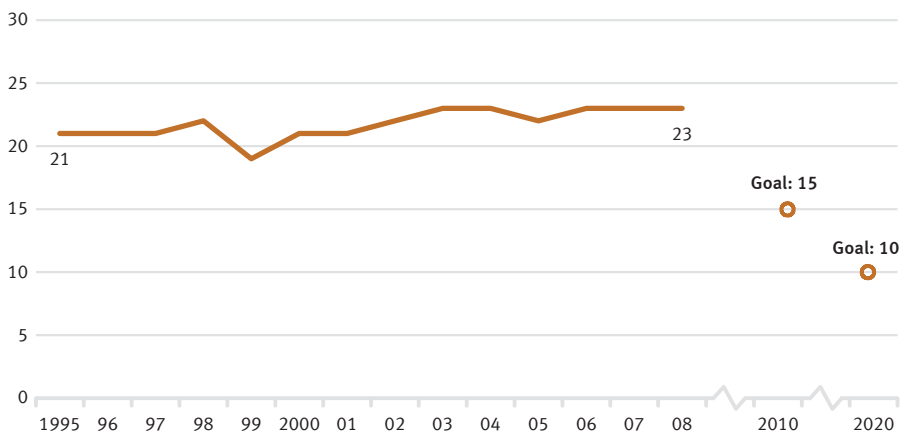
In terms of childcare opportunities, after-school clubs and all-day schools also play a significant role. In 2009 just under 124,000 children between 6 and 13 years of age were cared for on an all-day basis in after-school clubs full-time and 651,000 children part-time. The proportion of full-time pupils (out of all pupils in general education schools) in school year 2007/2008 was 20.9 %. However, this figure includes all forms of school, in other words it also includes pupils older than 13. In *Grundschulen* (primary schools) in the same school year 16.2 % of the children received all-day care. In comparison to 2002, the number of full-time pupils went up markedly, from 874,000 to almost 1.7 million (general schools altogether) and from 134,000 to around 500,000 in *Grundschulen* (source: Standing Conference of the Ministers of Education and Cultural Affairs, 2009).

Both in respect of all-day care in nurseries and crèches, and the availability of all-day primary school places, for example, a clear-cut difference exists between *Länder* in the east and west of Germany. Thus the all-day quota for 0- to 2-year-olds (proportion of children in all-day care in relation to all the children in this age group) in all the eastern *Länder* and in Berlin and Hamburg it was clearly above the national average, and in all the other *Länder* it was below the average. The highest percentage of all-day care for 3- to 5-year-olds was found in Thuringia at 86.1 %; the lowest in Baden-Württemberg at 11.4 % (both 2009). Among all-day pupils in *Grundschulen* the range is from 71.1 % in Thuringia to 2.9 % in Bavaria (2007/08). At the nursery summit between the Federal Government, the *Länder* and the municipalities in 2007 it had been agreed to provide day-care facilities throughout the country for 35 % of the children under three (irrespective of the amount of care) by 2013. In terms of this objective, there were places in children‘s day-care available in 2009 for about 20 % of children under three, and while the ratio in *Länder* in the west of German was a good 14 %, in the *Länder* in the east of Germany it was around 46 %.

Equal opportunities

Promoting equal opportunities in society

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



Because of methodological changes in 2002 and 2006, the gender-specific wage differences could have increased by one percentage point in both years.

18 Gender pay gap

'Men and women are equal before the law. The state encourages the actual enforcement of the equality of men and women and works towards the elimination of existing disadvantages'. This statement of principle in the constitution is also the goal of a sustainable society. Disadvantages based upon gender 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 decrease in pay disparities is an indication 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 2008 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. Since 1995 the differences in pay have hardly changed,

and there is no statistically significant trend identifiable for the last five years. Should this develoment continue, the goal set for 2010 will clearly not be achieved.

Differences in pay between men and women are due to a number of factors. Women for example are underrepresented in certain professions, sectors and on the higher rungs of the career ladder. They interrupt and reduce their employment more frequently and longer for family reasons than men, which hinders their subsequent professional development. Apart from this the earning opportunities in typical female professions are in general still worse than in the classical 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 vehicle manufacturing. Women represent less than 20 % of the employees in these areas. In 2008, for example, the gross monthly earnings of women with full-time employment in retail sales was 2,140 euros on average, while in vehicle manufacturing it was 3,139 euros. Men in these sectors earned on average 2,760 euros or 3,809 euros per month, respectively.

Since 2007 it has also been possible to compare the gender-specific pay gap in private industry and in the public sector. Results for 2007 and 2008 show that the difference in earnings in private industry is about three times as high as in the public sector (23 % and 7 % with a slight discrepancy in the method of calculation compared with the gender pay gap referred to above).

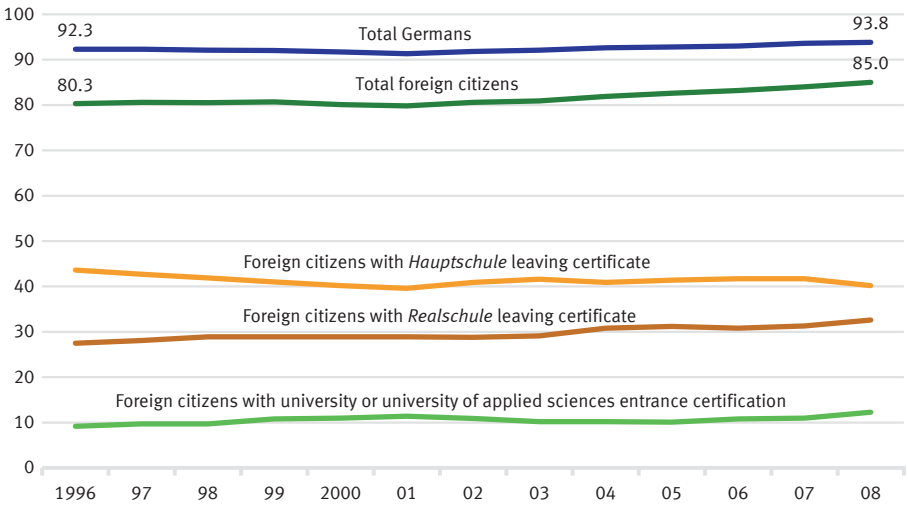
In the course of the last one and a half decades the formal qualifications of women have improved significantly (see Indicators 9a, 9b, 9c and 19). But even with the same formal qualifications, women often earn less. Differences in the career histories of men and women play an important role here. Women often have gaps or interruptions due to part time work, for example due to bringing up children or caring for relatives. These factors can restrict their careers and thus the development of salaries.

Although the number of childcare facilities has increased (see Indicator 17), in West Germany at least there are still by no means sufficient to enable women to combine paid work with raising children and thus at least avoid women having to take career breaks. The introduction of *Elterngeld* (paid parental leave) in 2007 should also make a major contribution to women having to take fewer breaks in their careers.

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 foreign citizens in Germany is an important prerequisite for cohesion within our society. A necessary condition for successful integration is an adequate system of school qualifications which opens up further educational and professional opportunities. For this reason the National Sustainability Strategy pursues the goal of increasing the proportion of young foreign school leavers who obtain at least a school leaving certificate from a *Hauptschule*, and of bringing this into line with the corresponding percentage of German pupils by 2020.

The indicator shows the percentage of foreign school leavers who leave general schools with at least a *Hauptschule* certificate as a percentage of all foreign school leavers within one year. In the period 1996 to 2008 this share rose from 80.3 % to 85.0 %, which means progress was made for foreign youths. Nevertheless, in 2008 the percentage of school leavers in

possession of a certificate in this group was still clearly lower than that of German young people, for whom the proportion was 93.8 %. In view of the desired goal, substantial efforts are still necessary, especially as efforts are being made at the same time to increase the proportion of all school leavers who achieve certificates (see Indicator 9a).

If we look at the certificates achieved, it is apparent that 40 % of the foreign school leavers from general schools achieved a *Hauptschule* certificate in 2008, just under 33 % achieved a certificate from the *Realschule*, and 12 % earned an advanced technical college entrance qualification or university entrance qualification. For Germans the corresponding figures were 21 %, 41 % and 32 %. Foreign young people are thus substantially under-represented in comparison to Germans, especially in terms of the higher level school leaving certificates. 15.0 % of foreign school-leavers failed to obtain a school leaving certificate from general schools, by comparison with 6.2 % of German school leavers.

At the same time a better level of school education overall is achieved by young foreign women by comparison with young foreign males. Only 12.1 % of young women leaving general schools had no school leaving certificate, whereas for young foreign men the figure was 17.7 %.

Besides school education, vocational qualification plays an important role in the integration of foreign fellow citizens into our society. In 2008 48 % of the 25- to 29-year-olds of foreign origin had no vocational certificates or university degrees. Some 42 % of the 30- to 34-year-olds had obtained no qualification by the end of their vocational training phase. The figures for Germans of the same age were 22 % and 12 % respectively. While more foreign women than men achieved a school leaving certificate, for vocational training it was the other way round: 46 % of young foreign women aged 30 to 34 in 2008 had no vocational or university qualifications, compared to 39 % of young men of foreign origin.

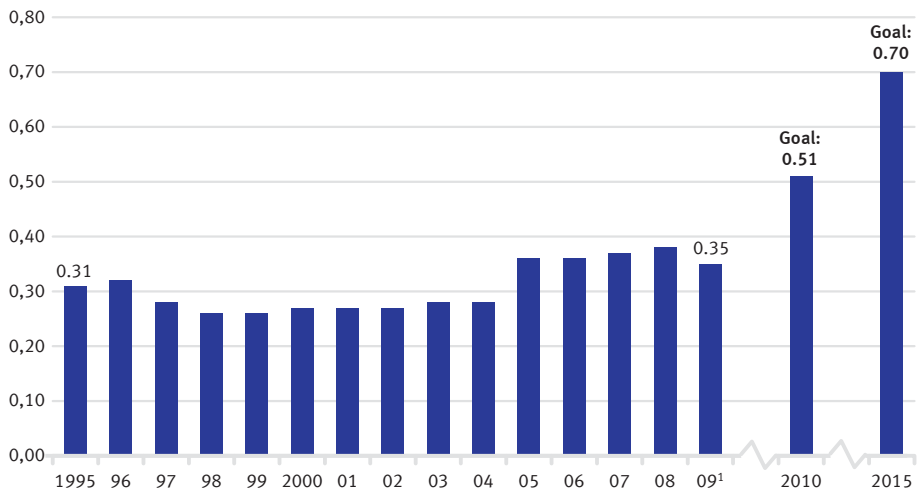
A sound knowledge of German is also of decisive importance for social integration. It is a prerequisite for leaving school with qualifications, as well as for participation in society generally. For this reason in 2005 integration courses for immigrants were introduced, which around 320,000 people had attended by the end of 2009. Around 62 % of participants passed the final examination (source: Federal Ministry of the Interior). The Federal Government is making efforts to increase participation in and successful completion of these courses in the coming years.

At the end of 2008 around 7.2 million inhabitants in Germany possessed a foreign passport, i.e. 8.8 % of the population. In school year 2008/2009 around 806,000 foreigners attended general schools. 196,000 foreign pupils attended vocational schools. Thus the proportion of foreigners was 8.9 % in general schools and 7.0 % in vocational schools.

Development cooperation

Supporting sustainable development

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



1 Preliminary results.

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

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

Through their development policies, industrialised nations are contributing to reducing poverty worldwide, securing peace, achieving democracy, creating globalisation equitably and protecting the environment. In the context of these responsibilities German development policy is oriented towards the guiding principle of global sustainable development which is expressed equally through economic performance, social justice, ecological sustainability and political stability.

The indicator comprises public expenditure for development cooperation (Official Development Assistance: ODA) in relation to 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 cost of studies for students from developing countries or expenditure for development-specific research are attributable to ODA. The target set for 2006 as part of the Sustainability Strategy of spending 0.33 % of the gross national income on development cooperation, had already been reached in 2005. For the future, as a result of the joint commitment of the EU to incrementally increase the expenditure for ODA, the Federal Government has set itself the goal of increasing its ODA percentage 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, because of the extremely difficult German financial situation, innovative financial instruments must make a major contribution towards this goal. Thus in 2008 for the first time revenues derived from the public sale of emissions certificates have been used for international climate projects in the context of measures provided for by development policies.

According to provisional calculations, the proportion of ODA in the GNI in 2009 was 0.35% and thus lower than in the previous year (0.38 %). ODA payments in 2009 were 8.6 billion euros, compared with 9.7 billion euros a year before. The drop is due to a substantial reduction in waivers of debt, for which the significant rise in the development budget failed to compensate. To meet the objective of an ODA quota of 0.51 % in 2010 a substantial increase would be necessary compared with the previous year. We cannot assume that this objective is achievable.

The largest portion of ODA funds (just under two-thirds in 2008) 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. non-governmental organisations, political foundations, church relief organisations and the private sector). Additional funds go to the UN, the EU, the World Bank or regional development banks.

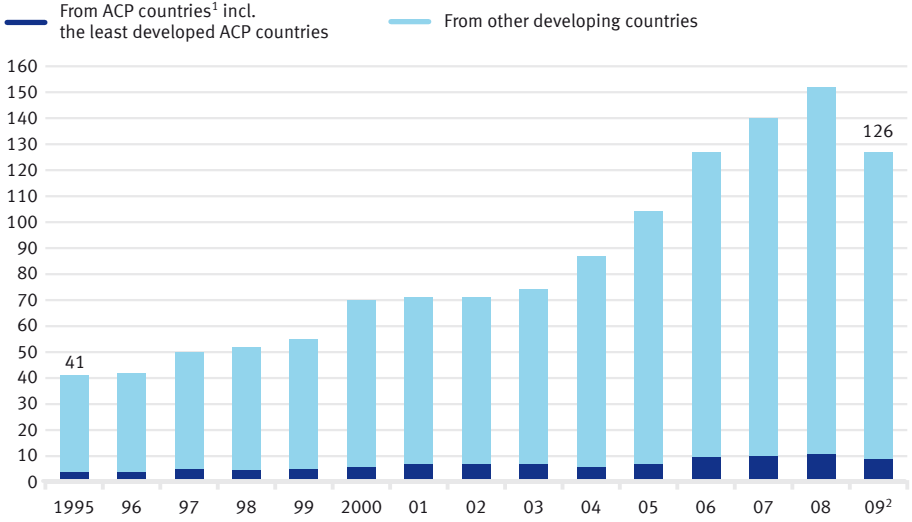
In an international comparison, in 2009 Germany was the third largest donor of ODA funds in absolute terms after the USA and France. It was followed by Great Britain and Japan. In relation to their GNI, however, it was primarily the smaller countries which contributed a higher proportion to development cooperation. In 2009 Sweden, Norway, Luxembourg, Denmark and the Netherlands clearly exceeded the 0.7 % mark, as they have for many years.

In addition to official development assistance the private sector (for example, churches, foundations and associations) also contributes to development aid from donations and its own resources. Private development assistance remained roughly constant between 1999 and 2004 at around 900 million euros a year. In 2005 it increased to around 1.23 billion euros and amounted to 1.13 billion euros in 2008, equivalent to a 0.04 % share of GNI (in 2008). Private direct investment in developing countries amounted to 8.3 billion euros in 2008.

Opening markets

Improving trade opportunities for developing countries

German imports from developing countries
in billion EUR



Developing countries excl. advanced developing countries.
1 ACP = Africa, the Caribbean and the Pacific Area. – 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, which enables them to sell both raw materials and finished 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 41 billion euros in 1995 to 152 billion euros in 2008. In 2009 however there was a drop to 126 billion euros, down to the level of 2006. The increase between 1995 and 2009 (+ 209 %) is considerably higher than the increase in total imports into Germany (+ 98 %). Thus the proportion of imports from developing countries to total

imports between 1995 and 2009 increased from 12.0 % to 18.8 %.

Approximately two-thirds of the imports from developing countries in 2009 came from Asiatic countries (including China), 13.8 % from Central and South America and 11.2 % from Africa. The remainder came from European developing countries, the countries of the Middle East and Oceania.

In terms of imports to Germany, the most important developing country was China: in 2009 the value of imports from China was around 55 billion euros and was thus approximately six and a half times as much as in 1995. Thus imports from China greatly shape the development of the indicator. If these are excluded from imports from developing countries for the period from 1995 to 2009, it becomes apparent that the proportion of German imports accounted for by these countries has scarcely changed and stood at one tenth (10.5 % in 2009). To this extent a greater participation of these countries in trade with Germany is hardly recognisable.

This also applies to imports from the African countries, the Caribbean and the Pacific Area (the ACP countries), with which the EU cultivates a special relationship. The value of the imports from these countries went up from 4.2 billion euros to 8.8 billion euros between 1995 and 2009. Their share of the total German import market has however remained virtually the same and was 1.3 % in 2009. 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 0.57 % in 2009.

As an EU member state Germany offers the ACP states and also the group of LDCs 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 within the EU to the same degree as has been possible for a country such as China. These developments suggest that in addition to the openness of markets there are other factors which influence the export opportunities of developing countries. These include for example the capacity to produce goods in sufficient quantity and quality, a functioning infrastructure and also political stability.

It is also interesting to take a look at the groups of goods of which imports from developing countries took up an especially high percentage of total imports (more than 25 %) in 2008. These include agricultural products (35 %), coal (31 %), ores (68 %), textiles (34 %) and clothing (71 %), leather and leather goods (58 %), data processing equipment, and electronic and optical products (35 %).

Summary: Presentation of the status of the indicators

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. Based upon this, the value which would have been achieved in the target year if this trend had continued unchanged has been calculated statistically. On this basis the indicators have been subdivided into four groups:

The target value of the indicator has been achieved or the remaining 'distance' would be covered by the target year (deviation less than 5 %).

The indicator is developing in the right direction, but if the annual trend continues unaltered there will still be a gap of between 5 and 20 % which will need to be covered to reach the target value in the target year.

The indicator is developing in the right direction, but if the average annual trend continues unaltered there will still be a gap of more than 20 % which will need to be covered to reach the target value in the target year.

The indicator has developed in the wrong direction and if the average annual trend continues unaltered the distance to be covered to reach the goal would become even greater.

This is not a forecast. The effect of measures decided upon at the end of the observation period (by 2009 or earlier) and of additional efforts by the players in subsequent years has not been taken into account. The actual development 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: in the development of 11 indicators over the last five years (10 years for Indicator 5) up until the last year of the time series there is no statistical trend recognizable or calculable (see identifier "nt" in the following summary). The classification in these cases suffers from major or minor uncertainties.

No.	Indicator areas Sustainability axiom	Indicators	Goals	Status	5 year trend[1]
	I. Intergeneration equity				
1a	**Resource protection** *Using resources economically and efficiently*	Energy productivity	Doubling between 1990 and 2020		t
1b		Raw material productivity	Doubling between 1994 and 2020		t
2	**Climate protection** *Reducing greenhouse gases*	Greenhouse gas emissions	Reduction of 21 % compared to 1990 until 2008/2012 and of 40 % until 2020		t
3a	**Renewable energies** *Strengthening a sustainable energy supply*	Share of renewable energy sources in total primary energy consumption	Increase to 4.2 % by 2010 and to 10 % by 2020		t
3b		Share of renewable energy sources in electricity consumption	Increase to 12.5 % by 2010 and to at least 30 % by 2020		t
4	**Land use** *Sustainable land use*	Increase in land use for housing and transport	Reduction in daily increase to 30 hectares by 2020		t
5	**Species diversity** *Conserving species – protecting habitats*	Species diversity and landscape quality	Increase to the index value 100 by 2015		nt[2]
6	**National debt** *Consolidating the budget – creating intergeneration equity*	National deficit	Structurally balanced public spending; Federal budget without net borrowing from 2011 at latest		t

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

No.	Indicator areas Sustainability axiom	Indicators	Goals	Status	5 year trend[1]
7	**Provision for future economic stability** *Creating favourable investment conditions – securing long-term prosperity*	Gross fixed capital formation in relation to gross domestic product (GDP)	Increase in the share		nt
8	**Innovation** *Shaping the future with new solutions*	Private and public spending on research and development	Increase to 3 % of GDP by 2010		t
9a	**Education and training** *Continuously improving education and vocational training*	18- to 24-year-olds without a school leaving certificate	Reduction in proportion to 9 % by 2010 and 4.5 % by 2020		nt
9b		25-year-old university graduates	Increase in proportion to 10 % by 2010 and 20 % by 2020		t
9c		Share of students starting a degree course	Increase to 40 % by 2010, followed by further increase and stabilisation at a high level		nt
	II. Quality of life				
10	**Economic prosperity** *Raising economic performance by environmentally and socially compatible means*	Gross domestic product per capita	Economic growth		t

1 t = trend, nt = no trend.

No.	Indicator areas Sustainability axiom	Indicators	Goals	Status	5 year trend[1]
11a	**Mobility** *Guaranteeing mobility – protecting the environment*	Intensity of goods transport	Reduction to 98 % in comparison to 1999 by 2010 and to 95 % by 2020		t
11b		Intensity of passenger transport	Reduction to 90 % in comparison to 1999 by 2010 and to 80 % by 2020		t
11c		Share of rail transport in goods transport performance	Increase to 25 % by 2015		t
11d		Share of inland water transport in goods transport performance	Increase to 14 % by 2015		t
12a	**Farming** *Environmentally sound production in our cultivated landscape*	Nitrogen surplus	Reduction to 80 kg/hectare on land used for agriculture by 2010, further reduction by 2020		t
12b		Organic farming	Increase of the share of organic farming on land used for agriculture to 20 % in coming years		t
13	**Air quality** *Keeping the environment healthy*	Air pollution	Reduce to 30 % compared to 1990 by 2010		t

1 t = trend, nt = no trend.

No.	Indicator areas Sustainability axiom	Indicators	Goals	Status	5 year trend[1]
14a	**Health and nutrition** *Living more healthily for longer*	Premature mortality (cases of death per 100,000 residents under 65) men	Reduction to 190 cases per 100,000 by 2015		t
14b		Premature mortality (cases of death per 100,000 residents under 65) women	Reduction to 115 cases per 100,000 by 2015		t
14c		Proportion of adolescents who smoke (12- to 17-year-olds)	Decrease to under 12 % by 2015		nt
14d		Proportion of adults who smoke (15 years and older)	Decrease to under 22 % by 2015		nt
14e		Proportion of obese people (adults, 18 years and older)	Reduction by 2020		nt
15	**Crime** *Further increasing personal security*	Burglaries in homes	Reduction in cases to under 100,000/year by 2015		nt
	III. Social cohesion				
16a	**Employment** *Boosting employment levels*	Employment rate (total) (15- to 64-year-olds)	Increase to 73 % by 2010 and 75 % by 2020		t
16b		Employment rate (older people) (55- to 64-year-olds)	Increase to 55 % by 2010 and 57 % by 2020		t

1 t = trend, nt = no trend.

No.	Indicator areas Sustainability axiom	Indicators	Goals	Status	5 year trend[1]
17a	**Perspectives for families** *Improving the compatibility of work and family life*	All-day care provision for children (0- to 2-year-olds)	Increase to 30 % by 2010 and 35 % by 2020		nt
17b		All-day care provision for children (3- to 5-year-olds)	Increase to 30 % by 2010 and 60 % by 2020		nt
18	**Equal opportunities** *Promoting equal opportunities in society*	Gender pay gap	Reduce the difference to 15 % by 2010 and to 10 % by 2020		t
19	**Integration** *Integration instead of exclusion*	Foreign school leavers with a school leaving certificate	Increase in the proportion of foreign school leavers with at least *Hauptschule* certificate and alignment with quota for German school leavers by 2020		t
	IV. International responsibility				
20	**Development coorperation** *Supporting sustainable development*	Share of expenditures for official development assistance in gross national income	Increase 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) is obtained per unit of primary energy used (in petajoules). Primary energy includes the primary energy sources obtained domestically and all imported energy sources minus those exported. This does not include offshore bunkering. From a use point of view this is equivalent to the energy employed for energetic purposes and for non-energetic use; to this can be added the conversion losses arising from the domestic conversion of energy and the statistical differences set out in the energy balance sheets.
1b	**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) 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 (H-FKW/HFC), perfluorocarbons (FKW/PFC) and sulphur hexafluoride (SF_6). The base year is 1990 for CO_2, CH_4, N_2O and 1995 for HFC, PFC, 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.
3a, b	**Share of renewable energy sources in total energy consumption** (%)	Share of renewable energy sources in total primary energy consumption (3a) and share of renewable energy sources in electricity consumption (3b). Renewable energies include, among others, hydropower, wind power, photovoltaics, solar energy and geothermal energy as well as biomass, such as wood and the biodegradable portions of domestic refuse.

No.	Indicator (Unit)	Definition
4	**Increase in land use for housing and transport** (ha/day)	Average daily increase in land use for housing and transport. Determination by the division of the increase in land use for housing and transport (in hectares) in a defined period of time (one year or four years) by the number of days (365/366 or 1461). The moving four-year average is determined in each case by the development of land use for housing and transport in the relevant year and the preceding three years. The data for one year are currently influenced by external effects (the public land survey registers are being reorganised), so that the moving four-year average gives a better picture.
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.
6	**National deficit** (%)	National deficit (or financing balance), calculated from national revenue minus national expenditure (by the Federal Government, the *Länder*, municipalities and social security) itemised under national accounts as a percentage of the gross domestic product. Proceeds from the UMTS auctions are not included.
7	**Gross fixed capital formation in relation to gross domestic product (GDP)** (%)	Gross fixed capital formation (in current prices) in relation to the gross domestic product (GDP), also referred to as investment ratio. This includes investments in buildings (residential buildings, non-residential buildings), equipment (machinery, vehicles, tools) and other assets (intangible assets, such as software and copyrights, property transfer costs, production livestock).

No.	Indicator (Unit)	Definition
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).
9b	**25-year-old university graduates** (%)	Percentage of 25-year-olds (of all 25-year-olds) who have completed a university degree according to International Standard Classification of Education (ISCED). 25-year-olds: according to (ISCED5A), 25- to 34-year-olds: according to (ISCED5A/6), in each instance excluding universities of applied administrative sciences.
9c	**Share of students starting a degree course** (%)	Number of first-semester students (from Germany and abroad, 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** (EUR)	Gross domestic product (price-adjusted, reference year 2000) per resident.

No.	Indicator (Unit)	Definition
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 effiency is considered (absolute energy consumption and energy consumption per tonne kilometres).
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 per passenger kilometre).
11c, d	**Share of rail and inland water transport** (%)	Share of rail transport (11c) as well as share of inland water transport (11d) in the total domestic goods transport performance without local transport of 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.

No.	Indicator (Unit)	Definition
12b	**Organic farming** (%)	Farmland of organic farms subject to the control procedure of the EC Regulation on Organic Farming (EC Regulation No. 834/2007 and Code of Practice), as a proportion of all the farmland in Germany. It includes both the areas completely devoted to organic farming as well as those still under conversion.
	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) and non-methane volatile organic compounds (NMVOC). Unweighted average of the indices of the four air pollutants.
14a, b	**Premature mortality** (Number of cases per 100,000)	Cases of death in the male (14a) and female (14b) under-65 population in relation to 100,000 residents of the standardised population (from 1987) under 65 years, including those younger than one year. The calculation takes into account that through demographic development in Germany there are increasingly greater numbers of people older than 65 and provides a comparable time series over the years.
14c, d	**Proportion of adolescents and adults who smoke** (%)	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 obese people** (%)	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 between body weight in kilograms and 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.

No.	Indicator (Unit)	Definition
15	**Burglaries in homes** (number of cases)	Number of burglaries in homes in a given year that are reported to the police (Section 244 (1) No. 3 of the German Penal Code).
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.
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: 15th 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.

No.	Indicator (Unit)	Definition
20	**Share of expenditures for official development assistance in gross national income** (%)	Share of the expenditures for official development assistance (ODA) in gross national income. ODA mainly includes expenditure for the 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** (EUR)	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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