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# Sustainability Barometer 2011

## Headline Indicators

On the Way to a Sustainable Austria



# NACHHALTIG FÜR NATUR UND MENSCH SUSTAINABLE FOR NATURE AND MANKIND

## Lebensqualität / *Quality of life*

Wir schaffen und sichern die Voraussetzungen für eine hohe Qualität des Lebens in Österreich.  
*We create and we safeguard the prerequisites for a high quality of life in Austria.*

## Lebensgrundlagen / *Bases of life*

Wir stehen für vorsorgende Erhaltung und verantwortungsvolle Nutzung der Lebensgrundlagen Boden, Wasser, Luft, Energie und biologische Vielfalt.  
*We stand for a preventive preservation and responsible use of the bases of life, soil, water, air, energy, and biodiversity.*

## Lebensraum / *Living environment*

Wir setzen uns für eine umweltgerechte Entwicklung und den Schutz der Lebensräume in Stadt und Land ein.  
*We support an environmentally benign development and the protection of living environments in urban and rural areas.*

## Lebensmittel / *Food*

Wir sorgen für die nachhaltige Produktion insbesondere sicherer und hochwertiger Lebensmittel und nachwachsender Rohstoffe.  
*We provide for the sustainable production in particular of safe and high-quality foodstuffs and of renewable resources.*

### **Impress**

according to the Media Act, Federal Law Gazette No. 314/1981, as amended by Federal Law Gazette No. 49/2005.

**Media owner and producer:** Federal Ministry of Agriculture, Forestry, Environment and Water Management, Stubenring 1, A-1012 Vienna, Austria.

**Published and produced in:** Vienna

**Editors:** "Indicators Working Group" of the Committee for a Sustainable Austria in agreement with the Sustainability Coordinators of the Federal Provinces.

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**Printed on environmentally friendly paper and using eco-friendly ink**

**Translated by:** Mirjam Freund, Federal Ministry of Agriculture, Forestry, Environment and Water Management, and Brainstorm Translation & Interpretation

**Status:** Mid of April 2011

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Foto: BMLFUW / Newman

## On the Way to a Sustainable Austria

Austria has set itself the goal of sustainable development. Economic wealth and quality of life for everyone should be reached on the basis of an intact living environment, as well as of a responsible role of Austria in Europe and in the world. The goal in this context is to safeguard the quality of life for future generations.

Much attention is paid to economic growth by monitoring the gross domestic product but wealth is also determined by questions such as distribution of goods, health and environmental quality.

The 26 indicators presented in this brochure cover the most important fields for quality of life, well-

being, Austria's relation to the world, and fitness for the future. The development of these indicators provides like a barometer an indication of the further development and shows where we are on the way towards sustainable development. The overall picture provides a deeper insight and can thus constitute the basis for political decisions.

The Ministry of life takes in its own field many concrete initiatives, by which a sustainable agricultural and forestry production is strengthened, measures for clean water and environmental protection or measures for rural development. We are jointly on the way towards a sustainable Austria.

*DI Niki Berlakovich  
Minister of Agriculture and Environment*

## Survey of theme areas and selected headline indicators for the monitoring of sustainable development:

Theme areas	Headline Indicators
<i>Intra- and intergenerational justice</i>	GE 1 Inequality of income distribution (top/lowest quintile)
<i>International justice</i>	IG 1 Official Development Assistance (ODA)
<i>Freedom</i>	FH 1 Authoritarianism index
<i>Peace and security</i>	FS 1 At-risk-of-poverty-rate before and after social transfers
<i>Governance and participation</i>	GP 1 Level of Austrians' confidence in institutions
<i>Health and well-being</i>	GW 1 Healthy life years at birth
<i>Nutrition</i>	ER 1 Body mass index
<i>Welfare</i>	WO 1 GDP per capita
<i>Work</i>	AR 1 Total unemployment rate by age, gender, and highest level of education
<i>Leisure</i>	FZ 1 <i>Satisfaction with leisure time organisation</i> FZ 1a <i>Compatibility of work and family life</i>
<i>Living and living space</i>	WS 1 <i>Close social and functional mixing</i>
<i>Mobility</i>	MO 1 Access of population to mobility
<i>Culture and art</i>	KK 1 Public expenditure on cultural activities
<i>Education and research</i>	BF 1 Youth education attainment 20-24
<i>Climate</i>	KL 1 Greenhouse gas emissions
<i>Air</i>	LU 1 Exceedances of the limit value for PM10
<i>UV radiation</i>	ST 1 UV radiation intensity
<i>Ionising radiation</i>	
<i>Energy and material flows</i>	ES 1 <b>Energy consumption absolute and relative to GDP</b> (gross domestic energy consumption and final energy consumption)
	ES 2 <b>Material input (DMC and DMI)</b>
<i>Landscape</i>	LA 1 <i>Landscape changes</i>
	LA 1a <b>Changes in use of land (forests, grassland/arable land)</b>
<i>Ecosystems</i>	ÖK 1 <b>Bird species groups and orchids as indicators of habitat quality</b>

Theme areas	Headline Indicators
<b>Water</b>	<b>WA 1</b> <i>Quality of surface water (ecomorphology)</i> <b>WA 1a</b> <b>Bodies of running water: ecological and chemical condition</b>
	<b>WA 2</b> <b>Groundwater quality</b>
<b>Soil</b>	<b>BO 1</b> <i>Use of soil</i> <b>BO 1a</b> <b>Percentage of sealed land</b>
	<b>TS 1</b> <i>Chemicals Index</i> <b>TS 1a</b> <b>Consumption of specific materials</b>
<b>Noise</b>	<b>LÄ 1</b> <b>Noise pollution</b>

Indicators in italics:

are "best needed" indicators but facing problems of definition, data availability or data quality.

An "a" in the indicator number:

means that the indicator is "best available" rather than "best needed".

To provide a more comprehensive description of the development observed, 56 further indicators were selected. These are illustrated at <http://www.nachhaltigkeit.at/article/archive/25773> and in the Indicator Report MONE 2011. You can download this report and the brochure at <http://www.umwelt.net.at/article/articleview/43294/1/7384/>.

## Assessment of trends:

The economic and financial crisis which broke out in 2008 has had marked impacts in many fields. A comparison with other European countries shows that Austria has managed this difficult phase well. However, trends are different in the individual fields.

A positive trend is observed for many topics of the social sector, such as healthy life expectancy, education and the expenditure on research and cultural activities.

In some fields the economic and financial crisis caused a slump of the positive trends. The unemployment rates rose only temporarily in 2009 and went down again in 2010. Due to the economic situation the GDP declined in 2009, people's purchasing power slightly decreased in EU comparison, but is above the EU average. Household income has continuously risen and the inequality of income earned by different groups (men and women as well as top- and lowest-income households) has been reduced.

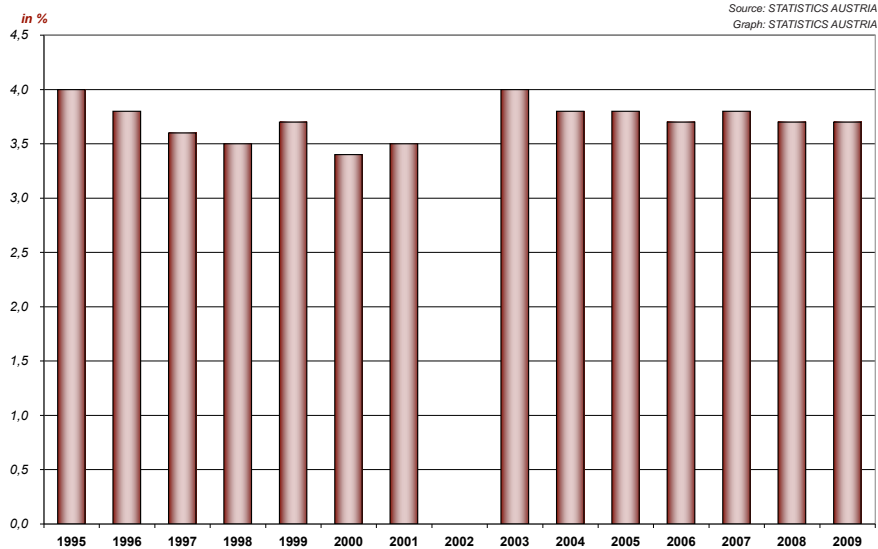
There are some areas where it has not yet been possible to reverse the rising trends, such as resource consumption, soil sealing or greenhouse gas emissions, which were temporarily damped by the economic crisis. Additional efforts are needed to attain the objectives set for these fields.

It is striking how certain aspects are perceived by the Austrians. The feeling of security decreased; employees consider their perspectives to be unfavourable although the situation on the labour market eased and, finally, the share of people who rather perceive themselves as being overburdened by freedom has risen.

A trend unconnected with the economic and financial crisis, but striking, is the rising body-mass-index in all age groups of the population, which is contrasted by higher sales of high-quality food (organic, fair trade).

## GE 1 Inequality of income distribution (top/lowest quintile)

Inequality of income distribution (top/lowest quintile) 1995 – 2009



2002: Interruption and new survey as of 2003

**Data source:**

Statistics Austria, EU-SILC 2009

**Definition:**

This indicator gives the ratio of the total income of the top 20% (top quintile) of the population with the total income of the bottom 20% (lowest quintile). Income is defined for these purposes as the available equivalised income: The equivalised income is calculated by dividing the disposable household income by the weighted number of household members. The weightings are calculated on the basis of the EU scale: first adult = 1.0; every further person 14 years or older = 0.5; children aged 0-13 years = 0.3.

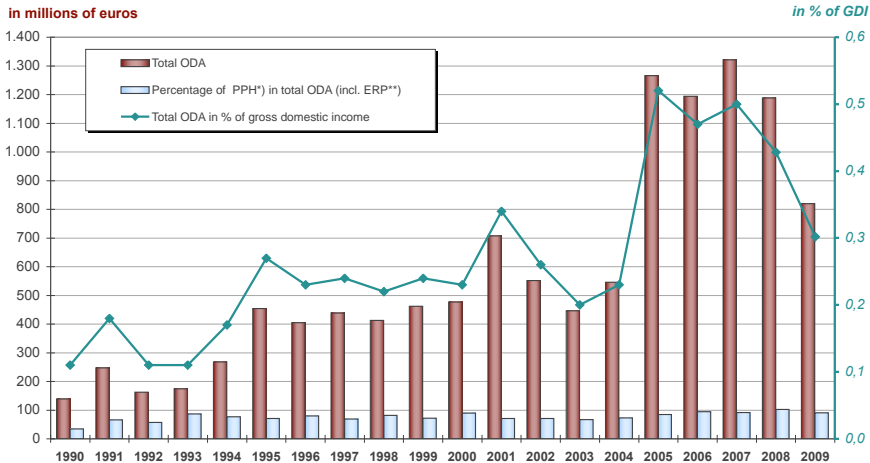
The inequalities in equivalised household incomes have become smaller from 1995 to 2001. The equivalised income of the top income quintile was 4 times in 1995 and 3.5 times higher in 2001 than that of the lowest income quintile. In 2003, the indicator was calculated on the basis of the

new EU-SILC system for the first time, giving a value of 4.0. In the following years the values ranged from 3.7 to 3.8, thus showing great constancy. Inequalities in income are smaller in Austria than in the EU average (2009 EU-27 and EU-15: 4.9).



## IG 1 Official Development Assistance (ODA)

### Official Development Assistance 1990 – 2009



\*) Project and programme assistance – bilateral core programme/Austrian Development Agency  
 \*\*) ERP: European Recovery Programme – funds from the ERP endowment

Source: Austrian Foreign Ministry, STATISTICS AUSTRIA  
 Graph: STATISTICS AUSTRIA

With reference to the “national scope of discretion” it should be noted that the form taken by the development policy is to a considerable extent constrained by the core budget for development cooperation which has been administered by the Austrian Development Agency (ADA) since 2004. This part of the budget is shown separately in the data series (as a proportion of the overall ODA). The Department for Development Cooperation in the Federal Ministry for European and International Affairs is responsible for

#### Data sources:

Statistics Austria, Austrian Foreign Ministry

#### Definitions:

The ODA ratio (public development assistance as a percentage of the gross national income) is calculated in accordance with the guidelines agreed to by the Development Assistance Committee (DAC) of the OECD.

Not all financial flows from industrial nations to the developing countries, which may ultimately benefit the economic development of the receiving country, are considered to be development assistance (e.g., direct investments, export credit flows, etc.).

The data presented corresponds to the ODA values reported by Austria – in accordance with the regulations – to the OECD/DAC.

the strategic targets.

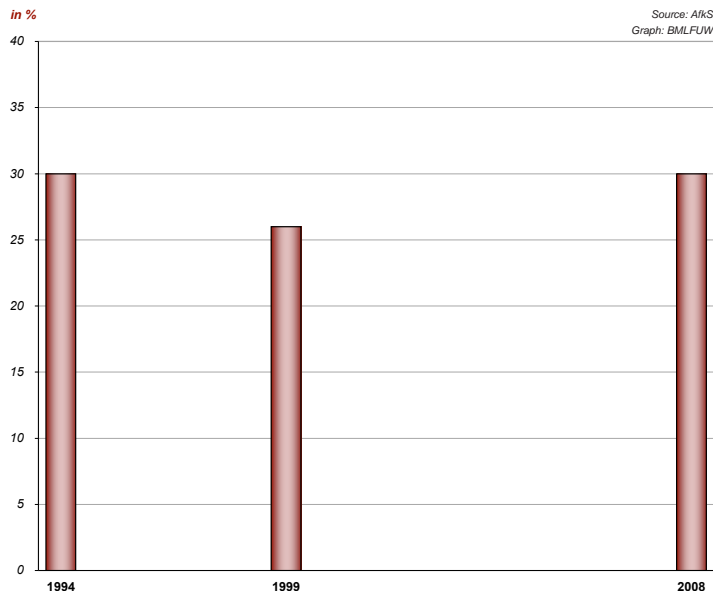
The ODA funds which lie beyond the scope of this core budget are frequently determined by other factors and not so much by the actions under the development policy itself. In the area of the multilateral ODA, for instance, there are peaks and troughs caused by the rhythm of fund replenishment or the capital stock increases of multilateral providers. In the case of refugee assistance, disaster relief and reconstruction aid, longer-term budget planning is virtually impossible. With respect to debt relief – which in many years can amount to a considerable proportion of the ODA – multilateral processes in the Paris Club are

of the ODA – multilateral processes in the Paris Club are decisive. In this context, the significance of the indicator ODA ratio is limited.

In the framework of the EU Austria has committed itself to take all possible efforts to achieve the UN goal to provide 0.7 % of its gross national income for official development assistance by 2015. In 2009 Austria attained an ODA ratio of 0.30 %.

## FH 1 Authoritarianism index

### Authoritarianism index 1994 – 2008



“Authoritarianism is a basic psychological pattern, a character structure. It describes a basic stance that is reflected in day-to-day actions, attitudes, values, etc. It also refers to an image of society that – to put it crudely – says: “The person on top is right.””

“... Authoritarianism is based not only on primary socialisation but is also a reaction of certain personality types to insecurity. This stance tends to be found among people with a disequilibrium between the challenges of

#### Data source:

Working Group for Church Social Research (AfkS)

#### Definition:

As part of the European Values Study, a survey is being carried out into political, religious and moral views and attitudes to the family. The responses to 5 questions are used to calculate the authoritarianism index:

- Where there is strong authority, there is justice.
- Security and prosperity are more important than freedom.

- People should not have a say and a right to participate in decision-making until they have achieved a position through hard work.
- The meaning of life is to assume a respected position.
- The most important thing that children have to learn is obedience.

The degree of agreement with these items is rated on a scale from 1 to 5, where 1 indicates complete agreement and 5 indicates complete rejection.

The Index shows the percentage of individuals who answered 1 or 2 to the four questions.

life and their skills to cope with existence: They perceive themselves as overburdened, see too much risk in their freedom ...”

“For the standpoint of social psychology, authoritarianism seems to indicate the need for protection of an individual who strives to reduce the complexity of confusing situations through simplification.” (From “Die Konfliktgesellschaft – Wertewandel in Österreich 1990 – 2000” [The Society of Conflict; Changes of values in Austria from 1999 to 2000]; DENZ, FRIESL, POLAK, ZUBA, ZULEHNER).

A decrease in the authoritarianism index still does not immediately imply that individuals are making responsible use of freedom.

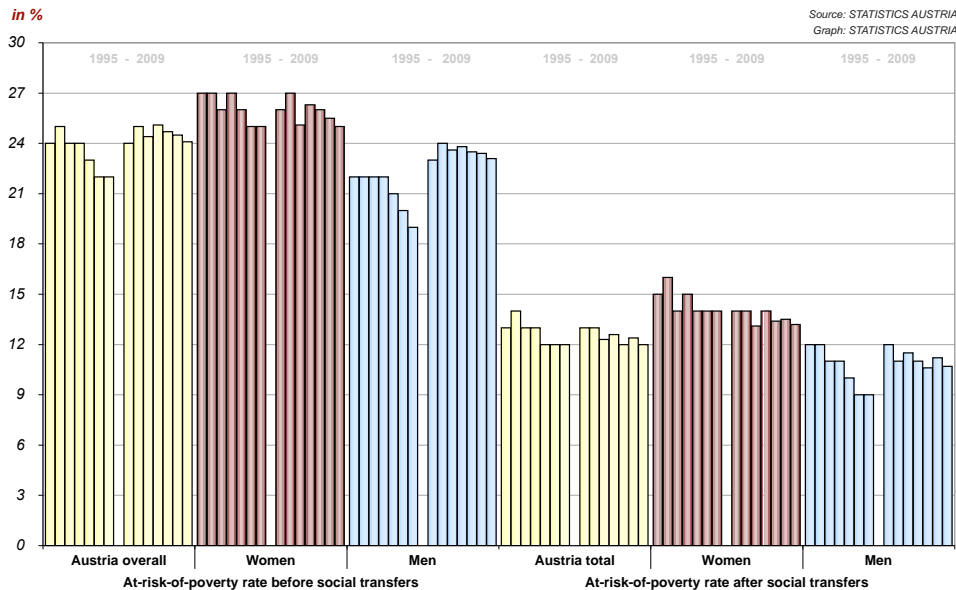
After the decrease in the authoritarianism observed in 1999, a certain fall-back effect to the higher level of authoritarianism of the year 1990 occurred in 2008.

There is a statistical correlation with age and the level of education: With a rate of 40 %, persons older than 60 prove to be more authoritarian than those under 30 (25 %). Among people without school-leaving qualification, the share is 54 %, compared to university graduates with 11 %.

In regional terms most “authoritarians” are found in Vienna (39 %), Carinthia (37 %) and Upper Austria (37 %), the fewest in Salzburg (18 %) and Tyrol (14 %).

## FS 1 At-risk-of-poverty rate before and after social transfers

### At-risk-of-poverty rate before and after social transfers 1995 – 2009



**Data source:**

Statistics Austria, EU-SILC 2003-2009.

**Definitions:**

Comparison of the proportion of population below the at-risk-of-poverty threshold before and after social transfers

**a) at-risk-of-poverty rates before social transfers – total**

Share of persons with an equivalised disposable income, before social transfers, below the risk-of-poverty threshold, which is set at 60 % of the national median equivalised disposable income (after social transfers). Retirement and survivor's pensions are counted as income before transfers and not as social transfers.

**b) at-risk-of-poverty rates after social transfers – total**

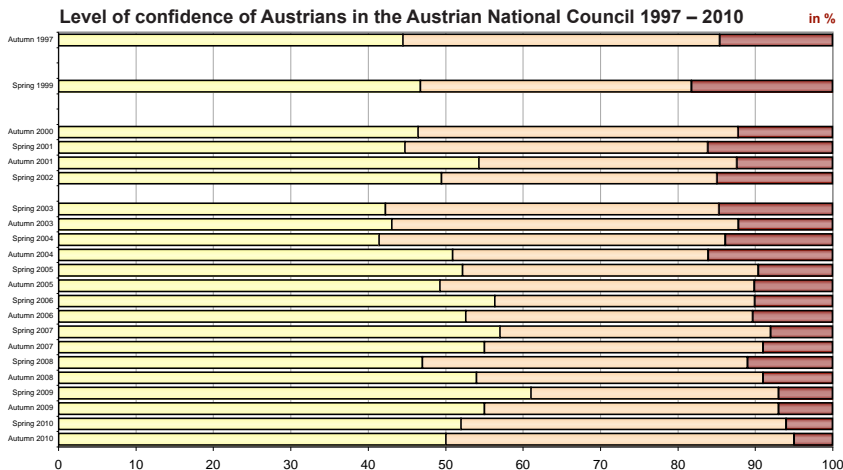
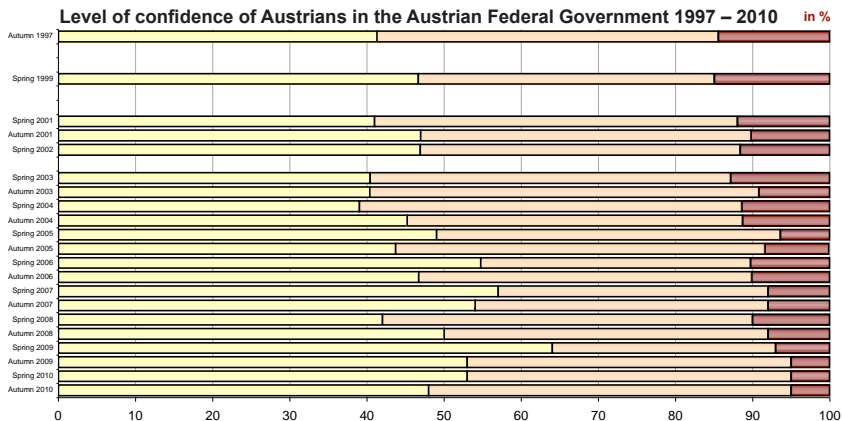
Share of persons with equivalised disposable income below the risk-of-poverty threshold, which is set at 60 % of the national median equivalised disposable income (after social transfers).

Since 2005 the at-risk-of-poverty rate has been approximately 12 %. In 2009 the rate for women was with 13.2 % higher than that of men, which was 10.7 %. The at-risk-of-poverty rate of the EU-27 was 16.3 % (women 17.1 %, men 15.4 %) in 2009.

The social benefits (not including pensions) cut the at-risk-of-poverty rate by half from 24 % to 12 %.

# Headline Indicator “Governance und participation”

## GP 1 Level of Austrians’ confidence in institutions

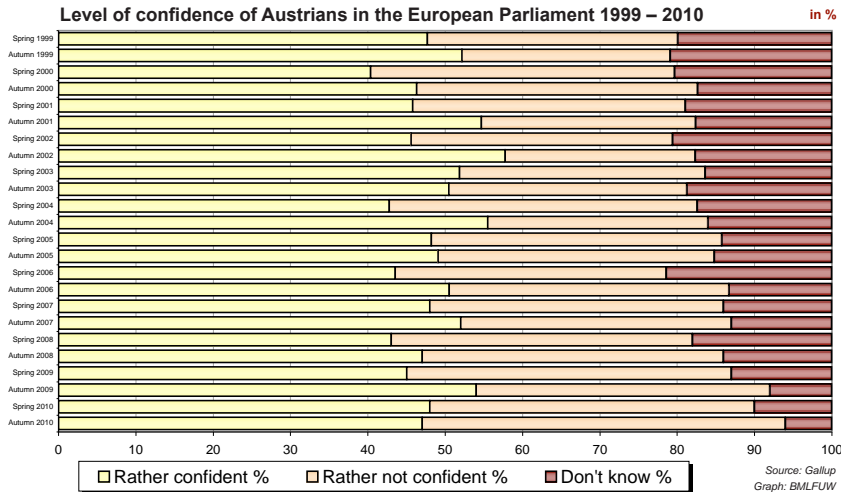


**Data sources:**

The European Commission’s Eurobarometer, carried out in Austria: since autumn 2004 Austrian Gallup Institute, previously GfK Austria

Data from the Austrian Gallup Institute and WISDOM (Vienna Institute for Social Science Documentation and Methodology)

## Headline Indicator „Governance und participation“



The surveys in the context of the Eurobarometer investigations are carried out twice yearly with about 1 000 people. The questions on confidence in the national institutions of the Federal Government and the Austrian National Council were not included in every survey. The data shows that there is more confidence in the Austrian Parliament than in the European Parliament. Comparison of the Austrian institutions also reveals greater confidence in the Austrian National Council than in the Federal Government.

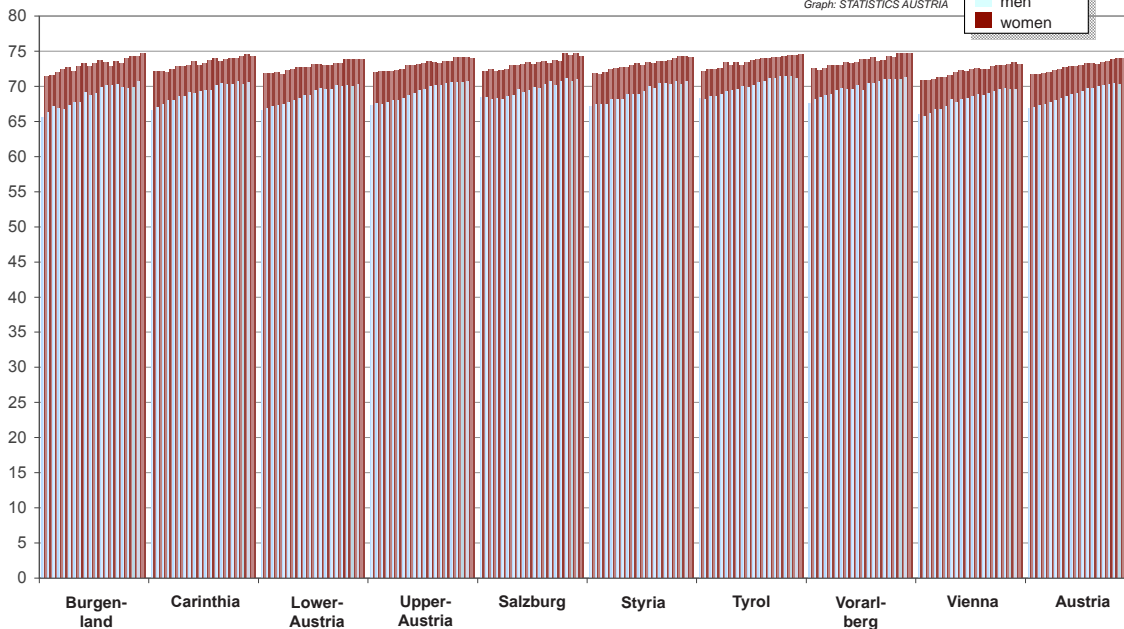
An interpretation of the fluctuations is difficult, but one also needs to bear in mind the uncertainty of the findings which are dependent on the size of the sample: with a sample size of 1 000, the observed percentages and their confidence limits are, respectively: 10 % or 20 %,  $\pm 1.9$  %; 20 % or 80 %,  $\pm 2.5$  %; 30 % or 70 %,  $\pm 2.7$  %; 40 % or 60 %,  $\pm 3.0$  %; and 50 %,  $\pm 3.1$  %.

## GW 1 Healthy life years at birth

Healthy life years at birth by Federal Provinces and sex 1991 – 2009

Life expectancy in years

Source: GÖG-ÖBIG, STATISTICS AUSTRIA  
Graph: STATISTICS AUSTRIA



### Data source:

Statistics Austria – Cause of Death Statistics 1991-2009, Micro-census special programmes “Questions on Health” 1991 and 1999, Questionnaire on Health in Austria 2006/2007; GÖG/ÖBIG (Gesundheit Österreich GmbH. -Österreichisches Bundesinstitut für Gesundheitswesen)– own calculations

### Definitions:

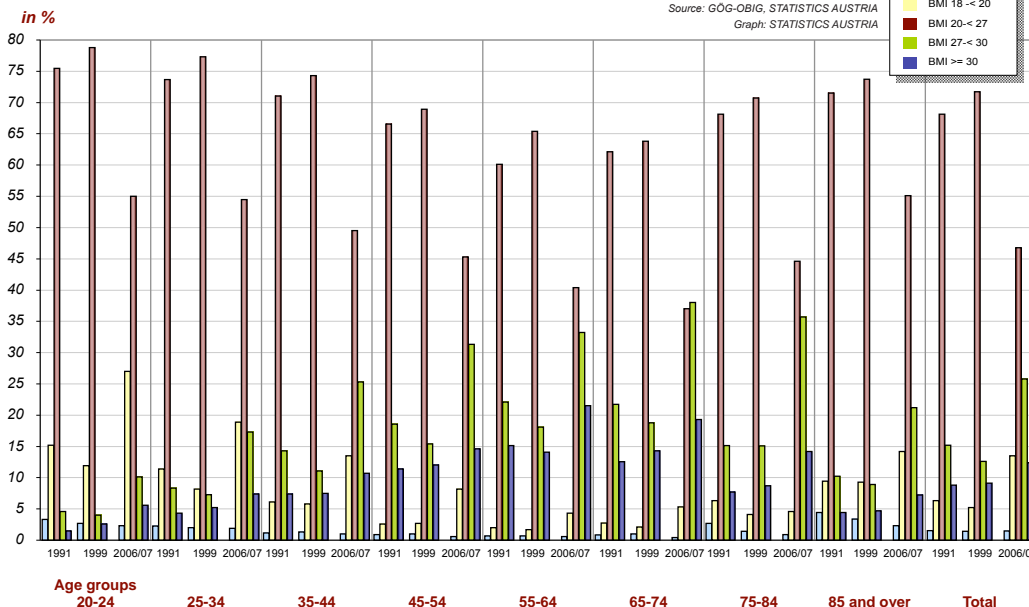
The indicator is based on life expectancy, which is derived from the population trend. “Good health” is rated on the basis of the following question: “How is your general state of health?” The possible responses are: very good, good, average, poor, very poor, no comment.

The Austrian population’s life expectancy is constantly rising, with men’s life expectancy below that of women’s, though the gap has narrowed somewhat in recent years. The highest life expectancy is enjoyed by inhabitants of the Federal Provinces of Tyrol and Vorarlberg, the lowest in

Vienna. The reasons for this discrepancy are not clear, though it is a well known fact that the proportion of persons with health risk factors (e.g. overweight) is lower in the western Federal Provinces than in the eastern Federal Provinces.

## ER 1 Body mass index

### Body mass index by age group 1991, 1999 and 2006/07



#### Data source:

Statistics Austria - Micro-census 1991, 1999; GÖG-ÖBIG (Gesundheit Österreich GmbH. -Österreichisches Bundesinstitut für Gesundheitswesen) 2007

#### Definition:

The body mass index (BMI) is calculated from weight and height:

$BMI = \text{body weight} / (\text{body size})^2$  [in kg/m<sup>2</sup>].

The body mass index shows whether a person is of normal weight, overweight or underweight. Since 1998, the WHO (World Health Organisation) has defined a BMI from 18.5 to under 25.0 as normal weight, a BMI below this as underweight, a BMI above 25.0 to under 30 as overweight, and a BMI of 30 or more as obese.

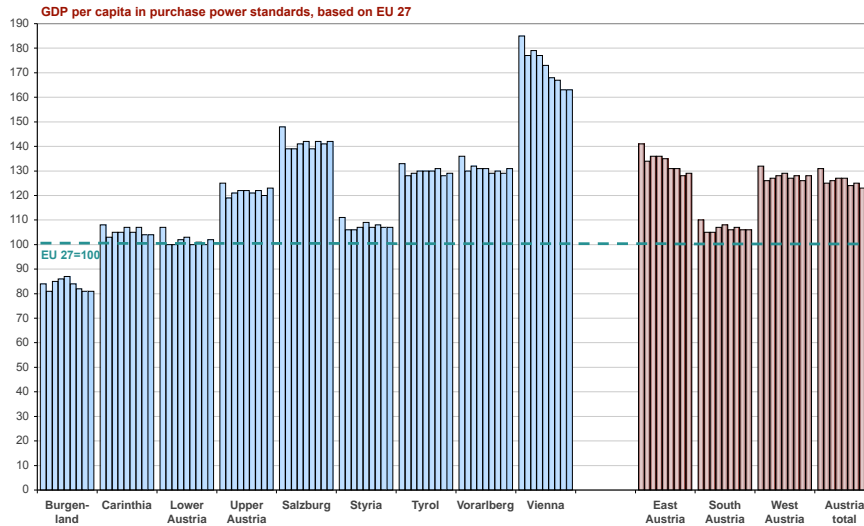
The illustration still refers, however, to the previous definition, according to

which only a BMI of 27 and more was classified as overweight. Nevertheless one can see that between 1991 and 2006/2007 the percentage of overweight and obese persons has increased in all age groups.

Obesity is considered a significant risk factor for the development of cardiovascular disease, diabetes mellitus and other disorders.

## WO 1 GDP per capita

### Regional GDP per capita in purchase power standards 2000 – 2008



Source: European Commission, EU Economic Policy Committee, Eurostat, WIFO  
Graph: STATISTICS.AUSTRIA

#### Data source:

Eurostat, European Commission, Austrian Institute of Economic Research (WIFO)

#### Definitions:

GDP is the measure of the economic activity of a national economy and is defined as the total income from newly created goods and services (less the total expenditures on goods and services purchased as intermediate input). The GDP is thus an indicator of a country's economic welfare.

This welfare indicator is defined as “GDP per capita”, i.e. GDP divided by the total number of persons living in the country, thus establishing a relationship between economic and population growth. GDP is given here in purchasing power parities: purchasing power parity is the measured value for an exchange rate in equilibrium which eliminates differences in price levels between countries in order to ensure international comparability.

The indicator refers to the average GDP of all the EU Member States (= 100). This data is based on the „NUTS“ system of territorial units (Nomenclature des unités territoriales statistiques; NUTS 1: East, South, West Austria; NUTS 2: federal provinces). This system provides a uniform and coherent breakdown of territorial units to produce regional statistics for the European Union.

In recent years, Austria has been able to maintain its good overall position in the EU comparison of GDP per capita. With an index value of 124 in 2007, Austria was markedly above the EU-27 average (on the NUTS

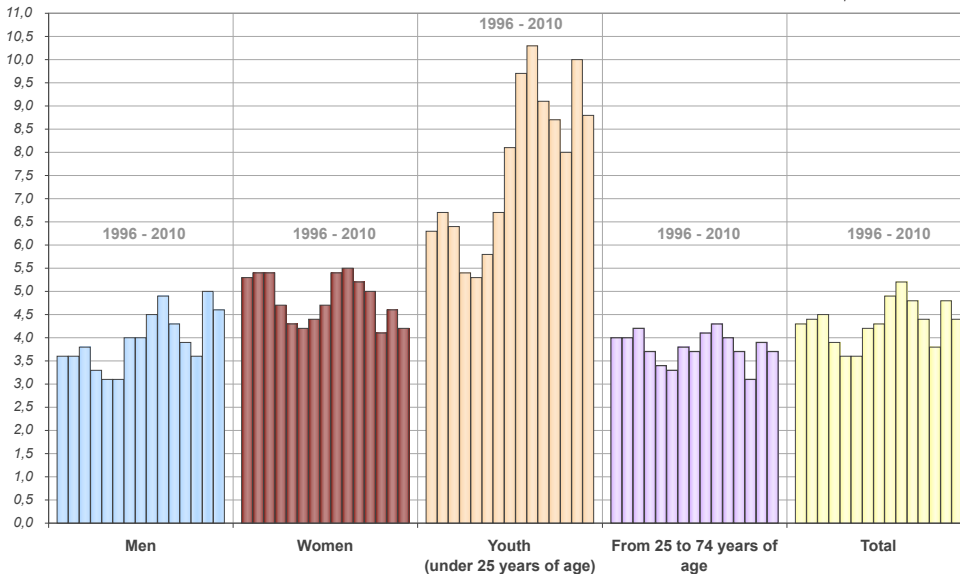
basis). In Austria in 2008, Burgenland had the lowest index value of 81 and Vienna the highest with 163.



## AR 1 Total unemployment rate by age, gender, and highest level of education

### Unemployment rates 1996 – 2010

in %



2004: Time series interruption

**Data source:**

Eurostat, structural indicators, New Cronos database

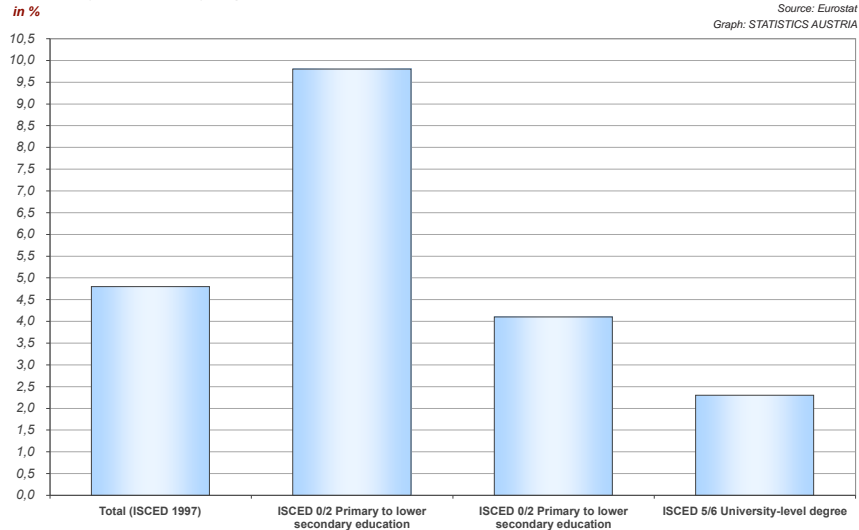
**Definition:**

According to EUROSTAT, the unemployment rate is based on the number of unemployed persons aged 15 to 74 as a percentage of the total labour force of the same age bracket. The number of persons in the labour force is the sum total of those in employment (employed or self-employed) and the unemployed.

The unemployed are persons outside of institutional households aged between 15 and 64 who are unemployed, are available to take on a job within the next two weeks, and are looking for employment (i.e. have been actively seeking work during the previous four weeks or are no longer looking for a job because they have already found work which they will commence in three months at most).

## AR 1 Total unemployment rate by age, gender, and highest level of education

### Unemployment rate by highest level of education 2009



The unemployment rate in Austria fell significantly in 2010. In international comparison, Austria with 4.4 % had the lowest unemployment rate in the EU-27 area, followed by the Netherlands (4.5 %) and Denmark (4.7 %). The rate for the EU-27 area was 9.6 %. The Austrian 2010 rate was by 0.4 percentage points lower than in 2009, with the unemployment rate for women, which fell by -0.4 percentage points to 4.2 %, declining to the same extent than the men's rate, which fell by -0.4 percentage points to 4.6 %.

The youth unemployment rate fell in 2010 by 1.2 percentage points to 8.8 %, the drop for young males was 1.6 percentage points (8.9 %), and for young

females 0.6 percentage points (8.8 %). This made Austrian youth unemployment the second lowest in the EU-27 area, excelled only by the Netherlands (8.7 %). The average for the EU-27 area was 20.7 %.

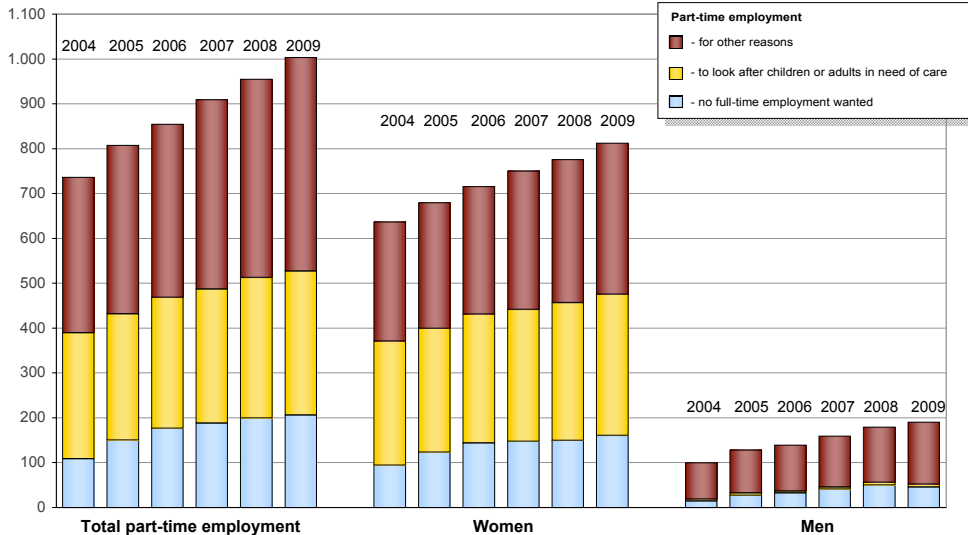
Unemployment after the completion of formal education shows that the less qualified are generally subject to a greater risk of being unemployed. Whereas the unemployment rate for those who have completed compulsory education was 9.8 % in 2009, it was 2.3 % for university graduates.

## FZ 1a Compatibility of work and family life

### Part-time employment 2004 – 2009

Number in 1 000s

Source: STATISTICS AUSTRIA  
Graph: BML/FUW



**Data source:**

Micro-census labour force surveys of Statistics Austria 2004, 2005, 2006, 2007, 2008 and 2009

**Definition:**

Labour force concept, allocation to the category ‘Part-time employment’ on the basis of the self-classification of those responding. Population in private households does not include recruits or persons performing alternative national service.

In the context of the survey, persons who say they work part-time are asked for the reasons of that type of occupation. In response, various possible explanations are given, such as looking after children or adults in need of care, other personal or family reasons, school, vocational training or continuing education, illness and other reasons. Other possible reasons quoted are not wanting full-time work or not being able to find any.

In the context of sustainable development, the objective of achieving the highest possible measure of quality of life in the theme area of “Leisure”

can be expressed for example by the level of satisfaction with leisure time organisation. The compatibility of work and family life is playing an important role in this context.

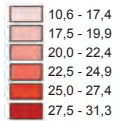
The graph shows that the proportion of those with part-time jobs is increasing and that about 81 % of the part-time employees are women. The recorded variations between men and women reflect – as is also shown by the indicator AR 4a “Housekeeping, childcare, and other forms of care” – role differentiation in Austrian society.

# Headline Indicator “Living and living space”

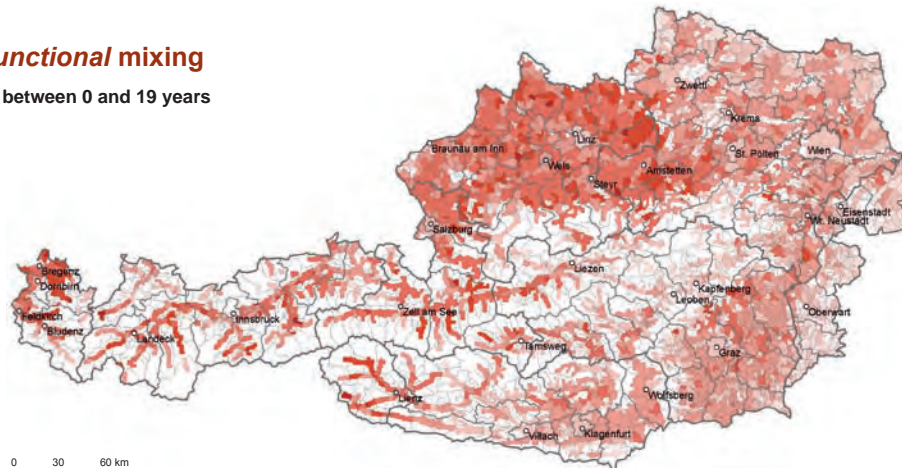
## WS 1 Close social and functional mixing

Population on 1st January 2011 aged between 0 and 19 years

Percentage of the population aged 0 to 19 years



Preliminary results



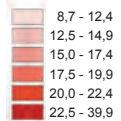
— Boundaries of municipalities  
 □ Forest, alpine pastures, wasteland

**Data source:**  
 Statistics Austria;  
 Population Statistics

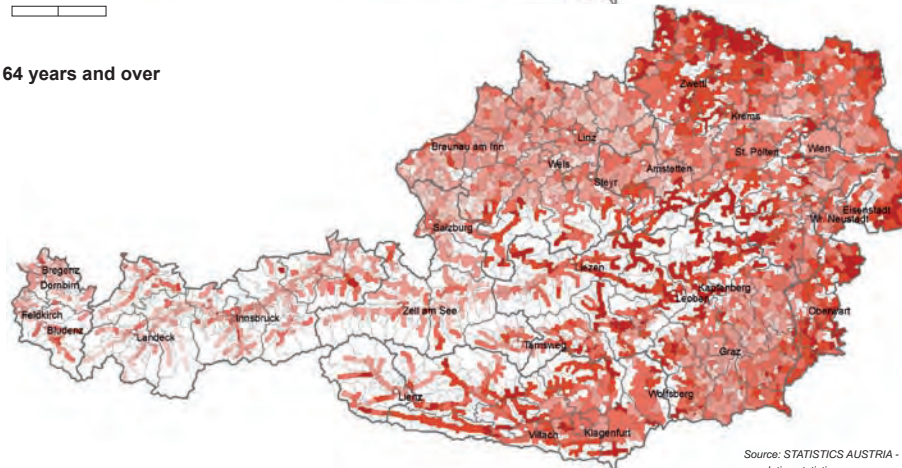
**Definition:**  
 This indicator includes the resident population with principle place of residence and a minimum stay of >90 days.

Population on 1st January 2011 aged 64 years and over

Percentage of the population aged 64 years and more



Preliminary results



Source: STATISTICS AUSTRIA -  
 population statistics.  
 Cartography: STATISTICS AUSTRIA

### WS 1 Close social and functional mixing

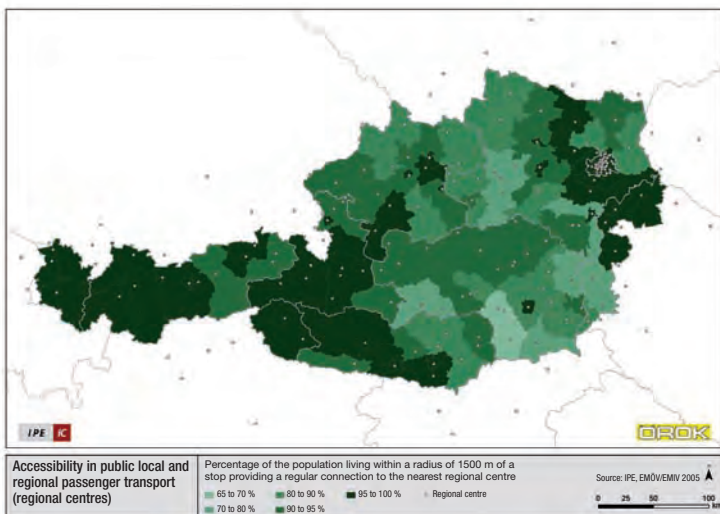
The maps show respectively the number of persons aged between 0 and 19 years and those over 64 years of age in a municipality as a percentage of the total population of that municipality; for Vienna with reference to its 23 districts. The permanent residential space of the respective municipalities (of the Vienna district) has been shaded red, according to the scale shown in the graphic, to show the resulting percentages. The uninhabitable areas (forest, alpine pastures, wasteland, bodies of water) have been left white to draw attention to the size of the area affected by the illustrated structure of the population groups.

The maps show strong regional differences in the demographic structure. In several small municipalities in Tyrol and Vorarlberg, the proportion of children and young people is slightly above 30 %. This is the result of above-average fertility and a persistently high rate of immigration from abroad, especially of young people. In some municipalities of Burgenland, Lower Austria and Styria and in Vienna's central districts, however, the proportion of persons aged 0 to 19 is only between 10 % and 15 %.

The Austrian average for the proportion of people of pensionable age on the survey date (1 January 2011) was 18 % of the total population. In a little less than one fifth of the municipalities the proportion of persons aged over 65 was below 15 %. In the city districts of Vienna- Rudolfsheim-Fünfhaus, Vienna Margareten and Vienna-Neubau the proportion of elderly people was also relatively small. The resident population of a little above a fifth of all municipalities had a proportion of over 64s of more than 20 %. These are mainly to be found in the border regions in the north and east of Austria and in the eastern Alpine valleys.

The demographic structure is a crucial basis for decisions on socio-political and infrastructure tasks. The indicator illustrates the extent to which the agreed sustainable development objective of close social mixing has been achieved. In order to illustrate the other stated objective of a functional mixing, further development work is necessary.

## MO 1 Access of population to mobility (Connections to public transport)



### Data source:

ÖROK, IPE: Accessibility in Austria 2005, ÖROK publication series No. 174, Vienna 2007

### Definition:

For the purposes of accessibility calculations of the Austrian Spatial Planning Conference, a person is considered to have local access to public transport from their place of residence if

- the individual lives within a radius of 1500 m of a stop providing at least
- one connection to the nearest appropriate centre (regional centre, work, school, etc.)
- within a specified interval of departure and arrival with
- no more than two changeovers are required.

This data gives information about access to public transport. However, neither the quality of the offer (travelling times, frequency of connections) nor the quality of the location (How important are the objectives that can be achieved?) are illustrated by this indicator.

**Table: Public local and regional passenger transport 1997 and 2005: Change in accessibility at the provincial level**

Federal Provinces	Accessibility 500m		Accessibility 1500m	
	Percentage	Change 97/05	Percentage	Change 97/05
Burgenland	72 %	-12 %	93 %	-6 %
Carinthia	76 %	6 %	96 %	-1 %
Lower Austria	75 %	-6 %	94 %	-3 %
Upper Austria	73 %	7 %	95 %	2 %
Salzburg	80 %	5 %	96 %	-1 %
Styria	67 %	-1 %	90 %	-5 %
Tyrol	80 %	7 %	97 %	-1 %
Vorarlberg	90 %	4 %	98 %	-1 %
Vienna	100 %	n.a.	100 %	n.a.
<b>Austria (w/o Vienna)</b>	<b>75 %</b>	<b>2 %</b>	<b>90 %</b>	<b>-2 %</b>
<b>Austria (incl. Vienna)</b>	<b>80 %</b>	<b>n.a.</b>	<b>95 %</b>	<b>n.a.</b>

The table shows the distribution of the population by Federal Province in relation to public transport stops as well as the changes which occurred between 1997 and 2005.

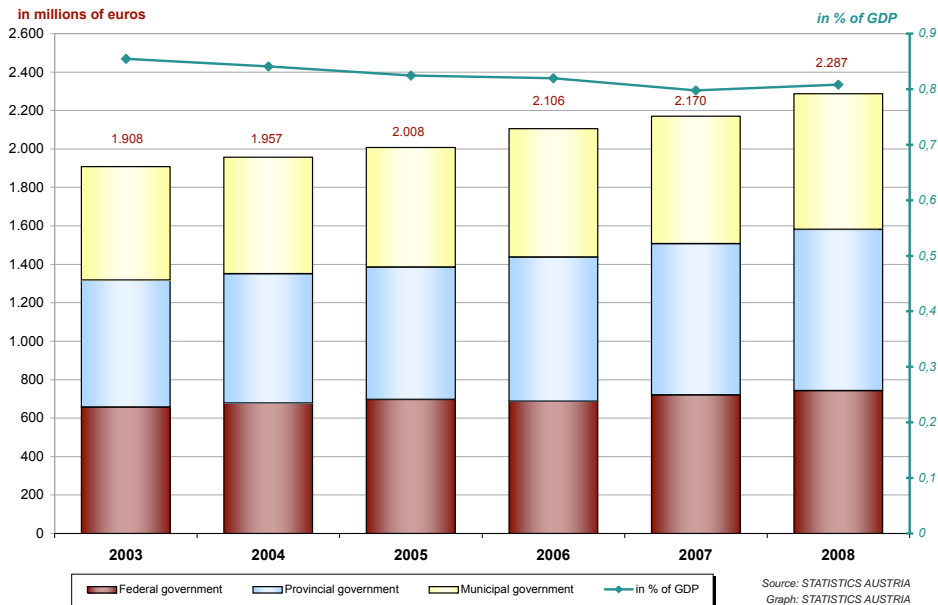
By virtue of the concentration of populated areas in the Alpine valleys, a fundamentally better coverage of the population by public transport is provided in the western Federal Provinces.

To illustrate the true deficits in the provision of public transport, it is necessary to take a smaller scale view, as shown on the map by political district. The districts with the poorest public transport services are in the regions of Waldviertel, Mühlviertel, Mostviertel, southern Styria and southern Burgenland.

The change of the indicator over time shows an overall increase in the percentage of the population living within a radius of 500 m of a stop of public transport, but a decrease in the percentage of the population within 1500 m. This can be explained as a consequence of two opposite trends: On the one hand an increase of the population living in urban centres (which have a high density of stops) is observed, on the other hand an increase in places of residence located at greater distances from public transport outside urban centres.

## KK 1 Public expenditure on cultural activities

### Public expenditure on cultural activities 2003 – 2008



**Data source:**

Statistics Austria, cultural statistics.

**Definition:**

Expenditure after deduction of inter-governmental transfers at current prices.

The expenditure on cultural activities by the federal, provincial, and municipal governments went up from 1,908 million euro in 2003 to 2,287 million euro in 2008, which corresponds to an increase by approximately 20 % in this period. The GDP rose by about 27 % since 2003. In sectoral terms, the federal provinces achieved the biggest increases and managed to keep pace with the GDP growth, whereas the expenditure on cultural activities of the municipalities (+20 %) and of the

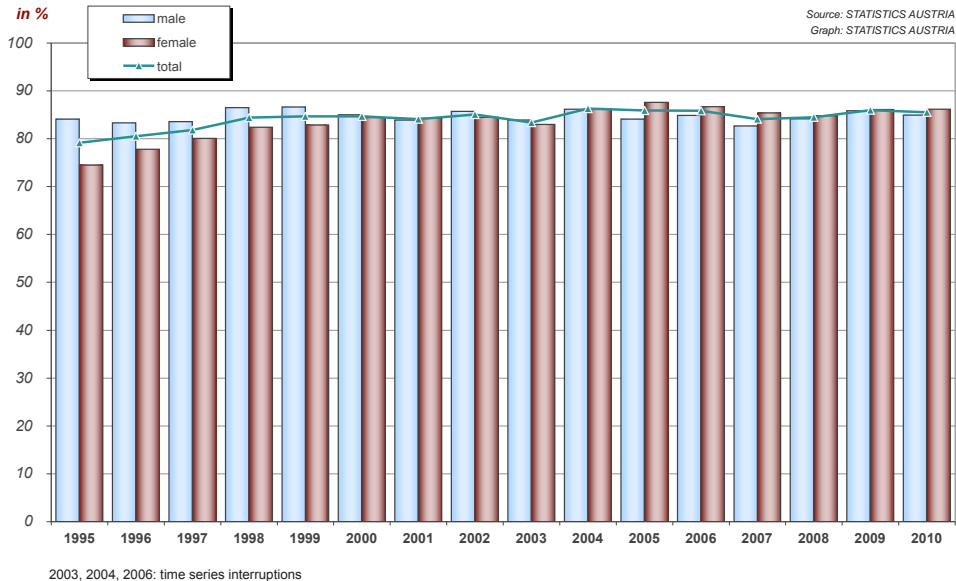
federal government (+13 %) rose less significantly. Compared to 2007, the growth of Austria’s expenditure on cultural activities (+5 %) for the first time superseded the GDP, which increased by just about 4 %. Only the growth of the federal government’s expenditure on cultural activities was smaller.

Calculated on the basis of the resident population, the expenditure on cultural activities last (2008) amounted to approximately 274 euro per capita, which is a marked rise compared to the preceding year (261 euro).

## BF 1 Youth education attainment 20-24

### Youth education attainment 1995 – 2010

(percentage of population aged between 20 and 24 with at least secondary education)



In the period of the study from 1995 to 2010, the proportion of young people who completed secondary education increased from 79.2 % to 84.5 % overall. But it is mainly women who are profiting from higher participation rates in education (rise from 74.5 % to 84.8 %), whereas there has been only a relatively small change among men.

Because of methodological changes, there were inconsistencies in the survey between 2002 and 2003 and between 2005 and 2006 and a clear break between 2003 and 2004. What must be remembered, however, is that the minor annual fluctuations are often due to sampling errors.

#### Data sources:

Statistics Austria, until 2003 micro-census (average of the months March, June, September, and December); as from 2004 labour force surveys (average of all weeks of a year).

#### Definition:

Percentage of the population aged 20 to 24 with at least completed secondary education, i.e. ISCED level 3 or higher.

The numerator corresponds to the persons who have completed some kind of education beyond compulsory schooling (final certificate, secondary school or higher school, as well as post-secondary education). 'ISCED 3c short' (corresponding to less than two years of education at a general secondary school) is not to be counted as a completion of secondary education according to the latest EU rules. From 2006, a relevant question was a compulsory part of the questionnaire of the labour force survey, which is why this could be taken into account from 2006 onward. Pre-vocational programmes were also always included in 'ISCED 3c short' as a type of education that belongs to compulsory schooling and thus has no noteworthy effects.

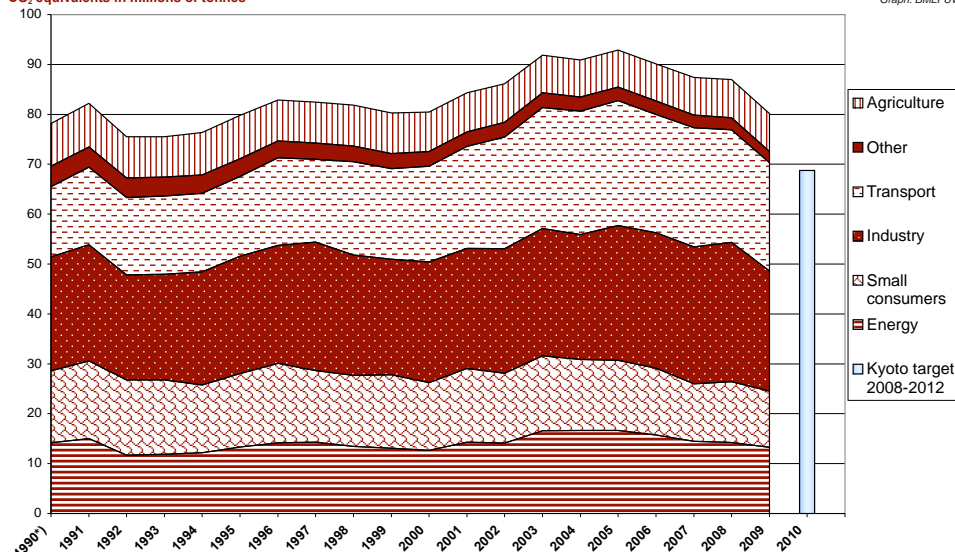
The denominator consists of the total population in the same age bracket, without counting the persons who failed to respond to the question about the highest degree of education attained.



## KL 1 Greenhouse gas emissions (sectoral break down)

Greenhouse gas emissions by sector from the base year until 2009 and Kyoto target

CO<sub>2</sub> equivalents in millions of tonnes



\*) 1990 is base year

The diagram shows annual changes in greenhouse gas emissions, including the gases carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), dinitrogen monoxide (N<sub>2</sub>O), partially and fully fluorinated hydrocarbon compounds (HFCs and PFCs) and sulphur hexafluoride (SF<sub>6</sub>).

These were weighted according to their global warming potential and added together within the consumer sectors of energy, small-scale consumers, industry, agriculture, transport and other (waste management,

solvent emissions etc.).

The calculations used comply with international agreements on weighting factors and the allocation of polluter groups.

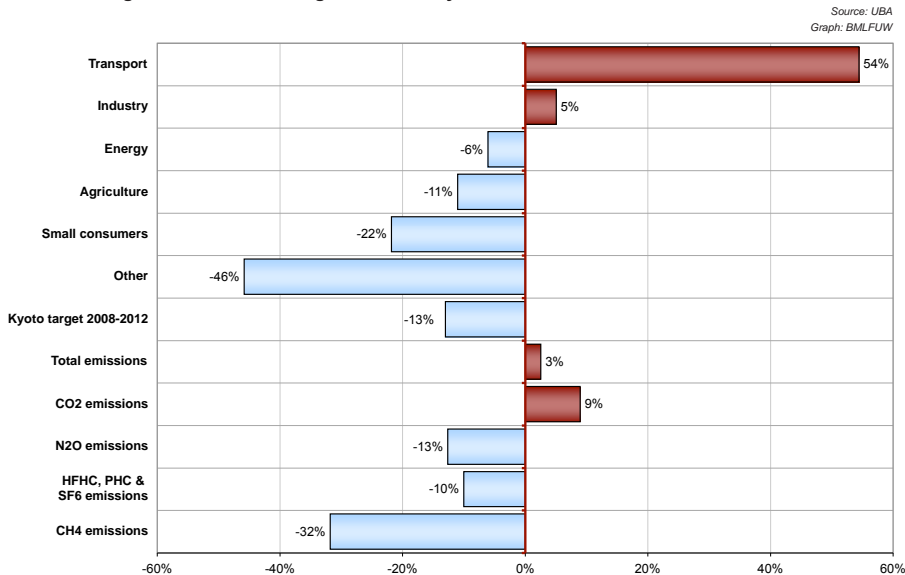
The diagram also shows the target reduction in greenhouse gas emissions to which Austria has committed itself. Particularly in the transport sector, but also in the sectors of industry and energy, it has proved impossible to

**Data source:**  
Umweltbundesamt (2011); Climate Protection Report (2010)

**Note:**  
The continuous improvement of the primary data leads also to retroactive changes in the emission figures compared to earlier publications.

## KL 1 Greenhouse gas emissions (sectoral break down)

### Greenhouse gas emissions - Changes from base year to 2009



reverse the rising trend. On the other hand, reductions have been achieved in methane emissions from landfill sites and N<sub>2</sub>O emissions from agriculture in the period under consideration.

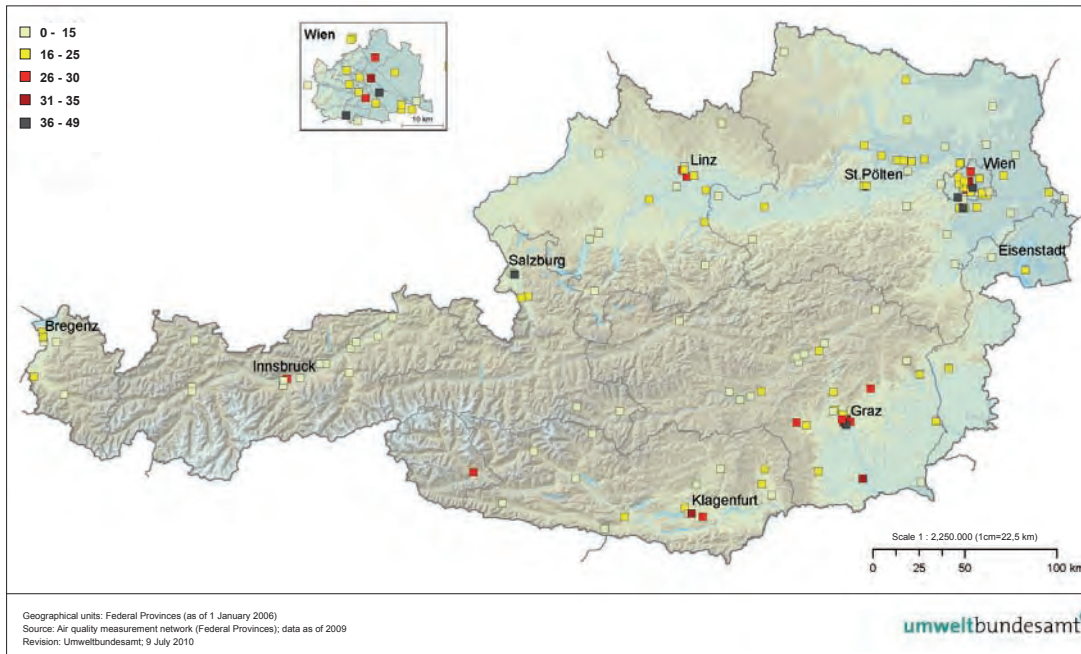
As far as the Kyoto target is concerned, in some cases we can also include emission reductions achieved in projects outside of Austria. The Austrian JI/CDM programme was initiated in order to make efficient use of the flexible mechanisms of the Kyoto Protocol in relation to projects. This will

help Austria to achieve some of its commitments; these emission reduction units are not shown in the diagram (see also indicator IG 4).

To improve the quality of data, modifications were made to the calculations used for greenhouse gas emissions. These have been taken into account in the time series shown. The modified calculations of greenhouse gas emissions for the provinces are not yet complete.

## LU 1 Exceedances of the limit value for PM10

PM10: Number of days with daily mean value > 50 µg/m<sup>3</sup>, 2009



**Data source:**

Air quality measurement network (Austrian Federal Provinces, Umweltbundesamt)

**Definitions:**

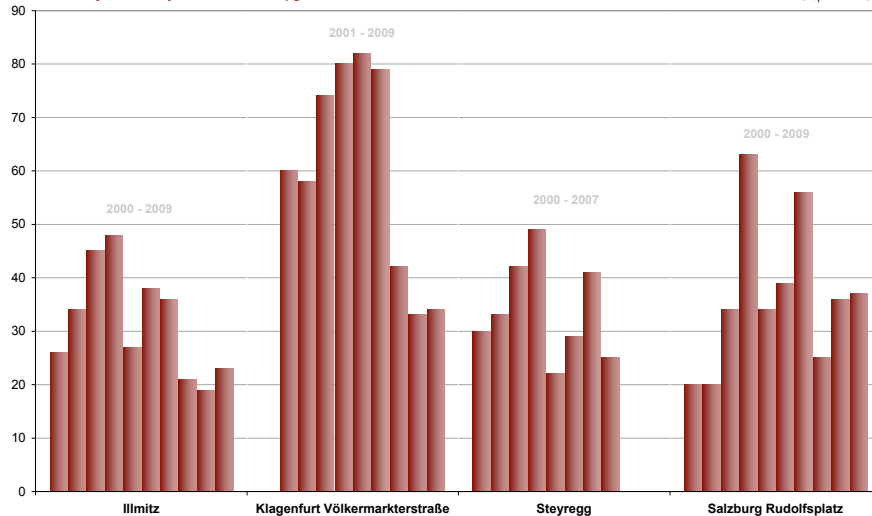
For PM10 (particulate matter), the Austrian Ambient Air Quality Act (IG-L, Federal Law Gazette 115/97, as amended) has imposed a limit on pollution to protect human health since 7 July 2001: the daily mean value of 50 µg/m<sup>3</sup> must not be exceeded for more than 35 days (until 2004) and not more than 30 days (from 2005 to 2009) and not more than 25 days (as of 2010) per year.

## LU 1 Exceedances of the limit value for PM10

### Exceedances of the limit value for PM10 2000 – 2009

Number of days with daily mean value > 50 µg/m<sup>3</sup>

Source: UBA  
Graph: BMLFUW



conditions in valleys and basins shielded from northerly and westerly winds, which are a principal factor in high PM10 levels. In eastern Austria, the longdistance transport of polluted air masses also plays a significant role.

PM10 levels were first measured in Austria in 1999. At the monitoring sites Illmitz and Salzburg Rudolfsplatz, measurements of the pollution have been available since the year 2000, at the monitoring site Klagenfurt Völkermarkterstraße since 2001.

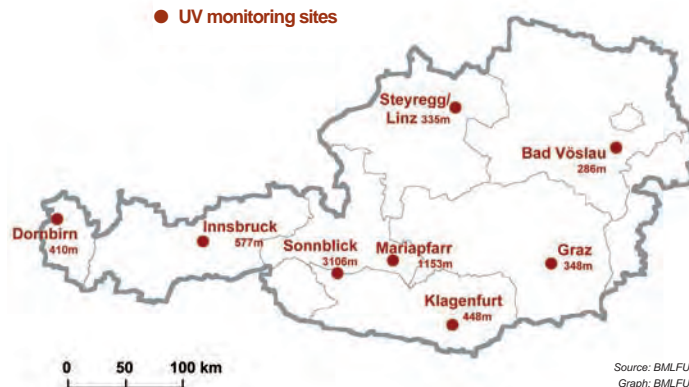
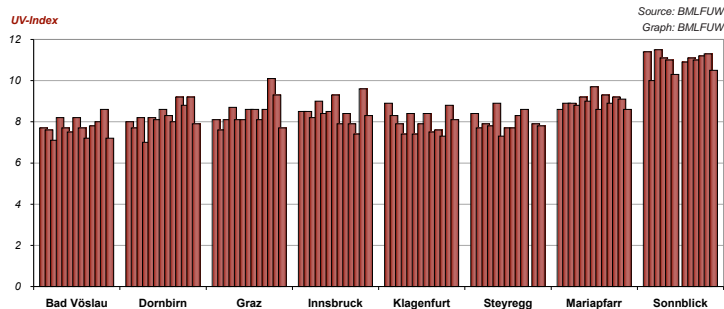
The defined limit for the daily mean value is exceeded in all Austrian regions. South-east Austria and large urban areas are particularly affected by noticeably high levels above the limit. In addition to high local emissions, south-east Austria (Styria, Carinthia) experiences unfavourable dispersion

Since the beginning of the monitoring of PM10 levels, above-average pollution has been registered in the years 2002, 2003, 2005 and 2006, relatively low levels of pollution in 2004 and the time from 2007 to 2009. The marked variation in PM10 levels from year to year is due to meteorological conditions, particularly during the winter months, which are responsible both for the local dispersion conditions and for the extent of long-distance transport.

Austria's PM10 emissions have slightly declined over the past ten years.

## ST 1 UV radiation intensity

UV radiation intensity 1998 – 2010



### Data source:

Institute of Medical Physics at the University of Innsbruck under the commission of the Federal Ministry of Agriculture, Forestry, Environment and Water Management

### Definitions:

The UV index is a measurement of the intensity of solar UV radiation with an impact on human health. The UV index was defined jointly by the WHO (World Health Organization) and WMO (World Meteorological Organization), not for research purposes but rather for the purpose of informing the public. It is a dimensionless number that indicates how much of the sun's UV radiation is reaching the earth.

It is calculated as a weighted integral over the spectral radiation and then scaled.

The integration is based on a spectrum of wavelengths from 250 nm to 400 nm applying the CIE action spectrum (the standard erythral action spectrum) to weight the wavelength components. In so doing, the intensity of radiation is measured on a horizontal surface.

The weighted intensity of radiation is divided by the selected intensity of radiation of 25 mW/m<sup>2</sup>. The result is a dimensionless number permitting the following exposure to UV radiation levels:

UV index	Exposure category
0 – 2	low
3 – 5	moderate
6 – 7	high
8 – 10	very high
over 10	extreme

The indicator shows the maximum UV index for one year at the individual monitoring site in Austria for which measurement values have been available since 1998. The natural phenomenon by which UV intensity increases with altitude can be observed. Variations from year to year are primarily due to weather conditions, particularly cloud cover.

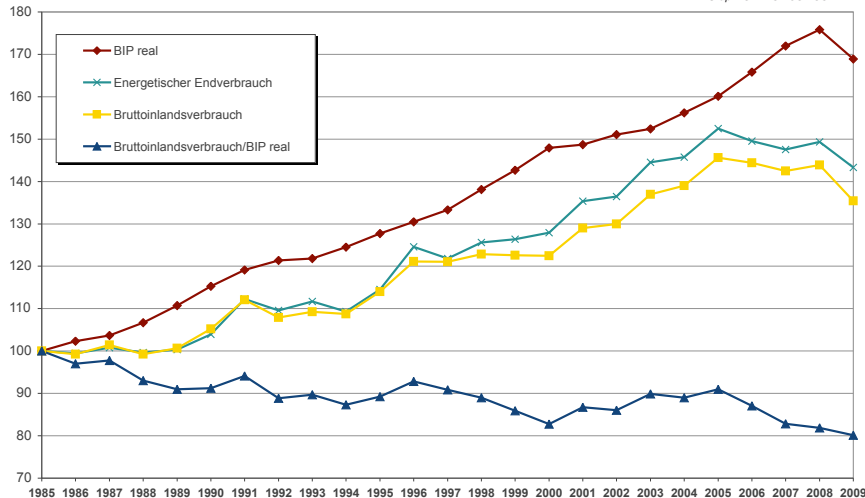
## Headline Indicator “Energy and material flows”

### ES 1 Energy consumption absolute and relative to GDP (gross domestic energy consumption and final energy consumption)

#### Energy consumption relative to GDP 1985 – 2009

Index 1985 = 100

Source: STATISTICS AUSTRIA  
Graph: STATISTICS AUSTRIA



Since the early 1970s there has been a noticeable decoupling effect between energy consumption and gross domestic product, which slightly weakened at the beginning of the millennium, but continued at a high level during the last two years under review.

While real GDP has increased by around 121.3 % since 1973, the gross domestic consumption of energy only rose by around 47.3 % over the

**Data source:**

Energy balances of Statistics Austria

**Definitions:**

Gross domestic energy consumption is calculated from the energy balance sheet, on the supply side from domestic primary energy production, the foreign trade balance, and the movements of stores of energy, and on the demand side from final energy consumption, use of energy for non-energy-related purposes (e.g. petrochemistry, lubricants), consumption by the energy sector itself, and the difference between transformation input and transformation loss (= conversion losses).

Final energy consumption is the amount of energy supplied to and used by consumers as useful energy (heating, lighting and automated data processing, mechanical work, etc.).

same period. Relative energy consumption (= energy consumption per unit of GDP; energy intensity) therefore decreased by one third (33.4 %). Over the period shown in the diagram, 1985 to 2009, energy intensity fell by about one fifth (19.8 %).

Austria ranks fourth best in the EU in terms of energy intensity.

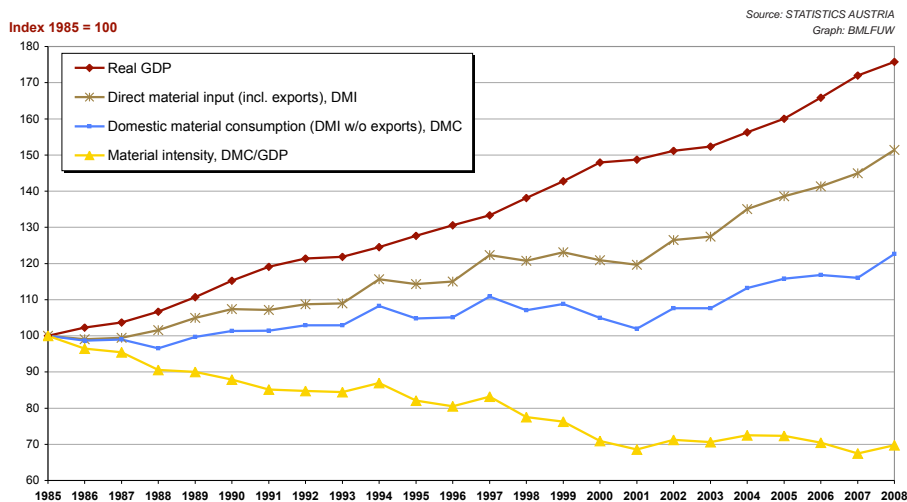
Due to the Directive on energy end-use efficiency (2006/32/EC) of 5 April 2006 Austria is obligated to

achieve a 9 % improvement in energy end-use efficiency (energy intensity) in 2016. According to the calculation rules set forth the 1st Energy Efficiency Action Plan for Austria (<http://www.bmwfj.gv.at/NR/rdonlyres/CEF20688-BE63-4CF7-8464-CA1A5A8FCB6D/0/Energieeffizienzaktionsplan.pdf>) provided for a national, general energy-saving target of 80,400 TJ and for a reduction by 17,900 TJ compared to the annual average consumption of the years 2001 to 2005 of 893,406 TJ by 2010.

# Headline Indicator “Energy and material flows”

## ES 2 Material Input (DMC and DMI)

### Economic growth, material consumption and material intensity 1995 – 2008



About three quarters of the total material turnover consists of nonrenewable materials (coal, crude oil, natural gas, mineral materials). This is a continuation of the trend of recent years.

In Austria, direct material input (DMI) has risen by more than 50 % since 1985. Domestic material consumption (DMC) has also increased: it rose by more than 22 % between 1985 and 2005.

However, GDP increased much more sharply over the same period (by

about 75 %). Material intensity (DMC/BIP) therefore decreased by more than 30 % over this period. One unit of GDP could be generated with lower material consumption, which boosted resource productivity. However, the goals of increasing resource productivity by a factor of 4 and an absolute reduction in resource consumption have not yet been achieved, as increases in resource productivity were offset by effects of quantity.

#### Data source:

Statistics Austria on behalf of the Federal Ministry of Agriculture, Forestry, Environment and Water Management

#### Definitions:

The resource through-put can be described through various measurements from material flow calculation, whereby minerals, biomass and fossil material flows are surveyed annually. The corresponding methods of calculation are internationally coordinated (EUROSTAT).

The **direct material input (DMI)** is domestic materials used plus imports.

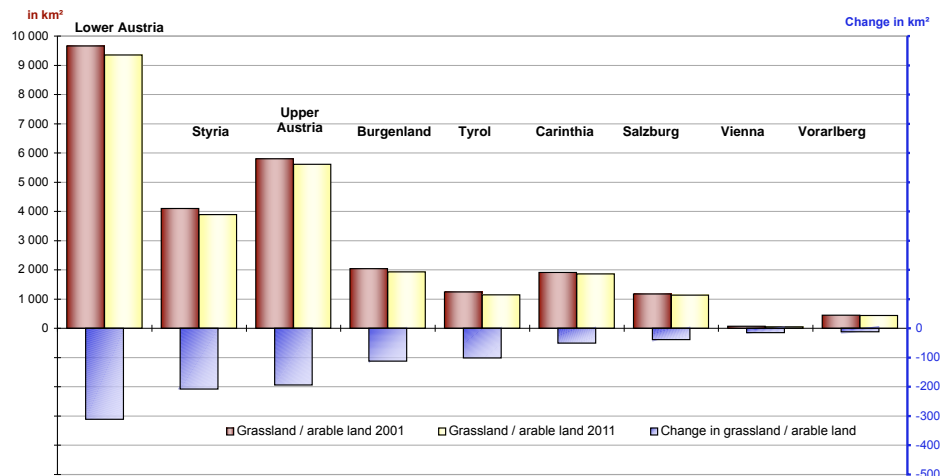
Subtracting exports from that amount of materials yields the **DMC (domestic material consumption)**. It represents the amount of materials consumed domestically.

The ratio of DMC to the commonly used indicator for economic growth, gross domestic product (GDP), in other words the **material intensity DMC/BIP**, indicates how many material units are required to generate one unit of GDP.

## LA 1a Changes in use of land (forests, grassland/arable land)

### Grassland/arable land 2001 and 2011

Source: BEV, UBA  
Graph: BMLFUW



Between 2001 and 2011 more than 1000 km<sup>2</sup> of agricultural area were lost in Austria. This corresponds to a daily reduction by 30 hectares. This decrease in agricultural area does not yet take into account the loss of areas for agricultural management in Alpine areas. Almost one third of the agricultural areas are turning into forests, more than two thirds are being converted into living and transport areas (see indicator BO 1a). Due to the growing of undesired forests on these former agricultural areas forest-covered land has increased by more than 380 km<sup>2</sup> since 2001.

An interpretation of the results according to regional information has to bear in mind that data are not updated continuously but only in the framework of large-scale projects and on occasion. Therefore, over certain periods of time regional information does not reflect the actual situation.

The trend of a loss of agricultural areas has been proved in all Federal Provinces except Vorarlberg. It is therefore not surprising that a high absolute decrease of areas is observed in the Federal Provinces having a high share

**Data source:**  
Calculations of the Umweltbundesamt, based on:  
Land use: Regional information from the land database of the Federal Office of Metrology and Surveying; as of 1 January 2001 and 1 January 2011 respectively; GZ: 950/2005 and 74.183/2011.

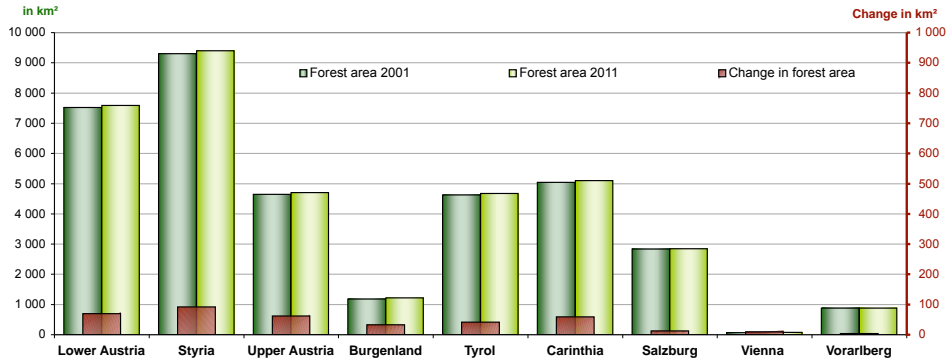
**Definitions:**  
Forest coincides with the use type 'forest'.  
Grassland/arable land is the total land classified as agricultural land and vineyard.



## Headline Indicator “Landscape”

### Forest area 2001 and 2011

Source: BEV, UBA  
Graph: BMLFUW



of agricultural area (Lower Austria: -311 km<sup>2</sup>, Styria: -207 km<sup>2</sup> and Upper Austria: -193 km<sup>2</sup>). However, this decrease is not as dramatic as it is in Federal Provinces with a low share of agricultural area. Especially Vienna and Tyrol have to be mentioned in this context (V: 57 km<sup>2</sup> and T: 1,146 km<sup>2</sup> of agricultural area), with proportionally very high losses of agricultural areas (V: -14 %, T: -9 %). We cannot judge, however, to which extent, especially in Tyrol, these figures are due to the inaccuracy of regional information.

Vorarlberg is a positive exception. Despite a very small share of agricultural areas (443 km<sup>2</sup>), no significant losses of agricultural areas have occurred. Through current measures ('Vision Rheintal') Vorarlberg's agricultural area appears to be well ensured.

Forest areas are generally growing in line with the long-term trend. Both accumulated forest losses in poorly forested areas (open agricultural land, surrounding living areas) and further increase in regions already holding a very high share of forests can be problematic (poorer fulfilment of functions, loss of biodiversity).

The greatest percent-increase has been observed in the Federal Provinces with little forested area. Only Styria, the Province most abundant in forests, still shows a relatively high increase.

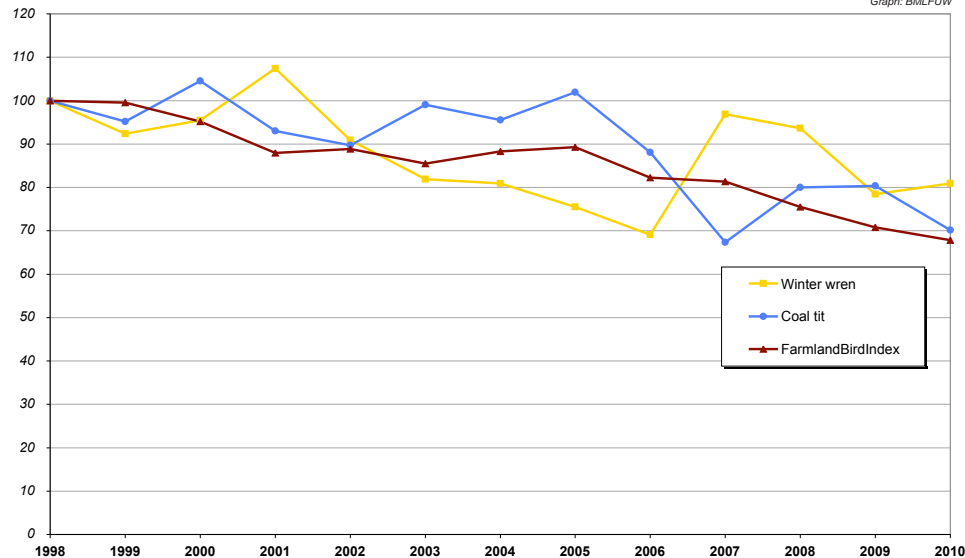
Changes in land use are just one aspect of the factors affecting the ecological value of the landscape.

## ÖK1 Bird species groups and orchids as indicators of habitat quality

### Population trend of selected bird species in Austria from 1998 – 2010

Index 1998 = 100

Source: BirdLife Österreich  
Graph: BMLFUW



#### Data sources:

“Monitoring of Austria’s Breeding Birds”, BirdLife Austria

#### Definition:

Bird populations are recorded every year in defined areas by specially trained volunteers (“citizen science”). Comparable programmes exist in many European countries and at pan-European level. The counts for each year are shown compared with the value for the year 1998, which was made equal to 100.

The FarmlandBirdIndex, an indicator applied in the European countries, combines the trends recorded in the numbers of bird species which live in predominantly agriculturally used land and are typical of these areas. For Austria, these are: Kestrel, Grey Partridge, Northern Lapwing, Turtle Dove, Wryneck, Skylark, Tree Pipit, Water Pipit, Whinchat, Stonechat, Northern Wheatear, Fieldfare, Marsh Warbler, Whitethroat, Red-backed Shrike, Starling, Tree Sparrow, Serin, Goldfinch, Linnet, Yellowhammer and Corn Bunting. Sufficient data on cultivated land at higher altitudes (alpine pastures) are available only from the year 2008 onward.

The numbers of birds living in agriculturally utilised areas have slightly decreased since 1998. Also the numbers of wren and coal tit – two species living preferably in forests – have been slightly declining.

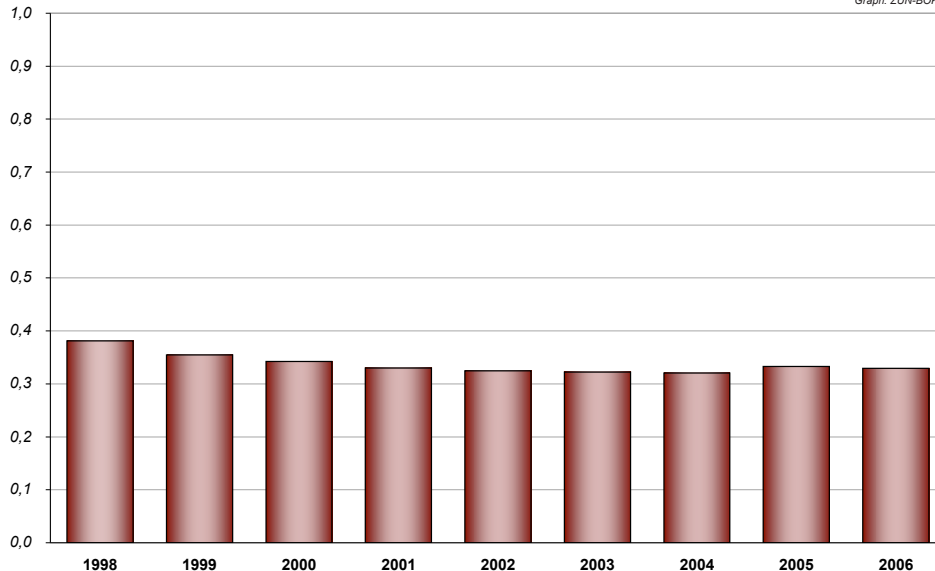
Birds are suitable for mapping the biodiversity of other groups of organisms

and respond quickly to environmental changes. The indicator shown is to be further developed for the chosen species (to represent all of Austria’s main habitats). Only then can the indicator be meaningfully interpreted.

## Headline Indicator “Ecosystems”

### Index for sustainable grassland management with regard to orchids

**Index**



Orchids growing in open areas depend on the type of land use – intensive utilisation leads to a decline in the population, as does a cessation of utilisation. The species indicator for orchids is therefore used in relation to land use and ÖPUL measures.

The index for sustainable grassland utilisation in terms of the needs of orchids exhibits a negative trend throughout Austria. This means that changes in grassland utilisation are causing a decline in the areas suitable for orchids or are having a negative effect on the conditions for orchids.

#### **Data source:**

Calculations by the Centre for Environmental Studies and Nature Conservation at the University of Natural Resources and Applied Life Sciences, based on data from CORINE-Landcover 2000 (UBA) and the integrated management and monitoring system INVEKOS (Federal Ministry of Agriculture, Forestry, Environment and Water Management)

#### **Definition:**

The evaluation of the sustainability of grassland utilisation in terms of the protection and encouragement of orchids is similar to expert systems based on expert knowledge. Different land uses and land-related measures which form part of the Austrian Agri-Environmental Programme (ÖPUL) of a holding are given a fuzzy rating (0 = ‘very poor’ to 1 = ‘very good’) and combined to produce an overall factor from their percentages of land. By combining the values it is possible to make statements about the potential for areas suitable for orchids at different levels (municipality, district, Federal Province, federal territory).

Since 2006, orchid counts have been carried out by volunteers as part of the Austrian Orchid Protection Network (ÖON). In future, this data will be used to establish population trends which will serve to examine and adapt the evaluations.

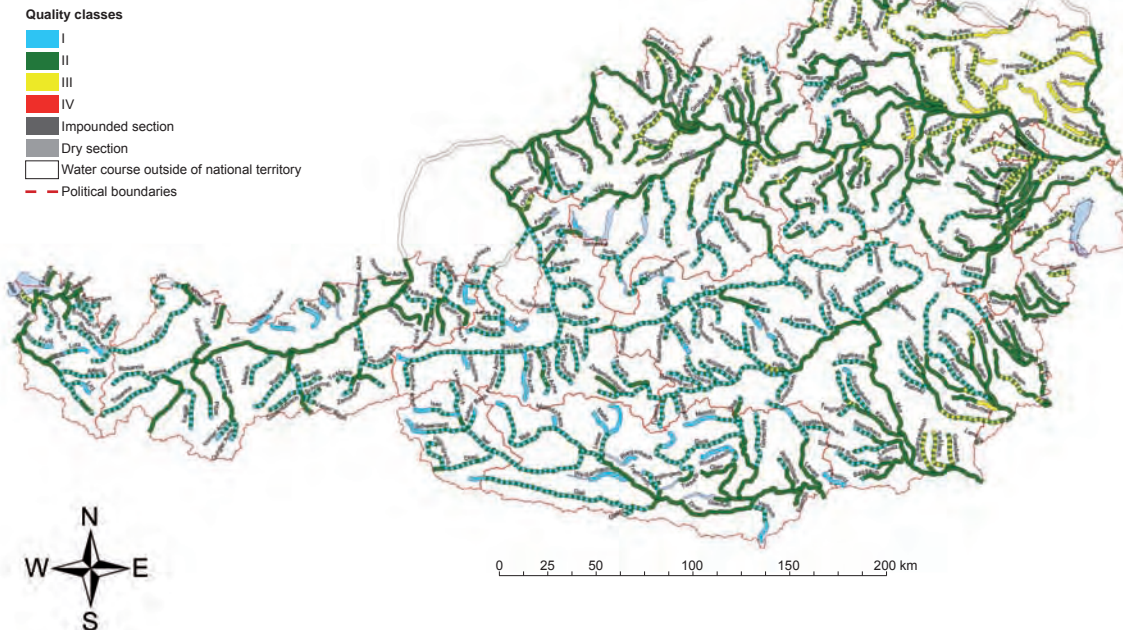
We can therefore conclude that orchids are in decline in cultural landscapes. This corresponds to estimates of orchids in the Red Lists and has also been extensively documented in specialist literature. In future, however, this index will be checked, adapted and further developed at the level of regional benchmarks on the basis of population trends determined from orchid monitoring initiatives.

The parallel recording and observation of bird species and orchids will provide a more detailed picture of the status of Austria’s large habitats.

## WA 1a Bodies of running water: ecological and chemical condition

### Saprobiological quality of rivers in Austria 2005

Published by the Federal Ministry of Agriculture, Forestry, Environment and Water Management



Copyright: Federal Ministry of Agriculture, Forestry, Environment and Water Management, cartographic basis UBA Vienna, processed by: Federal Agency for Water Management - Institute for Water Quality

#### Data source:

Biological water quality map issued by the Ministry of Agriculture, Forestry, Environment and Water Management, based on the data from the Austrian Provincial and federal governments.

#### Definition:

In Austria, the saprobe system has been used for several decades in the biological study and evaluation of bodies of running water.

The degree of presence or absence of selected indicator organisms is observed. This characterises the reaction of aquatic biocenosis to certain states of contamination and primarily provides a measurement of water pollution by biodegradable substances.

By means of this system, bodies of running water can be allocated to four (classes I-IV) – taking into account the intermediate steps, seven – biological water quality classes. As early as in 1977 quality class II was established as a general quality objective (Danube Ordinance, Austrian Federal Law Gazette No. 210/1977).

The compliance with this quality standard is used as an indicator for the status of Austria's running waters.

## Headline Indicator “Water”

**Table:**  
**Comparison of biological quality maps 1966/71, 1988, 1995, 1998, 2001, 2002/03 and 2005; relative percentages of quality classes in the water body network.**

Saprobiological quality class	Relative percentages in water body network						
	1966/71	1988	1995	1998	2001	2002/03	2005
I	15	9	6	7	6	4	4
I-II	18	18	22	23	28	28	35
II	31	39	44	51	53	55	49
II-III	19	21	24	17	12	12	11
III	6	10	4	2	1	1	1
III-IV	6	2	< 1	< 1	0	0	0
IV	5	1	0	0	0	0	0

The percentage of bodies of running water shown in the quality map for 2005 which exhibit only a low level of pollution (quality class I, I–II or II) and therefore meet the quality aim is 88 %.

It should be stressed that this already high percentage cannot serve as an overall evaluation for the entire Austrian water body network, since the quality map for 2005 only shows and evaluates bodies of water with a catchment area of more than 100 km<sup>2</sup> and a total length of 11,500 km. If the numerous small bodies of water – particularly Alpine ones – were included, the proportion of bodies of water meeting the quality target would be dramatically increased.

If we compare the current situation with earlier quality situations where the Austrian water body network is shown in a comparable scope (for example the quality maps for 1966/71, 1988, 1995, 1998, 2001 and 2002/2003 –

see table), we can clearly see the success of remediation measures. The proportion of bodies of water exhibiting severe pollution in the shape of easily degradable organic materials (water quality class III and poorer) is currently no higher than 1 %.

Since 2007 Austria’s running waters have been monitored according to the requirements of the EU Water Framework Directive. Natural bodies of water are assessed with respect to their ecological and chemical status, whereas bodies of water classified as “heavily modified” or as “artificial” are assessed in terms of their ecological potential and chemical status.

In 2010, the national water management plan was published. For all running waters with a catchment area > 10 km<sup>2</sup> (total length of water body network approx. 31,000 km) an assessment was conducted in this context.

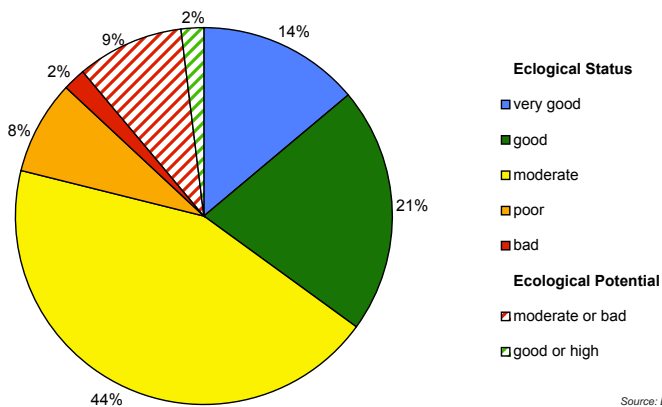
## WA 1a Bodies of running water: ecological and chemical condition

### Rivers in Austria

with catchment area >10 km<sup>2</sup>

### Ecological Status/ Ecological Potential

Status 2009



Source: BMLFUW  
Graph: BMLFUW

35 % of the Austrian running waters have a very good or good ecological status. The reasons of insufficient ecological status are the intensive use of water power and the comprehensive flood control measures which have brought about changes of the hydromorphological conditions and a missing of the target in 67 % of all running waters.

Material pollution is comparatively low: According to the National Water Management Plan organic pollution and/or nutrient pollution were found in 18 % of the running waters with a catchment area > 10 km<sup>2</sup> in 2009. In 15 % of the bodies of running waters, the material pollution proved to be very low, 55 % were found to be in a very good status. Only 2 % showed

### Data source:

BMLFUW, National Water Management Plan

### Definition:

The assessment of the status of bodies of water refers to the Quality Objective Ordinance Ecology (Federal Law Gazette No 99/2010) as well as to the Quality Objective Ordinance Chemistry-Surface Waters (Federal Law Gazette No 96/2006).

exceedances with respect to pollutants regulated on national level.

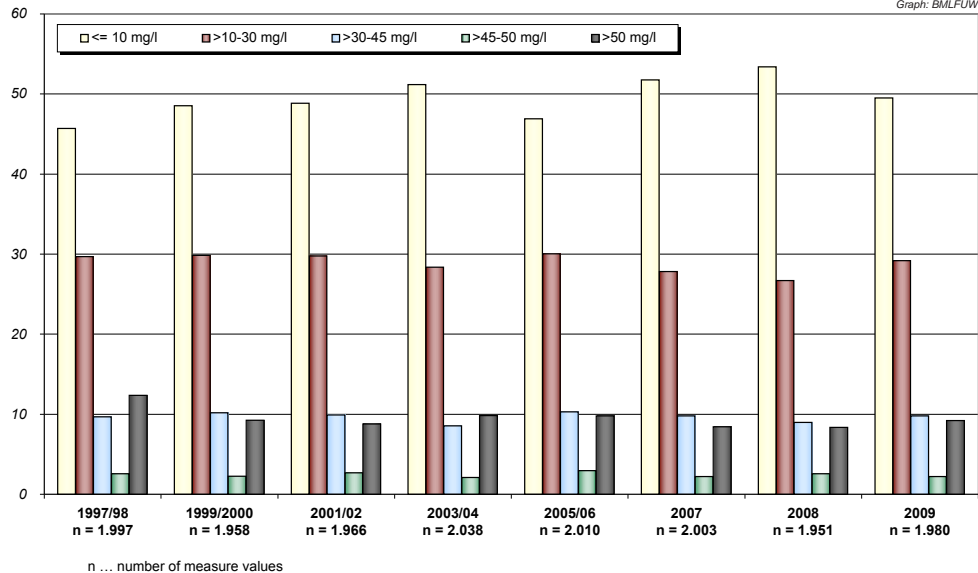
The good chemical status, which refers to the pollutants regulated on EU level, was found in 99.7 % of Austria’s running waters. Only for 0.3 % of the running water bodies the chemical status was poorer than good.

It should be mentioned that particularly for smaller bodies of water with catchment areas < 100 km<sup>2</sup> additional monitoring results are needed to provide better evidence of the status assessments. Only cases where the missing of the target has been proved with great certainty can lead to a need for rehabilitation.

## WA 2 Groundwater quality

### Development of nitrate in Austria's porous groundwater 1997 – 2009

Number of measurement stations in %, whose mean value is in the respective class



#### Data source:

Results of the national water quality survey in accordance with the Hydrography Act (Federal Ministry of Agriculture, Forestry, Environment and Water Management)

#### Definition:

Increased **nitrate** content in groundwater is usually the result of intensive agricultural use of the soil, wide-scale pollution from residential areas where there are leaky disposal systems and dry cesspools, unsecured landfill sites or contaminated sites, and atmospheric deposition.

Intensive agricultural use of the soil in sites with shallow soils usually plays a significant role in the endangerment of groundwater bodies.

The limit value for nitrate in drinking water is 50 mg of nitrate per litre. The upper limit of safety provided for in the Groundwater Threshold Value Ordinance is as low as 45 mg of nitrate per litre.

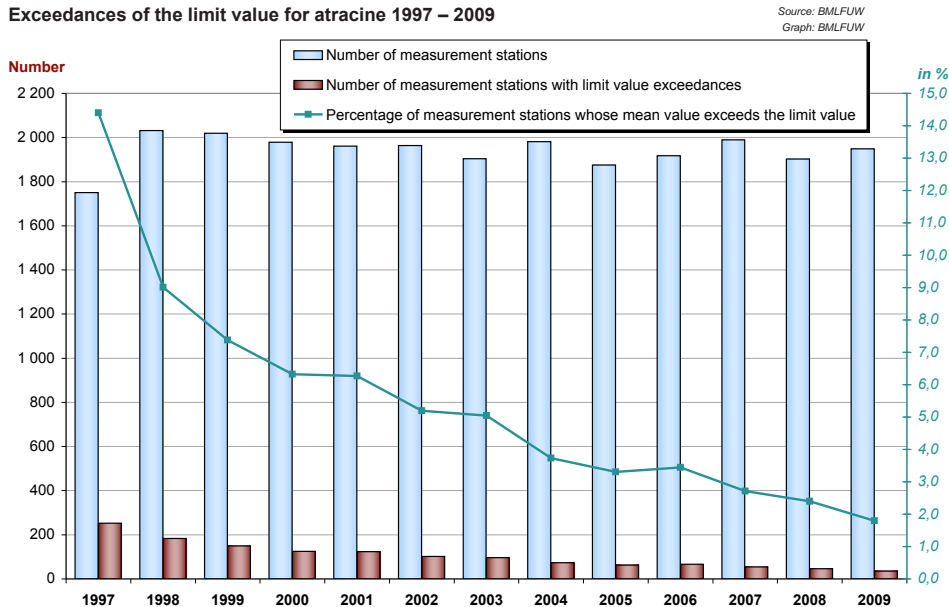
There has been a downward trend in the **nitrate** pollution in groundwater since 1997 with some fluctuations of few percentage points or tenth of percentage points, which may be a result of contrary natural effects (fluctuations in precipitation, soil conditions, groundwater renewal period...).

The altogether positive development is the result of growing awareness in

agriculture of cultivation methods that do not harm bodies of water, the availability of more intensive environmental advice, specific measures designed to protect groundwater, an increased connection rate to central waste water disposal systems and therefore a reduction in deposition from leaky dry cesspools, and finally a wider set of legal mechanisms for protecting groundwater.

## WA 2 Groundwater quality

### Exceedances of the limit value for atracine 1997 – 2009



#### Data source:

Results of the national water quality survey in accordance with the Hydrography Act (Federal Ministry of Agriculture, Forestry, Environment and Water Management)

#### Definition:

Until the end of the 1980s, **atracine** was very commonly used as a herbicide in agriculture. In 1995, the authorisation of this substance was withdrawn based on new discoveries in human toxicology.

The upper limit of safety for groundwater and the admissible level of contamination of drinking waters are both 0.1 µg/l.

The authoritative legal basis is provided by the Drinking Water Ordinance according to the Food Act, Federal Law Gazette Part II No. 304/2001, and the Quality Objektive Ordinance Chemistry Groundwater, Federal Law Gazette Part II No. 210/98.

According to the provisions of the Quality Objective Ordinance Chemistry Groundwater, Federal Law Gazette Part II 2010/98 (formerly Groundwater Threshold Value Ordinance), 11 bodies of groundwater with an area of 6,279 km<sup>2</sup> have to be designated as observation areas and 3 groundwater bodies with an area of 1,405 km<sup>2</sup> as action areas.

Despite the ban on **atracine**, introduced over 10 years ago, 35 measurement stations out of 1949, or 1.8 %, exceed the limit value for groundwater. This is in particular a result of the mostly very slow renewal of groundwater bodies (high groundwater age) in individual groundwater bodies.



## Headline Indicator “Water”

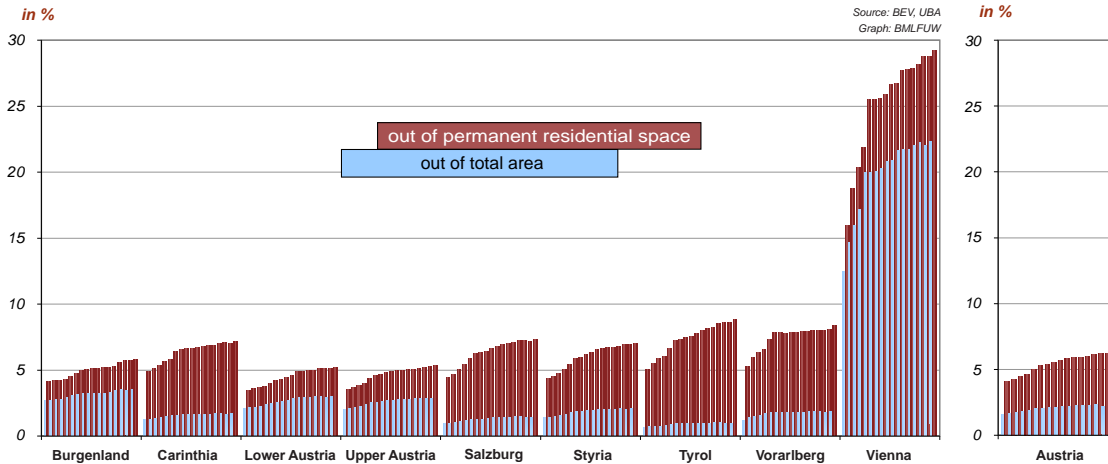
<b>Nitrate – Potential observation and action areas for bodies of groundwater (assessment 2007-2009)</b>		
Groundwater bodies and groups of groundwater bodies	Area in km <sup>2</sup>	Status
<b>Burgenland</b>		
Hilly land Rabnitz (incl. Lower Austrian part)	498	observation area
Parndorfer Platte	254	action area
Seewinkel	443	observation area
Stremtal valley	50	observation area
Wulkatal valley	386	observation area
Ikvatal valley	165	observation area
<b>Lower Austria</b>		
Marchfeld (incl. Viennese part)	942	action area
Weinviertel (prospective action area Danube below Jochenstein)	1347	observation area
Weinviertel (prospective action area March)	2008	observation area
Southern Vienna Basin - eastern rim (prospective action area Danube below Jochenstein)	209	action area
Southern Vienna Basin - eastern rim (prospective action area Leitha – Raab - Rabnitz)	276	observation area
<b>Upper Austria</b>		
Traun-Enns-Platte	810	observation area
<b>Styria</b>		
Leibnitzer Feld	103	observation area
Unteres Murtal valley	195	observation area
<b>Total observation areas</b>	6279	11
<b>Total prospective action areas</b>	1405	3
<b>Total observation or prospective action areas</b>	7684	14

Furthermore, according to the legal requirements of the Quality Objective Ordinance Chemistry Groundwater and the Water Framework Directive 2000/60/EC as well as of Directive 2006/118/EC for the protection of groundwater also groundwater bodies and groups of groundwater bodies

with a significant and persistently rising trend and with a trend line exceeding the starting point for the trend reversal have to be taken into account. The trend evaluations are based on periods of 6 to 8 years; presently, no marked persistent trends for nitrate or atrazine are being observed.

## BO1a Percentage of sealed land

Percentage of sealed land 1995 – 2011



### Data source:

Sealed land: Calculations of the Umweltbundesamt based on regional information from the land database of the Federal Office of Metrology and Surveying; as of 1 January of the given year (1995-2011); date of enquiry: March 2011

### Definitions:

**Sealed land** is the sum of the built-up areas (the areas used for “buildings” and “paved” are factored in at rate of 100 % and areas whose use “is unspecified” are factored in at a rate of 30 %) and of “Other Areas” (the areas used for “roadways” are factored in at 60 % and the areas whose use is “unspecified” are factored in at 10 %).

The **total area** is the sum of all areas regardless of their use.

### Permanent residential space

consists of the sum of all areas regardless of their use (“building”, “paved”, “with vegetation” and “unspecified”), areas used for agriculture, gardens, vineyards, and “Other Areas” such as “roadways”, “railways”, “excavation areas” and “unspecified”.

In 2011, approximately 1,965 km<sup>2</sup> of Austria became sealed. In relative figures the amount of sealed land in Austria comprises only 2.3 % of the federal territory, but due to the topographic conditions soil as a resource can only to a limited extent be used for settlement and transportation. Only 37 % of Austria’s total territory is available as permanent settlement areas that can be used for agriculture, settlement activities and transportation.

In relation to the permanent settlement area the sealed land accounts for more than 6 %, with a lower, but still rising development. The highest shares of sealed land in the permanent settlement area are found in Vienna and in the predominantly alpine Federal Provinces like Vorarlberg with 8.4 %, Tyrol with 8.8 % and Salzburg with 7.3 %.

## Headline Indicator “Soil”

Since 1995 the sealed land throughout Austria increased to 150 %. The target laid down in the Austrian strategy of sustainable development gives an intended reduction of 1 hectare per day for the whole of Austria. In a three-year average (2007-2010), land use amounts to more than 24 ha per day, which means that about 7.5 hectares are sealed per day. Thus current trends are still almost eight times greater than the target value. If we compare the three-year period 2007-2010 with the previous period 2004-2007, the Provinces Tyrol, Salzburg, Styria and Vienna show lower consumption rates – and thus prove the effectiveness of measures aimed at reducing the area of land used.

The indicator only describes ‘use of soil’ through sealing but not other type of use. To enable us to make more extensive statements about ‘use of soil’, indicator LA 1a provides additional information.

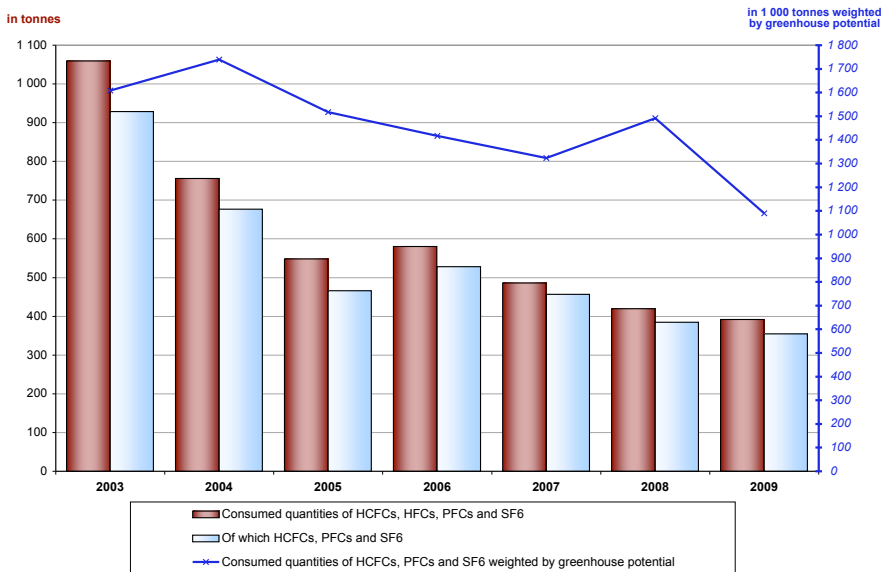
To create better data bases, for example for the assessment of the use of land, the Federal Provinces in cooperation with the Federal Environment Agency launched the project ‘LISA’ (Land Information System Austria). It is to provide better and more exact data on land cover and land use in the foreseeable future.

## Headline Indicator “Toxic and environmentally harmful substances”

### TS 1a Consumption of specific materials

Consumption of specific halogenated hydrocarbon compounds and sulfur hexafluoride 2003 – 2009

Data source:  
Umweltbundesamt



Source: UBA  
Graph: BMLFUW

The diagram shows the used volume of materials subject to reporting requirements, namely fluorine gases (HFCs, FHCs, SF<sub>6</sub>) and notified hydrochlorofluorocarbons (HCFCs).

To incorporate the effects on the environment, for the fluorine gases the volume is also shown weighted by the global warming potential of the individual substances.

The marked upward trend in the consumption of greenhouse gas in 2008, weighted in terms of greenhouse gas potential, is above all a consequence of an extraordinarily high refill quantity of the refrigerant R404a, whose greenhouse effect is 3260 times stronger than that of carbon dioxide.

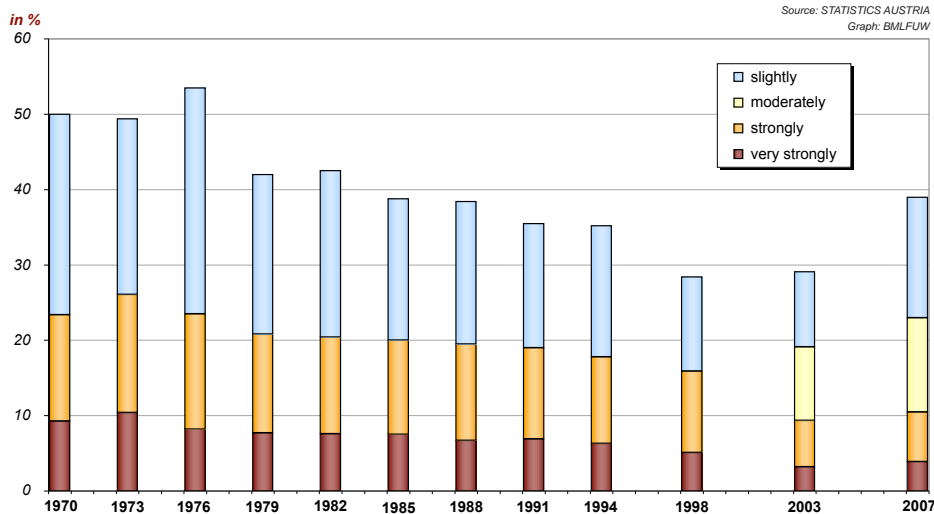
For halons, or halogenated hydrocarbons containing bromine or iodine, a system for organising halons was created in March 2000 with the introduction of the Halon Bank Ordinance. Every owner of halons can feed these into the halon bank, free of charge, and ‘critical users’ can cover their needs from the bank. Thus, the halon bank serves as

a central collection, storage and management point and coordinates the supply for ‘critical uses’ of halons, helping to avoid the production of new halons.

For a more detailed description of the effects of the use of chemicals through an indicator, other substances and toxic effects had to be taken into account.

## LÄ 1 Noise pollution

Percentage of the population that feels disturbed by noise during the day and/or night 1970 - 2007



### Data source:

“Environmental Conditions and Environmental Behaviour” in the microcensus carried out by Statistics Austria on behalf of the Federal Ministry of Agriculture, Forestry, Environment and Water Management

### Definition:

Persons aged 15 and over living in private households are asked whether they experience noise pollution in their home during the day and/or during the night.

The findings show a decrease in the percentage of the population who feel disturbed by noise from 50.1% in 1970 to 28.3 % in 1998. When comparing these figures with the results of the 2003 survey, some differences show up due to the introduction of the response category “moderately”. In 2003 the percentage of the persons answering that they felt disturbed by noise was 29.2 %, in 2007 38.9 %. Especially the percentage of those feeling “slightly” disturbed rose. This indicates that noise protection measures are implemented first and foremost in zones of strong noise pollution.

Totally 64.2 % of the persons who were asked in 2007 and answered that they felt disturbed by noise said that road-, rail- or air traffic were the sources of noise. The source mentioned by far most frequently is road traffic. However, the increase in persons disturbed by traffic noise from 2003 to 2007 is markedly lower than the increase in the total of the persons experiencing noise pollution. A particularly strong rise was observed for the percentage of persons feeling disturbed through “other sources”.



Information on agriculture, food, forests, environment and water:

[www.lebensministerium.at](http://www.lebensministerium.at)



lebensministerium.at

The initiative REGION OF DELIGHT AUSTRIA highlights the importance of regional specialities:

[www.genuss-region.at](http://www.genuss-region.at)



The campaign vielfalt**leben** (living diversity) contributes to the fact that Austria belongs in terms of natural areas to the most diverse countries of Europe: [www.vielfaltleben.at](http://www.vielfaltleben.at)



The action programme of the Ministry of Life on active climate protection:

[www.klimaaktiv.at](http://www.klimaaktiv.at)



The youth platform for awareness raising on water issues: [www.generationblue.at](http://www.generationblue.at)



The Austrian Eco-label guarantees the environmental soundness of products and services: [www.umweltzeichen.at](http://www.umweltzeichen.at)



The Ecological Footprint is the easiest way of testing the future viability of your lifestyle. Calculate your personal footprint at:

[www.mein-fussabdruck.at](http://www.mein-fussabdruck.at)



[www.mein-fussabdruck.at](http://www.mein-fussabdruck.at)

The internet portal of Austria's National Parks: [www.nationalparksaustria.at](http://www.nationalparksaustria.at)



"Organic" means healthy, high-quality food-stuffs which do not contain any spraying agents or antibiotics [www.biolebensmittel.at](http://www.biolebensmittel.at)



