

SUSTAINABLE DEVELOPMENT IN GERMANY

Indicator Report 2008



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Preface	2
I. Intergeneration equity	
Resource Protection	
1a Energy productivity	4
1b Raw material productivity	6
Climate protection	
2 Greenhouse gas emissions	8
Renewable energies	
3a, b Share of renewable energy sources in total energy consumption	10
Land use	
4 Increase in land use for housing and transport	12
Species diversity	
5 Species diversity and landscape quality	14
National debt	
6 National deficit	16
Provision for future economic stability	
7 Gross fixed capital formation in relation to GDP	18
Innovation	
8 Private and public spending on research and development	20

Education and training	
9a 18- to 24-year-olds without a school leaving certificate	22
9b 25-year old university graduates	24
9c Share of students starting a degree course	26
II. Quality of life	
Economic prosperity	
10 Gross domestic product per capita	28
Mobility	
11a Intensity of goods transport	30
11b Intensity of passenger transport	32
11c, d Share of rail transport and inland water transport	34
Farming	
12a Nitrogen surplus	36
12b Organic farming	38
Air Quality	
13 Air pollution	40
Health and nutrition	
14a, b Premature mortality	42
14c, d Proportion of adolescents and adults who smoke	44
14 e Proportion of obese people	46

Crime	
15 Burglaries in homes	48
III. Social cohesion	
Employment	
16a, b Employment rate	50
Perspectives for families	
17a, b All-day care provision for children	52
Equal opportunities	
18 Wage difference between women and men	54
Integration	
19 Foreign school leavers with a school leaving certificate	56
IV. International responsibility	
Development cooperation	
20 Share of expenditures for official development assistance in gross national income	58
Opening markets	
21 German imports from developing countries	60
Annex	
Summary: Presentation of the status of the indicators	62
Definitions of the indicators	68

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.

After a first stock-taking was performed in 2004, the Federal Government presented the second comprehensive Progress Report on the National Sustainability Strategy in November 2008. A major element is the Indicator Report 2008 compiled by the Federal Statistical Office, which is now made available in a handy format in this separate issue. The data of the indicators are regularly updated every two years, so that information on the status of sustainable development in Germany is provided also in the intervals between the Progress

Reports published every four years by the Federal Government.

Most of the data of the indicators come from official statistics. With the system of Environmental-Economic Accounting, statisticians also have an excellent tool to systematically examine interrelations between economic, environmental and social indicators of the strategy. An integrated approach allows simultaneous examination of different, and in part conflicting, goals of the Sustainability Strategy.

Especially in the context of reporting about sustainability, that is about a highly long-term principle of action, there is much interest in the continuity of indicators and goals. However, we must not rule out the possibility of appropriately enhancing and adjusting things - to a justifiable degree - to new questions. As a result of discussions with the ministries and a consultation of associations, bodies and the general public by the Federal Government, the set of indicators of the Indicator Report 2008 has slightly changed compared with the

previous edition. An indicator perceived as not very informative (satisfaction with health) has been deleted, while two new health indicators have been added. Other indicators have been modified in terms of calculation methodology or data basis, and in some cases the content has been extended. The Federal Statistical Office provided subject-related support for the methodical enhancement of the indicators.

This publication for the first time contains a summarising table showing the information on sustainability trends in a concise and reader-friendly way. It illustrates 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.

The Indicator Report 2008 has been compiled by the Federal Statistical Office under its own responsibility, as was the Report 2006. It is based on the principle of neutral and independent reporting. The Federal Statistical Office supports fact-based sus-

tainability policy by providing data and statistical analyses on the status of the German sustainability indicators.



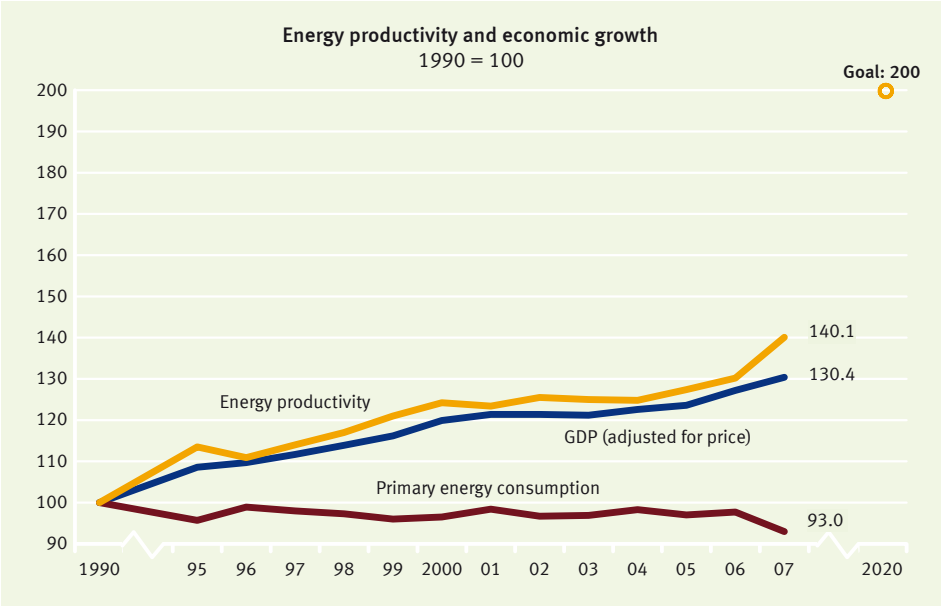
Roderich Egeler

President of the Federal Statistical Office

I. Intergeneration equity

Resource Protection

Using resources economically and efficiently



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 either directly or indirectly associated with the consumption of energy. Private households use energy particularly for heating their homes and water, using electrical appliances as well as to run motor vehicles. The consumption of energy has a number of environmental effects, such as a detrimental impact on landscapes, ecological systems, the soil, water bodies and ground water due to the depletion of natural energy resources, emissions of harmful substances and greenhouse gas emissions 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 Federal Government is aiming to double energy productivity by 2020 compared to that of 1990.

Energy productivity increased by 40.1 % in Germany between 1990 and 2007. Although the increase in productivity indicates more efficient use of energy, it has led to a comparatively insignificant drop in energy consumption (7.0 %) in absolute terms, because most of the increase in efficiency was used up again due to economic growth of 30.4 %. In the period between 2000 and 2007 energy productivity rose by a yearly average of 1.7 %. This increase was partly accounted for by a very large jump in 2007 compared with 2006 of 7.6 %. The increase in 2007 can be attributed to a large reduction in energy consumption of 4.8 % – strongly influenced by mild weather – and, at the same time, strong growth in the economy of 2.5 % in comparison to the previous year. In order to achieve the goal an increase in the productivity of energy in the remaining period until 2020 of an average of 2.8 % would be nec-

essary. 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 12.5 % between 1990 and 2006, compared with 3.8 % in the period from 2000 to 2006. The increased consumption in households is the result of rising demand for energy services. Relating to heating this increase is due to an increase in living space. The increase in electricity consumption is attributable in particular to the increase in the number of electrical appliances used in households. Even though it was possible to slow down the increase in consumption thanks to improved energy efficiency in the use of electrical appliances and apartments, this has not yet led to a complete compensation of the factors that cause consumption to increase.

Consumption of energy in the transport sector rose by a total of 10.9 % between 1990 and 2006. On the other hand, consumption declined by 4.1 % between 2000

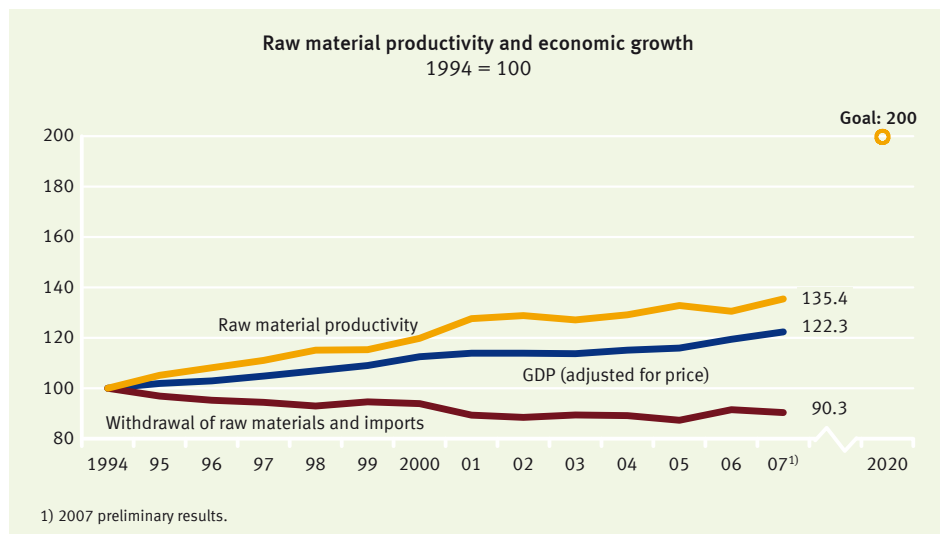
and 2006. A downward trend in the use of petrol and diesel for road traffic is evident (by –8.1 % from 2000 to 2006; see also indicators 11a and 11b), while the consumption of aviation fuel shows a large increase (21.3 % between 2000 and 2006). The figures on petrol consumption for road traffic do not include German residents' consumption abroad (referred to as 'petrol-tank tourism').

The domestic energy industry is characterised by an increasing import dependency. The percentage of imports in primary energy consumption rose significantly between 1991 and 2007 from 63.3 % to 71.5 %.

I. Intergeneration equity

Resource Protection

Using resources economically and efficiently



Source: Federal Statistical Office

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).

The term 'raw material productivity' expresses the amount of abiotic primary materials (in tonnes) used to produce one unit of gross domestic product (in EUR, adjusted for price). 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 35.4 % between 1994 and 2007. While

use of materials decreased (– 9.7 %), the gross domestic product went up by 22.3 %. Since 2002 the increase in productivity slowed down. Between 2005 and 2006 even a slight decline in productivity was recorded. It increased again in 2007. In comparison with the previous year the use of materials decreased slightly (– 1.3 %), while the gross domestic product grew by 2.5 %. Although this indicator shows a trend in the right direction, its previous growth rate would not be sufficient to achieve the goal set.

The favourable trend in raw material productivity between 1994 and 2007 is to be attributed chiefly to 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 26 % or 211 million tonnes between 1994 and 2007. In

contrast the use of ores and their products increased significantly during this period (by 59 % or + 52 million tonnes). The amount of fossil energy sources used has increased only slightly (+ 2.5 %) 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.

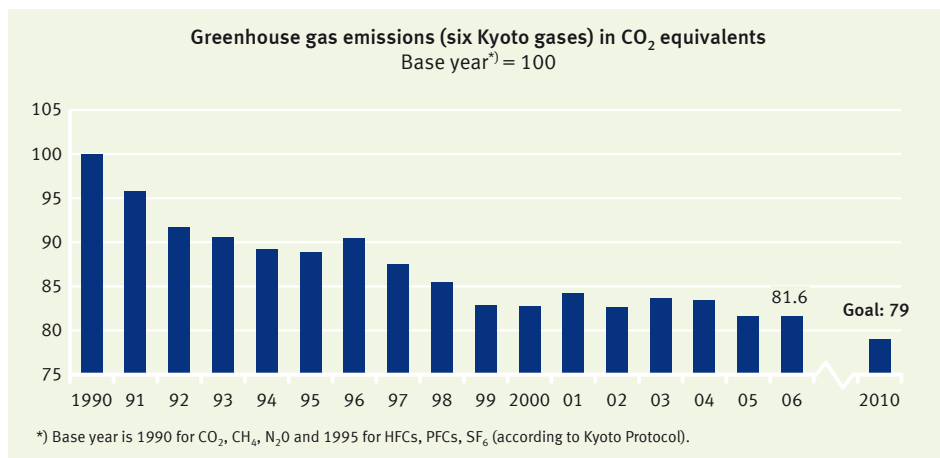
An important factor in interpreting the trend in the resource indicator is also that the demand for materials is increasingly covered by imports. While the withdrawal of raw materials in Germany decreased by 254 million tonnes (– 23 %) between 1994 and 2007, imports of raw materials as well as semi-finished and finished goods increased by 109 million tonnes (+ 28 %). The proportion of imported goods in the overall use of primary materials increased from 26 % in 1994 to almost 37 % in 2007. Increased imports of semi-finished and finished metal products (+ 116 %) and the replacement of domestic hard coal by imported sources of energy (see indicator 1a) are particularly important in terms of quantity. Domestic

nature is thus increasingly protected and the environmental implications related to the withdrawal of raw materials and their processing into semi-finished and finished goods are shifted abroad.

I. Intergeneration equity

Climate protection

Reducing greenhouse gases



Source: Federal Environment Agency

2 Greenhouse gas emissions

Climate change is an enormous challenge for mankind. Germany has thus committed itself to a reduction in its emissions of the six greenhouse gases and greenhouse gas groups in the Kyoto Protocol by 21 % until 2008 to 2012 compared to the year 1990. As Germany's contribution to an international climate protection agreement after the year 2012, the Federal Government is offering to reduce these emissions by 40 % below the levels in 1990 by 2020. This offer is conditional on the European Union reducing its emissions in the same period by 30 % compared to 1990 levels and that other States adopt comparable ambitious targets as a matter of policy.

According to the Kyoto Protocol, the following are included as greenhouse gases: carbon dioxide (CO₂), methane (CH₄), nitrous oxide = laughing gas (N₂O), partly halogenated hydrofluorocarbons (HFCs), perfluorocarbons (PFC) and sulphur hexafluoride (SF₆). These gases are emitted chiefly during the burning of fossil energy

sources, such as coal, crude oil and natural gas. Furthermore, they occur in other activities not involving energy sources, for example in the use of solvents and the employment of minerals as fertilisers. In Germany greenhouse gas emissions occur mainly in manufacturing industries followed by those occurring in private households, service industries and farming.

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 226 million tonnes or 18.4 % by 2006. To reach the Kyoto target an additional reduction by 2.6 percentage points must be achieved by the target year. In the previous five years leading up to 2006 the indicator moved only slightly in the right direction. The target would therefore be achievable by the target year. Preliminary results from the Federal Environment Agency for 2007 point to an increased reduction of greenhouse gas

emissions (Federal Environment Agency press release, 16/2008). It should be taken into account that for 2007 one-off effects, such as mild winter temperatures or altered consumer habits in the wake of an increase in VAT at the beginning of the year, played a role (final results for 2007 will only be available at the beginning of 2009).

With 87.6 % carbon dioxide accounted for the largest share in greenhouse gas emissions in 2006 by far. However, between 1990 and 2006 these emissions fell by 151.9 million tonnes or 14.7 %. The overwhelming part of the CO₂ reduction took place between 1990 and 1995, a total of 111.4 million tonnes. Between 1995 and 2006, on the other hand, CO₂ emissions were reduced by only 40.5 million tonnes. The large reduction in emissions between 1990 and 1995 is attributable especially to the restructuring process in the *New Länder* (closure of obsolete factories and other facilities), the increases in efficiency in power plants (increase in energy efficiency) as well as changes to the energy mix,

including the increased use of emission-free or low-emission sources of energy.

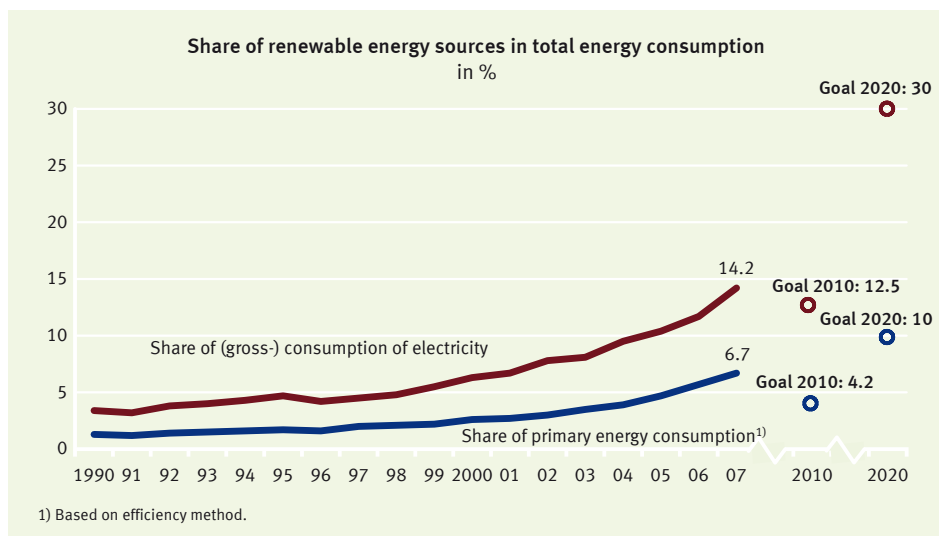
At least a good three-quarters of the direct CO₂ emissions result from the activities of business and just under one-quarter from those of private households. However, the reduction between 1995 and 2005 can be ascribed to a fifty-fifty split between both areas. Nevertheless it should be noted that through their demand for electricity private households cause additional emissions in the business sector, in other words in the area of 'Production and distribution of energy (gas and electricity)'.

Most areas of production were able to reduce their CO₂ emissions between 1995 and 2005, but the growth-related increase in emissions, especially in the significant areas of 'Metal production' (+ 8.0 %) and 'Production and distribution of energy (electricity, gas)' (+ 2.7 %), dampened the total reduction. The indicator has various cross-references, for example, to indicators 1a, 3, 4, 5, 11 and 12.

I. Intergeneration equity

Renewable energies

Strengthening a Sustainable Energy Supply



Source: Working Group on Renewable Energies – Statistics (AGEE-Stat), Working Group on Energy Balances (AGEB), Zentrum für Sonnenenergie- und Wasserstoffforschung Baden-Württemberg (ZSW) (Centre for Solar Energy and Hydrogen Research Baden-Württemberg), Federal Ministry for the Environment, Nature Conservation and Nuclear Safety; June 2008

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. The goal of the Sustainability Strategy is therefore to promote the development of renewable sources of energy. Renewable sources of energy are energy sources which can be derived from natural processes which are constantly regenerated. Renewable energies include hydro-power, 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' and 'Share of electrical power from renewable sources in total power generation'. The aim of the Federal Government is to increase the share of renewable energy in primary energy consumption to 4.2 % and the share in elec-

tricity 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 this, further continuous expansion is planned. The goals for 2010 have already been reached ahead of time, in 2005 (with the share in primary energy consumption reaching 4.7 %) and in 2007 (with the share in gross electricity consumption reaching 14.2 %). For the partial indicator of the share in primary energy consumption, the measurement indicator (as final energy) and the goal will be modified at a future date on the basis of the EU legislation currently undergoing preparation.

Between 1990 and 2007 the share of renewable energy in primary consumption rose from 1.3 % to 6.7 %. The share in electricity consumption increased from 3.4 % to 14.2 %. The upward trend in the last six years has been especially pronounced since the introduction of the Directive 2001/77/EEC of the European Parliament and the Council on the promotion of the electricity produced from

renewable energy sources and the amendments to the German Renewable Energy Sources Act (EEG) in 2004. The latter obliges producers of electricity to give precedence to renewable energy sources when buying electricity. For both indicators the target values for 2010 were exceeded in 2007.

In 2007 the share of the individual renewable energy sources in the total amount of energy produced from renewable energies varied greatly. 68 % came from bio-energies, 18 % from wind power and 9 % from hydropower. Renewable energy was primarily used in the areas of electricity generation (39 %) and heat production (40 %). The biogenic fuels area accounted for 21 % of the total energy produced from renewable energies. Since 1st January 2007 all businesses which place fossil fuels into circulation are obliged at the same time 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

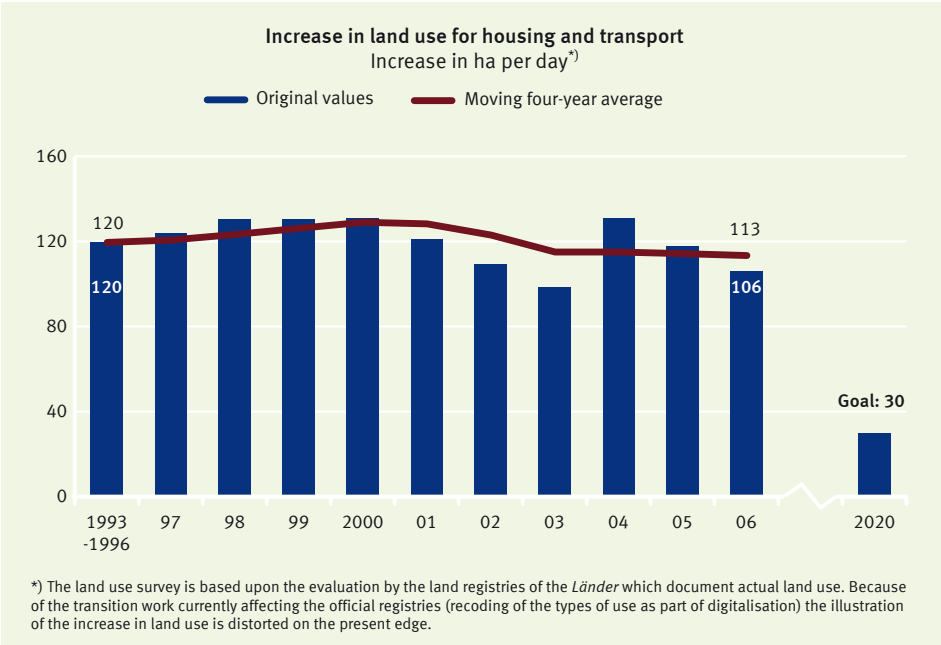
the growing significance of wind energy. For example, electricity generation from wind power increased from 7,550 gigawatt hours (GWh) in 2000 to 39,500 GWh in 2007 (+ 420 %). In 1995 it was still 1,800 GWh. Electricity generation from the entire biomass increased more than fivefold between 2000 and 2007. The contribution of hydropower to the total generation of electricity from renewable energies stood at 20,700 GWh in 2007.

Renewable energies significantly contribute to cutting emissions; thus the indicator displays a positive correlation to indicator 2 'Greenhouse gas emissions'. Calculations of the Working Group on Renewable Energies - Statistics showed that the use of renewable energies in 2007 enabled the emission of about 115 million tonnes of the climate gas CO₂ to be avoided. The demand for biomass from renewable raw materials can lead to competition for land used in the cultivation of foodstuffs and fodder (see also indicator 12b) or have negative consequences for land use (indicator 5).

I. Intergeneration equity

Land use

Sustainable land use



Source: Federal Statistical Office, Federal Office for Building and Regional Planning

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 resource. Besides the direct environmental consequences of the increase in land used for housing and transport – such as the loss of natural soil functions through sealing, the loss of fertile land or areas still close to their natural state as well as the loss of biodiversity – each time new construction areas are opened up close to towns and outside previous core housing areas this also generates additional traffic. This leads to further environmental impact through noise, increased use of energy and the emission of pollutants. Moreover, such development always involves increased technical and financial costs for the provision of infrastructures. The Federal Government’s goal is, therefore, to limit the use of new areas for housing and transport purposes to 30 hectares a day by 2020.

Although the growth in housing and traffic areas has in fact lessened in recent years,

there is still no unambiguous trend discernible. Continuing the development of the last few years is not sufficient to reach the proposed goal.

The rate at which areas used for housing and transport are currently increasing cannot be accurately assessed using the results of the land survey, because the progression of the series has been discontinuous. The results for 2001 to 2003 for example probably overstate the respective decline. This effect has subsequently been balanced out again. The increase in areas used for housing and transport appears to have been slowing down relatively continuously over the whole period since 2000 (see the moving four-year average). Such a trend would roughly correspond to the development of investments in construction, which showed a total (price-adjusted) decrease of 18 % between 2000 and 2005. How far the renewed increase in building investments since 2006 (see indicator 7) will also affect the increase in areas used for housing and transport remains to be seen.

Between 1992 and 2006 the area used for housing and transport increased by 15.2 %. This corresponds to an average growth of 120 hectares a day. Within this, the area used for housing rose by 20.7 % (97 hectares per day) while the area used for transport increased by 7.2 % (23 hectares per day). The kilometres travelled by road between 1992 and 2004 increased by 18.2 % in comparison to a 5.2 % increase in the land area taken up by road traffic. This means that the existing roads were used increasingly intensively (see also indicators 11a, 11b and 11c).

About 52 % of the area used for settlement was taken up by private households in 2004 (the calculation is only possible on a four-year cycle) – mainly for residential purposes. Areas used for production activities made up just under 43 % of this area. 5.3 % was unused.

Between 1992 and 2004 the settlement area used by private households went up by 22.1 % (61 hectares per day). Thus it increased considerably more than the

number of residents (+ 1.9 %). A major reason is the clear increase in the demand for living space, which rose in the period in question from 36 m² to 42 m² per head.

On the other hand, more value creation was generated from the continually decreasing area used for housing. Area intensity (the ratio of the housing area used for production activities to the sum of the gross added value achieved through these activities, adjusted for price) fell by 5.1 %. The increase in the housing area claimed for production was therefore lower than the increase in economic performance. This decoupling of overall economic production and the corresponding use of housing areas is, however, not attributable to a more economical use of land by the individual sectors, but rather to the move by the economic structure towards less land-intensive production activities, such as the expanding service sector (see also indicator 10).

I. Intergeneration equity

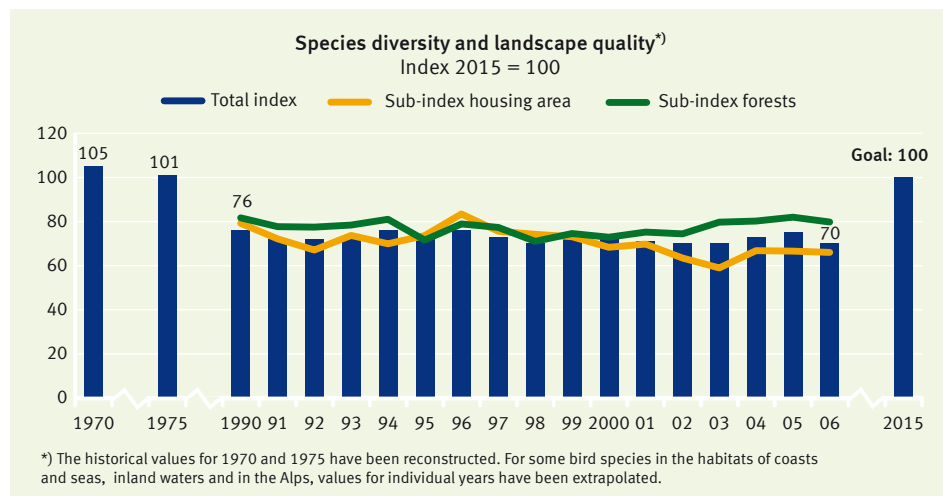
Species diversity

Conserving species – protecting habitats

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.



Source: Federal Agency for Nature Conservation (2008)

This indicator provides information on the quality of the landscape, sustainability of land use and species diversity. 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 (farmlands, forests, settlements, inland waters, coasts and seas and the Alps). The size of the bird populations reflects the suitability of the landscape as a habitat for the bird species chosen. Since in addition to birds other species are also associated with a richly structured landscape with intact, sustainably used habi-

tats, the indicator also indirectly indicates the development of numerous other species in the landscape and the sustainability of land use. 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 species diversity in 1990 lay clearly below the reconstructed values for 1970 and 1975. In the last ten years of observation (1997 to 2006) the indicator value has hardly changed and has failed to show any demonstrable development trend. In 2006 it stood at approximately 70 % of the target value for 2015. If development remains at this level, then the goal can not be reached by the designated time without considerable additional efforts being expended by the Federal Government, the

Länder and the municipalities in as many policy areas as possible which are related to nature and landscape conservation. The values of the six sub-indicators, which at the beginning of the 1990s differed strongly, had moved closer together by 2006. Between 1997 and 2006 the sub-indicators for settlement areas as well as for coasts and seas showed a significant downward trend, while the sub-indicators for farming land, inland waters and the Alps stagnated. Only the sub-indicator for forests has shown any positive development since 1997. In 2006 it reached 80 % of the goal value, while the other sub-indicators at this time displayed a level of only about two thirds of their target values.

The chief causes of the decline in species diversity are the intensification of farming and forestry use, the fragmentation and over-development of the countryside, the sealing of areas and the depositing of substances (for example, acidifiers or nutrients). In settlement areas the loss of near-natural areas and village structures because of building activities and soil sealing is having a negative effect.

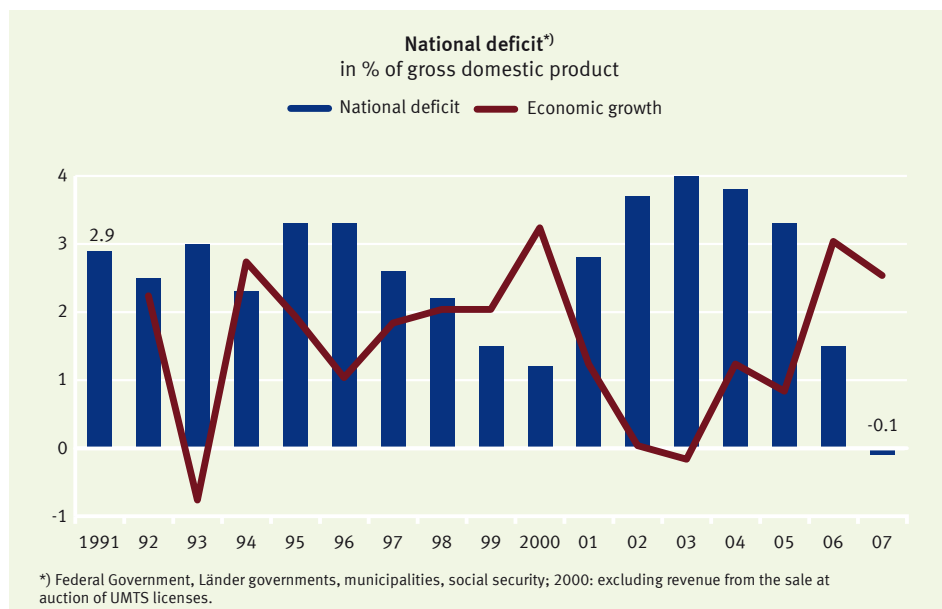
Endangering factors for habitats on the coast include disturbances due to increased recreational use and overbuilding, for example through coastal protection measures. In forests the promotion of near-natural forest management should display positive effects.

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 changes 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 species diversity. As yet it remains to be seen in what ways the demographic changes – especially as a result of land used for agriculture being given up to migration areas – will affect species diversity and the quality of the landscape.

I. Intergeneration equity

National debt

Consolidating the budget – creating intergenerational equity



Source: Federal Statistical Office

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. The goal of the present Federal Government is to achieve a structurally balanced national budget. For the Federal Government, the goal is being extended to ensure that the budget is free from net borrowing from 2011 onwards.

At European level national debt of the member states is limited amongst other things by the 'Maastricht criteria', which the member states of the Euro zone have agreed to observe. For the annual deficit (expenditures less revenue) of the state these provide for a reference value of a maximum of 3 % of GDP.

In 2007, for the first time since 1989 with the exception of a special development in 2000 due to the proceeds of the UMTS auction, Germany showed a small positive

financial balance of 3.1 billion euros, after a deficit of 35.9 billion euros the previous year. Between 2002 and 2005 the deficit limit permissible under the Maastricht agreement was exceeded every year. An important reason for the development in this period was the persistent recession and insufficient growth. The growth rates of real GDP between 2001 and 2005 were only between -0.2% and $+1.2\%$ (see indicator 10). In 2006 an economic turnaround took place. In 2006 and 2007 GDP rose by 3.0% and 2.5% respectively compared to the previous year.

Following the reunification of Germany the annual national debt rose continuously until 2003, from 43.8 billion euros in 1991 to 87.3 billion euros in 2003. In 2004 and 2005 the national debt remained high virtually without change. In 2006 and 2007 a reduction of the debt took place on all levels (national level, regional level, municipalities, social security). In 2007 the federal budget was still in deficit, but only to the sum of 18.9 billion euros. The budgets of the *Länder* and municipalities, on the other hand, displayed surpluses. Social

security was able to increase its surplus to 10.4 billion euros. These developments led to the state's achieving a small budget surplus (+ 3.1 billion euros) overall in 2007.

Since 2004, revenues have increased more strongly than expenditure. In particular in 2006 and 2007 a strong increase in tax revenues of 7.6% and 8.6% was recorded. Total state revenues increased to 1,065 billion euros. In 2007 taxes amounted to 576.3 billion euros, or 54.1% of total revenues. Expenditure went up in contrast only by a small amount. The largest section of expenditure, monetary social security benefits totalling 418.4 billion euros (pensions and annuities, health insurance payments and unemployment insurance amongst others) accounted for 39.4% of overall expenditure. These expenditures were declining, so for example cash payments from unemployment insurance were just under 23.0% of their value the previous year, and payments for type II unemployment benefit (*Arbeitslosengeld II*) were 13.4% of the previous year's figure. In 2007 compensation of employees amount-

ed to 168.0 billion euros, corresponding to a 15.8% share of expenditure.

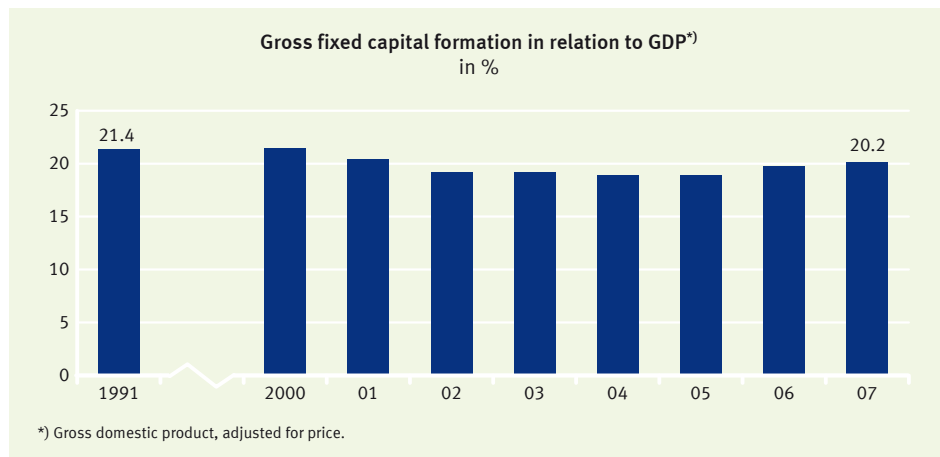
Expenditure as a proportion of GDP decreased from 45.3% in 2006 to 43.8% in 2007. In 2003 this proportion still amounted to 48.5% . In particular the proportion of GDP attributable to monetary social security benefits fell to 17.3% in 2007 (2003: 19.8%).

In 2007 just over 56% of public spending were accounted for by social benefits, such as payments from the statutory pension, health and unemployment insurance providers, or social welfare. This expenditure item rose by 12.0% between 2000 and 2007. In view of an increase in unemployment figures in the same period of 470,000 and a clear rise in the number of people drawing pensions, the increase in expenditure would have been considerably higher without the changes made to the social security benefits system, such as the structural reforms of Agenda 2010, the reform of the health care system and the limit placed upon pension adjustment rates.

I. Intergeneration equity

Provision for future economic stability

Creating favourable investment conditions – securing long-term prosperity



Source: Federal Statistical Office

7 Gross fixed capital formation in relation to GDP

Economic performance and the competitiveness of the national economy essentially depend upon business and State investments. 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 settlement 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 rate of investment (the ratio of price-adjusted gross fixed capital formation to gross domestic product) in Germany between 1991 and 2000 was about 21 %. In the following years it remained at around 19 %. From 2006 the indicator rose again and reached a level of 20.2 % in 2007.

Following a retrograde development of investments between 2000 and 2004, a turnaround occurred in 2006: capital investments (adjusted for price) with a growth rate of 7.7 % compared to the previous year increased at a much more pronounced rate than GDP, which achieved growth of 3.0 %. In 2007 this strong growth

in investments continued with an increase of 4.3 %, compared with an increase in GDP of 2.5 %. The investment ratio increased to 20.2 %.

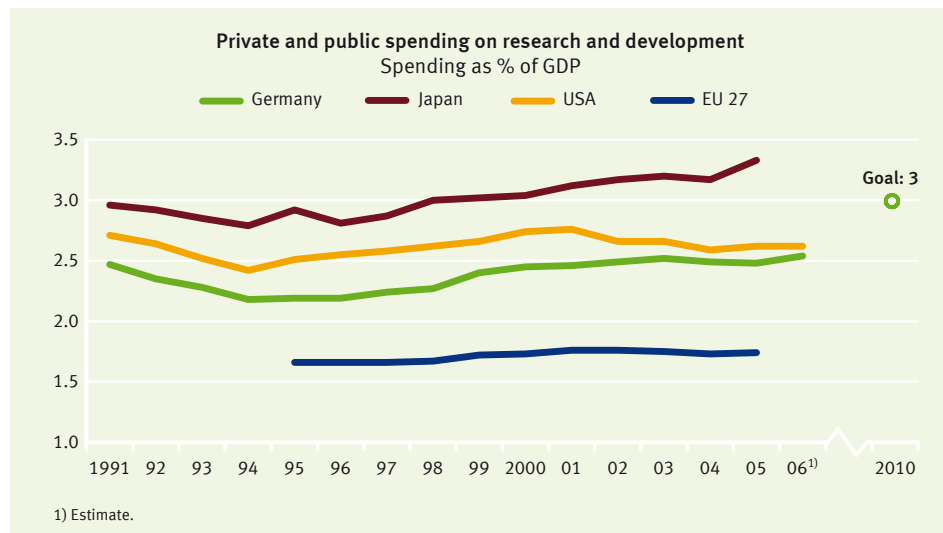
The upsurge in investment activity could already be seen in machinery and equipment in 2004. Since 2004 machinery and equipment purchases have increased sharply: in 2004 by 4.5 %, in 2005 by 6.0 %, in 2006 by 11.1 % and in 2007 by 6.9 % (in each case in comparison to the previous year). In particular, 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. In 2006 construction investments also displayed an upward trend for the first time since 1999. Investments in both residential and commercial property have contributed to this increase. While the increase in residential building was only

slight in 2007 at 0.3 %, non-residential building also continued to grow strongly in 2007 with an increase of 3.8 %. Other investments have shown steady growth since 1991, and in 2006 and 2007 especially strong growth of 8.3 % (2006) and 8.0 % (2007) in comparison to the previous year.

I. Intergeneration equity

Innovation

Shaping the future with new solutions



Source: OECD, Main Science and Technology Indicators 2007

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 on R&D of 3 % by 2010, and the Federal Government incorporated this goal for Germany early on as part of its National Sustainability Strategy. After 2010 the efforts of all involved need to continue in order to guarantee Germany's innovative capacity.

In 2006 overall R&D expenditure in Germany amounted to 58.9 billion euros, equivalent to 2.5 % of GDP. In comparison, in the USA in 2006 this value stood at 2.6 % and in Japan 3.3 % in 2005. Both the EU 15 and the EU 27 regions showed significantly smaller proportions of GDP devoted to R&D (1.9 % and 1.7 % respectively in 2005). Since the middle of the 1990s this proportion has increased in Germany by about 0.3 percentage points, although since 2000 only a very tiny increase has been evident.

Internal research within industry accounted for by far the largest share of R&D expenditure at around 70 %, 16 % was spent within institutions of higher education and just under 14 % by both public and private non-profit research institutions. Staff employed in R&D in 2006 comprised around 490,500 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, 20 % to institutions of higher education

and 16 % to public and private non-profit research institutions.

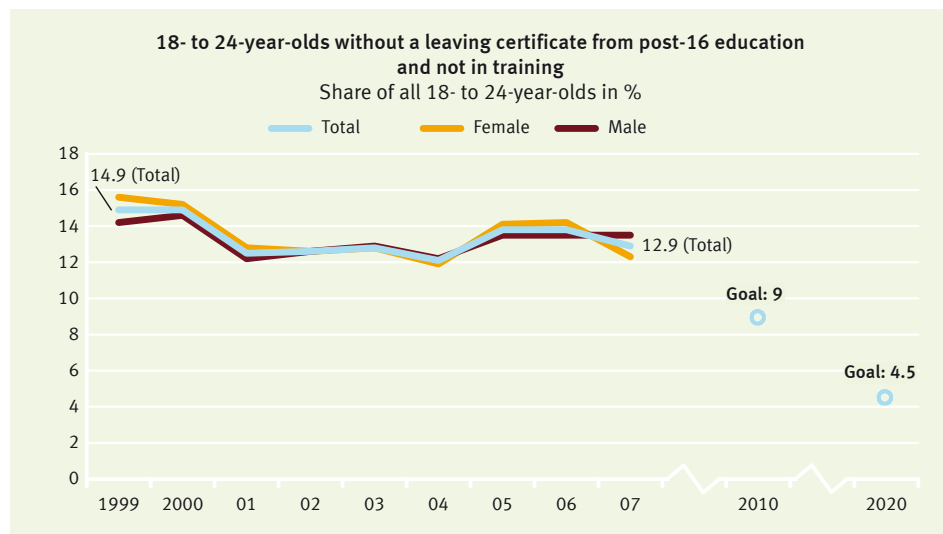
With regard to disciplines, in both the public and private non-profit research institutions the natural and engineering sciences played a particular role (47 % or 28 % respectively of the R&D expenditure in 2006 in this area). Research in the humanities and social sciences accounted for 13 % of expenditure, human medicine for 6 % 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 83 % of expenditure in private enterprise. The automotive industry alone in 2006 spent about 12.4 billion euros on R&D (source: scientific statistics of the *Stifterverband*).

I. Intergeneration equity

Education and training

Continuously improving education and vocational training



Source: Federal Statistical Office

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 subsequently did not complete vocational

training or did not qualify for university entrance or are no longer involved in the process of education are counted among those who are 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 in the five years leading up to 2007 remain unchanged, and efforts are not increased, then the goal which has been set under the German Strategy will clearly not be reached.

In 2007 all together there were 867,000 young people without an apprenticeship or an equivalent school leaving certificate. Between 1999 and 2007 the proportion of such young people amongst 18- to 24-year-olds decreased from 14.9 % to 12.9 %, but in 2005 and 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 2007 the proportion of young women stood at 12.3 %, lower than that of young men at 13.5 %.

In terms of the proportion of early school leavers, the school statistics show that in 2006 a total of around 75,900 young people (7.8 % of the graduating class) left school without a *Hauptschulabschluss* (general school leaving certificate). This proportion has hardly diminished in comparison to 1992. In the case of young women the proportion continues to be markedly smaller (5.9 %) than that of young men (9.7 %).

In 2006 just under 24.4 % of all school leavers obtained a *Hauptschulabschluss*, some 41.1 % a *Realschulabschluss* (intermediate certificate), 1.5 % a *Fachhochschulreife* (advanced technical college entrance qualification) and 25.2 % an *allgemeine Hochschulreife* (general higher education entrance qualification). The percentage of school leavers with a *Hauptschulabschluss* has declined since 1992 by 2.6 percentage points, whereas the proportion achieving more significant school leaving certificates has increased by 3.0 percentage points.

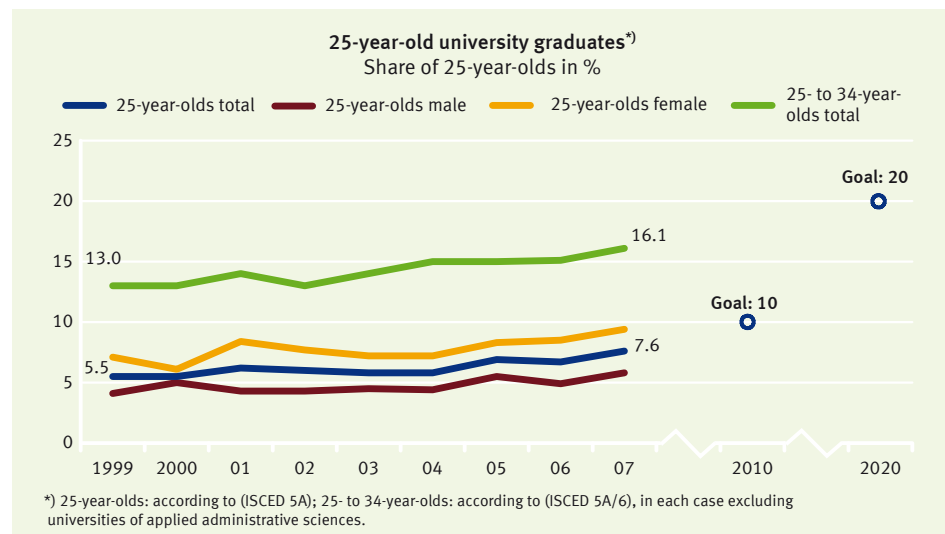
Both family and social background and knowledge of the German language play an important role in school and professional development. There continues to be a large

discrepancy between the educational success of Germans and that of foreign young people (see indicator 19). Furthermore, the declining willingness of employers to provide vocational training and the resulting limited number of apprenticeships have had a negative influence on this indicator. Marked by the upturn of the labour market, according to the results of the 2008 *Berufsbildungsbericht* (Vocational Education Report) the number of new apprenticeship contracts concluded increased to 625,900 and thus by 8.6 % in comparison to the same period in the previous year (cut-off date: 30th September). The increase was most pronounced in the *Old Länder* (10.7 %), compared with only 0.9 % in the *New Länder* and Berlin. Amongst other things due to the number of repeat applicants from previous years and the increase in applicants with university entrance qualifications, who pushed out school leavers with lesser qualifications (see indicator 9c), in 2007 there were still 29,100 applicants who failed to obtain an apprenticeship. In the case of unsuccessful applicants, besides job preferences which could not be fulfilled a lack of qualifications often played a significant role.

I. Intergeneration equity

Education and training

Continuously improving education and vocational training



Source: Federal Statistical Office

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 2007 this value went up from 5.5 % in total to 7.6 % and thus increased by 0.9 percentage points in comparison to the previous year. In a comparison between the sexes, in 2007 the proportion of 25-year-old women who had completed a university degree (9.4 %, 0.9 percentage points more than 2006) was distinctly higher than that of men (5.8 %, also 0.9 percentage points more than 2006) 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. The pace of development is however insufficient for achieving the goal. 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 2006 the average age of graduates completing their first degree was twenty-eight and was virtually 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 the school system to higher education 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 16.1% in 2006. The average value for 25- to 34-year-olds in the OECD countries in 2006 was 25%. Among the graduates in Germany in this age group there was an increasing number of women. In the comparison between the sexes, young male graduates (15.6%) have been overtaken by women graduates (16.7%).

The total number of all university graduates in 2006 was 265,700, 28,600 more than in 1997. These included 40,900 engineering graduates (17% fewer than in 1997) and 43,100 mathematics graduates (19% more than in 1997). While in 2006, 34% of all degrees were completed in the fields of law, business and social sciences, 17% in language and cultural sciences and 16% in mathematics/natural sciences, engineers occupied fourth place with 15% of degrees. In recent years foreign students have made a substantial contribution to cushioning the decline in engineering graduates. The degrees completed by foreigners increased by 2,800 compared to 1997, while graduates with a German passport declined by 11,200. The proportion of women taking engineering degrees rose from 15% in 1997 to 22% in 2006, but remained well below the average of women across all subjects of 50%.

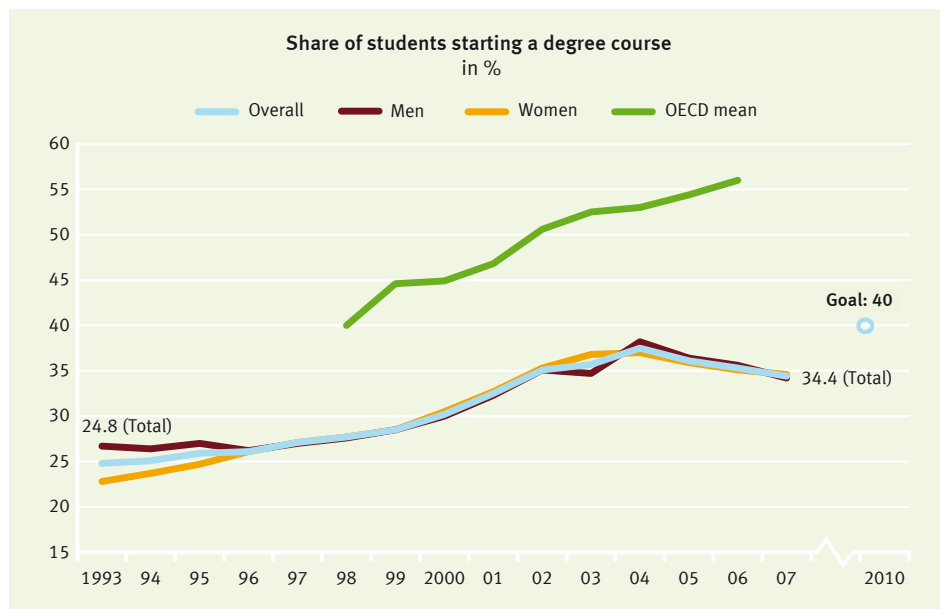
The European-wide revision of university programmes (in the so-called 'Bologna' process) has the goal of introducing bachelor's and master's courses in order to encourage international mobility of students and graduates and enhance the attractiveness of European universities

for foreign students. In 2006, 37% of all first-year students in Germany chose a course leading to a bachelor's degree (23% the previous year) and 5% a course leading to a master's (previous year 4%). The traditional diploma and master's programmes, on the other hand, are declining in numbers (33%, compared with 41% the previous year). Moreover, the percentage of first-year students who aspire to a degree from a university of applied sciences declined from 19% in 2005 to 12% in 2006. The average age of students taking their first degree has fallen in only a few areas as a result of the Bologna process. In the 2006 examination year, graduates taking their first degree on diploma programmes at universities finished their studies on average at the age of 27.9, while in universities of applied sciences it was 27.8 years of age. First-degree graduates completed a bachelor's degree on average at 25.8 years of age and a master's degree at 28.0 years of age. Those taking master's degrees in computer sciences, physics or mechanical engineering were older than graduates in diploma subjects, while chemists were the same age.

I. Intergeneration equity

Education and training

Continuously improving education and vocational training



Source: Federal Statistical Office (calculations in agreement with international OECD standards)

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 is 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 went up from 24.8 % to over 37.5 %, but fell back again to 34.4 % by 2007. In 2007 the percentage of women, at 34.6 %, was a little above that for men (34.2 %). In

the last five years up to 2007, the indicator developed in the wrong direction. If this trend continues, the goal will not be reached by 2010.

On average among the OECD countries the quota was clearly much higher. In 2006 56% of young people, thus more than half, started a university course. The proportions of students starting a university course were above average in respect of the age-specific population in Australia (84%), Iceland and Poland (78% each), Finland und Sweden (76% each) and New Zealand (72%), while Germany, Austria, Switzerland and Belgium occupied the lower end of the scale. In this comparison 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 here the system of vocational training mainly encompasses a dual system, whereas in other countries it takes place primarily at university level.

In 2007 358,200 new students (provisional results) registered at German institutions of higher education. Calculated according to national classifications, this number

corresponds to a first-year student quota of 36.6%. With an increase of 13,300 in comparison to the previous year, the number of new students in 2007 is still considerably below the peak value of 2003 (with 377,500 new students). The percentage of women among these new students in 2007 was 49.8%. Because of the reduction in school time from thirteen to twelve years and a series of baby-boom years who are completing their schooling, a clear increase in student numbers is expected by 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 2007 by 4.2% in comparison to the previous year, to 432,500 (preliminary results, including school leavers after eight years at *Gymnasium* (grammar school equivalent)). 46.7% of those achieving this level were young men, and the majority of them (51.7%) acquired the *Fachhochschulreife*. Young people who were eligible to go to university increasingly chose vocational training instead of attending a university. The number of those starting an apprenticeship who

were eligible to go to university increased between 2003 and 2006 by 18% to 130,000. Reasons for the increasing preference for 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 study certain subjects.

First-year students who acquired their university entrance qualifications in Germany were on average 21 years old in 2007. 16% 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. As a result the average derived age for starting university studies was 21.2 years of age. On a European comparison, first-year students for example in Greece, Spain, Belgium and Ireland (around 19 years old for each) were the youngest, and first-year students in Iceland (23.2), Denmark (22.6) or Sweden (22.4) the oldest. But there were already clear differences in age within Germany: the ages ranged from 20.8 years in Saxony and Thuringia to 22.4 years in Hamburg.

II. Quality of life

Economic prosperity

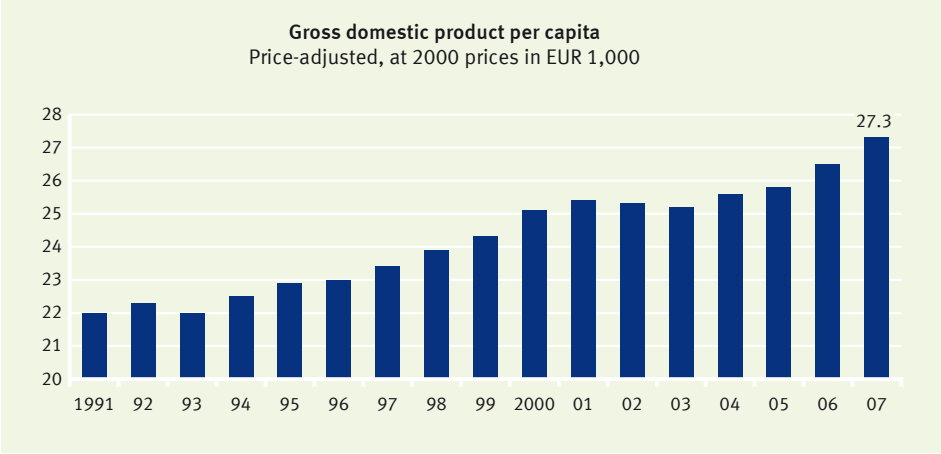
Raising economic output by environmentally and socially compatible means

10 Gross domestic product per capita

Gross domestic product (GDP) expresses the total domestically generated economic output. It is considered an important indicator of the economic cycles and growth of a national economy, but was not conceived as 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, the child care system and social cohesion play an important role in society with regard to international economic competitiveness. Increasing economic output is, of course, desirable from a welfare perspective. Sufficient economic growth can enable structural change, safeguard jobs and create new ones, and stabilise social systems against the background of the “aging 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 2007 real GDP per capita increased by a total of 23.8%. Following the recession of 1993, the



Source: Federal Statistical Office, National Accounting

ensuing economic revival lasted until 2001, showing average annual growth rates of almost 2 %. Between 2001 and 2005 growth declined considerably, but in 2006 and 2007 rates rebounded to 3.1 % and 2.5 % respectively in comparison to the previous year.

Economic growth has varied considerably by sector. Between 1991 and 2007 the manufacturing industry (excluding construction) experienced real growth of about 23 %, while the service sectors taken together showed a much stronger increase of 40 %. While in 1991 industry still accounted for a 30.6 % share of total gross value added (at current prices), by 2003 this figure had declined to less than 25 %. From 2004 this share increased to 26.4 %, however, because of the relatively high growth in this area between 2005 and 2007. Well above average growth in the services sector was achieved between 1991 and 2007 in the health and social services sector (+86 %), transport and communication (+71 %), and real estate, rentals and business services (+64 %). The economic

transition – marked by the increasing importance of the services sector and the decreasing significance of the production, mining, and building industries – contributed to a decoupling of economic growth and environmental pollution. This structural change, especially in CO₂ emissions and the use of raw materials, energy and settlement land, either completely or largely compensated for the negative effects of general economic growth. In particular, the more efficient use of energy in individual sectors also contributed to additional relief of the burden on the environment (see also indicators 1a, 1b, 2 and 4).

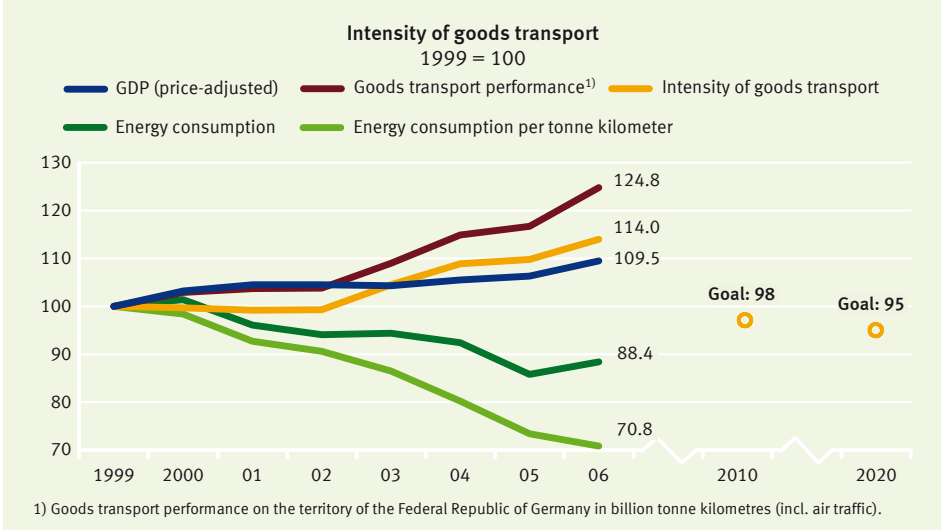
Economic output varied considerably from region to region. Starting from a comparably low level, economic output per capita was almost doubled by the *New Länder* (excluding Berlin) between 1991 and 2006 (+93 %). The GDP of the *New Länder* increased by almost 76 %, despite a 9.1 % fall in population. In the former West Germany (excluding Berlin), on the other hand, economic output per head over the

total period increased by only 13.8 %, with a 20.7 % increase in GDP and 6.1 % population increase. Nevertheless, the *New Länder* still continue to lag behind the *Old Länder* by around 30 % in terms of GDP per capita. Employment in Germany went up in total by about 1.1 million between 1991 and 2007 (see also indicator 16). Despite this increase in employment, large parts of the population are still threatened by poverty. The EU survey SILC (Statistics on Income and Living Conditions) 2006 established that in 2005 13 % of the total population in Germany was threatened by poverty; in the *New Länder* this figure was 15 %. Thus on a European comparison Germany lies clearly below the EU average of 16 %.

II. Quality of life

Mobility

Guaranteeing mobility – protecting the environment



Source: The Federal Minister of Transport (editor), Verkehr in Zahlen (Transport in Figures), 2007/2008

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 on roads, railways, 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 % by the year 2010 compared to the base value of 1999, and by an additional 3 percentage points by the year 2020.

Between 1999 and 2006 the intensity of goods transport increased by 14.0 % showing a development contrary to the trend desired. The clear increase in intensity is the result of a relatively strong increase in goods transport performance (tonne kilometres) by 24.8 % combined with an increase in the economic performance of 9.5 % (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 29.2 % between 1999 and 2006 to 1.36 megajoules per tonne kilometre (MJ/tkm). This development was primarily caused by the decrease in the specific energy consumption by lorries declining from 2.52 MJ/tkm to 1.75 MJ/tkm (– 30.6 %). However, the enormous increase in goods transport performance since 2005 has more than overtaken the technical improvements and has thus 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 9.4 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 10.8 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 6.2 percentage points.

The indicator on goods transport performance refers only 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 (globalisation). Goods transport performance amounted to 620 billion tonne kilometres in the year 2006; in comparison, the goods transport performance of sea transport through German

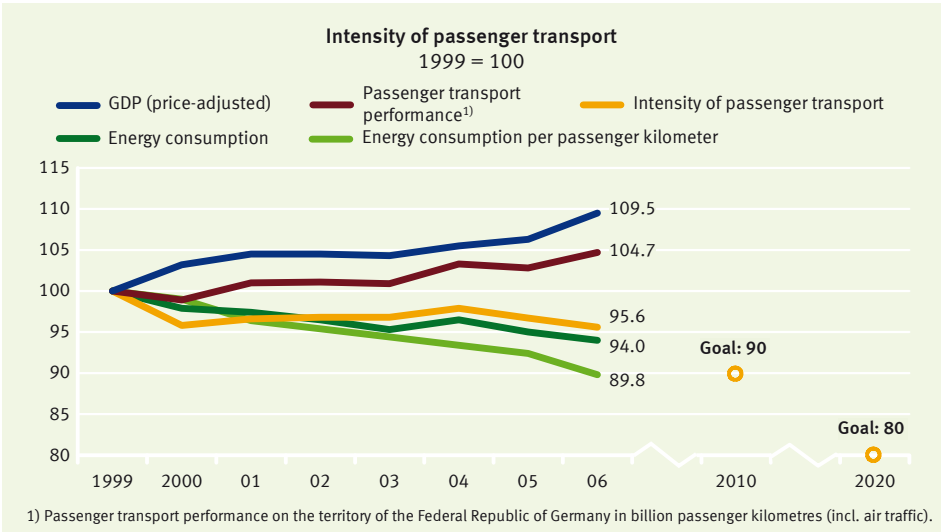
harbours alone amounted to 1,750 billion tonne kilometres, almost three times as much as the total of domestic transport. Furthermore, between 1999 and 2006, as a consequence of globalisation, goods transport performance of shipping, with a rise of 58 %, has greatly outdistanced domestic transport performance.

The indicator has a variety of cross references to other indicators (for example, to 1a, 2, 3, 4, 13 and 16 with regard to the shipping and transport services industry and the automobile industry).

II. Quality of life

Mobility

Guaranteeing mobility – protecting the environment



Source: The Federal Minister of Transport (editor), Verkehr in Zahlen (Transport in Figures), 2007/2008

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, land use, noise pollution and emissions of air pollutants. 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 Gov-

ernment'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 4.7 %) and the GDP has increased more significantly (by 9.5 %), intensity has dropped by 4.4 %. 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 + 51 %, diesel + 75 %).

The increase in passenger transport performance between 1999 and 2006 was accompanied by a decline in energy consumption. The average consumption of energy decreased in the period under review by nearly 10 %, to 1.77 megajoules per passenger kilometre (MJ/Pkm). The development of specific energy consumption in individual motorised transport was chiefly responsible for this change.

The transport performance of individual motorised traffic, which in 2006 had a share of 80.3 % in overall passenger transport performance, has increased only moderately since 1999 (by 2.5 %). On the other hand, the passenger transport performance of railway and public road transport (which until 2003 was comprised only of enterprises with at least six omnibuses) increased overall by 7.8 %. The performance of domestic air transport increased by 11.2 %.

Individual motorised transport serves various purposes. In the year 2005 recreational traffic accounted for the biggest share in transport performance, with 35.6 %. The share of commuter traffic amounted to 17.6 %, followed by shopping traffic at 17.2 % and business trips at 12.9 %.

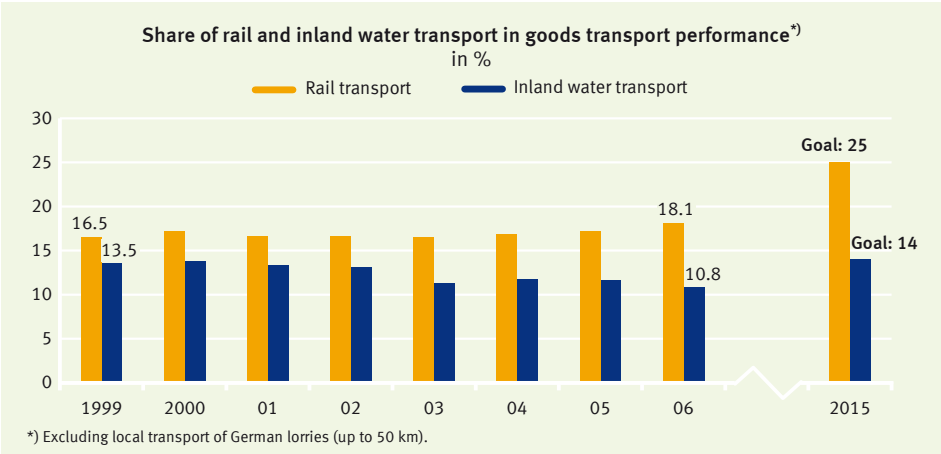
Chiefly because of technological improvements and the growing share of diesel vehicles, the consumption of fuel per kilometre in individual motorised traffic went down by 8.2 %.

The indicator has cross references to, among others, the indicators 1a, 2, 3, 4, 12a, 13, 14a, b (with reference to traffic accidents) and where applicable 16 (with reference to the transport service industry and the automobile industry).

II. Quality of life

Mobility

Guaranteeing mobility – protecting the environment



Source: The Federal Minister of Transport (editor), Verkehr in Zahlen (Transport in Figures), 2007/2008

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 and inland water transport; 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 27.4 % to 592.7 billion tonne kilometres between 1999 and 2006. The market share of rail transport improved slightly, from 16.5 % to 18.1 %, but did not significantly increase. The share of inland waterway transport actually declined from 13.5 % to 10.8 %. Looking at the absolute figures between 1999 and 2006, the freight transport performance of rail increased from 76.8 billion to 107.0 billion tonne kilometres, and that of inland water from 62.7 billion to 64.0 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 applied 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 23 %), stone (8 % to 12 %) and ore (37 % to 47 %) in the period 1999 to 2006. The share of foreign lorries in freight transport performance grew in the period under review from 19 % to 23 %, 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 2006, especially relating to the transport of 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 23 % and ore from 41 % to 35 %.

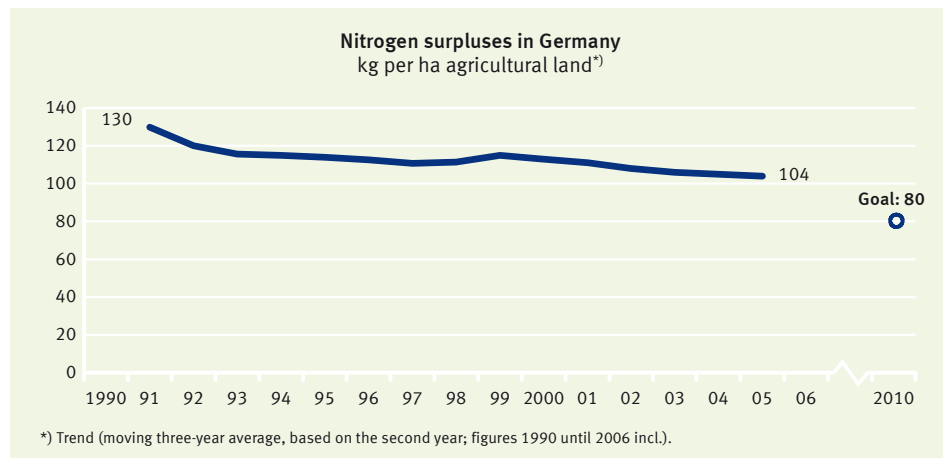
Goods transport performance in inland water transport went up by 1.3 billion tonne kilometres between 1999 and 2006. When breaking down the figures behind this trend into the influencing factors 'Goods transport performance by domestic carriers', 'Structure of goods transport performance by types of goods' and 'Market share of inland water transport for individual goods' leads to the following result: the increase in overall goods transport performance generated an increase in the transport volume of inland shipping by a calculated 11.2 billion tonne kilometres. This is counterbalanced by the negative effects caused by the change in the composition of transported goods of – 3.9 billion tonne kilometres and the mar-

ket share losses experienced in individual types of goods of – 6.0 billion tonne kilometres.

II. Quality of life

Farming

Environmentally sound protection in our cultivated landscapes



Source: Julius Kühn Institut Braunschweig and Federal Environment Agency/University of Giessen

12a Nitrogen surplus

Nitrogen compounds are 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. In addition, other sources (for example, livestock farming, traffic, private households) contribute to adding nitrogen to the soil via the air. An excess nitrogen input into the environment leads to far-reaching problems: pollution of ground water, eutrophication of inland bodies of water, oceans and ecological systems 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 the agricultural sector in Germany can be calculated by means of the comparison of nitrogen input (mostly via fertilisers, animal feed and seeds) to nitrogen output (through crop and animal market products). The aggregate

amounts of nitrogen used that did not leave the agricultural sector in the form of agricultural products are included in the total balance for Germany for the year (kg N/hectare and year) calculated using the farm-gate model. The surpluses so determined are used as a measurement for the environmental load in this area; since the balance, for example, also contains the amount of nitrogen required for the maintenance of soil fertility, it should not be equated across the board with environmental loss.

In contrast to the previous representation (in the 2006 Indicator Report) a time series will be used here that is based on the calendar year and shows the moving three-year average (based on the second year in each case). Calculating this mean value balances out the yearly variations that cannot be influenced, caused by the weather. The Federal Government's goal is to reduce the surpluses to 80 kg of nitrogen per hectare and year by 2010.

Since 1991 the averaged balance of 130 kg/ha per year has declined to 104 kg/ha

per year in 2005. This corresponds to a reduction of the annual surplus by 20 % since 1991. Altogether, between 1991 and 2005 little more than half the reduction desired to be achieved by 2010 was actually reached. The reduction at the beginning of this time series can be seen in connection with the decreasing number of livestock in the *New Länder*. During the last five years the average annual reduction of the balance was less than 2 %. But in order to achieve the goal, that reduction would need to increase by an average 5 % a year between 2006 and 2010.

While the nitrogen input in the sector has changed very little over the last ten years, nitrogen output (for example, through higher nitrogen removal through market produce) has increased. This increase can be ascribed to yield increases in crop production and a higher feed conversion ratio in livestock, and hence also to an increased nitrogen efficiency. Analyses of operational farming data show that high surpluses are generated especially in farms with high numbers of livestock. It also shows that on farms with a comparable

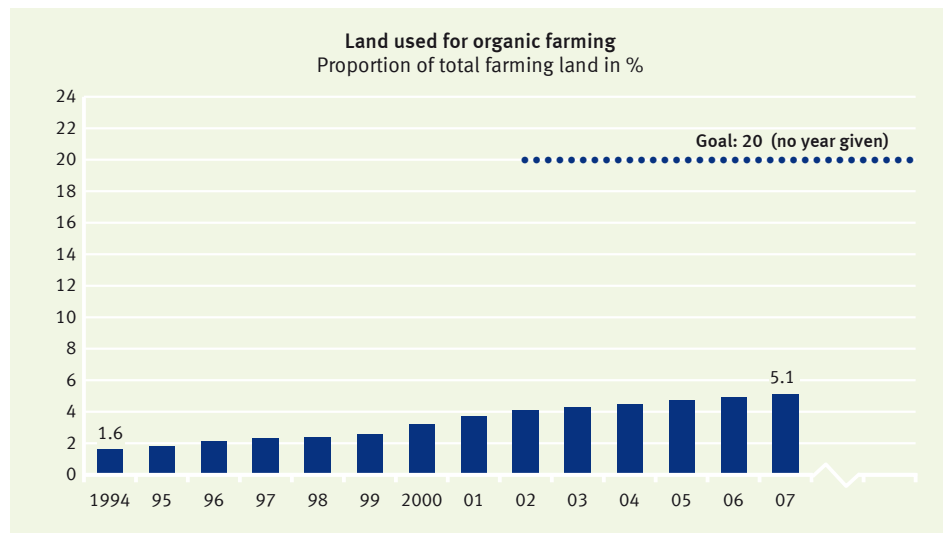
production structure that raise animals a large spectrum of nitrogen surpluses occurs. This permits the conclusion to be drawn that additional reduction potential exists in order to improve nitrogen efficiency.

This indicator is related to the indicators 1a and 1b, 2, 5, 11, 12b, 13 and 21.

II. Quality of life

Farming

Environmentally sound protection in our cultivated landscapes



Source: Federal Ministry of Food, Agriculture and Consumer Protection based on figures under Council Regulation (EEC) No 2092/91

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. Among the rules for organic farming is the renunciation of the use of highly soluble mineral fertilisers, chemical synthetic 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 (Council Regulation (EEC) No 2092/91) as part of the total area under agricultural

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 intends to create conditions that will allow organic farming to achieve a share of 20 % of the area in the coming years.

From 1994 to 2007 the share of organic farming in the arable land increased from 1.6 % to 5.1 % (865,336 hectares). In 2007 the newly converted area of 39,797 hectares was more than double that of the previous year.

According to Eurostat figures, 6.65 million hectares of arable land were used for organic farming in the year 2006 in the EU-27 countries. Italy accounted for the largest share (1.1 million hectares or 17 %), followed by Spain (0.9 million hectares or 14 %) and Germany (0.8 million hectares or 12 %).

Organic farming focuses on certain kinds of production: the share of land for grain culti-

vation 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 in organic farming the share of land used for permanent pasture was 50.9 %, whereas 47.8 % of the land was used for arable farming. Of the total farmland, however, arable land dominated with 70.1 %, while permanent pasture accounted for only 28.8 % (plus 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 particularly large in the *New Länder* (179.2 ha).

Eco food sales have grown much faster since 2000 than domestic production, and amounted to 4.6 billion euros in 2006 (*ZMP Zentrale Markt- und Preisberichtsstelle GmbH*). The increased demand is also to be

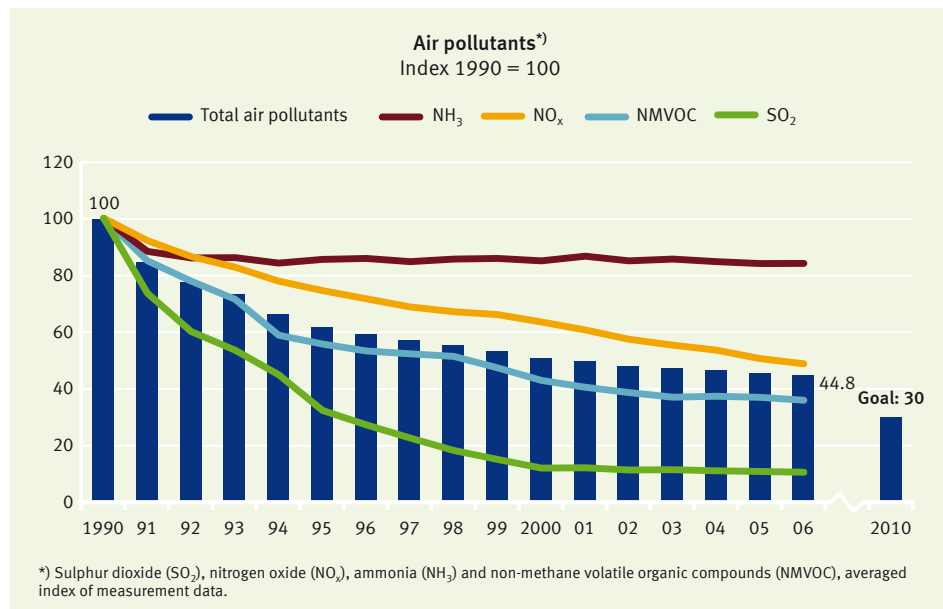
attributed to the fact that food retailers increasingly offer eco products. The demand had to be met increasingly by imports from other EU member states or non-EU countries. The production of renewable energy from biomass (supported by sales and price guarantees), as well as an increasing demand for foodstuffs, led to competition for arable land. This in turn has led to increased prices for agricultural products. In this competitive situation, any further conversion to organic farming, desirable from an ecological and supply point of view, has – cost-intensive as it is – stagnated.

Cross references of the indicator to indicator 2 (organic farming causes fewer CO₂ emission, among other reasons because of the saving of energy that would have been necessary for the production of fertiliser and pesticides), 3, 4 and 5 (promotion of species diversity through the more extensive farming).

II. Quality of life

Air Quality

Keeping the environment healthy



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 (SO₂), nitrogen oxides (NO_x), ammonia (NH₃) and the non-methane volatile organic compounds (NMVOC).

The goal of the Federal Government 2002 Strategy is to reduce the emission of these pollutants by 70 % (using 1990 as the base

year) by 2010. An updated goal will be worked out in agreement with the EU and is expected to be fixed in 2009.

Air pollution decreased by 55 % until 2006; the process has developed in the right direction overall. In order to reach the goal, in the four-year period leading up to 2010, an additional reduction of emissions amounting to 15 percentage points must be achieved. Clear-cut reductions were achieved in the first half of the 1990s, and by the year 2000 the emissions of air pollutants had almost been cut in half (– 49 %). But in the following years, up to 2006, a reduction of only 6 percentage points was achieved, and compared to the previous year the decrease was merely 0.7 percentage points. The speed by which emissions have been reduced over the last few years is insufficient to reach the goal of a total reduction of the index to 30 %.

The contributions to the development between 1990 and 2006 by individual types of emission varied. The strongest was the 89.6 % reduction of the sulphur oxide emissions; reduction by 70 % has already

long been achieved and even clearly exceeded. But since the turn of the millennium the additional reduction has been merely 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 successfully reduced by 64.2 % in the period under review. This means that a reduction of 70 % has been nearly achieved. The increasing use of catalyser technology in automobiles has proved decisive in the significant reduction of NMVOC emissions in the transport sector.

Since 1990 nitrogen oxide emissions have fallen by 51.3 %. The employment of catalytic converter technology in combustible engines in road traffic mentioned above has also played an important role here. Moreover, the increased use of exhaust gas denitrogenisation installations in

power plants has resulted in a pronounced decrease.

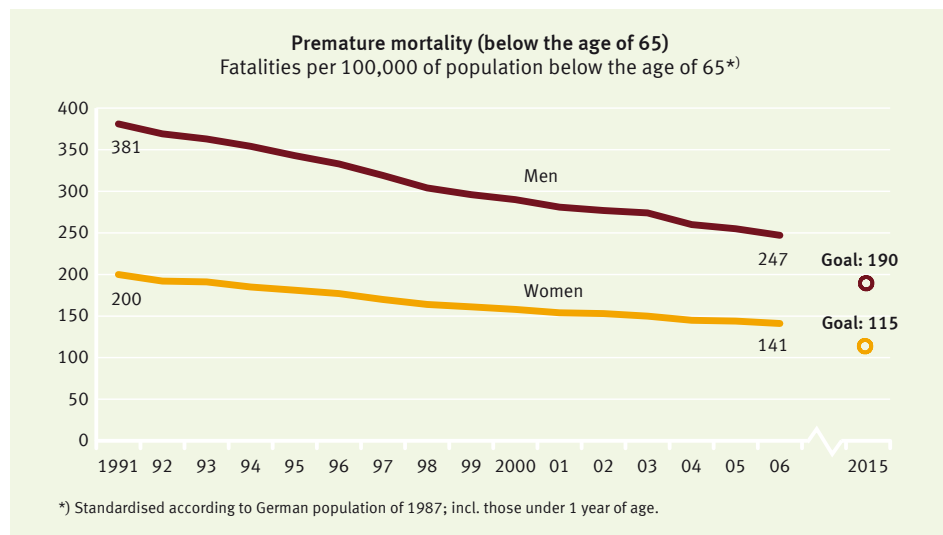
Ammonia emissions, which derive almost exclusively from farming, have been reduced by a mere 15.9 % since 1990. The initial decrease was mainly due to the reduction of livestock in Eastern Germany following German reunification. Since then this sub-indicator has showed little development.

The indicator has direct and indirect cross-references to other indicators, for example 1, 3b, 4, 5, 11, 12a and 12b.

II. Quality of life

Health and nutrition

Living more healthily for longer



Source: Federal Statistical Office

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 (death before 65) should be maximum 190 men and 115 women 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 provides for a time series that is comparable over time. It takes the fact into account that due to the demographic development

in Germany there is an ever-increasing number of people above the age of 65.

Between 1991 and 2006 premature mortality steadily decreased, for men by 35 % and for women by 30 %. Thus the gender-specific difference in premature mortality diminished. In absolute figures in 2006, 247 men and 141 women per 100,000 inhabitants died prematurely, i.e. before they reached the age of 65. If the present trend continues, the goal values for men could almost be achieved, whereas for women the figures would fall short by a narrow margin.

Life expectancy in Germany has once again increased. Between 2004 and 2006 the average life expectancy for newborn girls was 82.1 years of age and for boys 76.6. Between 2003 and 2005 the average was still 81.8 and 76.2 years of age respectively. Today 60-year-old women can, statistically, expect an additional 24.5 years of life, and men an additional 20.6. In the *Old Länder* life expectancy is still somewhat higher than in the *New Länder*; the differ-

ence is 1.4 years for newborn boys and 0.3 years for newborn girls.

In 2006 cardiovascular diseases were in general the most common cause of death (43.7 %), followed by malignant tumours (25.7 %), and diseases of the respiratory system (6.7 %) and the digestive tract (5.2 %), as well as deaths due to external causes (3.9 %). The importance of the individual causes of death varied according to age and gender; whereas cardiovascular diseases were the principal cause of death in the greatest number of people above the age of 65, malignant tumours (cancers) were the principal cause in 40- to 64-year-olds. The principal causes of death in 1- to 39-year-olds were non-natural (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.

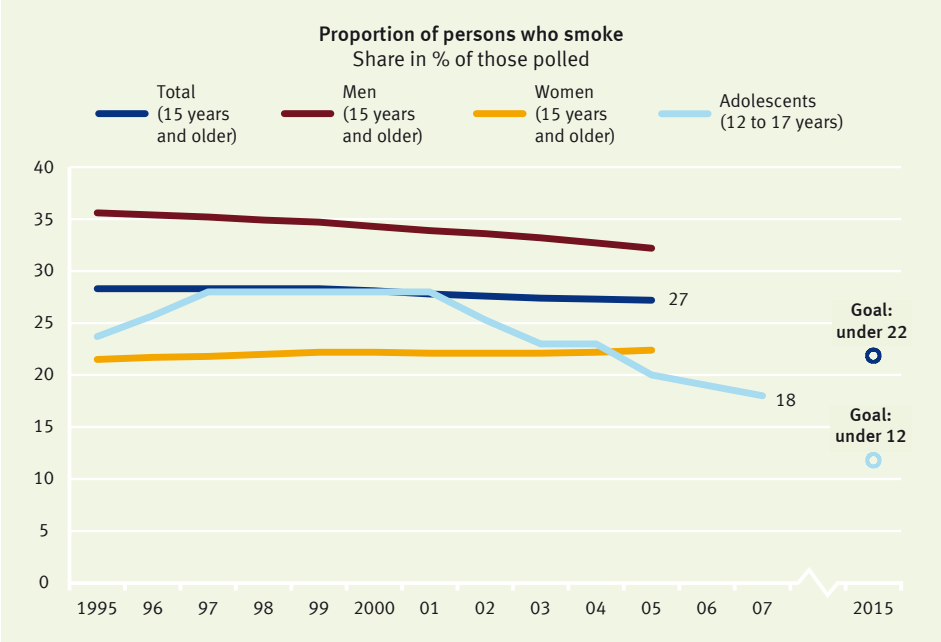
Besides factors such as health behaviour, medical care also plays an important role in the mortality rate. Total expenditure on healthcare amounted to 245 billion euros

in 2006, representing an increase of 5.7 billion EUR or 2.4 % compared to the previous year. This expenditure corresponded to 10.6 % of the GDP or 2,970 euros per inhabitant (2005: 2,900 euros). In 2006 the services of physicians accounted for 27 % of the total expenditure; the same amount was devoted to goods (i.e. medicines, dressing materials, aids and appliances, dentures and other medical supplies). In comparison to 2005, the expenditure on the services of physicians increased by 3.2 %, and those on goods by 2 %, with expenditure on pharmaceuticals (39.6 billion EUR) and aids and appliances (10.9 billion EUR) being the most important in this category. Above average was the increase of 4.4 % spent on prevention (for example, early diagnosis) and occupational health and safety (9.3 billion EUR).

II. Quality of life

Health and nutrition

Living more healthily for longer



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 and those 15 years old and older, who occasionally or regularly smoke. The Federal Government is pursuing the goal of reducing by 2015 the percentage of juvenile and adolescent smokers to under 12 %, 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). In the years following, the share decreased by 2007 to 18 % (data from Federal Centre for Health Education

(BZgA)). In 2005, 27 % of 15-year-olds and older who were polled stated that they occasionally or regularly smoked (micro-census). In 1995 and 1999, 28 % smoked. This means that the proportion of adults smoking declined only slightly. In order to reach the goal for persons 15 years of age and older, a more concerted effort on the part of all stakeholders must be made.

In 2005 23 % of all those polled that were 15 years or older considered themselves regular smokers, while 4 % smoked occasionally. Clearly more men (32 %) than women (22 %) smoked. While the proportion of men who smoke had decreased by 4 % percentage points since 1995, the proportion of women smokers had gone up slightly. The amount of tobacco smoked is important relative to the individual threat to health. In 2005, 97 % of the smokers surveyed preferred cigarettes; 16 % of the regular cigarette smokers (1995: 17 %) were in the category of heavy smokers, i.e. consumed more than 20 cigarettes a day, whereas 77 % smoked 5 to 20 cigarettes per day. With regard to the number of ciga-

rettes consumed per day, differences per gender were also apparent; one in five of the regular male smokers (20 %) were heavy smokers, but only one in nine (11 %) 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 2005 those men aged 65 to 69 at the time of polling stated that they had begun smoking at the age of 18.9, whereas women of the same age had begun at 23.1 years of age. Male adolescents aged 15 to 19 stated that they started at the age of 15.3 years, and their female counterparts at the age of 15.0.

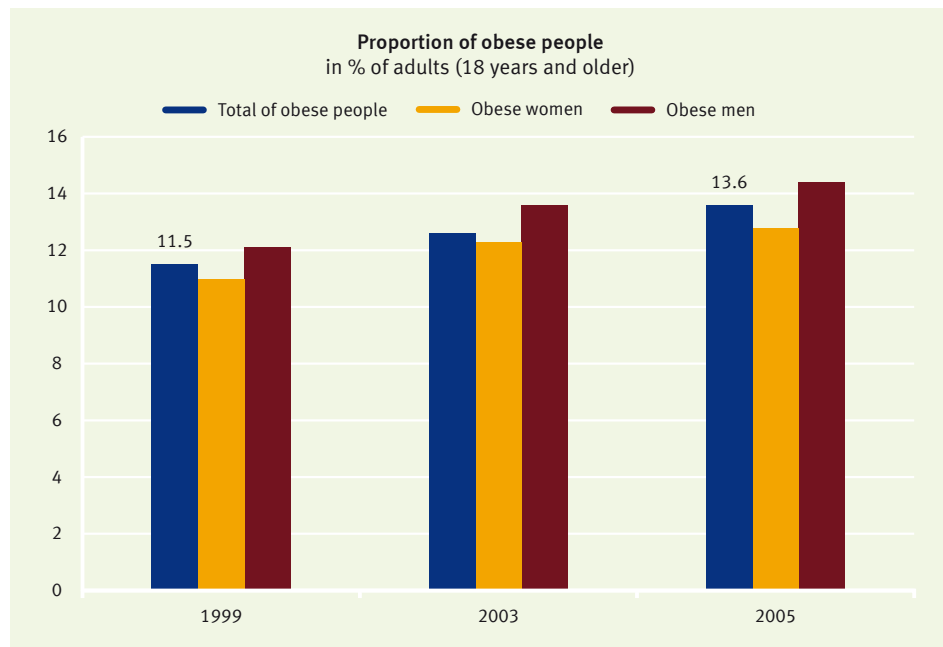
There is an inverse relationship between net household income and the proportion of smokers. In 2005, in households with a low monthly income, of up to 1,300 euros, 33 % of those polled reported being smokers. In households with 2,600 to 4,500 euros per month 26 % said they were smokers, and in households with over 4,500 euros per month, 20 % of those polled said they smoked.

Smoking poses a high and at the same time avoidable risk to health. In 2006, 5.1 % of all fatalities (42,348 people, of whom 30,249 were men and 12,099 women) could be traced to diseases typical of smokers (lung, laryngeal and tracheal cancer). In comparison to 2000, this is an increase of 4.5 %, which is primarily due to an increase in the number of female deaths. Since 2000 their share has gone up by 3.9 percentage points from 24.7 % to 28.6 %. The average age of those who died from lung, laryngeal and tracheal cancers in 2006 was 69.5 years of age – seven years lower than the average death rate (76.5 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. It may be assumed that these costs are considerably higher than the income derived from the tax on tobacco, which in 2007 amounted to 14.2 billion euros.

II. Quality of life

Health and nutrition

Living more healthily for longer



Source: Federal Statistical Office

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 that the number of obese people in Germany

will be reduced by 2020. In 2005, 13.6 % of the population in Germany aged 18 years or older could be classified as obese (whereas in 1999 the percentage had been only 11.5 %); at 14.4 %, the percentage of obese men was higher than that of obese women (12.8 %). In 2005, 49.6 % of the adult population was deemed overweight; again, the share of men (57.9 %) was higher than that of women (41.5 %).

The proportion of obese people increases directly with age, although this trend suddenly clearly reverses in people of very advanced age. In 2005, 2.8 % of 18- to 20-year-old women were obese. Then about 8 % of the women between 30 and 35 years of age were already obese, and 15.8 % of those between 50 and 55 years of age. The highest proportion of obese women was found in the age group between 70 and 75 years of age at 21.5 %; after this age the figures fell sharply. In men, some 10 % between 30 and 35 were obese, and the highest proportion of obese men was found in 55- to 60-year-olds (20.6 %). 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 2005 the figure was 21.5 %.

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 im-

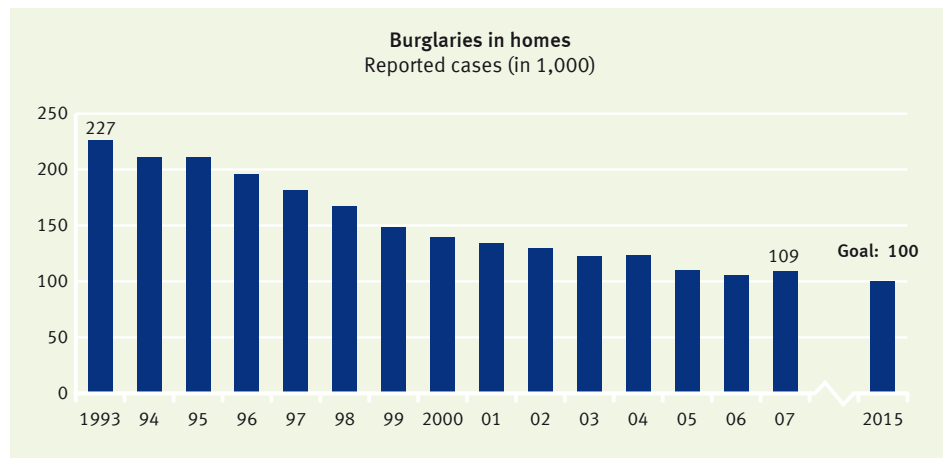
portant health risk. In 2005 women were considerably more often (4 %) underweight than men (1 %). It needs to be mentioned that 14 % of young women between 18 and 19 years of age were underweight, and in the women between 20 and 24 there were still 11 % who were underweight.

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

II. Quality of life

Crime

Further increasing personal security



Source: Federal Criminal Police Office, Police Crime Statistics

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.

Break-ins in general are crimes that in the course of the last decade have been reported less and less often. Since 1993 the number of the known cases has declined by half. At about 109,000 cases in 2007,

burglaries amounted to 1.7 % of the total of 6.3 million criminal offences registered by the police.

This reduction is based largely upon the rising awareness of the average citizen, who has increased his or her security in the face of burglaries through the installation of alarm systems or well secured windows and doors.

Despite a slight increase in the number of burglaries in 2007, the above-mentioned goal would be achieved if the trend observed during the last few years were to continue.

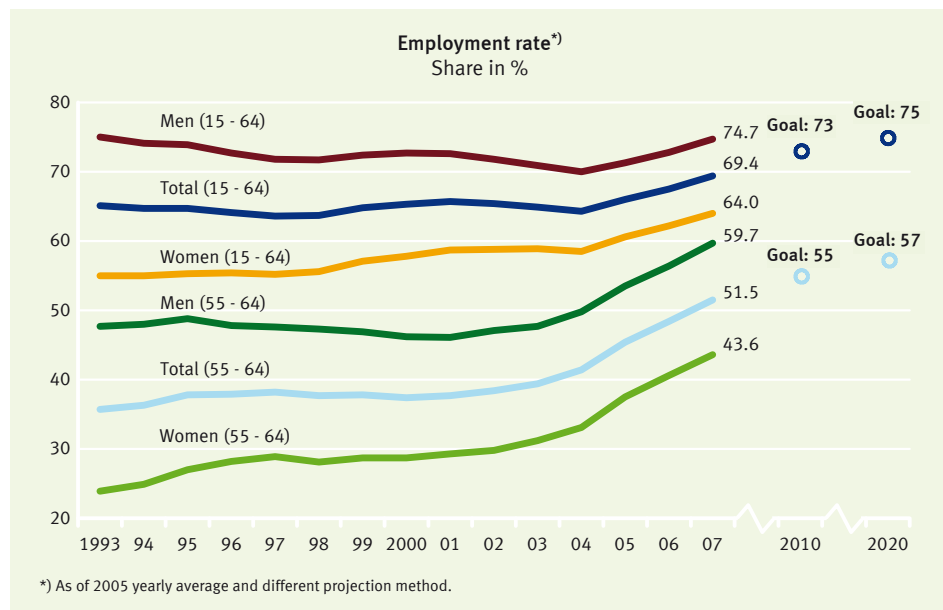
Burglaries are only one type of the crimes threatening personal safety and security. Aggravated theft (including breaking and entering) accounted for 20 % of the offences recorded in the year 2007. Cases of fraud accounted for 15 %, and bodily injury, 9 %. However, in contrast to the generally declining number of burglaries (as for other forms of theft) the reported cases of fraud and bodily injury have increased in comparison to previous years. They went up in

the period under examination, between 1993 and 2007, by 73 % and 85 % respectively, while the cases of burglaries in homes decreased by 52 %.

III. Social cohesion

Employment

Boosting employment levels



Source: Federal Statistical Office, EU Labour Force Survey (Microcensus)

16a, b Employment rate

Because of the demographic change in Germany ('the ageing society'), there will be a lack of labour 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 in the future to exploit our labour potential more effectively.

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) by 2010 to 73 %, and by 2020 to 75 %. 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 overall employment rate rose from 65.1 % in 1993 by 4.3 percentage points to 69.4 % in 2007. At the same time the employment rate among the older work force increased from 35.7 % to 51.5 % (+ 15.8 percentage points) in the period from 1993 to 2007. While a continuation of

the overall employment rate trend over the last few years is not sufficient to achieve the 2010 goal, it is certain that the employment rate for the older workforce will achieve it.

The clear rise in the employment rates that can be observed since 2005 is also reflected in the new methodological design of the EU Labour Force Survey that was used as the source for the employment rates and is integrated into the microcensus. The transition to the concept of collecting data during the current year since 2005 allows the microcensus to supply average annual results for the first time, but these are comparable to only a very limited extent to the results prior to 2004, which were obtained in reporting periods of a single week in the spring. Simultaneously with the transition to the continuous survey, the formulation of the questions and the fieldwork (for example, through conversion to laptop interviews) were optimised so that it is now easier to collect employment data in accordance with the labour force concept of the International Labour Organization.

Quite apart from the changed period of reference and the methodological developments, the new method of projecting data also increases the number of employed in the microcensus.

Since 1993 the employment statistics for men and women have developed in opposite directions; in the period under investigation, the rate of employed men dropped by 0.3 percentage points to 74.7 %, whereas the figure for women rose by 9.0 percentage points to 64.0 %. In evaluating the increase in the employment rate of women, however, it must be taken into consideration that this was accompanied by a clear increase in part-time employment (+ 3.1 million), while the number of full-time employed women went down by 0.9 million.

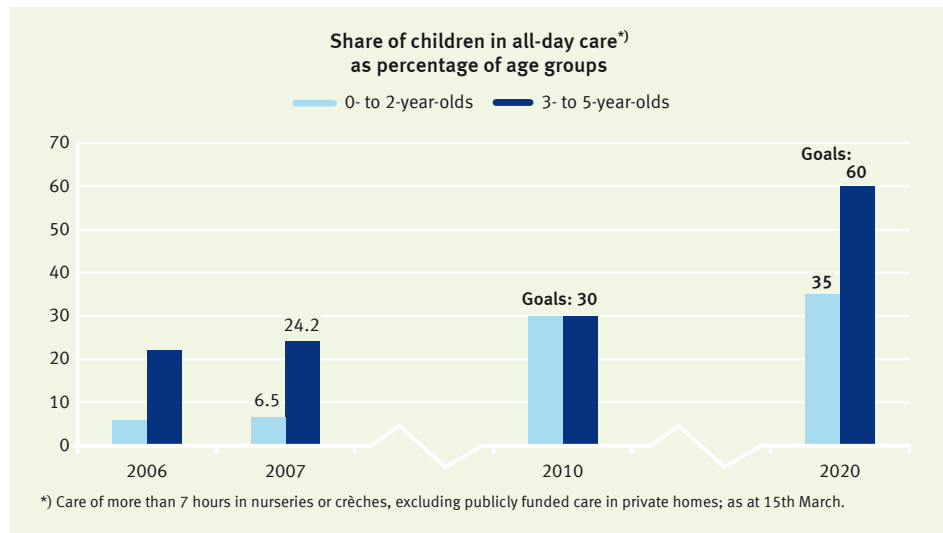
Between 1993 and 2007, the development of the employment rate differed according to age group. In 15- to 24-year-olds the share went down by 6.6 percentage points to 45.3 %. This decrease in particular reflects the longer average educational periods at school and university (see in-

indicator 9c). A slight rise was noted in the rate for 25- to 54-year-olds (+ 4.1 percentage points). In 55- to 64-year-olds the rate went up by 15.8 percentage points to 51.5 %, as mentioned above. The increase was especially significant from 2003 (+ 12.1 percentage points). As well as resulting from the methodological change in 2005, this increase can also be ascribed to demographic effects; starting at a low level in 1993, the employment rate of women in this age group has risen in a much more pronounced manner (+ 19.7 percentage points) than that of men (+ 12.0 percentage points).

III. Social cohesion

Perspectives for families

Improving the compatibility of work and family life



Source: Federal Statistical Office

17a, b All-day care provision for children

The provision of childcare in line with demands 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 can not 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 intended to be increased to 35% for 0- to 2-year-olds and 60% for 3- to 5-year-olds. In 2007, parents of 24.2% 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

6.5%. In comparison to the previous year, the only one for which there are comparable figures available, there was thus some slight Progress in the area of all-day care in nurseries or crèches, most clearly evident among the 3- to 5-year-olds (+ 2.2 percentage points). The increase in all-day nursery care was 0.6 percentage points. To reach the defined goal for nurseries, efforts to create more all-day care facilities must be stepped up considerably.

The number of children in all-day care in crèches and kindergartens in 2007 was around 661,100. Around 19,600 additional children under 6 received publicly funded care in private homes. The number of children in part-time care was around 1.58 million.

In terms of childcare opportunities, after-school clubs and all-day schools also play a significant role. In 2007 about 100,900 children between 6 and 13 years of age were cared for on an all-day basis in after-school clubs full-time and 690,000 children part-time. The proportion of full-time pupils (out of all pupils in general

education schools) in the school year 2006/2007 was 17.6%. 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 12.7% 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 1.5 million in the general school sector altogether and from 134,000 to around 400,000 in *Grundschulen* (source: Standing Conference of the Ministers of Education and Cultural Affairs, 4th March 2008).

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 under 6-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 Berlin was clearly above the average, and in all the western *Länder* it was below the average. The highest percentage of all-day care for this age group was found in Thuringia at 57.5%,

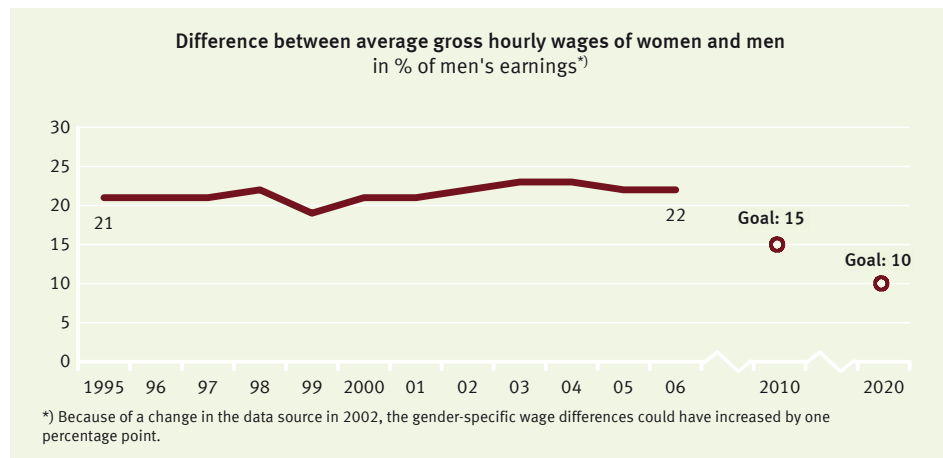
the lowest in Baden-Württemberg at 5.1% (both 2007). Among all-day pupils in *Grundschulen* the range was from 67.4% in Saxony to 2.3% in Lower Saxony (2006).

The ratio of available day care places to the number of children depends not only upon the supply of day care places, but also on the overall number of children and the birth rate. Here substantial differences can be identified for the individual *Länder*, and for this reason the fundamentally different challenges do not emerge clearly from the overall results for Germany. In all, the number of births in 2007 was about 685,000, considerably less than a decade earlier (765,000 births in 1995).

III. Social cohesion

Equal opportunities

Promoting equal opportunities in society



Source: Federal Statistical Office

18 Wage difference between women and men

‘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 indicator of progress on the road to equality. In 2006 the gender pay gap was on average 22 %, which means that the average gross hourly wage for women with a working week of at least 15 hours and aged between 15 and 64 years was more than a fifth lower than that of men. The latest results (without taking the minimum weekly working hours or age into account) in fact show a pay

discrepancy of 24 % for 2006. For the previous years there is unfortunately no comparable data available. The Federal Government's goal is to aim for a reduction in the pay discrepancy to 15 % by 2010 and to 10 % by 2020.

Since 1995 the gender pay gap has scarcely changed. Should this trend continue, the goal set for 2010 will not be achieved.

Differences in pay between women and men — as also between other groups — are due to a number of factors, for example, the type of job exercised, professional experience and the position within a company. But activity in specific industries or in companies of differing sizes also plays a role, as do also differences in professional development.

Often women work in branches or professions with lower opportunities for earning. Sectors with a high percentage of female employees include for example the clothing industry, retail sales, and the health, veterinary 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 2006, for example, the gross monthly earnings of women with full-time employment in retail sales was 2,132 euros on average, while in vehicle manufacturing it was 3,157 euros. Men in these sectors on average earned 2,703 euros or 3,587 euros per month, respectively.

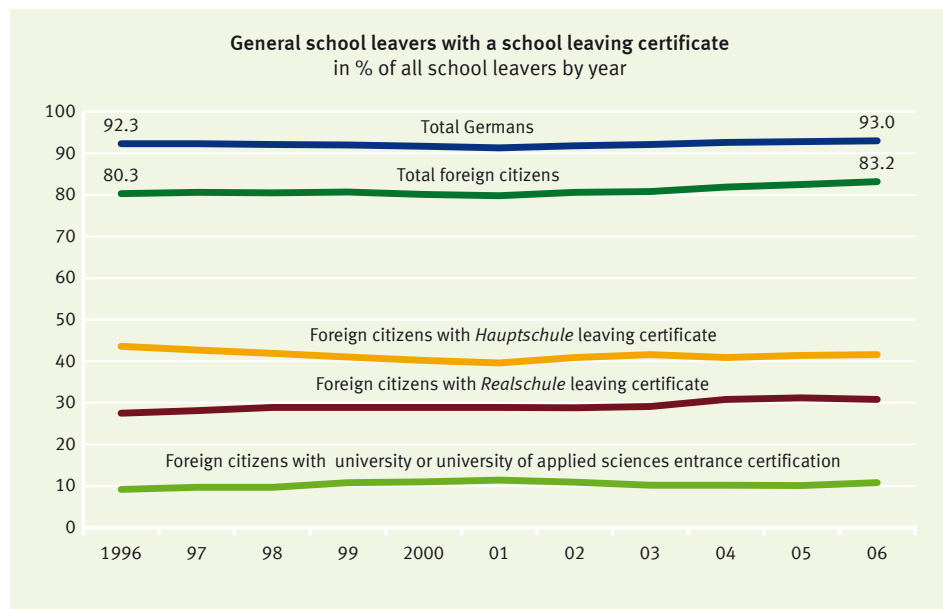
In the course of the last one and a half decades the formal qualifications of women have improved significantly (see indicators 9a and 9b). But even with the same formal qualifications, women often earn less. Differences in the career histories of men and women play an important role here. Women often 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 range of childcare facilities has also improved (see indicator 17), in West Germany at least it is 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.

III. Social cohesion

Integration

Integration instead of exclusion



Source: Federal Statistical Office

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 by 2020 of bringing this in line with the corresponding percentage of German pupils.

The indicator shows the percentage of foreign school leavers within one year who leave general schools with at least a *Hauptschule* certificate. During the period between 1996 and 2006 this percentage increased from 80.3 % to 83.2 % and thus represents progress for these young people. Nevertheless, in 2006 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 93.0 %. In view of the desired goal substantial efforts are still necessary, especially as at the same time efforts are being made 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 just under 42 % of the foreign school leavers from general schools achieved a *Hauptschule* certificate in 2006, 31 % achieved a certificate from the *Realschule*, and 11 % earned an advanced technical college entrance qualification or university entrance qualification. For Germans the corresponding figures were 23 %, 42 % and 28 %. Foreign young people are thus substantially under-represented in comparison to Germans, especially in terms of the higher level school leaving certificates. 16.8 % of foreigners did not achieve any school leaving certificate from general schools (the so-called 'drop out percentage'), in comparison to 7.0 % of German school leavers.

At the same time a better level of school education overall is evident for foreign young women in comparison to foreign young men. In 2006 only 13.5 % of young women leaving general schools had no school leaving qualification, whereas for foreign young men the figure was 19.8 %.

Besides school education, vocational qualification plays an important role in the integration of foreign fellow citizens into our society. In 2006 over half (51.4 %) of the 25- to 29-year-olds of foreign origin had no vocational certificates or university degrees. Some 45 % 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 23 % and 13 % respectively. While more foreign women than men achieved a school leaving certificate, for vocational training it was the other way round: 48 % of young foreign women aged 30 to 34 in 2006 had no vocational or university qualifications, compared to 42 % of young men of foreign origin.

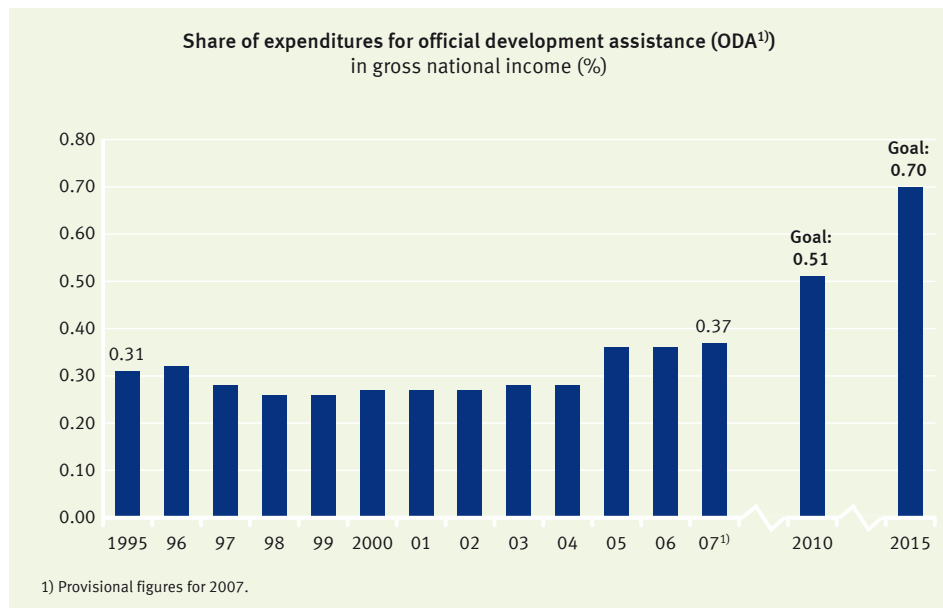
A sound knowledge of German is also of decisive importance for social integration. It is a prerequisite for leaving school with qualifications, as well as for participation in society generally. For this reason in 2005 integration courses for immigrants were introduced, which around 173,000 people had attended by 2007. Around 45 % of participants passed the final examination. The Federal Government is making efforts to increase participation in and successful completion of these courses in the coming years.

At the end of 2006 around 7.3 million inhabitants in Germany possessed a foreign passport, i.e. 8.8 % of the population. In the school year 2006/2007 around 898,000 foreigners attended general schools. 186,800 foreign pupils attended vocational schools. Thus the proportion of foreigners was 9.6 % in general schools and 6.7 % in vocational schools.

IV. International responsibility

Development cooperation

Supporting sustainable development



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 contribute 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 expenditures for the financial and technical cooperation with developing countries as well as contributions to multi-lateral institutions for development cooperation (such as United Nations, European Union, World Bank, regional

development banks). Furthermore, waivers of debt are also attributable to ODA along with the costs of specific development assistance provided in the donor country, such as costs of studying for students from developing countries or expenditure on development-specific research. Within the context of the UN International Conference on Financing for Development held in Monterey, the Federal Government undertook to contribute 0.33 % of its GNI for development work until 2006. This goal was taken over in the National Strategy for Sustainable Development. For the future, as a result of the joint commitment of the EU to incrementally increase the expenditure on 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 will be 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 2007 was 0.37 % and thus slightly higher than in the previous year (0.36 %). ODA payments stood at 8.96 billion EUR in 2007. If ODA payments remain at the level as in the last five years (up to 2007), the sustainability goal of contributing 0.51 % of GNI to development cooperation by 2010 will not be reached. Against this background the Federal Government has substantially increased these resources in 2008 and in the financial planning leading up to 2012.

Well over two-thirds of the expenditure for ODA in 2006 was used for technical or financial cooperation with selected partner countries, for food aid, development-oriented emergency and refugee aid and for waivers of debt. Non-governmental development cooperation was also supported (for example, non-governmental organisations, political foundations, church relief organisations, the private sector). The

remaining funds went to the UN, the EU, the World Bank or regional development banks.

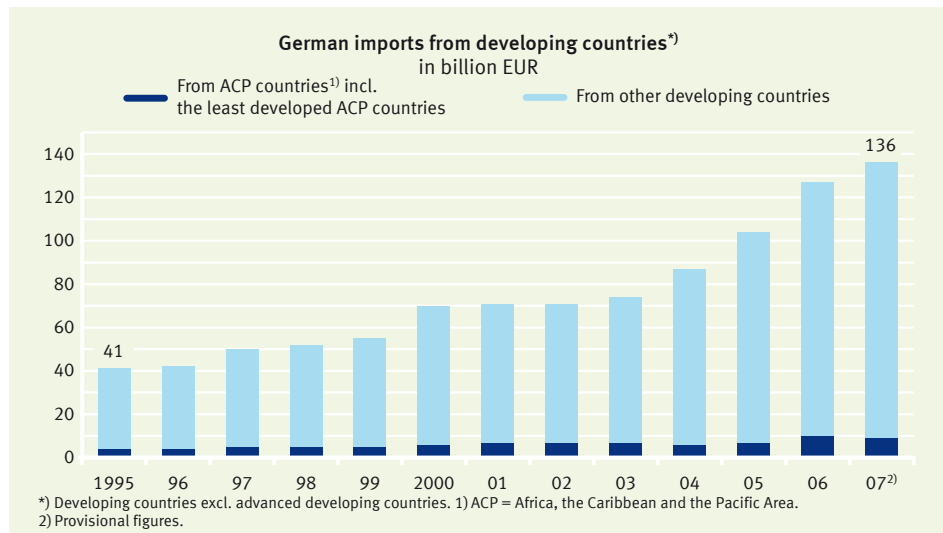
In an international comparison, in 2007 Germany was the second largest donor of ODA in absolute terms after the USA. Great Britain, France, and Japan followed. In relation to their GNI, however, it was primarily the smaller countries which contributed a higher proportion to development cooperation. In 2007 Norway, Sweden, Luxembourg, the Netherlands and Denmark 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 EUR a year. In 2005 it increased to around 1.2 billion EUR and in 2006 it was just short of 1.1 billion EUR, equivalent to a 0.05 % share of GNI (in 2006). Private direct investment in developing countries in 2006 amounted to 9.9 billion EUR.

IV. International responsibility

Opening markets

Improving trade opportunities for developing countries



Source: Federal Statistical Office

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 imports from the developing countries to Germany 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 in this.

At the end of the 1990s and again from 2004 imports increased markedly, from 41 billion EUR in 1995 to 136 billion EUR in 2007. This increase (+ 232 %) is considerably larger than the increase in total imports to Germany (+ 127 %). Thus the proportion of imports from developing countries to total imports between 1995 and 2007 increased from 12.0 % to 17.6 %.

Approximately 63 % of the imports from developing countries in 2007 came from Asiatic countries (including China), 15.4 % from Central and South America and 11.6 % 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 2007 the value of imports from China was around 55 billion EUR 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 2007, 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 2007). 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 EUR to 8.7 billion EUR between 1995 and 2007. Their share of the total German import market has however remained virtually the same and was 1.1% in 2007. The group of the fifty least developed countries (LDCs), which for the most part also belong to the ACP States, developed their share of imports from 0.37 % in 1995 to 0.43 % in 2007.

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 interesting to take a look at the groups of goods in which imports from developing countries took up an especially high percentage of total imports in 2006 (more than 25 %). These include agricultural and forestry products (35 % and 27 %), coal and peat (27 %), ores (65 %), textiles (39 %) and clothing (66 %), leather and leather goods (52 %), office equipment and data processing equipment (37 %), communications engineering, radios and televisions (32 %) as well as furniture, jewellery, musical instruments, sports articles and toys (35 %). In comparison to 1996 the 'market share' of the developing countries has increased in particular in the areas of textiles, clothing and leather, data processing hardware, telecommunications engineering, furniture, jewellery etc.

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 up to the last respective year of the 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 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 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 2007 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 the changed political, economic and other background conditions.







Note: No statistical trend is recognisable or calculable in the development of indicators 4 (Increase in land use for housing and transport), 5 (Species diversity and landscape quality), 9a (18- to 24-year-olds without a school leaving certificate), 11b (Intensity of passenger transport), 17a, b (All-day care provision for children) and 18 (Wage difference between women and men). The classification here suffers from major uncertainties.

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

No.	Indicator areas Sustainability axiom	Indicators	Goals	Status
7	Provision for future economic stability <i>Creating favourable investment conditions – securing long-term prosperity</i>	Gross fixed capital formation in relation to gross domestic product (GDP)	Increase in the share	
8	Innovation <i>Shaping the future with new solutions</i>	Private and public spending on research and development	Increase to 3 % of GDP by 2010	
9a	Education and training <i>Continuously improving education and vocational training</i>	18- to 24-year-olds without a school leaving certificate	Reduction in proportion to 9 % by 2010 and 4,5 % by 2020	
9b		25-year-old university graduates	Increase in proportion to 10 % by 2010 and 20 % by 2020	
9c		Share of students starting a degree course	Increase to 40 % by 2010, followed by further increase and stabilisation at a high level	
II. Quality of life				
10	Economic prosperity <i>Raising economic output by environmentally and socially compatible means</i>	Gross domestic product per capita	Economic growth	

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

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

No.	Indicator areas Sustainability axiom	Indicators	Goals	Status
17a	Perspectives for families <i>Improving the compatibility of work and family life</i>	All-day care provision for children (0- to 2-year-olds)	Increase to 30 % by 2010 and 35 % by 2020	
17b		All-day care provision for children (3- to 5-year-olds)	Increase to 30 % by 2010 and 60 % by 2020	
18	Equal opportunities <i>Promoting equal opportunities in society</i>	Wage difference between women and men	Reduce the difference to 15 % by 2010 and to 10 % by 2020	
19	Integration <i>Integration instead of exclusion</i>	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	
IV. International responsibility				
20	Development cooperation <i>Supporting sustainable development</i>	Share of expenditures for official development assistance in gross national income	Increase to 0.51 % by 2010 and 0,7 % by 2015	
21	Opening markets <i>Improving trade opportunities for developing countries</i>	German imports from developing countries	Further increase	

Definitions of the indicators

No.	Indicator (Unit)	Definition
1a	Energy productivity (Index, 1990 = 100)	Energy productivity = gross domestic product/primary energy consumption. Energy productivity is the amount of primary energy (expressed in petajoules) used to generate one unit of gross domestic product (in EUR billion, adjusted for price).
1b	Raw material productivity (Index, 1994 = 100)	Raw material productivity = gross domestic product/expenditure of biotic primary (raw) materials. Raw material productivity is the quantity of abiotic primary materials (in tonnes) used to produce one unit of gross domestic product (in EUR billion, adjusted for price). 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 ₂ O), partly halogenated hydrofluorocarbons (HFC), perfluorocarbons (PFC) and sulphur hexafluoride (SF ₆). The base year is 1990 for CO ₂ , CH ₄ , N ₂ O and 1995 for HFC, PFC, and SF ₆ . Calculations are based on the database Zentrales System Emissionen (Central System of Emissions - ZSE) of the Federal Environment Agency taking additional statistical energy information into account.
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, hydro-power, wind power, photovoltaics, solar energy and geothermal energy, and also 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)	<p>Average daily increase in land use for housing and transport. This average is determined by the division of the increase in land use for housing and transport (in hectares) in a specific period of time (one year or four years) by the number of days (365/366 or 1 461). The moving four-year average is determined in each case by the development of the land use for housing and transport in the relevant and the previous three years.</p> <p>As the data for a single year are currently influenced by external effects (the public land surveys are being reorganised), the moving four-year average provides a better picture of the long-term developments.</p>
5	Species diversity and landscape quality (Index, 2015=100)	<p>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 (a percentage of the target value). The total index is calculated from the level of target achievement.</p> <p>The indicator is based on the development of stocks of 59 selected bird species that 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 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.</p>
6	National deficit (%)	Public spending minus revenue (at the level of the Federal Government, the <i>Länder</i> , municipalities and social security) expressed as a percentage of the gross domestic product.
7	Gross fixed capital formation in relation to gross domestic product (GDP) (%)	<p>Ratio of gross fixed capital formation to gross domestic product (adjusted for price).</p> <p>Investments in fixed capital assets include 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).</p>

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 GDP.
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 <i>Sekundarstufe I</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 counted among those who are early school leavers. People with and without a leaving certificate from a <i>Hauptschule</i> (the lowest of the three-tiered German secondary school system) are also included.
9b	25-year-old university graduates (%)	Percentage of 25-year-olds (of all 25-year-olds) who have completed a university degree.
9c	Share of students starting a degree course (%)	Number of first-semester students (from Germany and abroad, enrolled at institutions of higher education, excluding universities of applied administrative sciences) expressed as a percentage of the population of the appropriate university-entrance age. The indicator discloses 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)	GDP (price adjusted) 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. In addition to the freight transport performance, energy efficiency is considered (absolute energy consumption and energy consumption per tonne kilometre).
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. In addition to the passenger transport performance, energy efficiency is considered (absolute energy consumption and energy consumption per passenger kilometre).
11c, d	Share of rail 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 = nitrogen input (mostly via fertilisers and animal feed, biological N-fixation, atmospheric deposition and seeds) minus nitrogen output (through crop and animal market products) in kilogram per hectare of land used for agriculture. The aggregate amounts of nitrogen used that did not leave the agricultural sector in the form of agricultural products are included in the balance for the calendar year calculated using the 'farm-gate model'. The moving three-year average was calculated from the total balance in the given year, the previous year and the following year.

No.	Indicator (Unit)	Definition
12b	Organic farming (%)	Share of the agriculturally used land of organically producing farms that is subject to the inspection system of the EU Regulation on Organic Farming (Council Regulation (EEC) No 2092/91) in the total land used agriculturally in Germany. The indicator includes both the areas that have been converted to organic farming and those in the process of being converted.
13	Air pollution (Index, 1990=100)	The following substances or substance classes are considered to be air pollutants for the purpose of this indicator: sulphur dioxide (SO ₂), nitrogen oxides (NO _x), ammonia (NH ₃), non-methane volatile organic compounds (NMVOC). Unweighted average of the indices of the four air pollutants.
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 occasionally or regularly smoke, expressed as a percentage of the polled persons of the appropriate age group.
14e	Proportion of obese people (%)	Proportion of obese adults (18 years and older) in the population of the same age. Under the WHO system, a body mass index (BMI) of 30 or greater is considered obese. BMI is the weight divided by the height squared. 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 the age of 15 and 64 years (16a) and between 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).
18	Wage difference between women and men (%)	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 public schools with school leaving certificates (at least the <i>Hauptschule</i> certificate) in all foreign school leavers in the year under survey.

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 expenditures for the financial and technical cooperation with developing countries as well as contributions to multilateral institutions for development cooperation (such as 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 expenditures 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.

