



The
Federal Government



Nachhaltigkeitsstrategie
für Deutschland

National Sustainable Development Strategy

2012 Progress Report



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National Sustainable Development Strategy

2012 Progress Report

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Twenty years ago, the states of the world made sustainability their guiding principle. Time for a new approach – this was the signal sent out by the United Nations Conference on Environment and Development held in Rio de Janeiro, Brazil, in 1992.

A great deal has changed since then. It has much more become a matter of course to consider the long-term repercussions of one's actions. But we continue to be confronted with major challenges. By 2050, the world's population is expected to rise to nine billion people. They will all be entitled to an adequate supply of food, water, energy and raw materials. But how can we secure the subsistence of a rapidly-growing world population while at the same time protecting our natural resources in the long term? This is a question to which the whole world needs to find an answer – the sooner, the better.

Germany has had a National Sustainable Development Strategy for the past ten years, and it is constantly refining it. The Progress Report which has just been adopted by the Federal Cabinet builds on its 2008 predecessor. In the reporting period, the dramatic events surrounding the international financial and economic crisis have provided just one glaring illustration of how important it is even for financial policies to comply with the principle of sustainability. That is why consolidating public finances is and remains a central goal of the German Government. The budgetary rule as enshrined in Germany's constitutional Basic Law makes a major contribution towards safeguarding the Federal Government's ability to act in the long term.

Thinking for tomorrow: as an important stocktaking exercise, the Progress Report provides an overview of the way in which the principle of sustainable development is reflected in Federal Government policy as a whole. The Report focuses on three main areas. First of all the spotlight is on the issue of sustainable economic activity. In the move towards a low-carbon, resource-efficient society, business has a key role to play in reconciling economic performance with social and ecological responsibility. Closely connected to this are the issues of climate and energy, which make up the second focal point of the report. The Federal Government's Energy Concept sets out the guidelines for an overall strategy extending to 2050, and describes how



we should move forward into the age of renewable energies. And finally, the report focuses on a third area, that of water policy, which is also of paramount importance as a global issue.

German citizens, associations and institutions with an interest in the subject have been given the opportunity to contribute their knowledge and experience to the various chapters of this Progress Report, because sustainability affects us all to some degree. Indeed, it thrives on personal and civic involvement, and I very much welcome the many suggestions which have been made. Another positive aspect is that, in addition to the Federal Statistical Office, the Sustainable Development Council and the Parliamentary Advisory Council on Sustainable Development in the German Bundestag, the *Länder* and the municipal umbrella organisations have once again made their own contributions to the Progress Report.

Regionally, nationally and globally, sustainability can help us enjoy a good standard of living while securing long-term protection of our shared natural heritage. Thus, the Progress Report provides a response to expectations in the run-up to this year's UN Conference. In Rio de Janeiro, we will have an opportunity to progress towards greater sustainability on an international level. This opportunity should be exploited to the full. Germany will be joining forces with the European Union in an effort to achieve this goal.

A handwritten signature in blue ink, which reads 'Angela Merkel'. The signature is written in a cursive, flowing style.

Angela Merkel

Summary

Sustainability requires responsible action – for today and for future generations, both nationally and internationally.

Sustainability: the current challenge

It lies within our grasp to take the necessary action so that people not only today, but also in the year 2050, can live in a world in which economic prosperity for all goes hand in hand with social cohesion and the protection of natural resources – a world which recognises a commitment to intergenerational equity and the peaceful coexistence of peoples.

We are facing enormous challenges. Global resources are insufficient for the whole world to be able to model itself on the industrialised countries and experience the same standard of living as that which these currently enjoy. We in the industrialised nations bear responsibility for the opportunities of people in other countries, and must not pass on to them the social and ecological burdens caused by our prosperity. As far as intergenerational equity is concerned, there have already been instances of our present generation “borrowing from the future”. Given this state of affairs, we must do everything in our power to promote innovation, develop new technologies and identify sustainable lifestyles, in order to give all people – both today and in the future – the opportunity to lead their lives in justice and prosperity, and in a healthy environment.

If we aspire to preserve our natural resources, the decisions we make about the economy, the environment and social affairs must be viable in the long term.

How do we achieve fiscal sustainability – both nationally and in Europe? How do we reinforce sustainable economic activity? What steps are to be taken in the near future to protect the climate and accelerate the shift towards renewable sources of energy? How can we promote sustainability at an international level? These are just some examples of the challenges facing policy-makers today (Chapter A.).

The benchmark of sustainability

With its 2012 Progress Report, the Federal Government is continuing – as with its 2008 Report – to advance the National Strategy of Sustainable Development which Germany presented for the first time in Johannesburg at the 2002 World Summit. The basis of this Strategy is an approach to sustainability which combines economic capacity with ecological responsibility and social justice (Chapter B.).

Both locally and internationally, sustainability affects all policy areas. That is why policy-making and economic activity should be based on sustainability as the benchmark for today’s decisions and short-term thinking be replaced by a comprehensive and responsible policy designed for the long term.

Sustainability as a guiding principle of Federal Government policy

At the national level, overall control of the nation’s sustainability policy rests with the Federal Chancellery. This is an indication of the political importance attached to sustainability as a guiding principle, and a consequence of its cross-cutting nature. All ministries are involved in shaping and implementing the strategy, because the guiding principle of sustainable development should above all prove effective by applying the sustainability concept across the entire breadth of Government activity.

Sustainability management

The 2012 Progress Report allows the Federal Government to show how sustainable development has been reinforced since 2008.

The progress is based on the implementation of the concept of sustainability management which comprises the following three elements.

Concept of sustainability management

Management rules

The ten management rules summarise the guiding principle of sustainable development and the associated requirements.

Indicators and goals

Indicators show the progress made on the road to sustainable development. Goals highlight the need for action and are important milestones for measuring progress and success.

Monitoring

Every four years, a Progress Report presents in detail the status of sustainable development. The report is complemented by the biennial Indicator Report of the Federal Statistical Office detailing the trend of the sustainability indicators.

The State Secretaries' Committee on Sustainable Development, which is chaired by the Head of the Federal Chancellery, is just one of the bodies which has been strengthened since 2008 with a view to improving sustainability management, for instance by having all the ministries work together on the Committee. Cooperation between the Federal Government and the *Länder* has also been reinforced.

It is particularly important to reinforce the concept of sustainability where legislative measures are concerned. Whenever a law or decree has been proposed by the Federal Government since 2009, its repercussions have been examined from the angle of sustainable development. The concept of sustainability has been enshrined in the Joint Rules of Procedure of the Federal Government for the very purpose of testing the impact of legislation and contributing to better legislation.

Indicators of sustainable development

Regular monitoring of progress based on certain criteria and indicators is an especially important part of any successful project management.

Consequently, the Sustainability Strategy contains indicators on 21 topics with a total of 38 goals (Chapter C.). Decisive criteria in the revision of the indicators were continuity and transparency (Chapter C.I.). Within this framework, some new goals were added, such as long-term objectives looking forward to 2050 in the areas of energy and climate. Individual indicators were amended to improve their informative value or to har-

monise them with goals agreed at EU level. Two new sub-indicators were introduced to highlight the importance of the area of fiscal sustainability.

The Statistical Office's independent analysis of the development of the indicators (Chapter C.II.) revealed a differentiated picture (31 October 2011 figures). Positive trends were apparent, e.g., in the areas of climate protection, renewable energies, economic performance, the percentage of students starting a degree course, and the employment rate of senior workers.

In other areas, however, the defined goals were either not reached or took a wrong turn. Examples include the consumption of new land for development, the trend of the intensity of goods transport, and the gender wage gap (Chapter C.III.).

Major priorities of the Report

Sustainable political action cannot be credible at the international level unless it operates properly at the national level.

This applies in particular to the fiscal activity of the state, because intergenerational equity and a robust social insurance scheme are greatly dependent on sound public finances. Current discussions about the origins and repercussions of the 2008/2009 crisis in the financial markets and the consequences arising from the debt crisis in euro area member states have made all stakeholders vividly aware of the significance of a financial policy based on sustainability and stability. That is why it is and remains a central goal of the Federal Government to consolidate public finances. The amendments to Articles 109 and 115 of the Basic Law fix new borrowing limits at the Federal level and for the *Länder* and created a mandatory national Stability Pact. The debt rule (or balanced budget provision) which is anchored in Germany's Basic Law plays an essential role in strengthening trust in the long-term stability of national finances and safeguarding the Federal Government's ability to act in the long term.

At the same time, it is important to place the euro on a stable, sustainable footing at the European level. A large number of measures have already been taken to this end since 2010, with a view to improving economic governance and adopting new measures in response to the sovereign-debt crisis. Meanwhile, the

Heads of State or Government in the euro area and other EU member states have agreed to take steps towards creating a stability union based on closer harmonisation of their fiscal and economic policies.

In the year the conference on sustainability will be held by the United Nations (UN) in Rio de Janeiro, the 2012 Progress Report on the National Sustainable Development Strategy is focusing on topics of global relevance: sustainable economic activity, climate and energy, and water policy (Chapter D.).

• Sustainable economic activity

Sustainable economic activity (Chapter D.I.) means adapting to face the challenges of our times and seizing economic opportunities; it also means businesses and organisations adopting a responsible attitude towards the future. It is becoming ever clearer that sustainability can equip us with an important competitive edge, provided it is properly understood. German businesses are starting out from a good position in the competition for sustainable economic activity. Many are pioneers when it comes to incorporating sustainability in their business policies.

Sustainable economic activity thrives on cooperation between public and private sector activities in which consumers are involved. It is particularly significant that ever more people are basing their purchasing decisions not only on price, brand and quality, but also on whether products have been made in a sustainable, socially responsible manner.

In recent decades, sustainable development has evolved into a guiding principle for the business community. One aspect of this is the need to continue adapting rigorously in the face of major global trends. These include urbanisation, the growing demand for resources and energy, a change in consumption patterns and lifestyles, climate change and demographic trends. The transition to a low-carbon, more resource-efficient form of production will necessitate considerable investment, but may also open up economic opportunities – in the field of environmental technologies and beyond – and create employment. Making efficient use of natural resources and materials is essential in order to ensure the competitiveness and efficiency of companies as well as the long-term availability of raw materials.

The Federal Government will continue to contribute to reinforcing sustainable economic activity, both nationally and internationally. This includes providing support for the concept of “Corporate Social Responsibility” (CSR), which encourages companies to combine their own entrepreneurial activity with social accountability.

Within the G20, Germany strongly advocates the achievement of the goal highlighted in the G20 Seoul Summit Leaders’ Declaration, namely to act together to generate strong, sustainable and balanced growth throughout the world.

• Climate and energy

Climate and energy (Chapter D.II.) are central issues in the context of sustainable development. Climate change mitigation and adaptation are among the greatest challenges facing mankind in the twenty-first century. An increase in temperature of more than 2°C over that of preindustrial eras would have serious repercussions for human beings and the environment. That is why by 2050, global greenhouse gas emissions should be reduced by at least 50% below their 1990 levels.

In line with its future energy policy decisions, the Federal Government has reaffirmed its commitment to reduce Germany’s greenhouse gas emissions by 40% from 1990 levels by 2020. The Energy Concept envisages an 80 to 95% reduction by 2050.

Germany is to become one of the most energy-efficient and eco-friendly economies in the world while maintaining affordable energy prices and a high level of prosperity. In its Energy Concept, the Federal Government formulated guidelines for an environmentally-friendly, reliable and affordable supply of energy and, for the first time, has set out the path ahead as we approach an age of renewable energies. Following the decision to phase out nuclear energy generation by the end of 2022 at the latest, the Energy Concept is now being implemented at an accelerated pace. This requires the broadest possible public support for the country’s transformation of its energy supply, which will make demands on all citizens. A common effort will be required by the Federal Government, the *Länder*, the local authorities, industry, trade unions, environmental and consumer associations and each and every citizen.

On an international level, the Federal Government will continue campaigning for a binding global climate agreement which provides for verifiable commitments based on the fair distribution of the burden on all major greenhouse gas emitters and outlaws the relocation of production plants to countries with no climate protection. The Federal Government also keeps tabs on the economic effects of climate change as well as its implications for security and development. At the Durban Climate Change Conference in late 2011, the Federal Government successfully championed a climate protection agreement which would be internationally binding. Its content and target agreements are now to be specified by the international community of states by 2015.

Climate change has already begun. In order to tackle its consequences, which can no longer be avoided, the Federal Government has put in place the framework for a national adaptation process with its German Adaptation Strategy.

• Sustainable water policy

Clean water is one of life's necessities, and one of our most important resources. Water management has risen to a high or even very high standard in Germany. Considerable investments into the sewage infrastructure, renaturalising river beds and other measures have brought about significant improvements in Germany's water quality. Nonetheless, the protection of rivers and lakes remains an on-going task (Chapter D.III).

Managing water resources under the principle of sustainability will ensure that water resources are available to future generations and preserve or restore the ecological balance of bodies of water. Sustainable water policy is a cross-cutting issue. Aspects of water policy must therefore be considered more than before in other policies as well.

The availability of water and affordable access to it are issues of global importance. Population growth, the expansion and intensification of agriculture, and economic development have resulted in the increased pollution of water with nutrients and pollutants in many parts of the world, despite significant progress in some regions (e.g. Europe). Add to this the substantial use of water resources associ-

ated with the international exchange of goods and services, and it becomes clear why Germany's development policy focuses on water resource management, water supply and sanitation.

Inadequate access to a reliable water supply and sanitation and the lack of adequate sewage treatment are still important causes of poverty, malnutrition and disease in many places. Although 900 million people throughout the world had insufficient access to clean drinking water in 2011, the United Nations' goal of halving the number of people without adequate access to safe drinking water by 2015 will probably be achieved. Problems in the provision of sanitation are far worse, however, with some 2.6 billion people currently having no access to such facilities. By organising the "Bonn2011 Nexus Conference", the Federal Government provided an important impetus to improving the linkage between the major global issues of securing adequate supplies of water, energy and food.

Sustainable development – a challenge for any policy

The Report's depiction of other policies follows the line of the European Sustainable Development Strategy – in particular in Chapter E.; it reflects the broad spectrum of topics that are relevant to sustainable development. New approaches must be found in many areas. In this context, adding to the body of knowledge through R&D and disseminating it through education have a decisive role to play.

Examples of other topics under discussion

Sustainable transport; sustainable consumption and production; preserving and managing natural resources; reducing consumption of new land for development; preserving biological diversity; agriculture and forestry; health; social inclusion; demography and migration; global challenges relating to poverty and sustainable development; sustainable and responsible financial policy; sustainability in Europe; sustainability within the framework of the United Nations.

A common task of the Federal Government, the *Länder*, the municipalities, and civil society

Sustainability requires a joint effort on the part of the Federal Government, the *Länder*, the municipalities and all relevant groups in society. The Federal Government advocates greater cooperation between the different levels.

That is why – as with the last Progress Report – the Parliamentary Advisory Council on Sustainable Development in the German Bundestag, the Sustainable Development Council, the *Länder* and the municipal umbrella organisations were once again invited to join the preparations for this Report (Chapters F, G, H. and I).

Sustainability – a global challenge

In many areas, policy-making in Germany is marked by the interaction between the national and the European levels (Chapter J.). Sustainability is one of the European Union's political priorities, with the renewed EU Sustainable Development Strategy being an important benchmark for national activities.

Implementing its Sustainability Strategy, the Federal Government is involved in an international process in the context of the United Nations (UN) (Chapter K.). The 1987 Brundtland Report was an important milestone, as it provided the theoretical foundation for the decisions taken by the earth summits in Rio de Janeiro and Johannesburg in 1992 and 2002, respectively.

The challenges facing the global community are daunting. By 2050, nine billion people will need a sustainable supply of food, water, energy and raw materials. The Millennium Development Goals are planned to be achieved as early as in 2015. Against this background, the UN conference to be held in Rio de Janeiro in June 2012 will focus on sustainable economic activity (the green economy) within the context of sustainable development and poverty reduction and on the UN's institutional framework for sustainable development. As regards sustainable economic activity, Germany and its EU partners are pressing for the adoption of a "UN Green Economy Roadmap", which would recognise the necessary steps towards a green economy at the international and national levels and accelerate the global transition to such an economy. As far as an institutional framework is concerned, Germany advo-

cates upgrading the UNEP to a UN specialised agency, which will cooperate closely with other UN bodies and organisations. In addition, improvements to the UN structures for sustainable development are required.

Dialogue with the public

Federal policy is based on the guiding principle of sustainability. But it is not just a matter for the state and policymakers; each and every German citizen is equally called upon to commit to this cause.

That is why the Federal Government recognised the importance of involving the public as early as possible in all aspects of the preparation of the Progress Report: from the initial deliberations about its concept and possible content to formulating the final draft version (Chapter B.). The suggestions and proposals which emerged from dialogue with the public proved valuable in shaping its final form. Their responses showed that the topic of sustainability is of concern to more and more people – and in very different areas of life, whether climate/energy, transport or sustainable consumption.

Conclusion

The Progress Report on the National Sustainable Development Strategy shows that Germany's adoption of the guiding principle of sustainable development has grown in stature in recent years. To the Federal Government, sustainability is a guiding principle for its policies: the more widely it is put into practice, the more it can become a driver of social and political progress.

A Sustainability: the current challenge

Society is confronted with an immense challenge: the need to strike a responsible and equitable balance between the needs of the present generation and the prospects for future generations.

We have all the tools we need to hand. The world today has at its disposal the knowledge, scientific understanding, technology, skills and financial means to tackle this challenge. Whether and how we make use of these opportunities will determine how our children and grandchildren will live in the year 2050, and will also impact upon the shared futures of people living in the northern and southern hemispheres of our planet.

The need to set the course now

It lies within our grasp to take the necessary action today so that in the year 2050 and thereafter our world will be one in which economic prosperity for all goes hand in hand with social cohesion and the preservation of vital natural resources – a world which recognises a commitment to intergenerational equity and whose peoples coexist peacefully.

The foundations for this must be laid now – in our economy, in our stewardship of natural resources and in the way we promote cohesion between all sectors of society. But this challenge cannot be tackled by the state alone. Truly “sustainable” development cannot be proscribed, but requires the active collaboration of both society and the state.

Megatrends

It is not possible to predict today the fine detail of how society will develop in the years leading up to 2050. A few important trends – often referred to as “megatrends” – are, however, emerging:

→ The world’s population is expected to rise from its current level of seven billion to more than nine billion by 2050, 70 to 80% of whom will live in towns, an

increasing number of which will expand into megacities. Tokyo and Mexico City, for example, already have populations estimated at more than 20 million each. This development will aggravate problems such as energy and water supply, sewage disposal, traffic congestion and air pollution, but will also give rise to new problems in areas such as poverty reduction and health or educational policies.

→ At the same time, the demand for raw materials and energy will grow, partly as a consequence of rising incomes and changing consumption patterns and lifestyles. Even today, we are using considerably more of the planet’s natural resources than it is able to regenerate. The consequences are being witnessed ever more frequently in the loss of ecosystem services and biological diversity, soil degradation and desertification, as well as water scarcity and water contamination. If our planet’s resources continue to be used as they are today, they will be depleted to the extent that we will be unable to maintain our present high level of consumption in the long term, especially if increasing numbers of people from elsewhere in the world follow our lead.

→ We can also expect to see a continuation of climate change. Even if the rise in temperature were to be limited to 2°C in comparison with pre-industrial times, we could expect serious repercussions to occur for individual regions of the world and their populations. Climate change harbours the risk of mass migrations of refugees and an increase in violent confrontations over water and food. Consequently, mankind is compelled as never before to reduce greenhouse gas emissions and adapt to those consequences of climate change which are inevitable.

→ Another of the global megatrends is demographic change. In Germany, the age composition of the population will alter markedly – by 2050, society will on average be considerably older, and life expectancy will continue to rise. Moreover, a much smaller proportion of the population will be of working age: it will have declined by 6.3 million by 2030 alone.

Among other things, this will turn the spotlight on our social protection schemes and on the availability and training of skilled workers, which will necessitate not only processes of social adaptation, but also policy formulation.

Crises – often the result of a failure to act sustainably

Despite all the uncertainty about global developments and despite all the multi-layered dimensions of the associated problems and their underlying causes, it is becoming increasingly clear that failure to observe the principle of sustainability is a deep-rooted cause of many of the recent crises and problems.

One example where this applies is the recent financial and economic crisis, which has illustrated with great clarity that short-term gains do not pay off in the long term. We must think about tomorrow today, if we are not to fritter away our future and that of our children and grandchildren

“Since 2008, we have been living in times in which we have had to cope with a succession of serious crises to an extent one wouldn’t have thought possible. But whenever one enquires into their origins, they can usually be traced back to the addiction to acquire more than one can sustainably afford.

I believe the time is fast approaching when a certain way of doing business – of constantly living on tick – will turn out to have no viable future.”

Chancellor Dr Angela Merkel in her address to the Congress “Rio+20: Gehen die Meere unter?” held by the CDU/CSU Parliamentary on Group 24 October 2011

Where we stand in 2012

The Germany we call home is one of the highest-performing countries in the world, with one of the strongest economies. That is a fantastic achievement on all our parts, but at the same time it places us under an obligation to move forward and provide support in the areas in which our strengths lie. We can demonstrate to others how sustainability can be put into practice, even internationally.

It is time to redefine progress. This is precisely the right moment to set ourselves ambitious goals which will help us shape a sustainable future.

• Fiscal sustainability – both nationally and in Europe

Robust national finances are essential if we are to achieve intergenerational equity. A central objective of the Federal Government has been, and remains, to consolidate public finances. In order to achieve this goal, we will reduce the structural deficit in the public purse in line with our European commitments. Every euro which has to be spent on interest payments is one euro less we can spend on shaping our future.

“Public authorities are obliged to take into account intergenerational equity. The Federal Government, the Länder and the municipalities should present balanced budgets and then take the further step of continually reducing their debt position.”

Seventh management rule of the National Sustainable Development Strategy

We are setting a good example in Europe by consolidating our government finances. In some EU member states, we have witnessed the serious repercussions brought about by high levels of debt combined with a weak competitive position. What first manifested itself in 2008 in the United States of America and evolved into a global financial and economic crisis went on to put whole states under pressure. As a result of the considerable financial aid which was required to stabilise financial institutions and overcome the economic crisis, even Member States in the euro area with pre-existing high rates of public debt found themselves in difficulty.

Germany is an anchor of stability and a driving force for growth in Europe. That is why at the same time as supporting our partners, we must call on them to take responsibility for their own affairs. European solidarity is no substitute for national accountability.

Back to a Union of stability – that is our goal for Europe. It is important to tackle excessive public debt and lacking competitiveness. It was with this objective in mind that the Heads of State or Government together with the finance ministers of the euro area developed a wide-ranging overall strategy to stabilise and reform the European Economic and Monetary Union. We must continue to build on this with determination, and improve the way in which the

European Economic and Monetary Union is governed as a whole (see Chapter C.II., Indicators Nos. 6a-c, and Chapter E.I.). It is only by adopting a wide-ranging approach that lasting solutions can genuinely be found to Europe's problems, and that we can take advantage of the opportunities which emerge from these crises.

- **Sustainable economic activity – “sustainability made in Germany”**

In comparison with other EU countries, Germany occupies a leading position, and not only in terms of innovation; German businesses are also pioneers when it comes to including sustainability into their corporate strategies, and their products are designed in response to the challenges of our time. One illustration of this is the German share in the global market for environmental technologies and services.

An increasing integration of sustainability concerns at the business level pays off in terms of macroeconomic development. So, never before have so many people in Germany been in employment – in the autumn of 2011, the figure was more than 41 million. Unemployment was below three million – the lowest it had been for twenty years – and the prospects for further improvements are looking good. 2010 saw the highest real wage growth since 1995.

It is true that economic outlook indicates that economic dynamism will slow down in 2012. But for Germany as a whole – despite all the uncertainties of international developments – we can expect the economy to continue to grow.

In the long term, this means that it will continue to have to adapt rigorously in response to global megatrends. Structural change must be pursued consistently in the direction of a low-carbon economy. And Germany is well placed to become one of the most resource-efficient economies in the world.

Sustainable economic practices rightly take centre stage in many of the activities we engage in at a number of different levels – nationally, within the European Union, and internationally (see the Chapter identifying our main priorities, D.I.).

“The issues of today, such as sustainable economic growth, global trade and climate change, highlight the need for a global regulatory framework. Enhanced cooperation in international forums and institutions is crucial if worldwide accords and agreements are to come about. There is no other way of tackling global challenges.”

Dr Philipp Rösler, Federal Minister for Economic Affairs, in his address to the conference on “Enhancing Sustainable Growth and Economic Cooperation on a Global Scale”, 6 October 2011

- **Need to protect the climate and accelerate energy supply restructuring**

It will only be possible to avoid the serious repercussions of climate change if the surface temperature of the earth rises by no more than 2°C in comparison with pre-industrial times. The two-degree objective was recognised by the international community as binding at the United Nations Climate Change Conference held in Cancún, Mexico, in 2010, and is therefore the guiding principle underlying both the international and the German approaches to climate policy. In line with the 2005 Kyoto Protocol, Germany undertook to reduce its average greenhouse gas emissions between 2008 and 2012 by 21% in comparison with 1990. The latest calculations from the Federal Environment Agency show that by the end of 2009, greenhouse gas emissions in Germany fell by 25.3% compared with the defined level of base year emissions. In international climate talks, the Federal Government has been joining forces with the European Union to continue to press for an ambitious, wide-ranging and legally binding climate protection agreement which would be universally applicable and enter force no later than 2020.

In line with its decisions for an accelerated implementation of the nation's Energy Concept, the Federal Government reaffirmed its commitment to reduce Germany's greenhouse gas emissions by 40% from 1990 levels by 2020, 55% by 2030, 70% by 2040 and 80 to 95% by 2050.

Germany is spearheading efforts to put in place an energy supply system of the future. We can become the first industrialised nation to succeed in converting to a highly efficient energy system based on renewable energy sources. This means attaching great importance to innovation and advanced technologies, effective yet cost-efficient measures, and the adoption of policies which are market oriented,

competitive as well as environmentally sound and climate compatible.

The German Government's Energy Concept sets out the path to be taken as we enter the age of renewable energies, and is now being implemented at an accelerated pace. As a consequence, Germany is about to undergo a fundamental restructuring of its energy supplies. This will not only be beneficial in terms of climate protection, but will also open up technological and economic opportunities for Germany to gain a competitive edge as a business location and exporting nation. While maintaining competitive energy costs, energy security and a high level of prosperity, Germany is planned to become one of the most advanced and energy-efficient economies in the world. But this restructuring will present businesses and the German people with enormous challenges, and will depend on wide-ranging investment.

The path towards a sustainable future requires openness and an ability to learn new lessons. An illustration of this was provided by the horrific events at the Japanese nuclear power plant in Fukushima. This incident provided visible evidence that the risks associated with the use of nuclear energy could not be excluded entirely even in a technologically advanced country, and prompted our resolve to phase out our use of nuclear energy altogether by 2022, which is even faster than scheduled.

One thing is certain: restructuring Germany's energy supply sector represents a challenge for the decades ahead. It can only succeed if this project and the associated requirements are supported by as broad a section of society as possible. The Federal Government, the *Länder* and the municipalities, as well as business, industry and the trade unions, environmental and consumer associations, and the German people will all have to share the burden. (see Chapter D.II.).

• **Promoting sustainability in the international arena – the “Rio 2012” United Nations Conference, and sustainability in Europe**

Today's concept of sustainable development or sustainability as a political guiding principle goes back to the Report of the Brundtland Commission of 1987:

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

It contains within it two key concepts:

→ *the concept of “needs”, in particular the essential needs of the world's poor, to which overriding priority should be given; and*

→ *the idea of limitations imposed by the state of technology and social organisation on the environment's ability to meet present and future needs.”*

World Commission on Environment and Development (“Brundtland Commission”), 1987

In 1992, the United Nations Conference on Environment and Development in Rio de Janeiro proclaimed “sustainable development” to be a central guiding principle for global action. The summit promoted the idea of sustainability throughout the world – far beyond the scope of stakeholders in environmental and developmental policies. It established a global programme of action for the 21st century with its “Agenda 21”. This mandated that signatory states were to formulate national sustainability strategies by the year 2002.

The precedent-setting resolutions adopted by the international community of states at the UN Conference on Environment and Development in Rio de Janeiro in 1992 were indicative of a sense of hope at that time. In the 1990s, completely new perspectives were opened up in many areas after the fall of the Berlin Wall and the removal of barriers between East and West, and with the integration of eastern Europe and new emerging countries into the world economy. At the same time, there was a growing awareness that preserving Creation was just as major a challenge for the international community as, for instance, securing peace, fighting poverty or respecting human rights.

In 1992, the United Nations established the United Nations Commission on Sustainable Development (CSD). As part of the UN Economic and Social Council, its duty is to promote the implementation of the results of the Rio Conference.

In 2002, the World Summit on Sustainable Development was held in Johannesburg, South Africa. This summit built upon the agreements achieved in Rio by updating the deadlines for target achievements and adding new priorities for action.

In December 2009, the UN General Assembly scheduled another UN conference on sustainable development again to be held in Rio de Janeiro at the level of Heads of State or Government in June 2012 – twenty years after the world summit in Rio and ten years after that in Johannesburg. The “Rio 2012” conference will focus on a “Green economy in the context of sustainable development and poverty eradication” and on the reform of UN institutions in the fields of environmental affairs and sustainability. Germany together with the European Union is expressing its support for a timetable for sustainable economic activity and for the strengthening of the UN institutions for environmental affairs and sustainability. Transforming the UN Environment Programme (UNEP) into a UN special agency based in Nairobi will play a central role. A more detailed study of the status of sustainability activities within the UN can be found in Chapter K. A sustainable water policy (see Chapter D.III.) is also closely related to the issues discussed in Rio, especially as regards the subject of sustainable economic activity.

In the European Union, sustainable development as the ultimate objective of all policies has been incorporated in the treaties since as long ago as 1999, and has also helped shape the Treaty of Lisbon. The goal of sustainable development is part and parcel of the basic consensus in European policy-making – both within the European Sustainable Development Strategy and in other policies or strategies such as the Europe 2020 Strategy.

The German Government is committed to increasing its efforts to bring this goal to fruition in every policy area (see Chapter D.I.2.b and Chapter J.).

Sustainability as a guiding principle

Sustainability provides orientation and guidance which will help us overcome the obstacles facing our society now and in the future. But this can only happen if the sustainable development approach is accepted not only as a guiding principle for governance, but increasingly also as a benchmark for the decisions to be made in business and society. The Parliamentary Advisory Council on Sustainable Development is just one of the bodies to stress that sustainability has to be integrated in all areas of life as something to aspire to.

“It requires a culture of sustainability, which should help close the gap between knowledge and action. It is a question of determining which values are important to us ... and how we define satisfaction and reputation in an era in which we know that resources are limited.”

Parliamentary Advisory Council on Sustainable Development,
Bundestag Reference No. 17/3788 of 16 November 2010

Many indications hint to the fact that we are making progress along this path. Surveys have shown that people are becoming increasingly conscious of the importance of sustainability. The level of awareness of the sustainable development approach has more than tripled in Germany in recent years.

Level of awareness of the term “sustainable development”

Yes, I am familiar with the term
2000: 13 % 2004: 22 % 2010: 43 %

Source: Federal Ministry of the Environment/Federal Environment Agency, representative survey on environmental awareness and environmental behaviour, 2010

A survey conducted by the Hamburg-based Trendbüro for the Otto Group among 1,000 people in September 2011 revealed a significant increase in the level of interest in ethical products and a marked rise in both the willingness to pay for products regarded as sustainable and in the frequency with which they were purchased.

Sustainability is becoming an increasingly relevant factor in the business world too; not only for family businesses which traditionally tend to think in the long term, but also for large companies.

Sustainability continues to be increasingly important to issuers of securities

“More than two thirds of companies listed on the stock exchange attach great importance to the issue of sustainability for the future development of their own company. This was the finding of a survey conducted by the Deutsches Aktieninstitut e. V. in collaboration with the Sustainable Business Institute (SBI) e. V. and sponsored by the Federal Ministry of Education and Research (BMBF). In an earlier survey in 2003, this was true of barely 40 % of companies.

The statement ‘Sustainability signifies long-term economic success’ is approved by 86 % of those questioned.”

Sustainable Business Institute/Deutsches Aktieninstitut, Press Release of 20 September 2011

In a globalised world, sustainable development is possible only if it is underpinned by worldwide action with cross-border interconnections. Great though the challenges which lie before us in this area may be, a very promising start is being made here (see in particular Chapter K.). As on a national level, it is of fundamental importance on a global scale that sustainability is acknowledged not just as a benchmark for action by the government, but as a responsibility for society as a whole. The UN conference in Rio in 2012 will probably send out a strong signal to this effect.

B National Sustainable Development Strategy

Federal Government policy is informed by the guiding principle of sustainability. This Progress Report will serve to take the 2002 National Sustainable Development Strategy a stage further, and will build on the most recent Progress Report from 2008.

“Sustainability is an on-going task that requires patience and resolve. It is necessary to consider sustainability as a guiding principle of Germany in a comprehensive and consistent manner. ... Only when the challenge of sustainability is truly faced and sustainability efforts put into daily practice by all stakeholders can it become an engine of renewal. In this spirit, the National Sustainable Development Strategy is a strategy for the future of the twenty-first century.”

2008 Progress Report on the National Strategy for Sustainable Development

The National Sustainable Development Strategy was first presented at the UN World Summit on Sustainable Development in Johannesburg in 2002. In this strategy and in subsequent reports (2004 Progress Report; Wegweiser Nachhaltigkeit 2005; 2008 Progress Report), the guidelines, processes and a number of topics were addressed in detail. Since 2006 (most recently in 2010), Indicator Reports released by the Federal Statistical Office have analysed the level of progress achieved. In the 2008 Progress Report, the key elements of the Strategy were summarised for the first time under the heading, “Sustainability Management”.

I. Aim of the Strategy

Sustainability requires a holistic, integrated approach. Only when interrelationships and interdependencies have been detected, described and taken into account, can long-term, stable solutions to existing problems and conflicting objectives be identified.

This means combining environmental protection, economic performance and social responsibility in a way that enables sustainable decisions based on all three aspects to be considered in a global context. The preservation of the earth’s capacity to support us is the absolute outer limit. It is within this framework that the realisation of the various political goals must be optimised.

Sustainability goal triangle

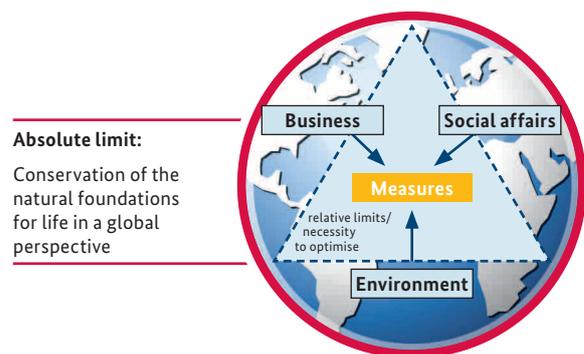


Figure based on: SRU, KzU No. 9, 2011/Fig. 2

The sustainable development approach does not identify a single correct path which should be followed, but it is rather a method of problem solving. It requires an ability to think in a number of different dimensions, and makes it possible to see the impact of acting or failing to act. This approach makes political decisions in all areas.

II. The functioning and operation of the Strategy

Central to the Strategy are guidelines which outline the challenges from all dimensions of sustainable development in an integrated and cross-cutting way. In this context, the Strategy is geared towards an improve-

ment in intergenerational equity, quality of life, social cohesion and international accountability. Sustainability must never lose sight of the “whole picture”.

These four guidelines also form the framework for the Strategy’s goals and indicators (see Chapter C.).

“The term ‘sustainability’ has become indispensable, because it builds bridges between economic activity and ethical responsibility, between present and future, cause and effect. Sustainability places the emphasis on prevention rather than cure, on systemic rather than linear thinking. No other term gears social, economic and ecological interests towards enduring development to the same extent.”

Prof Dr Markus Vogt, Department of Catholic Theology of Ludwig Maximilian University, Munich, Statement within the Dialogue on Sustainability (from: “Religionen – Zwölf Potentiale für Nachhaltigkeit” edited by the KSOE-Katholische Sozialakademie Österreichs, “Religionen im öffentlichen Raum”, Vienna 2010)

Intergenerational equity

The limits of our planet’s capacity to support life must be respected if economic prosperity and social well-being are to be ensured in the long term.

The guiding principle of sustainability requires that the resources and natural zones of this world be preserved for future generations. It is in part a moral duty to maintain the integrity of Creation in all its diversity. Consequently, sustainability requires the relationship between the generations to be based on fairness – both today and with future generations in mind.

“Each generation is required to solve the challenges facing it and must not unload them onto future generations.”

Basic rule of the Sustainability Strategy

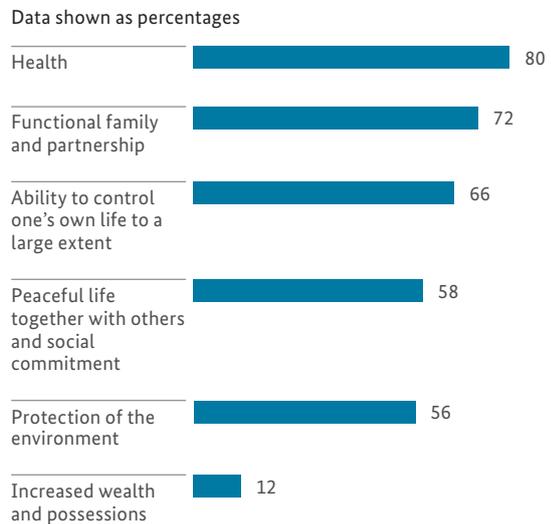
A policy shifting the burden to future generations or discriminating against sectors of the population would run counter to this rule, and would at the same time have a negative impact on social cohesion. This applies not only to the issue of environmental pressures, but also to access to education and participation in economic prosperity and employment.

A reduction in public debt is essential for intergenerational equity. “Public authorities are obliged to take into account intergenerational equity”, according to one of the management rules of the Strategy. But fostering innovation and putting in place government incentives for investment are also important if we are to provide future generations with the opportunity to shape the future with new solutions. Both requirements must be brought together in a sustainable policy. The Strategy contains nine goals and indicators dedicated to the guiding principle of intergenerational equity (indicators 1 to 9).

Quality of life

On the one hand, the Strategy for Sustainable Development aims to improve quality of life through the attainment of economic prosperity – an improvement in economic performance which is both environmentally and socially acceptable – while on the other it aims to maintain a healthy environment as a precondition for a good life.

Factors people consider important for their quality of life



Source: tns emnid, July 2010 | Bertelsmann Foundation

Other challenges under the heading “Quality of life” (goals and indicators 10 to 15) named by the Strategy include securing environmentally compatible mobility, health and personal safety. Because “having a lot” is not necessarily the same as “living well”; a recent survey commissioned by the Bertelsmann Foundation revealed that in fact many Germans shared this view.

Statement from the Dialogue on Sustainability

“At first sight it seems really positive that only 12 % of people cite increased wealth as their most important goal. But considering that only very few people really can achieve extremely high earnings (often at the expense of us all – remember the recent financial crisis and the subsequent strategies of financial firms) and also want to, and that it is a matter of complete indifference to them at whose cost they earn their money, then this statement is put into stark perspective.”

Social cohesion

Only a society which comes together to tackle existing problems will achieve long-term success.

“We should concern ourselves with how our society can be shaped in a sustainable way over the long term, perhaps up to 2050, within a global context. ... In the social sector, this means enabling everyone to participate in social, economic and political life, without living at the expense of future generations.”

Parliamentary Advisory Council on Sustainable Development,
Bundestag Reference No. 17/3788 of 16 November 2010

In order to strengthen social cohesion, poverty and social exclusion should be prevented to the greatest possible extent. Accordingly, the Strategy identifies boosting employment levels as one of its goals (Indicator 16: “Employment rate”). In addition, the work-life balance should be improved (Indicator 17: “All-day care provision for children”) and equal opportunities in society promoted (Indicator 18: “Gender pay gap”). There should also be improved integration (Indicator 19: “Foreign school leavers with a school-leaving certificate”).

International responsibility

Sustainability means thinking and acting within a global context. A future-orientated policy meets this requirement, not least in one’s best interests. After all, in a globalised and interconnected world even the most distant regions are “right next door”; developments there, including the repercussions of ecological and social problems in other countries, have a direct impact on us.

Neither would it be morally justifiable to pass on to other countries the social and ecological costs arising from our own prosperity. Figures showing the domestic and foreign shares of resource consumption are important in this context. The Federal Government is committed to the goals identified by the UN in its Millennium Declaration and the commitments made in this respect. Of particular importance is the goal of halving the percentage of people living in extreme poverty and starvation worldwide by 2015 compared to 1990. Achieving this goal has been made all the more difficult by the global economic and financial crisis, and therefore demands an increased effort. Two goals and indicators (Nos. 20: Official development assistance as a share of gross national income, and 21: German imports from developing countries) address the issue of international accountability.

Sustainability management

The operational elements which lie at the heart of the strategy are described below:

Sustainability management – Summary of existing controls and processes used within the National Sustainable Development Strategy –

I. Significance, basis and scope of sustainability as an instrument of control

1. Sustainable development (sustainability) is a guiding principle of the politics of the Federal Government. As a goal and yardstick of government action at national, European and international levels, it must be observed in all measures and all policy fields.
2. Sustainability aims at the achievement of intergenerational equity, social cohesion, quality of life, and the acceptance of international responsibility. In this spirit, economic performance, the protection of natural resources, and social responsibility are to be united so that developments will be permanently sustainable.
3. The National Sustainable Development Strategy is the 2002 Strategy as further developed in the reports that followed it, particularly the 2008 Progress Report. The strategy describes a process of policy development for the longer term and offers guidance with regard to this process.
4. The main responsibility for sustainable development at the national level rests with the Federal Chancellery in order to emphasise the significance for all policy areas and assure cross-departmental monitoring and control.
5. To make sustainability a reality depends strongly upon the interplay of all relevant stakeholders. Additional stakeholders in the field of sustainability are:
 - a) International level
Germany is committed, both within the framework of the United Nations (especially within the framework of the UN Commission on Sustainable Development – CSD) and bilaterally, to progress in sustainability.
 - b) European level
Germany
 - is committed to strengthening sustainability at the European level, especially of the EU Sustainable Development Strategy as well as the links between the EU Strategy and the national strategies; and,
 - cooperates closely with other European countries on sustainable development issues.
 - c) Länder and municipalities
Between the Federal Government and the *Länder*, there is a regular exchange regarding sustainability within the framework of the appropriate committees towards integrating activities and goals better. The municipal umbrella organisations are also included in these discussions.
 - d) Civil society (citizens, businesses and labour unions, science, churches, and associations).
There are various demands placed upon stakeholders in civil society in order to achieve sustainability. Thus, businesses, for example, carry the responsibility for their production and products. The information provided to consumers as to health and environmentally-relevant characteristics of products as well as about sustainable production methods is also a part of this responsibility. Consumers make individual contributions through their product choices and the socially and ecologically sustainable and economically sensible use of these products.

II. Sustainability management

1. For the assessment and development of measures in their areas of responsibility, the ministries employ the concept of sustainable development management. This concept contains the following three elements:
 - Management rules (see 2.)
 - Indicators and goals (see 3.)
 - Monitoring (see 4.)

2. Management rules for sustainability

– Basic rule –

- (1) Each generation must solve its own problems and not burden the next generations with them. It must also make provisions for foreseeable future problems.

– Rules of sustainability for individual areas of action –

- (2) Renewable natural goods (e.g. wood or fish populations) should, on a long term basis, be used only within the bounds of their ability to regenerate.

Equally, non-renewable natural goods (e.g. minerals or fossil energy sources) should only be used to the extent that their functions can be replaced by other materials or energy sources.

- (3) The release of materials into the environment should, in the long run, not exceed the adaptability of the eco-system – e.g. the climate, forests and oceans.
- (4) Dangers and unjustifiable risks to human health should be avoided.
- (5) Structural change triggered by technical developments and international competition should be shaped in a way that is economically successful as well as ecologically and socially sustainable. For this purpose, political fields should be integrated so that economic growth, high employment, social cohesion and environmental protection go hand in hand.
- (6) Energy and natural resource consumption and the provision of transport services should be decoupled from economic growth. At the same time, we should aim for growth-related increases in demand for energy, resources and transport to be more than offset by efficiency gains. In this context, adding to the body of knowledge through R&D and disseminating it through education have a decisive role to play.
- (7) Public budgets are to take account of intergenerational equity. The Federal Government, the *Länder* and the municipalities should present balanced budgets and then take the further step of continually reducing their debt position.
- (8) Sustainable agriculture needs to be compatible with nature and the environment and take into account the requirements of livestock farming in a way that is fair to the animals and provides consumer protection, particularly concerning health matters.
- (9) In order to strengthen social cohesion
 - poverty and social exclusion should be prevented as far as possible,
 - opportunities for participating in economic development should be open to all sections of society,
 - necessary adaptations to demographic change should take place at an early stage at the political and economic level and in society,
 - everybody should take part in social and political life.
- (10) General international conditions should be shaped jointly in a manner which ensures that people in all countries can lead a life worthy of a human being and according to their ideas and in unison with their regional environment while at the same time profiting from economic developments. Environment and development form a unit. Sustainable global action is based on the Millennium Development Goals of the United Nations. An integrated approach should link the fight against poverty and hunger with
 - the respect of human rights,
 - economic development,
 - environmental protection, and
 - responsible action by governments (good governance).

3. Sustainable development will be measured in 21 areas by means of the following key indicators:

NO.	INDICATOR AREAS SUSTAINABILITY AXIOM	INDICATORS	GOALS
I. INTERGENERATIONAL EQUITY			
1a	Resource conservation Using resources economically and efficiently	Energy productivity	To be doubled between 1990 and 2020
1b new		Primary energy consumption	To be reduced by 20 % by 2020 and 50 % by 2050 compared to 2008
1c		Raw material productivity	To be doubled between 1994 and 2020
2	Climate protection Reducing greenhouse gases	Greenhouse gas emissions	To be reduced by 21 % by 2008/2012, 40 % by 2020 and 80 to 95 % by 2050, in each case compared to 1990
3a amended	Renewable energy sources Strengthening a sustainable energy supply	Share of renewable energy sources in final energy consumption	To be increased to 18 % by 2020 and 60 % by 2050
3b		Share of renewable energy sources in electricity consumption	To be increased to 12.5 % by 2010, to at least 35 % by 2020 and to at least 80 % by 2050
4	Land use Sustainable land use	Built-up area and transport infrastructure expansion	Increase to be reduced to 30 hectares a day by 2020
5	Species diversity Conserving species – protecting habitats	Species diversity and landscape quality	To be increased to the index value of 100 by 2015
6a	Government debt Consolidating budgets – creating intergenerational equity	General government deficit	Ratio of government deficit to GDP less than 3 %
6b new		Structural deficit	Structurally balanced public spending, total national structural deficit of no more than 0.5 % of GDP
6c new		Debt position	Ratio of government debt to GDP no more than 60 %
7	Provision for future economic stability Creating favourable investment conditions – securing long-term prosperity	Gross fixed capital formation in relation to GDP	Increase in GFCF share in GDP
8	Innovation Shaping the future with new solutions	Private and public R&D spending	To be increased to 3 % of GDP by 2020
9a	Education and training Continuously improving education and vocational training	18- to 24-year-olds without a school leaving certificate	To be reduced to less than 10 % by 2020
9b amended		30- to 34-year-olds with a tertiary or post-secondary level of education	To be increased to 42 % by 2020

NO.	INDICATOR AREAS SUSTAINABILITY AXIOM	INDICATORS	GOALS
9c		Share of students starting a degree course	To be increased to 40 % by 2010, followed by further increase and stabilisation at a high level
II. QUALITY OF LIFE			
10	Economic capacity Raising economic output in an environmentally and socially compatible way	GDP per capita	Economic growth
11a	Mobility Guaranteeing mobility – protecting the environment	Intensity of goods transport	To be reduced to 98 % by 2010 and to 95 % by 2020, compared to 1999 levels
11b		Intensity of passenger transport	To be reduced to 90 % by 2010 and to 80 % by 2020, compared to 1999 levels
11c		Modal share of rail transport	To be increased to 25 % by 2015
11d		Modal share of inland freight water transport	To be increased to 14 % by 2015
12a	Farming Environmentally sound production in our cultivated landscape	Nitrogen surplus	To be reduced to 80kg/hectare of agricultural area by 2010, further reduction by 2020
12b		Organic farming	Share of organic farming on land used for agriculture to be increased to 20 % in coming years
13	Air quality Keeping the environment healthy	Air pollution	To be reduced to 30 % by 2010, compared to 1990 levels
14a	Health and nutrition Living more healthily for longer	Premature mortality (cases of death per 100,000 residents under 65): Men	To be reduced to 190 cases per 100,000 by 2015
14b		Premature mortality (cases of death per 100,000 residents under 65): Women	To be reduced to 115 cases per 100,000 by 2015
14c		Smoking rate amongst young people (12- to 17-year-olds)	To be decreased to under 12 % by 2015
14d		Smoking rate amongst adults (15 years and older)	To be decreased to under 22 % by 2015
14e		Proportion of adults suffering from obesity (18 years and older)	To be reduced by 2020
15 Definition amended	Crime Further increasing personal security	Criminal offences	To be reduced in number of recorded cases per 100,000 inhabitants to under 7,000 by the year 2020

NO.	INDICATOR AREAS SUSTAINABILITY AXIOM	INDICATORS	GOALS
III. SOCIAL COHESION			
16a	Employment Boosting employment levels	Employment rate (total) (15- to 64-year-olds)	To be increased to 73 % by 2010 and 75 % by 2020
16b		Employment rate (older people) (55- to 64-year-olds)	To be increased to 55 % by 2010 and 57 % by 2020
17a	Prospects for families Improving the work-life balance	All-day care provision for children (0- to 2-year-olds)	To be increased to 30 % by 2010 and 35 % by 2020
17b		All-day care provision for children (3- to 5-year-olds)	To be increased to 30 % by 2010 and 60 % by 2020
18	Equal opportunities Promoting equal opportunities in society	Gender pay gap	To be reduced to 15 % by 2010 and to 10 % by 2020
19	Integration of foreigners Integration instead of exclusion	Foreign school leavers with a school leaving certificate	Proportion of foreign school leavers with at least a <i>Hauptschule</i> certificate (lower secondary schooling) is to be increased and brought into line with that of German school leavers by 2020.
IV. INTERNATIONAL RESPONSIBILITY			
20	Development cooperation Supporting sustainable devel- opment	Official development assistance as a share of gross national income	To be increased to 0.51 % by 2010 and 0.7 % by 2015
21	Opening markets Improving trade opportunities for developing countries	German imports from developing countries	Further increase

4. Monitoring

- a) Progress is reported on a regular basis, including goals not yet achieved.

Every two years, the Federal Statistical Office publishes an Indicator Report. The Federal Statistical Office is responsible for the technical analysis of the indicators and their development.

The reporting on the Strategy itself (Progress Report) is carried out once every legislative period. The Progress Reports evaluate the state of the implementation of the Strategy, contain concrete measures for the achievement of the stated goals, and further develop the Strategy in selected focal areas.

The reports are made available to the German Bundestag for information purposes.

- b) The public is comprehensively involved in the preparation of Progress Reports at an early stage.
- c) In addition, the various ministries represented in the State Secretaries' Committee on Sustainable Development regularly report on current sustainability issues in their own fields of business and activity.

III. Institutions

1. The Federal Cabinet adopts changes in and further developments of the Strategy for Sustainable Development.
2. The State Secretaries' Committee on Sustainable Development:
 - a) updates the details of the National Sustainable Development Strategy,
 - b) regularly monitors the development of the indicators of sustainability,
 - c) is the contact for the Parliamentary Advisory Council on Sustainable Development, for the *Länder* and for municipal umbrella organisations; and,
 - d) acts as an advisor on current topics of Federal Government work related to sustainability.

All ministries are represented in this Committee. The State Secretaries' Committee on Sustainable Development is chaired by the Head of the Federal Chancellery.

3. The meetings of the State Secretaries' Committee on Sustainable Development are prepared by a working group under the direction of the Federal Chancellery in which all of the ministries are represented by the directors in charge of the respective matter.
4. The Interdepartmental Sustainability Indicators Working Group, under the lead of the Federal Ministry of the Environment, Nature Conservation, and Nuclear Safety and with the participation of the Federal Statistical Office, performs preparatory work with regard to the technical monitoring and improvement of the sustainability indicators.
5. The German Sustainable Development Council (decision of the Federal Cabinet of 26 July 2000, as amended on 4 April 2007):
 - a) advises the Federal Government with regard to questions of sustainable development;
 - b) contributes to improving the Sustainability Strategy;
 - c) publishes statements concerning particular topics; and,
 - d) contributes chiefly to raising public awareness and to the public Dialogue on Sustainability.

The members of the Council are appointed by the Federal Chancellor.

IV. Procedures within the Federal Government for the implementation of the strategy

1. On the basis of the Strategy for Sustainable Development, the ministries organise their activities, including their administrative practices, based upon the necessity of sustainable development. In the legislative process, the impact the act or decree to be passed has on sustainable development is examined and the results are presented. The assessment is performed within the framework of the regulatory impact assessment by the Ministry responsible for the legislative project.
2. The ministries permanently monitor the implementation of measures under the Sustainability Strategy and, when needed, inform the State Secretaries' Committee on Sustainable Development about problems that arise.
3. In the framework of their own communication, the ministries take care to highlight any links to the Strategy for Sustainable Development.
4. The Federal Government makes clear through appropriate cross-departmental projects that it acts on the basis of sustainability. The State Secretaries' Committee on Sustainable Development is responsible for the approval of projects.

III. Institutions at the Federal level

Germany is a pioneer in both Europe and the international arena for its established and effective institutions in the area of sustainability

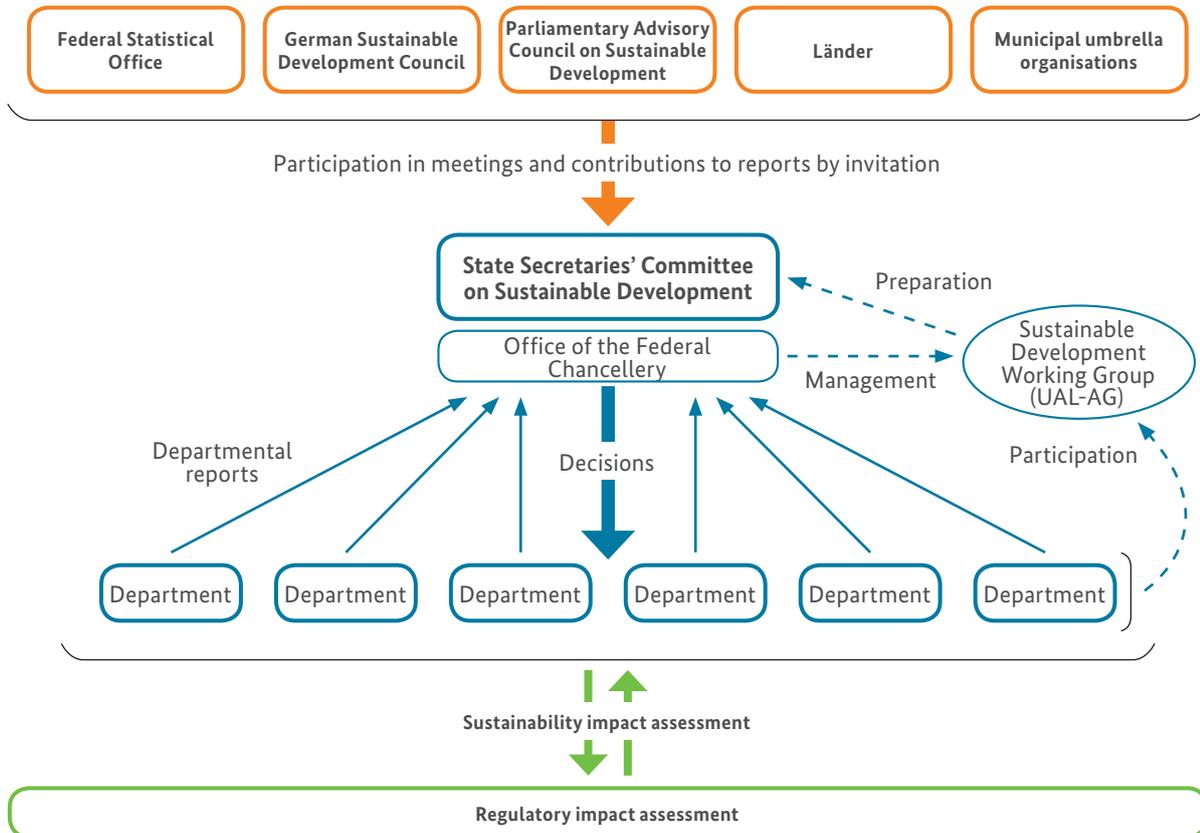
1. Firmly embedded within the Federal Government

It is not by chance that responsibility for the National Sustainable Development Strategy lies not with one of the ministries, but with the Federal Chancellery. In Germany, sustainable development is a key priority. This is not just because of the cross-cutting nature of sustainability, but above all demonstrates the importance attached to the issue. As a concept of overriding importance, sustainable development requires the polit-

ical support that it can only acquire by being embedded at the pinnacle of government. The State Secretaries' Committee on Sustainable Development which is chaired by the Head of the Federal Chancellery is in charge of implementing the Strategy and developing its content. All ministries are presented on the Committee at Permanent Undersecretary of State level.

The meetings of the Committee are prepared by a standing Working Group under the leadership of the Federal Chancellery, the UAL-AG. All ministries take part in these meetings at the "subsection management" (UAL) level which is in charge of sustainable development. In the area of "sustainability indicators", there is also an Interdepartmental Working Group led by the Federal Ministry of the Environment, Nature Conservation and Nuclear Safety, which performs specialist preparatory work with regard to the monitoring and updating of the indicators.

Sustainability Management



2. Parliamentary Advisory Council on Sustainable Development

The Parliamentary Advisory Council on Sustainable Development held its constituent meeting on 21 January 2010. This means that a body of this kind has now been in existence for three legislative periods now, the first dating back to 2004.

The Advisory Council has 22 members. It is chaired by Mr Andreas Jung (CDU/CSU), whose deputy is Ms Gabriele Lösekrug-Möller (SPD).

The Council's remit is to support the Federal Government's National Sustainable Development Strategy and its European counterpart in Parliament, and to make recommendations. The opinions it issued on individual matters under consideration in the State Secretaries' Committee feed into the latter's work. For the contribution by the Council to this edition of the Progress Report see Chapter F.

Unlike the specialised committees of the Bundestag, the Advisory Council has thus far had to be re-established every legislative period, because it is not firmly anchored in the Rules of Procedure of the Bundestag.

Remit of the Council

"The Parliamentary Advisory Council has been assigned the following tasks:

- *Providing parliamentary support for the Federal Government's National Sustainable Development Strategy, in particular giving its opinion in the process of determining and clarifying goals, measures and instruments, integrating important sustainability policy approaches and developing proposals for updating the Sustainability Strategy;*
- *providing parliamentary support for the EU Sustainable Development Strategy;*
- *the Council can select points of interest to be debated in more depth ... and submit the resulting reports and recommendations to the pertinent committee of the German Bundestag for debate; the Council may contribute its specialist knowledge to debates on draft bills and other submissions within the Council's remit during the on-going legislative period;*

- *evaluating the sustainability impact assessment of the Federal Government and supporting the implementation of a policy of "generational balance". The Council reports to the German Bundestag on potential improvements to the Federal Government's sustainability impact assessment, and, on its own initiative, may submit opinions on draft bills to the pertinent parliamentary committee. These opinions regarding draft bills of the Federal Government and the Bundesrat (the upper house of the German Parliament) are to be evaluated by the committee responsible;*
- *providing parliamentary follow-up for institutions created at Federal Government level to promote sustainable development (State Secretaries' Committee, Sustainable Development Council);*
- *making recommendations on medium and long-term plans of relevance to sustainable development or which might complement the Federal Government's Sustainability Strategy;*
- *maintaining contacts and debating with other parliaments, especially those in the European Union, for the purpose of developing joint positions on sustainable development;*
- *providing support for public discussion of sustainable development and facilitating coordination between various social groups."*

Bundestag Reference No. 17/245 of 18 December 2009 (Decision to establish the Advisory Council)

PARLIAMENTARY ADVISORY COUNCIL ON SUSTAINABLE DEVELOPMENT



FLORIAN BERNSCHNEIDER
FDP, Business economist,
Born in Braunschweig
on 15/12/1986; Single.
MP since 2009

JOHANNES VOGEL
FDP, Political scientist,
Born in Wermelskirchen
on 29/4/1982; Single.
MP since 2009

MICHAEL KAUCH
FDP, Co-ordinator,
Graduate in Economics,
Born in Dortmund on
4/5/1967; Civil partner-
ship. MP since 2003

KATHARINA LANDGRAF
CDU/CSU, Graduate in
Land Improvement Engi-
neering, Born in Kirchengel
on 24/2/1954; Married,
four children. Member in
1990 and since 2005

DR GÜNTER KRINGS
CDU/CSU, Lawyer, Born
in Rheydt on 7/8/1969;
MP since 2002

STEFFEN BILGER
CDU/CSU, Solicitor,
Born in Schongau on
16/2/1979; Single.
MP since 2009



MARCUS WEINBERG
CDU/CSU, Teacher, Born
in Hamburg on 4/6/1967;
Single. MP since 2005

PETER AUER
CDU/CSU, Graduate in
Business Economics
(University of Applied Sci-
ences), Born in Regensburg
on 17/4/1976; Single.
MP since 2009

RÜDIGER KRUSE
CDU/CSU, Managing
Director, Born in Hamburg
on 10/6/1961; Single.
MP since 2009

DR PHILIPP MÜRMANN
CDU/CSU, Managing
partner, Born in Kiel on
15/5/1964; Married, four
children. MP since 2009

DANIELA LUDWIG
CDU/CSU, Co-ordinator,
Lawyer, Born in Munich
on 7/7/1975; Married.
MP since 2002

ANDREAS JUNG
CDU/CSU, Chair, Solicitor,
Born in Freiburg im
Breisgau on 13/5/1975;
Single. MP since 2005



HEIKE ERLBECK
Head of Committee
secretariat

BIRGIT MARNIER
Office manager

GABRIELE LÖSEKRUG-MÖLLER
SPD, Deputy Chair, Gradu-
ate in Social Education,
Born in Bovenden on
20/4/1951; Two children.
MP since 2001

INGRID ARNDT-BRAUER
SPD, Co-ordinator, Gradu-
ate in Business Adminis-
tration and Sociology, Born
in Marburg on 20/3/1961;
Married, four children.
MP since 1999

KERSTIN TACK
SPD, Graduate in Social
Education, Born in
Wittingen on 11/11/1968;
Single. MP since 2009

ULRIKE GOTTSCHALCK
SPD, Office worker, Born
in Sandershausen on
8/11/1955; Married, three
children. MP since 2009



DR MATTHIAS MIERSCH
SPD, Solicitor, Born in
Hanover on 19/12/1968;
Single. MP since 2005

RALPH LENKERT
DIE LINKE, Co-ordinator,
Toolmaker, certified
mechanical engineering
technician, Born in Apolda
on 9/5/1967; Married, two
children. MP since 2009

HEIDRUN DITTRICH
DIE LINKE, Graduate in
Social Sciences, Born in
Meerane on 23/9/1958;
Civil partnership, two
children. MP since 2009

JUTTA KRELLMANN
DIE LINKE, Trade union
secretary, Born in
Johannisberg on 7/1/1956;
Married. MP since 2009

DR VALERIE WILMS
BÜNDNIS 90/
DIE GRÜNEN, Co-ordina-
tor, Graduate in Engineer-
ing, Born in Hanover on
22/1/1954; Two children.
MP since 2009

DOROTHEA STEINER
BÜNDNIS 90/
DIE GRÜNEN, Teacher,
Born in Schwandorf on
21/8/1948; MP since 2009

3. Sustainable Development Council

The Sustainable Development Council advises the Federal Government on all matters relating to sustainable development. Its members are appointed for three years by the German Chancellor. They represent ecological, economic, social or global concerns depending on their professional and personal backgrounds.

There have been fifteen members of the newly appointed Council since early June 2010, ten of whom were new appointees. The Council members elected as their Chair Mr Hans-Peter Repnik, who stepped down in January 2012; the Deputy Chair is Ms Marlehn Thieme. The Council is supported by an office managed by the General Secretary of the Council, Dr Günther Bachmann.

The Council is independent when it comes to technical matters, and contributes to the continued development of the strategy with its opinions and concrete proposals. But it is far more than an internal body providing advice to the Federal Government; it is at the same time an important stakeholder in the public – Dialogue on Sustainability. Whether at its annual – conferences or at other events, the Council exerts an influence on society and facilitates coordination between social activities and policy-making.

“The Council is keen to make sustainable development an essential goal and focal area of politics; it works towards encouraging the German people to live a consciously sustainable lifestyle, and presses for businesses to operate in a sustainable manner. It is keen to broaden the public discussion on sustainability, and to make the results of this discussion more effective and more binding.

In light of the increasingly popular use of the term “sustainability” and the rising popularity of the approach itself, it is the Council’s responsibility to explain clearly what it actually means. Sustainable development requires us to allot just as much importance to environmental considerations as we do to social and economic ones. Sustainable economic action requires us to leave behind for our children and grandchildren an intact ecological, social and economic fabric. Neither is possible without the other.”

Factsheet, Sustainable Development Council, Rev. 1/2011

The important activities on which the Council is currently engaged include:

- the development of a “German Sustainability Code for Business” with the help of experts, stakeholders and members of the public,
- a Council recommendation aimed at stabilising the financial markets,
- support for a Mayors’ initiative for sustainable municipal development, climate and financial policies,
- a recommendation on the issue of natural resources.

The Council awards the “Workshop N” quality seal to notable sustainability initiatives for a one-year period. The campaign was launched in 2010 to recognise the many different kinds of personal commitment demonstrated by individuals in pursuit of a more sustainable society, and helps raise their public profile.

Workshop N

One hundred current and planned projects from all over Germany are awarded the “Workshop N” quality seal every year. In the Council’s opinion, the people behind these initiatives demonstrate in an imaginative and committed way how ideas inspired by sustainability can be translated into actions and add value for society.

As in 2008, the Council has again made its own written contribution to this Progress Report (Chapter G.).

The Federal Government is keen to promote closer exchanges with the Council. Under a new option in the Council’s Rules of Procedure the Government may ask the Council to prepare internal opinions concerning individual issues.

SUSTAINABLE DEVELOPMENT COUNCIL



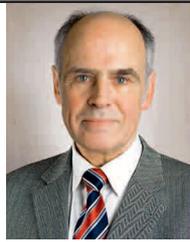
DR HEINRICH GRAF VON BASSEWITZ
Farmer, Federal Organic Farming Commissioner of the German Farmers' Association (DBV) and member of the DBV Council



DR USCHI EID
Former Parliamentary Secretary of State at the Federal Ministry of Economic Cooperation and Development



DR JOACHIM FABER
Member of the Board of Allianz SE Asset Management



DR HANS GEISLER
Former Saxon State Minister of Social Affairs, Health, Youth and Family Affairs



WALTHER HIRCHE
Former Parliamentary Secretary of State at the Federal Ministry of the Environment, former Minister in Lower Saxony and Brandenburg, President of the German UNESCO Commission



ALOIS GLÜCK
Chair of the Central Committee of German Catholics (ZdK)



PROF DR LUCIA REISCH
Professor at the Copenhagen Business School, Visiting Professor at Zeppelin University, Friedrichshafen



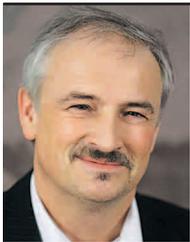
MAX SCHÖN
Managing Partner of Max Schön Verwaltungsgesellschaft mbH & Co. Service KG, President of the Deutsche Gesellschaft "The Club of Rome", Chair of the Supervisory Board of the DESERTEC Foundation



DR ERIC SCHWEITZER
Member of the Board of ALBA AG, President of the Berlin Chamber of Industry and Commerce



MARLEHN THIEME
Member of the Council of the Evangelical Church in Germany, Director of Deutsche Bank AG



OLAF TSCHIMPKKE
President of the German Nature and Biodiversity Conservation Union (NABU)



MICHAEL VASSILIADIS
Chair of the IG BCE (Mining, Chemical and Energy Industrial Union)



HUBERT WEINZIERL
President of the German League for Nature and Environment (DNR), Chair of the Board of Trustees of the German Environmental Foundation (DBU)



PROF DR ANGELIKA ZAHRT
Honorary Chair of "Friends of the Earth Germany" (Bund für Umwelt- und Naturschutz Deutschland, BUND)



DR GÜNTHER BACHMANN
General Secretary of the Council

IV. Increasing the effectiveness of sustainability management

In the 2008 Progress Report, the Federal Government undertook to align its policies fully with the principle of sustainability.

The 2008 Report defined or announced a series of measures aimed at increasing the impact of the Strategy through effective sustainability management. This included closer cooperation with the Sustainable Development Council and continuing the practice of having the Federal Statistical Office issue reports to objectively and transparently monitor the trends in the sustainability indicators. Both measures have been implemented.



Roderich Egeler (right), President of the Federal Statistical Office, presents the 2010 Indicator Report to Federal Minister Ronald Pofalla, MP, Head of the Federal Chancellery, on 28 July 2010.

Since the publication of the 2008 Progress Report, the Federal Government has reinforced sustainability as a guiding principle through the following activities:

1. Sustainability impact assessment as part of the regulatory impact assessment

As announced in the 2008 Progress Report, sustainability has become an essential part of the regulatory impact assessment. The Federal Government took this step on the advice of the Parliamentary Advisory Council on Sustainable Development and other bodies.

Amendment to the GGO

The corresponding amendment to the Joint Rules of Procedure of the Federal Ministries (GGO) came into force on 27 May 2009.

“It must be shown whether the impact of the draft legislation is consistent with sustainable development, and in particular what will be its long-term impact.”

Art. 44 (1), fourth sentence of the GGO

This provision applies to both laws and decrees. It enables the Federal Government to scrutinise the consequences of draft legislation in terms of sustainable development.

Non-binding recommendations on the implementation of the necessary impact assessment are contained in a relevant guide prepared by the Federal Ministry of the Interior.

Recommended procedure

1. Cursory examination of the draft at an early stage to assess whether there will be any impact on the management rules, indicators or goals of the Sustainability Strategy.
2. If a relevant impact is identified: more rigorous scrutiny of the areas concerned, with particular attention to paid to the long-term prospects.
3. Summary of the results in the explanatory memorandum of the law/deGREE.

The impact assessment is conducted by the ministry responsible for the proposed law or decree in consultation with the other ministries concerned. Compliance with this rule is a prerequisite for consideration by the cabinet.

Impact

In this way, sustainability will inform governance in the long term. As the GGO comes under internal procedural law, its validity is not restricted to a particular legislative period.

The sustainability impact assessment contributes to improved legislation, as it makes it possible to recognise, at an early stage, undesirable side-effects of legal provisions, either in the long term or across policy areas. It is only when the sustainability impact of a draft legislative act is taken into consideration early on that our eyes are opened to potential alternatives. It also allows a direct link to be created between the Strategy and law-making.

Experience to date

The Federal Government is currently looking into how impact assessment develops in terms of its content. The Parliamentary Advisory Council, acting in line with its mandate under the decision to establish it, checks each of the Federal Government's draft legislative acts for statements possibly related to sustainability. The Advisory Council's opinions are generally conveyed to the committee responsible. To date, the Advisory Council has submitted opinions on 31 drafts.

In its evaluation of November 2011, the Advisory Council came to the interim conclusion that, of the draft legislation which could be adjudged to be relevant to sustainability in the period under review (December 2010 to June 2011), 77% contained sustainability-related statements of which 73% were deemed to be plausible and unobjectionable (Bundestag Reference No. 17/6680). The Advisory Council concluded that the Federal Government was "on the right track as far as the sustainability impact assessment is concerned". For the sustainability impact assessments conducted at the ministries, the Advisory Council established the need for improvements both in the way the assessments were made and in how the results were represented.

Assessment criteria of the Advisory Council

- For the case that the draft legislation in question is significantly related to the National Sustainable Development Strategy and its indicators – have the latter been taken into account for the assessment?

If not, the important indicators which have not been considered are to be itemised in the opinion of the Parliamentary Advisory Council on Sustainable Development.

- Has it turned out that there are important impacts on the indicators/goals and focal points of the National Sustainable Development Strategy which have not been indicated in the draft legislation? – If so, these must be itemised in the opinion of the Parliamentary Advisory Council on Sustainable Development.
- Is the representation of the project's impact on sustainable development in the draft legislation comprehensible and plausible? – If not, the areas of implausibility in the sustainability impact assessment must be highlighted in the opinion of the Parliamentary Advisory Council on Sustainable Development.

Sustainability impact assessment at Länder level

An even more in-depth sustainability impact assessment has since been introduced by the Land of Baden-Württemberg. Since 1 January 2011, all regulations adopted by the regional government, the ministries (laws, decrees, administrative regulations and internal directives) and subordinate regional authorities must be subjected to a sustainability impact assessment. In this instance too, this has been incorporated in the Rules of Procedure.

"When submissions are made to the Cabinet, it must be stated whether their impact is in compliance with sustainable development. The details shall be governed by the administrative regulations on policy development of the Land Government and the ministries (VwV regulations)."

Art. 5 (1), 2nd and 3rd sentences of the Rules of Procedure of the Land of Baden-Württemberg

2. Activities of the State Secretaries' Committee

The State Secretaries' Committee is the central body in charge of steering the Sustainability Strategy. It provides both strategic impetus for the work of the Federal Government and a platform where information can be exchanged about the ministries' sustainability activities.

The Committee as a strategy forum

Building on the management concept, the State Secretaries' Committee has greatly increased the frequency of its meetings, as heralded in the 2008 Progress Report. While in the past it used to meet only at irregular intervals and for specific purposes, it has fundamentally changed the way it operates since the autumn of 2008.

Statement from the Dialogue on Sustainability

"Sustainability management systems should be mandatory from regional level down to that of the districts and major towns, so that targets can be pursued in a binding way/with measurement of results, and activities are clearly understood by the man in the street."

On the basis of detailed work programmes adopted in October 2008 and February 2010, the Committee met a total of 15 times between December 2008 and October 2011 to discuss sustainability-related challenges of topical interest. External speakers were invited to each of the meetings.

A broad range of subjects was discussed, ranging from the municipal level and cooperation with the *Länder* to European and international perspectives.

Prospects for further cooperation between the Federal Government and the *Länder* on sustainable development (8 December 2008)

In their contribution to the 2008 Progress Report, the *Länder* encouraged closer cooperation with the Federal Government in matters related to sustainability. The prospects for further cooperation were discussed with representatives of the *Länder* (Baden-Württemberg, Bremen, Hesse, Mecklenburg-Western Pomerania, Rhineland Palatinate, Saxony and Thuringia) at the meeting of the State Secretaries' Committee. Both sides agreed that a regular exchange between the Federal Government and the *Länder* was vital if their activities and goals were to be coordinated even more effectively.

The joint decision taken by the Federal Government and the *Länder* at the meeting stated: "To make sustainability a reality depends greatly upon the interplay of all relevant stakeholders. A regular exchange between the Federal Government and the *Länder*, which aims to improve the coordination of activities and goals even more, is essential."

A sustainable raw materials industry (19 January 2009)

Representatives of the BDI (Federation of German Industries) and the EITI (Extractive Industries Transparency Initiative) were in attendance at the meeting. Participants emphasised the need for a more efficient use of natural resources and materials in the economy. Support was given to the preparation of a national action plan for the utilisation of renewable resources and for a 2020 Forest Strategy for the whole of Germany.

It was further resolved that the Federal Government should continue to take up the issue of trade distortions in relation to natural resources through bilateral contacts. In addition, it should support the EU Commission within the framework of the WTO and bilateral negotiations in tackling measures distorting competition in connection with natural resources. The Committee also stressed the need for certification and transparency initiatives in the mineral and fossil resources sector; industry was urged to support these initiatives and to demand them of their trading partners.

Land use – the activities and expectations of the municipalities (9 February 2009)

Representatives of the municipal umbrella organisations (German Association of Cities, German County Association and German Association of Towns and Municipalities) attended the meeting. One aim of the National Sustainable Development Strategy is to reduce greenfield land use to 30 ha/day by 2020.

The participants agreed that the deceleration of land use for development was one of the major challenges facing sustainable development. Increased efforts must continue to be expended by the Federal Government, the *Länder* and the municipalities alike. Possible measures were identified (including greater brownfield development, the revitalisation of wasteland, and a reasonable degree of densification; consistent application of existing legislation; using fiscal conditions so as to discourage the designation of new land for housing and transport; giving the relevant national and regional funding programmes permanent status and making greater use of them; greater inter-municipal and regional cooperation; and continuing the discussion process with all of the stakeholders concerned). It was decided to continue the dialogue between the Federal Government and the municipal umbrella organisations on this matter (see below, Chapter E.IV.1.).

Prospects of research for sustainability' as an innovation policy (2 March 2009)

In talks with scientists, the State Secretaries' Committee on Sustainable Development stressed the importance of research, education and innovation as the key to sustainable development.

“Research for sustainability” requires a broad-based approach which encompasses both the development of innovative technologies and business methods and integrated social approaches to production, services, trade and consumption. There are great economic opportunities in this area, e.g. the development of the lead markets of environmental protection and environmental technologies.

There should be greater coordination between the research activities of the ministries in order to cover the broad spectrum of “Research for Sustainability” and make efficient use of the available funding.

Sustainable consumption and sustainable construction (4 May 2009)

Sustainable consumption and sustainable construction lay at the heart of talks with experts from the Verbraucherzentrale Bundesverband (Federation of German Consumer Organisations), the retail trade and the construction industry.

The Committee asked how consumers and investors could be encouraged to give greater priority to incorporating aspects of sustainability into their decisions. Product labelling can play an important role here. The Federal Ministry of Transport, Building and Urban Development was asked to establish a quality seal for Sustainable Construction as soon as possible for planning and construction, which are particularly important areas. It was decided that when Federal buildings were constructed or modernised, they too would be subject to scrutiny for compliance with the quality seal criteria.

The impact of demographic change with a view to sustainable financial policies (6 April 2009)

Ensuring that public finances remain sustainable in the long term is a central goal of the Federal Government and lay at the heart of talks with scientific experts.

With the impact of demographic change in the foreground, there was a discussion of the measures which would have to be taken to achieve a sustainable financial policy and to protect the health infrastructure in rural areas.

The Committee declared that, as the reform of constitutionally enshrined debt rules is pushed ahead, institutional safeguarding of budgetary discipline should be improved. It was also deemed necessary to establish suitable mechanisms to check and control the effectiveness of public spending and the way sustainability impact assessments are conducted, as this would enable follow-up costs to be reduced in terms of aid and infrastructure policies. It was further agreed to have a closer look at the impact demographic change has on the health infrastructure, especially in rural areas.

European Union Sustainable Development Strategy (15 June 2009)

The implementation and further development of the EU Sustainable Development Strategy were the main topic of the discussions with leading representatives of the European Commission. Particular attention was paid to the interaction between European and national sustainability policies, partly in light of the imminent deliberations in the EU.

The Committee stressed the importance of the European Sustainable Development Strategy, which enabled sustainability to be incorporated as a primary goal of European policy; the European strategy is at the same time a significant point of reference for its German counterpart. In these discussions, the importance for sustainable development of European climate and energy policies was highlighted, as were efforts to achieve greater sustainability in the spheres of consumption and production as well as in transport.

World food supply (29 June 2009)

The meeting of the State Secretaries' Committee attended by representatives of the UN's Food and Agricultural Organisation, the "Brot für die Welt" aid organisation, and the scientific community, examined the extent to which the recommendations for action on global food security passed a year previously by the Federal Cabinet had been implemented. This was an expression of the continued high priority given by the participants to safeguarding world food supply.

The Committee supported a policy designed to take account of actual local conditions, as this would contribute to improving the marketing infrastructure, reducing post-harvest losses and promoting the economic development of the rural regions of the world. It drew attention to the fact that the Federal Government had been strongly advocating this long-term political approach and the basic human right to food for many years in international political debates.

Sustainable agriculture, forestry and fisheries and the use of natural resources/adapting to climate change (26 April 2010)

In talks with scientists from the agricultural, forestry and fishery sectors, the Committee reiterated the need to prioritise sustainability in these industries.

Among other things, it came out in favour of the expansion of research and international cooperation in the field of agricultural biodiversity and plant biotechnology. In the forestry sector, the Committee recognised the need to take increased measures to adapt forests to climate change both nationally and internationally. A rapid reform of the Common Fisheries Policy was recommended, with the aim of using ecologically sound methods to align the European fishing industry with the criteria of sustainability. The Committee also advocated the establishment of a sustainability label for the fisheries sector within the EU regulatory framework, for which ambitious minimum standards were clearly set out.

Results of the peer review of the Sustainability Strategy (21 June 2010)

The Committee spent the meeting examining the findings of an international group of experts who had prepared a peer review report on the German sustainability policy. The report was discussed with members of the group of experts (see Chapter B.IV.4.).

Exploiting the potential for growth of environmental technologies (20 September 2010)

In talks with experts from the scientific sector, business consultancies and industry, the Committee underlined the growing importance of innovative technologies for environmental protection and resource conservation, for the Federal Government's climate and energy policy goals, and for growth and employment in Germany. It referred to the importance of export initiatives, but also shared the concern expressed in the peer review that Germany would have to do more if it was to maintain and consolidate its technological leadership.

In order to achieve synergies in the promotion of environmental technologies through parallel action by the Federal Government and the *Länder*, the Federal Government will address this issue on the basis of the results of the Conference of Environmental Ministers, at the regularly held conferences of the line ministers, as well as via the coordination platform on energy research policy. In addition, Germany's experience with innovative environmental technology – both with regard to its impact on climate and environmental protection and with regard to growth and employment – is to be fed into the current review of production, consumption and transport patterns by the UN Commission on Sustainable Development (CSD implementation cycle 18/19).

Translating sustainability into concrete administrative actions (6 December 2010)

The Committee adopted a programme of measures (for more details see Chapter B.IV.3.). The State Secretaries' Committee also approved a report prepared by the Federal Ministry of Economic Affairs and Technology for the Head of the Federal Chancellery on an "Alliance for sustainable procurement", and asked the Federal Ministry of Economic Affairs and Technology to continue its talks with the *Länder*. Possible courses of action were discussed with representatives of the German Sustainable Development Council, one of the *Länder*, and the Procurement Agency of the Federal Ministry of the Interior.

Growth, prosperity, quality of life – the GDP “and more” (28 February 2011)

The Committee was joined by experts from science and business and a representative of the Federal Statistical Office as it examined better ways of measuring growth, prosperity and quality of life.

In the view of the Committee, gross domestic product is neither intended to be a benchmark for comprehensively reflecting prosperity nor is it suited to this purpose. Concepts of prosperity, quality of life and progress are too diverse to be encompassed once and for all by any single indicator. That is why the Committee advocated developing a clear system for measuring prosperity in the medium term, and recognised the need to make the greatest possible use of existing indicators.

Talks with the Sustainable Development Council (12 September 2011)

The Council commented on the drafting of the Progress Report at this meeting. The State Secretaries' Committee thanked the Sustainable Development Council for the important impetus and advice it had contributed to the further development of the Sustainability Strategy, and stressed its importance for public dialogue.

The Committee agreed with the Council that the effectiveness of sustainable development as a guiding principle had to be increased yet further both nationally and internationally. In this respect, it stressed the significance of the United Nations Conference in Rio de Janeiro in June 2012. The State Secretaries' Committee welcomed the Council's initiative to declare 4 June 2012 a Day of Action on Sustainability. It was decided that the Federal Government would participate with its own activities on that day.

Prospects for sustainable mobility – the opportunities afforded by sustainable logistics (31 October 2011)

The Council commented on the drafting of the Progress Report at this meeting. The State Secretaries' Committee thanked the Sustainable Development Council for the important impetus and advice it had contributed to the further development of the Sustainability Strategy, and stressed its importance for public dialogue.

Amongst other things, the Committee stressed the need to press ahead with uniform standards and norms vis-à-vis determining the carbon footprint and other environmental impacts in the logistics sector at national, European and international levels in order to establish a transparent basis upon which logistics services could be compared.

As set out in the action plan on goods traffic and logistics of the Federal Transport Ministry, “sustainable logistics” should also be intrinsic to initial and advanced training in the industry and to the marketing of logistics services, and be given a higher profile in talks with business. The Undersecretaries of State were also keen for the subject to be discussed with the *Länder* at the Conference of Transport Ministers.

A new work programme adopted at the October meeting schedules topics for future meetings up until the spring of 2013 (see www.nationale-nachhaltigkeitsstrategie.de).

Departmental reports

As announced in the 2008 Progress Report, the regular bulletins on the Strategy and its indicators contained in Progress and Indicator Reports were supplemented by departmental reports to the State Secretaries' Committee. These reports – which do not require interdepartmental coordination – reveal the specific ways in which ministries approach sustainable development issues, and form the basis for discussions within the Committee.

Fourteen departmental reports have so far been submitted; the majority of them published at www.nationale-nachhaltigkeitsstrategie.de.

3. Programme of sustainability measures

The guiding principle of sustainable development applies not least to administrative action. The public sector must fulfil its exemplary role and, by virtue of its budget for procurement, has no insignificant influence on the demand for and development of sustainable products. It is important here to afford equal weight to economic, ecological and social factors.

Statements from the Dialogue on Sustainability

“Policy-makers and the state have an exemplary role to play. That is why our citizens are, for instance, right to question the call for more environmentally-friendly behaviour if politicians and the administration fail to set an example.”

“All public institutions must set an example. In other words, sustainable development must be part of their everyday lives.”

The 2008 Progress Report announced an audit to determine which cross-departmental projects could be made more sustainable. In fact, procurement is an important area where the Federal Government must act accordingly.

Consequently, the programme of measures adopted by the State Secretaries' Committee on Sustainable Development at its meeting on 6 December 2010 entitled “Translating sustainability into concrete administrative actions” raises an important issue, but also comprises many additional elements.

Translating sustainability into concrete administrative actions – Programme of measures on sustainability

1. Ensuring that Federal buildings comply with the specifications of the sustainable construction rating system
2. Halving the CO₂ emissions of the Federal Government, including those within its own portfolio, by 2020 compared to 1990
3. Increasing the use of renewable energies (heating) in Federal buildings
4. Preparing a timetable for the energy-efficient modernisation of all existing Federal buildings
5. Voluntarily introducing energy/environmental management systems to reduce the consumption of energy and natural resources at Federal properties
6. Increasing sustainable public procurement, for instance by setting ambitious targets for individual product areas and taken supplementary action
7. Gradually switching to green suppliers when sourcing electricity for the buildings of the Federal Ministries in Bonn and Berlin

8. Greater collaboration with the *Länder* for sustainable procurement; examining the possibility of establishing a platform and an “information point” for sustainable development
9. Measures to further reduce transport and location-specific CO₂ emissions (especially with regard to journeys to and from work and business trips)
10. Greater consideration of sustainability criteria when organising events for the Federal Ministries and subordinate authorities
11. Further improving work-life balance and/or nursing care
12. Reviewing the programme after four years.

The example of procurement

In order to ensure that public procurement is increasingly aligned with the guiding principle of sustainable development, the programme of measures states that Federal Ministries and all Federal authorities may only purchase products (e. g. office equipment) of the highest energy efficiency class, unless this is prohibited by valid legal provisions or violates the principle of cost-efficiency under public procurement legislation. In addition, the products must have the necessary performance profile and, if possible, satisfy the criteria of the “Blue Angel” environmental label as well as the criteria of the ENERGY STAR European environmental label, or those of similar labels or standards.

The proportion of recycled paper used (e. g. for copying, envelopes and printed matter) is to increase to at least 90 % by 2015. The ministries will improve the energy efficiency of their fleet; where necessary, special vehicles shall be exempted. Attempts will be made to achieve an average emission value of 130 g CO₂/km for the fleet of commercially available, publicly owned vehicles by 2015.

Other measures include an audit of individual actions taken to ensure that procurement and construction comply with standards for preserving biodiversity (the Federal Government's Biodiversity Strategy) by no later than 2020. When appropriate procurement procedures are announced, the authorities shall ask bidders to demonstrate that they are certified under an environmental management system (EMAS or ISO 14001) or equivalent standards as evidence of their technical capacity.

All of these steps will be complemented by providing regular training on sustainable procurement for staff in the Federal Government's contracting agencies. Service centres used by the Federal Government must also ensure that procurement is managed in accordance with the criteria of sustainable development.

The Federal Government is gradually converting its buildings in Bonn and Berlin to run on green power, which should account for 100% of the power needs of nearly all Federal Government buildings by as early as 2012. When procuring green power, care will be taken to ensure that power already sponsored under the Renewable Energy Sources Act is excluded.

The Federal Government advocates even greater collaboration with the *Länder* and municipalities in terms of sustainable procurement. To this end, talks will continue in a joint working group with the *Länder* and municipal umbrella organisations within the Alliance for Sustainable Development, with the Federal Ministry of Economic Affairs in the chair (see also Chapter B.IV.5.).

Sustainable procurement competence centre

As part of the programme of measures, a sustainable procurement competence centre is to be established at the procurement agency of the Federal Ministry of the Interior in Bonn.

It will be designed to pool existing knowledge about sustainable procurement and offer advice about appropriate ways of organising actual procurement processes. The creation of a suitable web platform is also planned. The competence centre will collaborate closely with existing owners of knowledge.

The Federal Government predicts that the demand for a competence centre and web platform will be great on the part of procurement officers at national, regional and municipal levels. Several ministries have already created internet platforms on sustainable procurement specialising in different areas.

The establishment of the competence centre is currently scheduled to begin early in 2012.

4. Peer review of the Strategy

At the request of the Federal Government, a report on Germany's sustainability policy was completed by international experts in September 2009. The work by the group of experts received organisational and content-related support from the Sustainable Development Council.



The report is presented to Chancellor Angela Merkel on 23 November 2009.

Under the chairmanship of Björn Stigson, President of the World Business Council for Sustainable Development, seven experts from Sweden, Finland, the UK, the Netherlands, India, Canada and the United States prepared a critical analysis of Germany's sustainability policy. In the report entitled, "Sustainability Made in Germany – we know you can do it", the experts were particularly keen to address the issue of how the economy can be converted to a low-carbon economy (and society).

The experts established that a large number of people in Germany are committed to and resolute supporters of sustainability. This meant that sustainability had a strong foothold in the country as a whole, even if it would be desirable if individual stakeholders did more. However, the authors criticised the fact that the country did not take advantage of its favourable circumstances and pool of talent in a sufficiently coordinated and purposeful way. As a result, the experts asked how individual measures could be used to increase the effectiveness of the Sustainability Strategy within the

Federal Government, improve collaboration with the *Länder* and municipalities, and increase the commitment of the business sector. The experts were particularly keen for long-term targets to be set beyond 2020 for sustainable development in Germany.

Strategic recommendations of the experts

1. Strengthen the leadership role of the Federal Chancellery in the area of sustainable development and design a new strategy for the implementation of “Grand Designs 2050”
2. Create a Ministry of Energy and Climate Protection
3. Appoint a Federal Government official in charge of sustainable development
4. Introduce an action plan on sustainability and broaden the set of instruments available
5. Improve the ability of the Bundestag to influence sustainability policy, create (new) opportunities for the Bundestag to scrutinise draft laws for their sustainability, and review the sustainability reports of the individual ministries
6. Increase the remit, functioning and effectiveness of the Sustainable Development Council
7. Improve vertical integration between the Federal Government and the *Länder* and between the *Länder* and the municipalities; promote strategies for sustainable development in the *Länder* and the regional networks
8. Increase cooperation between government and business for sustainable action and design roadmaps for its implementation in individual sectors
9. Change the way sustainability policy addresses customers, consumers and markets
10. Promote civic involvement
11. Develop “brain gain” strategies and learning partnerships
12. Increase research and development, improve “advanced studies” and science clusters on sustainability, develop technical standards for sustainable solutions.

Propositions to be considered in the further development of the strategy

At its meeting on 21 June 2010, the State Secretaries’ Committee welcomed the response of the international experts as validation of the Federal Government’s activities under the National Sustainable Development Strategy. The ideas raised in the report play an important part of the considerations about how the Strategy should move forward.

The Federal Government believes that achieving a low-carbon economy and society is a globally decisive challenge for sustainable development.

As advocated by the experts, in the enhancement of the Strategy particular attention should be paid to ascertaining whether long-term targets can be better incorporated. The Federal Government welcomes the fact that the Sustainable Development Council placed a discussion of visions for 2050 at the heart of its annual conference in 2011.

A Sustainable Development Unit was established at the Federal Chancellery in November 2010 to improve coordination activities under the Sustainability Strategy. As well as the experts, the Parliamentary Advisory Council on Sustainable Development, the Sustainable Development Council, the German Advisory Council on the Environment and environmental groups had all been pressing for such a change for a considerable time. The establishment of the unit affirms the importance of sustainability as a long-term political commitment. Rather than appointing a central commissioner for sustainable development (as contemplated by the experts), spokespersons for sustainability have been designated in the various ministries to represent the issue both internally and externally in their own specialist areas; their names are published at www.nationale-nachhaltigkeitsstrategie.de.

As advocated by the experts, the Federal Government is also in favour of the Sustainable Development Council engaging in more frequent dialogue with the public as part of its work. As a general principle, the Federal Government is striving to achieve even closer cooperation with the Council. The exchange of views between the Federal Government and the *Länder* should also be intensified.

5. Cooperation between the Federal Government and the *Länder*

The Federal Government has long supported the strengthening of cooperation between the Federal Government and the *Länder* in the area of sustainable development. The Government therefore welcomes the fact that the *Länder* have again contributed an article to the Progress Report (Chapter H.).

Statements from the Dialogue on Sustainability

“The contents of the sustainability strategies and policies pursued at different Federal levels should be harmonised with one another.”

“To this end, institutions and processes must be developed and be mandatorily established at the various levels which enable a consensus to be reached between the different stakeholders and allow strategies to be coordinated.”

At their meeting with the Head of the Federal Chancellery on 6 May 2010, the CdS once again stressed the importance of closer cooperation between the Federal Government and the *Länder* in matters relating to sustainable development. They asked the AG NHK to examine the opinions of the Conference of Ministers and to make a proposal on further cooperation at the next meeting of the Head of the Federal Chancellery and the CdS. On the basis of a proposal made by the AG NHK (the report, “Further cooperation between the Federal Government and the *Länder* on sustainable development”), the two levels resolved to continue work in the following three specialist areas.

Areas for cooperation proposed by the AG NHK

1. Alliance for Sustainable Procurement (procurement alliance)
2. The reduction of consumption of new land for development/Reviewing of instruments
3. Sustainability indicators/goals.

Joint activities since 2008

As a follow-up to the contribution to the 2008 Progress Report by the *Länder*, the Heads of the State and Senate Chancelleries of the *Länder* (CdS) and the Head of the Federal Chancellery decided in their talks in Berlin on 27 November 2008 that the prospects for further cooperation between national and regional authorities would be discussed at the meeting of the State Secretaries’ Committee on Sustainable Development on 8 December 2008 (see Chapter B.IV.2.). The meeting, to which representatives of the *Länder* had been invited, decided to set up the Sustainability Working Group (or AG NHK for short).

Sustainability Working Group (AG NHK)

The report “Prospects for further cooperation between the Federal Government and the *Länder* on sustainable development” which the AG NHK released on 3 April 2009 dealt with three issues and contained a proposal for further cooperation. The CdS and the Head of the Federal Chancellery took notice of the paper on 7 May 2009. At the meeting in Berlin, the Federal Government and the *Länder* welcomed the regular exchange of ideas about activities and goals, and asked the Conference of Ministers to state its views on the instruments proposed by the AG NHK in its report.

Procurement alliance

The collaboration between the Federal Government, the *Länder* and the municipalities in the “Alliance for Sustainable Procurement” will continue. A systematic sharing of experience between all participants and, potentially, the identification of joint measures are its main priorities. The Alliance should also increase awareness for the acceptance of national and international sustainability standards. Over time, such a diverse range of standards has emerged that it is becoming increasingly difficult to implement them in practice. The aim is for procurement officials to place more emphasis on ambitious sustainable procurement criteria when awarding public contracts.

The state’s behaviour in the marketplace sets an example to private-sector companies. According to a survey by the Association of German Chambers of Industry and Commerce in the summer of 2010, three out of four companies approved of the general principle whereby ecological criteria were taken into account when public bodies invited tenders. Acting on the demand side, the state can promote ecological innovations, especially by organising competition. This can be achieved through a consistent application of public procurement law. Life cycle analyses also make an

important contribution towards improving the cost-effectiveness of public procurement.

As a first step, four product groups were studied for which there is considerable demand in the public sector (green IT, green power, local public transport and wood products from sustainable forests). As a result, the Federal Government, the *Länder* and the municipalities worked together to compile four empirical reports. A report by the Federal Ministry of Economic Affairs on the procurement alliance is based on these reports (published at www.nationale-nachhaltigkeitsstrategie.de; click on "Berichte" ("Reports")).

Results of cooperation within the procurement alliance in 2010

1. Green IT

There are already a number of positive examples which are indicative of the opportunities which exist for both environmentally-friendly and cost-effective procurement. But there is still far too little awareness of these. The guidelines and information material already available should be distributed more widely, and there ought to be training sessions for the staff of procurement agencies.

2. Green power

There are successful examples of suitable procurement criteria being formulated. When sourcing green energy, the provisions of the Renewable Energy Sources Act should be observed. Appropriate procurement practices will increase the market share of green power and generate ecological added value. The extra costs associated with the purchase of green power are often less than with other instruments for reducing CO₂ emissions. When combined with measures to improve energy efficiency, giving preferential treatment to green power in public procurement contracts can make an important contribution to meeting climate policy targets.

3. Local public transport

The public transport sector still harbours considerable potential for sustainable procurement. If the entire life cycle of a means of transport is taken into account, the introduction of higher environmental standards is not necessarily associated with additional costs. That is why municipal entities should be made receptive to the adoption of this idea. A guidance document with sample tender notices and procurement guidelines

would be helpful. Another possibility which should be considered concerns joint inter-municipal purchasing operations to reduce costs and achieve uniform standards.

4. Wood products from sustainable forests

On 17 January 2007, the Federal Ministries of Economic Affairs, Consumer Protection, the Environment and Transport issued a decree on the sustainable procurement of wood products by Federal authorities. This meant that wood procured by Federal agencies had to be documented as coming from not only legal but also sustainable forest management. Certificates from the Programme for the Endorsement of Forest Certification Schemes (PEFC), the Forest Stewardship Council (FSC) or comparable systems and individual supporting documents are recognised as evidence that the required standards have been met. The decree of 22 December 2010 on the sustainable procurement of wood products by Federal authorities has been slightly amended and entered into force for an indefinite period.

In 2011, the Alliance for Sustainable Procurement had three specialist groups. The public transport group continued the work it had begun in 2010; the "standards" and the "statistics/monitoring" groups were both new. Each produced an empirical report prepared jointly by the Federal Government, the *Länder* and the municipalities. Another empirical report was prepared by the Federal Ministry of Transport, Building and Urban Development on the subject of "Sustainable Construction".

Results of cooperation within the procurement alliance in 2011

1. Local public transport

The group of specialists on local public transport recommended, among other things, an investigation into the need for and possible applications of new technologies (public sector demand forecast for manufacturers), and proposed examining the extent to which joint municipal purchasing operations could enable the synergies linked with network structures to be used more positively.

2. Standards

The group of specialists on standards dealt comprehensively with issues such as those associated with taking environmental and social criteria into account in the procurement process.

This involved not only making an inventory of the existing information available on sustainable procurement, but also a discussion of the legal framework of public procurement and disclosure of the need for action. For the first time, a list of European and national sustainability standards is now available, which will be of valuable practical assistance to procurement officers.

3. Statistics/Monitoring

The group of statistics and monitoring specialists prepared a comprehensive review of existing data on sustainable procurement and compiled the relevant references. As a result, the group established that there are no standard statistical data for public procurement below the EU threshold values, and that above these thresholds, data on the volume of orders is available only as part of EU statistical reports. There are no standard national procurement statistics.

4. Sustainable Construction

In its report, the Federal Ministry of Transport, Building and Urban Development focused primarily on the completely revised Guide on Sustainable Construction and on the establishment of a Sustainable Construction Competence Centre at the Federal Institute of Research on Building, Urban Affairs and Spatial Development. For the first time, the revised Guide requires evidence to be produced of the environmental impact of a building and the overall contribution it makes to sustainable development. The guidelines for evaluating sustainable buildings have been revised in order that this goal may be achieved.

The reports of the three specialist groups and the Report on Sustainable Construction were summarised once again in a report on the procurement alliance by the Federal Ministry of Economic Affairs.

At the meeting of the Head of the Federal Chancellery with the CdS on 17 November 2011, the Federal Government informed the *Länder* of the progress made. At this meeting, the Federal Government and the *Länder* unanimously acknowledged the alliance to be a valuable instrument which strengthened the collaborative efforts of the Federal Government, the *Länder* and the municipalities to improve sustainable procurement. They stressed that in the future, environmental and social criteria should be taken into consideration in as

many public procurement processes as possible, where budgetary and procurement legislation allow, and asked for sustainability procurement to be expanded within this framework.

See Chapter E.IV.1. for more information about the reduction of consumption of new land for development, and Chapter C. for more on the sustainability indicators.

6. Cooperation with municipal umbrella organisations

Sustainability is put into practice at the local level. That is why the Federal Government recognises the importance of increasing the involvement of municipal umbrella organisations in its work. They have been invited once again to contribute their own chapter to this Progress Report (Chapter I.).

Representatives of the municipal umbrella organisations have attended a meeting of the State Secretaries' Committee as well as follow-up discussions with the ministries to develop a joint position on land use; these associations also participate in activities by the Alliance for Sustainable Procurement. A representative of the municipal umbrella organisations took part in discussions with Mayors on the subject of "sustainable municipalities" organised by the Sustainable Development Council.

V. Ways of reinforcing the Strategy

The Federal Government will consistently pursue its current path to reinforce the Strategy.

In particular, this will include measures to enhance the management aspect of the Strategy, improve the vertical integration of the sustainability strategies and increase visibility; these will be in addition to measures in specific fields (see Chapters D. and E.).

1. Vision 2050 – Reinforcing the long-term nature of the strategy

Even today, Germany's Sustainability Strategy incorporates longer-term targets, in some cases leading up to 2050. A key objective of this Progress Report is to continue developing goals and political approaches for the implementation of the Strategy. However, the Strategy deliberately steers clear of setting out a long-term vision.

Statement from the Dialogue on Sustainability

"Definitions of sustainability must not be rigid, but have constantly to be adapted. Ten years from now, experience may show that what is considered sustainable today proves to be otherwise."

If a vision is to have an impact as a benchmark for the way people live together, it must be developed through a dialogue in society. The path taken when formulating the vision is at least as important as any consensus on a draft for the future which may potentially be reached. Because dialogue leads to deliberations about the consequences our actions today will have on tomorrow, and the way in which we and our children's generation want to live. Accordingly, dialogue about shaping our future places sustainability at the heart of society, and thus creates the foundation for action guided by the principles of sustainability.

That is why the Federal Government supports current efforts by business, society and academia to tackle long-term issues of sustainability. The Federal Government will evaluate the results of on-going processes and take them into account when developing the sustainability strategy further.

The first steps have been taken and the first results achieved in public discussions about broad visions of the future. The World Business Council for Sustainable Development's "Vision 2050" is one of the notable outcomes of a process of dialogue (see Chapter D.I.3.b). Other important activities include research projects by the Federal Ministry of the Environment in association with the Federal Environment Agency which have set targets to be met by 2050, and the process of dialogue conducted by the Sustainable Development Council on progress towards "Vision 2050" (U 27).

The Federal Ministry of the Environment has launched research projects in association with the Federal Environment Agency aimed at sounding out the long-term prospects for sustainable development in Germany up to the year 2050 using scenario and strategy development methods. The project called "Integrated sustainability scenarios based on the example of the city" identifies the potential for innovation and examines urban resource recycling and new forms of cooperation between urban economic stakeholders in particular. In the project "Development of integrated scenarios to achieve the environmental goals of the National Sustainable Development Strategy", contributory and determining factors for strategy development are identified. A third project prepares the findings for dialogue between civic and political stakeholders by asking, "What challenges are to be faced in terms of social change if greater sustainability is to be achieved? Who will make what contributions, and what intermediate steps must be taken?" As part of the project "Dialoge_Zukunft_Visionen2050"/"U 27" organised by the Sustainable Development Council, 86 young decision-makers (under 27 years old) came up with visions and prospects of what life would be like in the year 2050.

2. Flagship projects – setting examples for integrated sustainability

Innovative projects in which several participants collaborate and which serve as an example to others can be particularly helpful in promoting the practical implementation of the Sustainability Strategy. They open up new possibilities for action, at the same time disseminating the principle of sustainability. This is true of cooperation between ministries (horizontal integration) just as much as of the joint endeavours of municipalities, the *Länder*, the Federal Government and the EU or international bodies (vertical integration). To give such flagship projects the visibility they deserve, at least one project is highlighted by the State Secretaries' Committee each year.

3. The guiding principle of sustainability – encompassing different strategies

Sustainability is a political approach applied by the Federal Government across the breadth of its activities. It can be particularly effective in the case of strategies of importance to cross-cutting issues and which have an impact on several policies at once. In future, the question of sustainability will have to play a greater role in the development of such strategies.

4. Helpful – an external perspective

The peer review of 2009 (a report on the German Sustainability Strategy by international experts) yielded valuable suggestions – even if the Federal Government felt that some (such as the appointment of a central officer for sustainable development) could not be implemented at present.

Statement from the Dialogue on Sustainability

“I believe it is very important to have a central officer in charge. Having contacts spread among the various ministries leads to a lack of focus. Progress made with the Sustainability Strategy, i.e. success in terms of the indicators should be made public every week, so the figures do not always have to be collated laboriously. ... Sustainable development should be adopted and implemented globally as a long-term educational task.”

An additional assessment by international experts could build on the substance of that analysis and possibly highlight further opportunities for progress by focusing on the area of sustainable economic activity.

5. “German Sustainability Action Day” on 4 June 2012 – raising the profile of sustainability

Sustainability is galvanising many people and organisations in Germany – at the Federal level, in the *Länder* and the municipalities, in business, environmental groups, trade unions and churches.

The Sustainable Development Council had proclaimed 4 June 2012 as the German Sustainability Action Day. The initiative is receiving support from a broad circle of people with a wide variety of backgrounds. The Federal Government welcomes this, and has decided to join in with some activities of its own.

“A quarter of a century ago, in its report on ‘Our common future’, a United Nations commission appealed for action which ‘implies meeting the needs of the present without compromising the ability of future generations to meet their own needs’.

This appeal is more compelling than ever. The world’s population has since risen from five to seven billion, and global CO₂ emissions are about fifty per cent higher. More and more people are adopting a lifestyle which is unsustainable in terms of the resources and regenerative capacity our planet can offer in the long term.

It is in our hands to change this. We must be honest about admitting to shortages, and redesign our economies and our lifestyles in such a way that all people can use our natural resources without destroying them.

More and more people are ready to turn this corner towards sustainability. I hope the ‘German Sustainability Action Day’ will demonstrate how many people support the principle of a sustainable society with their ideas and their commitment.

You too should join in! Because with commitment and ingenuity, there are no limits to our future growth!”

Federal President Christian Wulff, message to the German Sustainability Action Day

All stakeholders from society, state, business and the general public are called upon to stage their own activities on 4 June 2012. This will enable self-reliance and responsibility, commitment and new ideas to be demonstrated in all their variety. The Day of Action will reaffirm – in the run-up to the UN conference on sustainable development in Rio on 20 June 2012 – that we take sustainability seriously in Germany.

A wide range of activities on 4 June 2012 has the potential to send a strong public signal saying that sustainability needs us all; it can only become a reality if everyone joins in. The Day of Action will increase awareness of the guiding principle of sustainable development and of the National Sustainable Development Strategy – and will help goals to be incorporated more consistently into the actions of the players involved.

6. Sustainable development – of international importance

The principle is clear: sustainable development will not succeed unless cooperation extends beyond national borders (see also Chapter E.VII.). The guiding principle of sustainability is therefore also relevant when it comes to Germany's relationships with other countries. The Federal Government will weave the topic into its foreign policy to an even greater degree in the future.

The subject of sustainability will be integrated in the Federal Government's international strategies on appropriate occasions, such as within the framework of the joint German-French "Agenda 2020".

"We are striving to achieve sustainable development and working together to incorporate the principle of sustainability as guidance for our joint action. We are keen to see the European Union become a model for strong, lasting growth, growth which creates a high level of employment and social progress, growth which improves the quality of life of the people today without shattering the opportunities of the next generation."

German-French Agenda 2020, Joint resolution of the cabinets of France and Germany, 4 February 2010

In addition, information material is being prepared for distribution to embassies and consulates, and accountability for matters of sustainable development is also being incorporated in the organisation of Germany's diplomatic missions.

7. Sustainability in Europe – increasing its effectiveness

The European Sustainable Development Strategy contains much that is worthwhile, but it is now outdated. Germany is campaigning for Europe to reinforce its strategy – by updating it and dovetailing it more effectively with the strategies at national levels (for more details, see Chapter J.).

8. "Rio 2012" UN Conference – harnessing its momentum to advance the strategy

2012 – ten years after the passing of the resolution on a National Sustainable Development Strategy – is a good time to take stock of the substance and impact of the national strategy.

The Federal Government will evaluate the outcome of the UN Conference in Rio 2012 to determine whether it will result in propositions and requirements of importance to the National Sustainable Development Strategy. In particular, the question will arise of how Germany's contribution towards solving global challenges can be made even more effective.

VI. Public dialogue – sustainability can succeed only through collective effort

Sustainability thrives on social debate with participation by all members of the public – whether privately, within one's family, or at work and in daily interaction. There are close parallels between acting responsibly in one's day-to-day life and being integrated and playing an active role in the advancement of society. Participation is especially important, not least because of the complexity and speed of social processes.

Social debate begins with the question of what political steps need to be taken for sustainable development to succeed. That is why, as it prepares to continue the development of its sustainability strategy, the Federal Government has invited people to become involved in dialogues on sustainability.

"Mitreden-U" Initiative

As a first step, the Federal Ministry of the Environment conducted a comprehensive, web-based dialogue between February and March 2010, entitled "Mitreden-U" (or Have a Say in Environmental Matters). The discussion centred around the question of where the environmental focus of the Sustainability Strategy should lie in the future. More than 1,400 people made some 1,200 suggestions. Participants in this dialogue

then met experts from organisations and ministries during three full-day discussions of individual issues. The Ministry incorporated the findings of these discussions in its internal debates.

Citizens' Dialogue on Sustainability

The wide-ranging Dialogue on Sustainability began in the autumn of 2010. During the first phase from September to November 2010, the Federal Government opened up discussion on its proposals regarding the content which was to lie at the heart of the new Progress Report: "Sustainable Economic Activity" and "Water". It also invited contributions on other aspects of its sustainability policy.

In a second phase of dialogue from June to September 2011, discussions focused on the Government's draft of its 2012 Progress Report.

Many German citizens joined in the debate. The website has been visited by more than 72,000 users since August 2010. More than 386,000 page views were registered. In total, participants provided more than 1,600 opinions and comments during the two phases. There were also a total of more than 2,100 positive or negative ratings.

Over 95 % of the contributions were submitted on the website www.dialog-nachhaltigkeit.de. It was mainly institutions which chose to send their submissions by post. Associations and organisations had an opportunity to express their views on the Progress Report at a dialogue event held in the Federal Chancellery in September 2011. In October 2011, they voiced their opinions on the new chapter dealing with "Climate and Energy".

Although criticism was expressed clearly in individual cases, many of the opinions were supportive and called for a further reinforcement of the concept of sustainability in and by means of the Strategy.

Voices of individual organisations (excerpts)

"The BDEW welcomes this initiative by the Federal Government. The BDEW also supports the Government in its efforts to align its policies with the guiding principle of sustainability."

German Association of Energy and Water Industries (BDEW), statement in October 2011

"The draft 2012 Progress Report on the National Sustainable Development Strategy provides a good overview of past results, the latest developments and future activities ... It is particularly gratifying that by focusing on 'Sustainable economic activity', the Federal Government recognises the 'key role to be played by business' in the move towards a lower-carbon society with a more efficient use of natural resources and ... highlights its contribution to tackling current and future challenges as well as acknowledging the efforts made by business, for instance in the area of voluntary CSR activities."

Federation of German Industries, statement on 11 October 2011

"In its report, the Federal Government sets out its basic understanding of the finite (ecological) burden we can place on our planet and of absolute limits – but it must be much more consistent in factoring this in when it sets targets and takes action. ... As before, actual policy continues to be diametrically opposed to the goals of the Sustainability Strategy in key areas."

BUND (environmental NGO), statement on 7 September 2011

"Yet on a positive note, it is important to recognise that the Federal Government is pursuing the sustainability process in Germany and is also setting a good example itself with the resolution of the State Secretaries' Committee on Sustainable Development of December 2010. ... The challenges remain as daunting as ever. Consequently, efforts will have to be redoubled across the board ..."

German Environmental Management Association (BAUM), statement in September 2011

"On the whole, the comments and actions of the Federal Government give the impression – as they have done in earlier years and under other governments – that the Sustainability Strategy plays only a subordinate role in the actual work of the Government. It continues to be more of an appeal than a strict guiding principle governing the action to be taken."

Greenpeace, statement on 3 September 2011

“Sustainability is a concept for the future. ... Even this report does not provide the evidence that sustainability is already established in our society.”

Grüne Liga e. V., statement in September 2011

“Overall, especially by international standards, Germany’s Sustainability Strategy is exemplary ... Its strengths lie particularly in its target-oriented approach and the incorporation of management instruments as well as an independent monitoring process. ... Other positive factors are the Strategy’s successful integration in institutions, its coordination by the Chancellery and the attention it receives at the highest political level. ... The Progress Report demonstrates that Germany’s Sustainability Strategy is a serious and active process ... Nonetheless, further improvements will have to be made if the targets the Sustainability strategy has set itself are to be met.”

German Advisory Council on the Environment, recommendations for the 2012 Progress Report, September 2011

“The VKU welcomes the draft 2012 Progress Report and the emphasis given to water, climate and energy.”

Association of Municipal Utilities (VKU), statement on 16 September 2011

“... the German Confederation of Skilled Crafts (ZDH) welcomes the incorporation and implementation of a detailed sustainability strategy ... The draft report is a wide-ranging description of many subject areas of relevance to sustainability. ... It is striking ... however, that the extent to which the individual subject areas are represented in the draft report ... does not always and necessarily correspond to the actual need for action on sustainability.”

German Confederation of Skilled Crafts (ZDH), statement on 6 September 2011

Top subjects of the Citizens’ Dialogue

When voicing their opinions and submitting comments, participants in the citizens’ dialogue broached the entire range of issues related to sustainable development. The subject which attracted by far the most attention was “climate/energy” in the first phase and “mobility”, followed by “sustainability”, “education” and “consumption” in the second phase.

Examples of issues under discussion during the first phase of dialogue

Climate/energy

Discussion centred around renewable energies (e. g. expansion of their use, individual provisions of the Renewable Energy Sources Act, and the sustainability of particular power plants or biofuels). The second most important theme was the conversion of energy systems, in which the Energy Concept of the Federal Government played a particularly important role. Nuclear energy – especially the service life of power stations and the disposal of nuclear waste – followed in third place. The need to take energy consumption into account at the planning and design stage in the production of goods, services or energy and the resulting consequences/costs were also discussed. Other issues raised very frequently were construction, the renovation and insulation of buildings, as well as the hot topics of energy saving and the consumption of meat.

Sustainability

The sustainability approach and ways of measuring it were discussed in detail. The question of how this approach could be given greater clout by society was also tackled. Equal attention was given to advertising and to legislation on the sustainability impact assessment. The effectiveness and binding nature of sustainability strategy(ies) at Federal, *Länder* and municipal levels were broached. A series of proposals was made in favour of new agencies and events, such.

Sustainable economic activity

The areas most discussed were the employment market, growth and competition, as well as raising awareness for sustainable economic activity. In terms of employment policy, participants addressed current developments, such as the increase in labour productivity, temporary employment, and equal opportunities in training. The spotlight also fell on the organisation of employment relationships (improving work-life balance, employee involvement in decision-making, on-the-job training, age structure, etc.). Under the slogan of “Growth and competition”, the compatibility of sustainability with growth and competition strategies was discussed, as were alternatives to the growth model.

Examples of subjects under discussion during the second phase of dialogue

At the beginning of and during the second phase of dialogue a new situation arose when decisions were taken to accelerate the implementation of the Government’s Energy Plan. This meant that concerns frequently raised during the first phase of dialogue were no longer valid, and the subject retreated somewhat into the background.

Sustainable transport

Transport policy topped the list of areas under discussion during the second phase of dialogue. Many participants were in favour of greater support for local public transport and wanted the sector to expand. There was also a feeling that the draft report had failed to highlight sufficiently the importance of cycling for daily mobility in Germany. Many contributions to the subject of transport criticised that the report focused primarily on using different kinds of fuel, rather than on striving to achieve an actual reduction in travel by private vehicle.

Sustainable forest management

A whole series of contributions addressed the question of forest management in Germany. There was criticism that the content of the draft report was too ambivalent. Thus it was unclear whether the Federal Government regarded woodland primarily as an economic resource or as a nature conservation area. More clarity was required here.

Sustainable consumption

This topic was frequently raised during both phases of dialogue. The Federal Government should be more active with regard to the manufacture and production of consumer goods. On the one hand, consumers should be empowered, for instance through an improvement in the mandatory labelling of products. On the other, the Federal Government itself ought to subject manufacturers to tighter regulations aimed at more sustainable production, e.g. by introducing stricter targets with respect to energy consumption.

Other topics addressed during both phases of dialogue were an improved work-life balance, the financial crisis and the sovereign debt, calls for a reduction in meat consumption, the quality and funding of education, and water management.

Comments on the work the Federal Government performed in the field of sustainability tended to call primarily for a more determined course of action and more ambitious targets. The Federal Government was also called upon to use its role as a business stakeholder to greater effect, and set a powerful example for sustainable economic action. In the international arena in particular, the Federal Government was asked to intensify its efforts even further, since many problems have to be approached from a global perspective, and there is insufficient room for manoeuvre at the national level. A detailed statistical analysis of the two online dialogues can be found at www.nationale-nachhaltigkeitsstrategie.de

Implications for the Federal Government

The Federal Government is grateful to all citizens, foundations, companies and organisations which participated in the dialogue. Its various ministries have looked into all the comments they received, and reviewed them in relation to their own deliberations on the Progress Report.

What happened to the comments received?

Examples

The topic of “Climate and energy” was discussed in detail during the dialogue process, and was incorporated into the final report as a new, separate subject area (Chapter D.II.).

Comments on meat consumption were directed to the **Federal Ministry of Consumer Affairs**. Meat consumption was targeted for criticism for reasons of climate protection and a healthy lifestyle.

The Federal Government agrees that a healthy balanced diet is important; indeed, a number of promotional campaigns are raising public awareness in this area. However, a healthy balanced diet includes meat and dairy products in moderation, as well as fish, bread, fruit and vegetables. The German Nutrition Society recommends the moderate consumption of meat products to ensure an adequate supply of nutrients which tend to be found in larger quantities or to be more easily available in animal products.

Agriculture also has a part to play in Germany’s ambition to reduce greenhouse gas emissions. Methane emissions from cattle farming have declined in Germany by more than a fifth since 1990.

The **Federal Ministry of Family Affairs** considered a specific proposal arising from the citizens' dialogue, namely that an indicator for active citizenship be included in Germany's Sustainability Strategy.

Comprehensive data about voluntary work is to be found in the volunteer surveys which had been commissioned by the Federal Government on several occasions in the past – in 1999, 2004 and 2009. The Ministry will continue to consider the possibility of incorporating active citizenship data in an aggregated indicator.

Another request was for the general principle of sustainability to be anchored in the National Engagement Strategy. But this principle has already been adopted by this strategy in a variety of ways. Where appropriate, reference is made to the goal of sustainable development in projects which are part of this strategy in particular.

Some of those taking part in the discussion support the demand for a stop to be put to the sale of nationally owned woodland. The **Federal Ministry of Finance** has commented as follows: 125,000 ha of national woodland were not sold, but were specifically earmarked for nature conservation as part of the Government's National Natural Heritage programme. The situation is different for woodland owned by the former Treuhandanstalt (Trust Agency) in the ex-GDR *Länder* (some 60,000 ha). Legislation on reparations means that most has to be sold to people who were dispossessed in former East Germany.

The subject of luminous pollution (light pollution) was discussed at length both in the "Mitreden-U" dialogue and in the citizens' Dialogue on Sustainability. It is a question of how much energy we use to light our streets and buildings. The **Federal Ministry of the Environment** has studied this issue. The Federal Government believes that the municipalities and the German people share responsibility in this area. Modern street and house lighting can help save energy.

At many points in the Progress Report quotations from the citizens' dialogue are cited which shed light on the views held by participants on a particular subject area.

Discussing what the future holds

In some of the statements and in many of the discussions, both German citizens and associations and organisations welcomed the fact that they were able to discuss the subject of sustainability in public.

Statements from the Dialogue on Sustainability

"I very much welcome the idea of wanting to involve the public."

"I am delighted that I have been given the opportunity to get involved."

"We welcome the fact that public discussion – co-operation with and between the different stakeholders in society – is being used as a vital element in order to take the Sustainability Strategy a step further."

Other participants made concrete proposals about the way in which subsequent public discussions should be organised.

The broad participation of all stakeholders will remain an important plank in the Federal Government's work towards achieving sustainable development in Germany. The experience gained from the dialogues on the Sustainability Strategy will be taken into account.

C The State of Sustainability in Germany: Indicators and Goals for Sustainable Development

I. Further development of the indicators

The Federal Government believes that one strength of the existing indicator system lies in the use of a limited number of key indicators that are truly informative and that are each associated with specific – in most cases quantified – goals and time frames.

The purpose of indicators and the requirements placed on them

The sustainability indicators fulfil a dual purpose:

- On the one hand, they clearly spotlight where social and political changes are needed, thus laying the groundwork for an informed debate on necessary reforms between all of the parties involved.
- On the other, they represent instruments of management and guidance. Their purpose is to influence government action. They are particularly employed in regulatory impact assessment and thus help the Federal Government to perform its job more effectively.

However, no one claims that the indicators used truly cover all aspects of all issues. It has to be accepted that those indicators deemed to be key indicators will inevitably pass over certain topics, some of which may be quite important. In the Federal Government's view, the signals sent out and the actual utility provided by the selected indicators are more important than their completeness, which could never be achieved anyway.

As regards the aspired quality of the indicators, two demands are central:

- In order for the indicators to serve as management instruments, the goals associated with them must be attainable, while at the same time stimulating progress and not restricting themselves to the business-as-usual path. Where possible, acceptability limits or mandatory quality standards should be specified, such as the two-degree limit agreed internationally in the area of climate protection.
- As instruments of communication and discussion, sustainability indicators cannot be limited to areas that lie within the field of influence of the Federal Government. This would only serve to ignore essential aspects of human existence and the challenges associated with them on the path to sustainable development.

The origin of the indicators

The indicators used in the Sustainability Strategy were developed on the basis of meticulous and thorough discussions carried out over many years. In this process, Germany invested great time and effort in laying the groundwork, including research projects carried out during a test phase for UN sustainability indicators between 1996 and 2000 as well as discussion and dialogue with various social groups.

Following Germany's report to the UN, it was clear that a more developed observation and management concept would be required in order to implement the overall sustainability concept. Proposals to this end were supplied by research projects conducted by the Helmholtz Association and the Federal Environment Agency, whose conclusions formed the foundation for the management concept of the German Sustainability Strategy.

Based on this work, the Federal Government defined a set of key indicators for the National Sustainable Development Strategy. The selected indicators – low

enough in number to remain manageable – focus the spotlight on outstanding aspects of important sustainability issues without laying any claim to completeness.

Key indicators are also to be understood as “keys” to comprehensive indicators and more detailed information systems better suited to representing the full depth and breadth of complex sustainability issues. Indicator 5 on “Species diversity and landscape quality”, for example, is understood as a key leading to the set of indicators used for the National Biodiversity Strategy (www.biologischesvielfalt.de/indikatoren_bericht_nbs.html). More detailed information about Indicator 13 on “Air pollution” can be found in the core environmental indicator set employed by the Federal Environment Agency (www.umweltbundesamt-daten-zur-umwelt.de/umweltdaten/open.do) and about integration (Indicator 19 on “Foreign school leavers with a school leaving certificate”) in the Integration Report issued by the Federal Government (www.bundesregierung.de/Content/DE/Publikation/IB/Anlagen/2009-07-07-indikatorenbericht,property=publicationFile.pdf).

Further development

With respect to the question of instituting changes to the indicator system, the Federal Government once again finds itself seeking the best balance between prudent development and improvement and the need for continuity. There has never been any lack of suggestions on adding new indicator areas or specific indicators or sub-indicators. The total number of indicators, however, should be kept within limits. This is the only way to ensure that they remain an effective instrument for communication and policy management tool.

Over-frequent changes would further serve to impair, if not prohibit, the vertical integration desired by the Federal Government. (i. e. the translation of the indicators to the *Länder* level). Moreover, the addition of new indicators only makes sense if they are associated with an important political goal that is suited to being monitored within the framework of the Sustainability Strategy.

The proposers of new indicators included the Parliamentary Advisory Council on Sustainable Development, the Sustainable Development Council, business, environmental and social welfare groups as well as participants in the Internet dialogue on sustainability.

In its deliberations, the Federal Government continued to take account of the positions of the *Länder* communicated during ministerial conferences on the issue. A meeting of the interdepartmental working group on sustainability indicators (known as the IMA Indikatoren) with *Länder* representatives examined the possibilities for further improving the indicators. The scientific and civic communities also contributed ideas that are very worthy of consideration.

But the viewpoints expressed here by no means pointed all in the same direction. The German Advisory Council on the Environment, for example, feels that the indicators do not sufficiently reflect the state of the environment and therefore urges the addition of eight new indicators (Council position paper of 9/2011), while others (such as econsense, quoting a study of the Cologne Institute for Economic Research) believes that economic indicators in particular are under-represented.

Examples of suggested new indicators

- Inflation rate
- Labour productivity
- Unit labour costs
- Implicit and explicit national debt
- Levy rate
- Working-age population
- Start-up dynamism
- Export success
- Foreign direct investment in Germany
- Diversity of the financial system
- Debt-to-GDP ratio (national debt as % of GDP)
- Interest burden (government interest payments as % of national budget)
- New group of indicators reflecting “financial market stability”
- Amount of investment in education and research
- Quality of public administration
- Adherence to the rule of law
- Preschool development
- Addition of 26- to 34-year-olds to Indicator 9b; incorporation of training figures in the depiction of the indicator

- Percentage of public and energy-efficient transport (in particular information on local and long-distance public transport, percentage of registered vehicles using environmentally-friendly drive systems and fuels, bicycle traffic, traffic noise)
- Fine dust particles
- Citizen's access to medical care
- Sub-indicator on the percentage of obese children
- Replacement of Indicator 15 (Burglaries in homes) with another internal security indicator
- Changes in long-term unemployment and measurement of effects of various employment models
- Introduction of a new indicator reflecting the language skills of children when starting school
- Civic involvement
- Valuation and revaluation of work.

Implementation of all of these suggestions would be impossible if we were to maintain our goal of having meaningful indicators that are suited to use as management instruments while still being communicable. The Federal Government then consulted on a number of selected suggestions within the IMA Indicator group and the working group of ministry directorates (the UAL AG). Here, priority was given to the need to measure how much the indicators could contribute to policy management and not to the desire to describe the problems in full detail.

Question of introducing financial market stability indicators

“Stable financial markets represent a basic prerequisite for a sustainable economy. Phases of instability and the uncertainty associated with them can have severe effects on the real economy.”

Sustainable Development Council

Just how true this quote from the report of the Sustainable Development Council is was made all too clear by the latest financial crisis. With this in mind, the Federal Government very carefully examined and weighed the new financial market indicators proposed by the Sustainable Development Council and the Parliamentary Advisory Council on Sustainable Development. It would doubtlessly be very useful to have indi-

cators that could reliably point to looming financial market crises well before they occur.

It was discovered, however, that adding new indicators for this topic would generate a large number of problems. The aims of the Federal Government's Sustainability Strategy are represented by objectively measurable indicators that describe a development with respect to a given target. The issue of financial market stability, however, is concerned with whether and to what extent deviations from a desired balanced state exist. A typical feature of financial markets is that their condition is dependent upon the judgement of the market players and that this judgement can change very quickly (when a bubble is recognised as such, for example). It is hardly possible to create target values here, since financial stability is something that should always exist. Moreover, while structural, retrospective indicators (e.g. debt levels and equity ratios) are rooted deeply in their particular environment and lead to no clear conclusions, so-called “stress” indicators as used in the banking sector only point to crises that are already looming or underway.

A very intense discussion of this issue is now taking place on the European level as well. On 8 November 2011, for example, the Council of European Economic and Finance Ministers decided that a financial market indicator should be included in the early warning mechanism within the European procedure for the identification and correction of macroeconomic imbalances. The financial market indicator is to be applied for the first time during the 2013 European semester. However, further fine tuning is still required of the method to be applied in creating a suitable and reliable benchmark. Issues to be decided include whether the indicator should cover the entire financial market sector (scope of application), whether consolidated data should be used, and which indicator has the capability and quality required for the early diagnosis of emerging financial market tension.

Against this background, the Federal Government has decided for now to wait and see what conclusions arise from the talks aimed at finding a suitable European indicator. These results can then be taken into proper consideration within the framework of the National Sustainable Development Strategy.

Reviews and changes by the Federal Government

The following list shows where changes to indicators have been made by the Federal Government, where no changes have been made, and the reasons behind each decision.

Overview of review results

Indicator 1a: Energy productivity and Indicator 1b: Primary energy consumption

Use of new goal from the Federal Government's Energy Concept to lower primary energy consumption from 2008 levels by 20 % by 2020 and 50 % by 2050.

Indicator 1c: Raw material productivity

Presentation of the German Federal Statistical Office's new computation of the effects of shifts from domestic resource consumption towards imports.

Indicator 2: Greenhouse gas emissions

Adoption of long-term goal from the Energy Concept: Reduction of greenhouse gases by 80 – 95 % by 2050 compared to 1990.

Indicator 3a: Share of renewable energy sources in final energy consumption

Switch from the "Share of renewable energy sources in primary energy consumption" indicator to the "Gross final energy consumption" indicator with the goal of an 18 % share by 2020. In addition, adoption of the Energy Concept's long-term target of a 60 % share of renewable energy sources in the gross final energy consumption by 2050.

Indicator 3b: Share of renewable energy sources in electricity consumption

Adoption of the Energy Concept's long-term goals: Share of renewable energy sources in electricity consumption of at least 35 % by 2020 and at least 80 % by 2050 (1990 base).

Indicator 4: Land use

Retention of goal and of the depiction introduced in 2010.

Indicator 5: Species diversity

It was examined which and how many sub-indicators should be presented in the next report. Given the difficulty of graphically presenting the 6 closely adjacent variables, it was again decided to show only the four most important single trends.

Indicator 6a: General government deficit

The result of the review was to adapt the previous Indicator 6a on the "General government deficit" (new goal: "Balance less than 3 % of GDP" (Maastricht criterion) and to select/develop two additional indicators and goals of key importance for the issue of sustainability in public finances.

Indicator 6b: Structural deficit

Goal: Structurally balanced national budget/deficit no greater than 1/2 % of GDP.

Indicator 6c: Debt position

Goal: less than 60 % of GDP. The ratio of government debt to GDP indicates the amount of relative debt burden borne by the government budget and is another new indicator being added to the Sustainability Strategy.

Indicator 7: Gross fixed capital formation in relation to GDP

No changes. It was examined whether to add investments in education and research to the indicator. Such additional criteria would, however, be of purely descriptive value only. As constituents of the indicator, they would have no relevance with respect to policy management.

Indicator 8: Private and public spending on research and development (R&D)

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

It was examined whether "Spending on education, research and science" should be labelled as investment in the future. Countering such considerations was the opinion that although R&D is seen politically as an investment in the future, within the framework of budgetary law and cameralistic accounting the term "spending" must be applied. The term "investment" is traditionally restricted to a differently and narrowly defined field such as is used in the national accounts systems.

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

Moving in line with the Europe 2020 Strategy, the Federal Government retracted its 2010 goal for the indicator (9%) and revised its goal for 2020. In 2020, the share of early school leavers should not exceed 10% (previous goal: 4.5%).

Indicator 9b: 30- to 34-year-olds who have completed tertiary or post-secondary non-tertiary education

Based on a core target of the Europe 2020 Strategy drafted in 2010, the National Sustainable Development Strategy indicator as revised by the Federal Government specifies the share of all young people aged 30 to 34 (previously: 25-year-olds) who have completed a programme of tertiary education (as per International Standard Classification of Education/ISCED levels 5/6) or comparable education (ISCED 4). This change serves to incorporate the strong dual system of vocational education in Germany. This was the Federal Government's response to frequent criticism that the particularity of the German system was not properly reflected in the previous indicator.

Proposals for adding indicators on the level of pre-primary education: Despite the increase being seen in the number of children who are unprepared for school due to deficiencies in their language development, their gross and fine motor skills and their cognitive capabilities, very little statistical data exists in the field of "pre-school development". Data from the different *Länder* are only of limited use because of the different analytical standards applied in each. For this reason, there is currently no dependable sub-indicator for the indicator set.

Indicator 9c: Share of students starting a degree course

Indicator will be kept unchanged.

Indicator 10: Gross domestic product per capita

A variety of concepts for supplementing the indicator were discussed by parties that included econsense, the Cologne Institute for Economic Research, Friends of the Earth Germany (BUND), Germanwatch, and in a report by the German and French Economic Experts Councils. The decision was taken to wait for the results of on-going work by the special committee on "Prosperity, Welfare and Quality of Life".

The often-expressed criticism that the indicator for "Economic prosperity" is insufficient and misleading was examined. The indicator field has been retitled "Economic output", something which is unmistakably described by GDP growth.

Indicator 11a: Intensity of goods transportIndicator 11b: Intensity of passenger transportIndicators 11c/d: Model share of inland freight water and rail transport

No changes. Longer-term goals can only be agreed following passage of the next Federal Transport Infrastructure Plan. Proposals from the Sustainability Council on how to depict external transport costs are being studied. To date it is still not possible to calculate these costs with sufficient reliability.

The proposed use of indicators to track developments in public local passenger transport and bicycle transport was not pursued in order to keep the total number of indicators from expanding further. Remarks about the development of rail passenger transport performance and public road passenger transport are found in the indicator sheet. The chapter on "Sustainable Mobility" discusses developments in the area of bicycle transport.

Indicator 12a: Nitrogen surplus

No changes following review and modification of the survey method in 2010.

Indicator 12b: Organic farming

The goal and the indicator will remain in their current form. No time frame for achieving the goal has been defined. In the opinion of the Federal Government, the decision on switching to organic farming lies with each individual farming operation.

Indicator 13: Air pollution

Since EU negotiations are still on-going it was not yet possible to define targets for 2020/2030. The proposed extension of the indicator to cover particulate matter is not supported for methodical and technical reasons. The existing indicator is based on measurements expressed in tonnes per unit time. This is used to produce the index representing a mean value for all of Germany. However it makes little sense to represent the health risk posed by particulate matter as an average of total particulate emissions. It would rather seem wiser to address this topic with the *Länder* as part of further consultations on the Sustainability Strategy.

Indicators 14a/b: Premature mortality

No changes to this indicator.

Indicators 14 c/d: Smoking rate amongst young people and adults

Proposals for presenting separate statistics for each sex: For the adolescent smoker indicator the values for males and females are so close together that separating them would generate no added information but only serve to clutter the graph. To prevent misunderstandings, however, the indicator report will make reference to the fact that the trend for males and females is identical.

Indicator 14e: Proportion of adults suffering from obesity

No changes. A review was made of the various proposals by the Sustainability Council and the Parliamentary Advisory Council with respect to using a sub-indicator to depict the proportion of obese children and adolescents. As yet, no continuous time series data on this topic are available so it is not possible to depict any trend. The existing data from the 2003 to 2006 time frame (from the KiGGs study done by the RKI) have been incorporated into the text of the indicator report. New nationwide data on obesity in children and adolescents will at the earliest be available in 2012.

The Federal Government is pursuing the goal of reducing the proportion of obese people by 2020. Quantifying this goal with a foreseeable time horizon makes no sense since reducing obesity requires a change in lifestyle in the medium to long term. Measurable successes can therefore only be demonstrated following a very long delay.

Proposals for an indicator on access to prevention and health services. The IMA Indikatoren group came to the conclusion that such an indicator would not be useful since access in Germany is ensured through compulsory insurance coverage.

NEW: Indicator 15: Criminal offences (replaces the indicator on “Burglaries in homes”):

The previous Indicator 15 on “Burglaries in homes” is being replaced by the indicator labelled “Criminal offences per 100,000 population” and the goal “less than 7,000 per year in 2020”.

By changing this indicator, the Federal Government is responding to the criticism expressed for years both by citizens and by the Parliamentary Advisory Council and the Sustainability Council. The new indicator improves the value of the information dedicated to this topic. The accompanying report will still provide a narrative description of the trend relating to burglaries in homes.

Indicator 16a: Employment rate (total) (15- to 64-year-olds)

The proposed use of a different age limit (67) has been rejected by the Federal Government as this would prohibit comparability within Europe. The goal for the 55- to 64-year-old age group for 2020 has been raised from 57 % to 60 %.

Indicators 17a/b: All-day care provision for children

No change.

Indicator 18: Gender pay gap

No change.

Indicator 19: Foreign school leavers with a school leaving certificate

A very diverse range of indicators were discussed with the aim of obtaining a clearer picture of this issue for use in the Sustainability Strategy. Further information on the topic is contained in the comprehensive indicator report issued by the Federal Government’s Commissioner for Integration.

Indicator 20: Share of GNP spent on official development assistance andIndicator 21: German imports from developing countries

No change.

Further indicator reviews

Consideration was given to the introduction of new indicator topics, particularly the topic of “sustainable consumption”, but the final decision was to not implement these ideas.

Results of the review of an indicator for the topic of “sustainable consumption”:

In its 2008 Progress Report, the Federal Government stated that it would examine whether a suitable key indicator could be found that fulfils the requirements for indicators used in the National Sustainable Development Strategy.

The ensuing dialogue produced a variety of proposals for new indicators. In the end, the reviews conducted within the IMA Indikatoren working group were not able to identify any suitable indicator for the issue of “sustainable consumption” that could be derived from dependable data taken from regularly conducted surveys. Various proposals for so-called auxiliary indicators were considered and discarded. Beginning

in 2012, the Federal Government will therefore implement research projects with the aim of developing an indicator for “sustainable consumption”.

Results of the review of an indicator for the topic of “water”:

The chapter dedicated to “Water” will take a detailed look at the difficulties involved in adequately charting this complex field and the problems associated with data acquisition and interpretation. One comprehensive and central “water” indicator that could be used is the indicator on the “Ecological status of surface waters”, which is part of the indicator system used for the National Strategy on Biological Diversity (NBS). However, the data for this indicator are only collected every six years, making the indicator unsuitable for use in the National Sustainable Development Strategy report, which is issued biannually.

Results of the review of an indicator for the topic of “space heating energy requirement”:

It was discussed whether to add this indicator, possibly under the topic of “sustainable consumption” or under a yet to be created topic on “sustainable construction”. In both cases, the Federal Government arrived at the opinion that this indicator alone would be insufficient to reflect the breadth of the topic.

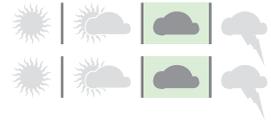
II. Where we stand: Analysis of the sustainability indicators – Contribution of the Federal Statistical Office

At the request of the Federal Government, the Federal Statistical Office conducts a biannual analysis of how the indicators have changed since the last report and of the progress made in achieving the specified goals. The technical responsibility for the accuracy of the analysis rests with the Federal Statistical Office. The Federal Government’s conclusions from the Federal Statistical Office’s analysis can be found in Chapter C.III.

Resource conservation

Using resources economically and efficiently

1a (Energy productivity)

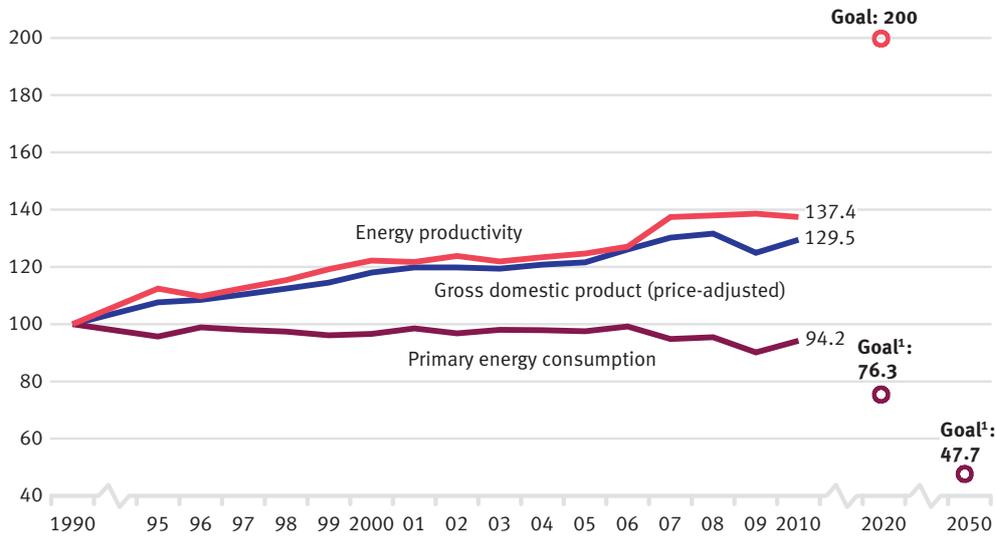


1b (Primary energy consumption)



Energy productivity and economic growth

1990 = 100



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

Source: Federal Statistical Office, Working Group on Energy Balances

1a Energy productivity

1b Primary energy consumption

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

The aim of the Sustainability Strategy is to double energy productivity (price-adjusted GDP per unit of primary energy consumption) by 2020 compared to that of 1990. A new goal added to the Sustainability Strategy is to lower the primary energy consumption seen in 2008 by 20% between 2008 and 2020 (corresponds to the 76.3% figure in the chart, indexed to

1990=100) and by 50% by 2050 (corresponding to 47.7%, 1990 = 100).

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

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

In private households, energy consumption (excluding motor fuels) rose by 8.4% between 1990 and 2010. Between 2000 and 2010 it remained virtually

unchanged. Inducing this rise in consumption was the increased demand for energy services. With regard to indoor heating, the decisive factor is the increase in living area. On the other hand, savings by private households and better insulation in buildings has resulted in a sharp decrease in heating fuel consumption. With regard to electricity, the greater number of electrical devices in households has led to a rise in consumption. Starting in 2007, consumption here fell slightly for the first time, probably due to savings by consumers following the strong jump in electricity prices at this time.

Energy consumption in the industrial sector rose by 5.0% between 2000 and 2010. The economic situation in 2010 brought about a very sharp 10.2% rise in consumption. The year before was marked by the financial crisis and consumption fell by 8.8%. The increase in

energy efficiency was not enough to compensate for the increase in consumption due to the growing economy. Consumption of energy in the transport sector rose by a total of 7.5% between 1990 and 2010. On the other hand, consumption declined by 7.1% between 2000 and 2010. A downward trend in the energy consumed by road vehicles has been observed (-11.5% from 2000 to 2009; see also Indicators 11a and 11b), while the air traffic sector has shown a large increase (+23.3% between 2000 and 2009).

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

Resource conservation

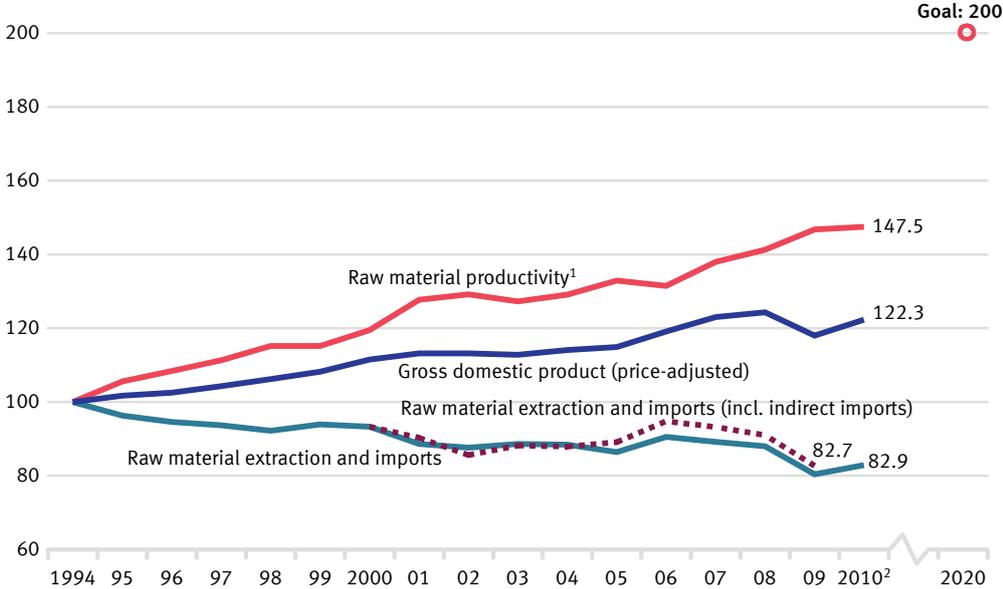
Using resources economically and efficiently

1c



Raw material productivity and economic growth

1994 = 100



1 Abiotic. 2 Preliminary results.

1c Raw material productivity

The use of raw materials is indispensable to economic development. However it also has environmental implications. Moreover, the non-renewable natural resources consumed today will no longer be available to future generations. For many companies, raw materials represent important input factors and hence cost factors.

The economical and efficient use of raw materials therefore lies in the interest of all social groups. The Federal Government is pursuing the target of doubling raw material productivity by 2020 from the level recorded in the base year of 1994.

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

Raw material productivity increased by 47.5 % between 1994 and 2010. While material usage decreased (–17.1 %), the gross domestic product went up by 22.3 %. After seeing a relatively sharp increase in productivity between 2008 and 2009 (+5.4 %), this indicator rose only slightly in 2010 (+0.7 %). Although on the whole this indicator moved in the right direction, its rate of increase over the past five years would not be enough to achieve the goal set. If this pace is maintained, the indicator would in 2020 have covered around 82 % of the distance needed to meet the goal set for it, enough to give it level 2 status (“partly cloudy”).

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

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

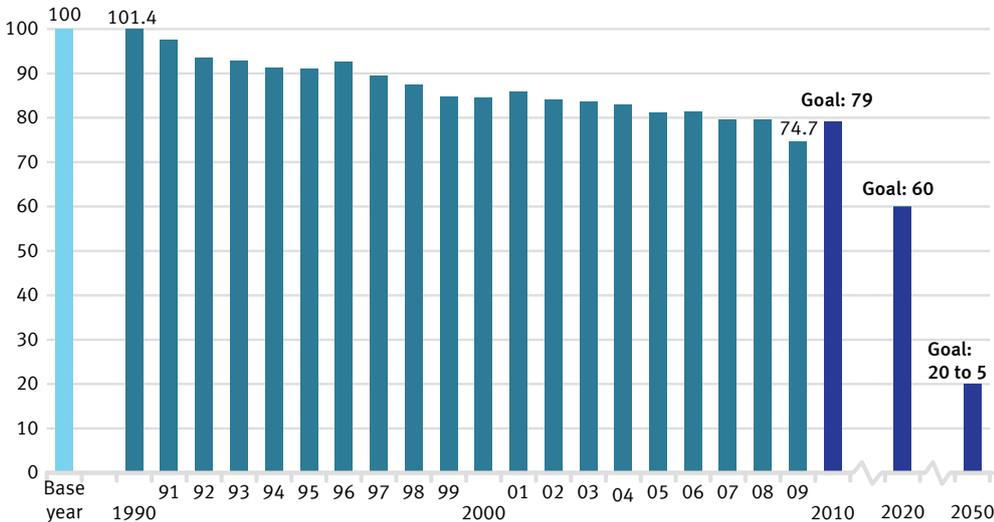
This development warranted supplementing the raw material indicator with information on “indirect imports” to complement the data on raw material extraction in Germany and on direct imports. Together, direct and indirect imports comprise all raw materials used abroad to manufacture goods imported into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

Climate protection

Reducing greenhouse gases



Greenhouse gas emissions (six Kyoto gases) in CO₂ equivalents
Base year = 100



Source: Federal Environment Agency

2 Greenhouse gas emissions

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

According to the Kyoto Protocol, greenhouse gases include the following substances: carbon dioxide (CO₂), methane (CH₄), nitrous oxide = laughing gas (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆). In terms of quantity, these gases are emitted chiefly during the burning of fossil energy sources, such as coal, oil and natural gas. But they are also produced during other, non-energy related activities, for example in the production of iron and steel, during the application of solvents, in the use of mineral fertilisers, in the field of animal husbandry and at waste disposal sites.

Since 1990 Germany has substantially reduced its greenhouse gas emissions. Compared to the base year set out in the Kyoto Protocol (1990/1995; not including emissions from land use changes and forestry), aggregate CO₂ equivalent emissions had fallen by approximately 312 million tonnes, or 25.3%, by 2009. This means that Germany had already attained its emissions reduction goal in the first year of the commitment period. By far the greatest share (85.7%) of total greenhouse gas emissions in 2009 came in the form of carbon dioxide, with methane contributing 5.3%, laughing gas 7.3% and the fluorocarbons 1.3%. Between 1990 and 2009, carbon dioxide emissions declined by 252.9 million tonnes of CO₂ equivalents, or 24.3%. A large share of this reduction (111 million tonnes) was primarily due to the industrial shutdowns that took place in the first five years after 1990. According to a near real-time forecast by the German Federal Environment Agency (UBA), greenhouse gas emissions rose again in 2010 following a disproportionate drop in 2009 as a consequence of the economic crisis.

The Overall Environmental Economic Accounting report revealed that the majority of greenhouse gases produced in Germany in 2009 stemmed from manufacturing industries (58.0%), followed by private household consumption (20.6%), the service sector (13.2%) and agriculture (8.2%). Strictly speaking,

private households actually account for more emissions than is indicated here, since the electricity they use makes up part of the high emissions included in the production sector for the “generation and distribution of power and gas”. Between 2000 and 2009, 72% of the greenhouse gas reduction fell to the production sector and 28% to private household consumption (not including emissions from the use of biomass). The calculations applied here take account of the emissions produced by German nationals residing abroad but not by foreign nationals residing in Germany.

According to data provided by the European Environment Agency, greenhouse gas emissions in the EU 15 between 2009 (3.7 bn tonnes CO₂ equivalents) and the

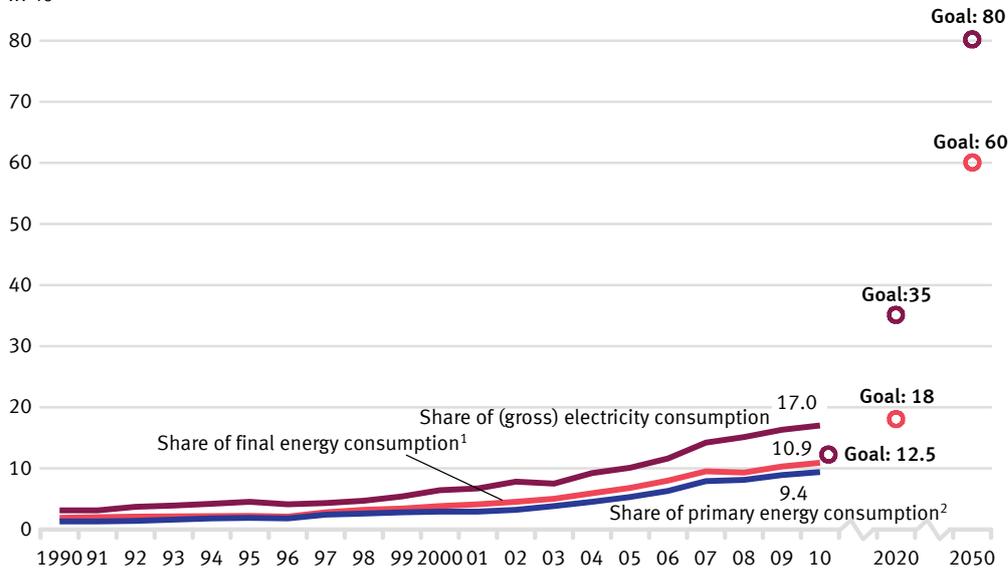
base year fell by 12.7% (–0.5 bn tonnes CO₂ equivalents). The striking drop of 6.9% seen between 2008 and 2009 was due primarily to the overall economic situation. Reports by the United Nations Framework Convention on Climate Change (UNFCCC) citing greenhouse gas emissions in 2009 in industrial countries listed Germany behind the United States (6.6 bn tonnes CO₂ equivalents), Russia (2.2 bn tonnes) and Japan (1.2 bn tonnes) as the fourth largest emitter with 0.9 billion tonnes of CO₂ equivalents and thus still near the top of the list of industrialized nations. The indicator is related to many other indicators, for example, to Indicators 1a, b, 3, 4, 5, 8, 11 and 12.

Renewable energy sources

Strengthening a sustainable energy supply



Share of renewable energy sources in total energy consumption in %



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

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

3a Share of renewable energy sources in final energy consumption

3b Share of renewable energy sources in electricity consumption

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

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

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

Between 1990 and 2010 the share of renewable energy in final energy consumption rose from 1.9% to 10.9%. If the trend continues at the pace seen in the past five years, the goal for 2020 will be significantly exceeded. The share of renewables in electricity consumption rose from 3.1% to 17.0% between 1990 and 2010, clearly surpassing the target set for 2010. This positive development was supported by a series of legislative measures (European Directive 2001/77/EC on the promotion of

electricity produced from renewable energy sources in 2004, the revised Renewable Energies Act (EEG) and the Renewable Energies Heat Act (EEWärmeG)). The EEG requires that producers of electricity give precedence to renewable energy sources when buying electricity. Since January 2007 all businesses that market fossil fuels have been and are still obliged to also market a specified minimum quantity of biofuels.

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

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

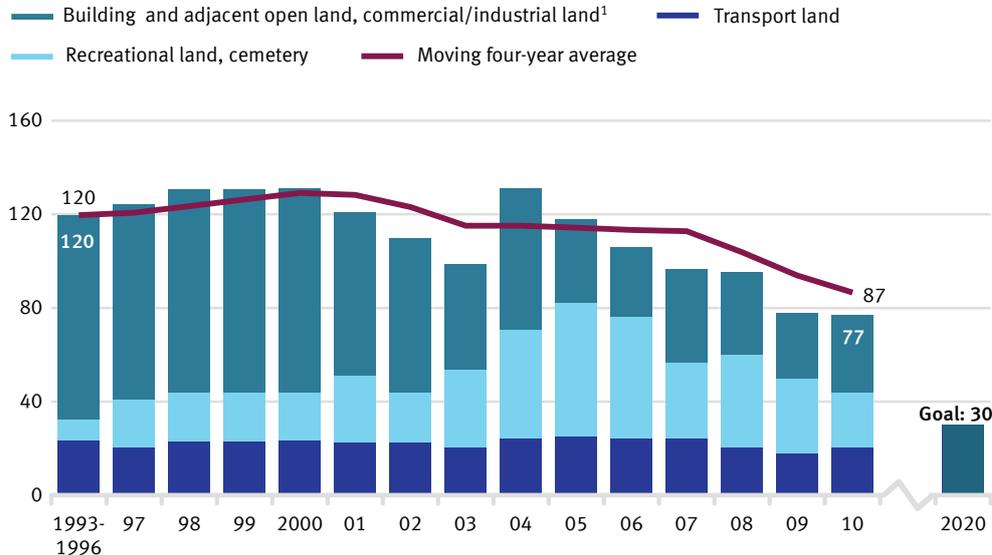
Given the associated reduction in emissions, this indicator has a positive correlation to Indicator 2 (greenhouse gas emissions). The Federal Environment Agency has calculated that some 118 million tonnes of CO₂ equivalents of greenhouse gas emissions were avoided due to the use of renewable energy sources in 2010. The actual growing of biomass for energy use can, however, lead to competition for agricultural land and have negative consequences for the quality of the landscape and for biodiversity (see Indicator 5). The renewable energy indicator is related to a variety of other indicators, including some used in the Strategy.

Land use

Sustainable land use



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



¹ Except mining land.

4 Built-up area and transport infrastructure expansion

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

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

The Federal Government's goal is, therefore, to limit the use of new areas for settlement and transport purposes to an average of 30 hectares (ha) a day by 2020.

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

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

The method of calculating the increase in settlement and transport land use as a moving four-year average (shown as a curve) currently delivers more robust information than the figures obtained for each year individually (columns). The reason for this is methodological reorganisation of the public land survey registers on which the area statistics are based. The moving four-year average shows an on-going reduction in the

rate of land use expansion for settlement and transport between 2000 (129 ha per day) and 2010 (87 ha per day). This development corresponds with the price-adjusted drop of 15.8% in the amount of money invested in building projects over this period. A more detailed look at the figures reveals a continuous drop in the years to 2005 followed by an up and down fluctuation in building investment. It remains to be seen whether this will affect the pace of built-up area and transport infrastructure expansion.

In the year 2000, the expansion of settlement and transport land use (131 ha per day) was distributed in percentage terms between the three components of “building and adjacent open land, commercial/industrial land”, “recreational land, cemetery” and “transport land” at a ratio of 66:16:18. By 2010, overall expansion had fallen to 77 ha per day and the distribution had changed to 43:30:27. Alongside the significant reduction

in the contribution made by buildings and adjacent open land and commercial/industrial land to the growth of land used for settlement and transport, the increase in the proportion of recreational land and cemeteries is also noteworthy. One of the reasons for this latter trend was the aforementioned reorganisation in the public land survey registers. Independent of the land use growth figures, the actual share of recreational and cemetery land in the total settlement and transport land was only 9.1% in 2010.

In 2008, about 53% of all settlement land was used by private households, mainly for residential purposes. Between 1992 and 2008 the amount of settlement land used by private households went up by 28.3%, a rate far faster than the number of residents (+1.3%). A major reason for this is the sharp increase in living space per capita, which rose by 18.5% (from 36 m² to 43 m² per capita) between 1993 and 2006.

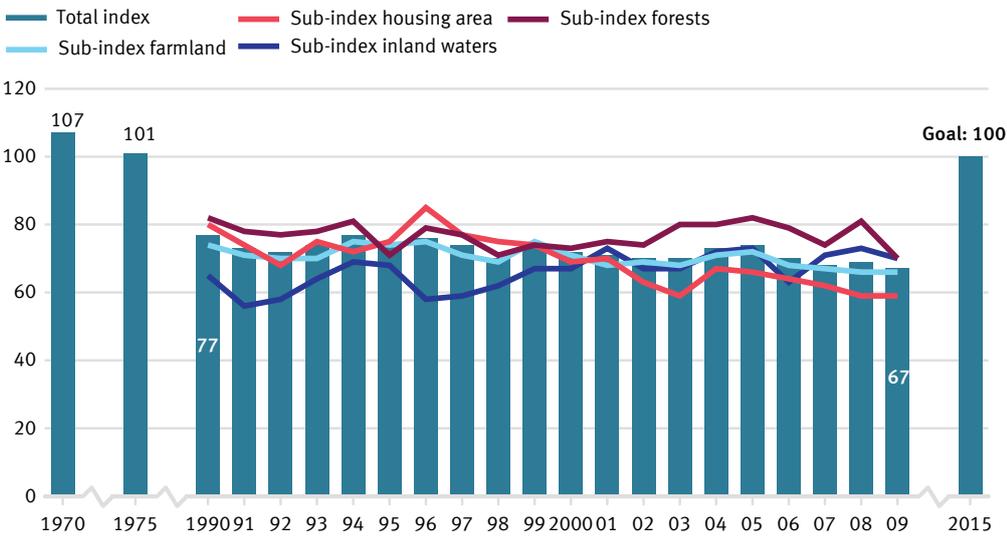
Species diversity

Conserving species – protecting habitats



Species diversity and landscape quality

Index 2015 = 100



Source: Federal Agency for Nature Conservation, 2011

5 Species diversity and landscape quality

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

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

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

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

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

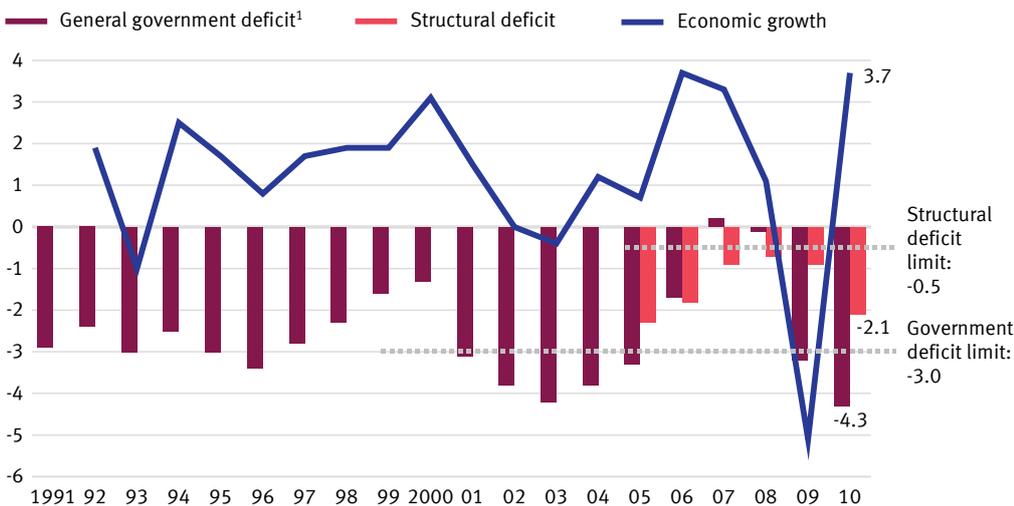
The climate change caused mainly by greenhouse gas emissions is today already leading to a shift in the geographic distribution of many species and is beginning to alter landscapes in Germany. Climate change caused by human activity could in the future considerably alter both species diversity and the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

Government debt

Consolidating the budget – creating intergenerational equity



Ratio of government deficit to gross domestic product in %



1 Overall balance of public finances in % of GDP.

Source: Federal Statistical Office, Federal Ministry of Finance

6a General government deficit

6b Structural deficit

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

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

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

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

The financial and economic crisis has placed a noticeable dent in Germany’s public finances. Following a small surplus in 2007 and a marginal deficit in 2008, the general government balance worsened in 2009, with the deficit rising to 3.2% of GDP. The Maastricht reference value was exceeded in 2010, with the deficit ratio climbing to 4.3% (EUR 105.9 bn). This deficit was shared by the various levels of government as follows:

EUR 79.7 billion for the Federal Government, EUR 22.8 billion for the *Länder* and EUR 5.7 billion for the municipalities. Only the social insurance system was able to record a positive funding balance of EUR 2.3 billion.

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

The government revenue ratio fell to 43.6% in 2010. The reasons for this included taxation measures (more

deductions allowed for insurance contributions, plus stimulus packages) and the lowering of the premium rates for statutory health insurance. Though government expenditures in 2010 also dropped compared to the previous year, this decrease was relatively modest, amounting to just 0.2 percentage points.

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

Government debt

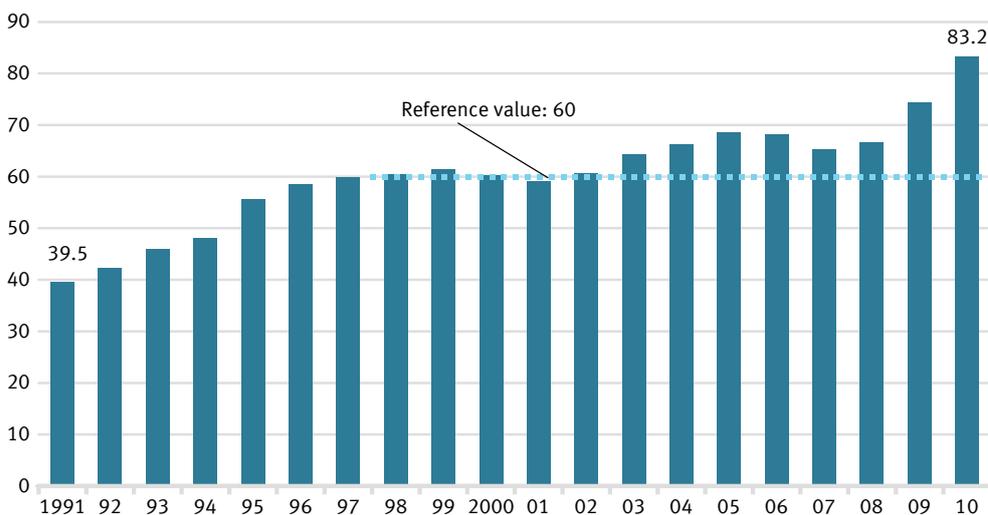
Consolidating the budget – creating intergenerational equity

6c



Ratio of government debt to GDP

Government debt (Maastricht) in % of GDP



Source: German Central Bank, November 2011

6c Government debt

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

The European Union's Stability and Growth Pact specifies a reference value of 60% as the maximum debt-to-GDP ratio. This also serves as the national target for the indicator in the report. The balanced budget provision anchored in Germany's Basic Law is intended to guarantee a sustained reduction of the debt-to-GDP ratio.

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

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

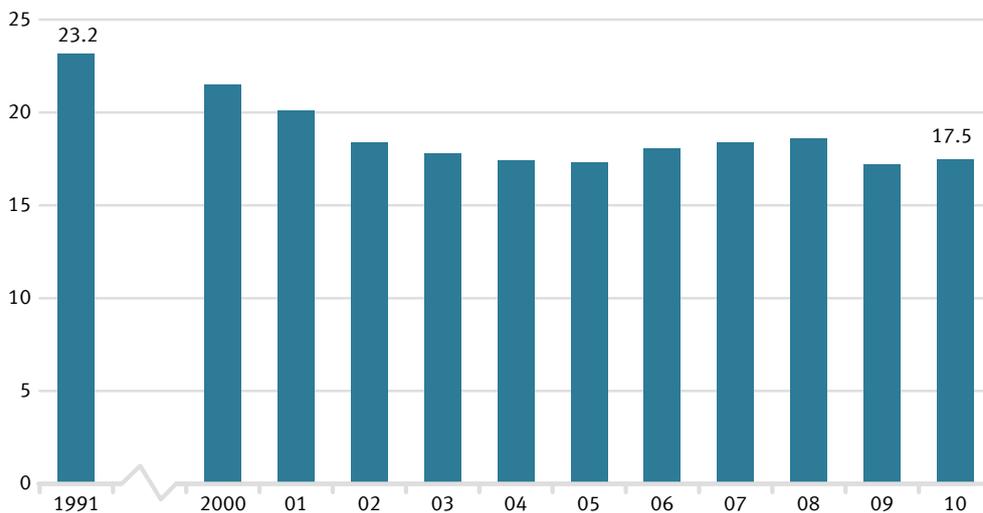
In the national balance of assets, the debts owed by government are balanced by its assets, both tangible and financial. It is only after this balancing of debts and assets that we can draw any economically reliable conclusions concerning the burden that will be inherited by future generations. The biggest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

Provision for future economic stability

Creating favourable investment conditions – securing long-term prosperity



Gross fixed capital formation in relation to GDP
in %



7 Gross fixed capital formation in relation to GDP

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

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

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

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

investment. 2010 saw a recovery in investment activity. Equipment investment (price-adjusted) experienced a strong increase, climbing 10.5% over the year, while building investment rose by 2.2%.

The period stretching from 1991 to 2010 witnessed a strong shift in investment activity from the manufacturing sector to the service sector. In 1991, 27.5% of investments in new plant and equipment were still being made by manufacturing companies. By 2010, this figure had fallen to just 18.7%. In 2010, 79.6% of investments were made in the service sector, up from 70.7% in 1991. The largest single investment area was that of property and housing. This sector accounted for 32.6% of investments in all new buildings and

equipment in 2010. This rise in the service sector's share of capital spending was seen throughout the period with the exception of 2007 and 2008, when above-average economic and investment growth in manufacturing again led to a short-term rise in this sector's share of total investments.

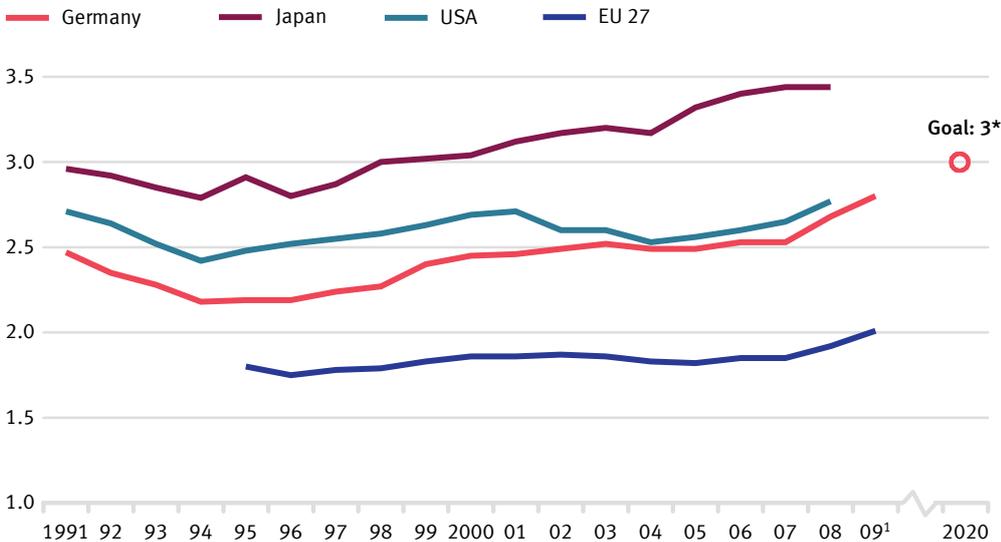
Total net fixed capital (sum of fixed investments minus depreciation) amounted to around EUR 8,012 billion in 2009. Of this total, EUR 6,807 billion belonged to the private sector and EUR 1,097 billion were held by public sector. In calculating the total assets, the value of land and of financial assets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

Innovation

Shaping the future with new solutions



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



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

¹ Partially estimated.

Source: Organisation for Economic Co-operation and Development (OECD)

8 Private and public spending on research and development

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

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

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

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

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

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

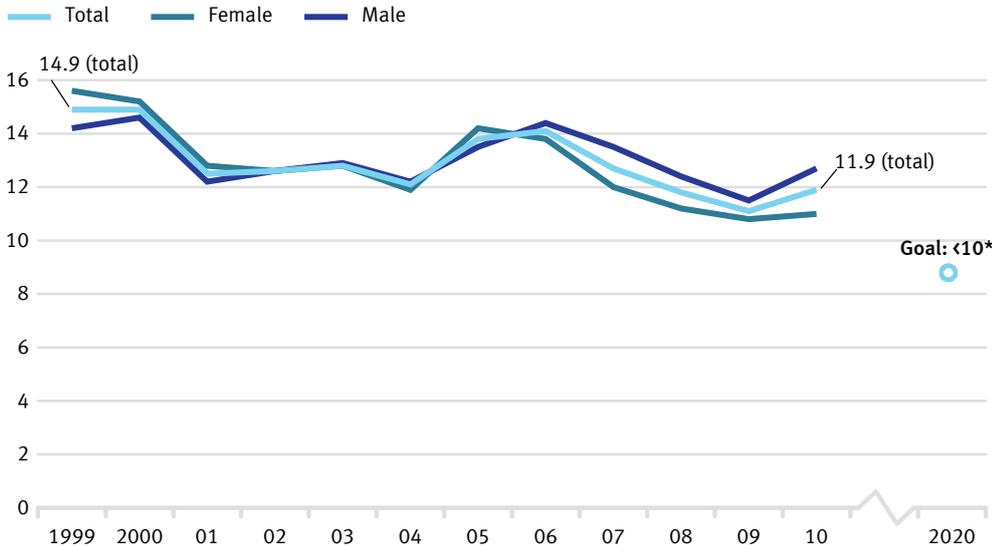
Education and training

Continuously improving education and vocational training



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

Share of all 18- to 24-year-olds in %



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

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

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

This education indicator describes education deficits by showing the proportion of early school leavers. This is understood as the percentage of all 18- to 24-year-olds who currently do not attend any school or institution of higher education, who are not attending any further education programmes and who have not completed second-stage secondary school (ISCED level 3-university entrance level or completed course of vocational training). This means that even those young people who, for example, have successfully completed the *Hauptschule* or the *Realschule* (lower secondary education, ISCED level 2) but did not go on to qualify for university or to complete vocational training and are no longer participating in the education process are also counted as early school leavers.

Moving in line with the Europe 2020 Strategy, the Federal Government retracted its 2010 goal for the indicator (9%) and revised its goal for 2020. The aim is for the share of early school leavers to stay below 10% in 2020 (previous goal: 4.5%). In 2010 the indicator stood at 11.9% and therefore missed the previous goal. If the current average trend continues, however, the new goal for 2020 will be met. The improvement seen since the last report must be viewed in connection with the changes made to both goals.

In 2010 a total of 784,000 young people did not have an apprenticeship or had not completed upper secondary education. Between 1999 and 2010, the share of this total attributed to 18- to 24-year-olds fell from 14.9% to 11.9%. In 2006 it stood at 14.1% and in 2009 at 11.1%. Since 1999 the gender-specific figures for the indicator have deviated from the total values to differing extents. In 2010 the proportion of young women stood at 11.0%, lower than that of young men at 12.7%. Looking at the share of school drop-outs (not shown in chart), school statistics show that in 2010 a total of around 53,000 young people (6.6% of the graduating class) left school without a *Hauptschulabschluss* (general school leaving certificate). Their share has dropped by 36.7% compared to 1999. In the case of young women the proportion continues to be mark-

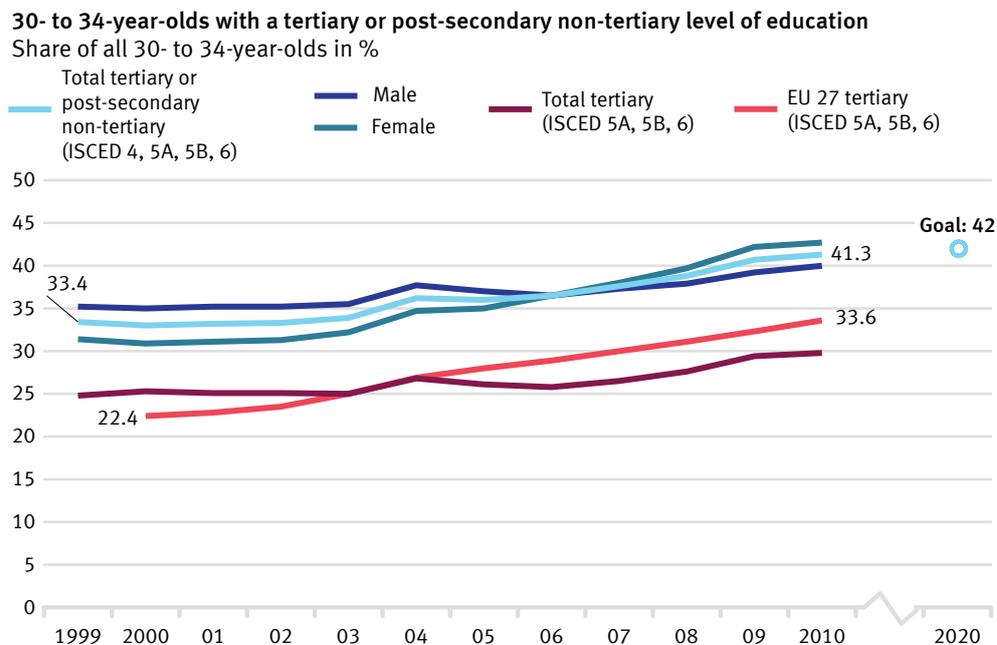
edly lower (5.3%) than that of young men (7.8%). In 2010, 22.3% (179,753) of all school leavers with a school leaving certificate obtained a *Hauptschulabschluss* (general school leaving certificate), some 43.5% (350,856) a *Realschulabschluss* (intermediate school leaving certificate), 1.4% (13,455) the *Fachhochschulreife* (applied sciences university entrance qualification) and 28.4% (268,194) the *allgemeine Hochschulreife* (general higher education entrance qualification). The proportion of school leavers with a *Hauptschulabschluss* has declined since 1999 by 3.8 percentage points, while the proportions of school leavers with a *Realschulabschluss* rose by 2.7 percentage points, with the *Fachhochschulreife* by 0.4 percentage points and with the *Hochschulreife* by 3.6 percentage points.

Family and social background and one's knowledge of the German language play an important role in school and professional development. There continues to be a large discrepancy between the educational success of Germans and that of foreign young people (see Indica-

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

Education and training

Continuously improving education and vocational training



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

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

Tertiary degrees include degrees from traditional universities and universities of applied sciences (ISCED 5A/6), as well as from public administration colleges, professional and vocational colleges, technical schools and health care schools (ISCED 5B). In addition, the new indicator also includes qualifications awarded from post-secondary non-tertiary schools (ISCED 4; see definition in Annex). The distinguishing feature here is that two upper secondary degrees are obtained consecutively or even simultaneously. For example, one can obtain university-entrance qualifications (the *Abitur*) from an evening school, adult high school or vocational/technical high school (in each of these cases, students must first have completed a programme of vocational education), or one can complete a course of teacher education after receiving the *Abitur*, or after completing two consecutive programmes of vocational education. The Federal Government and the *Länder* want to see this national indicator rise to 42% by the year 2020. The Europe 2020 Strategy cites a goal of 40% for tertiary degrees or comparable qualifications.

Starting at 33.4% in 1999, this national strategy indicator had by 2010 climbed eight percentage points to a level of 41.3%, just short of the target set by the Cabinet for 2020. At 42.7%, the figure for women had already exceeded the goal, while the figure for men (40.0%) was still well below the target. These favourable figures must be seen in connection with the fact that the international community does not normally include post-secondary non-tertiary degrees in this indicator for the simple reason that such degrees do not exist in many other countries. For the EU 27 coun-

tries, the more narrowly defined indicator (limited to ISCED 5/6) has risen steadily since 2002 to reach a total of 33.6% in 2010. If we were to apply the EU definition for the indicator to Germany (i.e. share of 30- to 34-year-olds with a tertiary degree) the numbers would have risen from a baseline of 24.8% in 1999 by five percentage points to 29.8% in 2010, nearly four per cent below the EU figure. In 2010, there were no noteworthy differences between the percentage figures for men and women.

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

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

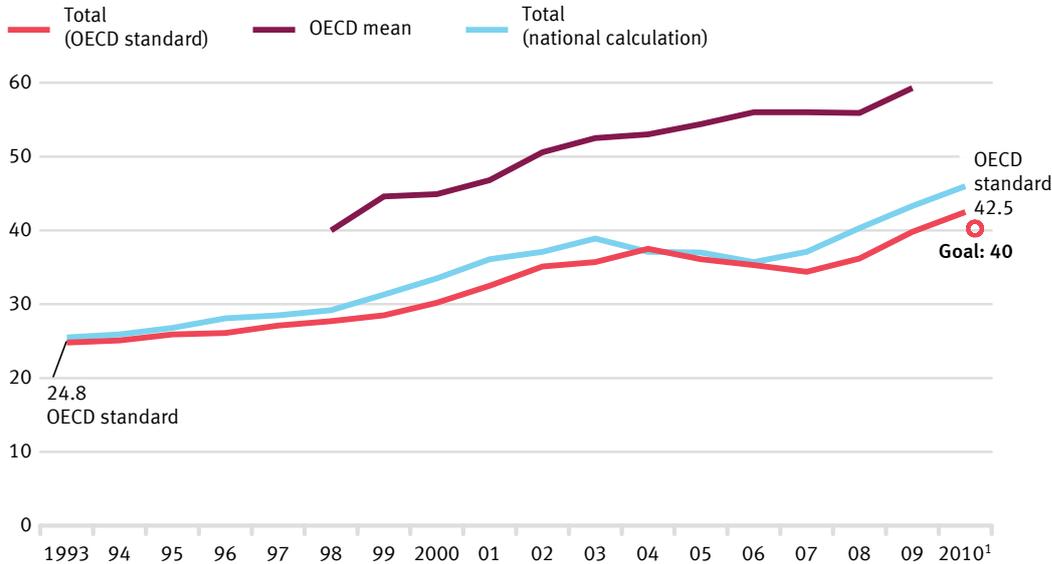
Education and training

Continuously improving education and vocational training



Share of students starting a degree course

Share in %



¹ Preliminary results.

9c Share of students starting a degree course

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

Between 1993 and 2004 the share of students starting a degree course in Germany (determined according to the OECD standard) rose from 24.8% to 37.5%. After a drop in the years 2005 to 2007, it has in recent years risen sharply to reach 42.5% in 2010, topping the goal set for that year. At 43.4% the percentage of women

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

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

During the 2010 academic year (summer semester 2010 and winter semester 2010/2011), 443,035 new students enrolled at German institutions of higher education (preliminary results). This number corresponds to a first-year student quota of 46.0% when calculated based on national classifications (blue line). With an increase of 18,800 (4.4%) compared with 2009, the number of new students in 2010 exceeded the previous

record achieved the year before (424,273 new students). This marked rise is connected to some extent with the peculiarity that certain *Länder* have mandated a reduction in the number of school years (2007 in Saxony-Anhalt, 2008 in Mecklenburg-Western Pomerania and 2009 in Saarland), which then led to two classes graduating in the same year. It is expected that the suspension of the military draft combined with overlapping graduating classes in further *Länder* will result in another steep climb in the number of students enrolled in higher education institutions.

2010 saw around 456,000 young people obtain their university entrance qualification (the *Abitur* or *Fachhochschulreife*), up 1.6% from the previous year (preliminary results, including those graduating after eight years at *Gymnasium*). 47.2% of those obtaining university qualifications were young men. Young people who were eligible to go to university increasingly chose vocational training instead of attending a university. The proportion of those starting an apprenticeship who were eligible to go to university rose from 14.0% in

2003 to 20.9% in 2010. Reasons for the increasing preference for vocational training among those qualified for university include the desire for more practical types of training not offered by university as well as the enrolment restrictions that apply to certain subjects.

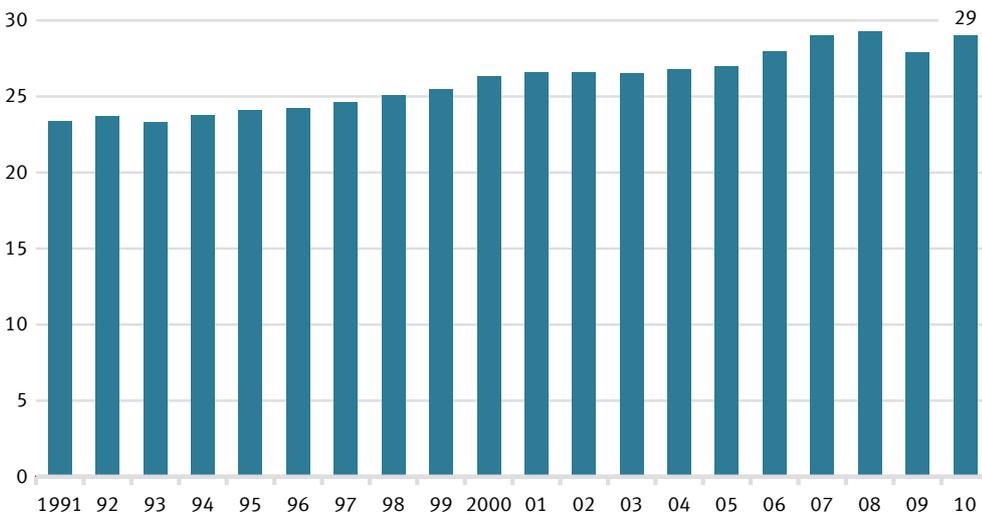
First-year students who acquired their university entrance qualifications in Germany were on average 21.6 years old in 2010. 15.3% of all new enrollees came to Germany from abroad to study. Since most of these had already studied in their home country, on average they were two years older than domestic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

Economic output

Combining greater economic output with environmental and social responsibility



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



10 Gross domestic product per capita

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

Between 1991 and 2010 price-adjusted GDP per capita increased by a total of 23.7%. Following vigorous GDP growth in the period 2005 to 2008 averaging 2.8% per year, the GDP per capita dropped by 4.9% in 2009 compared with the previous year in the wake of the financial and economic crisis. Economic output recovered in 2010 and the GDP rebounded to an average of EUR 29,000 per capita, nearly equalling the 2008 level. Over the last five years, GDP per capita rose by an average of 1.4% per year.

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

manufacturing industry and 1.6% in agriculture and forestry. These changes to the structure of the economy – marked by the increasing importance of services and the decreasing significance of the production, mining, and construction industries – contributed to a decoupling of economic growth and environmental degradation (see Indicators 1 and 2).

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

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

Mobility

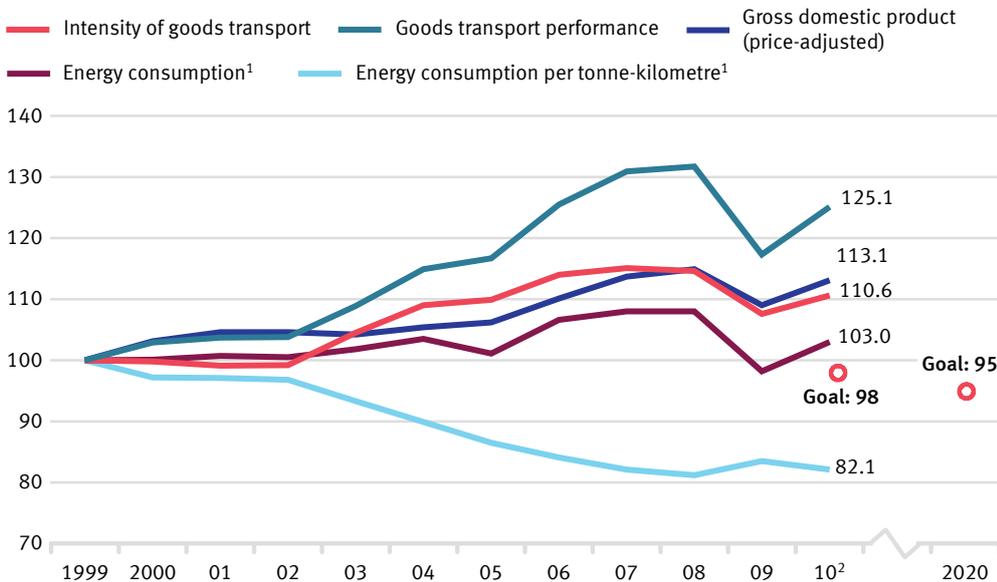
Guaranteeing mobility – protecting the environment

11a



Intensity of goods transport

1999 = 100



1 Excluding air transport, transport via pipelines and by light commercial vehicles (< 3.5 t gross vehicle weight). 2 Preliminary results.

Source: Federal Ministry of Transport, Building and Urban Development, Federal Environment Agency

11a Intensity of goods transport

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

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

The only year that the indicator moved in the desired direction was 2009. This was primarily due to the drop in economic output (price-adjusted gross domestic product). The same year also saw steep downturn in goods transport performance (in tonne-kilometres) that was in part the result of a reduced vehicle capacity utilisation rate in the road transport sector due to the economic

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

Besides the presumably short-term effect of the economic crisis, a number of long-term factors also influenced developments in transport intensity in the 1999 to 2009 period. In industry, the vertical range of manufacture has decreased, something that is normally associated with greater transport requirements because companies procure more intermediate goods from both domestic and international suppliers. This so-called technical division of labour is approximately described by the ratio of the total volume of goods (both domestically produced and imported goods and services) to the GDP. This factor accounted for a calculated increase of 10.0 percentage points in transport intensity. In addition, the average distance between the place of production and the place of use of the goods increased,

working to raise transport intensity by a further 10.0 percentage points. On the other side of the balance sheet is the shift in demand to less material-intensive goods (e.g., an increasing share of services). The resulting change in the composition of transported goods served to cut 11.9 percentage points from the calculated total transport intensity. All three factors described above result in the cited aggregate rise in the intensity of goods transport of 8.1% between 1999 and 2009.

economy (globalisation). Globalisation causes significant traffic flows outside of Germany as well. 960 million tonnes of German imports and exports were moved outside of Germany in 2008, making for a transport performance of 2,855 billion tonne-kilometres (including sea and pipeline transport). By comparison: Domestic goods transport performance in 2009 came to 583 billion tonne-kilometres with a transport volume of 3,702 million tonnes.

The indicator on goods transport performance refers by definition to transport within Germany. It does not therefore sufficiently reflect the influence of the growing integration into foreign trade of the German

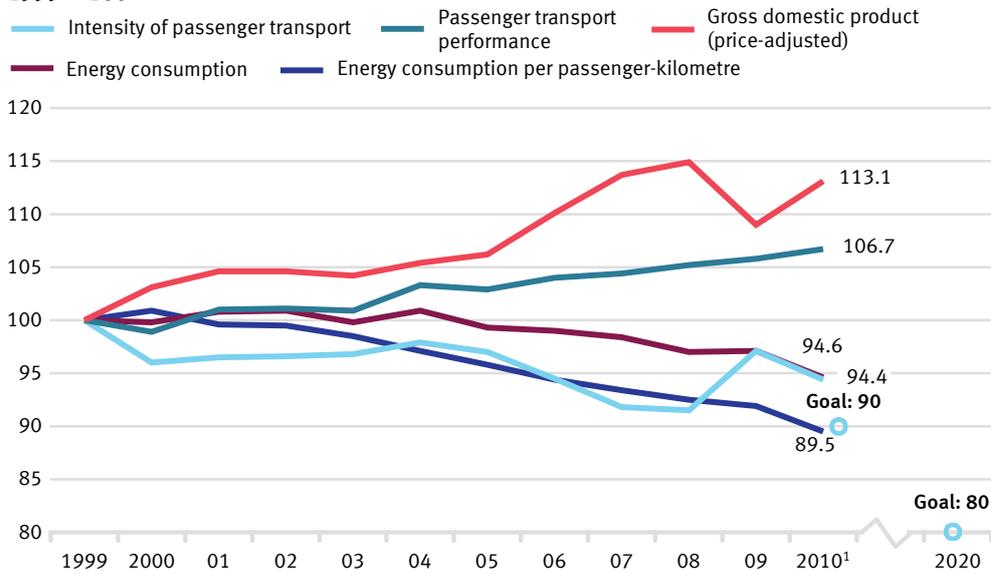
The indicator is directly and indirectly related to indicators 1, 2, 4, 10, 12, 13 and 16 (with regard to the transport services industry and the automobile industry), and others.

Mobility

Guaranteeing mobility – protecting the environment



Intensity of passenger transport 1999 = 100



¹ Preliminary results.

Source: Federal Ministry of Transport, Building and Urban Development, Federal Environment Agency

11b Intensity of passenger transport

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

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

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

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

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

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

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

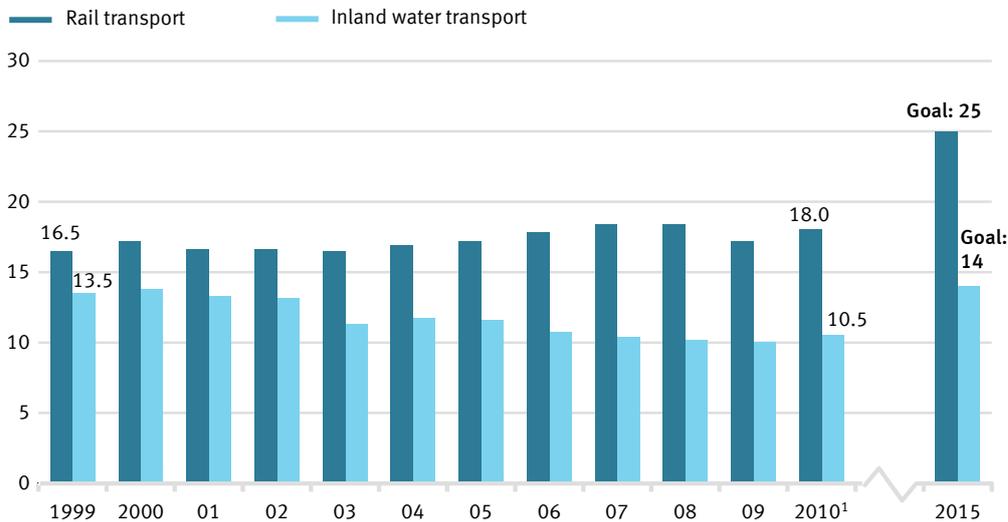
This indicator is related to, among others, indicators 1a, b (as concerns energy consumption), 2 (as concerns climate-damaging fuel emissions), 3, 4, 10, 12a, 13 (as concerns atmospheric deposition of nitrogen compounds from the combustion of fuels), 14a, b (as concerns traffic accidents) and in some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

Mobility

Guaranteeing mobility – protecting the environment



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



Excluding local haulage by German lorries (up to 50 km).

¹ Preliminary results.

Source: Federal Ministry of Transport, Building and Urban Development

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

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

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

allow us to expect the goal set by the Federal Government for this mode of transport to be achieved in time. For inland freight water transport it is, in fact, evident from the development of the indicator that the Federal Government's goal cannot be achieved.

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

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

In contrast to rail, inland freight water transport suffered losses in market share in the period 1999 to 2009,

especially for the transportation of those types of goods where it had traditionally had a large share. For example, the market share for chemical products (including fertilisers) decreased from 19% to 15%, crude oil from 27% to 21% and ore from 41% to 34%.

Goods transport performance on inland waterways dropped by 7.0 billion tonne-kilometres between 1999 and 2009. A sharper but short-lived decline also occurred due to the economic crisis of 2008/2009. By contrast, the total goods transport performance increased between 1999 and 2009. This should have meant an increase in transport performance of inland freight water transport of 6.1 billion tonne-kilometres. However, this calculation was countered by two longer-term developments. On the one hand the composition of the goods being transported changed. There was an increase

in those goods that were less suitable for transportation by water, so that other carriers had to be used. As a result of this the increase in inland freight water transport turned out to be 5.1 billion tonne-kilometres less than should have been expected. On top of this, the losses in market share for various goods categories mentioned above reduced the increase by a further 8.0 billion tonne-kilometres. This explains the cited decrease in goods transport performance by inland freight water transport of 7.0 billion tonne-kilometres.

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

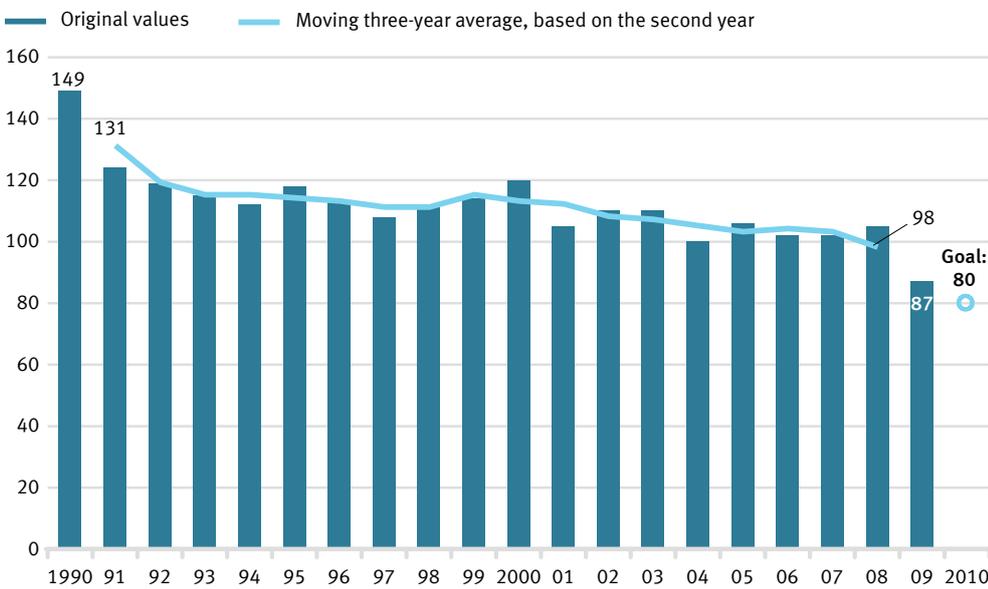
Farming

Environmentally sound production in our cultivated landscapes

12a



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



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

12a Nitrogen surplus

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

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

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

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

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

Farming

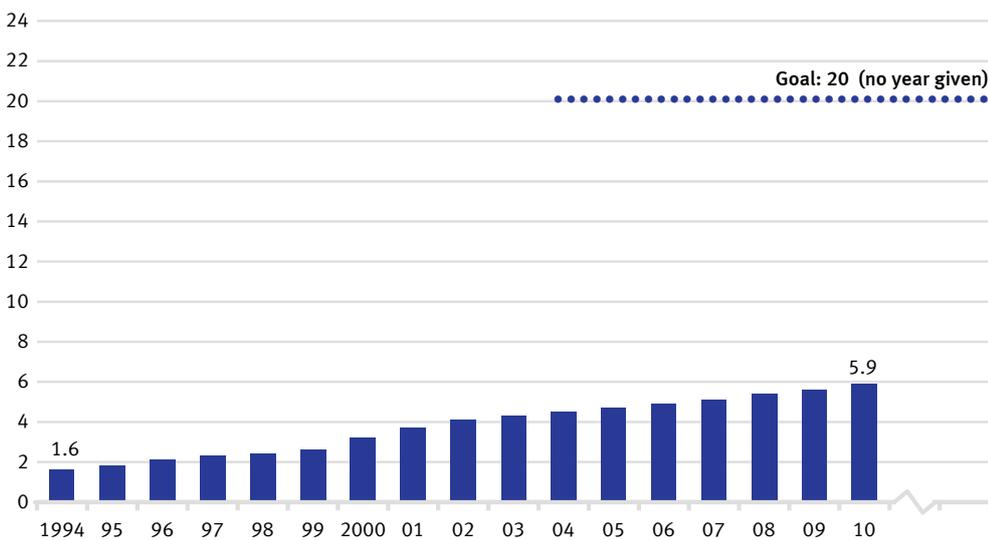
Environmentally sound production in our cultivated landscapes

12b



Land used for organic farming

Share of total farming land in %



Source: Federal Ministry of Food, Agriculture and Consumer Protection

12b Organic farming

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

The indicator shows the share of total utilised agricultural land in Germany that is cultivated by organically managed farms subject to the inspection system prescribed by the EU legislation on organic farming (Regulation (EC) No 834/2007 and the implementing rules). It includes land that has been fully converted to organic farming as well as areas still undergoing conversion. The decision to switch to organic farming is

one made by individual farms. The Federal Government welcomes farm conversions as being desirable for protecting the environment and meeting demand, and it intends to create conditions that will allow the share of farmland used for organic farming to reach 20% in the next few years.

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

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

agricultural land that used for organic farming in 2009 were reported for Austria (18.5%) and Sweden (12.8%).

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

pig farming at 15.1% of organic animal farms. The average area of utilised agricultural land on organic farms in 2010 was 59.3 hectares, somewhat more than the average of farms overall (55.8 ha), and they were particular large in the eastern *Länder* (226.8 ha).

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

Air quality

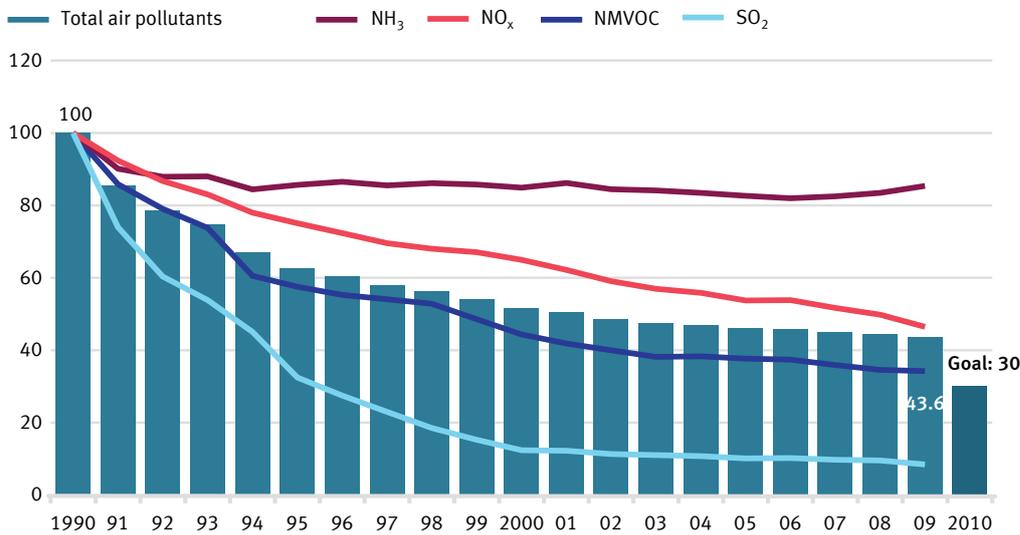
Keeping the environment healthy

13



Air pollution

Index 1990 = 100



Sulphur dioxide (SO₂), nitrogen oxide (NO_x), ammonia (NH₃) and non-methane volatile organic compounds (NMVOC), averaged index of measurement data.

Source: Federal Environment Agency

13 Air pollution

The protection of human health was the starting point of the environmental protection movement. A correlation between respiratory diseases and air pollutants was established early on, and protective measures were initially directed at reducing the emission of air pollutants. But air pollutants also damage ecosystems and species diversity, especially through acidification and eutrophication of the soil. Although the integration of desulphurisation and denitrogenisation units in power plants and the wide application of catalytic converter technology in petrol engines have served to reduce emissions in Germany significantly since the 1980s, further efforts are still needed. The Federal Government's National Sustainability Strategy's indicator for air pollution combines four primary pollutants: sulphur dioxide (SO₂), nitrogen oxides (NO_x), ammonia (NH₃) and the volatile organic compounds (NMVOC).

It is the aim of the Federal Government to reduce total emissions of these air pollutants by 70% by 2010, compared with the base year of 1990. Air pollution decreased by 56.4% by 2009, so the indicator has been moving in the right direction. There were significant reductions in the first half of the 1990s. By 2000 the emission of air pollutants had virtually halved (-48%). In the last five years up to 2009 the index in Germany has only fallen slightly by an average of 1.5% per year. This pace of progress is not sufficient to achieve the set goal in 2010. At this rate, the indicator would cover around 82% of the distance needed to meet the goal by the target year, enough to give it level 2 status ("partly cloudy").

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

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

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

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

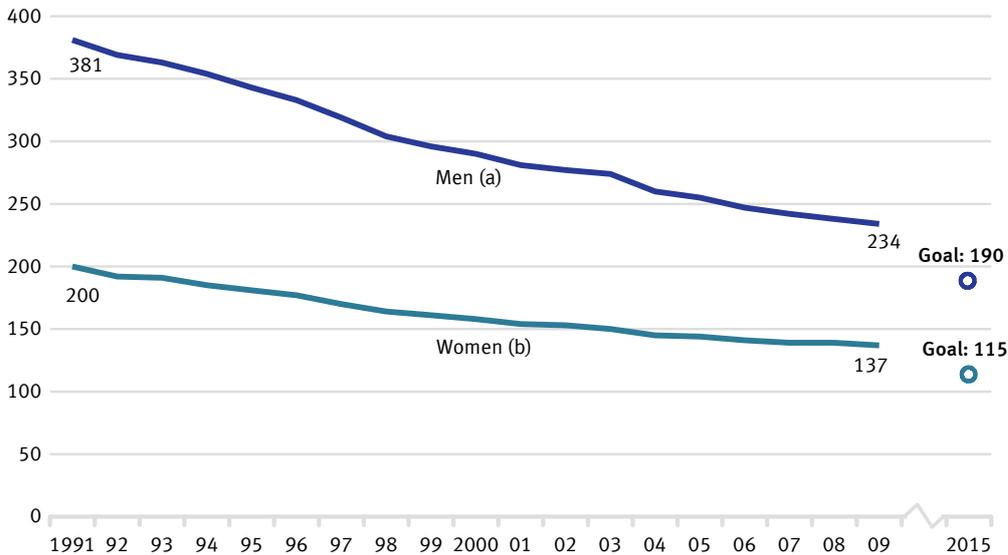
Health and nutrition

Living healthy longer



Premature mortality

Deaths per 100,000 population below the age of 65



14a, b Premature mortality

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

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

Between 1991 and 2009 premature mortality steadily decreased, and did so more for men (-38.4%) than for

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

Life expectancy in Germany has risen further.

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

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

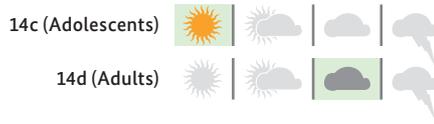
In 2009, cardiovascular diseases were in general the most common cause of death (41.7%), followed by malignant tumours (25.3%), diseases of the respiratory system (7.4%) and the digestive tract (4.9%) and deaths due to external causes (3.7%). The significance of the

causes of death varies depending on age and gender. Whereas cardiovascular diseases are the primary cause of death in older people, malignant tumours (cancers) represent the principal cause among 40- to 64-year-olds. Among 1- to 39-year-olds, the majority of deaths occurred due to non-natural causes (injuries and poisoning). Despite progress in the field of accident prevention, death by accident is still the main cause of death among 18- to 25-year-olds.

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

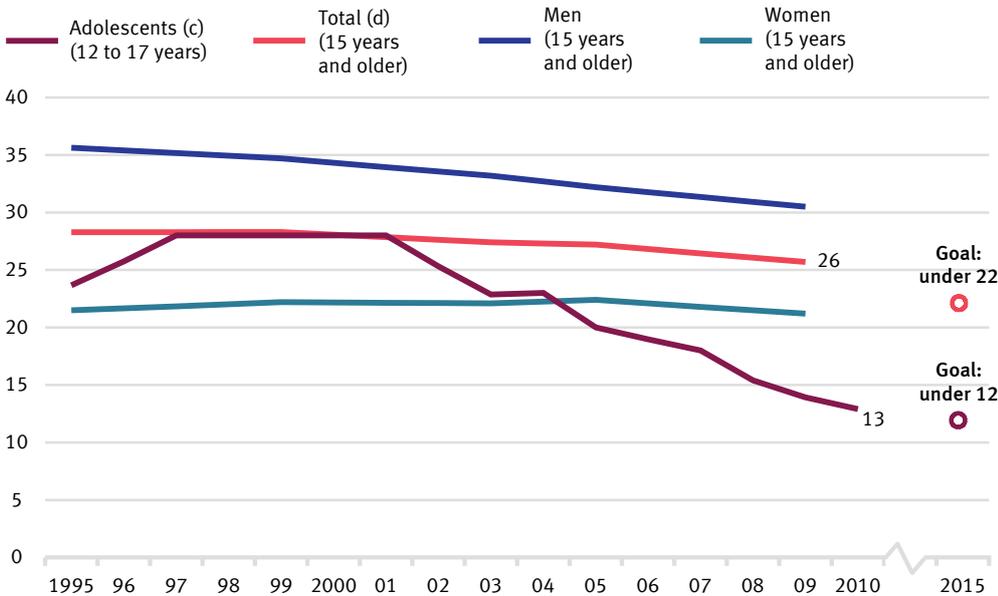
Health and nutrition

Living healthy longer



Smoking rate

Share in % of those polled



Source: Federal Statistical Office, Federal Centre for Health Education

14c, d Smoking rates amongst young people and adults

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

the goal of reducing the percentage of juvenile and adolescent smokers to under 12% by 2015, and that of smokers of 15 years of age and older to under 22%.

In the group of adolescents between 12 and 17 years of age, the proportion of smokers increased from 24% (1995) to 28% (1997 and 2001), but then dropped to 13% (14% male, 12% female) by 2010 (data from Federal Centre for Health Education). No significant differences were seen in the smoking rates of males and females. In 2009, 26% of the total 15 and above population stated that they occasionally or regularly smoked (microcensus). In 1995 and 1999, 28% of people in this group smoked. This meant that the rate for adult

smokers had dropped only slightly. In order to reach the goal for adults (15 years of age and older), a more concerted effort on the part of all stakeholders must be made. Among adolescents (12 to 17 years of age), however, the target value will be achieved if the trend seen over the past years continues.

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

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

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

Health and nutrition

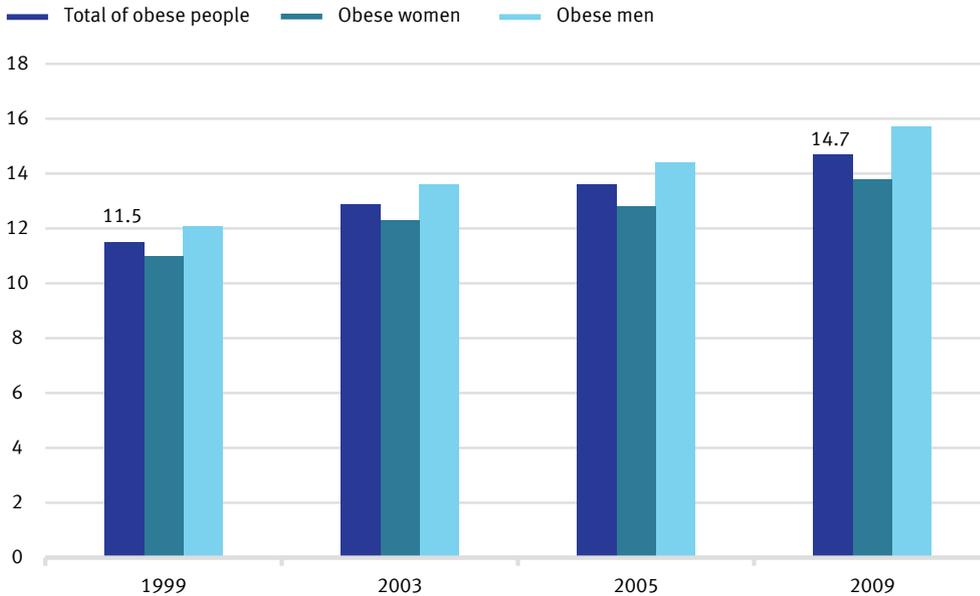
Living healthy longer

14e



Proportion of obese people

in % of adults (18 years and older)



14e Proportion of adults suffering from obesity

Surplus body weight plays a major role in the development of diseases of civilisation such as cardiovascular diseases, diabetes and joint injuries. Being overweight is directly caused by an unbalanced diet and lack of exercise, and is indirectly related to social causes, such as educational background or social integration.

Besides the consequences to health, excess weight is also a burden on the national economy and has a negative impact on social life. People are classified as “overweight” based on their body mass index (BMI), that is, an individual’s body weight in kilograms divided by the square of his or her height in metres. People with a BMI of 25+ are classified according to the WHO as “overweight” (with age and sex-specific differences not taken into consideration). When the overweight condition goes beyond a certain point (a BMI of 30+), it is classified as “obesity” and is as a rule connected to impairments to health.

It is the goal of the Federal Government to see a reduction in the proportion of adults suffering from obesity in Germany by 2020. In 2009, 14.7% of the German population over the age of 18 was classified as obese. In 1999 this figure still stood at 11.5%. The trend for obe-

sity in the population has since 1999 moved steadily away from the goal envisioned in the Sustainability Strategy.

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

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

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

The German Health Interview and Examination Survey for Children and Adolescents 2007 – KiGGS (Robert Koch Institute) provided specific results for the 3- to 17-year-old age group. According to these figures for the years 2003 to 2006, 2.9% of 3- to 6-year-olds, 6.4% of 7- to 10-year-olds and a whopping 8.5% of 14- to 17-year-olds were obese. No significant differences were seen between boys and girls here. An increased risk of being overweight or obese was found among children from families of a lower social status and among children whose mothers were also overweight. The causes of the spread of obesity can be found, among other things, in a diet too rich in calories and in too little physical exercise. As yet, no continuous time

series data are available on obesity in children and adolescents, so it is not possible to depict any trend.

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

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

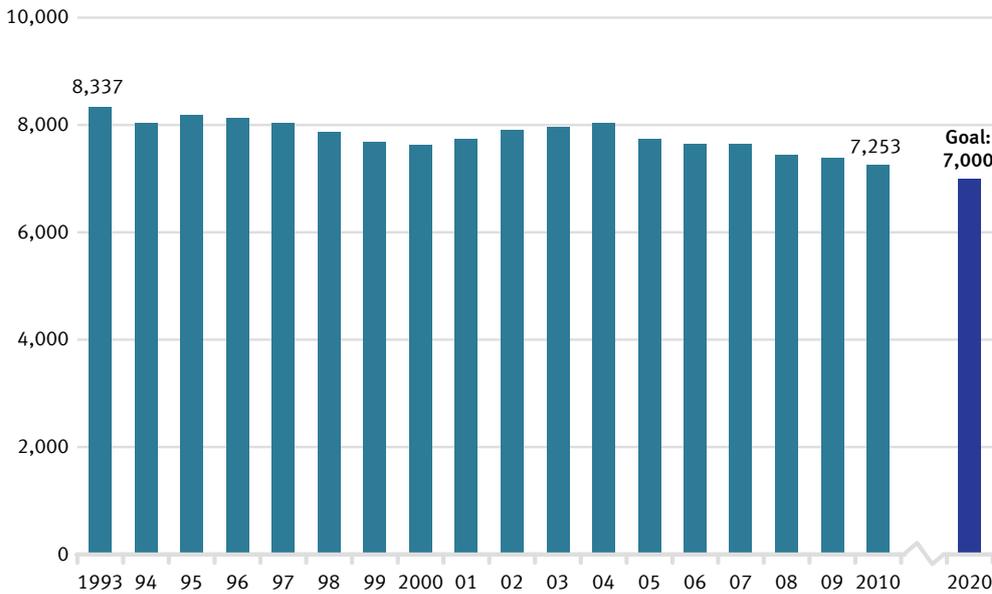
Crime

Further increasing personal security



Criminal offences

Reported cases per 100,000 population



Source: Federal Criminal Police Office

15 Criminal offences

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

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

The number of criminal offences committed per 100,000 population decreased by a total of 13% between 1993 and 2010. This trend, however, has not been a continuous one. It was in some years interrupted by temporary increases in case numbers. On average over the last five years, however, this indicator has moved in the right direction, meaning that a continuation of this trend would allow us to reach the goal set for 2020.

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

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

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

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

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

Employment

Boosting employment levels

16a (15- to 64-year-olds)

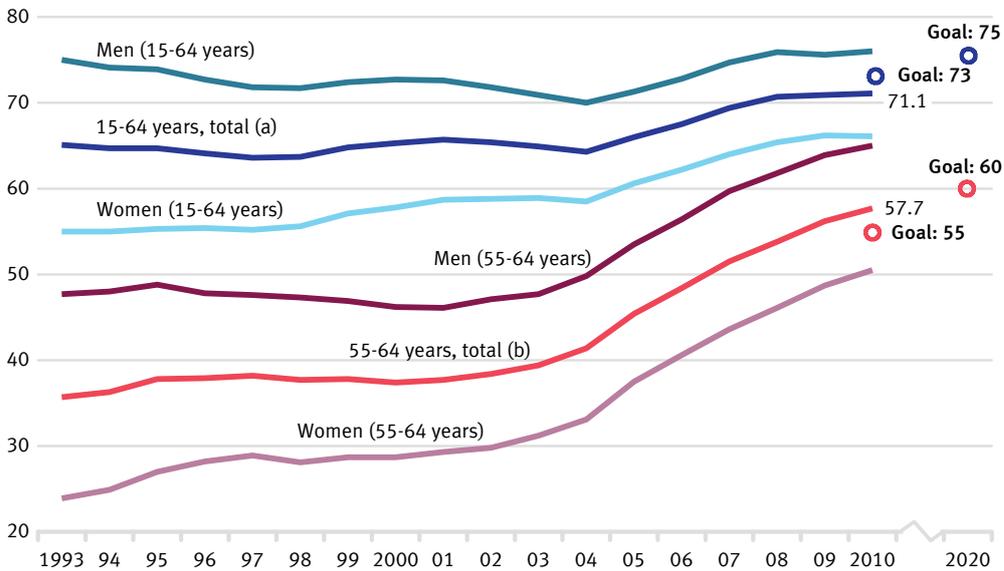


16b (55- to 64-year-olds)



Employment rate

Share in %



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

16a, b Employment rate

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

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

The employment rate rose by six percentage points between 1993 and 2010 from 65.1% to 71.1%, short of the target mark of 73% set for 2010. At the same time the employment rate for older people rose by 22.0 percentage points from 35.7% to 57.7% and was thus well above the goal of 55%. If the trend seen in recent years continues, there should be no problem attaining the goals defined for 2020.

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

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

If we break down the employment rate into age groups we find that there have been various development trends between 1993 and 2010. Among 15- to 24-year-olds the share went down by 5.7 percentage points to 46.2%. One of the reasons for this is the fact that the

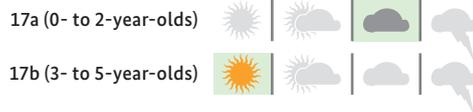
qualifications requirements placed on young people are growing, meaning that they are on average spending longer at school and university and therefore entering the workforce later than was previously the case. In contrast, a slight rise was noted in the employment rate for 25- to 54-year-olds (+4.7 percentage points). After falling in 2008, the employment rate among 15- to 24-year-olds stabilised again at the same level between 2009 and 2010. Among 25- to 54-year-olds, however, the decline slowed, with a 0.1% drop compared to the previous year's 0.2%.

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

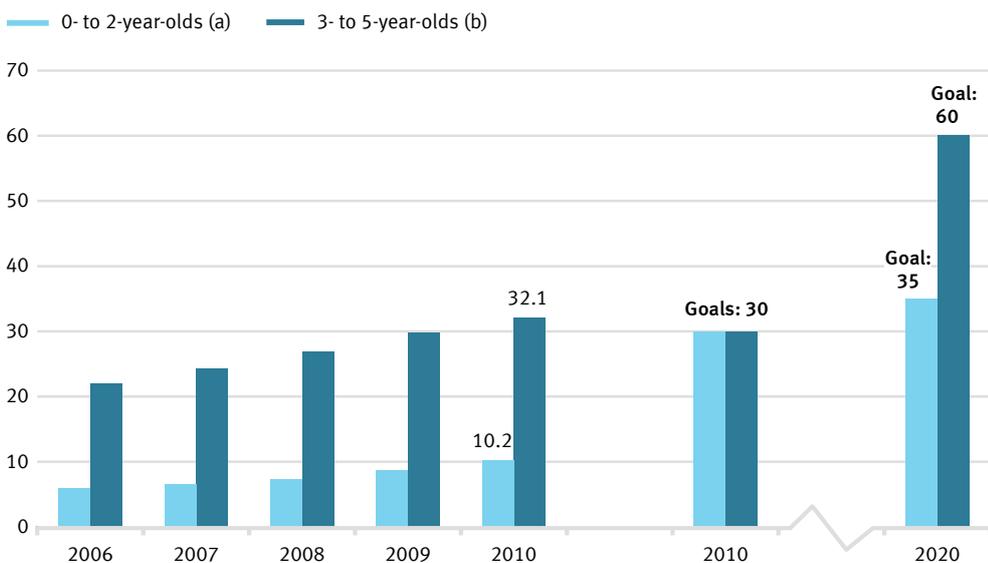
Relationships exist with Indicators 6, 9, 10, 17, 18 and others.

Prospects for families

Improving the compatibility of work and family life



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



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

17a, b All-day care provision for children

The availability of childcare options to meet the demands of today's families serves to improve the compatibility between family life and work. Women in particular continue to be prevented from taking up employment due to a lack of childcare, or couples decide against starting a family because they cannot be sure of obtaining childcare. A better balance between family and job might also contribute to increasing the birth rate in Germany. In addition, promoting child development within a needs-oriented

environment, particularly including all-day care facilities, is an important contribution to creating equal opportunity and to the integration of foreign children and adolescents.

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

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

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

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

With respect to the availability of both all-day care facilities and all-day care slots in, for example, primary schools, a clear gap exists between the *Länder* in the east and west of Germany. In all the eastern *Länder* as well as in Berlin and Hamburg, the all-day care rate for 0- to 2-year-olds (percentage of children in all-day care in relation to all the children in this age group) was well above the national average, while in all the other *Länder* the rate was below the average. The highest percentage of all-day care for 3- to 5-year-olds was found in Thuringia at 87.1%; the lowest in Baden-Württemberg at 12.9% (both 2010). The share of all-day pupils in *Grundschulen* ranged from 72.4% in Berlin to 4.3% in Mecklenburg-Western Pomerania (2007/8). At the “nursery summit” held between the Federal Government, the *Länder* and the municipalities in 2007, it had been agreed to offer day-care throughout the country for 35% of the children under three years of age by 2013 (irrespective of the scope of care). Measured against this target, day-care slots were available for about 23% of under three-year-olds in 2010, with the rate in the west German *Länder* at just over 17% and in the east of Germany at around 48%.

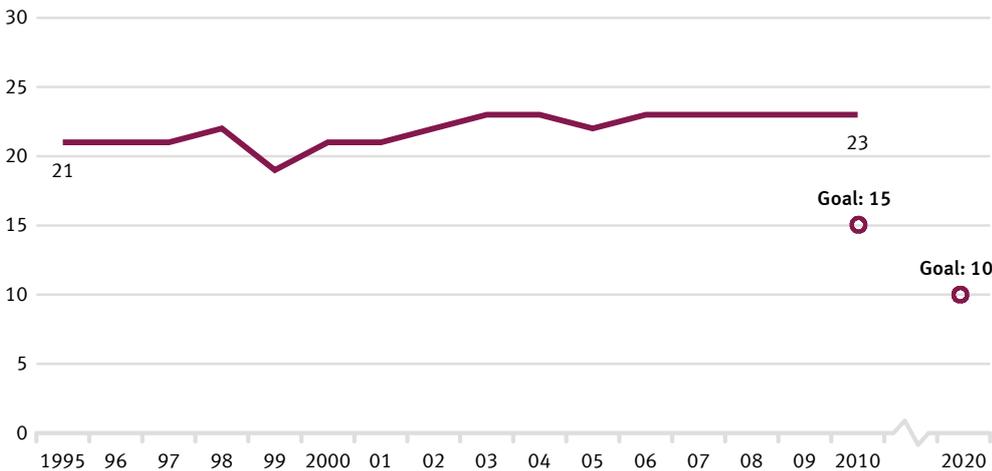
Equal opportunities

Promoting equal opportunities in society

18



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



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

18 Gender pay gap

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

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

In 2010 the gender pay gap was on average 23 %, which means that the average gross hourly wage for women was more than a fifth lower than that of the men. This was far off the goal set for 2010. Since 1995 the gender pay gap has scarcely changed. Should this development continue the goal set for 2020 might also not be achieved. The past five years have revealed no statistically significant trend.

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

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

Although the availability of childcare facilities (all-day nurseries, kindergartens and schools) has improved in recent years (see Indicator 17), in West Germany at least it is still by no means sufficient to enable women to easily combine job, family and child rearing so that

mothers at least avoid interruptions in their professional careers. On the other hand, the introduction of *Elterngeld* (paid parental leave) in 2007 should do much to help women cut down on the number of breaks they have to take in their careers.

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

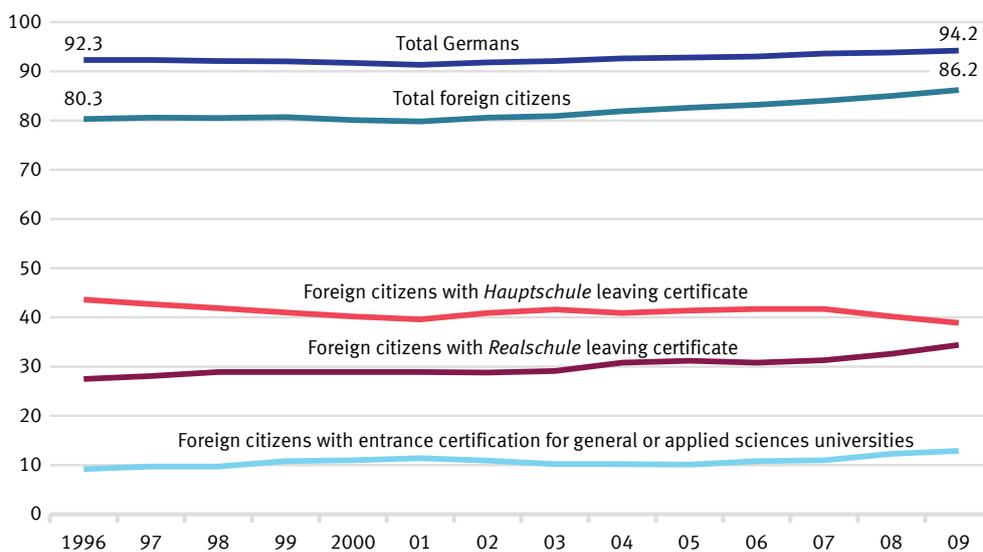
Integration

Integration instead of exclusion

19



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



19 Foreign school leavers with a school leaving certificate

The integration of foreigners living in Germany is an important prerequisite for cohesion within our society. A necessary condition for successful integration is the acquisition of sufficient qualifications at school to open up further educational and professional opportunities later on. For this reason the National Sustainability Strategy pursues the goal of increasing the percentage of young foreign school leavers who obtain at

least a school leaving certificate from a *Hauptschule* (lower secondary school), and of bringing this share into line with the corresponding percentage of German pupils by 2020.

The indicator shows the share of foreign school leavers who leave general education schools with at least a *Hauptschule* certificate as a percentage of all foreign school leavers within one school year. In the period 1996 to 2009 this share rose from 80.3% to 86.2%, and thus represents progress for these young people. Nev-

ertheless, the percentage of graduates from this group was in 2009 still far lower than the 94.2% share of German young people who obtained a school leaving certificate. To attain the desired goal, further efforts are still necessary, particularly in light of the simultaneous goal to increase the proportion of all school leavers who achieve certificates (see Indicator 9a).

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

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

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

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

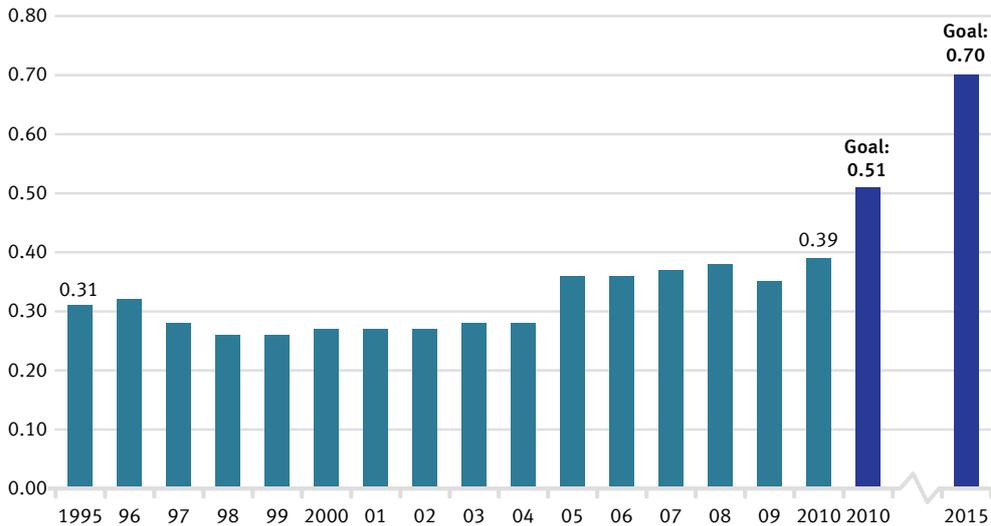
Development cooperation

Supporting sustainable development

20



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



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

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

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

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

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

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

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

In an international comparison, Germany was in 2010 the fourth largest donor of ODA funds in absolute terms after the USA, the UK and France and before Japan (preliminary results). When comparing shares of GNI, however, it was primarily the smaller countries which contributed a higher proportion to

development cooperation. In 2010 Norway, Luxembourg, Sweden, Denmark and the Netherlands clearly exceeded the 0.7% mark, as they have for many years.

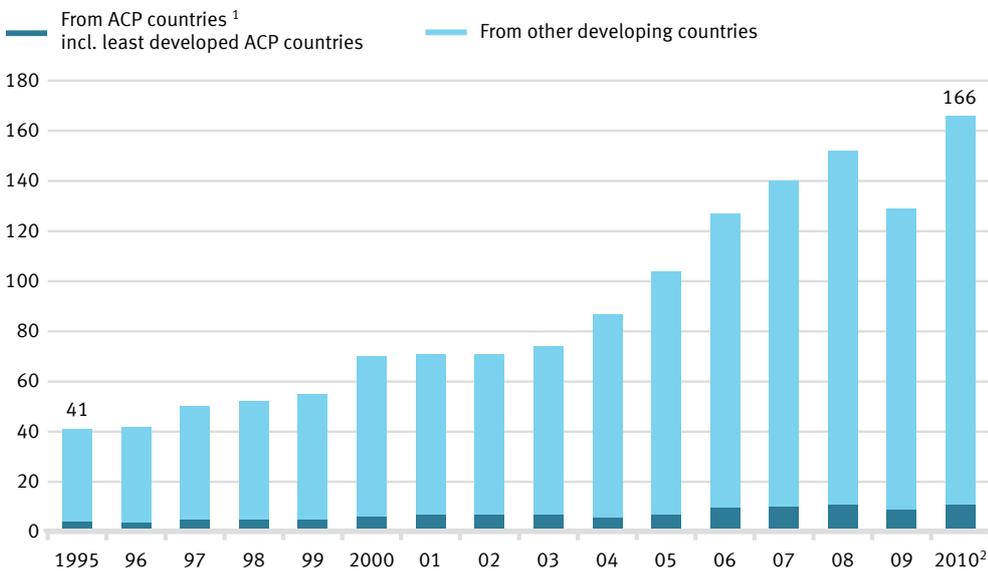
In addition to official development cooperation, private organisations (including churches, foundations and associations) also make contributions from donations and from their own resources. The amount spent on private development cooperation remained roughly constant between 1999 and 2004 at around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

Opening markets

Improving trade opportunities for developing countries



German imports from developing countries
in billion EUR



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

21 German imports from developing countries

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

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

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

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

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

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

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

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

Indicator status summary

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



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



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



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



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

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

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

NO	INDICATOR AREAS SUSTAINABILITY AXIOM	INDICATORS	GOALS	STATUS	5 YEAR TREND ¹
I. INTERGENERATIONAL EQUITY					
1a	Resource conservation <i>Using resources economically and efficiently</i>	Energy productivity	To be doubled between 1990 and 2020		t
1b new		Primary energy consumption	To be reduced by 20% by 2020 and 50% by 2050 compared to 2008		t
1c		Raw material productivity	To be doubled between 1994 and 2020		t
2	Climate protection <i>Reducing greenhouse gases</i>	Greenhouse gas emissions	To be reduced by 21% by 2008/2012, 40% by 2020 and 80 to 95% by 2050, in each case compared to 1990		t

¹ t = trend, nt = no trend.

NO	INDICATOR AREAS SUSTAINABILITY AXIOM	INDICATORS	GOALS	STATUS	5 YEAR TREND ¹
3a amended	Renewable energy sources <i>Strengthening a sustainable energy supply</i>	Share of renewable energy sources in final energy consumption	To be increased to 18 % by 2020 and 60 % by 2050		t
3b		Share of renewable energy sources in electricity consumption	To be increased to 12.5 % by 2010, to at least 35 % by 2020 and to at least 80 % by 2050		t
4	Land use <i>Sustainable land use</i>	Built-up area and transport infrastructure expansion	Increase to be reduced to 30 hectares a day by 2020		t
5	Species diversity <i>Conserving species – protecting habitats</i>	Species diversity and landscape quality	Increase to the index value of 100 by 2015		t ²
6a	Government debt <i>Consolidating the budgets – creating intergenerational equity</i>	General government deficit	Ratio of government deficit to GDP less than 3 %		t
6b new		Structural deficit	Structurally balanced public spending, total national structural deficit of no more than 0.5 % of GDP		t
6c new		Government debt	Ratio of government debt to GDP no more than 60 %		t
7	Provision for future economic stability <i>Creating favourable investment conditions – securing long-term prosperity</i>	Gross fixed capital formation in relation to GDP	Increase in Gross fixed capital formation share in GDP		nt
8	Innovation <i>Shaping the future with new solutions</i>	Private and public spending on research and development	To be increased to 3 % of GDP by 2020	 *	t
9a	Education and training <i>Continuously improving education and vocational training</i>	18- to 24-year-olds without a school leaving certificate	To be reduced to less than 10 % by 2020	 *	t
9b amended		30- to 34-year-olds with a tertiary or post-secondary non-tertiary level of education	To be increased to 42 % by 2020		t
9c		Share of students starting a degree course	To be increased to 40 % by 2010, followed by further increase and stabilisation at a high level		t

¹ t = trend, nt = no trend.² Ten-year trend.

* New goal / new evaluation; cannot be compared to previous period; see indicator description for explanation.

NO	INDICATOR AREAS SUSTAINABILITY AXIOM	INDICATORS	GOALS	STATUS	5 YEAR TREND ¹
II. QUALITY OF LIFE					
10	Economic output <i>Combining greater economic output with environmental and social responsibility</i>	Gross domestic product per capita	Economic growth		nt
11a	Mobility <i>Guaranteeing mobility – protecting the environment</i>	Intensity of goods transport	To be reduced to 98% by 2010 and to 95% by 2020, compared to 1999 levels		nt
11b		Intensity of passenger transport	To be reduced to 90% by 2010 and to 80% by 2020, compared to 1999 levels		nt
11c		Share of rail transport in goods transport performance	To be increased to 25% by 2015		nt
11d		Share of inland freight water transport in goods transport performance	To be increased to 14% by 2015		t
12a	Farming <i>Environmentally sound production in our cultivated landscapes</i>	Nitrogen surplus	To be reduced to 80 kg/hectare of agricultural area by 2010, further reduction by 2020		t
12b		Organic farming	Share of organic farming on land used for agriculture to be increased to 20% in coming years		t
13	Air quality <i>Keeping the environment healthy</i>	Air pollution	To be reduced to 30% by 2010, compared to 1990 levels		t
14a	Health and nutrition <i>Living healthy longer</i>	Premature mortality (cases of death per 100,000 residents under 65): Men	To be reduced to 190 cases per 100,000 by 2015		t
14b		Premature mortality (cases of death per 100,000 residents under 65): Women	To be reduced to 115 cases per 100,000 by 2015		t
14c		Smoking rate amongst young people (12- to 17-year-olds)	To be decreased to under 12% by 2015		nt
14d		Smoking rate amongst adults (15 years and older)	To be decreased to under 22% by 2015		nt
14e		Proportion of adults suffering from obesity (18 years and older)	To be reduced by 2020		nt

¹ t = trend, nt = no trend.

NO	INDICATOR AREAS SUSTAINABILITY AXIOM	INDICATORS	GOALS	STATUS	5 YEAR TREND ¹
15 Definition amended	Crime <i>Further increasing personal security</i>	Criminal offences	To be reduced in number of recorded cases per 100,000 inhabitants to under 7,000 by the year 2020		t
III. SOCIAL COHESION					
16a	Employment <i>Boosting employment levels</i>	Employment rate (total) (15- to 64-year-olds)	To be increased to 73 % by 2010 and 75 % by 2020		t
16b		Employment rate (older people) (55- to 64-year-olds)	To be increased to 55 % by 2010 and 60 % by 2020		t
17a	Prospects for families <i>Improving the compatibility of work and family life</i>	All-day care provision for children (0- to 2-year-olds)	To be increased to 30 % by 2010 and 35 % by 2020		nt
17b		All-day care provision for children (3- to 5-year-olds)	To be increased to 30 % by 2010 and 60 % by 2020		nt
18	Equal opportunities <i>Promoting equal opportunities in society</i>	Gender pay gap	To be reduced to 15 % by 2010 and to 10 % by 2020		t
19	Integration <i>Integration instead of exclusion</i>	Foreign school leavers with a school leaving certificate	Proportion of foreign school leavers with at least a <i>Hauptschule</i> certificate (lower secondary schooling) is to be increased, with their diploma rate to be raised to that of German school leavers by 2020		t
IV. INTERNATIONAL RESPONSIBILITY					
20	Development cooperation <i>Supporting sustainable development</i>	Share of expenditure for official development assistance in gross national income	To be increased to 0.51 % by 2010 and 0.7 % by 2015		nt
21	Opening markets <i>Improving trade opportunities for developing countries</i>	German imports from developing countries	Further increase		t

¹ t = trend, nt = no trend.

III. Federal Government conclusions from the analysis of the Federal Statistical Office

Through its independent and quality-assured analyses, the Federal Statistical Office makes a valuable contribution that allows for a credible and comprehensible review of the National Sustainable Development Strategy.

The analysis conducted for the 2012 Progress Report reveals that developments since the last report in 2008 have on the whole been slightly positive.

“Weather report”

Of the 38 indicators now used in the Federal Office’s 2012 Indicator Report (up from 35 in 2008), 19 were assessed as predominantly positive and their development marked with the symbols “sunny” (14) or “partly cloudy” (5).

The positive results in fields such as climate protection or renewable energy sources show that efforts in these areas have paid off. Unfortunately, some developments are not satisfactory, such as in the area of land use or concerning the goal of equal pay for men and women.

Although the Federal Government does not embrace all of the statements issued by the Statistical Office, the analysis shows one thing clearly: In a large number of areas there remains a massive need for action on every political level and in society as a whole.

It must be remembered, however, that the defined goals and selected indicators do not all concern areas of policy for which the Federal Government is solely or even primarily responsible. The aim of this report is to present an overall picture of sustainability.

A comparison of the number of goals that will in all probability be met or that will be missed by a relatively slight margin (20% or less) with the number of areas where developments are sluggish or even negative reveals a more or less balanced situation. It is clear that we cannot yet express satisfaction with this overall picture.

Progress

Positive developments can be found in the following areas:

The goal of decreasing greenhouse gas emissions (Indicator 2) was achieved earlier than planned and was even exceeded. The extensive measures implemented by the Federal Government were indeed successful. The challenge now is to continue to pursue the ambitious goals set forth in the Energy Package. This includes projects such as the expansion of renewable energy sources (Indicator 3). The extremely positive development seen here must be further pursued and accelerated. Further strong efforts are required as set forth in the decisions on the accelerated implementation of the Energy Concept. In the areas of climate and energy, we have also managed to comply with a basic demand of the international peer review on the strengths and weaknesses of the German strategy by establishing four long-term goals with a deadline of 2050.

Premature mortality in people under 65 has decreased further (Indicator 14a). It fell continuously between 1991 and 2009 and the difference in premature mortality between men and women has again narrowed slightly.

Although the sharp increase in the employment rate (Indicator 16) was not quite enough to meet the goal set for 2010, it was good to see that the rise in the employment rate among elderly people well exceeded the 2010 target of 55%. If the trend seen in recent years continues, there should be no problem attaining the goals defined for 2020.

The right direction

Moreover, there are a number of indicators that are moving in the right direction, even though the goals will not quite be met as things currently stand (targets missed by between 5 and 20%). These need to continue to be observed carefully, and additional action taken where necessary to support the positive trends.

Example: Raw material productivity

After a relatively sharp increase in raw material productivity (Indicator 1b) between 2008 and 2009 (+5.4 percentage points), this indicator rose only slightly in 2010 (+0.7 percentage points).

Although this indicator shows a trend in the right direction, its rate of increase over the past five years would not be enough to achieve the goal set. At this rate, the indicator would have covered 82 % of the distance needed to meet the goal set for 2020, with 18 % of the way still to go.

One positive aspect seen here is that between 2000 and 2009 the indirect raw material input (shown here for the first time) also decreased. The overall result has been a gain in raw material productivity, albeit less than if indirect imports were not taken into account. The Federal Government will therefore undertake further efforts to improve the efficient use of raw materials, including the planned establishment of a German Resource Efficiency Programme (ProgRess).

Example: Premature mortality

Between 1991 and 2009 premature mortality steadily decreased, with the drop for men (-38.4 %) greater than that for women (-31.7 %). This means that the difference in premature mortality between men and women has narrowed again slightly.

If this trend continues at the same pace, the decrease for both sexes will fall just short of the targets for the year 2015. The Federal Government will do its part to bring the figures down further by increasing efforts aimed at ensuring high-quality health care and supporting prevention and health promotion programmes.

Clear call for action

For ten of the indicators (those flagged with a “cloud” symbol), the progress achieved is not nearly enough to meet the aspired goal, and nine of the indicators have indeed moved in the wrong direction (signalled by the “thunderstorm” symbol). One example of this is the national debt indicator. The outlook here, however, has in the meantime gotten brighter. The issues of transport intensity and gender wage gap, in contrast, continue to pose difficult challenges.

General government deficit

The general government deficit (Indicator 6) rose sharply in the wake of the financial and economic crisis. Following a small surplus in 2007 and a marginal deficit in 2008, the overall public finances balance worsened in 2009, with the deficit rising to 3.2 % of GDP. Due to the stabilisation measures implemented to combat the effects of the financial market crisis, the Maastricht deficit ceiling was exceeded in 2010, with the general government deficit ratio climbing to 4.3 % (EUR 105.9 billion). The continuing economic recovery combined with the implemented consolidation activities that were supported by the federal debt ceiling going into effect at this time and also by the lack of one-off deficit effects seen the previous year, served to produce a marked drop in the general government deficit to below the Maastricht reference value (to 1 % of GDP) by as early as 2011. This development brings Germany a large step closer to meeting its mid-term goal of a nearly balanced structural budget. It may be possible to attain this goal even by 2012.

Intensity of transport

The indicators for the intensity of both goods and passenger transport (Indicators 11a and b) are currently moving ever farther away from their goals. The intermediate goals set for 2010 were missed by a clear margin.

As far as goods transport is concerned, this indicator continues to reflect the growing economic interchange with Eastern Europe. Though this is a positive development for the European internal market, the result is an increase in transit traffic with all its negative consequences. One side effect was an increase in energy consumption, which rose 3 % in the period between 1999 and 2010.

But energy consumption per tonne-kilometre dropped during this same period, with the 2010 value lying 7.9 % below the 1999 amount. The Federal Government continues to strive to reduce transport intensity and is sticking to its 2020 goal for the intensity of goods transport. The measures for reducing the intensity of goods transport are part of the Action Plan on Goods Transport and Logistics launched by the Federal Ministry of Transport, Building and Urban Development.

Gender pay gap

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

thing that these past developments clearly reveal is that the ability of public policy to bring about change in this area is very limited. It is essential that this goal be pursued by society as a whole and by everyone involved.

There are many causes for pay inequality. Women are under-represented not only in certain professions, sectors and on the higher rungs of the career ladder. They interrupt their working careers or reduce their hours more often than men and for longer periods due to family reasons, resulting in sharply reduced wages over the course of their working lives. Occupations considered typical for women and that are primarily filled by women have a lower standing than other jobs and are more poorly paid, regardless of whether the pay scales are agreed on an individual basis or through collective bargaining. Using this fact as a starting point, the Federal Government is offering German employers a consulting tool (called "Logib-D") that can help businesses to narrow their pay gaps. Other activities include the organisation of the "Equal Pay Day", held since 2008 in collaboration with partners from the private sector, trade unions and women's associations. One project is being carried out together with the German Countrywomen's Association (Deutscher Landfrauenverband) to study the job choices made by women in rural areas. The project will focus on getting people in rural communities to network in order to more efficiently share information concerning differences in pay and the consequences of this in the lives of individuals.

the word. The Sustainable Development Council can also play a particularly important role here. Accompanying these efforts, the State Secretaries Committee for Sustainable Development will address further areas where special action is required. One example is the report of the Federal Ministry of Family Affairs on the gender pay gap submitted to the June 2010 meeting of the State Secretaries Committee.

The Federal Government expects that the linking of the indicators, goals and management procedures of the Sustainability Strategy with the drafting of laws and regulations – something which in essence was only begun in 2010 – will, within the framework of the regulatory impact assessment, result in a more targeted pursuit of the defined aims and objectives and thus lead to further improvements.

In-depth descriptions detailing each of the subject fields are provided in Chapters D. and E. below.

Conclusion

Policy makers and society as a whole continue to face major challenges as they aspire to take on their international responsibility to meet the aims of intergenerational equity, social cohesion and the preservation of the natural foundations for life. Increased efforts must be undertaken to help society switch to a sustainable path of development. If Germany as a whole is to become more sustainable, all the forces within government and society will have to work together.

The guiding principle of sustainable development and the National Sustainable Development Strategy must become more deeply anchored in the public mind. Those goals which are primarily realised within the social sphere require an even greater commitment from all the actors involved. In this context, the individual ministries are also being called upon to spread

D Sustainability in Concrete Terms: Major Priorities

I. Sustainable economic activity

In the Federal Government's opinion, the economy plays a key role in the necessary switch to a low-carbon, resource-efficient society. Sustainable economic activity and innovation are closely linked. A sustainable economy will enable Germany to remain internationally competitive. The economic sphere is a source of not just challenges but also great opportunities for sustainability policy.

Statement from the Dialogue on Sustainability

"We would very much welcome increased emphasis on sustainable economic activity in the Progress Report as one of Germany's strengths. After all, we strongly believe that sustainable economic activity will enable Germany to remain internationally competitive in the future."

What is the goal of sustainable economic activity? It comprises maintaining the basis of our existence and ensuring a high standard of living in line with the world's limited natural resources – a standard of living in which access to education, culture, healthcare, transport, food, water, energy, housing and consumer goods is distributed fairly and available to everyone on earth.

Defining "sustainable economic activity"

Sustainable economic activity in a free market involves paying equal attention to economic success, social cohesion, the protection of natural resources, and the acceptance of international responsibility. It aims to bring these goals into a long-term, sustainable balance and thus to increase the welfare of society as a whole. Sustainable economic activity involves dealing responsibly with all resources such as the air, water, soil, biodiversity and ecosystems, raw materials, labour and capital.

1. Challenges and opportunities of sustainable economic activities

Commercial companies are already having to deal with major trends such as globalisation, climate change, and the scarcity and rising prices of raw materials. Economic and ecological activity must focus even more strongly on increasing the productivity of raw materials and energy so that the consumption of natural resources and growth are decoupled as much as possible. The objective must be to reduce the use of raw materials and energy as a whole.

"The structural shift towards a low-carbon economy must be pursued consistently. This will of course also have added economic value, for introducing this structural change in Europe early on will lead to significant competitive advantages for German industry in global competition."

Chancellor Dr Angela Merkel, Policy Speech on 25 March 2010

Of course, developing and emerging countries will also take advantage of opportunities for sustainable economic growth. Since the possibilities for growth in these countries are more pronounced than in the OECD states, a process of "catching up" will take place. And apart from the global challenges, the German economy faces additional challenges, such as the repercussions of the recent financial and economic crisis, dealing with demographic change, and ensuring a supply of skilled labour that meets the needs of the economy.

In 2010, the WBCSD (World Business Council for Sustainable Development) highlighted the enormous opportunities for many sectors of the economy that the future changes could bring. In its view, the strategic orientation of commercial companies in the next decade will be determined by the global problems of growth, urbanization, the shortage of resources and environmental changes. It calculated that worldwide sales opportunities in the areas of natural resources, healthcare and education alone could arise in the order of USD 0.5 – 1.5 trillion by 2020, increasing (based on current prices) to USD 3 – 10 trillion by 2050. This corresponds to between 1.5% and 4.5% of the predicted global GDP (gross domestic product) in 2050.

Estimates of the global order of magnitude of potential additional sustainability-related business opportunities in key sectors in 2050

Sectors	Annual value in 2050 (USD trillion at constant 2008 prices: mid-points with ranges shown in brackets)	% of projected world GDP in 2050
Energy	2.0 (1.0 – 3.0)	1.0 (0.5 – 1.5)
Forestry	0.2 (0.1 – 0.3)	0.1 (0.05 – 0.15)
Agriculture and food	1.2 (0.6 – 1.8)	0.6 (0.3 – 0.9)
Water	0.2 (0.1 – 0.3)	0.1 (0.05 – 0.15)
Metals	0.5 (0.2 – 0.7)	0.2 (0.1 – 0.3)
Total: Natural resources	4.1 (2.0 – 6.1)	2.0 (1.0 – 3.0)
Health and education	2.1 (0.8 – 3.5)	1.0 (0.5 – 1.5)
Total	6.2 (2.8 – 9.6)	3.0 (1.5 – 4.5)

Source: PwC estimates drawing on data from IEA, OECD and the World Bank; WBCSD, Vision 2050

The Federal Government is rising to these challenges. It will continue to strengthen sustainable economic activity in Germany and abroad such that the immense opportunities can also be harnessed to boost competitiveness and create more jobs.

The current economic situation in Germany provides an excellent starting point for this. In 2010, the German economy grew by 3.7% – a rate which has been unprecedented since the country's reunification. The momentum generated by foreign trade has now spread to investment and consumption. Domestic demand is increasingly becoming the main driving force behind growth. In its annual forecast for 2011, the Federal Government expected this upturn to continue with price-adjusted GDP rising by 2.9%. (According to a statement by the Federal Statistical Office on 11 January 2012, growth in 2011 was actually 3.0%.) Accordingly, the German economy is growing significantly faster than the euro area average.

Nevertheless, the economy had to cope with some tough challenges in 2011, not least owing to sharply rising oil prices as a result of upheaval in the Middle East, the earthquake in Japan impacting heavily on the Japanese economy, and the European sovereign-debt crisis. The German Council of Economic Experts therefore predicted a global slowdown in its annual report dated 9 November 2011. This also applied to the German economy, as shown by the forecasts in the table below for the period from autumn 2011 to autumn 2012.

Then again, the Council of Economic Experts also underlined that compared to other countries, the German economy was well hedged against all external economic risks. The healthy state of the labour market and the low net borrowing by international standards coupled with very favourable financing conditions provide a robust basis for further economic development.

Selected key figures for macroeconomic trends in the Federal Republic of Germany
Updated: 31 October 2011¹

	2009	2010	Projection for 2011 (autumn 2011)	Projection for 2012 (autumn 2011)
	Year-on-year changes in %			
Gross domestic product (price-adjusted) ²	-5.1	3.7	2.9	1.0
Employment (domestic)	0.0	0.5	1.3	0.5
Unemployment rate in % (as defined by the Federal Employment Agency) ³	8.1	7.7	7.0	6.7
Use of GDP (price-adjusted)				
Private households and private non-profit institutions	-0.1	0.6	1.2	1.1
Machinery and equipment	-22.8	10.5	10.0	4.0
Construction	-3.0	2.2	6.0	1.5
Domestic demand	-2.6	2.4	2.7	1.1
Exports (price-adjusted)	-13.6	13.7	7.5	3.5
Imports (price-adjusted)	-9.2	11.7	7.5	4.0
Net foreign demand (contribution to GDP growth rate) ⁴	-2.6	1.5	0.4	0.0
Gross wages and salaries per employee (nominal)	-0.4	2.1	3.4	2.4
Household disposable income	-0.7	2.9	3.2	2.9

¹ Up to 2010: preliminary figures from the Federal Statistical Office,

² GDP growth in 2011 was 3.0% according to a statement by the Federal Statistical Office dated 11 January 2012,

³ Based on total labour force,

⁴ Contribution to GDP growth rate.

2. Political basis of sustainable economic activity in Germany

The guiding principle of sustainable development contains an integrated political strategy covering all areas of society. To deal with the challenges, the Federal Government is building on the diverse processes and activities in state and society at both a European and a global level.

a) National Sustainable Development Strategy

In its National Sustainable Development Strategy, the Federal Government is pursuing a political approach which, alongside the state setting the regulatory framework, involves the business sector and other economic actors, including consumers. Sustainable economic activity is a task for society as a whole and places demands on all social groups.

“Structural change triggered by technical developments and international competition should be shaped in a way that is economically successful as well as ecologically and socially sustainable. For this purpose, political fields should be integrated so that economic growth, high employment, social cohesion and environmental protection go hand in hand.”

Fifth management rule of the National Sustainable Development Strategy

The Federal Government is determined to play its part by laying the foundations necessary for the implementation of sustainable development. Well-defined frameworks for sustainable economic activity are vital in order to ensure intense competition for innovative, efficient solutions.

Peer Review 2009

The report by a group of international experts on Germany’s sustainability policy published in autumn 2009 (“Sustainability made in Germany – we know you can do it”) declared that the German economy was a sound launching pad for the transition to a sustainable economic activity (see Chapter B.IV.4.). The efficient use and provision of energy, commodities and materials, the sustainable water sector, recycling management and sustainable

transport will give rise to future markets with growing international demand. German companies in this field are very competitive – including with respect to their foreign counterparts. On the other hand, the report emphasises that the existing potential could be exploited better.

b) Europe 2020 Strategy

The Federal Government supports “Europe 2020 – the strategy for smart, sustainable and inclusive growth” which was adopted by the European Council on 17 June 2010. The biggest change compared to the Lisbon Strategy is the introduction of five EU-wide headline targets.

Europe 2020 is intended to give Europe a new political direction: away from crisis management towards medium- and long-term structural reforms. The goals are to strengthen competitiveness, productivity, potential growth, social cohesion and convergence in Europe.

Headline targets of EU 2020

To increase the **employment rate** among women and men aged 20–64 to 75 %, including through the increased labour market participation of young people, older workers and low-skilled workers as well as the better integration of legal migrants.

To improve the conditions **for research and development** – in particular by aiming to raise combined public and private R&D investment levels to 3 % of GDP. In addition, the European Commission will develop an indicator to reflect R&D and innovation intensity.

To reduce **greenhouse gas emissions** by 20 % or if possible 30 % compared to 1990 levels; to increase the share of **renewable energy sources** in final energy consumption to 20 %; and to move towards a 20 % increase in **energy efficiency**.

To improve **education levels** – in particular by aiming to reduce school drop-out rates to under 10 % and by increasing the share of people aged 30–34 who have completed tertiary education or equivalent to at least 40 %.

To promote **social inclusion**, in particular through poverty reduction, with the specific aim of lifting at least 20 million people out of the risk of poverty and exclusion.

The Federal Government sees key priorities for German policy in these five targets and supports the qualitative objectives. However, assessing an entire policy area based on one single indicator holds the risk of drawing false conclusions. Therefore, the European Council has expressly stated that the Member States will retain sovereignty regarding the formulation and implementation of goals in the areas of education and poverty reduction.

To support the objectives and boost growth, the European Commission has developed seven EU flagship initiatives in three key areas:

Smart growth	Sustainable growth	Inclusive growth
Innovation union	Resource-efficient Europe	An agenda for new skills and jobs
Youth on the move	An industrial policy for the globalisation era	European platform against poverty
Digital agenda for Europe		

The Europe 2020 Strategy refers to the EU’s Sustainable Development Strategy (see Chapter J.2.) as an extensive framework for sustainable European policy. EU 2020 is a strategy for economic and employment policies which are also geared to sustainability. This is repeatedly evident, such as in the description of the need for a sustainable public finance policy as a requirement for growth and employment, and for example in the emphasis on the importance of reforms geared to the medium and long term.

The strategy also describes the economic challenges and opportunities of climate change and resource efficiency. Unlike short-term crisis management (which may still be necessary under certain circumstances), the aim is for political activity geared to improved structures to incorporate the basic concept of sustainability. In this sense, too, sustainability is a pioneering key idea of the Europe 2020 Strategy.

c) International efforts towards sustainable economic activity

The Federal Government also supports all efforts to advance the development of sustainable economic activity abroad.

Rio 2012

These activities centre above all around the UN Conference on Sustainable Development, the world summit taking place in Rio de Janeiro in June 2012. The main topics will be “Green economy in the context of sustainable development and poverty eradication” and the institutional framework for sustainable development. The Federal Government will work with partners from the EU and elsewhere to submit ambitious proposals for resolutions on both topics (see Chapter K).

Statement from the Dialogue on Sustainability

“To my mind, sustainable development can be significantly advanced, if the national, EU-wide and global economy is given an eco-social framework, i. e. the economy should only be geared to social (fair trade) and environmental (ecological standards) criteria.”

Green Economy

“The Green Economy is one in which the vital links between economy, society, and environment are taken into account and in which the transformation of production processes, production and consumption patterns, while contributing to a reduction per unit in reduced waste, pollution, and the use of resources, materials, and energy, waste, and pollution emission will revitalise and diversify economies, create decent employment opportunities, promote sustainable trade, reduce poverty, and improve equity and income distribution.”

UNEP, Green Economy Report

“Green economy” denotes a sustainability-orientated approach to economic activity (see the United Nations Environment Programme’s “Green Economy Report”: www.unep.org/greeneconomy).

The concept of a green economy can make a significant contribution to sustainable growth. The UN Green Economy Roadmap called for by the Federal Government and the European Union is intended to accelerate the implementation of this concept worldwide. This entails a common understanding of the term “green economy” so that all countries can take the measures necessary according to their abilities and priorities and shape the framework required for the development of (or transition to) a green economy. Only in this way can the rapid increase in the world population be reconciled with the desire for increasing prosperity.

However, the German economy is now also required to set the course for processes of change towards a more sustainable economy. The future belongs to an economic system that reduces emissions, maximises recycling, uses resources efficiently, and respects nature.

OECD

Being a member of the OECD (Organisation for Economic Co-operation and Development), Germany is also supporting the development of the OECD’s Green Growth Strategy, which was by launched the OECD’s Council of Ministers in June 2009 to contribute to economic recovery. The strategy aims to provide a framework for economic growth which includes ecological and social dimensions and identifies suitable policy instruments. Emphasis is placed on the efficient use of sustainable technologies, support for developing countries in implementing environmentally sound growth, and the global improvement of employment opportunities. It also involves the removal of barriers to “green growth”, the promotion of structural change, the expansion of international cooperation, and measuring progress by using indicators.

G8/G20

At the G20 summits in Washington, London, Pittsburgh, Toronto, Seoul and most recently in Cannes in November 2011, the leaders of the G20 states took crucial decisions to tackle the worst financial and economic crisis of the post-war period and to reorganise the international financial system. The G20 process has become an important forum for the

industrialised and emerging countries to solve key issues of economic and financial policy, and it will remain an important element in the stable, sustainable development of the global economy.

For example, at the Pittsburgh summit in 2009, the G20 countries backed the German initiative for a charter for sustainable economic activity. The Federal Government is committed to advancing the topic of sustainable development within the G20.

The resolutions on the continuation of the green growth strategy adopted at the G20 summit in Seoul in November 2010 are to be intensified at the upcoming G8 discussion. Attention is in particular to be paid to topics such as boosting energy and resource efficiency and the use of renewable energies.

3. Conditions, instruments and cross-cutting activities for sustainable economic activity

Achieving sustainable economic activity depends on a combination of state and corporate activities involving consumers and civil society.

a) Role of the state

The state's role is to set the framework for sustainable economic activity, to provide scope, and to stimulate desired developments. This does not necessarily mean that the state has to increase its intervention in the market; instead, companies are encouraged to take more responsibility while the market develops its innovative strength.

Competition is crucial on the road to a sustainable economic order. It leads to innovative products and processes and keeps prices low. Above all, competition drives the search for the most efficient use of resources – and hence supports a core aspect of sustainability. The efficient use of resources generates cost advantages, making economic interests and environmental protection mutually beneficial. When understood correctly, sustainability is a major competitive advantage.

Competition also strengthens the social market economy, whose guiding principle is a combination of freedom, responsibility and social equality: people's freedom to take commercial and personal decisions coupled with the acceptance of responsibility for these decisions along with social equality, with people being empowered to develop and make use of their abilities to the full. Because not just short-term profit but also long-term success counts in the social market economy, it encourages sustainable economic activity.

The state's job includes formulating long-term goals to address global, national and local challenges. One example is the development of roadmaps, such as in the energy sector (see Chapter D.II.3.) and electromobility (see Chapter E.II.) in 2010. Other examples of long-term state strategies include the Biomass Action Plan and the Bioeconomics Research Strategy 2030 dated 10 November 2010. Major new proposals were put forward in 2011 by the European Commission, including for an Energy Efficiency Plan covering the period until 2020, a Climate Roadmap extending until 2050, the Transport White Paper (tabled in March 2011), and a Resource Efficiency Roadmap published on 20 September 2011 (for the period until 2050). In addition, the European Commission has announced its intention to publish an Energy Roadmap, again looking ahead until 2050. Because corporate financial resources are tied up in investments for long periods of time, reliable framework environments allowing for long-term planning are essential.

Economic strength, social responsibility and ambitious environmental protection are interdependent and mutually reinforcing; interactions exist between the dimensions and synergies. Safeguarding socially important infrastructure services is also decisive.

“Making sustainability the overall hallmark of economic activity is in our own economic interest.”

Ronald Pofalla, MP and Federal Minister for Special Affairs, Message to the 3rd Arena for Sustainability in Zeulenroda, April 2010

The Federal Government's sustainability strategy is intended to help the economy identify these interactions and synergies and to harness them for high-quality, sustainable economic growth. In global terms, such growth can be considered an essential requirement for combating poverty and achieving

high environmental, economic and socio-cultural standards. Only by making prudent use of resources (i. e. nature and the environment) can we ensure that future generations will be able to live in a manner which is both economically successful and socially responsible. The strategy's management rules specify important aspects such as those concerning the use of renewable and non-renewable resources, the release of substances into the environment, public budgets, and the role of agriculture. They emphasise the importance of policy integration.

Implementation should be supported by the state whenever necessary. To do so, it has a comprehensive set of laws and regulations at its disposal, including planning law, market-based instruments and other "soft" rules. Examples include the management rules of the National Sustainable Development Strategy and rules of international bodies like the United Nations Global Compact initiative and the OECD Guidelines for Multinational Enterprises.

Voluntary measures such as commitments presuppose that economic activities will not harm the environment or society and that the pledges made will be met.

In addition, the state can encourage necessary innovation by funding research and development (see Chapter E.IX.) – an area where the interdepartmental project "E-Energy" takes effect.

E-Energy

"Smart grids made in Germany" is the name of a funding initiative supported by the Federal Ministry of Economics and Technology and the Federal Ministry of the Environment.

E-Energy stands for electronic energy or the Internet of energy. The initiative's objective is to extensively digitally network and optimise energy supply systems by using modern information and communication technologies (ICT). This will enable the existing transmission structure to be used more efficiently, renewable energies to be expanded, and CO₂ emissions to be cut. E-Energy will usher in the development of new ICT products, methods and services, which will be trialled in selected model regions. The participating companies and ministries have earmarked a total of EUR 140 million for the model regions.

However, sustainable economic activity in Germany also requires considering how the relevant economic sectors can adapt. This includes energy-intensive industries, which are an important part of the domestic industrial value chain and produce a large share of the industrial products which help to cut emissions of CO₂.

b) Role of commercial companies

From a business viewpoint, the aim of sustainable economic activity is to combine lastingly successful commercial development with a positive contribution to the sustainable development of society as a whole. Sustainable companies consider themselves more competitive. And they use innovative products and processes in order to maintain and expand this status.

More and more companies realise that environmental protection harbours significant economic opportunities and are developing their production processes and products accordingly. This is apparent from Germany's strong position in the production and export of goods used in pollution control and climate protection. The German economy is contributing substantially to the further development of environmental and climate technologies. Pumps, exhaust filters, wind turbines and refineries would be inconceivable without components produced by the electrical industry, process control systems and gear tooth sensor supplied by the measuring and control sector, or the transmission systems and turbines developed by the mechanical engineering industry. Electromobility, green IT and the thermal insulation of buildings are examples of growing world markets for ecofriendly products.

The Sustainable Development Council's "Roadmaps" initiative

A new initiative in this area has been launched by the German Sustainable Development Council. The goal is to promote the use of roadmaps as a tool of sustainable economic activity and to describe the knowledge of trends and transformation steps towards a sustainable economy. The Sustainable Development Council is keen to cooperate with business and science.

The production and use of end-of-pipe environmental goods (such as filtering systems or sewage treatment plants at the end of the process chain) are now standard. In future, pollution control will increasingly take place on all other levels of industrial production processes as well. Green products and production methods will play an ever greater role in mechanical engineering, metalworking and the automotive industry. And given rising commodity and energy prices, more and more companies are including environmental management systems, material flow accounts and life-cycle assessments in their work in order to save money.

Climate protection is already a significant cost factor for companies operating in Europe owing to emissions trading and other EU regulations motivated by climate policy. Based on the Copenhagen Climate Change Agreement and the negotiations under the auspices of the UN Framework Convention on Climate Change, future efforts to reduce greenhouse gas emissions must be strengthened – at a global level, and especially regarding practical implementation in many states. Europe cannot by itself provide the reductions necessary to cut the global temperature rise below 2 degrees Celsius. The EU is therefore campaigning for a global carbon market in order to put a price on greenhouse gas emissions all over the world.

The transition to low-carbon, resource-efficient production is of pivotal importance. Although requiring considerable investment – for instance in order to convert industrial plants – it may also open up economic opportunities. For example, demand for climate-friendly applications which reduce CO₂ emissions will continue to increase.

One visible expression of companies' commitment to sustainable economic activity is the efforts of business networks focusing attention on corporate social responsibility (CSR) for sustainability topics. The world's largest network of this kind is the United Nations Global Compact. One of the many activities it has launched is the Caring for Climate initiative, which contributes to international climate protection. The German DGCN Global Compact Network is one of the most active of currently more than ninety national and regional networks. It has a membership of over 150 small, medium and large companies (including twenty listed on the

DAX-30), which through the network are engaged in critical, constructive dialogue with non-governmental organisations, scientists and representatives of the Federal Government.

"In its first ten years, the Global Compact has become the world's largest and most ambitious initiative of its kind. Corporate sustainability is becoming a byword in companies across the world. At first, the Compact was driven solely by morality. We asked businesses to do the right thing. Morality is still a driving force. But today, the business community is coming to understand that principles and profits are two sides of the same coin."

Ban Ki-moon, Secretary-General of the United Nations, in his preface to the annual report of the German Global Compact Network, June 2010

Another example is the "econsense" corporate network set up in 2000 at the initiative of the BDI Federation of German Industries. Econsense is a group of leading global companies and organisations in the German economy addressing CSR and sustainable development, and is both a think tank and a platform for dialogue.

"The guiding principle of sustainability is a connecting element between current necessities and future challenges."

Dr Wolfgang Grosse Entrup, Chairman of econsense, 25 March 2011

Instruments and activities

One important tool helping to gear companies internally to successful economic activity while respecting social and environmental objectives is sustainability management. Its aim is to systematically integrate not just economic aspects but also social and/or ecological elements of business into corporate management. A variety of concepts, strategies, systems and methods is available for this purpose. Some of them are based on the EU Eco-Management and Audit Scheme (EMAS), others on ISO standards (such as the new ISO 26000 social responsibility guidelines) or other international initiatives such as the UN Global Compact and the OECD Guidelines for Multinational Enterprises. The compendium entitled "Corporate Sustainability Man-

agement” jointly published by the Federal Ministry of the Environment, Nature Conservation and Nuclear Safety and econsense (the sustainable development forum of the German economy) highlights the areas where scope is available to commercial companies keen to incorporate sustainable economic activity into their core business.

The loss and the protection of biological diversity are intertwined with corporate economic activities in many different ways. In addition, various economic sectors directly benefit from the conservation of ecosystems and their sustainable use. Businesses can significantly contribute to the preservation of natural riches – an irreplaceable resource and basis for competitiveness and growth. A pioneering role is played by the members of the international corporate network “Biodiversity in Good Company” set up by the Federal Ministry of the Environment in 2007. They support the Federal Government in its implementation of the National Strategy on Biological Diversity and the biodiversity targets agreed internationally.

Key future areas to be addressed by the business sector in its efforts to preserve biodiversity are outlined in the international Economics of Ecosystems and Biodiversity (TEEB) study (see Chapter E.III.2. on biodiversity), particularly the TEEB for Business Report presented in July 2010 at the first Global Business of Biodiversity Symposium in London.

International corporations are provided with a framework for action by the OECD guidelines and the Global Compact.

OECD guidelines and Global Compact principles

The guidelines contain recommendations for companies drawn up by the governments of OECD member countries. Observance of the recommendations is voluntary and they are not legally binding. They are intended to promote trust between corporations and their host countries.

These principles include a number of fundamental obligations which businesses are expected to adhere to, such as sustainable development, respect for human rights and the promotion of local capacities.

The guidelines contain requirements regarding for instance the disclosure of information, employment (including internationally recognised core labour rights), environmental protection, corruption, respect for consumer interests, technology transfer, the protection of competition (e.g. no anti-competitive cartels) and tax issues. The principles are currently being reformed – and the Federal Government is campaigning to make them more effective.

The first port of call is the National Contact Point at the Federal Ministry of Economics and Technology. In addition, the regular meetings of the OECD Guidelines working party are attended by representatives of various Federal ministries, the unions, industry associations and NGOs in order to debate aspects of the guidelines.

The companies which have signed up to the Global Compact are committed to ten sustainability principles, including the freedom of association, environmental protection, combating corruption, and the abolition of all forms of forced and child labour. Every year, each participating corporation compiles a progress report, which is broken down by systems, policies and achievements in respect of all ten principles and which enables it to be compared to other businesses in terms of its dedication to implementing these sustainability principles.

In organisational terms, sustainability activities are becoming increasingly established at the management level. Under the auspices of a senior director, concrete goals are set and their achievement is observed by means of extensive monitoring, audits and surveys.

Depending on the industry involved and a company’s core business, sustainable economic activity can in some cases be implemented by improving production methods and expanding the product portfolio, e.g. by developing and marketing environmentally friendly products. Enterprises are also increasingly concentrating on long-term production while simultaneously improving the energy, climate and resource efficiency of the entire supply chain. To this end, supply chain and life cycle screenings are carried out, thus extending product responsibility.

For commercial companies, the social dimension of sustainable economic activity primarily includes personnel development and training, securing employment, improving working conditions and social standards, and promoting health and safety. In addition, companies are frequently stepping up their corporate citizenship activities.

In the face of challenges like an impending skills shortage and demographic change, more and more corporations are discovering the economic aspect of sustainable business decisions. Sustainable human resource management also ensures enterprises' future.

In addition, commercial companies are finding that their sustainability activities are increasingly becoming a criterion in their customers' purchasing decisions, investors' financial decisions, and employees' occupational choices. Furthermore, other stakeholders often express their interest in being notified about companies' corporate citizenship activities in addition to their economic performance.

Companies which have recognised the strategic importance of sustainable economic activity are reporting publicly in greater detail on the "sustainability competence" that they have acquired during the course of their work. The growing number of sustainability and CSR reports demonstrates that it is in companies' own interest to meet the information needs of financial markets, stakeholders and the media. Examples of progressive sustainability reporting are posted at www.econsense.de. Another reason for this increased transparency is the fact that sustainable economic activity can enhance a company's reputation, which may in turn be reflected by higher league table positions and the receipt of high-profile awards.

Guidance is provided by the German Sustainability Code developed by the Sustainable Development Council, which includes recommendations for social and environmental reporting.

German Sustainability Code

The German Sustainability Code drawn up by the Sustainable Development Council in conjunction with science and business primarily serves as a guide for the capital market. Adherence to the code is voluntary. It sums up in nineteen points what can be considered in a transparent assessment of corporate sustainability. It contains criteria and KPIs (key performance indicators) which can boost the comparability, recognition and effectiveness of transparency of corporate responsibility for sustainable development.

In particular, investors and financial market players stand to benefit from the application of the German Sustainability Code. According to the Sustainable Development Council, they can now include fairly compiled information on companies' sustainability track record in their analysis of opportunities and risks.

"Sustainable economic activity is a topic which is also reflected in the German Sustainability Code, which makes corporate performance more transparent."

Chancellor Dr Angela Merkel, speech to the Assembly of the Federation of German Retailers on 16 November 2011

The Federal Government welcomes the voluntary sustainability reporting by many German corporations, above all those operating internationally. It underlines that efficient, transparent sustainability management can bring about significant competitive advantages for both companies themselves and society as a whole. The Federal Government therefore encourages businesses which have not yet published sustainability reports to do so. That said, it sees no need to make sustainability reporting a legal obligation..

German Sustainability Award Foundation

One important initiative by the business sector together with partners such as the Sustainable Development Council is the German Sustainability Award, which has been awarded every autumn since 2008. The German Sustainability Award is presented to companies that combine economic success with social responsibility and environmental protection, and harness sustainable activities to generate further growth. It also recognises consistent sustainability management and sustainability themes in brand management. In addition, a special prize is awarded to individuals who outstandingly promote the concept of sustainable society in Germany and abroad. The Federal Government is represented on the foundation's board of trustees, and in 2011 the German Chancellor was its patron.

Long-term prospects: Vision 2050

In addition to the activities described above, the WBCSD (World Business Council for Sustainable Development) has compiled an extensive, pioneering agenda for 2050. It could form an important basis for the future determination of the role of enterprises and the development of a framework for sustainable economic activity.

Vision 2050 – excerpts

“In 2050, some 9 billion people live well and within the limits of the planet. The global population has begun to stabilise, mainly due to the education and economic empowerment of women and increased urbanisation. More than 6 billion people, two thirds of the population, live in cities. People have the means to meet their basic human needs, including the need for dignified lives and meaningful roles in their communities.

Diversity and interdependence

Countries and cultures remain diverse and heterogeneous, but education through secondary school and universal connectivity have made people more aware of the realities of their planet and everyone on it. The “One World – People and Planet” ideal is embedded and practised globally, emphasizing interdependence among all people and dependence on the Earth. There are still conflicts, disasters, shocks, crime and terrorism, but societies are resilient, able to withstand disruption and quickly recover.

People, companies and governments are forward-looking, problem-solving, resilient and experimental, understanding that security is achieved through working together and adapting rapidly in a fast-changing world.

A different economic reality

Economic growth has been decoupled from ecosystem destruction and material consumption, and re-coupled with sustainable economic development and societal well-being. Society has redefined the notion of prosperity and successful lifestyles, as well as the bases of profit and loss, progress and value creation to include more long-term considerations such as environmental impacts and personal and societal well-being.

The global economic landscape also looks different from that of the turn of the century. The term “developing country” is rarely used, as most economies are either developed or emerging. Asian and American countries and companies play a more significant role in and influence the norms of international trade, finance, innovation and governance alongside a few of the nations that have established their success in the previous 100 years. Multiple perspectives are integrated. Capital, ideas, best practices and solutions disseminate in all directions.

In markets: Innovating and deploying solutions

Governance also enables and guides markets by clarifying limits and establishing frameworks that promote transparency, inclusiveness, internalised externalities, and other characteristics of sustainability. These systems define targets, create a level playing field and eliminate barriers, enabling business to innovate and to develop and deploy solutions. For business, this level playing field means that true values, including externalities such as environmental impact and the benefit of ecosystem services, are built into the marketplace for all competitors. Reward systems recognise sustainable behaviour and as a result business can deliver solutions that are both sustainable and competitive. Consumers can choose sustainable products not just because they are sustainable but because they deliver better value.

Dealing with climate change

Society prepares for, and adapts to, climate change; this adaptation is achieved largely through joint efforts between different countries and communities. Integrated and systemic approaches are used to manage agriculture, forestry, water and urban transport, energy and communications.”

WBCSD, Vision 2050

The steps towards a sustainable future described as vital by the WBCSD include studying the development needs of billions of people, promoting education and empowerment (especially of women), developing green solutions, lifestyles and behaviour, considering the costs of external factors (starting with CO₂, ecosystem services and water), doubling agricultural output with the same area of farmland and volume of water, stopping deforestation and increasing the yield of “artificial” forests, ensuring the global availability of climate-friendly transport, and enabling the use of energy and raw materials which is four to ten times more efficient.

Statement from the Dialogue on Sustainability

“I believe that sustainable economic activity is only genuinely sustainable if consumption and production structures can in principle be scaled up to 9 billion people on earth and can be practised in every part of the world.”

4. Political and economic areas of sustainable economic activity

a) Strengthening responsible corporate behaviour by means of CSR

One way of combining commercial activity with the necessary social responsibility is provided by the idea of corporate social responsibility. CSR means the voluntary adoption of social responsibility within a company’s core business going beyond the statutory requirements. It is one of the basic elements of the social market economy in Germany.

“The German economy takes its social responsibility seriously – not just at home in Germany but also worldwide. By investing in emerging and developing countries, companies create jobs and contribute to growth as well as to social and technological progress. The good reputation of ‘Made in Germany’ stems not only from its high product quality but also from the decent, honourable conduct of German companies.”

Prof Dieter Hundt, President of the Confederation of German Employers’ Associations

The leading associations of German industry are supporting the diverse corporate citizenship of German enterprise by means of the web portal “CSR Germany” (www.csrgermany.de). CSR Germany offers companies an opportunity to establish a network in order to pool their experience, to publicise their CSR activities, and to learn about backgrounds, current developments and trends.

In Germany, businesses’ voluntary CSR activities are organised at a relatively high level, as stipulated by statutory social and environmental standards and/or collective agreements with trade unions. It is important that CSR is seen to be an on-going task.

The Federal Government’s action plan “CSR in Germany” launched in autumn 2010 combines existing CSR initiatives and networks by the Federal Government, business and civil society at a domestic and international level. The aim is for more and more companies to take social responsibility and to make their business strategies sustainable of their own free will. Socially and environmentally responsible economic activity can open up advantages for commercial companies in national and international competition.

Aims of the CSR action plan

The Federal Government’s strategic intentions behind the action plan are:

- To better integrate CSR into business and public administration
- To increasingly interest SMEs in CSR
- To raise the profile and credibility of CSR
- To optimise the political framework for CSR
- To contribute to the social and ecological shaping of globalisation.

aa) Strengthening CSR in companies

Although a growing number of companies now include corporate citizenship in their core business to an extent going above and beyond the statutory requirements, some need assistance in the implementation of CSR in their everyday business activities. SMEs in particular often demonstrate exemplary social responsibility in a local context without, however, being aware of the term “CSR”, publicizing their activities, or strategically integrating their CSR activities with long-term goals into their own core business.

Planned activities

The Federal Government has therefore launched the programme “Social Responsibility in SMEs”, which offers practical tailored assistance on CSR geared to the needs of SMEs (see www.csr-in-deutschland.de/esf). In addition, strategic partnerships and networks are to be set up to use positive corporate examples and best-practice experience in order to spread CSR. Large international companies and DAX-30 corporations that implement CSR are pioneers and can use their experience to act as beacons for the expansion of CSR in Germany. Moreover, the public recognition of CSR activities is planned by the presentation of a new CSR Award. Existing public awards related to CSR such as the German Corporate Citizenship Prize, the special Social Entrepreneur of Sustainability prize awarded by the Sustainable Development Council, and the league table of corporate sustainability reporting will also continue to be supported.

bb) Raising the credibility and profile of CSR

The visibility of the various CSR activities is crucial to ensuring that the key target groups for an enterprise – consumers, investors, and also potential new recruits and the general public – take note of its CSR activities, weigh them up, and reward them through their decisions on the market.

Statement from the Dialogue on Sustainability

“Sustainability labels for consumer products mean that consumers are informed and made aware of sustainability issues. For the first time, consumers can see any damage they cause by purchasing a product and will have to wrestle with their conscience.”

Some consumers have expressed a desire for a “second price tag” which reflects the sustainability and social responsibility of commercial conduct. This would require reliable, transparent and comparable information on the socially responsible behaviour of companies – including about the supply chain – to enable consumers to make an individual assessment. Such an information base might also shed light on the credibility and seriousness of CSR activities and allow companies to allay the suspicion of mere window-dressing. However, no plans are afoot to introduce a system of statutory CSR certification.

In addition, the German CSR profile needs to be raised in Germany and abroad. Numerous companies demonstrate a higher level of corporate citizenship than that prescribed, they comply with international CSR standards, and thanks to their exemplary behaviour they can improve the international image of German companies. Alongside high product quality, responsible action by corporations can lead to specific competitive advantages, such as when contract awards are subject to the fulfilment of minimum standards.

Planned activities

The Federal Government will therefore combine the information on CSR and the activities by individual ministries, and also expand the existing website. It will raise the subject’s public profile among above all consumers and investors. Moreover, the Federal Government will develop a strategy for the phrase “CSR – Made in Germany” to be associated internationally with the product quality and responsibility of German business. German embassies and other German organisations abroad should be enlisted in this campaign.

cc) Integrating CSR into education, training, science and research

Basic economic, value-based training which includes questions of ethics and communicates awareness regarding issues of sustainability is essential for extensive competence and decision-making authority in the global economy. Therefore, values such as trust, respect and integrity should play a role in all phases of knowledge transfer for sustainable social and socioeconomic development.

Only when the principle of sustainable economic activity and trade has been internalised by tomorrow’s consumers, employees, business managers and political decision-makers will it be reflected in purchasing decisions.

Planned activities

For this reason, the Federal Government will:

- Encourage the networking of schools and the private sector with the trade associations and business chambers. Initiatives such as the nationwide business network “SCHULEWIRTSCHAFT” (SCHOOL BUSINESS) and the project “Netzwerk SCHULEWIRTSCHAFT Ostdeutschland” (Network SCHOOL BUSINESS Eastern Germany) as well as the promotion of internships are important starting points for cooperation.
- Within its authority, start initiatives to help raise knowledge and understanding of entrepreneurial self-employment among young people.
- Initiate social change towards sustainable development through its two research initiatives “Socio-ecological Research” and “Economics for Sustainability”. Expertise from the social sciences and economics is to be used to highlight new avenues for the sustainable shaping of relations between the environment and society for all stakeholders, including businesses and consumers. An effective scientific contribution will be made to the definition, honing and implementation of sustainability concepts by an interdisciplinary and transdisciplinary approach to research.
- Improve the training of specialist teachers with regard to CSR and have practical teaching material developed.
- Promote international research networks addressing the management of socioeconomic aspects in business.

Planned activities

- In its international cooperation, the Federal Government will campaign for dialogue on the CSR regulatory framework to be intensified in relevant international forums, such as the UN, G8 and G20, and the EU. In this connection, the Federal Government will also encourage the revision of the OECD Guidelines for Multinational Enterprises, in particular regarding the support provided to the National Contact Point and the way in which it operates.
- The continuation of development policy forums and strengthening the Federal Government’s training and information activities to increase knowledge of and adherence to internationally recognised CSR tools and CSR initiatives, e.g. regarding the OECD Guidelines for Multinational Enterprises, the ILO’s Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy, the UN Global Compact, the GRI (“Global Reporting Initiative”), the work of the Special Representative of the UN Secretary-General for Business and Human Rights, and the UN Principles for Responsible Investment.
- Honing the promotion of CSR in developing and emerging countries. It is particularly important to promote the framework for entrepreneurship and CSR in partner countries within the Federal Government’s development cooperation. In addition, specific CSR projects can be promoted in development partnerships with industry, such as to improve working conditions, environmental protection, and education and training.

dd) Strengthening CSR internationally and in development policy contexts

As globalisation increases, so too does the importance of corporations’ social responsibility. Under these conditions, companies operating internationally are influential actors in tackling global challenges such as climate protection, the preservation of biodiversity and ecosystems, poverty reduction and respect for human rights. Strengthening CSR in international and development policy contexts is therefore fundamental to sustainable development, especially in developing and emerging countries. These states are increasingly involving themselves in the global CSR debate – for instance by helping prepare the ISO 26000 guidelines.

b) Taking into account the impact of demographic change

According to estimates by the Federal Statistical Office (2009), the population of working age in Germany will drop over the next fifty years from currently just under 50 million to around 36 million. Caused by demographic effects, this shrinkage of the workforce is one of the main challenges for sustainable economic, social and financial policies in connection with securing the long-term viability of public finances, including the social security scheme.

The long-term growth of any economy depends largely on human resources, capital accumulation, and above all innovation in business and the economy as a whole. If the active population significantly decreases and a skills shortage emerges,

unless suitable countermeasures are taken, this will severely impair the growth potential, competitive position and innovation of the German economy, jeopardizing the viability of public finances and the stability of the welfare systems.

Therefore, more investment is required in particular in education, research and development coupled with significantly faster growth in productivity and the improved quantitative and qualitative utilization of human resources. Apart from the education and professional training of the labour force, labour productivity and the productivity of the entire economy are influenced by the quality and quantity of corporate and infrastructure investment.

Demographic change in Germany will also change consumption patterns and have a significant impact on product markets. The share of spending on medical, health and wellness products will rise while spending on basic necessities will fall. Manufacturers of industrial consumer and capital goods will have to adapt accordingly. Medium-sized enterprises in particular which produce, say, electrical appliances, medical equipment, packaging, food or furniture, or which operate in the construction industry will have to adapt their products and product-related services to the needs of the elderly. Great opportunities can be tapped by providers who can meet the changing needs and come up with the high-quality products required. Since Germany is one of the first countries to be confronted by the challenges of demographic change and is by no means alone in this respect, the country's industry can gain competitive advantages by building up its expertise now and earning a reputation for itself in demography-friendly technology.

The Federal Government published its Demographic Report on 26 October 2011. It outlines the most important facts and trends relating to demographic change together with the main interdepartmental activities of the Federal Government. It provides the basis for the Federal Government's Demographic Strategy, which will be presented in spring 2012.

The Federal Ministry of Finance submitted its third report on the viability of public finances in October 2011.

c) Ensuring sufficient skilled labour

Qualified employees ensure future success. However, skills shortages already exist in some industries and regions as well as in connection with specific skills and company sizes.

It can be assumed that employers' problems in recruiting qualified staff will be exacerbated in the medium to long term given demographic trends, the structural changes to the economy, and international competition. By 2030 alone, the number of people of working age will fall by 6.3 million people.

Being so closely integrated into the world economy, Germany is particularly dependent on the knowledge and ideas of qualified employees. Only if sufficiently qualified personnel are available can innovative products and services be developed and sold. This is the only way to maintain and create jobs in Germany. Steps must be taken to ensure that Germany remains a competitive, attractive business location – including for future generations.

Skilled employees safeguard innovation, productivity, growth and employment in modern economies. Moreover, they are indispensable if the population is to be supplied with goods and services. This goes for both graduates and skilled employees who have completed their vocational training.

Statement from the Dialogue on Sustainability

“Education and training must reflect practice more closely. Business associations, training centres and if necessary the state must pull together and develop programmes that meet employers' needs.”

It is primarily up to business and the trade unions to ensure that jobs are sufficiently attractive, to secure a continuous supply of “new blood”, and to protect health and safety in the workplace. It is in firms' own interest to tap the available potential. Their efforts must embrace all the target groups in the labour market – for it is just as important to provide training for young people as it is to intensify further training for all ages and skill groups.

In Germany, the potential of women is still under-used. Efforts to promote equality between men and women in the workforce are only taking effect slowly. Although more females than males achieve the *Abitur* (Germany's university entrance qualification), there are still far fewer mothers than fathers in employment. Women still represent only a small proportion of executives; women are still paid less than their male counterparts; and many women still work shorter hours than they actually want to. The reasons for this are complex. According to conservative estimates, 1.2 million working mothers would return to work if sufficient childcare were available. And nearly half a million mothers whose youngest child is aged between 6 and 16 would quickly rejoin the workforce if their offspring could be looked after at after-school clubs. Given their levels of skills and experience, these women are eminently suitable for the labour market.

This shows how important a family-friendly working environment is in order to recruit well-educated women – and men – with children. In addition to improved childcare services, above all more flexible work schedules (e.g. family-friendly working hours, telecommuting) are essential.

It is also vital to create employment for unemployed people more quickly. Moreover, diversity management is required in order to make greater use of the knowledge and skills of migrants in the public and private sectors, to make better use of the elderly by means health-promoting, age-appropriate working conditions and training opportunities, and to open up promotion and career opportunities.

In addition, the Federal Government submitted a bill to improve the recognition of professional qualifications attained abroad. It was passed by the Bundesrat (the upper house of the German Parliament) on 4 November 2011 and will largely come into force on 1st April 2012. This will enable better use to be made of the professional skills in the country which have been acquired abroad and to harness them for the German labour market.

In future, companies will have to try even harder to be attractive employers if they are to attract and keep qualified personnel. More and more companies have already realised this and take a variety of measures to ensure that staff shortages do not arise in the first place.

The Federal Government is backing these efforts by providing an appropriate framework coupled with suitable support schemes. Top priority is devoted to education and training as well as the activation of people living in Germany. In 2008, the Federal Government agreed with the *Länder* on concrete measures for all areas of training and education (some of which have now already been implemented) in the Training Initiative for Germany with the aim of "Advancement through Education". It also reiterated the priority status of education, training, research and development in this legislative period, as expressed in the related additional funding of EUR 12 billion by 2013.

To counteract the impending shortage of skilled workers, support needs to be provided by regional and national government working together with employers' associations and the trade unions. Accordingly, the Federal Government is engaged in constant dialogue with representatives of employers and trade unions in joint working parties and meetings. On 22 June 2011, the Chancellor, at a conference in Meseberg addressing future needs, agreed with employers' associations, business chambers and trade unions to release a Joint Declaration on Safeguarding Skilled Workers. The signatories pledged to help protect the skills base in their areas of responsibility.

On 22 June 2011 the Federal Government adopted a plan to safeguard skilled employment. The programme sets out the goals and activities of the Federal Government in five categories: (1) activation and securing employment, (2) compatibility of work and family life, (3) educational opportunities for all right from the start, (4) vocational training, (5) integration and skilled immigration. The programme is intended to provide guiding principles so that a skilled worker base can be secured by exhausting the full potential.

In addition, in autumn 2010 the Federal Government and the leading federations of German business resolved to continue the "National Pact for Training and Young Skilled Workers" until 2014 with new priorities and to include new partners: the Standing Conference on Education and Media and the Federal Government's Integration Commissioner. The efforts of the partners in the National Pact will in future be geared more to making better use of all the potential on the training market, i.e.

both strong and weak candidates. For example, closer attention is to be paid to people who have had difficulty finding training, especially unplaced applicants from previous years, migrants, the socially disadvantaged, youngsters with learning difficulties and disabled applicants.

However, safeguarding skilled labour cannot succeed without securing regional involvement. After all, local experts know best what specific activities and strategies will be the most effective for a certain region. This is why the initiative “Skilled Employment for the Region” was launched, which aims to build up and support regional cooperation structures. Under this initiative, the Labour Alliance was set up at the Federal level – a partnership between the Federal Ministry of Labour and Social Affairs, the Association of German Chambers of Industry and Commerce, the Confederation of German Skilled Trades, the Confederation of German Employers’ Associations, the German Trade Union Federation, the Federal Employment Agency and the German Pension System. The “Skilled Employment for the Region” innovation office was opened in March 2011 to provide support to regional networks and projects dedicated to preserving skilled employment. Its projects include the practical communication of expertise. It will also organise the regular pooling of national experience as well as special events and training opportunities for local network partners in order to make good ideas developed locally accessible to others. Moreover, individual assistance is planned to support the further development of local ideas and schemes.

It cannot be accurately determined exactly how many workers and what types of skills will be needed in a particular region and industry in Germany. Therefore, a tool to gauge the current and future need for employment broken down by jobs and skill levels as well as segments and regions is being developed with assistance from researchers. This will result in a reliable database on current and future labour supply and demand, which in turn will provide a basis for sustainable, appropriate decisions.

d) Consumers as agents of sustainable development

More and more people are basing their buying decisions not only on price, brand and quality, but also on whether products have been made in a sustainable, socially responsible manner. The economic and financial crisis, reports of poor social standards, global environmental problems and the challenges faced by a sustainable environmental policy have strengthened many consumers’ demands for responsibility, ethics and transparency.

Statement from the Dialogue on Sustainability

“Since only products are made that will actually sell, we consumers can influence what is made.”

This is of central concern to sustainable economic activity, for consumers’ purchasing decisions account for almost 60% of GDP. Consequently, consumers can determine just how sustainably we live. Whenever demand changes, in a free market manufacturers and suppliers change their production and processing methods to suit. A growing number of companies have decided to respond to many consumers’ demands for more sustainability. This enables them to secure competitive advantages, improve their image, and also do their bit to forge a sustainable economy and society.

If this trend is to continue, we need a framework which in particular ensures efficient competition as well as the degree of transparency and consumer information necessary for informed consumer decisions.

More and more consumers are interested in obtaining better, more reliable information to assess the characteristics of certain products and manufacturing processes. Trustworthy labelling schemes are of particular importance in this respect, such as the Blue Angel environmental label, which has been providing guidance to consumers for more than thirty years. The criteria formulated for each product group in the Blue Angel scheme are devised together with representatives of all major social groups. Manufacturers and retailers are also involved in the working processes. For example, cooperation takes place with market players in order to bring about high standards and encourage

product innovation. Another example is energy consumption labelling, which allows customers to compare products in terms of their power consumption before deciding what to buy. Other examples include the European environmental and energy efficiency labels, the Marine Stewardship Council logo, and the Confidence in Textiles, Fair Flowers and Transfair seals.

Since 2001, the German Organic Seal has been providing transparency and reliable guidance for organically grown food and helping consumers to spot organic food at a glance.

Ecological minimum requirements for products such as energy efficiency standards make an important contribution to energy and climate policy. They must be ecologically necessary, technically feasible and economically justifiable. Regarding sustainable development, social requirements will in future also play an important role throughout the value chain.

Information for consumers is available from the Sustainable Development Council, the Federal Ministry of Food, Agriculture and Consumer Protection, and the Federal Ministry of the Environment, Nature Conservation and Nuclear Safety (see Chapter E.II.3.).

Sustainable procurement

With annual procurement in Germany totalling roughly EUR 260 billion a year, the public sector is in effect a special consumer. Apart from being a role model for sustainable consumption, this role also harbours considerable potential for innovation. By purchasing advanced products and new technical solutions, the state not only saves money and energy but stimulates the economy to bring new innovations onto the market. Public sector buyers can therefore demonstrate that procurement can be both green and economical, while by demanding special products such as green IT and eco-friendly vehicles for use in public transport, they can drive innovation (see Chapter B.IV.5.). What is more, by consistently taking life cycle cost into consideration, the public sector can avoid overspending and save money – and it can also pay more attention to social aspects of procurement.

For practical implementation in public institutions, it is important to give those in charge of procurement guidance to cope with the abundance of quality seals and sample tender documents. Help is at hand from the Sustainability Compass website (www.kompass-

nachhaltigkeit.de), which was launched in September 2010. Funded by the Federal Ministry of the Environment and the Swiss State Secretariat for Economic Affairs, it is a source of guidance regarding in particular the social aspects of procurement (as is the procurement website www.beschaffung-info.de).

At its meeting on 6 December 2010, the State Secretaries' Committee on Sustainable Development agreed to gear public procurement more closely to the principles of sustainable development, such as by buying especially energy-efficient products and the greater purchase of green power (Chapter B.IV.3.). Gearing public procurement more towards ecological and socially responsible products is also a demand levelled at the Federal Government in the public dialogue on sustainability in 2010 and 2011. The aim of the Federal Government is always to harmonise economic, environmental and social performance.

To elucidate the role of consumers in sustainable development, it would seem appropriate to track consumption by using a separate indicator. Following initial discussions in connection with the last Progress Report, the Federal Government and the Federal Statistical Office put forward their initial deliberations concerning the form that such an indicator should take. It soon became apparent that using one or even a number of indicators only allows consumption patterns to be approximately depicted owing to their complexity and the cross-sectional role of consumption. Moreover, there are significant data gaps in many areas of consumption. The Federal Ministry of Food, Agriculture and Consumer Protection is therefore planning to fund a research project to develop an aggregated indicator for sustainable consumption (see also Chapter C.).

e) Tapping the growth potential of environmental technology

The long-term ambitious national environmental legislation and diverse subsidies as well as intensive research and innovative entrepreneurship have made Germany a pioneer in environmental technology, a field in which it is globally competitive.

Then again, environmental technology by itself is not a new industry standing isolated alongside mechanical engineering, plant engineering, electrical engineering, the automotive sector or other "conventional" industries. Instead, it is a particu-

larly innovative and promising element of these traditional sectors. Medium-sized businesses in particular have considerable potential regarding both the development and the rapid market penetration of new environmental technologies.

“Climate and environmental protection as well as resource and energy efficiency contribute to a large, growing extent to economic development, net product, and technological development in our country.”

Federal Environment Minister Dr Norbert Röttgen speaking in November 2010 on the occasion of the adoption of the Federal Government's Environmental Report

The German share of the world market for environmental technology and services currently amounts to EUR 224 billion, or 16%. German companies' share of the world market for individual environmental goods varies between 5 and 30%. Its main areas of expertise are green energy generation and waste separation and recycling. About 1.8 million people are employed in the environmental sector, including 370,000 in renewable energies.

The Federal Government has improved the framework for the broader application of environmental technologies by means of for instance its High-Tech Strategy and the Environmental Technology Master Plan, and its support for ETAP, the European Environmental Technology Action Plan.

High-Tech Strategy

The Federal Government's High-Tech Strategy takes an interdepartmental approach to aspects of innovation policy. One of the five future areas it focuses on is the topic of “Climate/energy”. The expansion of international cooperation – in Europe and beyond – is especially important in this field. The Federal Government is backing the greater use of renewable energies and the efficient use of energy. For this purpose, research and development in climate and energy are essential, with attention also being paid to socio-economic and social implications. Examples of possible development avenues to a sustainable climate policy and the sustainable use of natural resources and energy are highlighted by the future projects “The CO₂-neutral, energy-efficient and climate-adapted city”, “The smart transformation of energy supply”, “Renewable resources as an alternative to oil” and “More Internet use with less energy consumption”.

Environmental technology is of great importance in all of these projects of the future.

Environmental Technology Master Plan

The main principles of the Environmental Technology Master Plan are to dovetail innovation and environmental policy while simultaneously opening up new applications and markets for environmental technologies. Working on the basis of an assessment of environmental technology markets and their trends, the 2008 Environmental Technology Master Plan identified three priority areas for the development, manufacture and sale of:

- Water technologies
- Technologies for raw material productivity and efficiency
- Climate protection technologies

In accordance with the Cabinet's decision of 12 November 2008, the steering group is debating the continuation of the Environmental Technology Master Plan. The Federal Government's aim behind this initiative to strengthen environmental technologies is to ultimately accelerate innovation processes.

Achieving the objectives laid down in the National Sustainable Development Strategy necessitates stronger development, financial support, and rapid market penetration by environmental technologies.

Political measures to combat the financial and economic crisis, such as the Federal Government's two economic stimulus packages, have also boosted demand for environmentally friendly, energy-efficient solutions. They have included increasing the budget allocation to support the improvement of buildings' energy performance, a car scrappage programme, and subsidies for electric vehicles.

It can be assumed that other industrialised and emerging countries like the USA, Japan and the BRICs (Brazil, Russia, India and China) will step up their environmental protection efforts. In view of this, German industry can look to the future with optimism as regards the production and export of environmental technology. This situation could be enhanced by the further liberalisation of world trade (i. e. reduced tariffs on environmental goods), the improvement of local investment conditions, and the effective protection of intellectual property rights.

On 20 September 2010, the State Secretaries' Committee on Sustainable Development called for German experience regarding innovative environmental technology – in terms of its effects on climate and environmental protection as well as on growth and employment – to be included in the UN Commission on Sustainable Development's current work on production and consumption patterns (CSD 18/19; see Chapter K.II.).

Statement from the Dialogue on Sustainability

“Oil is far too precious to use in combustion. Instead, it should mainly be exploited for its chemical properties – for it is set to remain the most important raw material in the chemical industry.”

Hearing of the Parliamentary Advisory Council

On 16 June 2010, the Parliamentary Advisory Council on Sustainable Development held a public hearing on environmental technologies attended by six representatives from science and industry. The experts were asked about the potential of environmental technologies and to explain what political action could be taken to better leverage this potential. The Council decided to open the hearing by addressing energy technologies.

The experts all highlighted the immense ecological and economic potential in the areas of electricity, heat and transport in terms of both efficiency and renewable energies. The goal of rapidly scaling up environmental technologies was stressed as a strategic starting point for political measures. Therefore, in addition to the broad, exemplary application of environmental technology in Germany, a suitable economic framework needs to be created in order to safeguard the position of German companies as global leaders in this sphere.

f) Sustainable use of raw materials

A secure supply of raw materials will remain an important competitive factor for the German economy. Future development will be shaped by climate change objectives, finite fossil fuels like oil and natural gas, and perpetually rising demand for commodities of all kinds. Even though fossil fuels will remain very important in the foreseeable future,

especially in energy-intensive production processes, progressive diversification towards the use of alternative fuels makes sense. To achieve sustainability, the naturally available options must be used innovatively.

The reliable availability of raw materials is of vital importance to German industry owing to its high-tech products. Industries such as chemicals, car-making, electronics and metal-processing depend on raw materials such as precious and semi-precious metals, zinc and nickel, rare earths and minerals. Lithium, niobium, tantalum and germanium and so on are essential for producing batteries for electric vehicles, photovoltaic modules and mobile phones. In fact, companies in Germany are almost entirely dependent on imports for not just their energy commodities but also metals and industrial minerals.

On 26 January 2011, the European Commission published its flagship initiative “A resource-efficient Europe”. It defines the strategic framework for the sustainable use of natural resources and the transition to resource-saving, low-carbon growth in Europe. “A resource-efficient Europe” is one of the seven flagship initiatives within the Europe 2020 Strategy, whose objective is to strengthen smart, sustainable and inclusive growth in Europe. The initiative establishes the efficient use of resources as a guiding principle for EU policy in the areas of energy, transport, climate, industry, raw materials, agriculture, fisheries, biodiversity and regional development.

The flagship initiative was fleshed out on 20 September 2011 by the presentation of a roadmap for a resource-efficient Europe. The roadmap is based on the vision of harmonising the consumption of natural resources with the planet's natural limits by 2050 in the face of continuous global population expansion in order to enable constant economic growth. For this purpose, indicators and goals are to be drawn up after a broad consultation process. Buildings, food and transport have been identified as areas which are especially resource-intensive.

German Raw Materials Agency

The mission of the German Raw Materials Agency is to support companies in the German raw materials industry, especially SMEs, regarding issues of availability and current market trends as well as the sustainable exploitation of raw materials. The centre-piece of the Agency is to be a raw materials information system based on the extensive data and experience of the BGR Federal Institute for Geosciences and Natural Resources detailing the availability of raw materials.

With important emerging countries catching up, international competition for raw materials has intensified. States such as China and India will continue to secure their own access to key commodity markets, particularly in developing countries. Although the geological deposits of many raw materials are still far from depleted, limited success in prospecting for new deposits and insufficient transporting and processing capacities mean that bottlenecks will remain for the foreseeable future. Governments and industry must work together to prevent market distortions. Efforts have been made in conjunction with supplier countries and their local economies to find ways of extracting and delivering raw materials in a competitive yet ecological and socially sustainable manner – without losing sight of the aims of development policy.

The sustainable raw materials industry is to be supported under bilateral resource partnerships in producing countries so that the raw materials potential can be tapped for the German economy. Together with its European and international partners, the Federal Government is committed to improving the transparency and functioning of commodity markets. This also applies to the role of financial transactions in commodity futures and derivatives markets and the monitoring of inventories. Especially in resource-rich developing countries and emerging countries, the high transparency of export revenue is an important requirement for good governance. It helps fight corruption and thus promotes the sustainable use of resources. For this reason, the Federal Government supports EITI (the Extractive Industry Transparency Initiative), which seeks to bring about more transparency by means of dialogue with governments, commodities corporations and civil society.

The situation on the international commodity markets is characterised by rapidly increasing demand. Together with non-transparent supply structures, this leads to highly fluctuating yet mainly rising prices as well as shortages. In response to these challenges, on 20 October 2010 the Federal Government launched its Raw Materials Strategy – a coherent action plan in view of Germany's high dependence on imports. In this strategy, the Federal Government continues to adhere to its regulatory principle that the economy is responsible for the supply of raw materials. However, the Federal Government does support the economy in the diversification of its sources through a variety of measures such as the subsidised use of certain raw materials.

The "Photovoltaics" Innovation Alliance from late 2010 emphasises the need to save materials. Subsidies are also expressly available for work on the sustainable use of resources (e.g. saving energy and conserving scarce commodities). In spring 2011, the Federal Government published a funding initiative for energy storage. The aims were to increase the efficiency, lifetime and cycle stability of various types of energy storage – and hence reduce the consumption of energy and raw materials.

Resource efficiency is also a key area of activity in materials research, such as in the "WING" programme. Materials innovations offer high potential for managing industrial processes at all levels of the value chain with a significantly higher output while reducing the input of natural resources. Efforts are focused towards substitution as a way of saving strategic metals, corrosion protection to extend the lifetime of equipment, raising the energy efficiency of industrial plants, optimizing catalytic processes, and recycling nanomaterials.

Germany: Country of Commodities

Under the title "Germany: Country of Commodities", the Sustainable Development Council has proposed a vision for 100% recycling. As there is currently no system of sustainability management for many important commodities, what is needed is a strategic roadmap to mobilise mass raw materials and strategic industrial metals for recycling.

g) Reducing material costs, improving resource efficiency

In the manufacturing sector, materials are by far the largest cost item, generally being more than twice as high as labour costs. According to the Federal Statistical Office, between 2000 and 2010 the share of costs of materials increased from 38 to 46%, while labour costs dropped from 25 to 18%. According to an analysis by the government-owned development bank KfW, in 2009 German companies spent nearly EUR 800 billion on raw materials.

New materials are technology drivers in many applications. Improved product design (e.g. lightweight construction), the optimisation of production processes and better recycling can significantly help save energy, materials and production time. Specific areas of research policy include encouraging the development of high-performance materials and the conversion of waste heat into electricity using thermoelectric generators. The aim is to increase the efficiency of technical systems as a whole. Increased efficiency can also be achieved through progress in terms of lifetime extension, corrosion protection and functional integration.

Owing to a lack of information, especially medium-sized businesses are often unaware of how to use raw materials more efficiently in their manufacturing. Some also fear that change could lead to higher operating costs or significant capital expenditure. However, materials efficiency advice services funded by the Federal Government have shown such fears to be groundless. According to demea, the German Materials Efficiency Agency, up to 20% of materials costs can be saved while investments pay for themselves within no more than two years. On average, it was found that following consulting, average savings of EUR 200,000 on the costs of raw materials and supplies were saved every year by each small or medium-sized company. In the manual trades, firms were found to save on average some EUR 120,000. More than half of the proposed measures were carried out immediately after consultation for an outlay of less than EUR 50,000. Initial consultations for interested companies are available from institutions such as the ZRE Centre for Resource Efficiency (www.vdi-zre.de).

The practical experience gained in recent years has been very positive. Over half the companies which have sought advice definitely plan to continue their activities to improve materials efficiency. They realise that the innovations carried out not only save costs but also yield significant competitive advantages. In addition, optimised materials usage saves natural resources and protects the environment: the consumption of raw materials per unit of production decreases, energy and waste disposal costs are reduced, and throughput times are shorter.

“Germany depends on a good, reliable supply of raw materials. One important component of this supply is a high level of resource and materials efficiency in the private sector. This is an area where less is often more! The efficient use of resources and materials is essential in order to secure the long-term competitiveness and efficiency of medium-sized companies in particular.”

Dr Philipp Rösler, Federal Minister for Economic Affairs, in: BMWi-Tagesnachricht No. 12242, 15 August 2011

To boost commitment to materials efficiency and to publicise striking practical examples, every year the German Materials Efficiency Award is presented (www.materialeffizienz.de/materialeffizienzpreis). Since 2011, it has been awarded by the German Raw Materials Agency (www.bgr.bund.de/nn_323902/DE/Gemeinsames/Oeffentlichkeitsarbeit/Pressemittelungen/BGR/bgr-100622.html). Outstanding examples from practice are also showcased at the biannual conference Network Resource Efficiency (www.netzwerk-ressourceneffizienz.de), which is funded by the Federal Government.

Reducing the consumption of commodities and materials is one of the central challenges of a sustainable society in the twenty-first century. Making efficient use of natural resources and materials is essential in order to ensure the competitiveness and efficiency of companies as well as the long-term availability of raw materials. In connection with its Raw Materials Strategy, the Federal Government intends to develop a German Resource Efficiency Programme, plans for which will be finalised in good time before the Rio UN Conference on Sustainable Development in June 2012.

Statement from the Dialogue on Sustainability

“It’s obvious that we need to treat the remaining resources economically. But we also need to keep things in proportion.”

5. Measuring economic performance and prosperity (beyond GDP)

“Given the problems of climate change and the dramatic consumption of finite resources by a dramatically growing world population, ‘business as usual’ on the old path of industrial growth would be a dead end – just as refraining from growth altogether would be.”

“A sustainable society needs growth if it is to continue to show cohesion. The key is not to produce less, but instead to produce in a more intelligent fashion. What we need is growth which is no longer attached to the excessive consumption of natural resources, but instead protects the climate and resources, and hence also allows a higher quality of life.”

Dr Norbert Röttgen, Federal Environment Minister, in: Umwelt 10/2011

Public debate

An intensive public debate on growth, prosperity and the quality of life has been underway for years. The background to this includes the recent financial and economic crisis with the need for a new framework for financial markets, sovereign debt, the challenges of climate change, and the loss of biodiversity. The financial and economic crisis and its aftermath have shown what can happen given a lack of long-term planning and inadequate rules.

In the debate, the demand has been expressed for economic performance as a measure of social development to be augmented by measurements of quality of life and well-being.

Statement from the Dialogue on Sustainability

“Growth at any price is increasingly shaping political action. Although the consequences for the environment and the ecological balance are known, their significance is played down. Like a rabbit in the headlights, we have become fixated by growth rates as the sole yardstick.”

“The twenty-first century will require us to think about growth in a new way. We’re talking not about the traditional economic growth variables, but about growth that ensures sustainable prosperity. The likes of safety, quality of life, healthcare and the sustainable use of resources will play an important role in this. We must learn to redefine the concept of growth for the twenty-first century.”

Chancellor Dr Angela Merkel, speaking in a video podcast on 6 February 2010

In recent years, a wealth of ideas, studies and strategies on alternative approaches to economic activity and on the importance of economic growth has been put forward. Impetus has come for instance from the European Commission (“GDP and Beyond”), the OECD (e.g. “Towards Green Growth OECD Indicators”) and the French government (the Stiglitz-Sen Report) as well as the report by Franco-German economic experts entitled “Economic performance, quality of life and sustainability: a comprehensive system of indicators”.

The following approaches in the public debate can be distinguished:

- Changed growth measurement (e.g. “Genuine Savings Indicator”, World Bank; National Welfare Index FEST, Heidelberg/FU Berlin) and alternative measurements of prosperity (e.g. “Human Development Index” (UNDP), “Ecological Footprint” (EF Network), progress index (Zentrum für gesellschaftlichen Fortschritt))
- More extensive approaches towards sustainable or ecologically geared growth (Green Economy Report UNEP, Green Growth Strategy OECD)
- “Zero growth” or “de-growth” concepts, including for instance the latest work by Prof Jackson/UK Sustainable Development Council “Prosperity without growth?” and Prof Miegel/Denkwerk Zukunft, “Exit – Wohlstand ohne Wachstum” (both 2010).

The role of GDP

An essential part of the debate relates to the validity of gross domestic product as a measure of prosperity. GDP is a measure of the economic performance of an economy in a given period. It measures the value of domestically produced goods and services (i. e. value added). The rate of change of real GDP serves as a measure of the economic growth of an economy. Being an official projection of economic growth, GDP serves for example the financial planning of federal, regional and local authorities, tax revenue estimation, and the expenditure and income planning of social insurance.

GDP and the underlying national accounts provide the information necessary for economic policy. Consequently, the current discussion does not moot abolishing GDP as an indicator. On the other hand, experts also believe that there are certain aspects of economic performance which are not reflected by GDP. For example, GDP is not claimed to provide complete information on the use of production capacity, its distribution among different income groups, or the extensive and diverse forms of non-market-based economic performance. “These problems must be solved if the determination of current economic performance is to be improved,” declared the German-French Committee of Economic Experts in their report.

If we want to reflect additional aspects such as social development, GDP must be complemented by other indicators.

The Stiglitz Commission and the joint report by the Franco-German Committee of Economic Experts

Against this background, the French President requested the Stiglitz/Sen/Fitoussi Commission (or Stiglitz Commission for short) to submit a scientifically based report on how statistical reporting and national accounts could be improved.

In its report, the Commission confirmed that GDP and aggregated national accounts were vital economic indicators. But it added that there was a growing discrepancy between the significance of standard economic parameters and people’s perception of their actual economic situation. The commission concluded that additional economic indicators were needed for a meaningful analysis of the material standard of living

over time and across countries, and that non-economic aspects such as quality of life and sustainability needed to be taken into account.

In February 2010, the German-French Council of Ministers commissioned the German Council of Economic Experts to develop concrete proposals with the French Conseil d’analyse économique in order to improve the measurement of the progress made by society. Their report dated 10 December 2010 and entitled “Economic performance, quality of life and sustainability: a comprehensive system of indicators’ built on the Stiglitz Commission’s recommendations. The two councils acknowledged GDP as a reliable, indispensable economic indicator but stated that it needed to be supplemented. Like the Stiglitz Commission, the councils also rejected a single aggregate indicator owing to its limited significance.

In addition, they recommended better statistical reporting to measure the progress of society in the areas considered relevant by the Stiglitz Commission (economic performance, quality of life and sustainability). In the councils’ opinion, an indicator system needed to be developed that reflected these three aspects with a manageable number of indicators.

Indicators proposed by the councils

- Indicators to describe economic performance and material prosperity: GDP per capita, GDP per hour worked, employment rate of people aged 15 – 64, net national income per capita, private and government consumption expenditure per capita, measure of the distribution of net income
- Indicators of non-material well-being, including quality of life: health, education, personal activities, political influence and control, social contacts and relationships, environmental conditions, and personal and economic uncertainty
- Macroeconomic indicators of sustainability (including R&D expenditure related to GDP ratio, fiscal sustainability gaps), financial sustainability (including ratio of total private sector borrowing to GDP) and ecological sustainability (including consumption of raw materials).

The Federal Government agrees with the councils that prosperity and progress cannot be reflected in their entirety by a single indicator. It agrees with a proposal by the councils (and the Stiglitz Commission) to introduce a small number of early warning indicators of fiscal sustainability (sustainability gaps and net lending/borrowing) and financial sustainability (private sector borrowing, real estate prices and share prices).

When developing systems of indicators, existing systems – especially the indicators used in the National Sustainable Development Strategy – are to be taken into account.

The core conditions of prosperity include the preservation of the natural bases of life, including their adaptability and ecosystem services. The environmental economic national accounts make a significant contribution to their depiction. Increased funding for scientific and practical work to complement the statistics, such as in the measurement of ecosystem services and external environmental costs, is important. One step to be taken by the Federal Government is to use and hone the 2010 international study on economically and socially relevant ecosystem services for national calculations regarding natural capital. There are also other factors, such as unpaid housework and childcare in families, where more detailed knowledge of their economic value would be desirable.

EU initiative “GDP and Beyond”; Sofia Memorandum

Back in 2007, the European Commission took the initiative to promote research, specialist debates and political activities to further develop the concept and measurement of growth and sustainable development under the title “GDP and Beyond”.

For this purpose, a high-level expert group was appointed in 2010 headed by the directors-general of Eurostat and INSEE (the French National Institute for Statistics and Economic Studies), one member being the Federal Statistical Office. Referring to this group’s initial work, in the Sofia Memorandum the European Statistical System Committee described the measurement of prosperity, progress and sustainable development as key to official statistics. However, it added that concrete action was required in certain areas, such as improving the stock of data on the situation of private households.

Committee of Enquiry: “Growth, prosperity, quality of life”

On 1st December 2010, the German Bundestag set up the Committee of Enquiry on “Growth, prosperity, quality of life – How to achieve economic sustainability and social progress in a social market economy” (Bundestag Reference No 17/3853). The Committee of Enquiry’s tasks include considering whether an integrated well-being or progress indicator can be developed to complement GDP. A final report will be submitted by the end of the current parliamentary term.

6. Conclusions

Sustainable economic activity pursues the triad of economic success, social cohesion and environmental responsibility in a global perspective. It represents adaptation to the challenges of our era, the seizing of economic opportunities, and taking responsibility for the future of society at businesses and organisations.

Sustainability must be increasingly made a hallmark of economic activity. Sustainable economic activity builds on cooperation between government and industry by using the expertise available to develop solutions.

In a nutshell, in the competition for sustainable economic activity, German companies have a good starting position.

II. Climate and energy

1. Significance of the climate and energy issue for the guiding principle of sustainable development

The Earth Summit in Rio de Janeiro in 1992 set standards for a global policy for the protection of the climate and the environment in a fairer world. Twenty years later, the main topic of the United Nations Conference on Sustainable Development in June 2012 will be how to make the world’s economies more sustainable. Climate and energy policy play an important role in this respect. An energy supply needs to be developed that is reliable, reasonably priced and environmentally sustainable – and also meets the challenges of climate change. The results of international climate

policy based on the resolutions passed at the 1992 Earth Summit have provided the milestones for this development path until 2050.

Statement from the Dialogue on Sustainability

“An ambitious climate and energy policy is essential for sustainable development.”

Statement by the BUND nature conservation organization, 25 November 2011

At the same time, attention must be paid to considering and incorporating interrelationships with the global goals for the protection and conservation of biological diversity. This, too, was one of the main tasks agreed at the Earth Summit in Rio de Janeiro in 1992 and in the Convention on Biological Diversity signed there.

Against this background, the Federal Government developed an Energy Concept (Energy Concept for an Environmentally Sound, Reliable and Affordable Energy Supply, 28 September 2010) which envisages a shift in energy supply towards the predominant use of renewable energy by 2050.

The nuclear reactor disaster following the devastating earthquake in Fukushima in early 2011 demonstrated that not even a high-tech country like Japan can fully master the risks of nuclear energy. This realisation precipitated a reassessment of the role of nuclear power.

The Federal Government has responded to the new situation and will phase out electricity generation at German nuclear power plants by 2022. Furthermore, on 6 June 2011 a comprehensive package of measures was agreed in order to accelerate the restructuring of the energy supply.

In the Energy Concept, the Federal Government set out guidelines for an overall programme until 2050. The Energy Concept provides long-term guidance yet retains the flexibility necessary to accommodate new technical and economic developments. Regular, consistent monitoring will be used to detect any failures and correct them in good time.

Different types of renewable energy are to gradually replace fossil fuels and eventually become the mainstay in the future dynamic energy mix. The necessary conditions for this have been laid down in the measures

contained in the Energy Concept and the decisions taken by the Federal Government in June 2011.

2. Climate targets and the status quo in Germany

The IPCC (Intergovernmental Panel on Climate Change) last summarised the state of global climate research in its fourth Progress Report published in 2007. The scientific findings are unambiguous: severe consequences of climate change can only be avoided if the surface temperature of the earth does not rise by more than 2° Celsius compared to pre-industrial times.

The 2°C target was recognised as binding by the world community at the UN Climate Change Conference in Cancún in 2010 and provides a point of reference for climate policy action throughout the world – including in Germany.

Calculations show that in order to attain the 2°C target, the global average greenhouse gas emissions per capita must be reduced to approximately 2 tonnes of CO₂ equivalent (see Council of the European Union (Environment), conclusions of 3 March 2009).

This means that global greenhouse gas emissions must peak by no later than 2020 and then be reduced by at least 50% compared to 1990. In fact the EU has committed itself to cutting emissions by 2050 by 80–95% compared to 1990 levels – the amount necessary for industrialised nations according to the IPCC.

Discussions are currently taking place at EU level to determine what form the transition to a competitive low-CO₂ economy should take.

Back in 2007/2008, the EU also launched the “20-20-20” initiative, according to which by 2020 greenhouse gas emissions are to be cut by 20% (or 30% if possible; see the resolutions passed by the European Council), the share of energy consumption from renewables is to be increased to 20%, and energy efficiency is to be raised by 20%. The Federal Government would agree to the EU climate target being raised to 30% on the basis of Germany’s own 40% goal as long as no additional emission reductions were demanded of Germany and all EU member states contributed fairly.

Under its resolutions to accelerate the implementation of the Energy Concept, the Federal Government has reaffirmed its objective to reduce greenhouse gas emissions in Germany by 40% by 2020 (compared to 1990 levels), 55% by 2030, 70% by 2040, and 80–95% by 2050.

Under the Kyoto Protocol, which came into force in 2005, Germany undertook to reduce its average greenhouse gas emissions over 2008–2012 by 21% compared to 1990. By the end of 2009, the country's greenhouse gas emissions had actually dropped by 25.3%, although the considerable decline that year was partly due to the financial and economic crisis.

In 2009, Germany emitted a total of 920.1 million tonnes of CO₂ equivalent (excluding CO₂ from land use changes). Since 1990, the emissions from both the energy sector and industrial processes had dropped by more than 25%. In addition to action to boost energy efficiency and the system of emission trading in force since 2005, growth in the use of renewables to generate electricity had had an especially positive impact.

Research and the development of innovative solutions play an important role in achieving the climate objectives. Research (for example in connection with Germany's high-tech strategy) has resulted in more robust information about trends and assessment as well as action-orientated knowledge on the climate system. It predicts consequences, evaluates them and presents suitable adaptation options, highlights effective mitigation technologies and methods, and can be used to develop decision-making tools and methods.

The National Climate Protection Initiative is helping to implement Germany's ambitious climate protection targets.

Climate Protection Initiative

Since the beginning of 2008, additional funding has been granted to the Ministry for the Environment, Nature Conservation and Nuclear Safety in order to implement the Climate Protection Initiative, which is subdivided into a national and an international initiative.

The **National Climate Protection Initiative** brings several programmes together under one roof. The projects and programmes in the national part of the Climate Protection Initiative focus on municipalities, industry, consumers and schools – the key actors for

sustainable rethinking in society. The funded projects make a significant contribution to climate protection, are highly innovative, help spread the word, or stimulate the introduction of new technologies into the market.

The **International Climate Protection Initiative** deals with climate protection projects in developing and emerging countries (see 4.b below).

3. Energy Concept and Energy Package

Achieving a reliable, economical and eco-friendly energy supply is one of the biggest challenges in the twenty-first century, especially for Germany, one of the most productive and economically successful countries in the world. After all, the general public and the business sector have come to rely on being able to obtain any quantity of affordable electricity they require at any time of the day or night.

Germany has taken the fundamental political decision to meet its future energy demand mainly from renewable sources. In autumn 2010, the Federal Government mapped out its route to the era of renewable energy in its Energy Concept.

After the accident at Fukushima – an incident which had previously been inconceivable in a country like Japan – Germany urgently reconsidered the role of nuclear power. In March 2011, the Federal Government and the Minister-Presidents of all the *Länder* containing nuclear power plants decided to have them all undergo a comprehensive safety review. In addition, all nuclear power stations opened in 1980 or earlier were temporarily shut down for three months under a moratorium based on the Atomic Energy Act. The remaining nuclear plants were examined while still in operation.

Inspections were carried out by the RSK (Reaktorsicherheitskommission, Nuclear Safety Commission, an advisory body to the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety) in cooperation with the supervisory authorities of the *Länder* concerned (see RSK statement "Plant-specific safety check of German power stations following the incidents at Fukushima-I (Japan)", 11–14 May 2011, 437th RSK session).

Furthermore, the Federal Government appointed a Safe Energy Supply Ethics Commission. Its job was to contribute to public dialogue by evaluating how the risks of nuclear energy were to be assessed in the light of what had happened in Fukushima, and how a secure, reasonably priced and environmentally friendly energy supply could be guaranteed in Germany.

Ethics Commission

Chair:

Matthias Kleiner, President of the DFG German Research Foundation

Prof Klaus Töpfer, Executive Director, IASS Institute for Advanced Sustainability Studies, Potsdam

Members:

Prof (em.) Ulrich Beck, Ludwig Maximilian University of Munich

Klaus von Dohnanyi

Dr Ulrich Fischer, Bishop of the Baden Region

Alois Glück

Prof Jörg Hacker, President of the German Academy of Natural Scientists Leopoldina, National Academy of Sciences

Dr Jürgen Hambrecht, CEO of BASF until May 2011

Dr Volker Hauff

Dr Walter Hirche

Prof Reinhard F. J. Hüttel, President of acatech

Prof Weyma Lübke, Department of Practical Philosophy at the University of Regensburg

Dr Reinhard Kardinal Marx, Archbishop of Munich

Prof Lucia A. Reisch, Professor at Copenhagen Business School

Prof Ortwin Renn, Managing Director and head of the Department of Technological and Environmental Sociology (SOWI V), University of Stuttgart

Prof Miranda Schreurs, head of the Environmental Policy Research Centre at the Free University of Berlin

Michael Vassiliadis, Chair of IG BCE (mining, chemical industry and energy trade union)

The commission submitted its conclusions on 30 May 2011 (see www.bundesregierung.de/nn_1272/Content/DE/Artikel/2011/05/2011-05-30-bericht-ethikkommission.html). The analyses by the Nuclear Safety Commission and the Ethics Commission were a source of guidance for the Federal Government in taking the necessary energy policy decisions. As a result, Germany will phase out electricity from German nuclear power plants by the end of 2022.

Statement from the Dialogue on Sustainability

“... the local authorities, their utilities and their citizens have a special part to play in the transformation of the energy sector. This was made very clear by the Safe Energy Supply Ethics Commission. Mention should be made of the many regional and local approaches and measures for public dialogue on energy issues as well as the German Sustainable Development Council’s ‘Dialogue on Sustainable Cities’ initiative, in which over 20 mayors are taking part.”

German Sustainable Development Council, 23 November 2011

The speedy exit from nuclear power means that the fundamental restructuring of Germany’s energy supply outlined in the Energy Concept now has to be substantially accelerated. For this purpose, a comprehensive set of legislation known as the Energy Package was adopted in summer 2011. Comprising seven acts and one decree, it deals with for instance the increased use of renewable energy, the expansion of the grid, energy efficiency, and how to finance the transition of the energy sector.

By adopting the Energy Package, Germany took an important first step towards restructuring its energy supply. Other steps have already followed. For example, the Federal Government bolstered the development of sustainable energy technologies by launching its new Energy Research Programme in August 2011.

It is plain that Germany’s energy supply system is about to be overhauled – a task that will span the next few decades. It can only succeed if society’s support for these changes and for the associated demands on all those involved is as broad as possible. The Federal Government, *Länder* and local authorities, industry, SMEs, skilled trades, trade unions, environmental and consumer organizations, and the general public must all pull together.

a) The Federal Government's Energy Concept

By adopting its Energy Concept, the Federal Government has risen to key energy and climate policy challenges. The growing demand for energy throughout the world will eventually lead to significant energy price rises. In addition, if Germany does not implement the Energy Concept, its dependence on energy imports will steadily rise. Energy consumption currently accounts for 80 % of greenhouse gas emissions. Today's energy supply structures must therefore be fundamentally restructured in the medium to long term in order to achieve security of supply, affordability, and the country's climate objectives.

The Energy Concept's ambitious aims are to make Germany one of the most energy-efficient and eco-friendly economies in the world while maintaining affordable energy prices and a high level of prosperity. High security of supply, effective climate and environmental protection, and an economically viable energy supply are also vital if Germany is to remain an internationally competitive industrial location in the long term.

The Energy Concept contains the Federal Government's guidelines for a long-term overall strategy until 2050. The government's intention is to provide long-term guidance as well as the flexibility necessary to allow for new technical and economic developments. The main principles of the energy policy are that it is to be ideology-free, technology-neutral and market-orientated. It applies to all uses of energy, including electricity, heating, cooling and transport.

The Energy Concept is an integrated overall strategy which emphasises in for example the electricity sector the development of renewable energy together with an increase in energy efficiency, the expansion of grids and the construction of new storage facilities. This decisive action at the national level is also firmly established within the European single market for electricity and gas. After all, the energy and infrastructure measures in Germany cannot be divorced from developments in its neighbouring countries and the EU.

With the share of renewables growing, the development of energy costs will largely depend on how cost-effective their expansion is. Given this, the Federal Government's objectives are to achieve the expansion targets for renewable energy while stepping up the pressure for innovation and further cost reductions. This is the only way to keep the industries concerned internationally competitive – and to keep the cost to consumers reasonable.

To achieve the Federal Government's objectives, a development path is needed which provides guidance to all stakeholders.

Energy Concept 2010 – goals and development paths

The Energy Concept states that greenhouse gas emissions are to be cut by 40 % by 2020 and by at least 80 % by 2050 in accordance with the targets formulated by the industrialised nations.

Renewables are to be developed into a mainstay of energy supply. The aim is for their share of gross final energy consumption (around 10 % in 2010) to rise to 60 % by 2050.

The share of renewable energy in the electricity supply is to reach at least 80 % by 2050.*

At the same time, efforts are to be undertaken to reduce energy consumption in the long term. By 2050, primary energy consumption is to be reduced by 50 % compared to 2008. This requires an annual increase in energy productivity of, on average, 2.1 % based on final energy consumption.

By 2050, power consumption is to be reduced by 25 % compared to 2008, and by 10 % by 2020.

Furthermore, the rate of energy-saving renovation is to be raised from currently about 1 % of the building stock annually to 2 %.

In transport, final energy consumption is to be cut back by 2050 by around 40 % compared to 2005.

* Targets revised in the 2012 EEG (Renewable Energy Sources Act)

Overview of targets and development paths
Energy Concept adopted on 28 September 2010

Year	Greenhouse gas emissions	Share of renewables in final energy consumption (FEC)	Share of renewables in electricity*	Energy efficiency	2 % energy-saving renovation p. a.
2020	-40 % (1990)	18 %	At least 35 %	-20 % PEC (2008) (2.1 % rise in energy productivity p. a.) -10 % electricity (2008) -10 % FEC transport (2005)	
2030	-55 % (1990)	30 %	At least 50 %		
2040	-70 % (1990)	45 %	At least 65 %		
2050	-80 to -95 % (1990)	60 %	At least 80 %	-50 % PEC (2008) (2.1 % rise in energy productivity p. a.) -25 % electricity (2008) -40 % FEC transport (2005) -80 % primary energy demand of buildings	

Notes: PEC – primary energy consumption
 (year) – reference year on which reduction is based
 * According to the EEG 2012; target to be met by target year

Renewables

By expanding the use of renewable energies, Germany has taken a leading role in energy, climate and innovation policy in Europe and the rest of the world. This development is rooted in the suitable conditions created by for instance the EEG (Renewable Energy Sources Act). The long-term investment protection generated by these conditions has stimulated dynamic growth in many areas of renewable energy. As a result, renewables are becoming an increasingly important pillar of the energy supply and a driver for innovation, the expansion and modernisation of the energy infrastructure (storage, smart grids, flexible power plants and new technology), and employment.

Energy efficiency – a key issue

Energy efficiency is the key to achieving a high share of viable renewables and the objectives of the Energy Concept. Large energy savings can be made which can then be used in other areas (e.g. recycling, or gas in the electricity supply).

Statement from the Dialogue on Sustainability

“For example, energy efficiency projects can be financed using ‘public contracting’, in which members of the public share the costs of energy-saving projects. The costs saved are then used to pay back investors’ capital with interest. Since the annual rate of interest is normally in the order of 5 – 15 %, the demand for shares ought to be high. This would enable the Federal Government and the Länder to refurbish buildings, save energy costs and cut emissions – without having to finance such projects themselves.”

In Germany, there is still substantial potential for saving electricity and other forms of energy. This potential is to be harnessed as far as economically and technically possible. But instead of more bureaucracy, the Federal Government is relying on the common sense and self-reliance of the business sector and the general public. Economic incentives and improved information and advice are intended to help corporate and private consumers use previously untapped potential in terms of energy efficiency under their own steam, thus saving energy costs and protecting the environment. Energy efficiency is the key to achieving a high share of viable renew-

ables and the objectives of the Energy Concept. Large energy savings can be made which can then be used in other areas (e. g. gas in the electricity supply).

Statement from the Dialogue on Sustainability

“Considerable increases in efficiency can be gained ... especially in economic sectors where medium-sized companies typically predominate. However, numerous SMEs depend on advice and external investment ... if they are to tap these benefits.”

Fossil-fuel power stations

The electricity supply in Germany has grown over time and is based on a broad mix of energy sources. At present, the largest share of power generation in Germany is accounted for by the fossil fuels gas, lignite and hard coal. However, in 2011 renewables exceeded the 20% mark for the first time. And the necessary restructuring of the electricity supply between now and 2050 will change this traditional energy mix dramatically, with fossil fuels having to play a different role. As the use of renewables grows, we will need a modernised, much more flexible network of power plants.

Powerful grid infrastructure

The continuous expansion of renewables requires a constant optimisation of interaction with conventional energy. A key role in this regard is played by the grid infrastructure.

Today's power grid is characterised by historically evolved generation patterns. Power stations are located relatively close to where electricity is consumed. In future, however, power generation at sea and in coastal areas will increase significantly. In addition, power will be fed into the grid from many distributed generation systems running on photovoltaics, solar or biomass. Furthermore, partly due to its geographical position, Germany is increasingly taking part in electricity trading with other European countries. This interdependence will become even more important for Germany as its energy supply is restructured. The powerful infrastructure necessary can only be created in cooperation with our neighbours and within the EU.

A modern, efficient electricity grid is the main requirement for a power supply with a growing share of renewables. In addition, the better integration of renewable energy also requires new storage technology. Other requirements are for renewables to be made progressively closer to market activity and for increasing incentives to encourage power generation based on demand.

Energy-saving renovation and energy-efficient construction

Buildings account for about 40% of German energy consumption and roughly a third of CO₂ emissions. At the same time, the potential for saving energy and CO₂ in buildings is high. Three quarters of the older building stock was built before the first Thermal Insulation Regulations in 1979 – and little or even no energy-saving work has been done on many of these buildings. The vast majority of heating systems are not state-of-the-art. Scenarios reveal that the energy-saving renovation of existing buildings is the key to modernizing the energy supply and achieving climate protection targets.

The Federal Government pursues a neutral approach to the technology used during renovation. Owners can choose between measures on the building envelope, improving the building's systems engineering, or using renewable energies.

The Federal Government plans to amend tenancy legislation to encourage investment in energy-saving refurbishment and to create a uniform legal framework for contracting.

The challenge of transport

The transport sector accounts for some 30% of final energy consumption in Germany and about 18% of the country's CO₂ emissions. Furthermore, it is heavily dependent on fossil fuels. Therefore, one of the many factors contributing to sustainable mobility is having an efficient and reliable energy supply which is affordable and moreover helps achieve the national and international climate change objectives.

Broadening the energy base for transport and introducing efficient energy technologies such as fuel injection and hybridisation as well as new forms of propulsion like batteries and fuel cell technology will contribute to attaining the energy and climate targets in the transport sector.

In its Energy Concept, the Federal Government has set itself the objective of reducing the final energy consumption in transport by 40% by 2050 (and by 10% by 2020, both compared to 2005). Note that the energy reduction aims in the transport sector are very ambitious given the forecast increase in the volume of traffic.

Statement from the Dialogue on Sustainability

“The smart combination of the car with local and long-distance public transport harbours huge potential for saving energy. The continuing increase in freight and passenger services forecast within the European Union must be increasingly transferred to eco-friendly types of transport.”

The transport sector also faces tough challenges when it comes to cutting greenhouse gases. It has to contribute to this aim like other industries – for example by using alternative fuels and innovative power train technologies. The Federal Government is therefore developing a broad, technology-neutral transport and fuel strategy in this parliamentary term. It is intended to lead to a strategic understanding between government, business and science on the medium and long term prospects of such fossil fuels and renewables as well as the power train technologies and fuel delivery infrastructure necessary.

The strategy for battery-powered electric vehicles is being consistently pursued on the basis of the Joint Statement by Industry and the Federal Government of 3 May 2010. In the Electric Vehicles Government Programme published on 18 May 2011, the Federal Government reiterated its goal to have a million electric vehicles on the road by 2020 – and 6 million by 2030. Another goal is to make Germany one of the leading suppliers and biggest markets for electric vehicles. The government programme contains a number of measures to achieve these aims with particular emphasis on research and development. A total of EUR 1 billion has been earmarked for these measures between now and the end of the current parliamentary term.

The Federal Government has also been promoting hydrogen and fuel cell technology since 2006 under the NIP National Innovation Programme for Hydrogen and Fuel Cell Technology. Fuel cell vehicles could make an important contribution to eco-friendly, sustainable transport, as long as the hydrogen used is produced from renewable sources.

Energy research for innovation and new technology

The transition to the era of renewable energy requires the far-reaching modernisation of the energy sector. Pioneering innovations are crucial in order to drive structural change towards a sustainable energy supply. In addition to basic research, the main aim is to pave the way for market penetration by renewable energy and efficiency technologies by means of applied research. The objectives include making energy technology cheaper and investing in the further research and development of technologies which could make up a significant share of the future energy supply. This will also help safeguard Germany's international competitiveness in key future markets.

Energy supply in the European and international context

The transition to a modern, low-CO₂ and secure energy supply needs to be coordinated with Germany's European and international neighbours. International climate agreements have to be signed to bring about global climate change and prevent distortions of competition. The Federal Government will continue to campaign for a binding global climate agreement which provides for verifiable commitments based on a fair distribution of the burden for all major emitters of CO₂ and outlaws the relocation of production plants to countries with no climate protection regulations. The Federal Government also keeps tabs on the economic effects of climate change as well as its implications for security and development. At the European level, the proper division of responsibilities between the EU and the member states is crucial to ensuring that the transformation of our energy system is organised efficiently. Regarding the European single market for electricity and gas, particular importance is attached to developing an infrastructure that can meet the challenges of linking production and consumption.

Acceptance and transparency

The transition to a sustainable energy supply and the necessary infrastructure measures such as the required expansion of the power grid can only succeed if the future energy policy is clear and understandable to the general public. The business sector, government at all levels, and the public must play an equal role in tackling this challenge for society as a whole. It is vital that the long-term goals and measures are clearly explained at all procedural levels with high public involvement. In particular, the relevant facts and figures on which government decisions are based must be made public at an early stage in a comprehensible form.

b) The Energy Package

To speed up the restructuring of the energy supply, in early summer 2011 the Bundestag and Bundesrat adopted a wide-ranging Energy Package. It includes regulations governing areas such as grid expansion, efficient energy use, renewable energy, and ways in which the accelerated implementation of the Energy Concept can be financed.

Overview of the resolutions

- Act Amending the Legal Framework Governing the Promotion of Electricity Generated from Renewables (Renewable Energy Sources Act, EEG), including the EEG Report 2011
- Grid Expansion Acceleration Act (NABEG)
- Amendment to the Energy Act (EnWGÄndG)
- Fourth Amendment to the Public Procurement Regulations
- 13th Amendment to the Atomic Energy Act (AtomG)
- Amendment to the Energy and Climate Fund Act (EKFG-ÄndG)
- Bill providing tax breaks for the energy-efficient renovation of housing (1 December 2011: under negotiation between the Federal Government and the *Länder*)
- Strengthening the Climate-friendly Development of Towns and Cities Act.

Renewable energy

One key element of the future energy supply is the continued rapid expansion of renewable energies. To enable this, the foundations need to be laid for an electricity market which is increasingly based on renewable energy sources. This requires optimising market and system integration between conventional power plants and power generation from renewables. More use should be made of renewable energy sources to generate electricity in line with demand and to provide ancillary services for network and supply reliability. Conversely, storage systems and an increasingly flexible conventional fleet of power plants are needed to balance the fluctuating power generation from renewables more effectively.

To ensure affordable electricity prices, the expansion of renewables must also be cost-effective, i. e. a niche market must be turned into a mass market. The sooner this is achieved, the more the path to the era of renewable energy will also boost growth momentum. The cost-cutting potential needs to be exploited so that the scale of the EEG levy (currently about 3.5 ct/kWh) is not exceeded and can eventually be reduced. Wind energy harbours the greatest potential for the rapid, cost-effective development of renewable energy.

Amendment to the EEG

By amending the EEG Renewable Energy Sources Act, the Federal Government is continuing the dynamic expansion of renewables, making them more cost-effective and improving their market and system integration, particularly as follows:

- By adhering to the principles of the EEG and hence providing planning and investment security.
- By improving feed-in tariffs in areas where it was previously inadequate such as offshore wind, hydroelectric power and geothermal energy, and on the other hand capping any unnecessary subsidies and windfall profits.
- By adapting subsidies for photovoltaic power every six months ("flexible ceiling"), simplifying subsidies for biomass and capping windfall gains from the EEG levy exemption.

→ By providing incentives for the market and system integration of renewable energy by introducing an optional market premium and a “flexibility bonus” for demand-based electricity generation from biomass. Operators of renewable energy generating plants can now for the first time market their electricity themselves and boost profits by developing optimised solutions for demand-based generation. And the grid integration of PV systems is being improved by their incorporation into feed-in management.

Renewables can make a growing contribution to energy security by reducing dependence on imports of fossil fuels. The Federal Government has set itself the goal of increasing the share of electricity generation from renewables within gross electricity consumption from 17% in 2010 to at least 35% by 2020. Renewable energy is to meet an increasing share of electricity demand through a combination of accelerated grid expansion, improved market and system integration, and the greater use of storage.

In addition, the Energy Concept provides for power consumption to be reduced by 10% by 2020 – which will also contribute to the security of supply.

Offshore Wind Energy Subsidy Programme

The government-owned development bank (KfW) is funding the construction of the first ten offshore wind farms under a special funding programme with a volume of EUR 5 billion in order to gather valuable experience. Investing in this technology now will enable significant cost savings to be leveraged. Furthermore, the amendment of the Marine Facilities Ordinance will greatly simplify and accelerate planning permission for facilities in the German Exclusive Economic Zone.

By amending planning legislation and the EEG, the Federal Government has improved the scope for replacing old wind turbines with new, more powerful and more efficient ones. In addition, it has also simplified the installation of photovoltaic systems on façades and rooftops.

The designation of suitable sites for wind power is crucial.

The choice of sites takes into account the fact that wind turbines sometimes cause environmental and noise problems depending on the conditions at the site of installation. Wind turbine operators must therefore comply with national rules governing aspects such as noise limits. Such matters are decided in close cooperation between the Federal Government and the *Länder*. Moreover, the Federal Government and the *Länder* plan to commission a study on the potential for wind power so that criteria can be devised for identifying suitable land-based sites. Inflexible rules on clearance and height limits are to be replaced by national criteria developed with the *Länder* providing for the application of flexible spacing rules on a case-by-case basis.

Grid expansion

Grid expansion has a vital role to play in the expansion of renewable energies. By passing the Amendment to the Energy Act (EnWGÄndG) and the Grid Expansion Acceleration Act (NABEG), the Federal Government has created the basis for the faster expansion of above all electricity transmission networks, which will mainly transmit electricity generated by wind power in the north to the areas where it is needed in the south. The requirements of the energy sector and the pressing demand for the expansion of transmission networks are to be gauged by the Federal Government in a national demand plan. Furthermore, the Federal Network Agency is to carry out the planning to map out the power line corridors for cross-border and transnational networks. Extensive public participation rights will be introduced early on in connection with Strategic Environmental Assessments and through public application conferences. Underground cabling is to be the norm by law for the distribution network level (110 kV).

The connection of offshore wind farms to the grid is to be simplified by allowing their joint connection instead of the costly connection of individual turbines. Local authorities in areas to be crossed by power lines will be able to agree compensation with the network operator.

The amendment to the Energy Act (EnWG) also strengthens the foundations for smart networks and storage. Storage is an essential aspect of integrating fluctuating renewable energy. New storage is therefore exempt from the network fees normally charged.

In addition, under the EnWG the Federal Government has for the first time introduced mandatory, coordinated grid expansion planning for major electricity and gas transmission networks comprising ten-year network development plans. Network development plans are intended to enable grid expansion and increase public acceptance for the construction of power lines to the extent necessary by means of extensive consultations with stakeholders. Acting on this basis, binding grid expansion requirements will then be decided by the Federal Government in demand plan legislation. In addition, the framework for the design of low-loss high-voltage direct current (HVDC) transmission lines will be improved. The Federal Government will significantly improve public participation at all procedural levels of the grid expansion process by amending the NABEG and the Energy Act.

In the long term, Germany needs smart distribution systems for the expansion and integration of renewable energies. The Federal Government is gradually creating the conditions for the market-driven development of such networks. Networks are required which can guarantee data protection and data security, provide distributed generation and load management, integrate renewable energy in the best way possible, allow for optimum network utilisation, and raise the potential for efficient energy use among consumers. New storage technologies must be developed and used in order to stabilise fluctuating power generation from renewable energy sources, and further progress is required in the development of renewables in Germany and Europe and their effective interaction.

Fossil-fuel power stations

The gas and coal fired power plants currently under construction must be rapidly completed by 2013. Moreover, additional power stations with a total capacity of around 10 GW need to be built by 2020.

The Federal Government will use funding to encourage cogeneration (also known as combined heat and power or CHP) more efficiently and extend it beyond 2016 to substantially boost the amount of energy generated by CHP plants. In addition, CHP funding will be developed further under an amendment to the CHP Act. A new government power station subsidy is to be introduced to encourage the construction of power plants which are highly efficient and very flexible.

Efficient energy use

In the buildings sector, economic incentives and requirements stemming from energy-saving legislation will remain important elements of the strategy to increase energy efficiency and climate protection. The Federal Government has ambitious plans to raise the efficiency standards for buildings. In particular, through the Energy Saving Regulations (EnEV), between 2012 and 2020 the Federal Government plans to gradually bring newbuild standards into line with future European rules governing nearly zero energy buildings whenever the financial burden on owners and tenants is acceptable. The Federal Government is setting an excellent example by only constructing new buildings as of 2012 which already comply with the nearly zero energy building standards.

Statement from the Dialogue on Sustainability

“Energy efficiency requirements must be emphasised as the mainstay of the restructuring of the energy sector. Efforts must be massively increased if German and European targets are to be met. According to calculations by the Institute for Applied Ecology, around 60 Mtoe of primary energy will have to be saved in Germany by 2020, while the annual rate of building renovation must be at least doubled.”

German Sustainable Development Council, 23 November 2011

The energy-efficient refurbishment of buildings saves energy and cuts CO₂ emissions. Funding for the CO₂ Building Rehabilitation Programme has been increased from EUR 936 million in 2011 to EUR 1.5 billion annually for 2012 – 2014. In addition, as part of the accelerated implementation of the Energy Concept, the Federal Government has decided to explore the switching of funding for heating and insulation from a budgetary allocation to a market-based system as of 2015.

Public procurement regulations have been amended to make high energy efficiency criteria a legally binding criterion in the award of public contracts. Public-sector buyers now have to choose products and services with the highest level of energy efficiency and which belong to the highest efficiency class (see also Chapter B.IV.3.).

The Federal Government is campaigning at the European level for an ambitious, binding package of measures to increase energy efficiency. In particular, the government intends to develop European product standards and energy consumption labelling in accordance with the advanced state of the art. They are to be geared more closely than before to the best available technology on the market (“top runners”) and updated regularly (see also Chapter E.III.3.).

Light pollution and noise

Local authorities and the general public can also help to save power and cut light pollution by means of directed street and building lighting – an approach which is now being considered by the EU. One of the reasons is to counteract the increasing brightness of urban areas at night, which is perceived as a nuisance.

Whenever equipment designed to improve energy efficiency is purchased (e.g. heat recovery systems), it must be ensured that the noise it makes does not disturb the neighbourhood.

Storage of radioactive waste and safety of nuclear power plants

The generations that benefit from nuclear energy also have a responsibility to properly store the resulting radioactive waste. Current measures include the further exploration of Gorleben with no preconceived outcome and the potential development of alternative disposal options.

The Federal Government and the *Länder* have launched a process to reach a general consensus on the identification of a site where radioactive waste (especially heat-generating waste) can be safely stored. A timetable has been drawn up for this process which is to culminate in 2012 in a statutory proposal for a defined procedure to search for a nuclear repository.

Long-term future tasks which need to be considered now include improving the safety of existing nuclear power plants in Europe and the rest of the world. The Federal Government has successfully initiated this process in the European Union and among the leading economies.

Relief for energy-intensive industries

The approximately one million workers in energy-intensive sectors make an important contribution to Germany’s industrial output. In order to help energy-intensive businesses hit by electricity price rises caused by emissions trading, as of 2013 the Federal Government will provide funds of up to EUR 500 million in the Energy and Climate Fund, complemented by funding from the Federal budget if required. We will consistently defend this policy at the European level. In addition, the Federal Government has broadened the special compensation scheme in the Renewable Energy Sources Act (EEG) to offset the burden of the EEG levy for energy-intensive companies.

Competition on the German and European energy markets

The Federal Government continues to pay close attention to the intensity of competition on the German electricity market and is planning for example to set up a market transparency unit.

The transition to a modern, low-CO₂ energy supply requires the integration of Germany into the related activities of Europe and the world. Faced by these challenges, the overall aim should be to consistently meet the targets of the Energy Concept – and hence sustainably strengthen competition in the European energy sector.

Financing via the Energy and Climate Fund

To successfully accelerate the implementation of its Energy Concept, the Federal Government has set up a secure long-term financial scheme known as the Energy and Climate Fund. Starting in 2012, nearly all the revenue received from the auction of European emissions trading allowances will be paid into the new fund.

The Energy and Climate Fund will be used to encourage renewable energy, efficient energy use, energy storage and network technologies, energy-efficient building refurbishment, and climate and environmental protection in Germany and abroad. All revenue and expenditure will be estimated in an annual business plan.

c) Further implementation

The Energy Package implements many of the measures contained in the Energy Concept. For example, it forges a totally new investment framework. But this is just the beginning – for the restructuring of the energy supply is such a far-reaching, long-term project that many other areas will have to be tackled and controlled, with readjustment at some stage inevitable. The Energy Package will gradually be supplemented by additional measures, such as continued funding for research into energy technology. And if the faster implementation of the Energy Concept is to succeed, the consistent monitoring of the measures' effects is essential.

Statement from the Dialogue on Sustainability

“The successful acceleration of the energy revolution will depend on whether glitches and incorrect assessments can be identified in time so that corrective action can be taken. This will ensure that the climate policy goals can be achieved in order to bring about sustainable development – and that this will be done in the cheapest, most efficient way possible. Above all, it will depend on the monitoring process recently launched being implemented for the first time in the coming year.”

bdew, 25 November 2011

Energy Research Programme

On 3 August 2011, the Federal Government adopted the Sixth Energy Research Programme, which is an important contribution to speeding up the transition to the era of renewable energy. The aims are to accelerate innovation processes, introduce sustainable energy technologies to the market, and create conditions that make the transformation of the German energy supply safe and inexpensive.

The Federal Government believes that one of the essential requirements for trialling new strategies, accelerating innovation and marketing sustainable energy technologies is broad, first-rate, well networked research and development ranging from pure research to demonstration projects and industrial applications.

The Federal Government regards energy research to be a strategic tool of its energy policy, and this is reflected in its energy research budget.

Energy research budget

Under the Sixth Energy Research Programme, the Federal Government will provide EUR 3.5 billion between 2011 and 2014 to fund R&D into sustainable energy technologies. This is an increase of about 75% compared to 2006 – 2009.

Government research funding in the energy sector focuses in particular on renewable energy and efficient energy use. In fact in 2014, the Federal Government will invest almost 80% of its research budget into these two areas.

Monitoring

On 19 October 2011, the Federal Government adopted a monitoring process in order to regularly review the progress made on the Energy Concept. The aims of monitoring are to review the implementation of the action programme and the Energy Concept including target compliance with a view to ensuring that the energy supply is safe, economical and environmentally friendly, and specifying any adjustments necessary.

The responsible Federal ministries in charge of economic affairs and the environment work with other Federal ministries to compile an annual monitoring report as well as a progress report every three years, and will strengthen dialogue with the public on the action programme.

A commission of energy experts has been appointed to oversee the monitoring process.

The Monitoring Commission's opinion is to be taken into account when the Federal Government's monitoring report is drawn up and included as an appendix.

Monitoring Commission

Chair:

Prof Andreas Löschel, professor of environmental and resource economics at the University of Heidelberg and head of the Environmental and Resource Economics and Environmental Management Research Department at the Centre for European Economic Research (ZEW), Mannheim

Other members of the Monitoring Commission:

Prof Georg Erdmann, head of the Department of Energy Systems at Berlin University of Technology

Prof Frithjof Staiss, board member of the Baden-Württemberg Centre for Solar Energy and Hydrogen Research (ZSW), Stuttgart

Dr Hans-Joachim Ziesing, director of the Energy Balance Association, Berlin

Support for bilateral energy projects

German development cooperation currently supports bilateral energy projects in 50 partner countries, energy being a priority area in 23 of them. In 2010, a budget of approximately EUR 560 million was pledged for renewable energy and efficient energy use.

In addition to its bilateral ties, German development works with its development partners to improve public access to energy in various international processes:

- The Energy Partnership “Energising Development” has so far enabled 8 million people in over 20 partner countries to be given permanent access to modern energy services.
- The aim of the AEEP (Africa–EU Energy Partnership) is to achieve a clean, sustainable energy supply on both continents. AEEP works in five areas: energy access, energy security, renewable energy and efficient energy use, institutional capacity building, and increasing investment.

4. International activities and partnerships for low-carbon development, higher energy efficiency and renewable energy

a) German development cooperation in climate protection, renewable energy and energy efficiency

In recent years, German development cooperation has systematically increased its support for climate protection and adaptation to climate change in developing countries. The Federal Ministry of Economic Cooperation and Development’s expenditure on climate protection and adaptation rose from almost EUR 900 million in 2009 to EUR 1.5 billion in 2011 – an increase of more than two thirds within just two years.

German development cooperation spends more on energy than anything else. The main aim is to improve access to sustainable energy in partner countries. Cooperation is concentrated on encouraging the use of renewables and making more efficient use of energy. Particular attention is paid to improving access to energy for the poor.

b) International Climate Protection Initiative

The IKI (the Federal Ministry for Environment, Nature Conservation and Nuclear Safety’s International Climate Initiative) has been financing projects in developing and newly industrialising countries and in transition countries since 2008 (www.bmu-klimaschutzinitiative.de/de/aktuelles). This new form of climate cooperation supplements the Federal Government’s existing development cooperation.

According to a decision taken by the German Bundestag, the initiative has an annual budget of EUR 120 million. Germany uses this innovative financing mechanism to effectively contribute to reducing harmful emissions and adapting to climate change.

The IKI operates in three areas: climate-friendly economic activity, measures to adapt to the impact of climate change, and the conservation and sustainable use of natural carbon sinks (REDD+ or “Reducing Emissions from Deforestation and Forest Degradation”).

When selecting projects, special importance is attached to developing innovative approaches that can be disseminated and applied to other areas, and

whose impact extends beyond the individual project itself. Through targeted cooperation with partner countries the IKI provides important momentum for negotiations on an international climate agreement.

Individual priority areas

Regarding climate-friendly economic activity, the aim is to help partner countries build up an economic structure which avoids the emission of greenhouse gases as much as possible. Assistance is provided for activities such as improving energy efficiency, expanding renewable energy and reducing emissions of greenhouse gases by means of investment schemes as well as know-how transfer and policy advisory support in the partner country.

On climate adaptation, sections of suitable NAPAs (National Adaptation Programmes of Action) are implemented in partner countries which are particularly vulnerable to climate change. If possible, several aspects of adaptation such as water resource management, optimised land use, sustainable biomass production, preventive healthcare, disaster risk management and migration management are included in an integrated approach.

On carbon sinks/REDD, projects are supported which are devoted to the conservation of carbon sinks, particularly forests and other ecosystems such as wetlands. These activities are intended to above all improve the synergies between climate and biodiversity protection.

c) Bilateral partnerships

Germany is involved in various bilateral mechanisms to improve energy efficiency and develop renewable energies. Intensive bilateral dialogue is maintained in cooperation with partner countries, e. g. India via the Indo-German Energy Forum. Joint cooperation activities are also initiated.

In January 2009, a memorandum of understanding was signed with China enshrining agreements to work together very closely in all key areas of climate policy to combat climate change. To this end, Germany and China agreed to set up a working party comprising representatives of both governments under the auspices of the Federal environment ministry and the NDRC (National Development and Reform Commission). At its first two meetings in

October 2010 and June 2011, the working group addressed areas such as emissions trading and low-carbon cooperation with various provinces. A similar agreement on collaboration to combat climate change has now been signed with Brazil.

In addition, there are many instances of cooperation on a technical level, such as the Indo-German Automotive Industry Forum and collaboration between China and Germany in the field of sustainable mobility.

d) Other activities and partnerships

IRENA

To promote the development of renewable energies abroad, the Federal Government is a member of IRENA, the International Renewable Energy Agency, which was founded in Bonn on 26 January 2009. IRENA has 85 members, and as of October 2011 the statute had been signed by 149 states. IRENA's headquarters is in Abu Dhabi, while the IRENA Innovation and Technology Centre (IITC) is based in Bonn. The IITC was opened on 7 October 2011.

IRENA is the first international organisation whose sole aim is to promote renewable energy. An international governmental organisation, IRENA supports developed and developing countries in expanding the use of renewables. IRENA will be a source of expertise on successful policy frameworks and practical applications as well as technology-related know-how on renewable energies.

The Federal Government is one of the biggest contributors to IRENA. In addition to regular contributions to the budget, the IITC in Bonn is entirely funded by the Federal Government by means of voluntary additional contributions, which in 2011 were as high as USD 3.1 million.

International Partnership on Mitigation and MRV

At the Petersberg Climate Dialogue (2 – 4 May 2010), Germany teamed up with South Africa and South Korea to set up an international partnership for cooperation in the development of emissions reduction strategies as well as the measuring, reporting and verification (MRV) of emissions. The partnership supports practical dialogue between industrial and developing countries.

Progress in the areas dealt with by the partnership could make a crucial contribution to helping the international climate negotiations to succeed and advancing the development of international guidelines and rules agreed in Cancún. This exchange is also intended to boost a realistic assessment of what is practically required and feasible in the various countries.

The partnership is open to participation by all states. Developing countries which are at various stages in the development of emission reduction strategies and MRV systems are encouraged to join. Currently, representatives from some 25 countries are involved.

Mediterranean Solar Plan

The Federal Government has long been actively supporting the development of a future interconnected power system with North Africa and the idea of promoting solar energy in these countries. Germany's Energy Concept adopted in September 2010 emphasised that in addition to ensuring a sustainable and climate-friendly energy supply in the sun-rich countries of North Africa to meet the rapidly rising energy demand there, importing solar electricity from these countries would by 2050 eventually contribute to Europe's energy supply, which will be increasingly based on renewables.

As agreed in the Energy Concept, the Federal Government will formulate its coordinated overall strategy for the Solar Plan of the Union for the Mediterranean, partly with a view to contributing to the master plan to be developed with the members of the UfM and the European Commission.

To this end, the Federal Government also supported the establishment of the Secretariat of the Union for the Mediterranean in Barcelona. The Federal Government is actively working with the UfM Secretariat to identify the relevant legal, economic and energy policy issues and possible solutions as well as to develop a framework for the implementation of the MSP (Mediterranean Solar Plan) step by step in a transparent process in conjunction with experts from other EU member states, the states of North Africa, the European Commission, and representatives of financing institutions and the private sector. The MSP has set itself the aim of building 20 GW of new renewable power generation capacity by 2020, some of this solar electricity being exported from North Africa to Europe.

DESERTEC

The DESERTEC concept describes the possibility of using the high solar and wind power potential in the Sun Belt in the desert of North Africa to produce energy from renewable energy sources. In addition to mainly local power supply, the intention is that by 2050 the energy generated there could cover as much as 15% of the EU's electricity demand.

The DESERTEC Foundation is a global civil society initiative aiming to shape a sustainable future. It was established on 20 January 2009 as a non-profit foundation that grew out of a network of scientists, politicians and economists from around the Mediterranean, who together developed the DESERTEC Concept. In October 2009, the private DESERTEC Industrial Initiative (Dii) was set up as an international consortium to implement this vision. Currently 55 companies and institutions from several European and North African countries are involved in the Dii.

The Federal Government supports the vision of the DESERTEC Foundation and provides political assistance, for example by developing bilateral energy partnerships with countries in North Africa and creating an appropriate regulatory economic framework. This support is coordinated by a task force set up within the Federal Government. In doing so, the Federal Government is implementing Article 9 of the Renewable Energy Directive (2009/28/EC), which sets the frame for supporting renewable energy projects between EU member states and third countries.

Regional science service centres for climate change and adaptive land management in Africa

Global warming is leading to poor harvests, drought, famine, poverty, epidemics and disease, especially in Africa. The Federal Government therefore supports the establishment of Climate Change and Adaptive Land Management regional science service centres in Africa, which create robust science and research structures in various regions of Africa. For this purpose, the Federal Government is providing EUR 95 million in funding and hence setting the course for shared responsibility in a global context and for more climate justice.

The main objective is to develop adaptation capacities for climate change in African societies. The centres are designed to strengthen the expertise of African scientists and to develop knowledge-based solutions to current problems in the region. Existing resources in applied global change research (e.g. climate, water, land use, agriculture and ecosystem services) are being strengthened and integrated while new ones are being created.

After a two-year initiation phase, the centres in West Africa (WASCAL, ten countries) and Southern Africa (SASSCAL, six countries) will embark upon the main phase in 2012.

“Concerted Action” to implement the EC Renewable Energy Directive

In connection with the adoption of the current Renewable Energy Directive (2009/28/EC), in 2010 the project “Concerted Action RES” was launched. The aim of this forum is to promote dialogue between EU member states on the successful implementation of the directive.

Germany welcomes this intensive dialogue between member states and plays an active role in the various working groups. In addition, Germany co-chairs the working group on flexible cooperation mechanisms. These tools enable collaboration among member states in order to achieve national goals, for example by the statistical transfer of specified amounts of renewable energy or the implementation of joint projects in renewable energy. As described above, the initiative to promote projects

for importing solar power from North Africa to Europe could come to fruition by carrying out a joint project of this nature in accordance with Article 9 of the Renewable Energy Directive.

Clean Energy Ministerial

Another multilateral partnership to promote low-carbon energy sources exists under the US-initiated CEM (Clean Energy Ministerial). The participants are the “major economies” (Australia, Brazil, Canada, China, France, Germany, Italy, India, Indonesia, Japan, Korea, Mexico, Russia, South Africa, the UK, the USA and the European Commission) and a number of emerging and developing countries.

The Federal Government is active in various initiatives on low-carbon technologies that have been formed as part of the CEM. Germany, Denmark and Spain head the multilateral working group on solar and wind energy, in which various projects have been initiated to accelerate the global expansion of renewable energy in partnership with international institutions such as IRENA, UNEP and REN 21.

5. Risk prevention and adaptation to climate change

Alongside continuing national and international efforts, climate change increasingly requires adaptation to the impacts of unavoidable climate change in the medium and long term. The need for adaptation depends on the anticipated regional and local impact.

The Federal Government regards adaptation to climate change as a future challenge for society calling for private, corporate and government action. The German Adaptation Strategy (see www.bmu.de/klimaschutz/anpassung_an_den_klimawandel/doc/42781.php) is a framework for a national medium-term adaptation process drawn up under the auspices of the Federal environment ministry which provides guidance to government and non-state actors. After all, the appropriate measures to be taken must ultimately be decided locally depending on the natural topography, local requirements, the environment and profile.

Action plan

By further developing the German Adaptation Strategy, the Federal Government drew up an inter-departmental action plan which was adopted in August 2011. It sets out the activities of the Federal Government together with projects coordinated with the *Länder*. Implementation takes place in close coordination between the Federal Government and the *Länder*, is accompanied by a broad process of dialogue and participation with local authorities, stakeholders and social groups, and is due to be evaluated in 2014.

The action plan also pursues the aim of having factors related to the climate and extreme weather conditions being taken into greater consideration in all political, technical and operational planning processes. Accordingly, in connection with future decisions regarding (risk) management and the infrastructure, it will be increasingly necessary to examine whether – and if so, to what extent – the precautionary measures to be taken to mitigate adverse effects of climate change and extreme weather are viable when the costs and benefits are weighed up.

There is a huge need for knowledge and research into ways of adapting to climate change. The Federal Ministry of Education and Research is spending EUR 137 million annually (and around EUR 165 million in 2012) under the FONA programme (“Research for Sustainability”) to support research into protection against climate effects as well as local and regional development adaptation strategies. This is an important factor in increasing adaptation expertise in Germany. For example, in the KLIMZUG project, innovative strategies for adaptation to climate change in regions are being developed. The expected climate change and associated extreme weather events are to be taken into account in regional planning and development processes in seven model regions in order to improve the future competitiveness of regions and also to advance the development and use of new technologies, processes and strategies for adaptation to climate change in regions. In addition, knowledge transfer with partner regions is to be strengthened by means of international cooperation so that expertise can be developed for mutual benefit.

The Federal Government is also rising to its responsibility internationally. Developing countries are not responsible for climate change, but they in particular are suffering from the consequences. Adapting to climate change is therefore an important factor in sus-

tainable development. For this reason, in 2011 the Federal Government supported those developing countries which are especially susceptible to climate change in for instance Africa and the Pacific to the tune of some EUR 500 million.

In addition, funding is provided for multilateral pilot projects on adaptation to climate change – such as the Pilot Programme for Climate Resilience, which has received EUR 50 million. As the largest donor for the two funds for adaptation to climate change under the umbrella of the Global Environment Facility, Germany is underlining that even the poorest developing countries can expect to receive assistance from Germany in the face of the impending consequences of climate change.

6. Conclusion

The fundamental transformation of Germany’s energy supply is above all an opportunity for future generations. Germany is a pioneer on the road to the energy supply of the future. The essence of this course is to grow renewable energy into a mainstay of the energy supply and to promote the improvement of efficient energy use as a key issue in this restructuring.

It is within Germany’s power to become the first major industrialised nation to switch to a high-efficiency, renewable energy system. However, this entails a high degree of realism, common sense and good judgement. For this purpose, the Federal Government is backing innovation and advanced technologies, effective yet cost-efficient measures, and an environmentally and climate friendly policy which is geared to the free market and competition.

The Energy Package is the Federal Government’s response to the challenges of meeting climate change and developing a reliable yet affordable, eco-friendly energy supply.

Debate in Germany regarding the “right” road in energy policy and the associated issues of climate change, phasing out nuclear energy, international competitiveness and environmental protection (including their interactions) has been waged for many years. Based on these difficult yet important discussions, the Federal Government’s decisions outlined above on the route to the future of the energy supply represent the achievement of a national consensus. It is self-evident that partners are needed for this devel-

opment path. And Germany's energy supply can only be successfully transformed with the active participation of the *Länder* and municipalities, businesses and trade unions, NGOs and the general public. Above all, we must all remain focused on the positive prospects: the technological and economic opportunities for the competitiveness of Germany as an industrial country and an export nation as well as the protection of the climate and natural resources.

III. Sustainable water policy

Water is the basis of all life and an indispensable resource. We need water in our diet and our daily hygiene. We experience water as a habitat for many species of plants and animals – including in oceans, lakes, rivers and wetlands – and use it for leisure activities. Being a source of energy, a transport medium and a raw material, water is also an important economic factor. Water is thus one of the foremost resources – and as such we need to use it carefully and protect it.

No matter how we use water, it is always affected in some way. Contamination, water extraction and hydraulic engineering all alter the qualitative and quantitative state of water, including groundwater. Accordingly, different uses must be coordinated both with each other and with the measures taken to protect surface water, groundwater and marine water.

“Sustainable water policy”

A sustainable water policy means the careful, sustainable management of water taking into account all water cycles and partial cycles, related uses and necessary protection concerns.

It includes:

- Ensuring the availability of water in its various forms as a resource for present and future generations, with due regard to aspects such as general interest services and business location choices;
- The long-term protection of water as a habitat and a central element of ecosystems as well as the protection of ecosystems which are important for the sustainable availability of water;
- The development of options for lasting, eco-friendly economic and social development.

1. Significance of water for the guiding principle of sustainable development

Intergenerational equity

The sustainable management of water in line with the guidelines contained in the Sustainability Strategy will ensure that water resources are available to future generations and preserve or restore the ecological balance of bodies of water. Two principles are therefore essential for a sustainable water policy: the polluter pays principle and the precautionary principle. Polluters must take responsibility by remediating any damage they have caused and averting imminent risks. In accordance with the precautionary principle, water uses must be arranged and coordinated such that no pollution or any other form of impairment arises in the first place. Protecting and sustainably using water resources are vital in order to leave future generations a rich, clean water heritage.

Quality of life

The long-term protection and sustainable use of water resources make a valuable contribution to the quality of life. Water is available in Germany at any time, in high quality, in sufficient quantities and at reasonable cost via public supply networks. Maintaining the high quality of drinking water, ensuring the security of supply, and reducing water and groundwater pollution by means of extensive sewage treatment are key public services in Germany. The landscape is criss-crossed by lakes and rivers, which function as habitats for a variety of flora and fauna and provide human recreation. Water frequently makes up distinctive cityscape elements that enhance the quality of life. And areas of water also have a balancing effect on the urban climate and help cool the local atmosphere in hot weather.

Social cohesion

Stretches of water (especially large rivers) are common property. They are important lifelines which connect people and serve as transportation corridors. Inland and coastal waters have always been popular residential and business areas and also attract leisure activities. The sustainable protection and use of water bodies (including protection against floods, storm tides and other risks) require collective action and solidarity.

International responsibility

Seen globally, having a clean water supply can by no means be taken for granted. Currently around 900 million people lack adequate access to clean drinking water. More than 2.6 billion people have no basic sanitation. Halving these statistics by 2015 (compared to 2000) is one of the UN Millennium Development Goals. Sustainable water management which gives even the poorest people access to safe water is therefore one of the world's main developmental and environmental challenges – especially given the looming demographic and climatic changes. Germany has responded by concentrating part of its development work on the water sector.

How much water is available worldwide?

“Just 3.5 % of the water on earth is freshwater, most of which is bound up as ice at the poles, in glaciers and permafrost, where it fulfils important functions but cannot be used directly. Of the 118,000 cubic kilometres of water theoretically available throughout the world every year (by comparison, the Rhine has an annual discharge of 60 cubic kilometres), 49 % flows into the sea, 50 % is used by forests, grasslands and wetlands as ecosystems, 0.9 % is used for irrigation and only 0.1 % is actually available to people to meet their basic needs and to industry.

Although there is enough water, it is not always located in the right place at the right time.”

Leibniz-Zwischenruf 1/2011

2. The sustainable use of water resources in Germany: current status and challenges

Germany is rich in water. Each year, on average 188 billion m³ of water is available. Regional differences in availability are usually balanced out locally by adapted extraction and distribution systems. In 2007, the total amount of water extracted in Germany was 32 billion m³, less than 20 % of the available water resources. Of this, approximately 5 billion m³ (less than 3 % of the available water resources) was used as drinking water while about 27 billion m³ was used by industry. Water extraction for farming is less than 1 % of total water consumption in Germany, and is very low considering that about 4 % of the land is used for agriculture.

Statement from the Dialogue on Sustainability

“Regarding the water supply, I believe that in future we must make a clearer distinction between drinking water and process water.”

Thanks to the efficient, economical use of water across the board in industry and domestic households, water extraction has been significantly reduced in Germany over the past twenty years. Technology development as well as multiple usage and recirculating systems in industry and business have resulted in annual extraction declining by about 30 % since 1991.

Any bottlenecks in supply and extreme low-water situations only affect individual regions in Germany. They are usually caused by long dry periods and hot spells in summer. Although extreme events like this are not expected to be severely exacerbated by climate change in the next few decades, they cannot be ruled out in the second half of the century.

The main challenges as regards water management in Germany are the preservation and restoration of natural aquatic structures, improving the quality of water, and taking an integrated view of different uses.

a) Aquatic structures – protection against natural water hazards

Since historical times, humans have changed the natural flow of running water by altering rivers and streams as well as building canals and levees in order to create areas to live and work, make rivers navigable, intensify agriculture, use hydropower and prevent flooding. Natural floodplains and wetlands have been lost in this process.

The example of the Upper Rhine

The number of floodplains in the Upper Rhine between Basle and Karlsruhe has declined by 87 % since the mid-19th century owing to large-scale channelisation. All in all, the total area of floodplains on the Upper Rhine has decreased by over 80 % according to a report published in 2009. Channelisation has shortened the length of the Upper Rhine by about 82 kilometres and the Lower Rhine by about 23 kilometres, accelerating discharge and increasing discharge volumes over time. As a result, the travel time of a flood wave on the Rhine from Basel to Maxau (Karlsruhe) has been cut from 64 to 23 hours.

Only 21% of the watercourses in Germany are classified as unaltered or moderately altered.

The densification of built-up areas and rising property prices have increased the damage that could be caused in flood-prone areas.

It can be assumed that the changing climate will make flooding and heavy rain accompanied by local flooding more frequent. Flood damage needs to be prevented by consistently designating flood areas, reclaiming floodplains by relocating dikes farther back from rivers, and not building on these areas.

b) Drinking water supply

About 70% of drinking water in Germany comes from groundwater and springs. In order to secure drinking water supply, groundwater must be protected from adverse impacts and pollution. Woodlands for example play an important role in this respect as both a filter medium and by storing water.

The technical infrastructure of the public water supply, which is largely the responsibility of public utilities, ensures that drinking water is reliably available in sufficient quantity and quality wherever and whenever it is needed. The quality of drinking water must meet the standards laid down in the Drinking Water Regulations.

Water consumption and use

In 2007, more than 81.6 million inhabitants in Germany were supplied with drinking water. This corresponds to a connection rate of about 99%, meaning nearly all households were connected to the distribution system of a public water utility. The per capita consumption of potable water decreased from 1990 to 2007 by 25 litres to 122 litres per day. This was due to changing consumer behaviour and the use of water-saving appliances and fixtures.

To cope with emergencies (as defined by the Emergency Water Control Act), large cities and metropolitan areas have more than 5,200 self-sufficient emergency drinking water wells which can supply over 19 million people with 15 litres of water each per day simultaneously.

c) Sewage disposal and discharge into rivers and lakes

The improvement of water quality in Germany shows that great strides have been made in sanitation in recent decades. By discharging sewage and storm water into combined and separate sewers and subsequently treating sewage in centralised treatment plants, rivers and lakes have largely been spared from easily degradable organic matter and nutrient discharges from point sources.

Public sewage treatment plants

There are nearly 10,000 public sewage treatment plants in Germany. About 95% of the population is connected to public sewage treatment plants while some 3% process their sewage in small sewage treatment systems.

In 2007, 99.9% of the 10 billion m³ of sewage was treated biologically in treatment plants. About 98% of biologically treated sewage is subjected to additional purification: 99% undergoes nitrification, 97% denitrification, and in 93% phosphorus is selectively removed. About 90% of the phosphorus and 81% of the nitrogen accumulating are filtered out in this way at municipal sewage treatment plants.

Municipal sewage treatment technology will continue to be improved. This means in particular optimum nutrient reduction, and the integrated optimisation of wastewater systems involving the conditioning of partial streams for recirculation and the recovery of usable sewage constituents. This especially applies for example to the recycling of phosphate and the removal of micropollutants and trace elements.

Sewage plants have the possibility to save or even generate energy at each stage of the treatment process. Possibilities include power generation from biogas and digestate, using the thermal energy of sewage, and harnessing falling water in the system. In order to support the market penetration of this technology, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety has under its Environmental Innovation Programme joined up with the Environmental Protection Agency and the KfW banking group to encourage the development of energy-efficient sewage systems. Funding is provided for innovative projects to improve energy efficiency at sewage plants, to increase their internal energy production, and to recover sewage constituents.

d) Agriculture

Agricultural production in Germany is mainly supplied with water by rainfall and to a lesser extent irrigation. The amount of water extracted for farming in Germany is very low, and 90% of it is obtained using farmers' own equipment from groundwater and springs. However, this situation may alter as precipitation zones shift due to climate change.

Nevertheless, agriculture plays a central role in the regional water and water-based nutrient cycle owing to the use of land and cultivation ranging from intensive to extensive. Between 2003 and 2005, over 70% of all nitrogen and 50% of phosphorus inputs in surface water in Germany originated from diffuse agricultural sources. In 2007, the Fertiliser Regulations, which govern the use of fertiliser on farmland, were amended – and this is expected to result in further reductions to nutrient inputs.

The steady decrease in the overall level of pesticides in the groundwater is almost entirely due to declining levels of chemicals which have been banned for decades such as atrazine. By contrast, approved substances have been detected at constant levels in the groundwater for years. The situation is similar for surface water, especially streams in farming areas, where levels of certain substances are repeatedly found to exceed quality standards. Therefore, action still needs to be taken to reduce or even prevent residual pesticides in groundwater and surface water. Apart from spray drift and runoff from diffuse sources, one particularly important factor is point sources, such as when agricultural equipment is cleaned.

As well as the measures taken on the basis of the Water Framework Directive (see Section 3 below), other improvements are expected to be achieved by making additional changes to the legal framework, such as the national implementation of the EU Plant Protection Framework Directive and specific measures under the national action plan for the sustainable use of pesticides (e.g. hot spot management).

Statement from the Dialogue on Sustainability

“Regarding wastewater quality, much stronger product stewardship needs to be enshrined in law for manufacturers.”

e) Industry and business

Equipment which reduces or even eliminates wastewater is being robustly optimised in industry.

The amended Water Resources Act dated 31 July 2009 legislates for a system of sustainable water management which protects surface water as part of the ecosystem, the basis of human life, a habitat for animals and plants, and a usable commodity. The sustainable use of water also entails preventing the release of pollutants by industrial plants. For this purpose the Federal Government is drawing up regulations imposing uniform standards on plants under which the operator will have to ensure that tanks containing water-polluting substances remain watertight throughout the plant's operating period, that any leaks are quickly and reliably identified, and that any substances released cannot escape. As well as supporting water conservation, these requirements will prevent the loss of valuable production resources and preclude usually expensive environmental clean-up measures.

In the industrial sector, nuclear and coal power stations have the highest water demand. In 2007, more than two thirds (19 billion m³) of total industrial water consumption (about 27 billion m³) – mostly from surface water – was used to cool plants generating electricity and heat.

The discharge of heated cooling water from power plants into surface water has a direct impact on nearby aquatic life. Moreover, other downstream water uses may also be affected. As air temperatures rise in connection with climate change, so too will the temperature of surface water. Therefore, the development and application of advanced cooling technology in conventional power generation is very important.

f) Hydropower

In 2010, approximately 20.6 TWh (terawatt hours) of electricity was generated by hydropower in Germany, equating to about 3.4% of the German electricity supply. Among renewables, hydropower comes third with a share of 19.9%, eclipsed only by wind power (36.5%) and total biomass (32.3%). There are currently about 7,400 hydropower plants in Germany, some 400 of which have an installed

capacity exceeding 1 MW. The usable potential of hydropower in Germany is conservatively estimated to be about 25 TWh/a in the long term, about 82 % of which has been tapped.

Although clean and climate-friendly, hydropower also has some snags. The structural facilities impair the passability of water bodies. Whenever hydropower plants are modernised, therefore, the structures and above all operation must be modified wherever possible to improve the ecological balance in the water and the adjacent terrestrial ecosystems and wetlands. This can best be achieved by re-establishing passability by means of sufficient minimum water discharge and equipment for safely keeping fish out of the turbine.

g) Shipping

In 2010, a total of 229.6 million tonnes of goods was transported on inland waterways in Germany and 272.9 million tonnes by marine shipping. Inland shipping accounted for 10% of the modal split of the various modes of transport while marine shipping was responsible for 7.1 %.

Inland and maritime shipping are especially safe, eco-friendly and climate-friendly forms of transport. Even so, pollutant emissions and the use of rivers as waterways impact on human beings and the environment.

Releases of pollutants into the environment are, however, being increasingly reduced by gradually raising emission limits, quality requirements for fuels and the efficiency of ships.

Solutions introduced by the Federal Government for the sustainable use of Federal waterways are increasingly focusing on drawing up and implementing measures to improve the structure of water courses and in particular to restore ecological continuity at barrages.

h) Leisure

Rivers, lakes and the coast have high recreational value, leading to the varied intensive use of water and related facilities (e.g. campsites, jetties, marinas and swimming areas). This gives rise to opportuni-

ties for locals to identify with their lakes and rivers – but also creates potential for conflict in regard to water and nature conservation. Many leisure activities impair the habitats of animals and plants in and around water, e.g. by causing noise, waves and pollution.

Swimming areas at lakes and rivers and along the coasts of the North Sea and the Baltic are busy in the summer months. Ensuring the good quality of all bathing water in the EU by 2015 is the aim of the new EU Bathing Water Directive, which has been applied in Germany since 2008.

Bathing water quality

To protect swimmers, every area used for bathing in the EU is monitored at regular intervals during the bathing season. In addition, bathing water profiles had to be drawn up by 2011, each supplemented with information about any management measures required. This system of active water management is supported by public information and involvement.

In the 2009 bathing season, 99% of the 2,279 bathing waters in Germany that were monitored were found to meet the quality standards of the EU Bathing Water Directive.

Pathogens entering bathing water from sewage discharge or runoff from agricultural land can cause illness, including fever, vomiting and diarrhoea. In addition, increased phosphorus and nitrogen inputs from agriculture in summer may lead to the mass development of algae known as algal blooms. Another problematical phenomenon is cyanobacteria, which cause skin rash and sometimes even poisoning.

i) Use of the sea, coastal waters and coasts, and related impacts

The sea and coasts are subject to a variety of uses that can compete with both each other and protection interests. Particular mention should be made of the use of the sea as a “substance sink” in connection with the aquatic and atmospheric transport of substances as well as fishing, marine shipping, marine mining (e.g. for oil, gas, sand or gravel), oil and gas pipelines, electric and telecommunication cables, and tourism and leisure activities.

In addition there are new uses such as offshore wind power. The first two wind farms off the German coast were installed in 2010 and supply power to the German grid. Planning permission has been awarded for the construction and operation of a total of 30 wind farms in the North Sea and the Baltic. And this entails installing a corresponding network infrastructure. The Renewable Energy Sources Act (EEG) supports the approach of keeping marine protected areas largely free of wind turbines by cancelling the feed-in tariff for offshore wind turbines at marine protected areas for which planning permission was granted after 1st January 2005.

In addition to the impact arising from the above mentioned uses, increasing underwater noise caused by ships' propulsion systems, drilling rigs, seismic tests, military manoeuvres, dredging, and construction activities all impact on marine species, particularly marine mammals, in a way which has not yet been studied in great detail.

To counter the increasing impact on biodiversity in the North Sea and the Baltic in connection with climate change, in 2004 Germany designated a total of ten NATURA 2000 marine protected areas (four in the North Sea and six in the Baltic Sea) and is setting new fishing rules for them. Moreover, Germany has accorded top priority to the sustainability principle in the debate concerning the reorientation of the EU's Common Fisheries Policy.

With regard to inputs of substances, ground-breaking decisions were taken by the countries bordering on the North Sea and the Baltic in the 1980s and 1990s. At the 5th International North Sea Conference in 2002, it was found that the agreed reduction targets for most of the 36 pollutants listed (including 7 heavy metals and 16 pesticides) had already been reached that year.

The MARPOL Convention for the Prevention of Pollution from Ships makes a significant contribution to protecting the marine environment. In the continued development of these regulations, Germany has successfully campaigned for the convention to be expanded to include ship waste and discharge rules for sewage from ships.

3. Strategic and integrated approaches at EU level to sustainably combine use and protection

Surface water and water catchment areas must be seen in a transboundary context. Therefore, a series of uniform regulations has been developed at the level of the EU. In particular, the EU Water Framework Directive (WFD) and the EU Marine Strategy Framework Directive (MSFD) are geared towards the principles of sustainability and integrated management, and take an ecosystem approach. This requires the integration of all policy areas (such as economic, chemical, agricultural, fishing and transport policy) which affect surface water and marine ecosystems.

Regarding the WFD, the *Länder* are mainly responsible for implementing these requirements. Regarding the MSFD, responsibility is shared equally by the Federal Government and the *Länder*. International cooperation is also required under the WFD for example in transboundary river basins in several international river basin commissions such as for the Rhine and the Danube.

These guidelines are supplemented by the EU Flood Risk Management Directive (EU FRMD), which aims to reduce the risks and adverse consequences of flooding to people, property and the environment.

Water Framework Directive (WFD)

The WFD takes an integrated approach to management. It includes all types of bodies of water, such as rivers, lakes, river estuaries, coastal waters and groundwater. It provides for each stretch of water to be managed with respect to river catchment areas, i. e. from source to mouth. Common goals have been agreed in 2000: Surface water – rivers, lakes, etc. – are to achieve a good ecological and chemical status by 2015. Groundwater is expected to reach a good status in terms of quantity and chemical quality by 2015. The directive takes local circumstances into account by allowing derogations and deadline extensions.

The first assessment of water status under the WFD made in 2008 revealed that the areas in Germany where action needs to be taken are the improvement of surface water structures and reducing nonpoint source pollution. By the end of 2009, therefore, the *Länder* submitted management plans and action programmes for the river basins, including trans-

boundary ones. In many cases, extensions are necessary to achieve the objectives.

For the two main areas, the following can be concluded (as far as the Federal Government is responsible):

→ The Federal Government is responsible for the preservation or restoration of ecological continuity at the dams it has built or operates (i. e. ensuring that they can be passed by migratory fish) in Federal waterways, and as the owner of Federal waterways is also responsible for their management as water resources. For this purpose, the Federal Ministry for Transport, Building and Urban Development has drawn up appropriate investigation and implementation programmes for its areas of jurisdiction.

Passability of large rivers for migratory fish

To maintain, improve or restore ecological continuity, extensive research and implementation measures are to be carried out by 2027 to enable the uninterrupted migration of aquatic organisms in Federal waterways. Many waterways are key corridors for migratory fish and must be made passable again where this is necessary to achieve the objectives of the WFD 2000.

Supporting and strengthening biodiversity in rivers, wetlands and estuaries as part of the water resource management of Federal waterways

Under its water management framework, the Federal Ministry for Transport, Building and Urban Affairs has highlighted the responsibilities and scope for action of the Federal Government's Waterways and Shipping Administration in order to ecologically enhance the waterways as habitats and at the same time to develop waterways as eco-friendly means of transport.

→ With regard to reducing nonpoint source pollution, the Federal Government must in particular

- continue to consistently execute the Fertiliser Regulations together with the *Länder* as an important tool for implementing the EU Nitrates Directive to reduce diffuse pollution from agriculture. The strict application of erosion control schemes under the Direct Support Scheme Obligation Regulations will also help achieve this goal;

- campaign for the implementation of the WFD to become further established as a component of the EU's rural development and support policy within the development of the EU's Common Agricultural Policy. This includes for instance the use of agri-environmental programmes to further reduce nitrogen and nitrate inputs and to meet ammonia emission limits (NEC Directive);
- single-mindedly implement the EU Plant Protection Framework Directive – especially Articles 11 and 12, in which the protection of water resources is explicitly addressed – and to pay adequate attention to water conservation as part of the national action plan for the sustainable use of pesticides. When authorising pesticides under Regulation (EC) No. 1107/2009 concerning the placing of plant protection products on the market, the Federal Government will ensure that the existing level of water protection is maintained.

EU Marine Strategy Framework Directive (MSFD)

In October 2005, the European Commission tabled a “Thematic Strategy for the Protection and Conservation of the Marine Environment”. The aim of the strategy is to draw up a uniform, comprehensive marine conservation policy applicable throughout Europe.

The thematic strategy, together with the MSFD, makes up the “environmental pillar” of the IMP (European Integrated Maritime Policy). The central aim of the MSFD is to achieve or maintain a “good environmental status in the marine environment” by 2020.

“Good status of the marine environment”

This term is defined as the environmental status of marine waters where these provide ecologically diverse and dynamic oceans and seas which are clean, healthy and productive within their intrinsic conditions, and where the use of the marine environment is at a level that is sustainable ... This also means that the total pollution of the oceans due to human activities is limited to a level that is consistent with achieving good status; moreover, the capacity of marine ecosystems to react to changes caused by humans must not be impaired. At the same time, the sustainable use of marine goods and services today and by future generations must be enabled (ecosystem approach).

The Directive aims to prevent adverse effects on the marine ecology and the marine environment, including through measures to

- maintain biodiversity, including by means of ecosystem-friendly and sustainable fishing as well as measures to prevent the introduction of non-native species;
- reduce nutrient and pollutant inputs;
- limit harmful waste in the sea;
- ensure that the input of energy (e. g. in the form of sound and heat) is minimised.

The legally binding targets of the MSFD are supported by regional cooperation structures for the Baltic and the North-East Atlantic (including the North Sea) by for example policy objectives. They also address the major threats to marine ecosystems (including nutrient inputs and the impairment of biodiversity). If practicable, the results obtained there and under other directives (e. g. the WFD, Habitats Directive, Birds Directive) are to be used for the implementation of the MSFD.

EU Flood Risk Management Directive (FRMD)

In order to minimise future flood damage, viable, long-term national and international strategies at the level of river basins are to be developed. Water management authorities no longer only evaluate the danger of a flood event but link the probability of such an event occurring to the anticipated damage. This enables the measures taken to be more focused.

The FRMD, which deals with the assessment and management of flood risks, has been in force in European member states since November 2007 and takes a three-pronged approach:

1. A preliminary assessment of the flood risk at the level of river basins was to be carried out by the end of 2011. For this purpose, the member states used information about past flood events as well as available knowledge about the effects of climate change on the probability of flooding.

2. By the end of 2013 they will develop flood hazard and flood risk maps, which will contribute significantly to improving flood awareness.
3. Flood risk management plans are to be developed by 2015. They are to deal with flooding for a specific river basin – from analysis of the most recent flood event and follow-up to the development of flood protection and precautionary measures and any disaster management necessary in the event of future flooding. The focus of the plans is to be on flood prevention, protection and preparedness.

4. Other challenges and Federal Government initiatives

Although the large investments over the last twenty years in for example the sewage infrastructure and the renaturation of water courses have brought about significant improvements to water quality in Germany, the protection of rivers and lakes remains an on-going task. Germany's circumstances – its geographical location in the heart of Europe, its high population density and its industrialisation – continue to require special efforts in water conservation, including in response to looming climate change, demographic change and new technological developments.

Demographic change and sanitation

The population of Germany is set to significantly decline in the coming years.

Since the efficiency of the sewage infrastructure depends largely on the population density and per capita water consumption, reductions can lead to disposal problems of an operational nature. For this reason, in addition to conventional measures of infrastructure adaptation, new technical approaches to sanitation are under consideration for underdeveloped rural areas in order to maintain sewage treatment in sparsely populated areas. Organisational adaptation strategies (innovative organisational models and new system strategies combined with decentralised management concepts) will have to be developed, too.

Water in the framework programme “Research for Sustainable Development” (FONA)

From a global perspective in particular, sustainable water management is of great importance for the future of many people. Therefore, the Federal Ministry for Education and Research has included the issue of water in the framework programme “Research for Sustainable Development” (FONA). In the section devoted to sustainable water management, specific funding guidelines are being devised in a participatory process for five areas (water and energy, food, health, the environment, and water in urban areas). Innovative solutions resulting from collaborative research projects in these fields are the key to meeting future challenges for a sustainable water supply and sanitation.

Current areas of research funding

- Protecting river basins as a special habitat and sustainable land use without impairing rivers or lakes
- Protecting aquatic biodiversity while simultaneously using the water for the population
- Establishing cross-cutting approaches to regional water management
- Creating new types of water infrastructures to adapt to changing conditions
- Dealing with extreme events such as floods and droughts in different natural and built environments
- Developing solutions for the implementation of legal requirements in the development of water management.

One goal of funding for water management is the accelerated transfer of fundamental findings from academic research to competitive industrial products and water management processes. SMEs are a mainstay in technological and economic innovation, and they can receive accelerated support in a wide range of areas including sustainable water management under the established funding programme “Innovative SMEs: Resource and Energy Efficiency”. Alongside the development of sustainable technologies, services and strategies, the Federal Government funds supplementary measures and training (including in the technical sphere) as well as decision support systems.

Many of these areas are also in demand in partner countries’ internationalisation strategies while some are already supported by the Federal Ministry for Education and Research’s “Integrated Water Resource Management” research programme as part of regional collaborative research projects.

Hydrological research into adaptation to climate change

Federal hydrological institutes are studying the cross-sectoral and inter-regional effects of climate change on water availability and the status of water. As a result of this research, proposals are expected for adaptation options based on the sustainability objectives.

In accordance with these objectives, the Federal Ministry for Transport, Building and Urban Affairs has launched the collaborative research program “KLIWAS – Impacts of Climate Change on Waterways and Shipping – Developing Adaptation Options” with the close involvement of the Federal Institute of Hydrology, the German Meteorological Service, the Federal Institute of Hydraulic Engineering and the Federal Maritime and Hydrographic Agency. KLIWAS is working to draw up scientific principles in 31 projects between 2009 until 2013 in order to assess the possible effects of climate change on the navigable waterways in Germany and prepare informed decisions.

5. International responsibility

a) Background and challenges

Water availability and access as a globally important issue

Only 3.5% of the world’s water is freshwater. And just 1% of this can be used directly, since most freshwater is locked up in ice and glaciers. Moreover, the usable water resources on earth are distributed extremely unevenly. Arid regions often contain areas with limited water availability and a high population, resulting in frequent water shortages. In some countries in North Africa and the Middle East, the average amount of water available annually per capita is just 500 m³, compared to more than 100,000 m³ in countries like Canada.

Water availability and access

Especially in countries with a significant social divide or sharp ethnic divisions, it is important to distinguish between the physical availability (i. e. presence) of water resulting from meteorological, climatic and other natural conditions, and personal or social access to freshwater and drinking water. Access may be restricted for certain individuals or sections of the population as a result of an inadequate supply infrastructure, a lack of financial or legal opportunities, or social discrimination or exclusion.

In many regions of the world, water – a basis for human life and economic activity – is in limited supply. However, if the natural water cycle continues to function and the available water resources, especially the groundwater, are not overused, this resource can renew itself. The degradation or destruction of aquatic and terrestrial ecosystems (including areas used for agriculture or forestry) will eventually affect the available water resources, since these ecosystems perform important functions in the water balance such as water storage and erosion control.

The usable freshwater resources are also threatened by pollution, which may make it impossible for them to be used as drinking water or in food production without elaborate treatment. This situation will be further exacerbated by climate change, especially in regions already threatened by water shortages since the natural water supply will be reduced while usage will intensify (e. g. owing to increased agricultural irrigation).

The Millennium Development Goals

In 2011, about 900 million people worldwide did not have sufficient access to clean drinking water. Nevertheless, a great deal has in fact already been achieved, with about 1.6 billion people having been given access to drinking water since 1990. The United Nations therefore expects that the goal formulated at the Millennium Summit in 2000 of halving the number of people without adequate access to safe drinking water by 2015 can be achieved. However, given the rapidly growing world population, additional efforts will be required after 2015 if the number of people without access to drinking water is to be significantly reduced further.

Problems in the provision of sanitation are far worse, the number of people with no access currently totalling some 2.6 billion. The United Nations does not expect that the target agreed at the Conference on Environment and Development in Johannesburg in 2002 of halving the number of people with no access to sanitation by 2015 will be attained. In a resolution supported by all the EU's member -states, the 65th United Nations General Assembly therefore called for efforts to be intensified in the remaining years until 2015 in a "5-Year Drive on Sustainable Sanitation" and for improved access to basic sanitation as well as the mobilisation of the necessary funding to be made a higher priority in countries' national development strategies.

The vital importance of improving drinking water supply and sanitation is apparent when we bear in mind how this can help achieve the other Millennium Development Goals, especially the reduction of poverty and combating disease. Since poverty and health risks often exist in a vicious circle, action is urgently required. On a world scale, water-related diseases (especially diarrheal diseases) have an enormous impact, causing for example approximately 84% of the cases of illness among children under fourteen according to the World Health Organisation. The United Nations estimates that improving access to drinking water and sanitation would by itself cut child mortality by 2.2 million every year.

Against this background, it is logical that the United Nations has declared access to clean drinking water and basic sanitation to be a human right. The Federal Government had campaigned for this move for years, especially on the Human Rights Council, and welcomed the political recognition of this human right by the United Nations General Assembly on 28 July 2010 and the UN Human Rights Council on 30 September 2010. The Federal Government will canvass for the work of the Human Rights Council to implement this human right to be continued. In its development co-operation with partner countries, it will also continue to contribute to the practical implementation of the human right to water and sanitation.

Population growth, the expansion and intensification of agriculture, and economic development have resulted in the increased pollution of water with nutrients and pollutants in many parts of the world, despite significant progress in some regions (e. g. Europe). In 2010, the UN Secretary-General's Advi-

sory Board on Water and Sanitation submitted the Hashimoto Action Plan II, in which it underlined the importance of collecting and treating wastewater as a requirement for the protection of aquatic ecosystems, the reuse of treated wastewater, and the recovery of nutrients and raw materials.

Transboundary water cooperation

With more than 260 transboundary river basins, lakes and aquifers on earth, the management of water resources and bodies of water would be inconceivable without transboundary cooperation. A total of 145 countries own sizeable areas of transboundary river basins. This means that transboundary usage conflicts may occur, preventing optimum use. Transboundary water resources can only be effectively protected if the countries bordering on them work together within a system of integrated water resource management. The joint management of transboundary water resources may also initiate deeper cross-border cooperation. In addition to protecting natural resources, encouraging transboundary water cooperation is also intended to help combat poverty and to contribute to crisis management and conflict prevention.

The global water crisis – data and information aspects

Water management can only be adapted to changing circumstances if accurate information is available. However, current information on water quality and availability and the accuracy of projections based on these parameters provide an insufficiently reliable basis for political and social decisions, especially when investment issues are involved.

Various data centres for the water sector exist across the world. Two of the foremost ones are based in Germany under the auspices of the Federal Ministry for Transport, Building and Urban Affairs. One is the Global Runoff Data Centre (GRDC), which is affiliated to the Federal Institute of Hydrology, and collects and analyses discharge data. The GRDC is a contribution by the Federal Republic of Germany to the World Climate Programme – Water set up by the WMO (the World Meteorological Organization) and UNESCO. Meanwhile, the Global Precipitation Climatological Centre run by the German Meteorologi-

cal Service on behalf of the WMO provides global precipitation analyses for climate monitoring and research. The centre is a German contribution to the World Climate Research Programme and the Global Climate Observing System.

The data produced in these centres is made available in a workable form for scientific appraisals. Furthermore, the secretariat working at the Federal Institute of Hydrology is to be turned into an International Centre for Water Resources and Global Change under the auspices of UNESCO. The centre will document and analyse changes in global water availability and quality. This will make a major contribution to the successful work of the World Water Assessment programme and UN-Water, the initiative set up to help states achieve objectives in the water sector. By doing so, Germany will also be supporting countries and regions all over the world in their efforts to develop and adapt to a changing environment in accordance with the Millennium Development Goals.

Water footprint

A country's "external water footprint" (i. e. the volume of water used in other countries to produce goods and services imported and consumed by the inhabitants of the country) has been postulated as an additional measure of sustainability regarding the use of water resources. One example is the quantities of water bound up in agricultural imports and which were used in their cultivation in producer countries. According to calculations by the WWF in 2009, Germany's annual external water footprint totals around 79.5 billion m³. Most of Germany's virtual water is imported in the form of agricultural commodities from Brazil, the Ivory Coast and France.

The concept of the water footprint makes it plain that the international exchange of goods and services entails the substantial use of water resources. It highlights trade routes and the extent of "virtual water flows". This can help develop options for the sustainable use of water resources in regions where water use due to the export of virtual water leads to negative environmental and social repercussions.

German development policy is working for instance with intensive water users from the beverage and flower industries to raise awareness of water consumption by determining and revealing the water footprint so that it can be reduced, and to defuse remaining conflicts of use. In this partnership, risks are jointly identified and solutions worked out in a process of dialogue with other key public, private and civil society actors.

b) Initiatives by the Federal Government

The Federal Government is working for sustainable water resource management in various international fields. Apart from the initiatives and data centres mentioned above, particular mention should be made of the following activities:

aa) Water management in development policy

Sustainable water resources management and water and sanitation services are a central focus of German development policy. In these areas, Germany is one of the world's top three bilateral donors – and the biggest in Africa.

Development policy targets all levels. Internationally, for example in the bodies of the United Nations, Germany and its partners define goals and promising approaches. One example is the 5-Year Drive on Sustainable Sanitation adopted by the General Assembly in 2010. At the regional level, such as on the Nile or the Mekong, German development policy supports the shared use of transboundary rivers and lakes. And nationally, Germany's development cooperation helps partners in more than sixty countries to implement their right to water and sanitation and to protect their water resources. In 2005 for example, 440 water kiosks were built in Zambia with German support which now supply 600,000 people with clean, affordable drinking water. Mainly located in new, unplanned neighbourhoods in the suburbs, they can be used by the poorest sections of society. Throughout the world, the projects in the water sector currently underway under German development cooperation are estimated to benefit some 80 million people.

In addition to bilateral cooperation, the Federal Ministry for Economic Cooperation and Development works closely together with international initiatives and gives them financial support. Special mention should be made of Sanitation and Water for All, an association of governments from developed and developing countries, the United Nations and civil society, whose aim is to achieve the Millennium Development Goals in water and sanitation. The development ministry joined this initiative in 2010. It also supports the Global Water Partnership, which campaigns for the sustainable use of water resources, the Water Integrity Network, which fights against corruption in the water sector, and the United Nations Joint Monitoring Programme, which measures progress in the water sector.

Together with the Federal Ministry of Education and Research, the development ministry supports the UN-Water Decade Programme on Capacity Development based in Bonn – a joint programme bringing together all the UN agencies active in the water sector. The UNW-DPC's aim is to contribute to capacity building in the water sector.

bb) Bonn2011 Conference – The Water, Energy and Food Security Nexus – Solutions for the Green Economy

Apart from developing and improving the institutional framework for stability (global governance), the UN Conference on Sustainable Development to be held in June 2012 in Brazil (Rio+20) will primarily tackle the question of how the development of a green economy in the context of sustainable development and poverty reduction can be given new momentum. In order to provide a preliminary examination of this issue and to provide stimulus for Rio+20, from 16 – 18 November 2011 Germany hosted an international conference entitled “The Water, Energy and Food Security Nexus – Solutions for the Green Economy” (www.water-energy-food.org; see Chapter K.).

cc) Innovation and networking of expertise

Sustainable water policy must also rely on innovation. Germany has many years' experience in water management in both the public and private sector, a dense network of expert university and non-university research institutes, and a wealth of powerful companies (especially mid-sized companies) in the water sector. Given the immense global problems in the water sector, there are outstanding opportunities for research institutions and enterprises on international markets as long as they can jointly manage to offer innovative concepts and technologies which are also adapted to local needs. Tapping these markets by themselves is difficult for many companies and research centres. Realising this, in 2008 commercial companies, trade associations and research institutes in the German water industry joined forces to found the German Water Partnership with substantial support from a number of Federal ministries.

Bringing together about 300 private and public companies, engineering firms, research centres, professional associations and institutions in and related to the German water industry, this partnership has already grown into an internationally recognised brand. This close networking between research, production and engineering services coupled with the support of trade organisations and government helps to focus the enormous, diverse potential of the German water industry and to deploy it in international competition (www.german-water-partnership.com).

6. Conclusion

In Germany, the water sector – the public water supply and sewage disposal, the protection of lakes, rivers and coastal waters, as well as inland flood protection – has risen to a high or even very high standard. Previously taken for granted, these public services now need to be permanently safeguarded in order to preserve the quality of life. Even maintaining the current standard will take continuous hard work.

Sustainable water policy is a cross-cutting issue. Aspects of water policy must therefore be considered more than before in other policy areas. The complex demands on surface and subterranean water, including the seas and oceans, combined with the idea that bodies of water

must always be preserved regardless of their practical use, can ultimately only be sustainably met by means of extensive cooperation in usage and protection by all direct and indirect users and stakeholders.

After all, the implementation of goals which are desirable in other policy areas might conflict with the overarching goal of achieving sustainable water management. To meet these challenges, water management depends on close cooperation with other stakeholders such as local and regional planning, the energy sector, transport and agriculture, as well as the general public. The same applies to cooperation between Federal ministries when dealing with the overall issue of water.

Clean water is taken for granted in Germany. Yet for billions of people around the world – even in parts of Europe – a secure water supply and sanitation as part of the public services is still a dream. Inadequate access to a reliable water supply and sanitation and the lack of adequate sewage treatment are still the core causes of poverty, malnutrition and disease in many places. Climate change threatens to exacerbate the situation. At the same time, there is a risk that within the process of globalisation, water-intensive and water-polluting production plants may be relocated to developing and emerging countries, aggravating the situation there even more. Intensive efforts in development cooperation alone will not suffice. What is required are clear international rules to prevent the exploitation of water resources in developing countries under the pressure of international competition, such as taking water issues into account when formulating sustainability criteria. Furthermore, a stable, trustworthy international financial system is essential in order to finance the infrastructure investments required worldwide in the water sector.

E Current Reporting: Sustainability in Individual Policy Areas

The Federal Government believes that effectiveness and transparency grow when sustainability strategies at different levels are linked whenever possible. As a result, the themes discussed in the following chapter are aligned with those of the European Sustainable Development Strategy of 2006 (see also Chapter J. – Sustainability in Europe), insofar as they have not already been discussed as key themes, as is the case for climate and energy. The aim is to create a summary and not to provide a comprehensive report of the Federal Government's variety of activities in these areas.

I. Sustainable and stable financial policy

The current discussion over the causes and effects of the 2008/2009 financial market crisis and the consequences of the debt crises in the euro area member states have made all stakeholders vividly aware of the significance of a financial policy based on sustainability and stability. There is also a need to consider far-reaching cause-and-effect relationships, to safeguard the state's ability to function in the long term and to set foresighted policy.

1. Exposing the need for action

Since 2005, the Federal Ministry of Finance has been reporting once per legislative period on the stability of public finances to ensure that any future challenges can be recognised early and be incorporated promptly into policy decisions. The effects of demographic development on state spending and the risks resulting from the present debt level in particular play a central role in the long-term model calculations in these reports. Other risks to public finances are described either in the short and medium-term projections on which the models are based, or cannot be sensibly quantified at present because of the long duration.

“Sustainable policy, as we understand it, requires our budgetary and financial policies to be aligned to social reality and to the political challenges. The foremost of these is demographic change, which will limit our medium to long-term growth opportunities.”

Federal Finance Minister Dr Wolfgang Schäuble in his speech presenting the executive draft of the Federal Budget 2012 and the Financial Plan 2011 to 2015 on 6 September 2011 in the German Bundestag

The results of the model calculations are not forecasts, but they do show the development of state finances assuming that previous policy remains unaltered. Thus, the report equates to an early warning mechanism exposing the need for action.

The third report on the stability of public finances considers the period from 2010 to 2060 and was published in autumn 2011. The results of the current report show that the need for action to ensure that government finances are sound has increased in comparison to the last sustainability report of 2008. Whilst the “sustainability gap” in 2008 was still between 0 and 2.5% of GDP, this has now increased to 1 to 4% of GDP. However, when this was updated between the reports in 2010 it was found that the gap then had even reached 2 to 5% as the result of the financial and economic crisis. This tangible reduction is not only due to the economic recovery that has since begun to take effect, but also to the success of a strict policy of consolidation that must be continued. Germany can meet the long-term challenges if the debt rule is maintained.

The report lists significant steps that have previously been achieved and are contributing to the improved sustainability of public finances. The fundamental reform of statutory health insurance, for example, which came into effect in 2011, has made a substantial contribution toward securing long-term financial viability in the particularly “demographically susceptible” area of social security. As important drivers of

Germany's long-term economic strength education and research have been excluded from cuts and systematically increased. In Germany 6.3 million women of working age are not employed; therefore, the Federal Government and the *Länder* are pursuing comprehensive measures to breakdown gender-related obstacles to employment. As the field of migration policy also affords good opportunities to increase the long-term sustainability of public finances, the Federal Government is to increase the appeal of Germany as a migration destination for highly skilled workers by reorganising immigration law. An additional focus is to increase the inclusion of older people in the labour market. The decision in Germany to increase the retirement age for the statutory old-age pension from the current 65 years to 67 by 2029 is an important component of this.

However, there is no reason to be content with what has been achieved thus far. The Sustainability Report emphasises the need for continual and reliable compliance with the debt rule enshrined in the Basic Law and, at the same time, for continual improvement to the conditions for growth and employment in Germany.

2. National debt rule

The amendments to Articles 109 and 115 of the Basic Law enshrined new borrowing limits at the Federal level and for the *Länder* and created a mandatory national Stability Pact. The "debt brake" plays an essential role in strengthening trust in the long-term stability of public finances and safeguarding the Federal Government's ability to act in the long term.

The new regulations have been in effect since the 2011 fiscal year. The debt rule specifically stipulates that starting in 2010 the Federal Government must reduce the structural deficit in equal stages to a maximum of 0.35% of gross domestic product by 2016 (probably approximately EUR 10 billion) and then subsequently must not exceed this limit. The structural deficits of the *Länder* must be reduced to zero by 2020. Limiting new borrowing at the Federal level will also have a tangible and lasting effect on the national debt ratio in the medium term.

The new debt brake also stipulates controls on actual borrowing in budget execution at the Federal level. A "control" or "adjustment" account is being set up for this purpose. Any deviations from the permitted bor-

rowing will be recorded and balanced at the end of each fiscal year. If borrowing has been below limit within the respective fiscal year then this will result in a credit, whilst an excess would lead to a debit on the control account. If the net debits on the control account exceed a set threshold, then these must be reduced.

Exceptions are permitted only in the event of natural catastrophes or extraordinary emergencies (only possible with an absolute majority vote in the German Bundestag and a binding repayment plan). The control limit of Article 115 Basic Law may no longer be exceeded by setting up separate assets with their own credit authorisation.

To achieve the consolidation required, in its medium-term financial planning the Federal Government agreed a future package for the years up to 2014, which includes both reduced expenditure and increased revenue of approximately EUR 80 billion. Thus, government purchases can be limited, incentives can be increased and the priority of investments in education, research and development can be maintained. This structural consolidation strengthens the growth potential.

3. Drawing lessons from the financial market crisis

The financial market crisis, which first flared up in 2007 on the US market for bad credit mortgages (the sub-prime crisis), has since led to massive loan revaluations and to the insolvency of financial institutions. This crisis also reached the other industrial countries through the international financial markets and triggered a worldwide financial and economic crisis. This is partly why the group of the 19 most important industrial and emerging nations and the EU (G20) have been meeting regularly at the heads of state or government level since the end of 2008. These G20 summits – most recently under French chairmanship in Cannes, France – have resulted in an array of stimuli for the reform of the international financial and economic system.

The causes of the crisis are diverse: the US sub-prime crisis originated in the US Federal Reserve's low interest policy, which favoured borrowing in connection with insufficient financial market oversight. This caused asset prices, particularly of property, to rise sharply, which in turn led to further borrowing. At the same time, the financial products, e.g. the loan securitisations used on the international financial markets to refinance

the US mortgages, became ever more complex and ever less transparent, so that they proved to be uncontrollable accelerants for the declining US property prices and only loosely regulated financial markets. New, highly complex securitised products were characterised by information asymmetries, i. e. potential buyers knew less about the product than the vendors. The banks relied too heavily on the judgement of rating agencies when evaluating these highly complex products.

Additional disincentives came from compensation schemes that rewarded risk appetite and placed too little weight on longer-term risks. Banks were holding less and less of their equity capital to cover their risky activities, which increased the return on the capital used, but at the same time also heavily increased their vulnerability to losses. In their drive for higher returns the supervising managers misjudged the risks. This was facilitated in turn by poor regulation, e. g., in 2006 a US bank was able to conduct more business off its balance sheet than actually on it. Furthermore, this was all played out on increasingly globalised financial markets.

The German economy has successfully mastered the challenges of the crisis with sound judgement and innovation. National measures undertaken in the context of the financial and economic crisis have also proven effective. However, it is undisputed that more reform is needed to restore trust.

Profit opportunities and liability risks are often mutually exclusive and, thus, infringe the basic principles of the market economy. Regulation, including for innovative financial products, was also inadequate. The aim of the Federal Government's reform agenda is to increase the resilience of the financial institutions and the whole financial system in terms of sustainability. More than 20 legislative initiatives for financial market reform have already been agreed at national and EU levels or are currently being implemented. Some are concerned with precautions, whilst others facilitate targeted interventions in a crisis.

At the suggestion of the Federal Government the Bundestag has, for example, introduced an array of measures, such as banning certain "short sales", i. e. selling German shares and euro area state debt securities that are not in the vendor's possession, and banning certain credit default swaps (CDS) on euro area state bonds without hedging. The Federal Government welcomes the fact that similar measures will most likely soon apply across the EU.

The legislation to introduce regulatory requirements on compensation schemes for credit institutions and insurance companies means that these are now legally bound to introduce reasonable, transparent compensation schemes geared to sustainable development.

It was also a central lesson of the financial crisis that the institutions did not have sufficient equity capital at their disposal to cover the risks on their books. At their summit in Seoul, Korea, in November 2010, the G20 approved the new regulations on equity capital and liquidity for banking institutions (Basel III) created by the Basel Committee on Banking Supervision. Accordingly, the banks will have to hold far more equity capital in future, which must be of a higher quality, and they must create additional capital buffers to provide better cover for any losses. The Federal Government is committed to international implementation of these regulations.

Statement from the Dialogue on Sustainability

The 2008 governmental measures have proven effective. However, the toolkit, namely the purse, is empty with regard to taking further economic measures. My questions to the Federal Government would be:

What do you see as the cause of the latest market bubbles?

How will you avoid further bubbles?"

The Federal Government has initiated a change to the legal and institutional framework of system-relevant banks with the German Restructuring Act (RStrukG – Restruktuierungsgesetz), which should ensure that it can counter future crises with preventative measures and remain able to act. The Act includes a reorganisation process, which will support the banks in future as they take responsibility for their own restructuring and reorganisation, and grants the Federal Financial Supervisory Authority (BaFin) extended powers of intervention up to orderly liquidation. The funds required to continue system-relevant parts under a new legal entity in the event of orderly liquidation come from a restructuring fund, which is financed by contributions from the credit services sector based on services used. Public funds are protected. The restructuring fund is managed by the Federal Agency for Financial Market Stabilisation.

Additional measures

- **Strengthening financial market supervision:** since August 2009, improving the intervention options at times of crisis in accordance with the German Banking Act (KWG – Kreditwesengesetz) (including through higher equity capital for improper business organisation), and increasing professional requirements on oversight bodies for banks and insurance companies.
- **Amending the Banking and Capital Adequacy Directives and regulations on securitisation:** banking supervision law was greatly improved by the legislation to implement the amended Banking Directive and the amended Capital Adequacy Directive in 2010, which included regulations for securitisation and resecuritisation. These will be more transparent in future and the risks they give rise to must be covered by more equity capital.
- **Greater investor protection:** the legislation to strengthen investor protection and improve the functionality of the capital market imposes additional requirements on undertakings providing investment services to avoid negligent advice. In particular, a database is being set up at BaFin with compulsory registration for investment consultants, sales managers and compliance agents. In future, customers must be informed about the essential features of financial instruments using short and clear product information sheets. In addition, a minimum lock-up period for open-ended real estate funds and a winding-up procedure for real estate funds unable to raise the necessary funds for a prolonged period of time are being introduced. Finally, ownership transparency is being increased to prevent undetected “stalking” of companies. This came into force on 7 April 2011.
- **Strengthening investor protection in the grey capital market:** the draft legislation to modify the German Investment Intermediary and Investment Product Act (FinVermG – *Finanzanlagenvermittler- und Vermögensanlagenrecht*) will intensify regulation of asset investments on the open market (e.g. introduction of information leaflets). Stricter requirements and obligations to protect investors will apply to independent brokers, which will also be mandatory for asset consulting by undertakings providing investment services. Finally, the statutory periods of limitation for claims arising from the information given in a prospectus are being extended. The Act was passed in December 2011.

- **Better conditions for investment fund business:** the Act to implement the revised UCITS Directive (OGAW-IV Umsetzungsgesetz) will increase the efficiency of investment fund business and create attractive and competitive conditions for investment companies. Standardised EU-wide protection standards will be created for fund investors (e.g. introduction of a double-page sheet with essential investor information on the main features of the investment fund). The Act came into force on 1 July 2011.
- **Strengthening national financial market supervision:** the parliamentary groups of the government coalition partners agreed on 10 key points for reform of financial supervision in Germany in December 2010. The central element is consistent expansion of macroprudential supervision by the Bundesbank. An additional central element is improvement of microprudential supervision of credit and financial institutions by the Bundesbank and the BaFin. The parliamentary groups of the government coalition partners have asked the Federal Ministry of Finance to draft a bill based on the key elements.

Further important measures must be effected across Europe. **European financial market regulation** has been improved by the following measures:

- **Strengthening financial supervision in Europe:** a European System of Financial Supervision, or ESFS, was created on 1 January 2011, comprising the European Systemic Risk Board (ESRB), three European financial supervisory authorities in the banking, insurance and securities sector (EBA, EIOPA, ESMA), a joint committee of European supervisory authorities, plus the national supervisory authorities.
- **Expand and harmonise deposit guarantee schemes:** since 1 January 2011, customer’s bank deposits in the EU have been protected up to EUR 100 000 in the event of an institution’s insolvency. A reform of the EU deposit guarantee scheme directive is currently being discussed in the Council and the Parliament. This will improve the financial resources of the guarantee schemes and reduce the payout delay, among other things.
- **Regulation and oversight of rating agencies:** the Regulation on Credit Rating Agencies introduced in the EU on 7 December 2009 laid the foundation for the regulation, supervision and registration of credit rating agencies. Since 1 July 2011, responsibility for supervision of credit rating agencies has rested with ESMA (European Securities and Markets Authority).

- **Registration criteria for fund managers:** managers of alternative investment funds (including hedge funds and private equity funds) will face mandatory registration in future and will be subject to on-going supervision. The Alternative Investment Fund Managers Directive (AIFM) introduced in July 2011, must be transposed into national law within two years.
- **Regulatory capital requirements and risk management:** the regulatory capital requirements for risky transactions and for complex securitisation transactions are being increased. The banks must meet the new requirements by the end of 2011 at the latest.
- **Strengthening derivative markets:** derivative markets will be made more transparent and systemic risks decreased at the European level. According to the regulation proposed by the EU Commission in September 2010, it will be mandatory to execute OTC derivative contracts through central counterparties and to record such transactions in transaction registers. The proposed regulation is currently being debated by the European Parliament, the Council and the European Commission. The Federal Government is working towards a rapid conclusion to the discussions.

The global effects of the financial crisis have made very clear that effective countermeasures, as well as lasting removal of the causes to prevent a repeat of the crisis, must be coordinated at the international level. Even though it is apparent that countries and markets were affected to differing degrees and the economic situation and interests, e.g. of aspiring emerging countries and long-industrialised nations, are very different, important progress has been achieved over the past few months, particularly with regard to:

- **Systemically important institutions:** special importance attaches to the recommendations accepted by the G20 summit in Cannes for the SIFI Package to reduce the risks to financial market stability caused by global financial institutions substantially in future. This includes better capital adequacy to make the institutions more robust. Nevertheless, it is not possible to exclude the failure of a systemically important institution completely. Therefore, other internationally coordinated mechanisms are required that facilitate liquidation without jeopardising the entire system and without the injection of billions from the taxpayer.

- **Regulation of the shadow banking sector:** the work concerning the “shadow banking system” is also on a sound footing. Shadow banking refers to financial transactions (credit intermediation) that occur outside of banking regulations; this includes the activities of special purpose entities, money market funds and also hedge funds if they are involved in credit intermediation. There is a risk that the shadow banking sector will increase in significance again as the result of tightened banking regulations, if large numbers of investors continue to expect excessive returns. The Financial Stability Board (FSB) has produced proposals for a well-structured, internationally coordinated process to improve recording and monitoring of shadow banking activities. At the same time, it is developing working plans for the development of more specific regulatory recommendations for the second half of 2012, in cooperation with the Basel Committee on Banking Supervision and the International Organisation of Securities Commissions (IOSCO), such as indirect regulation of the interactions between traditional banks and the shadow banking sector, or direct regulation of the shadow banking system. The G20 Summit in Cannes explicitly supported these FSB proposals and plans.

One thing is certain: the system cannot “continue as before”. The regulatory principles of the social market economy must be strengthened and the ideal of sustainable development must be realised. Policy must create the framework conditions that enable companies to seize the opportunities afforded by new methods and innovations while also taking responsibility for their own actions.

The Federal Government is working at the European and international levels to strengthen the regulatory principles of the social market economy and to bring financial markets into alignment with the ideal of sustainable development.

4. Stabilising the euro area

More than four years after it occurred, it is clear that the financial crisis is still not over. What began as a sub-prime crisis and has developed into a global financial and economic crisis is now putting whole countries under pressure. The extensive financial assistance to stabilise financial institutions and overcome the economic crisis has also caused difficulties in the euro

area, particularly for countries that already had high levels of debt before the crisis. To ensure that this sovereign-debt crisis does not evolve into a crisis across the entire euro area and even into a crisis of the European Union itself, the Heads of State or Government have cooperated with the finance ministers of the euro area to develop a comprehensive strategy to stabilise and reform the European Economic and Monetary Union.

The Strategy comprises four groups of measures that address the weak points of the Economic and Monetary Union that were exposed by the sovereign-debt crisis, and which should ensure sustainable and lasting stability alongside an extensive package of reforms.

Four groups of measures

I. Stability through sound budgetary policies

The legislative package that took effect on 13 December 2011 to strengthen economic governance (the “Six Pack”) has significantly tightened up the Stability and Growth Pact, in order to reduce budget deficits and government debt more quickly and to prevent them in the future.

Specifically:

- **New sanctions:** debt reduction is mandatory and subject to sanctions. In the past, a deficit procedure, and ultimately sanctions, could only be initiated against a euro country if its ratio of government deficit to GDP was more than 3%. In future, there will also be consequences, if:
 - a balanced or close-to-balanced budget is not achieved as a medium-term goal;
 - a country’s total debt is too high. Member States with a ratio of government debt to GDP of more than 60% will be obligated to reduce the proportion of debt above this limit by 1/20 per year, until their debt is once again no more than 60% of GDP.
- **Earlier sanctions:** Under the provisions of the preventive arm of the Stability and Growth Pact (i.e. if the ratio of government deficit to GDP is less than or equal to 3%) a sanction mechanism has been introduced along with the new obligation of a balanced or close-to-balanced budget (medium-term goal) for euro countries such that if the necessary corrective financial policy measures are inadequately implemented, states must first pay an interest-bearing deposit in the amount of

0.2% of GDP. In the event of continued failure this is converted into a non-interest-bearing deposit and then into a non-refundable fine.

- **Faster sanctions:** the sanction mechanism in the corrective arm of the Stability and Growth Pact (if the ratio of government deficit to GDP is greater than 3% and/or debt reduction is insufficient) was reformed to the effect that sanctions will now be imposed much more quickly.
- **Quasi-automatic sanctions:** sanctions will be much harder to delay in future. In future, sanctions can only be rejected by a qualified majority of the euro area countries (reverse majority voting). This corresponds to “quasi-automation”.

II. Stability through sound economic policy

Europe’s competitive ability is being expanded through a common Growth Strategy and a pact for competitiveness (Euro Plus Pact). National economic policy will be coordinated at the European level in future by a new mechanism for monitoring and correcting macroeconomic imbalances and a European planning and reporting cycle (the European Semester).

Specifically:

- **New mechanism for monitoring and correcting macroeconomic imbalances:** for the first time in 2012, adverse economic developments will be identified by an EU mechanism and, if required, recommendations will be made to the applicable Member States for correction of macroeconomic imbalances. If the necessary corrective measures are not undertaken in the long term, then sanctions could also be imposed against euro area member countries. Thus, in addition to existing monitoring of financial policies, there will also be independent, annual and multilateral monitoring of economic policies. In order to prevent excessive economic policy imbalances as soon as they arise and to correct them as quickly as possible, attention will predominantly be focussed on problem states with reduced competitiveness. Continual monitoring will be applied amongst other things to the development of unit labour costs and the real effective exchange rates of EU countries.
- **Europe 2020:** the EU Heads of State or Government have drafted the EU Growth Strategy for the decade – “Europe 2020”. The aim is to make the EU a smart, sustainable and integrative economic area. Ambitious key objectives in the areas of employment, innovation, education, social integration and climate/energy create the framework for the Member States’ efforts.

- **Euro Plus Pact:** the Euro Plus Pact is intended to go beyond the Europe 2020 Strategy to intensify coordination of economic policies and to improve the competitiveness of the Member States and Europe as a whole. The crises of the last few years have shown which risks give rise to reduced competitiveness. The states participating in the Pact are obligated to devise specific national measures at the Heads of State or Government level to strengthen their competitiveness, the implementation of which will be reviewed on an annual basis. The Pact is also intended to strengthen the long-term sustainability of public finances and its measures include adjusting the pension system to the national demographic situation and restricting early retirement regulations.
- **European Semester:** the European “Semester” will increase the annual coordination and synchronisation of economic, financial and employment policy. National reporting on implementation of the Stability and Growth Pact, the Europe 2020 Strategy including the Euro Plus Pact and the imbalances mechanism is synchronised and, thus, facilitates overall assessment of the economic and financial policy situation. The country-specific recommendations pertaining to the Member States’ national programmes, which are announced by the Council in the summer of each year, can now be incorporated into the national budgetary process in that same year.

III. Stability through a sound financial market

The financial market is being stabilised through new European financial market supervision, effective stress tests for banks and insurance companies and stricter regulation of the financial sector (including new capital adequacy rules for banks and new legislation to restructure banks) (see also in this chapter under 3).

IV. Stability through solidarity

The aim of setting up a temporary package to defend the euro (EFSM & EFSF) is intelligent control of the sovereign-debt crisis – from 2010, the introduction of a permanent European Stability Mechanism (ESM) has established an institutional protection and emergency aid mechanism, which safeguards long-term trust in the European Economic and Monetary Union and guarantees the union’s lasting stability.

Specifically:

- **Package to defend the euro:** against the background of the Greek crisis and the critical situation on the financial markets, the Member States of the European Union have instituted a package to defend the euro, in order to be able to fight a euro

area member’s imminent insolvency if required and to secure the stability of the euro area as a whole. The package comprises a loan volume of EUR 750 billion and consists of three pillars, namely:

- the European Financial Stabilisation Mechanism (EFSM) with a volume of EUR 60 billion,
- the European Financial Stability Facility (EFSF) with a volume of EUR 440 billion, and
- participation by the International Monetary Fund (IMF). This amounts to at least half of the EU contribution (EUR 250 billion).

When the temporary package to defend the euro was conceived under the pressure of the acute Greek crisis in May 2010, there was a definite need to send a clear signal of trust in the financial markets as quickly as possible. It was possible to avert the insolvency of Greece, Ireland and Portugal by introducing conditioned and strict adjustment programmes with standby credit. The governments of the affected countries have implemented tough saving measures to safeguard their countries’ debt sustainability and to restore competitiveness. Greece reduced its deficit by five percentage points from 2009 to 2010, but this was still insufficient. In German terms this corresponds to an amount of EUR 125 billion.

The solidarity and stability achieved through the package to defend the euro must now be secured on a long-term and sustainable basis:

The first step was to equip the EFSF with a larger set of instruments so that it could act more flexibly: preventative programmes, loans to recapitalise financial institutions, primary market purchases and secondary market interventions will be possible in future.

The second step is to establish a permanent stability mechanism, which will be available from 2012.

- **European Stability Mechanism (ESM):** the described measures to stabilise the European Economic and Monetary Union should reduce the probability of crises occurring in the future. In case a sovereign-debt crisis in a euro area member country occurs in the future despite all the precautionary and preventative measures, then clear rules and an institutional security mechanism need to be agreed in advance. As a result, the European Council agreed on a permanent European Stability Mechanism in March 2011. This is not a simple extension of the EFSF – the ESM will close the institutional gap in the

architecture of the Economic and Monetary Union. The ESM will have the same set of instruments at its disposal as the EFSF:

- Its effective lending capacity will amount to EUR 500 billion.
- Its total subscribed capital is EUR 700 billion, from which EUR 80 billion will be in the form of paid-in capital and a total of EUR 620 billion in the form of callable capital.
- The ESM will start its work in July 2012.
- The paid-in capital will be provided by the Member States from 2012 in equal instalments over a period of five years.
- The mechanism will be refinanced by issuing loans with excellent credit ratings (AAA), which will ensure that affordable funds are available in the event of a crisis.

It is important that the mechanism is only used when crisis prevention and all other measures have failed. Usage of the ESM is governed by set rules and comes with strict conditions:

- The ESM is activated only if there is a risk that the affected Member State no longer has any market access AND the financial stability of the euro area as a whole is at risk (Ultima Ratio).
 - An urgency procedure will be created to ensure action can be taken at any time, for which the otherwise applicable unanimity requirement will be replaced by a qualified majority vote of 85%, although Germany will continue to have a right of veto.
 - Support is not provided unless a strict economic reform and adjustment programme is put in place, which the European Commission, the European Central Bank and the International Monetary Fund will develop together.
 - In contrast to the EFSF, the ESM is an international financial institution and thus approximates the idea of a European monetary fund.
- **Private sector participation in the ESM:** the preamble of the future ESM Treaty will make unmistakably clear that the ESM adheres to the proven principles and procedures of the IMF as regards private sector participation. The participation of private investors is secured by standardised debt restructuring clauses, which are then stipulated in all new government bonds from euro countries (collective action clauses). These clauses will prevent private investors from blocking negotiations on specific restructuring models.

All these measures are ultimately of little use if the stewardship of the European Economic and Monetary Union (EMU) is not improved and the underlying deficits of the EMU are not corrected. The EU passed far-reaching resolutions in 2011 that will contribute to this. The Stability and Growth Pact was tightened through an extensive package of legislative measures (the “Six Pack”), and a mechanism to correct macro-economic imbalances was introduced. The euro area Heads of State or Government passed resolutions on 26 October 2011 to tighten the institutional framework of the EMU. Finally on 9 December 2011, they resolved to set the EMU on a new treaty basis. The essential elements of this agreement are:

- Introducing national debt rules that have to meet ambitious requirements (0.5% upper limit on structural deficit, correction mechanism triggered automatically) and have to be anchored in the constitution or comparable law. The ECJ will review whether Member States have complied with the requirements;
- Increased tightening of the deficit procedure through a self-commitment on the part of the euro area member countries, which means that the procedure is triggered automatically and proceeds unless the euro area members decide by a qualified majority vote against the process in question;
- Member States in the excessive deficit procedure are obligated to initiate binding consolidation and reform steps in “reform partnerships”; the Commission and Council will monitor compliance.”
- The procedure for debt reduction (1/20 rule) should be incorporated into a treaty.

Ultimate conclusion: an economic union can only be successful if its introduction sooner or later entails steps towards political union. The European currency area is founded on this basis.

II. Sustainable mobility

Sustainable mobility will be achieved through a transport system that facilitates employment, well-being and personal freedom and that is safe, clean, economical, efficient, environmentally friendly, quiet and affordable. A system that is supported by broad social acceptance and that facilitates fair competition between the modes of transport. This means: transport infrastructure planning at the Federal, the *Länder* and the municipal levels must bring the mobility needs of society into greater harmony with the aims of protecting the environment, nature and the countryside. We must maintain unfragmented low-traffic areas, and must restore traffic corridors to reduce fragmentation effects and to strengthen the connection between animal and plant habitats in the national and regional road network. Mobility options that consider social and demographic developments such as the growing number of older road users are also required. This requires efficient spatial and residential planning.

The Federal Government's Energy Concept

The Federal Government has produced an Energy Concept to ensure a reliable, economical and environmentally friendly energy supply as one of the greatest challenges of the 21st century. A development path for the transport sector was also described with regard to climate protection aims: "In the transport sector, end energy consumption compared to 2005 must be reduced by around 10% by 2020 and by around 40% by 2050."

Measures successfully realised

Important steps on the road to sustainable transport have already been effected. These include:

- setting Europe-wide CO₂ targets for new cars and light commercial vehicles;
- the prescribed minimum level of sustainably produced biofuels in total fuel consumption;
- the initiated realisation of the National Electromobility Development Plan;
- the national Hydrogen and Fuel Cell Technology innovation programme;

- clear tightening of the limits on pollutants and noise for mobile sources;
- the National Traffic Noise Mitigation Package II; and
- the measures of the Action Plan for Goods Transport and Logistics.

National Traffic Noise Mitigation Package II

The noise produced by traffic overall represents the most strongly perceived environmental problem for people in Germany today. The National Noise Mitigation Package II makes clear that reducing traffic noise is part of a sustainable transport policy. It focuses in particular on avoiding and limiting noise at the source. However, where noise is unavoidable, the Package will help to reduce its effects. The National Noise Mitigation Package II of 2009 includes quantitative noise reduction aims for the first time. For the benefit of people in noise hotspots, by 2020 noise pollution compared to 2008 will be reduced by:

- 20% for air traffic,
- 30% for road traffic and inland water transport, and
- 50% for rail traffic.

People can gain an objective impression of noise pollution, particularly traffic noise, thanks to the creation of the 2007 Noise Maps and their updates every five years in accordance with the EU Environmental Noise Directive. Noise Action Plans are drawn up on the basis of these maps, which are then used to gradually improve the noise situation locally by getting the affected people involved.

Reducing rail traffic noise is crucial to the acceptance of increased rail traffic. The European rail industry has developed new kinds of composite brake blocks for goods wagons to reduce noise impact. One requirement of the "Quiet Freight Transport" pilot and innovation programme, for example, is retrofitting goods wagons with composite brake blocks and refining these brake blocks for general use. The introduction of a noise-related track access charge system in December 2012 will advance the retrofitting of existing goods wagons. The central points are the 50% subsidy from the Federal Government (maximum EUR 152 million), the validity period of eight years and the follow-up regulations from 2020, which will ensure that the noise reduction achieved by the retrofit is permanently maintained. The Federal Government is committed to the

introduction of noise-related track access charges at the European level to ensure long-term noise reduction.

Noise reduction for cars and motorcycles is being advanced within the United Nations Economic Commission for Europe (UN-ECE) and the European Union with the revision of licensing requirements. It is also being made much harder to modify two-wheel vehicles.

Incorporating air traffic into the EU emissions trading system from 2012 is a first step towards reducing the emissions of the ever-increasing air traffic. The Federal Government also advocates a global introduction of market-based instruments for international air and sea freight.

In Germany, an aviation tax was imposed for flights from 1 January 2011. The tariff is linked to the calculated distance to the target airport and amounts to EUR 8 per departure from a German airport (EU Member State, EU accession candidate countries, EFTA Member States, and other states in this geographical area), EUR 25 for countries that are not in the aforementioned distance class up to a distance of 6,000 km, and EUR 45 for countries more than 6,000 km away.

The Single European Sky – or SES Initiative has created the legal framework for an efficiently controlled air traffic management system in Europe independent of national borders. The required technical advance for the most important operational elements, which include alignment of airspace structures, common flexible airspace usage and institutionalised cooperation between air safety organisations across borders, will come from the harmonisation of existing air safety systems in the SESAR (Single European Sky Air Traffic Management Research) scheme. This will lead to shorter flight routes and lower CO₂ emissions per flight.

FABEC – a role model for SES

The airspace of the six states Belgium, Germany, France, Luxembourg, Switzerland and the Netherlands (Functional Airspace Block – Europe Central – FABEC) is – due to its position at the heart of Europe – one of the busiest and most complex in the world. Fifty-five per cent of all flight movements in European airspace are completed in this area. Due to its central position and numerous main traffic flows, it is a central element of the SES Initiative, which aims to improve the efficiency of European air traffic management, including in terms of further growth in air traffic.

The first successes were achieved during the negotiations for the signing of the FABEC agreement on 2 December 2010. For example, a night flight route network with 115 shortened routes was introduced. This facilitates savings of around 1.5 million km of flight routes per year, 4,800 t jet fuel and 16,000 t CO₂.

Further decoupling of traffic growth and energy consumption

The successful strategy of increasing efficiency and the use of innovative propulsion systems and alternative fuels will be continued. Increasing efficiency in the traffic system has positive ecological effects, because it reduces resource consumption and the impact on the climate and environment. It can help lower the costs of mobility, offer financial relief to companies and consumers and strengthen the competitiveness of the economy.

In terms of increasing traffic volumes, the main goal of all measures is to further decouple traffic growth from energy consumption. With regard to passenger transport intensity, i. e. passenger transport in relation to GDP, significant progress has also been made here: the aims of the National Sustainable Development Strategy have almost been achieved.

In contrast, the agreed goal for freight transport intensity, i. e. freight transport in relation to GDP, is proving to be a much greater challenge. There have been successes in energy efficiency for freight transport on the roads: average energy consumption for freight traffic reduced by around 18% in the period from 1999 to 2008. However, the simultaneous growth in freight traffic has cancelled out the technical improvements and led to an increase in overall energy consumption. There has been progress with the goal of moving freight traffic from the roads to the railways: the market share of rail freight has increased over the last few years from 16.5% in 1999 to 18% in 2010. In absolute terms, this corresponds to an increase in rail freight traffic of almost 40%. However, the market share still remains far below the goal of 25% enshrined in the Sustainability Strategy. In contrast, the modal share inland freight water transport has fallen overall. (see Chapter C.II, Indicator 11d).

Green logistics

Green logistics includes the creation of environmentally friendly and resource-efficient logistics processes. German companies strengthen their activities in climate and environmental protection through green logistics. In no way is this just a social contribution. Resource-efficient business lets companies save costs and, thus, achieve important competitive advantages. The Federal Government specifically supports environmentally sound logistics processes in Germany, e.g. environmentally friendly organisation of freight traffic in cities and densely populated areas, and the development of universal standards for calculating the carbon footprint of logistics services through the Freight Traffic and Logistics Action Plan launched by the Federal Ministry of Transport, Building and Urban Development (BMVBS). The reform of combined traffic enshrined in the Action Plan is a further boost to moving traffic to the more environmentally friendly methods of rail and water to reduce CO₂ emissions and, thus, to further optimisation of the whole system.

Green, sustainable logistics was the theme of the State Secretaries' Committee for Sustainable Development session on 31 October 2011 (see Chapter B.IV).

The next Federal Transport Infrastructure Plan (probably in 2015) will initiate important steps toward future-oriented sustainable mobility. At the same time, it will form the basis for the review and update of the indicators and targets of the Sustainability Strategy in the transport sector.

Climate-friendly mobility by public transport and bike

Public transport is an indispensable component of sustainable transport. This is why the Federal Government promotes public transport by road and rail. The market share of public transport in competition with cars can still increase if it is customer-friendly, efficient and affordable. Substantial funds of around EUR 7.7 billion a year are available for public transport at the Federal level.

Statement from the Dialogue on Sustainability

"In my view sustainable transport implies broad usage of public transport.

However, so long as using your own small car is just as expensive as travelling by train, or if a train trip costs more than a domestic flight, then we are a long way from this goal."

In addition to public transport, cycling is becoming increasingly important, not just as an emission-free mode of transport, but also because it is a healthy and economical choice. In Germany, 10% of all trips are currently taken by bicycle. Thus, the potential is by no means exhausted. As a result, the Federal Government also wants to increase public awareness of cycling in future. It will be made safer and more attractive through pilot projects like the "Innovative Public Rent-a-bike Systems" experimental model.

Statement from the Dialogue on Sustainability

"The best thing would be not to produce CO₂ at all. To achieve this it should be made harder to use a car in the suburban and town centre area (e.g. congestion charge on cars in densely populated areas) while public transport and cycling should be massively encouraged."

National Cycling Plan

With the National Cycling Plan (NRVP) the Federal Government is playing an important role as a moderator and coordinator in encouraging cycling throughout Germany. The aim is to increase public awareness of cycling and to offer sustainable incentives through pilot projects. Incentives for the development of sustainable mobility are being developed in close cooperation with the *Länder* and local authorities responsible for promoting cycling, which will relieve traffic volumes in the cities, protect the climate and environment and promote health, medium-sized enterprises and tourism particularly in rural areas. The public funds of around EUR 3 million made available to realise the National Cycling Plan are being used to promote projects that are notably innovative and can be transferred to other cities and regions. The current plan runs until the end of 2012. It will be refined and the new "National Cycling Plan 2020" version will take effect from the start of 2013.

Innovative drives and alternative fuels

The Federal Government's aim is to support R&D and market preparation for innovative drives and alternative fuels in transport on a technology-neutral basis. A broad-based Mobility and Fuel Strategy will be developed by the end of the legislative period, taking all alternative technologies and energy sources into account. This will follow on from the 2004 Fuel Strategy, which emerged from the National Sustainable Development Strategy. A German position on a European Fuel Strategy also needs to be developed.

"The aim (of the Mobility and Fuel Strategy) is to come to an understanding between political, economic and academic circles on the medium and long-term prospects for fuels, propulsion technologies and the necessary supply infrastructures. Alternative, environmentally friendly mobility concepts will also be discussed. Thus, we want to create support for decision-makers in the areas of research and development and industrial policy investments in Germany and to initiate socio-political debates on the future of transports and mobility."

Rainer Bomba, Undersecretary of State at the Federal Ministry of Transport, Building and Urban Development (BMVBS), Kick-Off Conference in June 2011

Electromobility has huge potential for reducing traffic-related emissions if the power it requires comes from renewable energies. One million electric cars will be on the road in Germany by 2020, and this figure will rise to six million by 2030. The National Electromobility Initiative (NPE) was founded in May 2010 at the behest of the Federal Government, realising a goal of the National Electromobility Development Plan. The working groups involve representatives from business, science, politics and civil society. The common goal of the Federal Government and the NPE is to develop Germany into the lead market for electromobility and its leading supplier. The Federal Government is supporting electromobility R&D to achieve this.

By the end of 2011, the Federal Government had earmarked EUR 500 million for R&D in the electromobility field as part of its second Economic Stimulus Package (Konjunkturpaket II), focussing on:

- refining battery technology;
- innovations in electric motors, electronics and system integration;
- smart incorporation in the national electricity grid and coupling of electromobility and renewable energy sources;
- electromobility in integrated travel chains;
- electric vehicles as part of environmentally sustainable city logistics;
- use of electric buses for public transport.

Furthermore, additional important steps were taken in the following fields: integration in transport plans, provisions, standardisation, safety of vehicles and batteries, and battery recycling. There is a solid foundation for future progress. Electromobility is already in action on Germany's roads and can be seen and experienced in the model regions and model projects. In November 2011, there were 674 cars, 142 commercial vehicles, 58 buses and 1,047 two-wheel vehicles (pedelecs and scooters) in use in the "Electromobility Model Regions" alone. In addition, hundreds of charging stations have been set up.

A total of EUR 1 billion will have been provided for R&D measures relating to electromobility by the end of the legislative period. With the Electromobility Government Programme of 18 May 2011, the Federal Government has acted on the considerations of the second NPE progress report and introduced specific additional measures to promote electromobility. These include, for example, setting up regional showcases and technical flagship projects, as well as other supporting measures in traffic and tax legislation.

The market development of electric vehicles should right from the outset and wherever possible avoid new critical dependencies on resources. Supply shortages may occur in the important raw materials for the electromobility system (including cobalt, lithium and rare earth elements). Concentration on a few producing countries also represents a possible supply risk. Therefore, resource-efficient production techniques and recycling – particularly of the batteries – must be incorporated from the beginning when setting up production chains.

In terms of fuels, the use of biofuels can make an important contribution to sustainable mobility. The Renewable Energies Directive (2009/28/EC) defines the sustainability requirements for the production and usage of biomass in the European Union. The Biofuel Sustainability Ordinance (Biokraft-NachV) was issued as part of the implementation of this Directive in Germany. Since January 2011, the sustainability of biofuels and vegetable oils used must be proven if a subsidy is claimed.

Biofuels are sustainably produced under the Biofuel Sustainability Ordinance only if, taking the entire production and supply chain into account, they save at least one third (35 %) of the greenhouse gases of fossil fuels (from 2017 then 50 %), and do not require any valuable areas to be cultivated or cleared. The cultivation of biomass within the EU also has to meet the requirements of “cross compliance” (linking the EU agricultural payments to obligations that include environmental protection). Checks are conducted to see whether the requirements are met.

In aviation, newly developed alternative fuels may be combined with traditional jet fuel in the future and credited against the EU target for renewable energies, if they meet the criteria for sustainability. The development of a framework system for the use of alternative fuels in international aviation is listed as one of several key elements in a declaration on the use of alternative fuels issued by the International Civil Aviation Organisation (ICAO) with Germany’s involvement in November 2009. Projects are currently running in Europe as an essential part of the latest EU Framework Research Programme with the involvement of various German partners from industry and research, which will facilitate more specific assessments on the possibilities of using alternative sustainable fuels in international aviation.

Assessment of the sustainability of biofuels and bioliquids does not yet include measurement of indirect land use changes. Indirect land use change refers, for example, to whether biomass is produced for energy purposes on land previously used for agricultural purposes such as grazing land, and as a result agricultural usage is shifted to land with a high carbon content (e. g. forests) or with high biological diversity. These displacement effects are very complex and difficult to quantify. In addition to their influence on the greenhouse gas balance of biofuels, indirect land use changes may also have a negative effect on biological diversity. The Federal Government is working at the

European level to ensure that the effects of indirect land use changes are also considered when assessing the sustainability of biofuels.

The European Commission is reporting in 2012 on the social effects of the use of biofuels and will propose amendments if required.

The medium and long-term options also include hydrogen in fuel cell vehicles. Alongside sustainably produced biofuels, alternative systems of propulsion can be essential components in creating greater diversification in the energy basis for transport.

III. Sustainable consumption and sustainable production

A sustainable society takes responsibility for how it handles and uses goods and services. Sustainable consumption and sustainable production are two sides of the same coin. If demand for sustainable products increases then the corresponding range will increase – and vice versa. Therefore, instruments that offer orientation to the consumer as well as those that stimulate production of sustainable goods are essential.

With regard to the ever-increasing world population and limited resources, the question arises of how the basic requirements of nine billion people can be covered and participation can be ensured. It is crucial that we discuss our lifestyles and our responsibility in terms of consumption.

The Federal Government welcomes and supports the development of informed, considered consumption and buying behaviour and actively incorporates this into its consumption policy. Various measures, projects and initiatives relate to informing consumers and are intended to stimulate people to consider their own behaviour.

1. Changing consumer behaviour

Sustainable consumption means above all: informed consumption, looking closely and being aware of one’s own “consolidated balance sheet”. The motives for sustainable consumption are very varied and include health, prevention, environmental awareness, preserv-

ing Creation, conservation, fair distribution and buying “with an easy conscience”. This is the expression of a value-based, individualised society that is pluralised in lifestyles and life philosophies.

Statement from the Dialogue on Sustainability

“Less is more! We should have the courage to question our appetite for consumption in all areas; we must question energy and resource consumption more ambitiously than before.”

The trend for sustainable consumption has been taken up by many organisations including those supported by the Federal Government: Verbraucherzentrale Bundesverband, Stiftung Warentest and Verbraucher-Initiative all offer information on this topic.

Interest in sustainable consumption has also grown in our society over the last few years. The number of consumers who accept consumption but want it to be sustainable is growing. Many other initiatives and groups are focussing on sustainability problems in different ways and incorporate this in their lifestyles to some extent. More and more consumers are now questioning the social, ecological and economic conditions under which the products are produced. This increases the need for information, transparency and orientation and leads to new forms of cooperation in the service of sustainable development. Approaches are also welcomed from companies that use the Corporate Social Responsibility Strategy (CSR) as a new way of providing comprehensive consumer information. Internet platforms such as www.utopia.de or www.karmakonsum.de and electronic sharing networks (e.g. www.netcyler.de) are another expression of this development.

2. Consumer information/product labelling

The potential for sustainable consumption and changes in industry, agriculture and the service sector has by no means been exhausted. The basis for this is reliable, credible and transparent consumer information – because consumers can only make an informed and “sustainable” buying decision when they know how a product is made, the conditions under which it was produced and the effects it has.

Statement from the Dialogue on Sustainability

“It is important that we as consumers develop an awareness that 1. something must be done, 2. we can play a part in that, and 3. it benefits us. I believe that the state needs to do more to develop consumers’ awareness in this context.”

Help is offered by, e.g. the Blue Angel, one of the world’s best-known and most successful national eco-labels. An independent jury, which includes representatives from the relevant sector, chooses the products that may bear the label. The Blue Angel is an emblem of all the crucial environmental, health and consumer-friendly features of the product. The label has now been around for more than 30 years and was fundamentally reformed in 2008. For example, consumers are now informed about how each product protects the environment and health.

As before, the product-related logo will include detailed information on the relevant features of the product, such as “because of its energy efficiency and low emissions” (more detailed information at www.blauer-engel.de).

The EU Energy Efficiency Label is another important instrument of consumer information. Since 1998, various household appliances (including washing machines, fridges and freezers, dishwashers) have been labelled according to their energy consumption based on the European guidelines using a coloured energy efficiency scale (A = most energy efficient to G = least energy efficient). This EU-wide instrument has made a substantial contribution to increasing energy efficiency since 1998. Today’s household appliances are far more energy efficient than those at the time the label was introduced. In future, other products that consume energy will also bear the EU Energy Efficiency Label in addition to household appliances following Directive 2010/30/EU modified in 2010. TVs are the first new product category, for which the new EU Efficiency Label became mandatory from the end of 2011.

Given the large variety of company-specific labels, it is expected that consumers will be presented with orientation guides for better comparison of these labels.

The German Bio-Siegel (more information at www.bio-siegel.de) is an important orientation guide when buying organically grown food. It is a trusted source of information used by many consumers to guide their buying choices.

The portal www.label-online.de and the “Sustainable Shopping Basket” published by the German Sustainable Development Council (RNE) offer comprehensive advice on buying goods.

The Federal Government’s Corporate Social Responsibility Strategy – Action Plan (CSR) announced in October 2010, which supports companies’ voluntary commitment in their respective spheres of activity, also provides information and awareness among consumers.

The Federal Ministry of Consumer Affairs is supporting the project: “Interactive and multimedia exhibition: Your Consumer Landscape” and the “Responsibility” media package for young consumers with CSR materials for teachers and pupils. This project has received awards from the current “UN Decade of Education for Sustainable Development”. The Ministry’s Consumer Portal will also tackle the topic of sustainable consumption.

The Federal Ministry of the Environment has initiated countless consumer-related projects, e.g. to monitor the market for sustainable consumption. An online quiz on the topic for schoolchildren has also been developed (www.bildungsent-spiel.de/konsum). Additionally, the National Climate Protection Initiative has its own consumer focus, which finances projects on topics such as sustainable mobility behaviour, how to choose energy-saving electrical appliances, and topics of interest to householders, including building a new home.

The state as a consumer

With an annual procurement volume of around EUR 260 billion, the public sector is an important consumer. The German Government wants to do even more to meet its role model function by including demanding environmental criteria in procurement. This is the focus of the sustainable procurement alliance between the Federal Government and the *Länder* under the aegis of the Federal Ministry of Economic Affairs (see Chapter B.IV.5.).

The Federal Government supports the development and harmonisation of environmental and social standards at the international level to strengthen sustainable production and sustainable consumption patterns.

The functional departments initiate the development of standards for sustainable and environmentally friendly procurement by the Federal Government, e.g. for timber from sustainable forests. The Federal Government also continually consults with environmental and social standard systems, e.g. the Common Code for the Coffee Community and Fairtrade. Additionally, the Federal Government supports measures at the EU level against illegal felling. Higher standards of vigilance will apply to the marketing of wood in the EU from 2013. The Federal Government has also undertaken fisheries-related initiatives to establish demanding sustainability regulations at the EU level and to pave the way for ambitious standards, such as the seal of the Marine Stewardship Council (MSC) (see IV).

3. Product policy

Customer demand is essentially driven by producers and retailers via the existing range and marketing. Product responsibility has to begin in product development. Around 80% of a product’s environmental effects are the result of the design, which dictates, for example, which materials are used, how the product is produced, how much power it consumes, how long it lasts and how it is recycled or disposed of. Thus, there is a huge potential for reducing environmental impact through product innovations.

In terms of production, incentives or product requirements can trigger more sustainable production and more sustainable products. The legislation on chemicals and hazardous substances, for example, regulates the use of hazardous substances and information obligations.

Ecodesign Directive and the EU Top Runner Approach

The European Ecodesign Directive and the EU Top Runner Approach also address this area. The Ecodesign Directive of 2005 allows for stipulation of environmental requirements specific to the product group in the design of certain products – with the result that particularly inefficient products are excluded from the European market. At the same time, benchmarks are identified for the best devices found on the market (best available technology). Realisation is effected through measures by the European Commission or self-regulation by the economy.

Commission Regulation No. 1275/2008 came into force at the start of 2009 as one of the first measures to implement the Ecodesign Directive. It stipulates binding limit values for the standby and off-mode electric power consumption of electrical and electronic household and office equipment, which will gradually be tightened later on.

A new version of the Ecodesign Directive, which took effect at the end of 2009, extended the area of application to energy-related products, i.e. products that do not consume energy themselves, but do influence energy consumption.

The dynamic, phased tightening of energy efficiency values gives the industry the opportunity to keep developing and altering its products. The Ecodesign Directive represents an instrument with which to realise the Top Runner Approach, which was originally developed in Japan, for the EU internal market. The aim is to encourage market penetration of environmentally compatible, energy-efficient technologies.

The Ecodesign Directive forms the basis of a consistent EU Top Runner Approach in combination with the European system of energy consumption labelling (A-G label), removing the “energy wasters” from the market and stimulating the purchase of efficient and environmentally friendly appliances. It is to be supplemented by voluntary environmental labelling and the demand effect of public procurement. The Federal Ministry of Economic Affairs and the Federal Ministry of the Environment have developed joint proposals for the improvement and refinement of the European Top Runner Approach and conveyed these to the EU Commission. (www.bmu.de/produkte_und_umwelt/top_runner_ansatz/doc/39038.php).

4. Closed-cycle economy and recycling

Between 2000 and 2008 economic growth amounted to 10%, whilst waste generation fell to 85% in the same period. This is a positive trend. However, the potential for waste avoidance and recycling must be exploited even further in order to protect resources.

Statement from the Dialogue on Sustainability

“Are there actually any sustainable products? Is ‘cradle to cradle’ the benchmark of everything? Or does that come more from a ‘best-in-class’ model? ... The most sustainable product in my opinion is, however, the one we don’t manufacture (humility and sharing in place of selfishness and greed).”

The recycling rate of waste has increased markedly since 2005. Instead of waste just being disposed of, it is now increasingly being separated out, recycled or used for energy. The recycling rate of municipal waste, for example, rose from 58% (2003) to 77% (2008). For paper and cardboard the return rate is 83% (2009), whilst almost 82% of packaging waste is recycled (2008). This means that a very high proportion of raw materials returns to the economic cycle.

The waste industry is an example of a successful and sustainable economic sector: it is not just valuable raw materials being kept in circulation, as greenhouse gases have also been reduced (since 2006 more than 56 million tonnes annually compared to 1990), which corresponds to approximately 10% of the Kyoto targets. More than 160,000 people are employed by an industry that achieves a turnover of around EUR 40 billion a year.

The creation of the first-ever German waste avoidance programme means that all known official measures to increase waste avoidance are being reviewed with regard to their sustainability effects. The possibilities of waste avoidance are being identified and evaluated on a systematic and comprehensive basis.

The Federal Government is currently in the process of significantly improving the legal framework for sustainable support of recycling management in Germany by modifying the Closed-Cycle Economy Act (KrWG – Kreislaufwirtschaftsgesetz). Accordingly, recycling management will be aligned to the new five-stage hierarchy of the EU Waste Framework Directive (prevention – preparing for re-use – recycling – other recovery, i.e. including energy recovery – disposal). Technical, economic and social aspects will also be considered to ensure that waste recycling is as high value as possible.

IV. Preserving and managing natural resources

1. Reducing consumption of new land for development

Uncultivated, unfragmented and undeveloped land is a limited resource. The Federal Government's aim is to limit the development of new land for housing and transport purposes to 30 hectares (ha) a day by 2020.

Statement from the Dialogue on Sustainability

“Fundamentally limiting the consumption of undeveloped and cultivated agricultural land should be one of the dictates of intergenerational justice. On the one hand our great-grandchildren have the right to a liveable natural environment in Germany (both in urban centres and rural areas)... On the other, our grandchildren, great-grandchildren and other offspring might want to develop new residential areas, industrial facilities or transport infrastructures, which eat up undeveloped land.”

a) Current trends

The set target has not yet been achieved and will not be achieved if current trends continue at the same rate as in recent years. Nonetheless, built-up area and transport infrastructure expansion has been brought down over the past few years. Whilst it was still as high as 113 ha per day from 2003 to 2006, the average increase was down to 87 ha per day in the 2007 – 2010 period. According to the data of the land use survey, 77 ha of new land were still being consumed per day in 2010 (see analysis by the Federal Office of Statistics, Chapter C.II., Indicator 4).

Taking different types of land use into account it is apparent that:

- The daily increase in buildings and open spaces is steadily falling and reduced to 30 ha from 2007 to 2010 and to 21 ha in 2010.
- Land use for transport infrastructure has been growing relatively steadily since the start of the 1990s with an average of 23 ha per day. However, this is also related to much more intensive use of

the transport infrastructure for long-distance traffic resulting from increased transport services.

- The increase in recreational areas was particularly high in the previous surveys; from 2007 to 2010 it was 31 ha per day. This is, however, largely due to data recoding. In their Coalition Agreement, Germany's ruling parties agreed to look more closely at the qualitative aspects of land use. Accordingly, since the 2010 Indicator Report the “land use” indicator has been presented in a more sophisticated way than it was in the 2008 Progress Report. The indicator no longer only portrays built-up area and transport infrastructure expansion, but also the rise in land use types, i. e., “buildings and open spaces, commercial development”, “recreational space, cemeteries” and “transport infrastructure”. Thus, the Federal Government has acted on a suggestion from the Parliamentary Advisory Council on Sustainable Development to present the various types of land use in a more nuanced way. The new approach reveals that “buildings and open spaces” including “commercial development” are making a disproportionate contribution to the reduction in additional land use.

b) Instruments for reducing consumption of new land for development

The Federal Government has continued the dialogue with all relevant stakeholders since the 2008 Progress Report to support the planning and implementation of measures. This includes, for example, the discussion with representatives of the municipal umbrella organisations in February 2009 at a meeting of the State Secretaries' Committee for Sustainable Development.

“Despite the countless previous efforts and recommendations from the Federal Government, the Länder, the municipal umbrella organisations and the Conferences of Ministers, there has not been any tangible reversal in the trend which marks the use of open spaces. Reuse of fallow land in particular has not been exploited sufficiently to date. Therefore, a bundle of measures is required, ranging from information and raising awareness among all stakeholders involved to supportive measures by public authorities to legislative activities.”

Report of 30 March 2010 of the Conference of the Ministers of the Environment (UMK-Bericht); www.labo-deutschland.de/documents/UMK-Bericht_98a.pdf

Following on from this, the Federal Government and municipal umbrella organisations developed certain aspects of a further strategic process to reduce land use. These were incorporated into further cooperation between the Federal Government and the *Länder* to achieve sustainable development. In 2009/2010, all the affected departments focussed on different measures and instruments to reduce land use and, thus, the associated incentive effects. This again revealed how difficult it is to apply the existing effective planning tools consistently in practice, and to eliminate misguided economic incentives.

By order of the Conference of the Heads of the State and Senate Chancelleries of the *Länder* and the Head of the Federal Chancellery (decree of 18 November 2010) the conferences of the ministers for spatial planning, agriculture, building, finance, internal affairs and the environment are currently reviewing specific action proposals for the following points:

- **Updating measures and tools** for stricter implementation of the rules of the Federal Building Code (BauGB – Baugesetzbuch) to strengthen domestic development and for better identification and usage of the potentials, including by expanding land management and closed-cycle land use management as a voluntary tool; this includes supporting cities and local communities by providing uniform national and continually updated residential area potentials.
- **Identifying fallow land and space between buildings in a land register**
- **Testing practical possibilities to increase the extent to which the existing regulations of the Building Code are implemented**, e.g. testing the flexibility of §17 of the Federal Land Utilisation Ordinance (BauNVO – Baunutzungsverordnung), to ascertain how far the existing upper limits for the level of construction use could be increased, taking the other concerns into account, e.g. protection of the climate and open spaces, to facilitate better structural utilisation or the extent to which it could be made easier to exceed those limits.
- **Supporting the effectiveness of planning laws** through appropriate instruments and informal processes, e.g.:
 - organisational and informative support to identify inappropriately used plots of land and put them to use;
 - facilitating combined land development through combined land usage and planning schemes and creating the incentives for harmonised planning;

- support at the federal level for the creation of tools to develop realistic demand forecasts;
- strengthening cooperation between municipalities and regions.

→ **Education, disseminating information and raising awareness:**

- linking the stakeholders and tailoring communication and awareness-raising initiatives to target groups;
- new land protection agency at the federal level for improved integration and support of the activities of all stakeholders;
- Internet portal to collate and process the previously scattered activities at the Federal and *Länder* levels and incorporate the results of federal research (REFINA, ExWoSt).

Moreover, more precise review is still required of the tools that have been assessed critically in the past and the additional proposals, in order to ascertain their implementation potential. This relates in particular to **economic and fiscal proposals**, such as:

- modifying real estate and real estate transfer tax;
- introducing a zoned statutory law for real estate tax;
- introducing binding, space-saving processes under building and spatial planning law;
- system for tradable land development rights.

Two multi-year research projects were initiated by the Federal Government in this context at the end of 2010:

- a project on trading in land use allowances – preparation for a national pilot project: institutional and instrumental preparation and improvement of measures to reduce land use in order that these measures may be used for land management in legislation, in the administrative process and by private entities;
 - a project on experimental testing of exchange-based instruments to limit land use for construction purposes at the regional level;
- greater consideration of land qualities.

The upcoming modification of the Federal Building Code (BauGB) will include improved instruments and regulations to reduce land use with the aim of increasing brownfield development.

REFINA

Under the umbrella of the Federal Ministry of Education and Research's REFINA funding priority (Research for the Reduction of Land Consumption and for Sustainable Land Management) 45 research projects were conducted from 2006 to 2011. They resulted in the development of municipal and regional model concepts, analytical and evaluation methods for innovative land management, and new information and communication approaches to sustainable land management. Their feasibility and acceptance was tested by local authorities. Fundamental progress was made particularly in the fields of land information and analysis of residential development, as well as in the control of residential development.

Furthermore, special consideration was given to economic aspects, land recycling and target group-specific communication and awareness raising. The transfer of research results was supported by numerous measures, such as the dialogue with representatives of the *Länder*, regions and municipalities in regional conferences. Dissemination of the results is also furthered by an array of generally accessible publications, e.g. the REFINA Handbook for Practice (2011), (see www.refina-info.de).

c) Land use competition

In addition to residential development and varying demographic development, the expansion of renewable energies (wind power, biomass, photovoltaic, etc.) has brought greater competition for the land.

The increased demand for land for renewable energies has become apparent over the last few years particularly, for example, in increased land use for ground-mounted photovoltaic systems. Compensation for ground-mounted photovoltaic systems on arable land was abolished by the Renewable Energies Act (EEG – Erneuerbare-Energien-Gesetz) in 2010. From 2011, therefore, no more solar farms are being built on arable land. This has clearly reduced the usage competition in this area.

In terms of energy production, photovoltaic (6 ha) and wind energy (7 ha) require far less land use per GWh produced than biomass. There are currently around 21,000 wind turbines in operation. In 2010, more than 80% of the approximately 17.3 GW of

installed output from photovoltaic systems came from roof installations.

The amount of land needed for lines to transport the power, heat or gas also increases as the result of expanding land use for energy purposes and because the energy is not produced close to where it is consumed.

Spatial planning must and can balance the differing, often contradictory interests and incorporate legally binding requirements into the development plans for suitable locations. The land must also offer sufficient potential space for energy usage and the technical infrastructure for reasonable development must be in place.

Lord Mayor Initiative

The Sustainable Development Council has issued invitations for strategy dialogues to lord mayors who are particularly committed and take a leading role in practical measures to achieve sustainable development. Their "key points" describe what they want to do for sustainable urban development. In particular the costs should reflect economic, ecological and social realities. One particular concern is that more weight be given to the long-term costs of land use projects.

2. Protecting biological diversity

a) Preserving biological diversity and the model of sustainable development

Biological diversity is essential for human life. The richness of nature that has developed over millions of years and a powerful ecosystem are the basis of life for us and generations to come. It is in our interests and those of future generations to maintain, develop and utilise resources sustainably. The National Sustainable Development Strategy has clearly emphasised that the framework for this is set by the ecological limitations (Wegweiser Nachhaltigkeit 2005, Chapter C.IV.3.).

With the 2007 National Strategy for Biological Diversity the Federal Government has created concepts, challenging targets and measures for conservation and sustainable use of biological diversity in

Germany, and for Germany's contribution to conservation and sustainable use of biological diversity worldwide (see 2008 Progress Report, Chapter D.III.2.). The Biodiversity Strategy is anchored in the National Sustainable Development Strategy.

The continuing loss of biological diversity and ecosystem services is no longer just a concern of nature conservationists. The users of biodiversity, e.g. businesses, cities, local authorities and citizens, are increasingly recognising the significance of biodiversity, e.g. for drinking water supplies, dealing with air pollution, flood protection and the provision of materials like fuels, fibres or medication.

TEEB – The Economics of Ecosystems and Biodiversity

The TEEB Study initiated by Germany and the European Commission has examined, and for the first time tested, the economic value of biological diversity using selected international case studies, in order to identify comprehensively the cost of destroying nature on a global scale. It documents that in many cases an approach that is environmentally friendly and saves resources can also pay off economically – such as by safeguarding and creating jobs, by opening up new opportunities for growth and by contributing to poverty reduction and food security. Corresponding investments in biodiversity and environmental protection or a sustainable energy and transport system do not have to be in competition with the economic development of a country or region.

b) Aims and indicators

The National Strategy on Biological Diversity (Nationale Biodiversitätsstrategie – NBS) provides for follow-up with an indicator set and a report on target achievement in each legislative period. Its indicators are also partly covered in the set of indicators of the National Sustainable Development Strategy.

Biodiversity indicators

The Federal Government's first NBS Indicator Report (www.bmu.de/files/pdfs/allgemein/application/pdf/indikatorenbericht_nbs.pdf) from November 2010 includes a set of indicators refined since the end of 2007. Nineteen indicators are divided into five themes:

- components of biological diversity (seven indicators),
- built-up areas and transport infrastructure (two indicators),
- economic use (eight indicators),
- climate change (one indicator), and
- social awareness (one indicator).

The indicators "diversity and landscape quality", "land use", "organic farming" and "agricultural nitrogen surplus" are also indicators in the Sustainability Strategy. Twelve indicators are concerned with achieving specific targets, which are connected to a quantitative target value and usually also to a specific target year (2010, 2015 or 2020).

A statistical trend analysis based on the available data for seven indicators shows that the diverse measures that have already been implemented to improve protection of biological diversity are producing their first results. Development is going in the right direction for almost all of the indicators for which trends can be identified. However, it is clear, especially in the values for the status indicators, that massive effort is still required to achieve the 2020 target of stopping the loss of biological diversity completely (see g and h below). Nonetheless, the first successes are tangible.

c) Status and implementation of the National Strategy for Biological Diversity

The National Strategy for Biological Diversity implements the obligations of the UN Convention on Biological Diversity (CBD). It is a demanding action programme, which requires action from stakeholders at all levels of society (see also 2008 Progress Report, Chapter D.III.2.).

The Federal Ministry of the Environment began a comprehensive dialogue and realisation process at the end of 2007. The social dialogue invited all social stakeholders to get involved in implementing the Strategy and contributing to the targets. Governmental and non-governmental stakeholders were involved in the numerous dialogue-oriented forums. The website of the Biodiversity Strategy, www.biologischevielfalt.de, explains the Strategy, its implementation and the results of the dialogue process. The younger generation were also addressed through their own dialogue process and youth conference (www.jugend-zukunft-vielfalt.de).

Biological diversity in communities

One example of the dialogue process is the Environment Ministry's "Biological Diversity in Local Authorities" Initiative. The "Biological Diversity in Local Authorities" declaration was developed in February 2010 as part of a dialogue forum and includes the themes of "green and open spaces in residential areas", "protecting diversity and biotopes", "sustainable utilisation and awareness raising", and "cooperation". One hundred and ninety local authorities had signed the declaration by March 2011. A municipal alliance for biodiversity is currently being prepared and will be founded at the start of 2012.

The Federal Government has set ambitious targets in its Biodiversity Strategy. At the governmental level implementation of the Strategy is being coordinated and driven by an interdepartmental working group, comprising 11 government departments under the leadership of the Environment Ministry. The first report on the National Biodiversity Strategy will be published in 2012.

One example of how the Federal Government is contributing to achieving these targets is the "Federal Reintegration Programme". The aim of the National Biodiversity Strategy is to ensure that by 2020 existing traffic routes do not give rise to any more substantial impact on the biotope network, and to achieve ecological passability of fragmented areas. Development of a Federal Reintegration Programme was enshrined in the Coalition Agreement for the 17th legislative period as the basis for the construction of crossing aids in the national transport network in the most important habitat corridors. In a joint interdepartmental working group the Environment Ministry and the Transport Ministry have developed a draft federal programme, which comprises 93 reintegration sections.

The *Länder* play an important role in preserving biological diversity because of their responsibility for nature conservation and landscape management. More and more *Länder* have now developed their own biodiversity strategies or action plans and programmes relating to biodiversity, or are currently doing so (see also www.biologischesvielfalt.de/8045.html).

d) Federal Biodiversity Programme to implement the NBS

The Coalition Agreement for the 17th legislative period allows for the development of a federal programme as part of the implementation of the Biodiversity Strategy, involving the *Länder*, local authorities, forest owners, land users and conservation associations. This is a new funding programme that supplements the Federal Government's existing funding options for nature conservation and is intended to implement the National Strategy for Biological Diversity. Expenditure of EUR 15 million was estimated in the Environment Ministry's budget for the "Federal Biological Diversity Programme". EUR 15 million a year has been earmarked in the financial planning for updates to the Federal Programme. The funding methods are regulated in the Environment Ministry's guidelines on support for measures under the "Federal Biological Diversity Programme" of 26 January 2011 (www.biologischesvielfalt.de/bundesprogramm.html). They are the result of an intensive dialogue process with stakeholders from conservation, agriculture and forestry/hunting, but also with representatives from business, landowner organisations, and with federal departments, *Länder*, and local authorities.

Funding priorities of the federal programme

1. Species for which Germany has particular responsibility
2. Hotspots of biological diversity in Germany
3. Safeguarding ecosystem services
4. Other measures of particular significance for the Strategy.

e) Sector strategies for conservation and sustainable utilisation of biological diversity and references to other Federal Government strategies that are relevant for biodiversity

aa) Biodiversity aspects of the “National Strategy for the Sustainable Use and Protection of the Oceans”

The Federal Government is committed to integrative marine conservation that follows the ecosystem approach and the precautionary principle. This also applies to relevant sector policies, e. g. a sustainable fisheries policy.

Climate change will also lead to changes in marine ecosystems. If fisheries policy does not take an ecosystems approach with regard to overfishing then the marine ecosystems will be at risk and the fishing industry will be in serious danger. Therefore, Germany is committed across the board to setting catch quotas consistent with the scientific recommendations and under consideration of the precautionary principle. Moreover, Germany is working towards a fundamental overhaul of the Common Fisheries Policy as part of the upcoming reform in 2012.

Existing catch overcapacities are to be abolished. By-catch should be significantly reduced and discard bans and landing requirements be introduced step by step; additionally, multi-year management plans based on the ecosystem approach and the precautionary principle will help to offer better protection for young fish, endangered species and marine habitats for as many fish stocks as possible.

In 2004, the Federal Government nominated ten Natura 2000 sites in the German Exclusive Economic Zone to create areas to protect endangered species and marine habitats. Management plans have been developed since May 2010 to maintain the protection aims including specific plans for fishing in these areas. In total this applies to a third of the German Exclusive Economic Zone and an area of around 10,000 km². In creating such an area Germany is contributing to the global network of marine reserves as part of the International Convention on Biological Diversity.

bb) Biodiversity aspects of the German Climate Change Adaptation Strategy

The Climate Change Adaptation Strategy is closely linked to other departmental and interdepartmental strategies – e. g. the Sustainability Strategy, the Biodiversity Strategy and the Sectoral Agrobiodiversity Strategy. The Adaptation Strategy covers 15 areas of action with a broad departmental, but integral, approach. The particular focus is the impact of climate change on biodiversity and the potential options to tackle this. The Federal Government announced an “Adaptation Action Plan” on 31 August 2011. This includes targeted activities and measures for the protection and sustainable use of biodiversity, the main aspects of which are being initiated at the Federal level.

cc) Agrobiodiversity Sector Strategy

Stemming the decline in biological diversity in Germany requires greater harmonisation of the protection and utilisation interests. This was also a conclusion that was drawn in Wegweiser Nachhaltigkeit 2005 in the consideration of the key theme “Biological diversity – protection and use”.

The diversity of animals used in agriculture, forestry, fisheries and the food industry, and the diversity of agro-ecosystems are an essential part of biological diversity on Earth. Sustainable agriculture and forestry management contribute to conservation of the wild animal and plant species that live on the land by preserving the cultivated landscape. However, intensification of agriculture and discontinued use of marginal land has a negative effect on biodiversity, with varying effects from region to region.

Statement from the Dialogue on Sustainability

“In the Western industrialised countries we only use a fraction of the food that is at our disposal. Life has become difficult for small farmers and those with heritage breeds, species and varieties.”

The Federal Government’s National Biodiversity Strategy is supported and supplemented by the Agrobiodiversity Sector Strategy (www.bmelv.de/DE/Landwirtschaft/Klima-Umwelt/Biologische-Vielfalt/biologische-vielfalt_node.html). Its aims

include long-term conservation and broader use of genetic resources for the food sector and the farming, forestry and fishing industries, as well as efforts to create better harmony between the interests of usage and protection in biological diversity.

Elements of the Agrobiodiversity Strategy

- Implementation of the Agrobiodiversity Strategy is effected in particular by flagship projects, e.g. Communication Strategy for Agrobiodiversity, which includes usage and consumer aspects in particular.
- Improvement of agricultural usage systems including through more targeted alignment of agri-environmental measures (GAK) for the protection and sustainable use of biological diversity, e.g. supporting patches of wild flowers, extensive grassland, ecological cultivation and genetic resources.
- Developing new instruments to offset interference with and impacts on nature and the countryside, to enhance ecosystems, to enrich their agrobiodiversity and to reduce land usage conflicts.
- Expanding the agrobiodiversity research network, including for long-term conservation and innovative use of genetic resources.

f) Other outstanding national activities for conservation and sustainable use of biological diversity

One of Germany's main goals, particularly during the 2008 German Presidency of the CBD, has been to increase the profile of global biodiversity policy, to position the topic on the agenda of Heads of State or Government, to integrate it in significant political and social processes and to anchor it in the public consciousness.

2010 was the International Year of Biodiversity. Numerous public awareness campaigns were conducted in Germany (www.kalender.biologischesvielfalt.de). One particular highlight was International Biodiversity Day on 22 May 2010, for which global campaign days on biodiversity and development were held in 37 countries in cooperation with the GEO magazine and other partners (www.biodiversity-day.info). Citizens from various social groups (local authorities, schools, environmental groups, companies etc.) all

examined and evaluated an ecosystem to ascertain the services it provides for human well-being. These global campaign days for biodiversity and development have all played a major role in broadening public awareness of the economic value of biodiversity.

What is the public's attitude to nature? Statistical data are important for national biodiversity policy, so the Federal Government commissioned a representative survey with a focus on personal attitudes to nature, knowledge about nature and biodiversity, as well as individual readiness to undertake conservation activities. The Nature Awareness Study, published in 2010 (www.bfn.de), showed that more still needs to be done to raise awareness of the term and concept of biodiversity. Whilst two thirds of those surveyed apparently had good knowledge of the domestic plant and animal world, around a third were aware of the term "biodiversity", but did not know what it meant. One in four had never heard anything about it. In contrast, the readiness of Germans to do something for nature conservation and to undertake simple activities that can be monitored individually, e.g. in their consumption behaviour, is encouragingly high.

The Federal Ministry of Agriculture has organised a large number of events, campaigns and other consumer information measures to increase awareness of the importance of protection and sustainable use of biodiversity. In this connection, the Ministry introduced the "Biological Diversity – Protection and Use" Initiative in 2010. This included an initiative with schools, "Diversity on Tour: Mobile Teaching on the Tour Bus", at around 55 locations across Germany, a school competition and the creation of a "Diversity Map" on the Internet. The aim of the Initiative was to increase public awareness of agrobiodiversity.

Biopatents and their influence on biodiversity

The governing parties have argued against patenting livestock and agricultural crops in their Coalition Agreement. The Federal Ministry of Agriculture is committed to ensuring that biopatents do not hinder agriculture and breeding and that the diversity of genetic resources is not restricted. Solutions are being sought in dialogue with national and European decision makers, breeders and farmers. In December 2010, the Enlarged Board of Appeal of the European Patent Office issued a ruling on the "broccoli patent" stating

that the use of technical devices or means, such as markers from a process for conventional breeding of plants (and animals), does not represent a patentable technical process. The Federal Government welcomes this ruling as an important step toward realising the goal outlined in the Coalition Agreement.

g) References to the European Sustainability and Biodiversity Strategy

In May 2010, the European Union set new long-term goals for 2020 and 2050. These focus on the protection and restoration of biodiversity, ecosystem services and the role of the EU in the global loss of biodiversity. The European Commission published a proposal for a new EU Strategy in May 2011 to assist in realisation of the targets.

New EU objectives

1. **Long-term goal/vision for 2050:** a situation shall be achieved in which biodiversity in the EU and the ecosystem services associated with it – its natural capital – are protected, valued and reasonably restored both because of the intrinsic value of biodiversity and because of the essential role it plays in human well-being and economic prosperity, and in which we avert the disastrous changes associated with a loss of biodiversity.
2. **Interim goal for 2020:** the loss of biodiversity and deterioration in ecosystem services in the EU shall be brought to a halt by 2020 and biodiversity and ecosystem services shall be restored wherever possible; at the same time, the EU contribution to preventing the global loss of biodiversity will be increased.

This EU-wide objective includes three new aspects compared to the old objective for 2010:

- The **ecosystem services** of biodiversity – i.e. the goods and services provided by nature free of charge, e.g. to regulate the water balance, as a basis of food production, for climate protection or flood protection. The findings from the global study “The Economics of Ecosystem Services and Biodiversity” (TEEB), which was initiated by Germany in cooperation with the EU Commission, will be incorporated here;
- A stated goal of **restoration**;
- A commitment to a greater EU contribution to **global** protection.

New EU Biodiversity Strategy for 2020

The EU Biodiversity Strategy for 2020 published by the European Commission on 3 May 2011 is being used to realise these overriding objectives and includes quantitative interim goals for the following six priority areas:

- **Conservation** (improved implementation of the FFH (Flora, Fauna and Habitats) Directive and the Birds Directive)
- **Ecosystems and ecosystem services** (conservation and improvement through the creation of “green infrastructure” and restoration of at least 15% of damaged ecosystems)
- **Agriculture and forestry**
 - Agriculture** (maximise agricultural land with measures under the EU Agriculture Policy relating to biodiversity)
 - Forestry** (forest management plans for public forests and large forests in private ownership)
- **Fisheries** (“maximum sustainable yield” by 2015: healthy fish stocks through fisheries management)
- **Invasive non-native species** (control and contain the further spread of priority non-native species including prevention of new introductions)
- **Global protection of biodiversity** (increase the EU role).

The stated operational goal of the EU Strategy for Sustainable Development is to stop the decline of biodiversity and to make a contribution to a substantial reduction in global loss rates in biodiversity. For biodiversity Eurostat uses an index of sufficiency which covers the areas designated under the EU Habitat Directive and is developing positively in most Member States.

h) UN Convention on Biological Diversity (CBD)

The 9th Conference of Parties to the Convention on Biological Diversity was held in Bonn, Germany, in May 2008. Germany held the Presidency of the Convention until the 10th Conference of Parties in October 2010 in Nagoya, Japan. Substantial progress was made in an array of areas under the German presidency, which ultimately contributed to the great success of the conference in Japan.

Progress achieved

- Negotiation of an international Convention on access to genetic resources and on fair division of the benefits of their use (Access and Benefit Sharing – ABS). The convention was adopted at the 10th Conference of the Parties in Japan. The German CBD Presidency played a significant role in the ABS negotiation process.
- With the acceptance of the ABS Protocol, specific targets were agreed in Nagoya for the third goal of the CBD, fair benefit sharing. Realisation will create legal security for users and providers of genetic resources. The protocol envisages that states will generally grant access to their genetic resources (e.g. plants that are used as medications or cosmetic products) and will establish national regulations for them. An agreement between the user and donor country/country of origin on fair benefit sharing will be concluded, and a permit will be obtained from the donor country/country of origin before access. Germany is a guest participant – through the Federal Ministry of Development and the German Society for International Cooperation (GIZ) – in the “ABS Capacity Development Initiative for Africa”, which has advised African partners as part of the negotiations for the ABS Protocol and supported these on the realisation of the Protocol agreed in Nagoya.
- Continue and expand the “Life-Web Initiative” to strengthen the global network of protected areas on land and in the sea: the Life-Web Initiative conceived by Germany at the 9th Conference of the Parties to the CBD is actively being used. Potential recipient countries have already recorded a requirement of approximately USD 800 million. Germany has approved more than 30 Life-Web projects with a total volume of more than EUR 80 million since 2008.
- Mobilising financial resources and introducing innovative financial tools for international biodiversity protection: the Federal Government will provide an additional EUR 500 million by 2012 and EUR 500 million annually from 2013 for the protection of forests and other significant ecosystems. The Government has already increased its financial commitment for global biodiversity protection from EUR 210 million in 2008 to EUR 260 million in 2009 and EUR 303 million in 2010. The majority of this funding is realised through development partnership in close cooperation with our partners in developing and emerging countries. The Federal Ministry of the Environment has also introduced an innovative instrument that is unique in the world – the Inter-

national Climate Initiative/IKI – using the proceeds from European emissions trading for climate-relevant biodiversity protection. Moreover, the Environment Ministry is subsidising exemplary climate protection projects around the world, including for conservation and sustainable use of natural carbon sinks (especially forests and wetlands) in developing, emerging and transition countries. At least EUR 110 million has been donated for climate-relevant biodiversity protection within the framework of IKI projects since 2008.

- Conclusion of the TEEB Study (The Economics of Ecosystems and Biodiversity), publication and implementation of the project results: an international Secretariat was set up in Bonn at the end of 2008 under the auspices of the UNEP, which coordinates the global activities of the TEEB Study. Communication and realisation of the results are also controlled by this Secretariat. As many states as possible will be informed and supported in implementing their own national analyses and studies and in developing individual cost-effective options for the protection of biodiversity and ecosystems. Germany is financing the extension of the TEEB Project to the end of 2011 in order to ensure the greatest possible dissemination of its results and methods and an exchange between TEEB and interested parties.
- Creation of an intergovernmental body for scientific policy advice on biodiversity (Intergovernmental Platform on Biodiversity and Ecosystem Services – IPBES), comparable to the IPCC international climate panel. The decision to set up the body was taken at the IPBES Conference in June 2010 in South Korea and confirmed by the 65th UN General Assembly as part of the UNEP Resolution. The UNEP was tasked with continuing support for the process and setting up the secretariat structures. Germany has made a substantial financial contribution to the process, will play an active role in the specific formulation of the instrument and is campaigning for the headquarters of the IPBES Secretariat to be at the UN site in Bonn.
- “Business & Biodiversity Initiative” – incorporating the private sector in activities for the conservation and sustainable use of biological diversity: 34 international companies joined the Initiative at the Conference in Bonn and signed a declaration committing them to integrating biodiversity in their management systems. New members have continually been added since then. A practical Initiative Handbook helps companies with biodiversity management, whilst two touring exhibitions have informed the wider public. In addition to contin-

uing and developing the Initiative, the German Presidency also focussed on supporting a network of all international B&B initiatives (e.g. by the International Union for the Conservation of Nature (IUCN), the World Business Council for Sustainable Development (WBCSD), the CBD and the EU) so that the joint effort can progress on a coordinated basis and to ensure exploitation of synergy effects.

The 10th Conference of the Parties to the CBD in Nagoya also announced a strategic plan for the period from 2011 to 2020 and a timetable for setting financing targets and indicators, in addition to the ABS Protocol. The existing cash flows and financing needs will be defined in more detail in the process, which has been limited to two years. The funding announced in Bonn 2008 by the German Chancellor for the protection of forests and other significant ecosystems represents an excellent starting point.

The overriding goal of the strategic plan is to stop the loss of biodiversity by 2020 by introducing necessary measures. Twenty medium to long-term intermediate and interim goals illustrate the process: e.g. to reduce the rate of loss of natural habitats to almost zero; to extend the network of protected areas on land and sea, which is not yet sufficient in many CBD signatories; and to fight the causes of biodiversity loss, e.g. fragmentation, urban sprawl and destruction of habitat, sealing of surfaces, input of substances and overfishing.

Protection of nature and habitats is also increasingly being integrated in development plans. The aim is to contribute to poverty reduction and to achieving the Millennium Development Goals (MDGs). The Federal Government is not only supporting approaches for financing new protected areas in its partner countries. It is also supporting the consistency of structural measures, for example by introducing ecologically oriented fiscal reforms and by eliminating or reorganising counterproductive environmental policy transfer payments or subsidies.

i) Other outstanding international activities for conservation and sustainable use of biological diversity

The Washington Convention on International Trade in Endangered Species (CITES) is enormously significant for international conservation and sustain-

able use of tradable species. At the 15th Conference of the Parties to CITES in Doha, Qatar, in March 2010, Germany came out in favour of including porbeagle (*Lamna nasus*) and spiny dogfish (*Squalus acanthias*) in Appendix II of the Convention. Both species of shark have been heavily decimated by commercial fishing. Inclusion in the list would limit trade in shark products to sustainable fisheries. Neither the two shark species, nor red tuna, red and pink coral or hammerhead shark, were added to the Appendix. Marine diversity remains an important theme for the Federal Government despite these regrettable conference results. Success was achieved, however, with improved protection of the tropical hardwoods *Aniba rosaeodora* and *Bulnesia sarmientoi*.

At the 16th Climate Conference (UNFCCC) in December 2010 in Cancún, Mexico, the parties agreed a process to set up a global mechanism to avoid emissions from deforestation and destructive forest use: REDD+ (Reducing Emissions from Deforestation and Forest Degradation). With regard to global deforestation it is the common goal of all states, with the help of REDD+ to slow or stop this process and, thus, also the loss in biodiversity, or even to reverse the process. The methodological work began in 2011, including identifying the respective national reference lines and the reporting and monitoring processes. The UN process is supported by the Interim REDD+ Partnership. Founded in Oslo, Norway, in May 2010 it is intended amongst other things to encourage an exchange of experience for concrete REDD+ activities and specifically to stimulate additional national REDD+ activities.

Concrete implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture was also expedited. The final questions over financing and the provisions with regard to compliance were resolved at the fourth session of the Steering Committee in March 2011.

3. Sustainable fisheries

National Marine Strategy

The Federal Government published the "National Strategy for the Sustainable Use and Protection of the Oceans" (National Marine Strategy) on 1 October 2008. In so doing, the Government announced its commit-

ment to use all its political influence within the European Union to ensure that sustainability, the environmental impact of fisheries and protection of marine ecosystems remain at the forefront of political decisions in the Common Fisheries Policy and international fisheries policy.

Sustainability seals

The central concept of the Marine Protection Strategy is to protect ecosystems and to provide for future stocks. The fishing industry and retailers have introduced a raft of initiatives over the last few years to align purchasing policy and the range on offer more closely to the principles of sustainability. This includes in particular the increasing use of products with sustainable fisheries seals, especially from the Marine Stewardship Council (MSC). The increasing range of organically produced aquaculture products and the introduction of more precise catch area labelling by 2010 on a voluntary basis are also worthy of mention.

The Federal Ministry of Agriculture supports these activities in a variety of ways. These include the joint project to create an interactive consumer information system, which builds on the work of catch area labelling, and to develop a joint German position paper with minimum criteria for environmental labelling of fishing products. Under the German EU Council Presidency (2007) the Member States agreed to continue voluntary labelling of minimum standards for fishing products.

The State Secretaries' Committee for Sustainable Development decided on 26 April 2010 that the Federal Government will campaign explicitly at the European level for voluntary, but highly traceable sustainability labelling for fishing products.

Reform of the Common Fisheries Policy

The upcoming reform of the Common Fisheries Policy offers the opportunity to create a permanent basis for sustainable use of fishing stocks, in order to ensure that future generations also have a supply of high-quality and healthy fish as a food source. Many fish stocks in EU waters are still in a poor condition; previous crisis management has been insufficient. First of all, sustainable fisheries means adapting catch capacities to the existing catch possibilities. This has already been done in Germany.

Modern fisheries management must also be introduced. Important advance work has been undertaken since the reform of 2002, particularly with multi-year management and restocking plans for a variety of fish stocks. Germany advocates continuing this policy in the future and applying it to all overfished stocks. Moreover, it was announced that in future the focus will shift from individual species to an ecosystem-based multi-species approach, because the species are closely interlinked as components of the ecosystem.

Avoiding by-catch of unwanted fish or other animal species is another required measure. For this reason, Germany is insisting on the introduction of discard bans and landing requirements, i. e. an obligation to land all species intended for human consumption and – if these are regulated species – to offset the respective quotas. A change from landing quotas to actual catch quotas is an integral part of this process. The fishing industry itself should take more responsibility by undertaking quota management, in order to optimise this and to avoid discards whenever possible. Against this background, Germany does not believe that a fishing effort scheme is a suitable tool for developing positive prospects for sustainable fisheries. When implementing the new Common Fisheries Policy, consistency with integrated marine policy will be one of the central factors, particularly with the aims of the Marine Strategy Framework Directive including the Natura 2000 Guidelines. This also includes the development of fisheries management plans in the protected areas of the German Exclusive Economic Zone (see Chapter D.III.2.e).

Fisheries controls; fighting illegal fishing

EU fisheries controls were thoroughly overhauled by the new Fisheries Control Regulation, which has been in force EU-wide since 1 January 2010. The Federal Government has welcomed this adjustment from the start. It is clear that urgent action is required, not least due to the alarming figures on the scale of illegal fishing. In addition to the EU Regulation to combat illegal, unreported and unregulated fishing, which was passed in 2008, the new Fisheries Control Regulation also allows for tighter and more effective controls, as well as deterrent sanctions. These are important instruments in preventing and effectively combating infringements of the Common Fisheries Policy. It is important in this context to develop a European “control culture” and to achieve more efficient coordina-

tion of the controls at EU level. The Fisheries Control Regulation was supplemented in spring 2011 with a comprehensive implementing regulation, which concludes the reform process by regulating individual technical issues.

Fisheries agreements with third countries

When devising future fisheries agreements the EU should pay greater consideration to how the funding provided to the fisheries sectors of third countries is used. In addition to stimulating investment and creating new jobs, it is crucially important to create efficient management structures to optimise fisheries management and to implement the legal regulations through effective controls. The EU should require the recipient countries to be more transparent about their use of the funds so that the EU is able to review this use. Encouraging responsible and sustainable fisheries must be the first priority in this context. At the same time, the measures should be oriented towards increasing the added value of the fisheries sector in the respective partner country. The development of sustainably oriented aquaculture should also be considered as a fisheries policy measure. The schemes subsidised by EU funds should always be coordinated with the projects for technical cooperation.

4. Agriculture and forestry

Agriculture is and remains one of the most important sectors in our country, ensuring the supply of food, energy and raw materials and providing many people with employment and identity. Some 54 % of Germany's entire land area is used for agricultural purposes. Agricultural operations play a crucial role in preserving cultivated landscapes and shaping the rural space.

Like all economic sectors agriculture is facing the challenge of climate change. On the one hand agriculture itself is affected by climate change and, on the other, is an emitter of greenhouse gases. In Germany it is responsible for 8.2% of greenhouse gas emissions and contributes worldwide around a third of global emissions of long-lived greenhouse gases. Efficient and frugal management of natural resources (land, water, air, nutrients) and their sustainable use are urgent tasks to safeguard high-quality food for the population without endangering the basis of life for future gen-

erations. This also includes animal welfare. This was stressed by many participants in the Dialogue on Sustainability.

Agricultural land provides habitats for an array of open-land animal and plant species. This gives agriculture a particular significance and responsibility for preserving biodiversity. Heavy declines have been recorded across Europe over the last few decades for numerous species that are connected to extensive forms of use (e. g. field birds like the skylark or the great bustard). This decline was a consequence of an intensification of farming on fertile land and discontinued use of low-output land, which varied from region to region. Whilst a few species have recovered thanks to targeted conservation measures (such as the establishment of new grassland, edge strips or special fallow land, the identification of protected areas and provisions to protect species), the levels of other species have continued to decline. As a result, finding sustainable and eco-friendly forms of land use remains a high priority. Consequently, the Federal Government shares the analysis of the European Commission on the future challenges for the European Common Agricultural Policy (CAP) and the objectives derived from it. These objectives are viable food production, sustainable management of natural resources and sustainable development of rural areas. The CAP must be consistent with the other policy areas of the European Union and the Millennium Development Goals. It must also support the farming industry in overcoming climate change and protecting biodiversity, help to improve water management and ensure that production is environmentally friendly and meets animal welfare standards.

Globally, increased yields from sustainable forms of agriculture management that is tailored to the local conditions are essential to cushion heightened land competition in the face of the growing demand for food and bioenergy. However, yields per hectare can be increased further through improvements in cultivation and breeding.

Organic farming

Organic farming in Germany is supported by the development programmes for rural areas with financial support from the Federal Government and through the Organic Farming Federal Scheme and other forms of sustainable agriculture. Organic farming preserves

and protects natural resources, has a variety of positive effects on nature and the environment and helps to produce high-quality food. From 1994 to 2010, the land share of organic farming increased from 1.6% of agricultural land to 5.9% (990,702 ha). Organic farming land increased by 4.6% (+ 43,588 ha) compared to the previous year. In 2009, sales of organic food returned to the previous year's level of around EUR 5.8 billion. With a similar total sales figure, the volume growth continued to grow. In 2010, sales of organic food went up by 2% to around EUR 5.9 billion. Overall it is apparent that the market has grown much faster than the amount of organically farmed land. As a result, the demand for organic food will also continue to be met through imports from other EU states or from non-EU countries.

The continued development of organic farming also depends on the legal and economic conditions, and more particularly on the buying decisions that consumers make.

The recommendations published by the Sustainability Council in 2011 will be incorporated into the agricultural policy discussion.

Gold-standard organic farming: new sustainable agricultural policy – recommendation of the Sustainability Council of July 2011

Against the background of unresolved issues (including global nutrition, food security, competitive ability, reducing greenhouse gases, adaptation to climate change, safeguarding biodiversity), the Council under the stewardship of Council Member Dr von Bassewitz (Chair of the German Farmers' Association – DBV) has outlined recommendations for ways to achieve the objective of the Sustainability Strategy for organic farming to have a 20% share of German agricultural land.

Sustainable forestry management

In densely-populated Germany, forests cover a third of the land area. They are managed according to the proven integrative principle of sustainable, multi-functional forestry management.

Sustainable forestry management incorporates the conservation of biodiversity, the supply of raw materials to the domestic economy, the safeguarding of rec-

reational functions, the optimisation of forests' contribution to climate protection, and the maintenance of the forests' stability and adaptability.

The Federal Government's aim is to achieve forestry management in harmony with nature on as much as possible of the managed forest land.

Timber from domestic forests is Germany's most important renewable raw material. The significance and use of timber as a raw material, building material and energy carrier, are increasing as is the demand for it because of its positive material properties and comparatively beneficial eco-balance. At the same time, forests are to meet increasing requirements in terms of climate protection, conservation, environmental protection, recreation and hunting. Conflicts between goals may arise in the future – depending upon the region concerned. Moreover, climate change is forcing forest owners and the forestry industry to face new challenges.

The Federal Government announced its "2020 Forest Strategy" in September 2011 in response to this situation. The Strategy tackles the complex interrelationships and different levels of ambition. It identifies existing challenges and opportunities, analyses potentially conflicting goals and devises solutions for nine areas of action (including climate protection, ownership, raw materials, biodiversity, forestry and hunting, recreation, research). The aim is to identify ways of achieving a sound balance between the increasing demands on the forests and their sustainable capacity.

2008 Forest Inventory Study

The 2008 Forest Inventory Study identified the following essential developments for the forests in Germany compared to the Second Federal Forest Inventory:

- Timber stock in forests has risen by 2% since 2002. At 330 cubic metres of standing wood per hectare, Germany has more wood in its forests than practically every other European country.
- The average age of the forest has increased by four years over this period and is now 77 years.
- Despite the drought in 2003 and 2004, at 11.1 m³ of standing wood per hectare and year, the increase has exceeded the estimate of 10.3 m³ per hectare and year taken from the modelling of forest development and timber harvesting potential.

- The total balance of timber stock, forest growth and loss shows that 10% more timber is grown than is felled, i.e. 90% of the growth is used.
- The proportion of deciduous trees has increased evenly by 2% in forests under state, corporate and private ownership.
- Dead wood has increased by 19% to 14.7 m³/ha. Per hectare most dead wood is located in national forests. The heavy increase is predominantly due to natural disasters (e.g. wind and snow damage, as well as disease, insect and fungal attacks). Dead wood programmes for targeted biotope and habitat management also play a role here.

Sustainably managed forests are indispensable worldwide as suppliers of raw materials, for climate protection, biological diversity and water resources. At the same time, the global deforestation rate, which is mainly driven by the conversion of tropical rainforests into agricultural land, and destructive forest use, remains at a high level – 13 million hectares a year over the last 10 years.

One basic prerequisite for sustainable forestry management is compliance with national laws on timber harvesting. This is not guaranteed in many countries, particularly in the tropical areas. Illegal felling represents a considerable threat to our forests, because it adds to deforestation and to forest damage, which causes around 20% of global CO₂ emissions. Moreover, it has social, political and economic consequences that frequently frustrate progress in terms of responsible governance and threaten the livelihoods of the local communities that depend on the forest.

The EU published the Timber Regulation on 2 December 2010 to meet its responsibility as an important market for timber. From 3 March 2013, the new Regulation will be applied in its entirety. It bans marketing of illegally felled timber and introduces mandatory standards of care for all market participants putting timber or timber products into circulation for the first time within the EU. These include information obligations on the type and origin of the timber, as well as the procedure for estimating and minimising the risk that the timber could have come from illegal felling.

The EU is also concluding voluntary partnership agreements with important timber-producing countries. Legality certificates for timber imports into the EU are being introduced for these countries. The Federal Gov-

ernment is working with the EU Commission and other Member States – including with financial aid – towards efficient conclusion of bilateral partnership agreements with important supplying countries. Corresponding agreements have now been negotiated with six countries (Ghana, Republic of the Congo, Republic of the Cameroon, Indonesia, Liberia, Central African Republic). The European Commission is currently negotiating with other tropical countries (Malaysia, Vietnam, Gabon, Democratic Republic of the Congo) and has begun official talks with 15 additional countries.

Corresponding legislation came into force in Germany in July 2011, which regulates the controls on wood supplies and certificates and imposes effective penalties and punitive sanctions in the event of infringements (Timber Trading Safeguards Act – HolzSiG).

Sustainable global forestry management cannot be achieved overnight – especially against a background that includes existential poverty, nutrition and development problems. Proof of legal production is the first and necessary step towards proof of sustainable and, thus, resource-efficient production. Subsequent steps, such as those demanded by the European Parliament in its Resolution of 11 May 2011 on the Commission's Green Paper on forest protection and information, will be taken within the envisaged review of the effectiveness of the Timber Trading Regulation. The first review by the Commission will be conducted in December 2015 at the latest.

V. Health

1. Challenges of a sustainable health care policy

The German health care system ensures all citizens have access to high-quality care. Almost 90% of the population receive necessary medical treatment through the statutory health insurance system (GKV). A further 10% have private health insurance and other coverage in the event of illness. The good quality of medical care in our country not only plays a crucial role in people's quality of life and prevents social exclusion (ninth management rule of the Sustainability Strategy); it also has a positive effect on the economy, because it encourages productivity and helps people to work for longer and in better health.

However, GKV is under pressure from two sides due to demographic change. On the one hand, an increasing demand for health care services has to be financed, because older people suffer illness on average more frequently than younger people and their illnesses are usually more severe. On the other hand, the decline in people of working age reduces the GKV financing basis. The Federal Government's objective is for everyone in Germany to have access to the medical care they need, now and in the future, regardless of income, age and health risk, and for them to benefit from medical progress.

It is clear from the numerous and diverse comments on the structure and financing of the health care system, which were suggested during the Citizen Dialogue on the Sustainability Strategy, that the public is also very interested in this topic.

Statement from the Dialogue on Sustainability

"I'm concerned with individual health, specifically with how people understand and feel about their own health, which all external measures can support."

Long-term care insurance (Pflegeversicherung) was introduced in 1995 to close the last major gap in social welfare and to guarantee systematic cover for the risk of requiring long-term care. The foremost priority is to enable people who need care to live as independently as possible. Around 2.42 million people utilised care insurance services in 2010. Like GKV, long-term care insurance is having to adjust to increasing demands on its services due to an ageing population. The increase in dementia-type illnesses is a particular problem. The number of dementia patients could double by 2050 from the current approx. 1.2 to 1.4 million (based on the current age-specific prevalence rates).

2. Reform of statutory health and long-term care insurance

Statutory health insurance (GKV)

Due to the effects of demographic change, GKV expenditure has been steadily growing over the last few years, predominantly faster than assessable income. If there is no correction of the financing mechanism, then this is reflected in increasing contributions, which

lead to increasing labour costs and jeopardise growth and employment. As a result, it is essential to ensure sustainable financing of GKV to reduce the dependency of contributions on earnings, and to decouple the development of labour costs from the development of health care costs.

Accordingly, on 1 January 2011, the Federal Government instituted a radical reform with the legislation for sustainable and socially balanced financing of statutory health insurance (GKV-FinG – Health Insurance Financing Act), which also incorporates the objectives of the fifth management rule. Indeed, the Health Insurance Financing Act includes effective consolidation measures and facilitates the decoupling of health care expenditure from the development of work-related earnings.

The new financing system is based on greater transparency and competition. The insured people get a clear price signal, against which they can measure the quality and services of their health insurance fund. The additional contributions that are not dependent on income, together with unbureaucratic social equalisation financed primarily through tax revenue, are playing a crucial role in ensuring that the increasing demand for health care services can be met in future with no additional burden on labour costs. The Federal Government has introduced various measures to reduce costs and intensify competition in the area of pharmacy services, for which expenditure is increasing particularly dynamically.

Joint efforts from all stakeholders at the federal, the *Länder* and the regional levels are essential to ensure a continued local provision of medical care that meets requirements particularly in rural regions. The Federal Government has introduced the Medical Care Structure Act (GKV-VerStG – GKV-Versorgungsstrukturgesetz), which passed its second and third readings in the Bundestag on 1 December 2011, to create the conditions for safeguarding comprehensive local medical care and to avert an imminent shortage of doctors.

Doctors and nurses are required who are able to meet the growing demand to ensure a good provision of health care and nursing. Given that the number of potential staff will decline because of demographic change, the proper conditions for training and permanent employment must be put in place today for the staff of tomorrow. This includes creating attractive conditions for employment in the medical and nursing

professions, including a better work-life balance. The Federal Government has already set numerous measures in motion, e.g. the training and qualification initiative in geriatric care.

Long-term care insurance

Social long-term care insurance, which is still financed exclusively through income-dependent contributions, is also facing a shrinking financial basis. This represents a considerable challenge to the financing of nursing services.

The Federal Government will develop long-term care insurance to ensure that all citizens continue to have access to dignified nursing and care in the future if they require it. Implementing the goals of the Coalition Agreement and the result of the Coalition Committee meeting of 6 November 2011, the Federal Government agreed the key points of its nursing reform on 16 November 2011, which will define the details of the forthcoming legislative process.

The services of long-term care insurance will be improved and redesigned to meet needs better. The particular aim is to improve care for the special needs of dementia patients. The “outpatient before inpatient” principle will also be reinforced, including support for people in group care units. In the course of this legislative period, the Federal Government will develop a new definition of “in need of care” – based on existing preparatory work – that goes beyond the performance-related assessment.

Improving services for those in need of care – particularly for dementia patients – will provide relief for their relatives and families who care for them. Additional measures will be introduced to support relatives who provide care.

A sustainable foundation is being created for the financing of care: the service improvements will be financed by raising contribution rates by 0.1% from 1 January 2013. At the same time, a tax credit will be established for people voluntarily contributing in advance to fund private services when they are in need of care.

The Federal Government is implementing pilot programmes, such as the programme to improve services for people in need of long-term care, which will provide information on how to continue developing long-term

care and care structures. Within its 2020 Hightech Strategy the Federal Government is supporting the development of technical solutions to help those in need of care and carers. Furthermore, the Federal Government will focus more heavily on the issues of long-term care for people with dementia-type illnesses in connection with the “Flagship Dementia Project” within the scope of the “Dementia Future Workshop” project.

3. Prevention

The Federal Government's prevention strategy

People in Germany are living substantially longer nowadays thanks to social and medical progress. Nevertheless, chronic illnesses still have a grave effect on individual people's living situations, and on the financeability of social welfare systems, on companies' performance and, thus, on the capacity of society as a whole. Targeted prevention and health promotion are important components of leading a long, healthy life and avoiding chronic disease. They are especially important for children and young people.

Statement from the Dialogue on Sustainability

“The course for a healthy and active life is set in childhood. What we learn in the early years shapes our lives and pays off in a healthier life in the long term. Therefore, early health promotion for children and young people, e.g. through exercise, nutrition and education, is highly significant for the sustainable development of the health care system.”

The Federal Government shares the belief – expressed many times in the Dialogue on Sustainability – that sustainability of health care can only be achieved if citizens take responsibility for their own health, i.e. adopt healthy forms of behaviour. Establishing a National Prevention Strategy was one of the goals of the current Coalition Agreement. In particular, people's awareness of the significance of health for the individual and for society must be increased. The doctor-patient relationship and company-based prevention programmes are crucial to this.

Company-based health promotion

Over the last few years, there has been a dramatic and above-average increase in the number of older people in the workforce. In terms of demographic change, older people working for longer is necessary from a macroeconomic perspective and sensible from a commercial one. Consequently, efforts to remove the obstacles to employment that older people face must be continued consistently in the future. Companies and both sides of industry should participate by arranging working conditions that are age-appropriate and favourable to older workers.

The Federal Government wants to play a crucial role in supporting older workers. Options for strengthening company-based health promotion schemes will therefore be an important component of its Prevention Strategy. In this context, information on the advantages of company-based health promotion schemes and their legal framework will be expanded. This is because many small and medium-sized companies are not aware of the numerous possibilities of company-based health promotion and are not making sufficient use of the opportunities it offers.

The Action Strategy for Safety and Health in the Workplace (GDA – Handlungsstrategie zur Sicherheit und Gesundheit am Arbeitsplatz) has been in place since November 2008. It is a partnership of the Federal Government, the *Länder* and accident insurance institutions and is enshrined in the Occupational Health and Safety Act (AschG – Arbeitsschutzgesetz) and Book VII of the Social Code (Sozialgesetzbuch – SGB VII). The overriding objective of this strategy is to maintain and promote employees' employability and ability to work. The prevention work of the GDA is organised systematically with legislation from the Federal Government, Labour Inspectorate services from the *Länder*, and self-regulation by the accident insurance institutions; this facilitates close cooperation based on common occupational health and safety goals, areas of action and work programmes. The institutions of the GDA also work with the insurance companies to link the diverse prevention activities of the insurance companies with the occupational health and safety activities and to exploit synergies. This cooperation will be expanded in future.

German National Initiative to Promote Healthy Diets and Physical Activity (IN FORM)

The number of overweight and obese people in industrialised and emerging countries has steadily increased over the past decades. Excess weight plays a crucial role in the emergence of lifestyle diseases, such as cardiovascular diseases, diabetes and joint disorders. This is not just a health concern, as it also creates a burden from an economic and social perspective.

Statement from the Dialogue on Sustainability

“When we consider the topic of health we should also discuss an important condition of a healthy life: the way in which we eat.”

The Federal Government's aim is to reduce the number of people with obesity. The national action plan “IN FORM – Germany's national initiative to promote healthy diets and physical activity” was introduced to prevent malnutrition, a lack of exercise, excess weight and the associated diseases. It will help to improve the population's exercise and dietary behaviour in the long-term. The aim is to motivate people to take care and lead a healthy life. At the same time, it will create the right conditions to ensure that everyone is able to take responsibility for their own health and that of their family. In the Dialogue on Sustainability many citizens stated that a healthy diet of high-quality food and regular exercise were essential components of healthy living. Nutritional education, exercise promotion and sporting activity are also gaining in significance. Because prevention is an across-the-board task, in implementing the Action Plan, the Federal Government is also working closely with the *Länder*, and with social stakeholders such as social insurance institutions, sports associations, the food industry, consumer associations and scientific societies. The number of adults with obesity is being recorded within the sustainability indicators, in order to monitor the effectiveness of the prevention promotion measures. The figures on premature death and smoking rates amongst the population are additional indicators in the field of health and nutrition.

4. Prevention through environmental protection

Environmental protection is also highly significant for health. Protecting health has always been a central objective of environmental policy, which is reflected, for example, in the impressive improvements reached in air quality, chemicals safety, water protection, noise protection and drinking water quality.

Health risks have been substantially reduced (fourth management rule of the Sustainability Strategy) over the past decades. However, environmental protection can also relieve the health care system through the avoidance of health costs. Nonetheless, further efforts are required, such as changing lifestyles and conditions. This applies in particular to vulnerable groups like children and young people or the elderly.

One area of action is to improve air quality in building interiors. New legal requirements are changing the energy balance of buildings, which can lead to the accumulation of pollutants. Sustainable transport policy with the health goal of avoiding traffic noise is a current topic of environmental health protection. Chemicals safety can also be further improved at the international level. At the European level, the EU REACH Regulation on chemicals has facilitated identification and assessment of many previously unknown chemicals. The regulatory approach and the tools of the REACH Regulation (Registration, Evaluation, Authorisation and Restriction of Chemicals) are suitable to regulate nanoscale substances. However, adjustments are still required for the realisation of the precautionary principle, which are currently being developed and discussed in the EU's appropriate working groups. With regard to the combination effects of chemicals the EU Commission has been tasked with examining the necessity of health assessments, because there is still too little information on this subject. It is also essential that the influence of environmental factors is recognised promptly through an early warning system, e.g. through human biomonitoring, before health impairment or damage occurs.

VI. Social inclusion, demography and migration

The Federal Government's political objective is to improve disadvantaged groups' social and economic opportunities for participation. Everyone must have the opportunity to exploit their individual potential. The measures introduced by the Federal Government range from employment incentives and improved reconciliation of work and family life to infrastructure measures in education and support through the expansion of childcare and all-day schools. People who cannot earn a living wage on their own are supported by social welfare in accordance with Books II and XII of the Social Code (SGB II and XII) so that they can participate in society. However, long-term dependency on state aid perpetuates poverty across the generations and must be avoided. In contrast, integrating people of working age into working life improves the opportunities for participation of all members of the household. Therefore, the central tenet of the Federal Government's labour market and social policies is to (re)integrate as many people of working age into the labour market as possible and to maintain or restore employability.

Statements from the Dialogue on Sustainability

"Introduce personal development accounts to facilitate a secure and flexible employment biography."

"Introduce social points in Germany. The social point should be a valid, universal currency for social [welfare] activities across the whole of Germany. One social point corresponds to one hour of social activity."

"A society's sustainability essentially depends on whether it succeeds in integrating people from different social backgrounds, in giving them a sense of belonging and offering prospects."

Social participation ultimately occurs at a local level. Youth welfare and education and cultural services (from swimming pools to public libraries) are all examples of municipal services. Utilisation of sports facilities, music teaching, supplementary learning, and even holidays can be supported through the so-called education and participation package for eligible children and young people (Act on the Ascertainment of Standard Needs and on the Amendment of Books II and XII of the Social Code of 24 March 2011). This means that children and young people in low-income households have the opportunity to gain experiences outside their

original social sphere, which can help them develop self-confidence and prospects to shape their own lives. This will be of benefit for the children's life and development opportunities, but also for society as a whole.

Statement from the Dialogue on Sustainability

"Substantial efforts are required above all to implement the central sustainability strategy including the global requirements in feasible targets for the development of sustainable regions. This is unthinkable without a participatory mobilisation of civil society (local agenda, citizen initiatives, environmental associations, engineering associations etc.) actively promoted through policy."

Voluntary civic engagement is an additional central pillar of any free, democratic, social and vibrant community. Therefore, effective engagement policy is an important part of the activity of the state and government in our society.

More than a third of the German population is currently involved in churches, clubs, associations and initiatives. Voluntary civic engagement creates cohesion and community and fosters solidarity in a way that the state alone never could. With their engagement, citizens are making an indispensable contribution to solving social challenges and to social cohesion.

Statement from the Dialogue on Sustainability

"Particularly in youth associations children and young people learn the value of getting involved, that doing something for society is fun."

It is crucial to get people actively engaged in society who have not previously had this access. Such engagement is also a key to integration and participation in our society. To this end, the Federal Cabinet passed the National Engagement Strategy on 6 October 2010. It lays the foundation for promotion of engagement in Germany to be better coordinated between the state, business and civil society and pursues four strategic goals: better coordination of engagement policy schemes between the Federal Government, the *Länder* and the local authorities, increased commitment to strategic partnerships with companies and foundations, the promotion of a culture of recognition and the improvement of the basic conditions for civic engagement.

Statement from the Dialogue on Sustainability

"With regard to demographic change there must be an effort to increase the integration of women and to integrate on a voluntary basis older people with academic training in particular in R&D projects on sustainability. This could open up significant innovative potentials for the realisation of the Sustainability Strategy."

Promoting integration will increase the participation of migrants in social life and facilitate respectful interaction. Therefore, the Federal Government attaches particular significance to the integration of migrants and is making substantial resources available for this purpose. The Government had invested around EUR 1 billion in integration courses by the end of 2010 from when they were introduced in 2005. Around EUR 218 million was provided for integration courses in 2011, for example, and numerous other measures to promote integration were also financed.

Germany is still facing certain challenges despite these measures. The population structure is changing to profound effect like never before. Demographic change is causing a shrinking and ageing population. According to the latest modelling, the low birth rate and increasing life expectancy will mean that the number of people of working age (20 to 64) will drop by around six million by 2030, whilst the number of elderly people (over 65) will rise over this period by more than five million.

This is why the Federal Government has set up an interdepartmental State Secretaries' Committee for Demography under the aegis of the Federal Ministry of the Interior.

The Federal Government approved the Demography Report on 26 October 2011. The Report describes the most important facts and trends of demographic change and presents the action the Government is taking in all areas. The Report's key focuses include family and society, migration and integration, economy, work, education and research, old-age provision, health and care, rural areas and urban regions, infrastructure and mobility, and state and government. The aim of the Report is to illuminate the demographic changes and the associated consequences and to prepare guidelines for a coordinated demographic policy by the Federal Government. Because the Report covers all the policy areas relevant to demography, it offers a comprehensive basis of information for all political decision-makers for the first time.

Demography Strategy

The Federal Government will publish a comprehensive Demography Strategy in spring 2012. The intention is to create an intergenerational policy adapted to individual living situations using four main objectives and 10 fields of action, which recognises development opportunities for people of every age at an early stage and promotes these opportunities. The Government is bound by the following four strategic objectives, which are of national significance and guide the Government's actions:

1. Recognising and utilising the opportunities afforded by a longer life
2. Strengthening growth opportunities and securing prosperity
3. Maintaining and increasing social justice and social cohesion
4. Preserving the state's ability to act.

Action plan

In order to launch a pilot project under a comprehensive Demography Strategy, the Federal Government, together with the *Länder* in eastern Germany, has drawn up an action plan to safeguard public services, particularly in areas affected by demographic change. The experiences gained in the eastern *Länder* were used to develop guidelines for dealing with demographic issues and to formulate action principles for a redesign of public services. Working on the basic assumption that equivalence of living conditions does not mean comprehensive consistency of infrastructure and living conditions across the whole of Germany, what is required are regional infrastructure services tailored to specific needs, taking into account demographic and structural development and the specific local conditions. New solutions and ideas are particularly needed in those areas where traditional planning approaches aligned to population growth collide with regional development. Modernising public services will be a crucial element in future. Technical progress, especially in the field of modern information technologies, opens up a broad field of innovation. The activities of the citizens will also be crucial in determining what can be achieved in future in rural areas. Greater civic responsibility and greater involvement in regional decision-making processes strengthen the community and cohesion.

Meeting demographic challenges is a national issue that requires the participation of all stakeholders in politics, business and society. The public authorities must lead the way in managing demographic change and organise the process across all departments and levels.

The action plan was announced on 6 October 2011 at the Conference of the Heads of Government of the Eastern *Länder*.

VII. Global challenges in respect of poverty and sustainable development

Sustainable development only succeeds when states cooperate across national borders. Poverty and hunger on other continents, particularly in developing countries, climate change and environmental disasters, social inequality, contagious diseases, violent conflicts, terrorism and scarcity of resources destabilise whole regions and affect life in industrialised nations like Germany. As a result, the tenth management rule of sustainability is to align sustainable action globally to the United Nations' Millennium Development Goals.

Statement from the Dialogue on Sustainability

"We also have to ask ourselves whether sustainability is really only applicable to Germany and Europe, while we don't care about the rest of the world. Whatever the ideal of humanity and the world we believe in, it cannot be that. Ultimately, we have to work to realise a minimum standard all over the world and not just start an aid project here and there."

1. The Millennium Development Goals

Ten years ago, the Heads of State or Government of 189 countries signed the United Nations' Millennium Declaration. In so doing, they laid the foundation for the central international reference framework, which covers four fields of action: to advance peace, security and disarmament; to reduce poverty; to protect our shared environment; and to promote democracy, human rights and good governance. These four fields of action form the basis for the eight Millennium Development Goals (MDGs) with their 21 subsidiary objectives and 60 indicators, which were developed from the Millennium Declaration following the Summit.

The eight Millennium Development Goals

- To eradicate extreme poverty and hunger
- To achieve universal primary education
- To promote gender equality and empower women
- To reduce child mortality rates
- To improve maternal health
- To combat HIV/AIDS, malaria and other communicable diseases
- To ensure environmental sustainability
- To develop a global partnership for development.

The Millennium Development Goals are the overriding goals of German development policy. They are global targets, which describe a minimum standard for a life of human dignity, and should be achieved by 2015. Five years before the deadline, progress is rather mixed: there have been considerable successes from a global perspective, but the challenges remain immense. Many countries have achieved extraordinary things. These results show that joint efforts lead to positive results and the successes are tangible. Yet, overall the situation is improving too slowly. The effects of the global oil price and food crises, as well as the financial and economic crisis, are jeopardising some of the successes that have been achieved. It is precisely those countries and regions that are particularly far behind that are at risk of falling further back. This applies particularly to countries that have suffered or are suffering from violent conflicts. Progress has been slow on achieving productive full employment and decent work for all, on promoting equality between the sexes, on achieving ecological sustainability and providing basic sanitation.

A UN High Level Plenary Meeting held in New York from 20 – 22 September 2010 included discussions on the interim status of achievement of the MDGs and strategies for future action.

The unusually high number of participating Heads of State or Government helped to raise public awareness of the MDGs and to create a new momentum for achievement of the goals by 2015. The outcome document represents a balanced compromise between the needs of the developing countries and the interests of the donor countries. In addition to political principles, the declaration includes a review of the status of achievement of the MDGs and an Action Agenda tailored to the individual goals. Moreover, the global development partnership was strongly reaffirmed and renewed.

2. Protecting global public goods

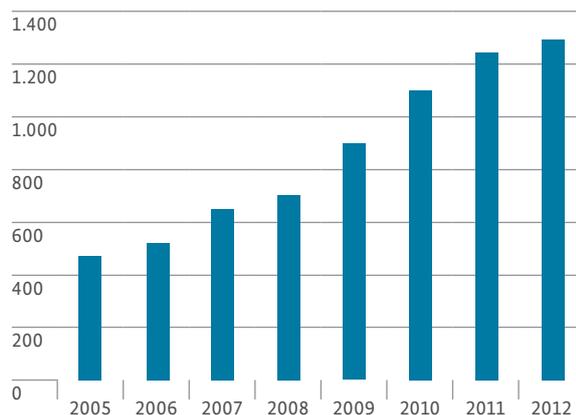
The aim of development policy is to achieve stable economic and social development in the partner countries. However, its goal is also to meet common global challenges in all countries: climate protection and adaptation to climate change, protecting biodiversity, preventing global degradation of land and desertification, peace, stable international markets with fair development-friendly regulation and protecting against epidemics are all seen as “global public goods”. All countries profit from their protection – and no country can do so successfully on its own. This is why the Federal Government, recognising Germany’s responsibility, this jointly with other nations to protect these global public goods.

Climate change

The international community recognises that climate change is one of the greatest challenges of the 21st century. Fast action is required to limit global warming to a maximum of 2 degrees Celsius. The Federal Government is focussing on cooperation with developing and emerging countries in parallel to the climate negotiations under the umbrella of the United Nations. Its commitment to climate protection and to adaptation to climate change in developing countries has been systematically expanded over the past few years. This is also served by the “Climate and Development” Action Programme. In 2005, investments in this field stood at EUR 470 million, but by 2008 this had already reached EUR 1 billion. The Federal Government is providing an additional EUR 1.26 billion between 2010 and 2012.

Climate commitment of the Federal Ministry of Economic Cooperation and Development since 2005

Contribution (in EUR m)



With regard to the future financing of environment and climate-related action, Germany is working toward a strong role for bilateral cooperation and for the World Bank, the regional development banks and the relevant UN funds and mechanisms (particularly the Global Environment Facility). Moreover, all measures of German national development cooperation have been subjected to environmental and climate screenings since 2011. This ensures that environmental and climate aspects are incorporated in efforts in fields such as water, health, agriculture or economic development.

Since 2008, the International Climate Initiative has been supporting projects in developing and emerging countries.

International Climate Initiative

The International Climate Initiative (IKI) finances climate protection projects in developing and emerging countries and in the former communist states of Central and Eastern Europe. The G5 states (Brazil, China, India, Russia and South Africa) are the clear focus of the scheme. In this way, the Federal Ministry of the Environment is making an effective contribution to reducing emissions and adapting to climate change and is supplementing the Federal Government's existing development cooperation. The EUR 120 million at the IKI's disposal comes from the revenues of emission allowance auctioning. Investing in climate protection worldwide stems from a decision of the German Bundestag. When selecting projects the Federal Ministry of the Environment favours the development of innovative and replicable solutions, which have an effect beyond the individual project and are transferrable. As the result of targeted cooperation with partner countries, the IKI is bringing a crucial impetus to negotiations for an international climate agreement for the period from 2012 onwards.

Access to energy

Supplying people with energy to meet their basic needs and to realise the Millennium Development Goals is of central significance. Worldwide, 1.4 billion people have no access to electricity and 2.7 billion people cook and heat predominantly with wood. The Federal Government is working consistently to achieve improved access to sustainable energy in the emerging and developing countries. The partnership focuses on promoting renewable energies and increasing energy

efficiency. The commitments to this end have been continually expanded over the past years and reached a total volume of around EUR 1.7 billion (of which EUR 445 million budget funds) by 2010. Thus, German development cooperation is making a significant contribution to a global change in energy use and to climate protection. It is the developing countries in particular which profit heavily from targeted political support for renewable energies. The International Renewable Energy Agency (IRENA) was founded in January 2009 in Bonn at the initiative of the Federal Government (via the Ministries of the Environment and of Development). IRENA will help countries develop strategies and policy measures to expand usage of renewable energies.

Biodiversity

The loss of biodiversity around the world also jeopardises development opportunities. As a result, the Federal Government has greatly increased its commitment to protecting biodiversity over the past years. In 2012, it will provide EUR 390 million for the protection of forests and other ecosystems, and from 2013 this amount will increase to EUR 500 million a year.

Peace and stability

Peace and stability are basic prerequisites for development and increasing prosperity: a large number of the "least developed countries", the poorest countries in the world, have experienced violent conflicts or are suffering from war or civil war. Human rights violations such as discrimination or inhumane working conditions represent major challenges. The Federal Government is contributing to crisis prevention and global security through peace missions, but especially through development cooperation that helps prevent conflicts.

Fair world trade order

The 2008/2009 financial and economic crisis shows that stable global markets are a prerequisite for (economic) development. Poor countries can only achieve sustainable growth and, thus, reduce poverty if they have access to global markets through a fair world trade order. To ensure that they are actually able to exploit the potential of global trade, the poorest coun-

tries are given support to expand their trade capacities and to improve trade-relevant infrastructure, e. g. through the Aid for Trade scheme. Within the EU, Germany is advocating a pro-development conclusion to the world trade round launched in Doha. Within the EU and G20, the Federal Government is committed to creating transparent and stable rules for the international financial markets, as well as an effective and global anti-corruption regime.

Health

Contagious diseases can also be a threat to international sustainable development. In a globalised world they can spread quickly across continents. In this context, the Federal Government provides over EUR 700 million a year to improve the health situation in developing countries. In particular this includes fighting HIV/AIDS, malaria and tuberculosis.

3. Priorities of a sustainable development policy

Development policy requires broad support in society. As a result, the Federal Government would like to improve both the effectiveness and the visibility of its development cooperation. Cooperation with business and civil society is also being increased. The objective remains to increase the funds available for development cooperation to 0.7% of gross national income by 2015. The Federal Government is using innovative financing tools to achieve this, including the use of revenues of emission allowance auctioning and funds from the market. At the same time, greater attention is being paid to the developmental effectiveness of the funds' use, and to the efforts being made by the emerging and developing countries themselves.

a) Increasing the effectiveness of development cooperation

Germany's three agencies for technical cooperation – GTZ, InWent and DED – have been combined into one new, efficient organisation, the Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. The Federal Government has thus dismantled duplicate structures so that German development cooperation now presents a united front abroad.

The aim was to increase results orientation and impact assessment. International principles like strengthening partner countries' ownership, partner orientation, results-oriented cooperation and mutual accountability will play a greater role and increase the impact of development cooperation work. It is not just about how many wells have been built. The other crucial factor is how many people will stay healthy thanks to access to clean water. More impact also means greater political consistency. Subsidies, agricultural privileges and unfair trade must not hinder development.

b) Concentration on key sectors

German development policy concentrates on the key sectors of education, health, sustainable economic development, good governance, rural development and climate and resource protection. Funds are deployed selectively in these areas in cooperation with the partner countries. For example, funds for education were dramatically increased in 2011. In Africa, the Federal Government is to double the funds for education projects by 2013. With regard to rural development, the German commitment is in line with the resolution of the 2009 G8 Summit in L'Aquila, Italy, both from a financial and a strategic-political angle. A total of EUR 2.1 billion was spent to further rural development and food security between 2010 and 2011.

Good governance means constructive interaction between the state and society, which guarantees citizens' political participation, respect for human rights, social welfare and the rule of law. It also means effective governmental institutions and responsible behaviour by the state in terms of political power and public resources. Good governance in any sector is a prerequisite for development measures to have a sustainable effect.

c) Strengthening human rights

Human rights are the guiding principle of German development cooperation. Consequently, in all intergovernmental negotiations and talks with partner countries the Federal Government is pushing for the respect, protection and guarantee of human rights – these are the central criteria of cooperation. Implementation of the 2008 – 2010 Second

Development Policy Action Plan for Human Rights has embedded the human rights approach even more firmly in German development policy, e. g. by strengthening the right to water or sanitation and through the promotion of civil society organisations. From 2011, this has been represented by the “Human Rights in Development Policy” plan of the Federal Ministry of Development.

d) Creating economic opportunities

The Federal Ministry of Economic Cooperation and Development (BMZ) supports German businesses to invest in emerging and developing countries in a socially responsible and environmentally sustainable manner and, thus, to promote sustainable economic growth. The aim is to create economic opportunities for individual people and for small and medium-sized companies in the developing countries. Supporting sustainable economic development, including strengthening (micro) financial systems, is one of the Federal Government’s most important tools. Germany is a leading donor country in the field of micro-financing. The aim of the SANAD Fund (SANAD: Arabic for “help”), for example, which was set up by the Federal Government in partnership with the EU and the KfW (German Development Bank) for North Africa and the Middle East in the context of the “Arab Spring”, is to offer financing options to the smallest, small and medium-sized companies and to develop the banking sector, which is still weak there. In this way the SANAD Fund contributes to poverty reduction and inclusive economic development.

e) Strengthening civil society

Foundations, churches and many other civil society organisations provide assistance for self-help, facilitate civic engagement, effectively promote protection of human rights and good governance, and raise awareness of irregularities. As a result, cooperation between the Federal Ministry of Development and civil society organisations in Germany and partner countries will be increased, funding instruments will be simplified and more funds will be made available. There is a particular focus on promoting the ability of civil society organisations in the affected countries to involve themselves in political processes and make themselves heard, and to support the partner governments in facilitating political participation.

Local authorities are also stakeholders in development cooperation. However, they also offer scope for engagement by civil society. The Federal Ministry of Development is currently amalgamating the various programmes and service facilities for civic and municipal engagement in one place; this will make it easier to find the right point of contact and to build networks. And finally, the citizens of Germany are invited to get involved in global development through an engagement campaign – by purchasing fair trade products, by volunteering in civil society organisations, by donating, campaigning and many other forms of active engagement. Educating people about sustainable development is an important tool in equipping people of all ages for global engagement and in creating scope for creativity.

VIII. Education and training

Skill requirements in terms of sustainability have been taken into account in Germany’s “twin-track” vocational education system since 1997. All training regulations that the Federal Government has instituted under the Vocational Training Act (BBiG – Berufsbildungsgesetz) and the Trade and Crafts Code (HwO – Handwerksordnung) have taken this aspect into account. This applies to the whole range of jobs requiring training, i. e. both to the industrial-technical and to the commercial-administrative sectors. The training regulations are in alignment with the principle of integrated contexts and include “health and safety at work” and “environmental protection” as standard job profile requirements.

Statement from the Dialogue on Sustainability

“Good education is the primary foundation for a better future for the people of this planet ... People must be guided to an awareness and understanding of sustainability, but above all to CONCEPTUAL KNOWLEDGE. This has to cut across all training fields as a multi-disciplinary issue.”

The new training process also reviews whether the requirements of these standard features are sufficient in each respective profession for adequate consideration of sustainability. If further measures are required, then these are absorbed into the training system, e. g. economy when dealing with materials, resources and energy, regular checks and maintenance. The environ-

mental professions have to be mentioned in this context (e.g. specialists in wastewater technology) and the chemical lab and production professions (e.g. lab technicians or chemists), whose training systems include numerous additional skill requirements for sustainable development.

Advanced training regulations concentrate mainly on the economic, social and ecological aspects of sustainability for the skill profiles to be provided.

Education for sustainable development has increased in significance over the last few years in Germany and internationally. The UN “Decade of Education for Sustainable Development” (2005 – 2014) is playing a big part in this. The Federal Ministry of Education and Research is supporting the German UNESCO Commission in providing a platform for realisation of the UN Decade in Germany. An “organisational structure” has been established (national committee, round table, working groups on different topics), which ensures the cooperation of diverse stakeholders such as political figures and civil society representatives. Education for sustainable development is also well embedded in all educational areas thanks to the countless activities which are part of the UN Decade, and will also be continued after the Decade has passed.

The aim of Germany’s National Action Plan for the UN “Decade of Education for Sustainable Development” is to enshrine sustainability as a guiding ideal in vocational education. The Federal Ministry of Education and Research is supporting seven pilot projects within the funding priority of “Vocational Education for Sustainable Development” in the second half of the UN Decade 2005 – 2014.

UN Decade – Pilot projects

The metal/electrical fields were chosen with a focus on “renewable energies”, “building and living”, “chemicals” and “nutrition”. The aim of the projects is to create interconnections, model regions and networks, and to implement the guiding ideal of sustainable development in the everyday working world in a lasting way. The individual projects examine the connection between sustainable development in vocational education and working and employment structures. Qualification requirements and measures, as well as other aspects relating to education, are incorporated. The funding priority began in 2010 and has been agreed for the whole period up to 2013.

Supporting vocational education in German development cooperation has been one of the key areas of development cooperation since autumn 2009, partly due to its major significance for sustainable development. The aim is to develop practice-oriented vocational training systems in partner countries, which are aligned to the skills required by the economy, e.g. for industries like renewable energies or natural raw materials. This is an important step towards achieving the Millennium Development Goals, in which sustainable development is Goal No 7. This contribution is reinforced by integrating education for sustainable development (ESD) into vocational education.

However, awareness and education of sustainable development must begin much earlier. Some federal ministries have developed teaching materials for kindergartens and schools on the diverse topics: from A for agriculture to W for water (and shipping). All materials are labelled as being part of the projects for the UN “Education for Sustainable Development” Decade. The education service of the Federal Ministry of the Environment as a whole has been designated a Decade measure (www.bmu.de/bildungsservice).

Examples of education projects

The Wasser- und Schifffahrtsdirektion Süd (Water and Shipping Directorate South) is running a “Water and Shipping School” project offering extensive lesson materials for teachers, as well as textbooks and activities for primary school children (project week, school ship), which also refer to biodiversity (including limnological investigations, experiments, teaching materials on river habitats).

This project has twice been recognised by the UNESCO Commission as a project of the UN “Decade of Education for Sustainable Development”.

There is also a colouring book for kindergarten children. Schools and kindergartens can order the teaching materials and colouring books free of charge. The project content is available for download at www.schifffahrtsschule.wsv.de.

The numerous free educational materials from the Federal Ministry of the Environment deal with environmental topics such as renewable energies, climate protection and biodiversity. They are designed for primary schools and the lower and upper secondary education levels. The materials for each age level include descriptive examples and suggestions for how sustainable development, environmental protection and conservation can be used for general education.

With interactive learning modules on issues like water, biodiversity or energy, the Education Service's website offers innovative forms of learning. There is an online quiz and games to convey environmental knowledge in a fun way. In June 2010, these educational materials received the Comenius EduMedia Award for products in the field of ICT-supported educational media.

IX. Research and development

1. Germany in the international competition for knowledge

The international competition for talents, technologies and market leadership continues to grow. Global challenges like climate change, demographic development, the spread of common illnesses, world food security and the finite supply of fossil fuels and raw materials require sustainable solutions which can only be facilitated through research, new technologies and the dissemination of innovations.

Given this starting point, it is essential to activate Germany's enormous potential in science and business and to facilitate solutions to the global and national challenges. We cannot ease up on our efforts to shape sustainable lead markets through innovation, to promote these through social changes and, thus, to secure material, cultural and social prosperity. Science and industry have a major social responsibility in this context. Better coordination and integration of general basic research and problem-oriented research is required given the magnitude of the challenge.

2. Research as a way out of the crisis

Germany sent a clear signal during the 2008/2009 economic and financial crisis, as it did not reduce research spending, but even increased it. The amount spent by the state and industry on research and development (R&D) increased to approximately 2.8% of gross domestic product (GDP) in 2009. The Federal Government has provided an additional EUR 12 billion for education and research in the course of this legislative period.

New, inter- and transdisciplinary research initiatives on sustainability issues help to keep the country sustainable. This lays the foundation for the development of

solutions to crucial global challenges such as climate change, energy and resource scarcity, resource overuse, pollution of the natural resources air, ground and water, and a loss of biodiversity. At the same time, such initiatives form the basis for Germany to maintain and expand its leading position in the future lead markets of energy, resources and water. Another absolute "must" is a better understanding of the social and economic processes that are essential for the transition to a sustainable society.

Despite the recent economic and financial crisis, German industry has held to its course of expanding investments in R&D. Overall, industry invested around EUR 55.9 billion in R&D in 2009. Although R&D investments dropped slightly (by approx. 2.4%) in 2009, the drop was by no means as severe as that of economic development during the crisis. In 2009, the 2007 level was even exceeded by approximately 4.6%.

For 2010, it was clear that companies were increasing the high growth of their R&D investments compared to the years before the crisis. The Stifterverband für die Deutsche Wissenschaft was predicting a rise of more than 4% for 2010. It was expected that the number of jobs in the R&D sector would grow by around 10,000. This would equate to around 340,000 people being employed in Germany in this sector in 2010, approximately 36,000 more than in 2005.

Europe is looking to research for a way out of the crisis: the Research and Innovation Strategy is an important part of the "Europe 2020" Strategy, which lays down the measures required to guide Europe out of the economic crisis into a "smart, sustainable and inclusive economy". This includes the aim of increasing R&D expenditure in Europe to 3% of GDP. The most recent estimates suggest that 3.7 million jobs could be created in Europe by 2035 and that GDP could rise by almost EUR 800 billion. R&D spending in the EU is currently less than 2%, which means it is less than that of Japan and the US.

A European research stimulus package of almost EUR 6.4 billion was agreed in June 2010 for 2011. This is the EU's largest ever investment package in this area. It is 12% more than the budget for 2010 (EUR 5.7 billion) and 30% more than the funds for 2009 (EUR 4.9 billion). It is also part of the 7th EU Research Framework Programme (2007 – 2013).

3. Federal Government activities

The Federal Government has proclaimed 2012 to be the Sustainability Science Year entitled “Project Earth Our Future”. It follows the 2010 Science Year “Future of Energy” and the 2011 Science Year “Research for our Health”.

The Science Years have been taking place for 10 years and have been used to address the public through a huge array of events and activities on the different topics. The Sustainability Science Year will focus on the dialogue between political actors, academia and the public, incorporating current research on sustainability topics and, in particular, topics that are very much a moot point. The results of public discussions are to be integrated more closely into science and research policies. Science and research are expected to deliver the foundations for appropriate political decisions.

The Federal Government has instituted several major research initiatives in the field of sustainability. Moreover, it is supporting specific topics of sustainability research in other projects in diverse areas. The Federal Government’s central initiatives include:

- **2020 Hightech Strategy**

With its Hightech Strategy of August 2006 the Federal Government presented its first-ever overall plan, which brought the most important stakeholders in the innovation process together in support of a shared idea. The aim is to create lead markets, intensify cooperation between science and industry and continue improving the basic conditions for innovation. On 14 July 2010, the Federal Cabinet resolved to continue developing this successful approach. The new 2020 Hightech Strategy guarantees the continuity of the overall approach, whilst at the same time introducing new priorities. The Federal Government is focussing the 2020 Hightech Strategy on research fields that stem from a particular need in society. Germany is to become a pioneer of scientific-technical solutions in the fields of climate/energy, health/nutrition, mobility, safety and communication. This will give new impetus to sustainable growth and employment in Germany.

Future projects

Future projects move selected “missions” to the centre of future research and innovation policies. This creates the scope to pursue specific aims of scientific and technological development over a period of 10 to 15 years. Innovation strategies are developed here and realisation steps are planned in relation to specific areas of application. Many of these central future projects contribute directly to the objectives of sustainable development.

Examples of priority topics:

- CO₂-neutral, energy-efficient and climate-adjusted cities
- Smart transformation of energy supply
- Renewable resources as an alternative to oil
- Treat diseases more effectively with individualised medicine
- Better health through targeted nutrition
- Enable people of old age to live a self-determined life
- One million electric vehicles in Germany by 2020
- Effective protection of communication networks
- More Internet use with less energy consumption
- Making the world’s knowledge digital and accessible
- Working world and organisation of tomorrow.

National and European research and innovation policies are closely interlinked. “Europe 2020” represents the start of an ambitious process on the part of the European Commission and Council to put education, research and innovation at the centre of a European growth policy.

Germany will contribute to a coherent research and innovation policy in Europe on this basis. This process has already begun in sustainability and environmental research. The Federal Ministry of Education and Research started a dialogue process in May 2010 on the topic of “Shaping Europe’s Future – Agenda for Innovation and Sustainability in the 8th EU Research Framework Programme”, to give early momentum to the new “Horizon 2020” EU Research Framework Programme starting in 2014.

The basic conditions for innovation in Germany are continuing to improve. This applies especially to business start-ups, the particular situation of medium-sized companies, sufficient financing for innovations, and the provision of venture capital.

Research and innovation are also dependent on an intensive dialogue with society. As a result, new dialogue platforms have been set up, where citizens can hold more detailed discussions on future technologies and research results to solve the major global and social challenges, and incorporate their own ideas.

• “Research for Sustainable Developments” Framework Programme

The “Research for Sustainable Developments” Framework Programme was announced by the Federal Ministry of Education and Research on 2 February 2010. More than EUR 2 billion in funding will be available for the development of sustainable innovations by 2015. Thus, the Federal Government is consistently implementing the National Sustainable Development Strategy and the Hightech Strategy in the field of climate protection, resource conservation and energy.

The development of innovative technologies and concepts to meet the global challenges like climate change, resource conservation, energy needs, and preserving biodiversity, is at the heart of the Framework Programme. There is a particular focus on the connection between basic and applied research. As a result, areas with a strong growth potential, like sustainable water management and resource and energy efficiency, form the core of the Programme. Additional focuses are climate protection, better raw material productivity, new approaches to sustainable land management and international research cooperation particularly with emerging and developing countries.

This requires a research approach that gives equal consideration to all aspects of sustainability – economic, social and ecological – and does not solve one problem at the expense of another. Research for sustainability offers this integrated, systems-oriented approach, which lays the foundations for decision-making for future-oriented action.

Areas of action

The new Research Framework Programme focuses on the key areas of action:

- Global responsibility – international networks
- Earth system and geotechnologies
- Climate and energy
- Sustainable economies and resources
- Social developments and
- The cross-cutting issues of sustainable land management and economy and sustainability.

Research cooperation with emerging and developing countries, e.g. in Africa, is a central element of the internationally oriented programme. Climate change is creating ever-greater challenges for land management. Therefore, the Federal Ministry of Education and Research together with partners from southern and western Africa started the new initiative “Climate Change and Adapted Land Management in Africa” in June 2010. The aim is to establish regional science service centres as a long-term research infrastructure in Africa. The Federal Ministry of Education and Research is investing EUR 5.1 million in the scheme over the next two years. Funds of up to EUR 100 million are planned to be spent in the subsequent set-up phase. Ten countries in western Africa and five countries in southern Africa are currently participating in the project.

A central focus of the research policy within the “Research for Sustainable Developments” Framework Programme is to fund R&D of innovative environmental technologies that German companies can use to expand their good position on the world market. One example in this field is the funding measure “r² – Innovative Technologies for Resource Efficiency – Raw Material-Intensive Production Processes”. Its aim is to improve energy and materials efficiency in the management of recycling and recovery processes, and to interlink materials flows in material-intensive production processes like the production and processing of iron, steel, glass, ceramics and the chemicals and construction industry. The new funding measure “r³ – Innovative Technologies for Resource Efficiency – Strategic Metals and Minerals” focuses on researching new approaches for reducing the use of critical raw materials such as rare earths or even replacing them by other materials. In the field of water technologies, the new funding priority “Sustainable Water Management” is promoting new research

initiatives on both a national and international level, in order amongst other things to improve access to cleaner drinking water and advance an efficient use of water resources and wastewater treatment.

• Environmental Technology Master Plan

In 2008, the Environmental Technology Master Plan was devised jointly by the Ministry of Education and Research and the Ministry of the Environment and was adopted by the Federal Cabinet. The aim of the plan is to facilitate access of German companies to the lead market of environmental technology and to improve the conditions for the development and use of new environmental technologies. Innovative technologies are needed to stimulate the demand for them in Germany and to safeguard export opportunities to the expanding world markets. The Plan focuses on climate protection, resource conservation and water technologies. Environmental technologies generated around 8% of Germany's GDP in 2007 and experts believe that this can increase to 14% by 2020. Accordingly, turnover in the environmental industries could increase to almost EUR 3,200 billion. The largest absolute growth in market volumes is expected in the lead markets of energy efficiency and sustainable water management.

The Plan combines focussed funding activities with measures relating to standardisation, education and training, and networking at the European level. Further development of the Environmental Technology Master Plan is currently being discussed at the extended interdepartmental level in accordance with the Cabinet decision of 12 November 2008.

• Energy Research Programme

The Federal Cabinet adopted the 6th Energy Research programme entitled "Research for an Environmentally-Friendly, Reliable and Affordable Supply of Energy" on 3 August 2011. This Programme forms an important step towards realisation of the Energy Plan of 28 September 2010, which the Federal Government wants to use to enter the age of renewable energies. The Programme is a new strategic approach to supplement the Federal Government's energy and climate policies, which envisages greater funding of research and development for sustainable energy technologies. The 6th Energy Research Programme is based on the Federal Government's Energy Concept of 28 September 2010 and the Energy Decisions of 6 June 2011.

The logic behind it is to enter the age of renewable energies more quickly while guaranteeing a safe, economical and environmentally sustainable supply of energy in Germany. Accelerated restructuring of the energy supply is a top priority in terms of political and social organisation, with science and industry having an important role to play in this respect. The process of accelerated restructuring is unthinkable without scientific expertise.

The new Energy Research Programme lists guidelines for future federal funding in the field of innovative energy technologies, outlines the funding priorities and gives an overview of the planned funding budgets of the ministries involved.

Focuses of the 6th Energy Research Programme

- Renewable energies
- Energy efficiency
- Energy storage technologies and intelligent network technology
- Integration of renewable energies
- Interaction between these energy technologies.

The Federal Government has greatly expanded its budget for energy research in light of the restructuring of Germany's energy supply over the coming years. EUR 3.5 billion will be made available for the period from 2011 to 2014. The growth in funds is mainly coming from the special "Energy and Climate Fund" set up on 1 January 2011.

The Programme focuses on four areas: a) clear prioritising of R&D in favour of "renewable energies" and "energy efficiency", b) increased interdepartmental cooperation on strategically important issues, c) expansion of international cooperation particularly at the European level, and d) improved coordination and adjustment of funding policies.

The Federal Government has started a joint initiative in order to bring about advances in "energy storage" and provided EUR 200 million for this purpose. Other joint initiatives concerning "networks" and "solar construction – energy-efficient city" will follow.

The Federal Government will expand the "Energy Research Policy Coordination Platform" to ensure the greatest possible added value from the public

funds provided. Funding activities of the *Länder* and the European funding institutions will also be incorporated. A central information system will not only make federal funding policy more transparent, but will also contribute to improved technology evaluation and serve as a basis for a “Federal Energy Research Report”.

The Federal Government is expecting valuable contributions to sustainability research from the Institute for Advanced Sustainability Studies (IASS).

IASS

The Institute for Advanced Climate, Earth System and Sustainability Studies (IASS) was founded in Potsdam on 2 February 2009. The Founding Director is Professor Klaus Töpfer.

The Institute will conduct cutting-edge research in the areas of climate change and sustainable economy and will provide working opportunities for up to 50 scientists. It is financed by funding from the Federal Ministry of Education and Research and the state of Brandenburg and has an agreed budget of EUR 63 million over seven years. The IASS in Potsdam is dedicated to holistic research into climate change, the components of the earth system and sustainability on an interdisciplinary and international basis.

The “Zukunft Bau” research initiative of the Federal Ministry of Transport, Building and Urban Development is another example of the many current research activities the Ministries are conducting. This gives new momentum to a clear orientation towards innovation in building. This strengthens the building industry in its role as an economic driver and as a sector of the economy largely responsible for resource conservation and climate protection. Interdisciplinary R&D measures specifically pursue the path to the construction methods of the future, i. e., the age of energy-plus housing and electromobility. The Ministry supports the social research dialogue with model projects of outstanding building research results.

The “Energy-plus House Touring Exhibition” from 2009 to 2011 showcased a new generation of energy-plus houses, buildings which, thanks to smart architecture and the use of innovative building technology, produce more energy than is needed for residential processes.

F Sustainability in the German Bundestag – Contribution of the Parliamentary Advisory Council on Sustainable Development

The Parliamentary Advisory Council on Sustainable Development (Parlamentarischer Beirat für nachhaltige Entwicklung – PBNE) sees itself as an advocate of long-term political responsibility. Future generations are a significant focus of its work. Sustainability must be the guiding principle of policy-making. This principle also applies to the Council's mode of operation. Whenever possible, it takes its decisions in consensus with all parliamentary groups in the German Bundestag, which requires an extended voting process that can be tough at times. This process is worthwhile, as it makes the Council's decisions sustainable in the long-term, regardless of the outcome of the next Bundestag election.

The Council's renewed establishment right at the start of the 17th legislative period reflects the firm desire of the German Bundestag to integrate the principle of sustainable development into everyday parliamentary business. The rise in member numbers from 9 in 2004 to its current 22 full members is a sign of its growing significance. The number of decisions passed by the Council in the first half of the current legislative period has already exceeded that of the previous four years. The crucial resolutions are summarised in this Chapter.

The increasing significance of sustainability in the German Bundestag should be recognised institutionally. Therefore, the aim of the PBNE is to be appointed a permanent body in the German Bundestag's Rules of Procedure. The Council should be given control of monitoring the Sustainability Strategy, which currently lies with the Environmental Committee – not with the governmental level.

1. Sustainability strategies and sustainability management

Sustainability management at the federal level

One of the PBNE's crucial roles is parliamentary monitoring of the National Sustainable Development Strategy, which it performed most recently with its comments on the Peer Review (Bundestag Reference No. 17/1657) and the 2010 Indicators Report (Bundestag Reference No. 17/3788). The latter comment addresses the sustainability indicators and details the Advisory Council's expectations with regard to this 2012 Progress Report.

One of these expectations is the improvement of the indicators, and the Federal Government has accepted some of these suggestions in Section B.I. of this Report. The PBNE is also calling for greater vertical integration of the sustainability strategies. It sees the increasing deficit in public finances as a substantial burden for generations to come. More education for sustainable development is another expectation, because changing the way we think begins in people's minds. Finally, it is hoped that the 2012 UN Conference on Social Development will set the course for a green economy, poverty reduction and global governance.

Sustainability management is well established institutionally at the federal level in Germany through the State Secretaries' Committee for Sustainable Development, which is now an independent department of the Federal Chancellery, the PBNE and the Sustainable Development Council.

Sustainability impact assessment as part of the regulatory impact assessment

One new task in this legislative period is to evaluate sustainability impact assessments as part of the regulatory impact assessment, as discussed in Section A.IV.1 of this Report. The PBNE has reported on initial experiences in a report on sustainability impact assessment (Bundestag Reference No. 17/6680), and made suggestions for optimising the process.

Sustainability impact assessments have been mandatory since the beginning of the 17th legislative period and play an important role in separating policy decisions in Germany from the constraints of the present. It is a means of improving intergenerational equity and creating sustainable policy. The sustainability impact assessment does not make political decisions, but it makes the long-term impact of draft bills and regulations more transparent and, ultimately, facilitates prioritisation. Thus, it plays a crucial role in improving political discourse in the German public arena.

Vertical integration – cooperation between the Federal Government and the *Länder*

Cooperation between the Federal Government and the *Länder* is of crucial significance for achieving the sustainability targets. The Parliamentary Advisory Council on Sustainable Development had mentioned this aspect previously in its comments on the 2008 National Sustainability Strategy Progress Report (Bundestag Reference No. 16/13236). The Peer Review carried out in 2009 confirmed the need for greater vertical integration. To date some of the *Länder* have been pursuing their own sustainability strategies, but the latter's quality and the political support they have received have varied considerably. Better integration of federal and *Länder* strategies is important to ensure consistent implementation of the sustainability targets.

Just like the Federal Chancellery taking charge of the National Sustainable Development Strategy, the sustainability strategies pursued at the level of the *Länder* should be assigned to the respective State and Senate Chancelleries under the direct remit of the Heads of Government. Additionally, an independent and interdisciplinary working group within the Minister President Conference would be desirable. This would attach greater significance to the topic at the *Länder* level and would meet the cross-cutting nature of the task. In

contrast, dissolving the “Sustainable Development” expert sub-group and merging it with the Conference of Environment Ministers’ Climate Policy working group was a step in the wrong direction.

Sustainability management at the European level

The PBNE published detailed comments on sustainability management at the European level for the first time with its briefing on the “European Sustainable Development Strategy” (Bundestag Reference No. 17/5295). It sees the most urgent tasks as improving the institutional basis and linking European and national strategies, in order to make sustainability a guiding principle of European policy-making and gradually to counteract the sometimes sluggish realisation process in some Member States.

The Sustainability Strategy and the Europe 2020 Strategy are frequently described as complementing each other. The first focuses on quality of life, intergenerational equity and coherence between the policy areas, whilst the second is concerned with smart, inclusive and sustainable economic growth. No priority of sustainability was previously apparent. The PBNE is campaigning for interconnecting the two strategies, so that the European Sustainable Development Strategy sets the long-term goals, whilst the other strategies give rise to specific definitive measures and would, in a way, act as a roadmap or action plan for achieving the sustainability goals.

The European Sustainable Development Strategy also needs to be linked with the national strategies. Although individual aspects of the European strategy are being tackled – as in the German Sustainability Strategy – the European Sustainable Development Strategy has only been partially realised in national sustainability strategies. Cooperation between the EU institutions and the Member States must be optimised and the Eurostat indicators have to be synchronised with the respective national indicators.

Sustainability management should assume a more binding nature. Institutional embedding must be improved to achieve this. It would be conceivable to establish a Council “Sustainable Development” Working Group at the European Council level and to improve organisation and staffing levels at the Commission, in recognition of the cross-cutting relevance of sustainability. Ulti-

mately, an independent body should also be established in the European Parliament to take the lead in monitoring the Sustainability Strategy.

2. Position papers and resolutions on specific topics

The position papers, resolutions and briefings of the Parliamentary Advisory Council on Sustainable Development can be accessed online at www.bundestag.de/bundestag/ausschuesse17/gremien/nachhaltigkeit/berichte/index.html.

Position Paper “Growth Potential – Environmental Technologies”

Environmental technologies have a key role to play with regard to future energy supplies. At the same time, they can be a supporting pillar of future economic development. Energy storage technologies in particular are of crucial significance in this context. The Parliamentary Advisory Council on Sustainable Development has recommended to the Federal Government that it accommodate existing research and development requirements and promote the market launch of new technologies. Moreover, there is still considerable potential for energy saving through improved energy efficiency. Appropriate measures should be used to trigger competitiveness with regard to technological innovations, not least in order to help secure Germany’s future.

Position Paper “Prospects for Sustainable Mobility”

Establishing sustainable mobility is faced with major challenges from several perspectives. Climate change, demographic change and the finite supply of fossil resources, the global increase in energy requirements and the impact of air and noise pollution in the cities, all represent key challenges for political decision-makers and industry. Scarcely any other area will change as much as the way we deal with mobility.

The task which policy-makers are facing is far-reaching: it must consistently promote the transition from a sectorally driven transport policy to a sustainable mobility policy. The car, for example, has to become part of a smart mobility network. Mobility must become more efficient and cause fewer CO₂ emissions. Electromobility

has to be considered in terms of all potential alternative technologies and modes of transport to make full use of its considerable sustainability potential, and must lower barriers that prevent switching between modes of transport. For freight transport, rail and shipping represent the most energy-saving modes available and utilisation of these should be increased overall. The transport system can only guarantee effective performance when the appropriate infrastructure is in place. The next Federal Transport Infrastructure Plan (Bundesverkehrswegeplan) is crucial to future infrastructure development. The Plan has to be adapted to the criteria of sustainability. Transport projects must be prioritised according to the sustainably formulated cost-benefit ratio of the scheme and not according to their stage in the planning process.

A sufficient range of intermodal options plays an important role in sustainable mobility. It is becoming increasingly accepted that sustainable mobility may even mean the provision of new mobility services. Federal subsidies for public transport are worthwhile from all aspects of sustainability. In terms of efficient utilisation of funds, service contracts for transport should include social and ecological standards. This also assists in the development of a competitive industry in public transport, which may market part of its services outside Germany.

In order to provide for short journeys and avoid carbon-intensive forms of traffic, it might in some cases be worthwhile to create suitable settlement structures and housing environments and to encourage regional economic cycles.

“Education for Sustainable Development” Decision

Education creates opportunities for change. Therefore, learning the necessities and possibilities at all levels – from childcare to vocational and higher education – is an important basis for economic activity and lifestyles to become more sustainable. The United Nations has devoted a Decade to this topic. The Federal Government reports regularly on its realisation, most recently with a briefing on education for sustainable development (Bundestag Reference No. 16/13800). In the past legislative period, the PBNE held several discussions with the UNESCO Commission which is in charge of realisation; the talks concerned the implementation of the Decade in Germany. The PBNE’s resolution recommends

(Bundestag Reference No. 17/3158) to the Federal Government to call on the *Länder* to give education for sustainable development a permanent place in their curricula.

3. Expectations for the Rio+20 Conference

Green economy in the context of sustainable development and poverty reduction

Considerable effort is required with regard to resource and energy productivity and mobility, which is heavily dependent on raw materials and energy, in order to achieve the sustainability goals. The annual conferences of the Sustainable Development Council and of econsense showed that the different stakeholders are committed to achieving a more sustainable economy. All stakeholders want to see specific, binding and reliable sustainability standards at the national and international levels. This was confirmed by a survey by the German Chamber of Commerce and Industry (DIHK) of summer 2010, in which three out of four companies supported the inclusion of ecological criteria in public tendering processes.

The PBNE is asking the Federal Government to support the stakeholders' intent and to put in place a reliable framework for sustainable economic activity, which should be established at the European level for competition reasons. As a region poor in raw materials, Europe must focus on resource conservation, reusability and durability of products. With regard to the import of raw materials, the foreign policy dialogue must also foster prudent and socially responsible extraction of raw materials abroad. In the energy sector, the PBNE is pushing for an efficient control system, such as the gradual internalisation of the external costs of emissions in the transport, building and production sectors.

In addition to social and societal participation, the prerequisite for a comprehensive approach to combating poverty is a country's economic development and, thus, the creation of jobs and growing prosperity for broad swathes of the population. This requires measures such as the development of regional markets and the intensification of trade, improved ownership protection, functioning administration, know-how transfer, access to a diversified education system and a functioning health system. Different types of support should be considered in places where developments are stagnating.

Global sustainability governance

In its contribution to the European Commission's consultation process, the PBNE is proposing that international environmental governance be established in view of the major global challenges in the environmental sector. This would coordinate the action of numerous UN organisations and UN programmes, as well as those of the UN Member States. It would be a building block towards achieving global consensus on sustainable policy. The PBNE is advising the EU to push for the establishment of a United Nations Environmental Organisation.

The PBNE also believes that it is necessary to strengthen the notion of sustainability in the UN system. This could be done through an institutional reevaluation of the Commission on Sustainable Development – CSD, but only if this is combined with expanded issues to be considered, intensified content and improved efficiency and effectiveness. The issue of sustainability could also be enshrined within the framework of the Economic and Social Council (ECOSOC) or a sustainability council at the UN level. The members of the PBNE are agreed that sustainability governance must be strengthened within the UN framework.

Conclusion

There are no sensible alternatives to a sustainability policy! Sustainability is recognised as the objective of political action by all the political parties. Politicians must combine forces to achieve this. The principle of sustainable development must not be ignored in the day-to-day reality of politics because of short-term considerations or imminent elections.

Sustainability is worth more than short-term supposed success! Sustainability must be the guiding principle of German politics and, as such, must be comprehensively and consistently applied. The work of the past 10 years has sharpened the focus, but there is still a massive need for action at all levels of society.

The Sustainability Strategy must be seen as a long-term strategy for the future! When sustainability is seen as a cross-cutting political, social and economic task, then it can drive innovation. To achieve this, the sustainability strategies must be more closely interlinked between the Federal Government, the *Länder* and the local authorities. In the *Länder*, responsibility

for sustainability should rest with the state chancelleries in order to be able to popularise the topic and increase its visibility.

We have to live sustainability! The members of the Parliamentary Advisory Council on Sustainable Development will continue to contribute their work in the parliamentary groups, committees and plenary debates in the German Bundestag, in order to reinforce the position of sustainable development in the parliamentary process. The Parliamentary Advisory Council on Sustainable Development will also continue to offer constructive and critical support to the activities of the Federal Government and will campaign within its sphere of activity for greater consideration of sustainability in the day-to-day political business. We want to smooth the way to stimulate sustainability and progress and to translate them into concrete action.

G Sustainability as a Social Process – Contribution of the German Sustainable Development Council

Essential, necessary, desirable

It is essential for the Federal Government to have a sustainability strategy that it regularly reviews and updates. It is an urgent requirement that this strategy, even more than is today the case, becomes a common thread in the policy of government departments. That it becomes a guiding anchor point for local authorities, civil society and industry for their own priorities and requirements, is a matter of urgency. Essential, necessary, desirable: that is what we wish to emphasise with this input.

Continuing the status quo is no longer an option. What began as the 2008 financial and economic crisis and now has Europe and the whole world in the grip of a sovereign-debt crisis, along with recession in some countries, has been a wake-up call. The change in German energy policies has emphasised the urgency of transitioning to a sustainable, secure, competitive and climate-compatible supply of energy. We have to do more towards resource conservation, as otherwise we will lose non-renewable raw materials forever. World food and sustainable farming demand that we make far-reaching and bold decisions to change the current situation. Without a reliable and stable financial market the transition to a sustainable economy seems very far off. Unfortunately, we are currently seeing the opposite of what is sustainable on the financial markets.

The criteria for economic sustainability are underrated. It is totally obvious that we have to find new and bold answers to the question of how we can achieve a sustainable economy, so that the prosperity gap does not get any wider both nationally and internationally. It is also a matter of fairness to agonise over how we can create fair prosperity: in terms of money, a sound environment and a sustainable society. “Pumpkapitalismus” – capitalism on tick – (Lord Dahrendorf) shifts the shortages and risks to future generations under the dictates of fast pace. Its prosperity is fragile.

Essential: we must respond more consistently and more effectively to the signals of urgency sent out by a non-sustainable world. The Federal Government’s Sustainability Strategy must influence government policy more heavily. That is how we measure its relevance.

Visions for the future (“Sustainability – Made in Germany”) should become a regular, central component of the Sustainability Strategy alongside robust monitoring of what has taken place. The Sustainability Council has launched a project on the “Vision 2050” agenda at the request of the Federal Government and as a consequence of the 2009 international peer review of German sustainability policy. The “U27” political generation has devised visions for the year 2050, by which time there will be almost 9 billion people on earth, with strict limits imposed on CO₂ emissions and the use of natural resources, and a completely different geopolitical situation. The project shows that people that develop visions for the year 2050 have something to say. These visions are clear-sighted. They are connected to the expectations, plans, skills and responsibility of young people. Thus, they are part of reality, because they play a role in people’s wishes, ideas and expectations.

The Sustainability Council is advocating that such outlooks for the future be incorporated regularly and structurally into the Sustainability Strategy. We also need a robust European Sustainable Development Strategy. While it is essential to look to Brussels in almost all other political fields, what the sustainability strategy lacks above all is a European component that is more effective than what is currently on offer in the form of the EU Sustainable Development Strategy.

Necessary: to promote sustainability thinking in business and civil society. The Sustainability Council has presented a proposal in this regard. The German Sustainability Codex defines what sustainability management of a company entails and identifies a company's areas of action. This gives stakeholders in the market a basis of information for their assessment of whether a company is acting sustainably or not.

World leaders triggered a policy of sustainability twenty years ago in Rio de Janeiro. At the time, they brought the aspects of environment and development together. In June 2012, world leaders are reconvening for a Sustainability Summit, once again in Rio de Janeiro. Rio – 20plus. The focus must be on looking forward. Now we have to integrate “environment”, “development” and “business”. At the same time however, we must pave the way structurally for a genuine and binding sustainability policy, including at the United Nations level. We are still a long way from effective institutional solutions. The Federal Government is advised to incorporate the national instruments and institutions of sustainability more closely in international discussion and affairs.

Desirable: for many people, organisations, firms and associations to have their say with their own events on 4 June 2012. The Sustainable Development Council has set itself the task of encouraging genuine participation. As a result, we are calling for an action day for sustainability on 4 June 2012, the first day of the UN Sustainability Summit in Rio. This is supported by many prominent figures. The Federal Government and the Parliamentary Advisory Council on Sustainable Development are also backing the idea. The idea is for actions to be initiated at many places around Germany on the opening day of the World Summit and for people to hold events on sustainable development. The Sustainability Council will hold a session as a public round table and invite young people to discuss pertinent issues, e. g.: what is Germany's sustainability vision for the coming years? How can we recycle all important materials? How can we incorporate all the actual ecological and social costs of business and consumption into companies' balance sheets and cost estimates? What do we need to do to make the transition to a secure and renewable supply of energy a success and, in so doing, protect the environment, create jobs and increase prosperity in Germany? What do we have to learn, what do we have to forget? What do we mean by prosperity and what do we consider to be “sustainable consumption”? What should we aim for and what are we responsible for?

Essential, necessary, desirable! We have to develop knowledge and create insights to change the world. However, we have to learn that the opposite path is also important. Changes in the world create new knowledge and, at the very least, provide an opportunity for renewed reflection. Progress must be combined with pausing and reflecting.

Sustainability in the *Länder* – Contribution of the *Länder*

(Resolution of the Conference of the Minister-Presidents
Lübeck, 26/28 October 2011)

1. Prerequisites for sustainable development in the *Länder*

One of the key tasks of the *Länder* is to translate the guiding principles of sustainability – protection of the natural environment and intergenerational equity – from the abstract level into the reality of people's lives, to give substance to these principles and create options for action in everyday decisions. Due to their proximity to citizens, local authorities, companies and social organisations, the *Länder* have a special role to play as initiators, multipliers and promoters of broad forms of participation. Additionally, it is the *Länder* who have to adapt sustainable development in Germany to the regional conditions and peculiarities. It is worth mentioning in this context that the origins of the notion of forest sustainability are rooted in the Saxony-Thuringia-Hesse region.

Partnerships and communication

As a cross-cutting task, sustainability in an open and pluralist society requires the cooperative interaction of the state, industry and society. Sustainability must become concrete and tangible for a broad swath of the public through initiatives for active and target-group-oriented participation. Examples of this are the *Länder*-wide sustainability days with diverse campaigns, regular action days for the UN “Decade of Education for Sustainable Development”, and the action weeks resulting from the nationwide Day of Regions. Awarding prizes for sustainability will inspire social stakeholders to present their successes and give the public an idea of the wide range of areas of action for sustainable development. All the *Länder* encourage communication and discussion of the *Länder*-specific aspects of sustainability through online communications, forums, exhibitions, conferences, consultations, etc.

Therefore, communication, cooperation and dialogue are key terms of the *Länder* sustainability policies. They offer – in diverse forms – platforms for joint problem-solving and actively bring together stakeholders from business and society. This creates transparency, encourages engagement, improves results and facilitates positive public perception.

Since the last Progress Report, cooperation between governmental and non-governmental stakeholders in support of sustainable development has become more dynamic including in the economic field. It is characterised by widely practised trusting and long-term cooperation.

It is equally important for the *Länder* to support participative and cooperative processes for sustainable development in the individual regions and municipalities: *Länder*-wide service centres, special “alliances” for the rural area, promotion of regional materials flow management and bioenergy villages are all pertinent examples. It is in particular European financing tools and funds that are used to strengthen these regional sustainability processes and projects.

The *Länder* support a culture of civic engagement, such as in social networks. Corresponding initiatives by social stakeholders are welcome contributions on the path to achieving practical change together.

The challenge for *Länder* policy is to create scope for these activities on the one hand and, on the other, to set guidelines and consolidate and combine these in a common process. The *Länder* are not only moderators of social processes, but must also undertake the task of translating sustainability policy into democratically legitimate, generally binding decisions. In so doing, they integrate the social stakeholders into workflows and decision-making structures, or create the scope for them to act independently.

Combining the two approaches increases the likelihood of improved effectiveness, quality, acceptance and commitment to the results.

The *Länder* sustainability strategies

Different challenges and conditions are important reasons why the *Länder* pursue sustainable development in different ways and develop their own approaches. This creates opportunities to take a pioneering role in selected fields and prove their credibility through their actions.

The sincerity of *Länder* activities is demonstrated by the fact that they embed sustainability aspects in their governmental and administrative activities. Concrete and, more importantly, binding measures contribute to the role model function of these activities and inspire others.

A comprehensive approach, for example, is the introduction of sustainability impact assessment for regulations by some *Länder* governments and the respective subordinate *Länder* authorities: the meaning of sustainability is defined and incorporated into the legislative and administrative process as a regular test criterion.

Defining products and services according to the criteria of “sustainable” and “fair” can also create a role model effect.

Many *Länder* governments take on a role model within the framework of their varied energy and climate protection programmes to realise the national, international and, in some cases, their own climate protection targets – up to the objective of becoming carbon-neutral by 2030 at the latest.

Developing sustainability strategies has proved to be a good way of achieving broad realisation of sustainable development in the *Länder*. All *Länder* are working on such strategies and concepts in different forms or are debating the introduction of such processes.

The broadest possible involvement of non-governmental stakeholders in the strategy process is a crucial constitutive element. In terms of their motivation it is especially significant that the value the *Länder* governments place on sustainability is clearly apparent, and the duration of the process of strategy development must also be explicit. In some of the *Länder*, the sustainability strategy is the direct responsibility of the minis-

ter-president, whilst individual departments are responsible in others. Advisory councils, in which citizens support individual topics of sustainable development, can also act as a trigger and bring momentum to the strategic process.

The main issue is to support the issues and areas of action for such strategies with *Länder*-specific initiatives, programmes and projects. The participation of a large number of non-governmental stakeholders is a central factor in this process. Consensual adoption of indicators and targets is a significant challenge.

In addition to having participatory democracy, an overriding player, driving the process forward, is of crucial significance for the progress of the strategy and an enduring commitment to the achieved results. In this context, the *Länder* governments take the political and administrative lead not only as coordinators and sources of momentum, but also as the body responsible for the common good. They report on progress in an appropriate and transparent manner.

2. Process and development since 2008

The Federal Government and the *Länder* have intensified their two-way communication about activities and targets and their cooperation for sustainability over the last few years. The *Länder* welcome this development. Synergies can be identified as the result of a regular exchange and the sustainability processes can be strengthened at both the *Länder* and the national levels. The Federal Government and the *Länder* are in agreement that they should continue to pursue their own focuses within their respective areas of responsibility.

The independent approaches of the Federal Government, the *Länder* and the local authorities supplement one another in their cooperation, so that additional momentum can be achieved. This is exemplified by the following priority issues:

Sustainable procurement

Public procurement is an essential element of more sustainability in practice. It not only presents potential for saving resources and money when considering life cycle costs, but also incorporates ecological and social aspects. At the same time, the public sector can set a clear example.

The *Länder* welcome the lively exchange that has arisen in this context between the Federal Government, the *Länder* and the local authorities. The “Alliance for Sustainable Procurement” provides a platform for the Federal Government to bundle know-how and demand for public procurement at the federal level. The *Länder* see this as an opportunity to make experiences accessible and useful, whilst maintaining their autonomy. They intend to continue this exchange of knowledge, methods and instruments.

The *Länder* will participate intensively in the Europe-wide discussion on sustainable procurement as part of the deliberations on the modernisation of European policy in the field of public procurement.

Consumption of new land for development

Economical and prudent use of resources – this objective certainly applies to land use. Sustainable solutions must be developed and implemented to meet the demand for land and, at the same time, to protect the natural environment and the land required for farming.

The prerequisite to success is a genuine desire to realise all potentials using existing brownfield sites before consuming additional greenfield sites. This applies equally to all decision-makers.

Reports from Federal/*Länder* working groups reveal a broad range of instruments and methods that focus on planning approaches and consultation. The *Länder*, for example, have instituted practical “pacts” or “alliances” on saving land and recycling and are compiling good practical examples with stakeholders from local authorities, industry and trade, urban planners, spatial planners and architects, as well as representatives from environmental protection and conservation bodies. The aim is to work together on solutions at the *Länder*, regional and local levels. In addition, innovative approaches such as cost-benefit analyses before zoning building land, land management databases and cooperation between neighbouring local authorities, are also being developed and pursued. Tools facilitate municipal land management.

The *Länder* will at all levels continue their involvement in the discussion on which economic and fiscal incentives can help limit land use effectively.

Indicators

The *Länder* welcome the Federal Government’s undertaking to incorporate proposals from the ministerial conferences into the consultations on developing a set of sustainability indicators for the 2012 Progress Report.

The *Länder* stress the significance of common sustainability indicators at the federal and *Länder* levels. Orientation to universal, national indicators based on the indicators of the National Sustainable Development Strategy has proven valid and seems to offer the greatest possible compliance and comparability at the *Länder* level based on the existing data. This includes the *Länder* mapping *Länder*-specific targets with their own indicators.

The *Länder* will continue to work intensively in this context and to table appropriate proposals.

Education for sustainable development

In terms of *Länder* education policy, work over the last few years has been consistently increased and broadened at all levels, i. e. early childhood education, school, tertiary, education and training and adult education. The *Länder* have expanded their activities in the field of education for sustainable development with specific measures and programmes, which vary from one German constituent state to the other.

Sustainable development has continued to reach schools and lessons. The topic of “sustainability” has also been absorbed into universities and research, e. g. on issues of economic and social innovation and development. The *Länder* utilise plans to ensure that education for sustainable development is firmly entrenched in preschools, general and vocational schools, and in scientific institutions. Action plans, campaigns, initiatives, competitions and awards, e. g. “School of the Future”, are used by the *Länder* to provide additional momentum to promote personal engagement at school.

There is a focus on cooperation between schools and extracurricular partners and on extracurricular educational opportunities. The *Länder* work with experts from business and society in forums, “round tables”, internet platforms and action weeks, campaign for active cooperation and offer information to the public. Quality seals or certifications awarded by the *Länder* contribute to quality development and help to bring

together the supply and demand sides of non-formal education on a transparent and needs-oriented basis.

New partnerships and networks frequently arise, which broaden outlook, explain interconnections and make better use of practical experience. They offer the chance to link educational content with everyday experiences and to make sustainable development, participation, integration and networking clear and tangible.

An important area of support is first to practise the step from knowledge to independent decision-making ability and then to sustainable action. Everyone will be in a position to play an active and responsible role within their abilities, in order to achieve an environmentally sustainable, economically efficient and socially just development that takes global aspects into account.

The diverse activities of the *Länder*, communities and organisations from civil society and business are important tools when it comes to implementing the UN “Decade of Education for Sustainable Development”.

The exchange of experience and cooperation with the *Länder* is secured through the Conference of Environment Ministers and the Conference of Education Ministers of the *Länder*, and through the German UNESCO Commission (National Committee, Round Table, Working Groups).

3. The road to Rio 2012

A sustainable economy is an essential, forward-looking, environmental, economic and employment factor. As a result, the *Länder* explicitly support energy and resource efficiency to become aims pursued by economic and political decision-makers – not least as an important prerequisite for resource conservation.

Such an economic strategy is one of the indispensable requirements for promising climate protection and innovation that goes far beyond the traditional technologies.

The objective and methods of sustainable economic activity must, therefore, be effective across the whole breadth of the economy and society. The *Länder* support this process with a range of *Länder*-specific approaches and align their specific policies and funding instruments accordingly.

In many cases the *Länder* facilitate user-specific consultancy for businesses and consumers on matters relating to renewable energies and saving energy. Agencies that in addition maintain a knowledge network have proven effective in this context. This approach is now being expanded to general resource conservation in the production process. The first nationwide portal for production-integrated environmental protection (PIUS) for medium-sized businesses and craft and trades-based industries has been introduced as the result of cooperation between several *Länder* (PIUS Internet Portal – www.pius-info.de).

Some *Länder* have launched initiatives that concentrate on particular issues. These include centres of excellence for biomass, competitions to protect the climate, e.g. in urban development and expanding the use of renewable energies in the local authority areas, or projects to monetarise services of carbon sinks, taking bogs as an example.

Environmental, climate and sustainability partnerships between *Länder* governments and businesses play an outstanding role, with thousands of member companies making substantial voluntary contributions to efforts such as in-house resource and energy efficiency and increasing the use of renewable energies. There is now an even broader approach to such cooperation through corporate social responsibility (CSR), which incorporates additional partners such as the trade unions. New forms of cooperation between government and businesses are also emerging at the local and municipal levels.

The Federal Government rightly wants further exploration of how to improve the structure of the framework conditions for sustainable economic activity and of how any conflicting targets that may arise can be managed. The *Länder* emphasise the necessity of further work to solve the issue of how external costs can be incorporated into companies’ business management thinking.

However, sustainable economic activity requires more than just players on the supply side. The demand side also exercises a considerable influence. In terms of procurement the decisions of the public sector, companies and consumers are crucial in determining whether resource-efficient, environmentally friendly and socially just products become broadly established. Consequently, the *Länder* are backing an initiative to continue the development of tools to aid potential consumers’ buying decisions, e.g. through appropriate quality seals.

Given that the notion of sustainable development also includes securing prosperity and quality of life for current and future generations, prosperity itself must be viewed differently in future than it is at present. GDP is not a suitable yardstick for measuring the success of sustainable development.

The key question of “good life” in a limited world is: “How much is enough?” Limited natural capital, social interaction, safety, health, education, distributive justice and democracy all have their own value, which has to be incorporated in the measurement and assessment of prosperity and quality of life, alongside the market and its economic processes. This means that as regards both national and *Länder*-specific sustainability management GDP as a yardstick needs to be supplemented with another variable. The *Länder* support the investigations and research conducted by the Federal Government in this regard and welcome the consultations conducted by the Commission of Enquiry on “Growth, Prosperity, Quality of Life”.

Sustainability at the Municipal Level – Contribution of the German Association of Municipal Umbrella Organisations

(German Association of Cities, the German County Association,
and the German Association of Towns and Municipalities)

1. The guiding principle of “sustainability”

The principle of sustainability links environmental, social and economic challenges. Thus, it includes economic prosperity, social security and the stabilisation of ecosystems as the three essential dimensions and goals of social development. The integration of the three pillars of sustainability into one overriding development policy master plan is the crucial step towards a precautionary environmental policy.

Local authorities – as the political and government levels closest to the citizens – play a crucial role in the sustainability process. Strengthening personal responsibility and the right to self-determination is an imperative of freedom. It protects individuals and social groups from bureaucratic interference and promotes and maintains citizens’ motivation for individual engagement.

The diverse initiatives introduced as part of the municipal Agenda 21 show that the potentials for change toward sustainable development definitely lie in such regional and local approaches.

2. Aims of sustainability

It is an on-going political task, including of local policies, to reconcile environment and development and economy and ecology, to create environmentally compatible forms of business and to achieve qualitative progress whilst safeguarding the natural environment. In this regard, the aims of the environmental policy and other political areas must be seen as being of equal importance. Ecological demands should, however, take precedence if there is a risk of fundamental and long-term impact on the natural environment. The conservation and development goals include in particular:

- protecting the life and health of the citizens (protection from pollution, noise emissions, radiation and residual contamination);
- protecting the natural environment (species and biotope protection, land and water protection, protection against air pollution);
- green business (decoupling growth from environmental consumption);
- green energy policy (economical and rational use of energy, exploitation of regenerative energy sources, promoting new technologies etc.);
- ecologically oriented urban development policy (living and working in harmony with nature);
- sustainable transport infrastructure (sustainable reduction in environmental impact of traffic, environmentally friendly restructuring of the modal split);
- environmentally conscious consumption.

3. Sustainable development through spatial planning and coordination

From the perspective of the German Association of Municipal Umbrella Organisations, a particular benefit of the Conferences in Rio de Janeiro in 1992 and Istanbul in 1996 is that consultations have not only focussed on conservation and protection of the natural environment, but also on the long-term development aspect.

In this respect the requirement of sustainability corresponds to the following specific necessities of environmental protection, e.g.:

- conserving dwindling supplies of natural resources and avoiding overstraining the absorptive capacity of the various environmental compartments; and
- controlling the consequences of environmental impacts, particularly in terms of health.

Sustainable development has a positive long-term effect on economic prospects because of:

- the significance of “soft” location factors (primarily sound environmental conditions) in business investment decisions;
- the increased weight attached by the resident population and the labour force to the quality of living conditions; and
- the growth and employment opportunities for companies that work with environmental technologies.

Moreover, sustainable development also has a social dimension, e.g. with regard to:

- the creation of participation opportunities for the population in the development of their living environment; and
- the decision in favour of lasting development built on social consensus and fairness.

The Rio Agenda 21 did not include any deliberations on the significance of the environmental aspect in relation to the economic and social side of sustainable development. All three aspects must be examined, highlighting the multi-dimensionality and cross-cutting nature of sustainable development.

Implementing the ideal of sustainable development, i.e. safeguarding economic and social progress while taking into account the capacity, resilience and diversity of the natural environment, is a high priority for the cities, districts and communities. This is particularly true against the background of the current difficult economic conditions resulting from the globalisation of markets, increased economic competition and profound changes in the working environment.

4. Local authorities and sustainability

Local authorities have a great deal of scope when it comes to structuring and developing residential development. The planning competence guaranteed in the German Basic Law is a fundamental component of local communities’ right to self-governance. This means that communities also bear a special responsibility for the environment. For example, local land use planning should not only guarantee structured urban growth and socially just land use for the good of the whole community, but should also help to safeguard an environment worthy of human life and protect and develop the natural environment.

Environmental protection has long been at the heart of local politics. Local authorities have demonstrated exemplary behaviour, both in the fulfilment of their mandatory tasks and by taking on voluntary roles. This applies to all areas of activity; examples include setting up environmental agencies, creating countryside plans within land use planning, developing traffic management systems, expanding wastewater treatment plants and incorporating environmental considerations into procurement processes.

The fundamental starting points for sustainable living and economy from the local authorities’ perspective:

- More efficient use of water, raw materials and energy resources, avoiding emissions of harmful substances and noise pollution: this includes, for example, reducing the reliance on fossil fuels through economic measures like combining solar collector systems and condensing boilers to reduce both energy costs and emissions.
- Structure of the exchange processes and traffic flows between the cities and their hinterland: this complex includes traffic flows of commuters and those seeking recreation, as well as the provision of drinking water and food. Naturally, the idea is not to make communities self-sufficient in general. No city can exist without its hinterland. However, sustainable development must attempt to make the exchange processes with the hinterland environmentally sustainable.
- Improving spatial utilisation and organisational structures: when selecting and structuring new building areas, cities and communities are laying the foundations for environmentally sustainable settlement. The fundamental aim must be a rational

spatial allocation of living and working areas, utilities and leisure facilities. Optimum residential development can only be guaranteed by a foresighted land use strategy. Space-saving construction is the most important target for countering land use. This means using existing brownfield sites and reasonably high building density. The overall environmental value of a piece of land must always be taken into account. High-density urban development must not lead to all valuable open spaces disappearing. Near-natural design and green areas throughout the built-up area are the visible aim of environmentally oriented urban development. The presence of trees and plants clearly increases the convenience and recreational value of a place, contributing to environmental embedding and to the improvement of air quality and climate conditions.

A sustainability policy that aims to bring together the ecological, economic and social aspects of sustainability should be guided by the following principles:

- Sustainable policy is holistic policy, so it does not need any new instruments. It is far more important to make optimum use of existing instruments, i. e. land use planning, building land management, municipal by-laws, civil agreements and public relations.
- Sustainable policy is precautionary policy. Thus, the course of future energy consumption in the cities and communities is already established within land use planning. There are clear saving potentials here resulting from the reduction of the energy demand.
- Sustainable local policy incorporates selected representatives and local officials, all administrative departments and responsibility levels. Support from political leaders is essential. An integrated approach is essential given that municipal sustainability is based on social, economic and ecological sustainability.
- Sustainable policy is founded on consensus. Sustainable development cannot be imposed, but only achieved through joint responsibility.

Local authorities have all their own different structures and requirements. As their human and financial resources are generally limited, tailor-made solutions and prioritisation are required. Local authorities must exercise their responsibility in defining their own path to sustainable development and their own focuses. Nevertheless, they do expect support from the Federal

Government and the *Länder* to fulfil the task of contributing to sustainable development and implementing this at the local level.

Agenda 21 invites local authorities to enter into a dialogue with their citizens, local organisations and private businesses and to create a municipal Agenda 21. This is not mandatory, but processes and procedures that fulfil the essential requirements of an Agenda 21 are already running in many cities, districts and communities.

5. Interdisciplinary areas of activity

5.1 Economy and sustainability

Nowadays, favourable environmental conditions are a major part of what makes a business location attractive. On the other hand, dramatic progress in environmental policy with regard to sustainable development requires a competitive economy. This is why there must be a clear emphasis that sustainable development, cooperative environmental protection and ecologically oriented prosperity have to be the guiding principles of future policy.

Economic structure and employment patterns are already heavily influenced by environmental protection. The increasing demand for environmental goods has a clear effect on jobs. Employment in the environmental protection sector has grown more strongly than in other sectors of the economy. In terms of foreign markets, the environmental protection market offers good prospects especially to medium-sized businesses which are participating in the growth of this sector with new products and processes.

5.2 Residential development and sustainability

The points of friction between economic needs (including to safeguard and create jobs) and socially and ecologically oriented development are being increasingly highlighted by the diverse discussions held in the bodies of the municipal umbrella organisations on the specific requirements of a sustainable residential development policy. The main problems and action areas that need to be considered in relation to the principle of sustainable development are presented below:

→ *Land recycling before using greenfield sites*

From a perspective of sustainability, reusing brown-field sites must take priority over consuming new greenfield land. This applies equally to urban sprawl and rural areas.

Comprehensive and efficient land management is needed to ensure as much land recycling as possible, i. e. a combination of mandatory and consensual tools in terms of sustainable residential development. This includes appropriate restructuring of real estate tax, as well as modern land information systems, which must be centrally managed or centrally accessible (e. g. online). A land register providing information that is as up-to-date and comprehensive as possible for any interested parties is a key component of such a building land exchange.

→ *Dismantling functional-spatial division*

The problem of functional-spatial divisions also needs to be resolved. This division inevitably causes lots of journeys between functional facilities, often by car – which in Germany is still encouraged by the special allowance paid to commuters. From a sustainability perspective, therefore, the objective must be to form small functional-spatial entities, in which as many basic needs as possible can be met in the smallest area possible.

→ *City-hinterland relations*

Urban development cannot be sustainable without the associated hinterland. Indeed, there can be no development in urban areas without the hinterland, because it is needed to provide resources, sales markets, waste disposal areas, labour force etc. In turn, the hinterland benefits from the concentrated infrastructure of the cities, their cultural and educational facilities and their range of jobs. City and hinterland, urban and rural areas, need one another and, therefore, must blend more closely on a functional level. Joint land use planning and closely coordinated development planning that ultimately becomes joint planning can all help to make residential development more sustainable from a quantitative and qualitative perspective.

There are various partnership models available to increase cooperation in the city-hinterland area. The most flexible, if the softest form of city-hinter-

land relations, comes in the form of simple, informal cooperation between the local authorities in the various areas. This may be in the social-cultural field, as well as in joint planning.

Special-purpose associations have proven to be effective in many public service areas (e. g. public transport or joint waste disposal), but this does require a lot of organisational effort and can only be applied sectorally.

Cooperation between cities, districts and communities in urban regions, which would require the creation of new structures, is another way of bringing the city and hinterland closer together to work jointly on sustainable settlement development.

5.3 Water management and sustainability

Water is an elementary natural resource and an indispensable requirement for life. In line with the first recital of the EU Water Framework Directive, water is not a commercial product like any other, but, rather, a heritage that demands sustainable, i. e. economical, careful and precautionary management, not least in the interests of the generations to come. In Germany, ensuring that the population has a constant supply of clean water wherever they are has traditionally been a key role of public services and, thus, local authorities.

Only around 7% of drinking water in Germany is lost during transit through the public distribution systems. This is extremely economical and is an outstanding achievement across Europe. German wastewater treatment also comes out at the top in a European comparison. 96% of wastewater in Germany is treated according to the highest EU standard (third treatment stage). 99% of Germans are connected to the public drinking water network and 95% are connected to wastewater treatment plants. This is an above-average value when compared internationally.

On-going investment in supply and disposal is required to maintain the quality standards. Public companies create long-term supply and disposal security through their investments and are meeting their responsibility to future generations. For example, around EUR 5.5 billion a year is invested in municipal wastewater management infrastructure, guaranteeing secure, environmentally friendly wastewater removal and treatment.

With regard to the future, it is also clear that public water management represents an integrated approach. Examples of this include water boards and associations, which operate water management on a cross-regional basis across water catchment areas. Another model is to tackle the overall responsibilities through partnerships within public water management. In terms of sustainable water management, diverse tasks are handled on an integrated basis at the municipal level, e.g. wastewater removal and treatment combined with flood protection and water protection and conservation.

6. Climate change and municipal sustainability strategy

The challenges of climate change create opportunities and risks alike for local authorities. A long-term, integrated concept for climate-friendly and energy-efficient action is essential as a guide. Accordingly, it makes sense to describe different development paths in scenarios in order to ensure that optimum results are ultimately achieved.

The long-term concept of sustainable, climate-friendly and energy-efficient urban development and the objectives and programmes derived from this should be created in an open dialogue and as far as possible in cooperation with all stakeholders in urban development.

Development of the necessary scientific evidence and knowledge of climate protection, energy efficiency and adaptation to climate change must be continued on a systematic basis and be linked to integrated urban development planning. The objectives of climate-friendly and energy-efficient urban development should be formulated on a quantifiable basis for the essential areas where action or measures are introduced, taking into account social, economic, ecological and cultural dimensions.

Local authorities should create binding, integrated policy programmes with graduated deadlines and ensure that the necessary organisational, human and financial resources are in place. The key to this lies in the existing portfolio and in climate-friendly and energy-efficient urban restructuring.

These action programmes should include a clear spatial reference with realistic and spatial prioritisation. Realising climate-friendly and energy-efficient urban development (also) requires the continued development of the legal (planning) tools, as well as reliable, coordinated and adequately funded credit and subsidy programmes.

The use of different urban development tools should be coordinated within integrated urban development management. The achievement of CO₂ reduction and energy efficiency goals needs to be subject to continuous quantitative monitoring. This also reveals which areas require readjustment. Non-quantifiable goals (planning measures for adaptation to climate change) should also be evaluated periodically using qualitative monitoring.

7. Conclusion

The guiding principle of sustainable development can only be implemented if the economic, ecological and social dimensions of local authority areas become the foundation of their development policy on an equal and simultaneous basis. Continual modernisation is required to achieve this. This does not just refer to modernisation of the economic and structural basis of local authority areas. Cities, districts and communities must also be sites of modernisation in terms of new governmental action. Cooperation and integration are at the heart of this new, modern governmental action. Local authorities, citizens and business benefit equally from this increased cooperation. Conflicting interests are recognised promptly, so that joint solutions can be found through a process of weighing the interests.

J Sustainable Development in Europe

I. Principles and perspectives

In the 1950s, European cooperation was primarily focussed on the economic dimension. It began with the European Coal and Steel Community. This was followed by the treaties to establish the European Economic Community, with the aim of creating a common market for goods and services, and founding the European Atomic Energy Community.

“World peace cannot be safeguarded without the making of creative efforts proportionate to the dangers which threaten it. The contribution which an organised and living Europe can bring to civilisation is indispensable to the maintenance of peaceful relations.”

Robert Schuman, Declaration of 9 May 1950

The European Union was created in 1992/1993 by the Maastricht Treaty. This was based on three pillars: the European Communities, cooperation in the fields of foreign and security policies, and police and judicial cooperation in criminal matters. Renaming the European Economic Community as the European Community also made clear in legal terms that the Treaty had already been expanded into far more areas, which were directly or indirectly connected to the internal market. It became apparent in the 1970s that environmental pollution did not stop at national borders and that Community regulation was required. This led to the development of integrated European policies, with responsibilities in economic, ecological and social policy areas.

In 2001, nine years after the 1992 United Nations Conference on Environment and Development in Rio de Janeiro, the European Council adopted the EU Sustainable Development Strategy under Sweden's presidency (see II). In 2002, the international community and the EU made a commitment at the United Nations Summit in Johannesburg to develop sustainability strategies. In 2006, the European Council agreed a revised EU

Sustainable Development Strategy under Austria's presidency and the Commission published progress reports in 2007 and 2009.

Sustainability as a guiding principle in Europe

Balanced and sustainable development was enshrined as an objective in the EC Treaty (Article 2) for the first time in 1999 in the Treaty of Amsterdam. The Treaty of Lisbon, which came into force on 1 December 2009, defined sustainable development as the guiding principle of European policy.

Treaty of Lisbon, Treaty on European Union, Articles 3 and 5

“3. The Union shall establish an internal market. It shall work for the sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment. It shall promote scientific and technological advance.

It shall combat social exclusion and discrimination, and shall promote social justice and protection, equality between women and men, solidarity between generations and protection of the rights of the child. It shall promote economic, social and territorial cohesion, and solidarity among Member States. It shall respect its rich cultural and linguistic diversity, and shall ensure that Europe's cultural heritage is safeguarded and enhanced.”

“5. In its relations with the wider world, the Union shall uphold and promote its values and interests and contribute to the protection of its citizens. It shall contribute to peace, security, the sustainable development of the Earth, solidarity and mutual respect among peoples, free and fair trade, eradication of poverty and the protection of human rights, in particular the rights of the child, as well as to the strict observance and the development of international law, including respect for the principles of the United Nations Charter.”

Significance of European policy for sustainable development

Sustainability requires an integrated approach; in this age of globalisation this is no longer possible through national action alone. It is, therefore, essential that Europe pursues a sustainability policy in conjunction with the Member States and in cooperation with its strategic partners around the world.

“The time for piecemeal solutions is over. We need to set our minds on global solutions. A greater ambition for Europe.”

José Manuel Durão Barroso, President of the European Commission, European Renewal – State of the Union Address 2011

If Germany wants to maintain and expand its influence and role in the world, then our engagement and activities – whether this concerns foreign policy or many other policy areas – will only be successful within the framework of the EU. This is the only way to be successful in tackling global challenges and developments such as climate change, dwindling resources or poverty, and the necessity of feeding a rapidly growing world population and fulfilling their legitimate claims in terms of material development.

“The secret behind the success of European unification is the table in Brussels, at which all EU states are equal regardless of their size. Everyone has a voice at this table and everyone is heard. The Union is not divided into important and unimportant countries. Any country wanting to go over the heads of other EU partners damages the European ideal and, ultimately, itself as well. As a result, we are only able to overcome centuries of confrontation through the principle of cooperation, because we are all at the same level. Every country treats every country with respect.”

German Foreign Minister Dr Guido Westerwelle at the German Society for Foreign Policy on 21 October 2010

Resolving the financial, economic and sovereign-debt crisis is currently the main focus of European politics. The Federal Government will continue to accept its responsibility in Europe to handle the consequences of this crisis (see Chapter E.I.4.). The EU and its Member States will be given the tools needed to overcome the crisis and restore sound framework conditions.

Measures are being taken in all three sustainability dimensions – and realised in the Member States – to achieve this goal and to overcome any further challenges that may arise. These measures are discussed in the relevant sections of this Report. The following examples show that sustainability holds significance for the EU’s most disparate policy areas.

• Economic dimension

Efforts to consolidate national budgets, to resolve structural failings and to increase competitiveness in the EU are being strengthened in order to overcome the consequences of the crisis. Closer coordination of economic policies is to be agreed.

Efficient and effective realisation of the Europe 2020 Strategy by the Member States and the European institutions is essential if the EU is to emerge from the crisis stronger and improve its competitiveness on the international stage.

In the negotiations over the new multi-annual financial framework, which will determine financing for EU policies from 2014, the Federal Government intends to make the framework more sustainable and to bring it into harmony with the EU’s agreed priority objectives in terms of substance and financial structure.

• Social dimension

The future development of the EU depends in no small part on whether it is accepted by its citizens. One of the critical objectives in the years to come will be to focus on measures that benefit the citizens. Examples of this are promoting food quality and the safety of consumer goods. It is crucial that social challenges like demographic development and social cohesion are also taken into account in this context. The European Year for Active Ageing and Solidarity between Generations (2012) will direct focus onto the enormous demographic challenges in Europe.

To ensure that the citizens are prospering from a social and economic perspective, the Federal Government is working to facilitate access to good education and training, in order to improve vocational qualifications and to encourage lifelong learning. Measures to promote employment and mobility of young people are of particular significance.

The focuses of EU health policy include demographic change, and health-related factors and innovations in the health care systems.

• Ecological dimension

For sustainable development the Federal Government supports an integrated approach in climate, environmental, energy, transport and agricultural policies. The basis of the EU's activity is an array of interlinked plans, including the Resource Efficiency Plan, the Energy Efficiency Action Plan, the Energy Roadmap to 2050, the Roadmap for the Transition to a Low-Carbon Economy by 2050, and the White Paper "Roadmap for a Single European Transport Area".

Biodiversity will become the focus of the revised Environmental Action Programme with the aim of substantially improving biodiversity and of defining targets for the period up to 2020 and up to 2050.

With regard to the international climate protection negotiations, the EU will continue to use all the means at its disposal to pursue an international climate protection agreement for the period after 2012. In addition, work on adaptation to climate change must be continued.

• Global dimension

As the largest donor of development aid in the world, the EU has an opportunity to bring European values and interests to bear, to contribute to inclusive and sustainable growth, to continue implementing the international agenda for development aid and to strengthen the effectiveness of EU aid. It will also work in future toward the realisation of the Millennium Development Goals, especially toward the goal of finally eradicating poverty by 2015. The EU will continue to reform and strengthen its development aid policy and its humanitarian aid against this background.

II. European Sustainable Development Strategy

The European Sustainable Development Strategy represents an interdisciplinary political framework for all EU policies and strategies and provides long-term orientation. The aim of the European Sustainable Development Strategy, which was renewed in 2006, is to achieve an integrated approach to the different policies and to facilitate coherence between the individual programmes and schemes. The Strategy focuses predominantly on seven areas with key challenges.

Content of the EU Sustainable Development Strategy

The EU Sustainable Development Strategy comprises the following strategic areas of action, which are called "key challenges":

1. Climate change and clean energy, sustainable transport
2. Sustainable consumption and production
3. Natural resources
4. Public health
5. Social inclusion, demography and migration
6. Global poverty and sustainable development challenges
7. Cross-cutting policies contributing to the knowledge society (education and training, research and development, financing and economic instruments).

Additionally, the European Sustainable Development Strategy aims to achieve better vertical integration of the strategies existing at the national, European and international levels. Thus, this National Progress Report, for example, is structured according to the seven key challenges of the EU Strategy, especially in Section D (Sustainability in Individual Additional Policy Areas). This facilitates a direct comparison of the progress made and additional action required.

Peer reviews – the mutual assessment of the national strategies – and the European Sustainable Development Network (ESDN) support exchange between national experts and accelerate the modification of the sustainability strategies. In this way, positive experiences, successes and ideas can be shared and put into practice quickly. Germany assembled an international team of experts in 2009 on this basis. The result was a lot of new momentum for the National Strategy (see Chapter B.IV.4.).

Regular impact assessments of new schemes are an important tool in the realisation of the EU Strategy. They are used to analyse social, ecological and economic effects and assess the costs of non-action. Regulatory impact assessments following this model were introduced in Germany at the federal level and have been regularly conducted since 2009.

The EU Sustainable Development Strategy represents the overriding framework of the EU's 7th and probably also the 8th Research Framework Programme. The contribution the research projects make to the aims of the EU Sustainable Development Strategy is systematically monitored.

The EU Sustainable Development Strategy is reviewed every two years. In advance of the 2009 review, the State Secretaries' Committee for Sustainable Development adopted a "Key Issues Paper on the German Position in Terms of Reviewing the Progress and Priorities of the EU Sustainable Development Strategy". As the result of a consultation with the EU Member States within the framework of a "Friends of the Presidency Group", the EU Heads of State or Government agreed in their conclusions of 10 – 11 December 2009 that developments in climate change, transport, biodiversity and natural resources are still not sustainable. Future reviews will focus more heavily on the transition to a secure and sustainable, low-emission and resource-efficient economy. In this context, the Federal Government is committed to a thorough review of the EU Sustainable Development Strategy.

III. EUROSTAT Monitoring Report

Measuring progress on the path to sustainable development is an essential component of the EU Sustainable Development Strategy. EUROSTAT therefore publishes a Monitoring Report every two years based on the European sustainability indicators.

The indicators are developed and adjusted in consultation between the Commission and the Member States. Eleven of the more than 100 indicators were identified as headline indicators. These give a quick overview of whether and in which areas progress could be achieved and where particular action is required. Assessment of progress since 2000 based on these headline indicators reveals the following picture:

Sustainable development indicators	Headline indicator	Assessment of the change for EU 27
Socio-economic development	Growth of per capita GDP	
Climate change and energy	Greenhouse gas emissions	
	Use of renewable energies	
Sustainable transport	Transport energy use in relation to GDP	
Sustainable consumption and production	Raw material productivity	
Natural resources	Population density of native birds	
	Conservation of fish stocks	
Public health	Life expectancy and healthy life years	
Social inclusion	Risk of poverty	
Demographic changes	Employment rate of older workers	
Global partnership	Official development aid	
Good governance	[No headline indicator]	:

- Very positive changes/on target
- No or some positive changes/ almost on target
- Some negative changes/far off target
- Very negative changes/ development off target
- :
- :
- Contextual indicator or insufficient data

IV. Activities in other European countries

A total of 28 European countries (26 EU Member States, Norway and Switzerland) have developed national sustainability strategies. The first national sustainability strategies were developed in the 1990s. Sweden and the United Kingdom adopted their first sustainability strategies as early as 1994, followed by Ireland (1997) and Belgium (1999). Many countries developed their first sustainability strategy in the run-up to the United Nations World Summit in Johannesburg in 2002. Other countries followed in the 2000s and have since revised their strategies. Close alignment to the EU Sustainable Development Strategy has been evident since 2006.

Integration of the sustainability strategy in the political process varies from country to country. Some countries have put their sustainability strategy at the heart of their national policy planning (e.g. Latvia, Poland). Others have combined the strategy with their government programme (e.g. Switzerland) or have achieved good coordination of targets and intentions with other government documents. Institutionally, sustainability strategies predominantly fall within the remit of the national environment ministries. In some countries (e.g. Estonia, Latvia, Malta, Slovenia, Slovakia, Poland), the sustainability strategies are coordinated by the office of the head of government as in Germany.

Given that the sustainability principle requires political coordination both vertically and horizontally (i.e. the integration of different policy areas at one level), the states have developed different mechanisms including interdepartmental working groups in Estonia, a Committee for a Sustainable Austria, the German State Secretaries' Committee for Sustainable Development, and the Interdepartmental Network Secretariat in Finland.

V. European sustainability networks

ESDN

The European Sustainable Development Network (ESDN) is an informal network of public administrators and other experts who are dealing with sustainable development in Europe. The aim is to exchange experiences, knowledge and model methods with regard to the main features of sustainability processes at the European, national and regional levels. The Network tackles issues like strategy development and implementation, horizontal and vertical policy integration, participation, peer reviews and monitoring.

A high-profile website includes all information on sustainable development in Europe. The activities of the ESDN Office are supervised by a Steering Committee, which guides the Network's basic activities and positioning. It is chaired by Austria as the home country of the ESDN Office. Belgium, Finland, France, Germany, the Netherlands, Switzerland and the United Kingdom are members, whilst the European Commission has observer status.

The Network has continually grown since 2002. In early 2011, it had 188 members from 35 countries. The annual conferences are preferably held in the Presidency country, with annual workshops taking place as well. Germany is an active member of the ESDN and holds regular workshops in Berlin on topical sustainability subjects, such as on 27–28 October 2011 on the "Perspectives for European SD policy & governance in the context of recent EU policy strategies and Rio+20".

EEAC

The European Environmental Advisory Council (EEAC) currently combines more than 30 policy think tanks in the fields of environmental policy and sustainable development from 21 EU Member States, including the German Sustainability Council, the German Advisory Council on the Environment and the German Advisory Council on Global Change. The Network was founded on the initiative of environmental councils from Belgium, Germany, the UK and the Netherlands due to the growing significance of European environmental policy. Together, the councils exert influence on policy developments at the EU level.

Since 1993, the councils have exchanged information within this Network to improve the quality of consultation at the local and national levels. The EEAC supports numerous working groups and ad hoc committees, publishes regularly on the relevant topics and organises international conferences.

The EEAC has argued for the European Sustainable Development Strategy to be more binding and more effective. Europe assigns the national environment and sustainability councils an important role in the dialogue and enhancement of sustainability policy.

Links to sustainable development websites in Europe

[Eurostat – sustainability indicators](http://epp.eurostat.ec.europa.eu/portal/page/portal/sdi/indicators)
epp.eurostat.ec.europa.eu/portal/page/portal/sdi/indicators

[European Sustainable Development Network \(ESDN\)](http://www.sd-network.eu/)
www.sd-network.eu/

[European Environmental Advisory Council \(EEAC\)](http://www.eeac-net.org/)
www.eeac-net.org/

K Sustainability within the framework of the United Nations

Germany is working towards sustainable environmental and development policies at the international level. The United Nations (UN) is the most important international forum in which global resolutions can be passed. The guiding principle of global sustainable development was defined in the Agenda 21 of the 1992 Rio Earth Summit and the Action Plan of the 2002 Johannesburg World Summit for Sustainable Development.

The Federal Government is committed to bilateral and multilateral realisation of the aims of Agenda 21 and the Johannesburg Action Plan. It focuses its efforts on reducing poverty and sustainably managing natural resources. This includes food security, access to clean drinking water, basic sanitation, sustainable energy policy, chemicals safety, conservation of forests and biodiversity, and sustainable consumption and production patterns.

The UN Commission on Sustainable Development (CSD) established in 1992 was created as an overall forum for issues of sustainable development within the UN. It meets once a year at the UN headquarters in New York. All the relevant issues of sustainability are tackled on a two-year cycle with regard to progress and the need for further action.

However, it has become apparent over the past few years that the current UN system is limited in its ability to realise the guiding principle of sustainable development and effective advancement of the internationally agreed commitments. As a result, a reform of the UN in the area of environment and sustainable development is currently being discussed.

I. UN Conference on Sustainable Development 2012

In 2009, the UN General Assembly decided to hold another UN Conference on sustainable development at the level of the Heads of State or Government in Rio de Janeiro (www.uncsd2012.org/rio20) – it will take place in 2012, i. e. 20 years after the Rio Earth Summit and 10 years after the Johannesburg World Summit.

The main aim of this conference (United Nations Conference on Sustainable Development, UNCSD – “Rio 2012”) is to renew the political obligation to sustainable development. The key issues will be a Green Economy in the context of sustainable development and poverty eradication, and the UN’s institutional framework for sustainable development. Together with its partners in the EU, the Federal Government is developing ambitious proposals for the two priority issues to be decided at “Rio 2012”.

1. Institutional framework for sustainable development

The global community is faced with major challenges. By 2050, 9 billion people will need a sustainable supply of food, water, energy and raw materials. The Millennium Development Goals are planned to be achieved as early as by 2015.

Over the past twenty years, a fragmented and inefficient institutional system dealing with environment and sustainability has emerged. “Rio 2012” is an opportunity to reform UN environment and sustainability structures. Germany, the EU and other countries believe that such a reform is a basic requirement, in order to achieve effective realisation of the sustainable development objectives.

The EU advocates upgrading the UNEP to a UN specialised agency, which will cooperate closely with other UN bodies and organisations. In addition to better cooperation and integration with the crucial financing mechanisms, closer cooperation with the secretariats of the multilateral environmental agreements is required.

The Federal Government also believes that improvements to the UN structures for sustainable development are required.

2. Green Economy in the context of sustainable development and poverty eradication

Green Economy

In the context of sustainable development and poverty reduction, the UNEP's "Green Economy" Report defines this term as follows:

"The Green Economy is one in which the vital links between economy, society, and environment are taken into account and in which the transformation of production processes, production and consumption patterns, while contributing to a reduction per unit in reduced waste, pollution, and the use of resources, materials, and energy, waste, and pollution emission will revitalise and diversify economies, create decent employment opportunities, promote sustainable trade, reduce poverty, and improve equity and income distribution."

The term "Green Economy" is not a concept that is intended to replace the general principle of sustainable development. Indeed, it is a significant building block of global sustainability policy, which consolidates the environment-specific, social and economic dimensions of sustainable development and contributes to poverty reduction. As such, it is a prerequisite to achieving the ambitious international targets of climate and environmental protection. This provides developing and emerging countries in particular with the opportunity to achieve prosperity for broad swathes of their populations in a more environmentally compatible way.

In terms of poverty reduction, the ecological, economic and social requirements must be given equal consideration in the realisation of the green economy concept. New economic and income opportunities are central here, particularly for the poor. A key factor is access to sustainable energy as a basic prerequisite of sustainable development. There is significant potential for renewable energy use in almost every country, which can be utilised on a flexible and localised basis.

Another important issue of the green economy is to combine nature and resource protection with creating income opportunities (e.g. through sustainable forestry management or helping producers in partner countries to market sustainably produced agricultural products like coffee or cacao), and to help develop financing possibilities for sustainable economies in developing and emerging countries.

Within its development policy the Federal Government supports its partners in creating incentives for sustainable economies – through ecological tax reform, which leads to trade that is more environmentally compatible and generates income that can be utilised with a broader impact.

Germany is very experienced in developing and introducing environmental standards and environmental policy objectives and is also a world leader in the development of environmental technologies. It already has strategically intensive environmental partnerships with many developing countries, which still have scope for expansion.

The "Rio 2012" conference will achieve a common understanding of the concepts and instruments of a green economy. A major part of this will be to highlight good examples of the transition to a green economy, and to formulate recommendations that take into account the differing situations in the industrialised, developing and emerging countries.

With regard to achieving the most definitive result possible, the EU is calling for the adoption of a "UN Green Economy Roadmap", which recognises the necessary steps towards a green economy at the international and national levels and accelerates the global transition to a green economy.

UN Green Economy Roadmap

The Federal Government believes that in accordance with the European Union's previous positioning, the "UN Green Economy Roadmap" should include fixed deadlines and a clear scope of work for the UN system:

- By 2020, all interested countries will have received tailor-made advice from the United Nations on the creation of the necessary basic conditions for a green economy.
- By 2030, the necessary basic conditions for a sustainable economy will have been created in the majority of these countries.

The Federal Government held two international conferences in Bonn at the end of 2011 in the run-up to Rio 2012 and as a contribution to the preparations for the world conference. Additionally, the Global Forum for Food and Agriculture (www.gffa-berlin.de) was held in Berlin in January 2012.

The focus of the international "Bonn2011 Conference – The Water, Energy and Food Security Nexus – Solutions for the Green Economy" (16 – 18 November 2011 in Bonn) was based on the assumption that achieving sustainable usage and conservation of water resources is in the common interest of the stakeholders responsible for the main water-consuming sectors of energy and agriculture, as well as drinking water supply and wastewater disposal: the development goals of energy and food security and of access to drinking water and sanitation depend on the availability of sufficient amounts of water of adequate quality and, thus, have a direct impact on economic development. The international policy dialogue between these areas has been rather lacklustre to date. An integrated, cross-sectoral review of the basic conditions and incentive structures for efficient resource use is still outstanding.

Nexus (Latin): link, connection

Linking water, energy and food security is a major issue for the future. In 2030 – in fewer than 20 years – there will be more than eight billion people living on planet Earth according to current calculations and the global economy will have almost doubled. If we wait until then to attempt, using the practices that we currently know and utilise, to achieve the necessary water supply, energy and food security, then according to 2009 forecasts the required water resources will exceed available water resources by approximately 40%. This means that some two thirds of humanity would live in regions with chronic water shortages.

At the same time, the most recent studies show that with targeted, efficient use of available water resources – combined with improvements in agricultural practices and along the whole food chain – the drinking water and food needs of a growing world population can be secured without depleting water resources.

The "Nexus" approach represents a new perspective, a new way of thinking, which goes beyond the limits of previous disciplines and silo thinking. The interconnected challenges of the coming decade demand networked, cross-sectoral and cross-tier solutions. Recognising interconnections, developing integrating solutions and realising them through coherent action – this is the only way to avoid target conflicts and errors, which may have grave and irreversible consequences.

The Bonn2011 Nexus Conference represents the first international contribution to closing these gaps, in order to foster coherent action through networked thinking (for more information on the Nexus Conference see Chapter C.III.5. and www.water-energy-food.org).

Bonn2011 Conference – The Water, Energy and Food Security Nexus – Solutions for the Green Economy

The three dimensions of sustainable development and their interconnections were the focus of the Conference:

- a) **The social dimension:** improve access to basic supplies of water, energy and food
- b) **The economic dimension:** achieve greater prosperity whilst using fewer resources
- c) **The ecological dimension:** invest in the conservation of ecosystems and their services.

Accordingly, the Conference pursued three aims:

- To develop and present comprehensive approaches to water, energy and food security,
- To steer the debate to establish a linkage between water, energy and food security and to enshrine this "Nexus" in the "Rio+20" process and the concepts of a green economy,
- To start coherent action and concrete initiatives to develop sustainable solutions to existing and future conflicting targets.

The Conference was attended by more than 500 policy-makers and representatives of national and international administrations and from industry, science and society, who will contribute to making the Conference results into a tangible contribution to the conceptual preparations for the “Rio 2012” Conference. This follows the decisive role of the 2001 Bonn Fresh Water Conference which was held in advance of the preparations for the water policy decisions at the 2002 Johannesburg Sustainability Summit.

Moreover, a Conference on the “Contribution of Forests to a Green Economy” was held. With their products and services, forests make diverse contributions to a green economy. Forest conservation and sustainable forest management are cornerstones of a green economy in many countries with significant potential for the future. However, the framework conditions for this need to be improved on a cross-sectoral basis. Despite the valuable contribution that forests make, 13 million ha of natural forest per year, particularly in tropical areas, are currently being destroyed through illegal and non-sustainable use, or the land is being converted to other forms of use. The Conference, which was held as part of the UN Forest Forum and included participants from 45 countries, formulated specific recommendations for how the framework conditions for forest conservation and forest management can be improved, how the diverse contributions of forests can be safeguarded, expanded and better incorporated in the economy as a whole, and be used more effectively for sustainable development, including securing the people living in and from the forest a bigger share in the value added.

The International Agriculture Ministers’ Summit in Berlin in 2012, which discussed the key issue of Food Security through Sustainable Growth – Agricultural Use of Scarce Resources, was the political highlight of the Global Forum for Food and Agriculture. Agriculture ministers from all over the world developed proposals for Rio 2012 in terms of how agriculture can follow the principles of sustainability and feed the growing world population.

II. UN Commission on Sustainable Development in New York (CSD)

The UN Commission on Sustainable Development (CSD) is the central international body for supporting the implementation of Agenda 21. It reviews achievement of the Rio Summit results on a thematic basis in a two-year cycle within its working programme for the period from 2004 to 2017.

The 2008/2009 two-year cycle (CSD 16/17) was devoted to the following topics: “agriculture”, “rural development”, “land issues”, “drought”, “desertification” and “Africa”. After long negotiations, it came to an end with the acceptance of policy recommendations at CSD 17 in May 2009. For Germany and the EU it was important that topics such as continual improvement in the sustainability of biofuels, sustainable agriculture, and the significance of rural populations, especially women, participating in agricultural planning processes at the municipal and regional levels, were enshrined in the text.

The priority issues of the two-year cycle of CSD 18 and CSD 19 in 2010 and 2011 were transport, chemicals, waste management, sustainable consumption and production patterns, and mining. In terms of Sustainable Consumption and Production Patterns (SCP), broad support was secured at CSD 18 for the initiative triggered by the 2002 World Summit in Johannesburg to develop a 10-year framework of programmes. The results of the Extraordinary Meetings of the Conference of the Parties concerning synergies between the Stockholm, Rotterdam and Basel conventions were viewed as a success for global chemicals and wastes policies in that this constituted a successful contribution to improving the UN’s environment-related organisational structure. There was agreement that the synergy process must be continued and expanded to other chemicals agreements.

In global terms, we are still a long way from sustainable mobility. Transport is a critical factor in reducing poverty and achieving the Millennium Development Goals. Different measures tailored to country-specific situations are required to facilitate energy-efficient and clean technologies, traffic-avoiding spatial planning, attractive community transport and infrastructure for non-motorised traffic in densely populated areas, as

well as flexible and reliable mobility in rural areas. The main areas of discussion were market incentives, technical standards and financial support.

CSD 18 also examined thoroughly the economic potential and the ecological and social risks of the mining industry. If this sector is to make a positive contribution to sustainable development then it must be integrated into countries' development strategies on a long-term basis. This would necessitate clear framework conditions to safeguard social and environmental sustainability and to accommodate the interests of all stakeholders, particularly local populations. Furthermore, it is essential to create transparency of cash flows, to utilise mining revenues in a way that promotes development, and to involve companies and ensure they understand their corporate social responsibility.

Despite positive outcomes of the negotiations, CSD 19 ended without result in May 2011, because some countries rejected the CSD Chair's draft decision for political reasons. This meant that no compromise could be reached on the text as a whole at the end of the two-week negotiation process. Consequently, the CSD ended without result for the second time since 2007 (CSD 15). Contrary to the past, when the CSD used to succeed in setting the course for sustainable development, CSD 19 has brought the UN's weak sustainability structures to the fore and highlighted the loss of influence it has suffered in recent years. This development was a key factor in UN acceptance of Brazil holding the "Rio 2012" Conference, at which one of the priority issues will be a reform of UN structures for sustainable development.

III. Millennium Development Goals and 2010 MDG Summit

The Millennium Development Goals (MDGs; see Chapter E.VII.1.) are global targets describing minimum standards for a life of human dignity and represent the central reference points of German development policy.

Germany played an intensive part in the negotiations at the High-level Plenary Meeting of the General Assembly ("MDG Summit") in New York from 20–22 September 2010 and was crucial to the success of the Summit. Important German concerns were enshrined in the

Summit's final declaration: in addition to the MDGs, other major issues must be given greater consideration in future, as climate and biodiversity protection, peace and security, human rights and good governance are of crucial significance for sustainable economic growth and successful poverty reduction. The outcome document "Keeping the promise: United to achieve the Millennium Development Goals" calls on all social stakeholders in the industrialised and developing nations – governments, civil society and private enterprise – to contribute to the achievement of the Millennium Goals. The developing countries' responsibility is explicitly highlighted. This includes mobilising their own funds to finance development, for example by establishing or expanding fair and efficient national tax systems. The necessity is also stressed of finding new financing sources beyond classic development aid and making heavier use of these. Partnerships with private enterprise, contributions from private foundations or innovative financing tools offer corresponding potential.

The issue now is to realise the momentum of the Summit at the country-specific level in adapted development strategies. Germany will support its partner countries in these efforts. However, the developing countries' own responsibilities were stressed by all sides. These countries themselves agreed that official development assistance should be viewed as supplementary to national resources.

The industrialised countries must above all undertake reforms outside of development policy. What is needed: further debt reduction, development-oriented conclusion of the Doha Development Round, reduction of agricultural subsidies, political coherence, combating tax evasion, introduction of a financial market tax. Moreover, Germany will actively participate in shaping an MDG follow-up model for the period after 2015.

Following the controversial UN Conference on the World Financial and Economic Crisis (June 2009) and the failure of the Copenhagen Climate Conference (December 2009), the MDG Summit has also helped to revitalise the UN and the UN member states to achieve a global consensus on urgent international challenges.

IV. UN Convention to Combat Desertification

The United Nations Convention to Combat Desertification (UNCCD) with its 194 member states is highly important when it comes to combining environmental and resource protection with the objectives of global poverty reduction (MDG 1).

Germany supports the UNCCD both through direct convention contributions and within its bilateral development cooperation. In May 2008, the final declaration of the 17th session of the UN Commission on Sustainable Development clearly referred to the interconnections between land use, climate change, poverty, and food production. In terms of strengthened international environmental governance (see Chapter J.I.1 above), the Federal Government is working continually to increase the significance of the UNCCD as a global framework for sustainable land use.

Economic assessment of the consequences of land degradation and sustainable land use is an important approach, in order to create a basis for investment decisions and decisions to be made by politicians. As a result, Germany supports the UNCCD Secretariat's policy paper entitled "The Economics of Desertification, Land Degradation and Drought" (E-DLDD).

Outlook

In all areas of life, the challenges we are facing call for changes the consequences of which are often equated to the upheavals effected by the Industrial Revolution. Are we currently experiencing the precursors of such a “major transformation”? If so – will it be a slow, imperceptible process of transition, or will subsequent generations associate this change with individual events and dates?

Perhaps the Fukushima accident in March 2011 will be seen as a key event in a rapid transition to the age of renewable energies in Germany and beyond.

Even the financial crisis with its subsequent economic setback and the associated problems in the euro area may prove to be a turning-point on the road to sustainable development. These developments are raising awareness of the necessity of sustainable government finances and sound economic policies. This may be the foundation of stronger European integration. It is also possible that the crisis will create a new awareness of the necessity of fundamental changes in the way nations interact on economic and sustainability issues.

The 2012 Conference of the United Nations in Rio de Janeiro offers a definite opportunity to recognise sustainable economic activity as a global challenge and to improve the institutional structures for international cooperation in the field of environment/sustainability. International stakeholders are aware that it is not possible to resolve the global issues by continuing the status quo.

If at “Rio 2012”, the international community of states agrees effectively to adapt the United Nations structures to the existing challenges, if the global community takes steps together on the road to a “green economy in the context of sustainable development and poverty reduction”, then people in 2050 may well see these steps as milestones on the road to a sustainable world order.

“The only true realist is the visionary” – according to Italian film director and author Federico Fellini. There is no reason to be despondent. We can overcome the current challenges if we approach them with sincerity, creativity, audacity and optimism.

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