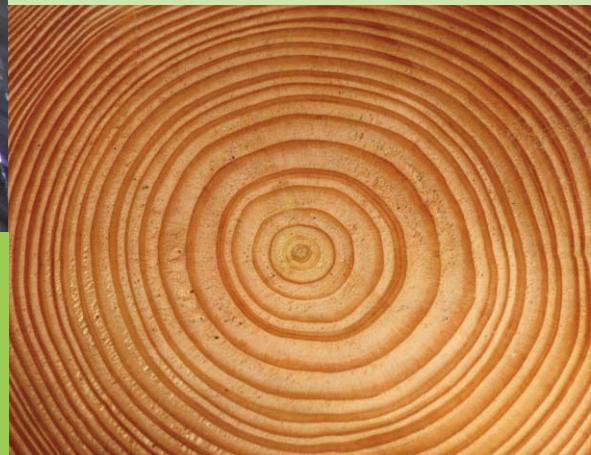
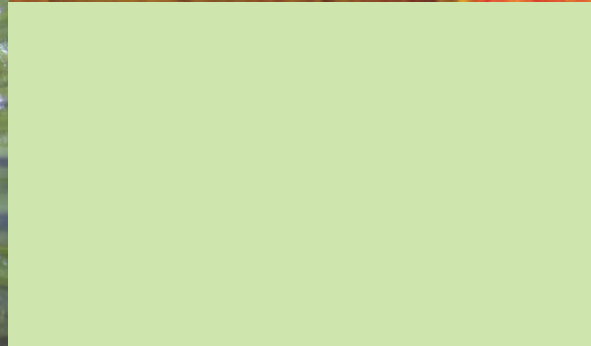




Federal Ministry  
of Food, Agriculture and  
Consumer Protection

# Forest Strategy 2020

Sustainable Forest Management –  
An Opportunity and a Challenge for Society



“*The concept of sustainability combines economic performance with ecological responsibility and social justice. These three elements are mutually dependent. In the long term economic growth based on the overexploitation of nature or on social injustice is inconceivable. This realisation is the expression of our responsibility not only for today's but also for future generations. What we do today must not deny following generations the chance of living in prosperity in an intact environment.*”

*Federal Chancellor Dr. Angela Merkel  
at the Food Business World Summit, 18 June 2008*

## FOREWORD



### Sustainable Forest Management – an opportunity and a challenge for society

From the Finnish primeval forests and the pine forests of Southern Italy and Andalusia to the birch forests of Russia: Europe's landscape has no more distinctive feature than its forests. In Germany alone, forests cover one third of the country. And forests are as multifunctional as they are diverse in appearance. Forests provide a home for animals and plants. They assist in protecting climate, water and soil. At the same time they provide an area for recreation and sports activities. Forests are also deeply entrenched in our cultural identity. For us Germans, they have a firm place in our hearts.

Forests supply us with timber, a highly versatile raw material that can be used for anything from building to energy production. Care is taken that the amount of timber used does not exceed the amount that grows back in the forests. This principle has been adhered to in Germany for the last 300 years. At the same time we nowadays have a far broader view of sustainability: our forestry sector now applies the principle of sustainability to the full range of functions performed by forests, from the raw materials they supply and the protection they provide to the qualities they offer as a place for recreation.

To be able to continue to enjoy forests and the many functions they perform, we must ensure that the demands we place on forests are not excessive or too one-sided. To this end, the Federal Government adopted the Forest Strategy 2020 for Forests as a Natural and Economic Resource. With the help of the forest strategy, we can coordinate the many requirements made of forests regarding climate, biodiversity, raw materials, recreation and energy, and solve potential areas of conflict. The twin goal is to “use and protect” our forests. The forest strategy will also assist in help promoting knowledge and understanding about Germany's forests in the population at large. Our forests deserve our attention.

For it is clear that while our forests need us, we are in even greater need of our forests.

A handwritten signature in green ink that reads "Ilse Aigner". The signature is fluid and cursive.

Ilse Aigner, Federal Minister of Food, Agriculture and Consumer Protection

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# 1. INTRODUCTION

## 1.1 Challenges and opportunities for forests - Need for a forest strategy

The demands made on and the responsible use of natural resources are on the increase as a consequence of global developments. For the growing world population the central challenges of our age are food security, raw material and energy supply, the preservation of our natural environment, biodiversity and climate change. The climate-friendly, ecologically-sound and nature-friendly production of renewable resources, therefore, plays a key role in social developments geared towards sustainability.

In Europe politicians agree on the need to use dwindling non-renewable resources more efficiently and, as far as possible, to gradually replace them with renewable ones. Both in the materials and energy areas it is, therefore, assumed that we are going to see greater use of renewable resources and renewable energy sources and, by extension, wood, Germany's most important renewable resource.

For people in Germany forests have always played an important role. They have shaped German culture and are mentioned in myths, sagas, stories and songs. They have consistently been a highly important economic factor, raw material supplier, climate regulator, habitat for flora and fauna and a place where people go for recreation. Over the course of the millennia the appearance of forests has been shaped by the influence and economic activity of humans.

In the face of increasing timber shortages and the threat of forest exploitation, people already came

to the conclusion about 300 years ago in Germany that sustainable management was the only way of ensuring that future generations would also be able to enjoy the same benefits from forests. Whereas this principle was applied initially to timber supply, forestry continuously developed the principle of sustainability. Today, sustainable forestry pursues the goal of affording permanent, optimum protection to the diverse economic, ecological and social contributions of forests in the interest of both today's and future generations. This is an ambitious goal and is pursued in Germany by means of an integrative approach to sustainable, multi-functional forestry.

In Germany forests are potentially the natural vegetation. Today, more than eleven million hectares of forest, i.e. 31 % of the country's surface area, are sustainably managed. Over the last four decades the forest area has increased by one million hectares. In Germany, besides agricultural land, forests are the most important source of raw material for biomass which is available in an enduring manner in the case of sustainable management. The growth conditions in Germany are largely favourable. For decades now timber increments have outstripped felling and this has led to the building up of considerable timber reserves.



Forests and forestry are more closely linked to climate than any other sector. Whilst the preservation of forests, sustainable forest management and timber use can have a positive effect on climate, climate changes can have a negative impact on the health of our forests. The release of CO<sub>2</sub> can be avoided or reduced as a consequence of carbon storage in forests, the replacement of fossil fuels and the sequestration of carbon in long-lived timber products. At the present time, the potential of domestic forests to improve climate protection via the use of timber is not being fully exploited everywhere. Forests are, however, affected by climate change and this means there is a need for suitable adaptation measures.

Efficient and sustainable forest management, the careful use of available resources and the regional production of raw materials close to the processing site are of great relevance not just from the angle of environmental impact assessment. They are, moreover, an important foundation for a high performance and globally competitive timber and paper industry. Supply security from domestic and global markets is also the precondition for safeguarding jobs and value-added, especially in rural areas.

Furthermore, forests fulfil major functions for humans, nature and the environment. They are a climate regulator. They provide a habitat for animals and plants, protective cover on steep slopes, drinking water and air filters, a place for relaxation and much more. The functions of forests and the measures taken for their sustainable protection are anchored in the forest and nature conservation laws of the federal government and the *Länder*. Furthermore, the majority of forest areas are certified on a voluntary basis in accordance with recognised systems using strict criteria of sustainable forestry.

Amongst the population at large knowledge about the forest ecosystem and the concept, performance and requirements of sustainable forestry is clearly on the decline. However, knowledge and understanding are the preconditions for the acceptance of sustainable forest management.

The demands made on forests and forestry will continue to grow in Germany: changes in leisure

behaviour, increasing calls to safeguard the environmental and nature conservation contributions of forests, the wishes of hunters and the growing need for timber must all be met within the framework of sustainable forest management.

These growing demands from almost all areas – use, protection and leisure – can, however, in the future lead to conflicting goals that vary in severity from region to region. The challenge facing politicians is to evaluate the different demands in an overall context and establish the framework conditions that enable forestry and timber management to meet the challenges in a sustainable and, if possible, optimum manner.

The Forest Strategy 2020 of the federal government contributes to meeting this challenge.

## 1.2 Course of discussions and involvement of associations

The Forest Strategy was developed on the basis of the results of four symposia in Munich and Berlin. In a nationwide “cluster study” within the framework of the Charter for Wood, the potential wood offering and demand were analysed both at the present time and in the future (Munich, May 2008). The focus of the scientific event in Berlin in December 2008 was on forests and forestry in the line of fire of different social interests. It sought to identify conflicting interests and to develop possible solutions. Another symposium was held in May 2009 at which the subject was discussed more extensively by representatives of political circles and associations. At the fourth event in April 2010 the question was: what kind of forest will be best equipped to meet the many expectations we will place in it in future and what will it look like?

Representatives of forest owners, forestry, timber and energy management, the *Länder* as well as the nature conservation associations were invited to all four events and made extensive contributions to the discussions. At a later stage, groups like the German Hunting Protection Association (DJV), representatives of sport and nature conservation as



to specifically define the forest management goals and to identify ways of solving the problems and conflicts thrown up by the wide-ranging, different social interests.

The Forest Strategy 2020 reflects the responsibility of the federal government for forests as a natural and economic resource. It is intended for all relevant stakeholders on the level of the federal government and *Länder*. The initiative taken by the federal government, Forest Strategy 2020, triggered a new round of discussions and injected fresh life into the

well as employees were brought in. This revealed a broad range of what were sometimes contradictory ideas and demands. They all confirmed that the expectations of forests are generally on the increase both in terms of the demand for timber as well as climate protection, protection of biodiversity and recreation. Hence, balanced but at the same time solution-oriented answers are needed.

activities of the *Länder* themselves (“Forests For Lower Saxony”, Forest Strategy 2020 in Saxony-Anhalt, Timber Impulse Programme Schleswig-Holstein, “Changing Forests” Thuringia/NRW is also currently working on a forest strategy). The Forest Strategy 2020 helps to raise awareness amongst people about the forest ecosystem, and the benefits of sustainable forestry.

The Forest Strategy 2020 also takes on board major findings of the National Forest Programme (NWP). Since 1999 models, general goals and recommended actions have been developed within the NWP in a multi-phase process involving a number of interest groups, associations and public authorities, and accepted as a consensus by most of the stakeholders. However, it has since emerged that the implementation of these general goals and recommended actions as well as the reconciliation of conflicting goals was not fully achievable within the framework of the NWP. In the Forest Strategy 2020 an alternative path is taken in order



## 2. VISION AND GOAL

**Vision:** Sustainable management preserves and develops site-specific, robust forests with mainly indigenous species of trees that are able to adapt to climate change. The forests provide the necessary raw materials, offer diverse habitats for flora and fauna, fulfil their protective functions and extend an invitation to leisure activities. The ecological soundness, stability and diversity of forests in Germany have all markedly increased.

The goal of the Forest Strategy 2020 is to develop a viable balance, adapted to future requirements, between the growing demands made on forests and their sustainable performance. The basis for this is equal consideration of the three dimensions to sustainability (ecological, economic and social). The goal of the sustainable use of forests calls for the same weight to be given to economic viability as ecological responsibility and social justice. The Forest Strategy should, furthermore, be in harmony with the federal government's other strategies like, for instance, the National Sustainability Strategy, the National Biodiversity Strategy, the Biomass Action Plan and measures to mitigate climate change.

### The areas of action and subordinate goals of the Forest Strategy 2020 are:

#### 1. Climate protection and adaptation

The contribution of forestry and timber management to climate protection should be safeguarded and increased. Forests need to adapt to climate change in order to be able to continue to fulfil their functions for society, owners, nature and the environment.

#### 2. Property, work and income (value added)

The economic foundations of forestry enterprises, value added and jobs in the forestry and timber industry are to be preserved.

#### 3. Raw materials, use and efficiency

The production of timber from sustainable forestry is to be ensured and the framework conditions improved for the sustainable





provisioning of raw materials for the timber, paper and energy industry. After 2020 as well, the growing domestic demand for timber is to be mainly covered from indigenous supplies and from the sustainable exploitation of other raw material sources.

#### 4. Biodiversity and forest conservation

Forest biodiversity is to be further improved by suitable measures. The links between forest management and biodiversity are to be researched more extensively and the findings factored into further decision-making and planning processes.

#### 5. Silviculture

The forest area in Germany is to be maintained and, if possible, enlarged. The stability, productivity, diversity and naturalness of forests are to be further improved through the proven integrative approach of sustainable, multi-functional forest management. The planting of site-specific, mainly indigenous species of trees is an important contributory factor here.

#### 6. Hunting

Hunting makes a special contribution to sustainable forestry plays an important role in sustainable forestry. Strict, efficient hunting ensures the preservation of the forest ecosystem and promotes natural forest regeneration.

#### 7. Protection of soil and water management

Soil, an important production factor for forests, is to be protected and harmful effects reduced. The contributions of forest management to water supply are to be assessed and opportunities for improved remuneration examined.

#### 8. Recreation, health and tourism

The value of forests for recreation and leisure and their specific cultural functions and contributions are to be maintained and suitable measures taken to avoid any negative impact on nature, forest property and management.

#### 9. Research, education, awareness-raising:

Major research efforts are needed in order to avoid and reduce conflicting goals in the above areas of action. At the same time, it is about promoting understanding of the forest ecosystem, the contributions of sustainable forestry and the use of renewable resources within the framework of educational schemes and greater awareness-raising amongst consumers about the forest ecosystem.

## 3. AREAS OF ACTION

(Initial Situation, Challenges, Possible Solutions)

### 3.1 Climate protection and adaptation to climate change

#### Initial situation:

With solar energy, the right amount of water, a harmonious nutrient cycle and CO<sub>2</sub> from the air, forests produce the natural raw material, wood. 50 % of wood is carbon. As trees grow carbon is extracted from the air as carbon dioxide. For each kilo of timber around 2 kg CO<sub>2</sub> are sequestered from air and bound as carbon in wood, sometimes for lengthy periods. Hence forests are a giant natural carbon sink.

Forests on the earth store 50 % of total carbon stocks from the terrestrial biosphere. In contrast to Germany, more than 13 million hectares of forest are destroyed around the world every year as a consequence of uncontrolled felling and clearing of forests by burning, especially in tropical regions. Afforestation only compensates in part. According to the latest FAO data as many as 5.2 million hectares are still lost every year. Global forest destruction is responsible for almost 20 % of global carbon dioxide emissions. Without international forest protection, the introduction and promotion of sustainable forest management and suitable adaptation measures, it will be impossible to achieve the global climate protection goals.

### Future challenge

Forests and sustainable forestry have proven positive effects on the climate. However, they are also

Water shortage, pest infestation and forest fires can lead to the destruction of entire forest stands. Although some effects of climate change are positive, like longer vegetation periods, they are outweighed by the negative ones. Longer dry periods in spring in particular can weaken the vitality of large areas of forests for several years to come.

Given the importance of large woodland areas in Germany and the long life cycle and production periods of forests, there is a need for sustainable adaptation measures like the ones outlined, for instance, in the German Adaptation Strategy to Climate Change presented by the federal government in December 2008. To this end, further regional forecasts of climate changes are needed as decision-making aids for the selection of species of trees for silviculture. This is because the available forecasts still come with a large degree of

uncertainty. In addition, unpredictable interactions between climate and pests hinder decisions about silviculture adaptation measures. These difficulties are very clear in the case of the spruce for example. The spruce is the most frequent type of tree to be found in Germany and is the most economically relevant. Because the spruce grows quickly, it has been planted in many regions that were not its natural habitat. However, spruces are thought to be susceptible to the indirect effects of climate



affected by climate change, particularly by the increasing dry periods and extreme weather conditions like storms and heavy rainfall. Whereas isolated weather extremes do not generally impair the stability of forests or only impair them on a local level, long-term climate changes may constitute large-scale hazards for forests.

change like growing infestation with bark beetles and to damage caused by extreme weather conditions like the windthrow. Hence, in some regions it does not make economic sense to plant spruce trees because of the changing climatic conditions. In future, this is likely to apply to even more regions.



In its Green Paper on Forest Protection the European Commission notes, “In the long term, a sustainable forest management strategy aims at maintaining or increasing forest carbon stocks and the sustained yield of timber, fibre and fuel generates the largest mitigation benefit.”

In Germany's forests around 1.2 billion tonnes of carbon are bound in the biomass both above and below ground. The development of this store also impacts how forests affect climate. If growth outstrips timber use, then timber stocks rise and forests act as a CO<sub>2</sub> sink. If timber use is more extensive than growth, then the stocks fall and the forests become a CO<sub>2</sub> source. The carbon balance largely depends on age structure. Young forests have a high sink capacity whereas in older forests, related to the above-ground biomass, a balance is established over the long term between CO<sub>2</sub> intake (growth) and release (decay).

In recent decades Germany has built up large stocks in forests that had been extensively decimated by damage during the war and cutting for reparation purposes. Currently at 330 solid cubic metres of standing crop/hectare they are the highest in Europe. Large areas of German forests are, therefore, older and at an age where growth levels out. This means that the capacities for further carbon binding by increasing stocks are falling. At the beginning of the 1990s this capacity was around 80 million tonnes CO<sub>2</sub> a year. Since

then it has steadily decreased. At the present time, 20 million tonnes of CO<sub>2</sub> are additionally stored in forests each year.

Furthermore, in Germany around 118 million tonnes of CO<sub>2</sub> are stored in what are, in some cases, long-lived timber products. The use of timber in material recycling and energy supply prevents the release of around 80 million tonnes of CO<sub>2</sub> from fossil fuels. The cascaded use of timber, where energy use only comes after material use, offers the greatest climate benefits.

However, the positive contribution of timber products is not yet taken into account in the international climate regime. This gap is to be closed in a possible follow-up agreement to the Kyoto Protocol.

#### Possible solutions:

- ✓ Forests are to be maintained as a CO<sub>2</sub> sink. The climate and energy goals of the federal government are to be backed by measures to adapt German forests to climate change and to tap the CO<sub>2</sub> reduction potential in forests and timber.
- ✓ Appropriate steps are to be taken to promote the use of timber from sustainable forestry as a substitute for energy-intensive materials with an unfavourable environmental impact assessment and carbon footprint.
- ✓ In the EU and in the international climate negotiations, the federal government advocates the crediting of timber and timber products in the national climate/CO<sub>2</sub> footprint.
- ✓ Research on the impact of climate change on forests, their productivity and suitable adaptation measures is to be stepped up. (cf. Chapter 3.9).
- ✓ The climate adaptation potential of available, unused forests is to be examined and tips passed on to forestry services.

## 3.2 Property, work and income

### Initial situation:

Use of the raw material timber is an important economic factor in Germany. For forest owners the sale of timber is the biggest source of income. The forests in Germany are run by approximately 160,000 private, state and municipal forest enterprises and more than 4,200 co-operatives. Overall, there are around 2 million private forest owners in Germany. They manage around 47 % of forest area. Municipal forests account for about 20 %, state forests for approximately 33 % of forest area. These different types of ownership have proved their worth. Besides the varying local features, they make a major contribution to forest diversity. Approximately 100,000 people employed in state, municipal and private forest enterprises generate annual turnover of € 5 billion. Furthermore, forestry plays a diverse role in the protection of natural resources, recreation and health. Up to now, this has hardly been taken into account and is not normally remunerated.

With suitable overall conditions, German forestry can offer the cluster, forestry and timber with its 1.2 million employees and its turnover of € 168 billion (2009), a reliable source of raw materials. The value added of the German timber industry is currently based mainly on coniferous wood. In 2009 there were just under 20 million cubic metres of coniferous sawnwood compared with just 1 million cubic metres of non-coniferous sawnwood. The sales revenues generated by coniferous wood are closely linked to its use in the construction industry. The potential uses of non-coniferous wood have by no means been fully exploited up to now, mainly for technical reasons.

In the European Member States, too, timber from indigenous forests is the raw material basis for a competitive timber industry. In 2007 approximately 3.3 million people in around 365,000 enterprises were employed in forest-based industries (timber, paper and printing) of the EU (27). They generated annual turnover of € 454 billion<sup>1</sup>.

### Future challenge:

The expected rise in demand for coniferous wood, coupled with a decline in the proportion of this type of wood in forests, could lead in the medium and long-term to bottlenecks and, by extension, to sawmills, timber companies and pulp manufacturing plants moving elsewhere. This would pose a threat to jobs and economic strength particularly in rural areas.

In contrast, the proportion of non-coniferous trees in the forest area has steadily risen in recent decades and non-coniferous sawnwood stocks have increased considerably. Forestry currently exploits around half of this growth. For many types of non-coniferous wood there are still not enough processing or utilisation options, innovative technologies or future-centric sales markets with high value added.

The focus of the professional activity of the large group of small forest owners with an average forest area of less than 10 hectares lies outside forestry. Their individual goals vary considerably. Given the growing alienation, there is frequently no economic incentive to encourage them to get involved in forestry and to acquire the relevant knowledge.

<sup>1</sup> Source: [http://ec.europa.eu/enterprise/index\\_en.htm](http://ec.europa.eu/enterprise/index_en.htm)



This owner size structure is not conducive to timber mobilisation and forest tending. As a consequence of demographic developments and structural changes in rural areas it may even deteriorate further.

#### Possible solutions:

- ✓ The federal government advocates a wide dispersal of private property and will continue to work to protect this.
  - ✓ Economically viable forest enterprises and associations of forest owners are the basis for the responsible sustainable management of forests and the safeguarding of all their functions. Forestry is the foundation for a highly productive and internationally competitive timber industry. The overall conditions should be shaped in such a way that forests' ecological and social functions and, by extension, the related jobs and value added are safeguarded in the future, too, and can be developed further.
  - ✓ In principle, the overall political and legal conditions should permit forest owners to work in an economically viable, market-oriented and sustainable manner, and to make a decent living.
  - ✓ Given the growing social, climate policy, ecological and economic demands made on forests and forestry, consulting services for small private forests should be further extended as a public task of common, general interest.
  - ✓ The mobilisation of timber potential, particularly in small private forests under 10 hectares should likewise be improved by measures to alleviate the organisational and logistical structural problems.
- ✓ Assistance for forestry units is strengthened especially through the use of forestry experts. Forest owners who have been “passive” up to now are to be actively approached by forestry experts, provided with information and encouraged to join forestry co-operatives (FBG) and associations. Beyond the mobilisation of sustainably usable raw material reserves, a contribution is likewise made to ensuring forest tending and stand stabilisation.
  - ✓ To prevent any job losses it is necessary to fully exploit the sustainably available coniferous raw wood potential and, in this way, to reduce the risk of important large-scale employers in the timber and pulp industry moving away, particularly from rural areas.
  - ✓ In order to tap into the potential of non-coniferous wood, the timber, pulp and paper industries are called on to develop further innovative and resource-saving areas of use.
  - ✓ The employers recognise their responsibility for their employees. Here, the emphasis is on tried-and-tested social standards, effective health and accident insurance, the introduction of up-to-date working time schemes and adequate pay in relation to performance.
  - ✓ A viable forestry industry needs its own qualified experts and service providers to be fit for the future. Forest owners and forestry entrepreneurs are called on to work together in the future, too, in a trust-based and responsible manner.
  - ✓ In order to safeguard the complex capacity of forests in the long term, a minimum number of well-trained experts should always be on hand. In this context public-owned forests bear considerable responsibility.

### 3.3 Raw materials, use and efficiency

#### Initial situation:

Domestic consumption of wood resources has steadily increased over the last two decades and now amounts to around 130 million cubic metres per year. The category “wood resources” is a gross value that contains some double counting. Wood resources include raw wood, waste wood (recovered wood), landscape management materials as well as industrial wood residues that also come under the category raw wood. Overall, around 77 million cubic metres are used for material recovery and around 53 cubic metres for energy generation. The use of coniferous wood has increased markedly, that of non-coniferous wood has fallen<sup>2</sup>.



The additional capacities created in recent years in Germany in the sawmill, timber-based material and pulp industry stem in particular from the use of coniferous wood. Innovative products based on coniferous wood have helped timber to break into new areas of use as a building material. One in

seven homes is now made of timber. This renewable building material has further untapped potential in the area of the energy-efficient upgrading of buildings and the construction of multi-storey, industrial and commercial premises. The consumption of raw materials alone in the timber-based material and pulp industry has increased since 2000 by around 19 to just under 36 million cubic metres in 2009. Furthermore, there is a growing demand for timber for energy production. This led for the first time in 2006/2007 to a bottleneck that triggered a dramatic increase in the price of all types of coniferous wood. The windthrow damage caused by “Kyrill” somewhat defused the situation on the timber market at the beginning of 2007. At the present time, there are once again signs of a growing supply bottleneck for types of coniferous wood.

Wood is a renewable resource with a broad spectrum of uses ranging from material recovery down to energy generation. Even today around 10 % of primary energy needs around the globe are still covered from biomass, in particular timber. The energy value of between 2 and 2.5 kilogram wood roughly corresponds to that of one litre heating oil. Right now wood is far cheaper than oil or gas. Furthermore, timber can be produced and transported with relatively few risks. The renewable energy source, wood, is normally available locally and reduces dependency on oil and gas imports. This promotes regional economic cycles and the value added remains in the area. The emission values for incineration are generally low now thanks to innovative technologies. The market penetration of low-emission technologies will be concluded by 2025 at the latest<sup>3</sup>.

The use of timber, particularly for heat and power generation, has increased considerably in recent years because of the fluctuating and general increase in the price of fossil fuels. More than half of energy timber (28 million cubic metres) was used in private households in 2009. This mainly applies to raw types of wood like firewood that are

<sup>2</sup> MANTAU, U. (2009): Holzrohstoffbilanz Deutschland: Szenarien des Holzaufkommens und der Holzverwendung bis 2012 [Wood resource balance Germany: Scenarios of forest resources and timber use up to 2012] (Sonderheft 327 Waldstrategie 2020 [special issue 327 forest strategy 2012]; proceedings of the BMELV Symposium, 10-11 December 2008 in Berlin; pages 27 - 36)

<sup>3</sup> Implementation of the refurbishment programme 2014 - 2024 of the amendment to the 1<sup>st</sup> Federal Emission Control Act to reduce pollutant emissions from small-firing installations.

not suitable for other material uses or could not be developed at competitive prices (self-felling). Thanks to the support measures of the federal government for achieving the climate goals in 2020, there are also incentives which encourage the increased and more efficient utilisation of timber. New, energy-efficient buildings of the future, refurbished old buildings with high-tech heat insulation and modern wood heating systems with far lower fuel consumption tend to have a dampening effect on the demand for energy timber.



#### Future challenge:

An evaluation of the available expert scenarios shows that the demand for wood resources is on the rise in Germany. The option of sustainably covering the forecast demand for raw wood from the world market seems to be uncertain in today's climate. China has now overtaken Japan as the world's largest timber importer. Large production countries like Russia seek to process more of their timber reserves themselves and, therefore, impose export duties. All the same, the situation has become more relaxed in the course of the current WTO negotiations. The analysis of the economic conditions regarding raw timber imports does, however, reveal that the transshipment and transport costs can lead to a major increase in the price of the raw materials. Besides weighing up environmental impact aspects

(for instance energy input for transport), care must be taken to ensure that the timber comes from legal, sustainable production.

Against this backdrop questions about material efficiency and cycle management take on increasing importance. The timber and paper industry has demonstrated how economic advantages can be combined with ecological ones. The quotas for paper recycling that climbed from 60 % to more than 70 % between 2000 and 2009 are an impressive example. This applies equally to the material usage of industrial wood residues and old stand in timber-based material and pulp technologies and the increased use of wood residues for heat and energy generation in timber companies' own production cycles.

Short-rotation plantations outside forest land also help to cover the demand for this raw material. In Germany the current scale of plantations of roughly 3,000 hectares is still low. Compared with intensive farming and alternative energy plants, short-rotation plantations can demonstrate positive ecological effects on nutrient balance, humus formation and biodiversity in the context of landscape ecology and site-adapted species selection.

#### Possible solutions:

- ✓ The timber harvest is auctioned up to the maximum average annual growth (the basis is the baseline scenario of the federal government for the climate negotiations / around 100 million m<sup>3</sup> per year). Forests are to be preserved as a CO<sub>2</sub> sink.
- ✓ The first step towards tackling dwindling resources is, therefore, more efficient, i.e. material-saving use. The essential pre-requisite for increasing resource efficiency is the avoidance of waste and the return of recyclable materials from waste to the economic cycle. In principle, the sensible cascaded use of scarce resources in the timber and paper industry should be increased further. Here, there are additional reserves which can be tapped with the help of research.



- ✓ Another approach to increasing resource efficiency is the improvement of the material and energy utilisation of the raw material timber through conversion techniques and lowering specific consumption, for instance through all-round building refurbishments and the use of efficient small-firing installations and thermal power stations.
- ✓ A further approach to the sustainable and efficient energy use of the non-renewable resource, biomass, is continued support for the use of biomass in cogeneration plants. In the case of high levels of utilisation, this is the most efficient use as, in this case, optimum fuel exploitation and greenhouse gas savings are possible in conjunction with the supply of heat and power.
- ✓ Given the ongoing competition between material usage and energy generation, support policy disincentives are, in principle, to be avoided.
- ✓ The location of short-rotation plantations outside forests can lead relatively quickly (from 3 to 10 years) to a flanking contribution to improving timber supply particularly for energy use. Short-rotation plantations possess

planting potential on suitable agricultural land and other areas because of the, in some cases, favourable natural production conditions to be found there. Furthermore, the yield potential can be increased in the long term through selection and breeding. The funding conditions should be examined.

- ✓ The increased use of landscape management timber can also help to widen the wood resource balance. According to the wood resource balance, at the present time around 5 million cubic metres of timber from landscape management are used in smaller biomass thermal power stations. This corresponds to only 20 % of the estimated potential of landscape management timber.
- ✓ The existing forestry certification systems, PEFC and FSC, are in principle suitable for the certification of solid biomass.
- ✓ A detailed database is needed to ensure market transparency and as a decision-making aid for entrepreneurial and political decisions. The forestry and timber industry is called on to ensure sustainable market reporting. The federal forest inventories and forest resources assessments should, in future, be conducted





by the federal government and *Länder* as well. Following the submission of the results of the next Federal Forest Inventory (BWI 3), a detailed forest resources assessment will be undertaken for Germany.

- ✓ The framework conditions for the cluster “forestry and timber” should be improved, regional and supraregional cooperation should be extended and the competitiveness of the forestry and timber industry should be strengthened.
- ✓ The certification of timber and timber products from sustainable forestry in line with strict ecological standards (e.g. PEFC, FSC) should be upgraded into a decision-making criterion for final



consumers when purchasing timber products. The procurement rules of the federal government for timber products are exemplary and should be taken over into the public administration of the *Länder*, local authorities and private industry.

- ✓ The existing, sustainably available raw material potential should be exploited to a greater degree and tailored to market needs. In this context the existing instruments for raw timber mobilisation should be developed further and used more effectively. They include forestry associations, consulting and support for forest owners – in particular small private forest owners, forest consolidation and forest leasing models.

### 3.4 Biodiversity and forest conservation

#### Initial situation

Without human intervention Germany would be mainly covered with forests. Particularly during the period from the Middle Ages up to the 19<sup>th</sup> century extensive felling and over-exploitation reduced the forest area, led to the deterioration of existing forest stands and markedly changed species composition. It was only thanks to the introduction of sustainable forestry around 300 years ago and the dedication of many generations of foresters and committed forest owners that the forest area could once again grow and that the diverse forest ecosystems could develop that we have today. In this way some of the original biodiversity in Germany could be maintained.

Sustainable forestry is very close to nature in comparison to other forms of land use. High nature conservation standards for forestry are anchored in the Federal Forest Conservation Act and Federal Nature Conservation Act and the corresponding laws of the *Länder*. When it comes to forest management, stiff requirements are imposed today on the protection and the preservation of nature and the environment. In Germany's forests as a rule measures for the preservation and the protection of biodiversity are integrated into use. This means that, in principle, no distinction is made between commercial forests and conservation forests. This is one of the main components of modern multifunctional forestry. Forest conservation will continue to be an integral part of modern forestry in the future, too.

The forms of historical forest use are a special feature (e.g. composite forest, coppice forest and woodland pasture). Depending on how they were managed, special habitats for animal and plant species were created.

They enlarge biodiversity and have considerable nature conservation potential.

For the landscape, forest, the latest indicator report of the federal government on the National Biodiversity Strategy (November 2010) in forestry confirms good ratings for the indicator "biodiversity and landscape quality" (in relation to specific bird species). According to this, modern forest management promotes and improves the status of biodiversity. Indigenous forests have the best partial indicator value of all land uses (81 % of the maximum achievable value). The promotion of close to nature forest management by the federal government and the *Länder* and the high degree of responsibility shown by forest owners have led to clear successes. Far fewer species have disappeared from forests than from other biotopes. 47 out of 1,213 forest plants (4 %) compared with 438 out of 3,001 (14.6 %) for all vascular plants were listed in the hazard categories 0-2 of the Federal Agency for Nature Conservation (BfN). This positive trend must be continued in order to achieve the goals by 2015. On the other hand the Red Lists in Germany indicate a few species of animals and plants that are deemed to be endangered and threatened with extinction. This applies in particular to species that are dependent on old forests, undisrupted forest development and old stand and deadwood components. The share of deadwood component, an indicator for the nature conservation quality of forests,





has climbed by 19 % in the last 6 years to 14.7 m<sup>3</sup>/hectare<sup>4</sup>. The reasons for this major increase are natural disasters and deadwood programmes in the *Länder*.

When it comes to the certification of sustainable forestry, Germany tops the league around the world and in Europe. Most German forest managers voluntarily comply with the requirements of private certification systems that go beyond statutory rules. Up to now, more than 70 % of German forests have been certified PEFC or FSC. The forest nature conservation measures of the *Länder* e.g. to maintain rare types of trees and biotopes, deadwood concepts and the implementation of close to nature forest management concepts, have led to the emergence of valuable forest biotopes.

According to current estimates around two-thirds of German forest area are listed in at least one protected area category according to the Federal Natural Conservation Act, the *Land* Forest Act, the European FFH directive and the Bird Protection Directive (Natura 2000). Most of them are landscape conservation areas. Their main purpose is to protect the landscape and preserve biodiversity. In nature parks they are also used for recreation and sustainable regional development. Whereas forest management is scarcely subject to any

constraints, for example in landscape conservation areas, nature conservation goals in other areas have priority or are – in the case of core areas in national parks and biosphere reserves – oriented towards nature conservation in particular. Depending on the conservation goal there may be more or fewer management constraints.

Furthermore, in recent years a total of approximately 100,000 hectares of government-owned areas have been handed over to *Länder* and to nature conservation associations and foundations as National Natural Heritage. A further 25,000 hectares are to follow suit. Two-thirds of the natural heritage areas are forests. According to estimates approximately 2 % of the forest area is no longer managed (for instance core areas of national parks and biosphere reserves, natural forest areas, areas owned by nature conservation associations and authorities as well as permanently non-used areas). Exact details about this are currently being put together in a research project of the Federal Ministry of the Environment.

In German forestry there are many synergies with nature conservation particularly when the principles of close to nature forest management are upheld in the maintenance and development of forests as a habitat for animals and plants. Moreover, forest owners and foresters see themselves as nature conservationists in forests. On the regional level they cooperate successfully in many areas with nature conservation institutions.

<sup>4</sup> Deadwood with a diameter of more than 10 cm



The federal government provides annual backing for the implementation of the National Biodiversity Strategy (NBS) amounting to € 15 million through its Federal Programme Biodiversity. The federal programme supports projects which are of nationwide importance within the framework of the NBS or which implement this strategy in a particularly exemplary and standard-setting manner. The supported measures aim to halt the decline in biodiversity in Germany and to reverse this trend in the medium and long-term.

### Future challenge:

The federal government adopted a series of measures to conserve and protect natural habitats in 2007 in its National Biodiversity Strategy. Goals were also formulated for forests that link the protection and maintenance of biodiversity with sustainable forest use.

The principle of integrative, sustainable and multi-functional forest management applied in Germany is recognised and respected on the international level. Segregating approaches or methods are viewed critically by forest management from the angle of the overall goal of the sustainable development of society and the existing potential of indigenous forests whereas nature conservation representatives believe that additional use-free areas are needed to preserve the ecosystem services.

Nature provides mankind with a number of goods and services that constitute the foundations of human well-being. Intact soil, food, drinking water, fuels and medicinal products, protection from flooding and soil erosion as well as climate regulation or carbon storage are “ecosystem services”. They are provided to us free of charge by nature but they are not always immediately obvious. Many services provided by nature have either not been included at all up to now in conventional environmental impact assessments or are taken for granted. Around the globe this means that valuable natural capital is neglected or destroyed. The services provided by ecosystems and biodiversity are, however, of major economic value. The study “The Economics of Ecosystems and Biodiversity” (TEEB) of the United Nations Environment Programme (UNEP) outline ways of assessing the services of important ecosystems and shows how the costs and benefits of maintaining or re-establishing nature and its services can be comprehensively taken into account in decision-making processes. In future, the assessment of forest ecosystem services is also to be integrated into the decision-making processes.

### Possible solutions:

- ✓ The friction between the use of biological resources and maintaining biodiversity should be defused and dealt with.
- ✓ The high level of biodiversity in forests today is nurtured. Biodiversity in forests should be further improved in line with the goals of the National Biodiversity (NBS), e.g. through non-managed areas, an increase in the proportion of deadwood, a rise in the number of natural forest patches along with the implementation and linking up of the Natura 2000 areas. Publicly owned forests, in particular state-owned forests, serve as a model here.
- ✓ In order to clarify the status quo regarding the proportion of non-managed forest areas, the Federal Environmental Ministry has commissioned a research project through the Federal Agency for Nature Conservation (BfN). The results will help to identify the need for action by political circles. The federal government will submit an interim report on the project status.
- ✓ Additional constraints on forestry should be carefully weighed up on the national and EU levels when it comes to the achievable sustainable benefits taking into account ecological, economic, social, and climate-relevant aspects.
- ✓ Measures to secure natural forest areas within the framework of NBS are implemented in private woods by means of voluntary agreements with the stakeholders and are financially compensated.
- ✓ Additional findings about the contexts and effects of forest management and nature conservation should be evaluated and gaps in knowledge filled through suitable research projects. The results should be carried over into the formulation of goals for integrative nature conservation concepts within the framework of sustainable forestry.
- ✓ The federal government will examine and step up support for close to nature forest management. The goal is to offer a concrete support catalogue with attractive conditions for “environmental forest measures” throughout Germany.
- ✓ The ecological services of forestry, which go beyond sustainable, regular forest management should be adequately compensated.
- ✓ The ecosystem services in forestry (services of the forest ecosystems) should be taken into account as eligibility criteria for support in the 2<sup>nd</sup> Pillar of the Common Agricultural Policy after 2013. Any overlapping (e.g. with the Federal Biodiversity Programme) is to be avoided.
- ✓ The evaluative approaches in the TEEB Study should be carried over to the ecosystem services of indigenous forests and biodiversity and their value should be quantified. The values obtained for the ecosystem services of forests should be incorporated into decision-making processes.
- ✓ The proportion of high-grade ecological standards of certified forest areas (PEFC, FSC) should continue to grow up to 2020. Consumers should be encouraged to take more note of certificates for sustainable forest management of this kind when out shopping. The federal administrative authorities already only procure wood from sustainable forest management. PEFC, FSC and comparable certification standards are sufficient proof in this context. *Länder*, local authorities and business are called on to adopt the procurement rules of the federal government for wood products in their areas of responsibility, too, and to seek greater acceptance amongst consumers for this.
- ✓ Forestry, particularly in state and municipal forest holdings, should assume an active role when it comes to safeguarding European natural heritage particularly within the framework of Natura 2000.

### 3.5 Silviculture

#### Initial situation:

Germany is densely populated but it is, nonetheless, one of the Member States of the European Union with the most forests. Woodland accounts for 31 % of its total surface. Over the last four decades it has increased by around one million hectares. Overall, the natural growth conditions for forests in Germany are extremely favourable. Sufficient precipitation, good soil and moderate temperatures permit consistently high growth rates and largely stable stocks. The broad range of species of trees in indigenous forests, approximately seventy different species of tree and shrub, reflects the broad spectrum of different forest locations.

For around three decades forestry has increasingly geared its activities towards the principles of close to nature forest management. One core element here is the shift of monocultures, which were introduced on a large scale after World War II, towards more site-adapted mixed stands that can adapt to climate change. Germany now has a considerable share of non-coniferous and mixed forests (39 %). The share of conifers in the old stands is still around 62 % compared with only 29 % in young stands.

Between the Forest Inventories I (1987) and II (2002), timber stocks increased by around 7 million cubic metres from 2.7 to 3.4 billion cubic metres. Between 2002 and 2008 growth (11.1 m<sup>3</sup> solid volume over bark per hectare and year) exceeded the estimates in the forest development and timber volume models of 10.3 m<sup>3</sup> solid volume over bark

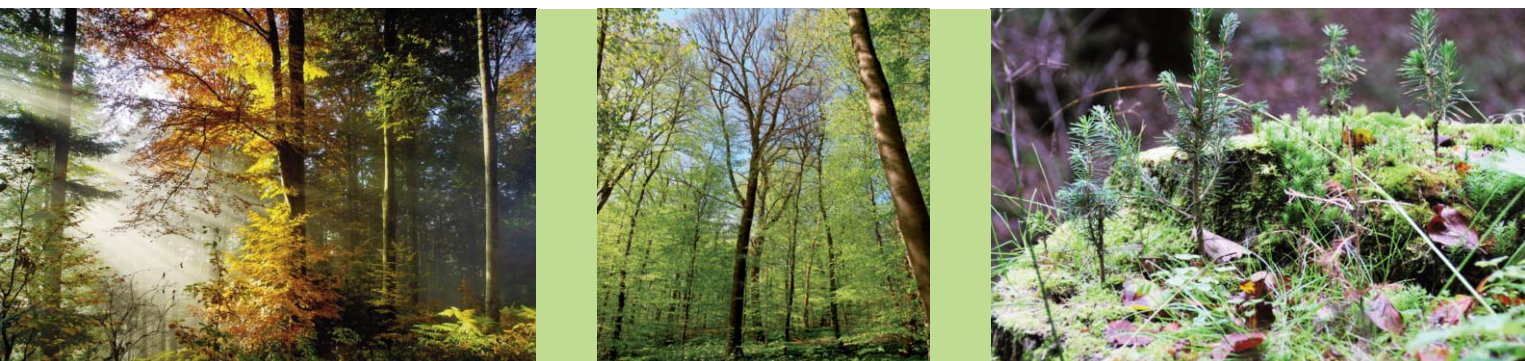
per hectare and year despite a few dry periods (e.g. 2003). Timber reserves have once again increased by 2 %. With 330 solid volume over bark per hectare, Germany has more timber in forests than almost any other European country. The average age of forests during this period has increased by four years. It is now 77 years. 11 % of the forest stands are under 20, 50 % aged between 21 and 80 and 34 % between 81 and 169 years of age. Forests with trees older than 180 years of age are rare, approximately 2 % of forest area. Approximately 80 % of young stands come from natural forest regeneration. Only 17 % have been planted. Overall, sprouting and coppice do not play a significant role.

The overall balance (2002 up to 2008) of timber stocks, timber increments and cutting show that 10 % more timber has grown than was felled, i.e. 90 % of timber increments are used. The share of non-coniferous trees has risen by 2 % in state-owned, cooperative and private forests.

Spruces (28 %) and pine trees (23 %) are the most frequent species of trees. Single-storied forests account for almost half (46 %) of the woodland area. 45 % are two-storied and 9 % are multi-storied.

#### Future challenge:

Forests and forestry are exposed to climate change; on the other hand they make an active contribution to climate protection. Some of the pure spruce forests which are still to be found today on around 10 % of woodland area will probably not withstand climate change. Forests



can adapt to climate change by means of the suitable selection of trees and origins with the required climatic variability. Additional amounts of timber can be placed for the time being on the market by means of the timely transformation of forests into mixed, multi-storied, site-adapted and, if possible, close to nature forms of stands with mainly indigenous species of trees.

The course charted in forest management in recent decades has been towards extensification, increasing stocks, extending the share of deciduous trees, natural regeneration and stiffer protective requirements. Compared with the large-scale pure conifer stands, the growing proportion of mixed forests mitigates the existing risks of climate and weather-driven change. One consequence is that the volume and types of coniferous wood needed by the timber industry will no longer be available in future on the same scale. Given the expected increase in demand for wood for recycling and biomass for energy generation, this raises the question about securing the supply of raw materials for the indigenous timber and paper industry.

#### Possible solutions:

- ✓ The forest area in Germany should be maintained and the stability, diversity and orientation by nature of forests should be increased. The planting of site-adapted and mainly indigenous species of trees makes an important contribution to this.

- ✓ Wherever possible the forest area should be increased and the land consumption for settlement and infrastructure measures should be reduced. Within the framework of regional possibilities, new forest sites, offering particularly advantageous climate benefits and positive effects on nature and the landscape, should be planted.
- ✓ By means of an close to nature and environmentally compatible increase in forest productivity, the tapping of additional land potential and the sustainable use of large timber reserves, particularly in small private forests, a major contribution can be made to increasing the stability and vitality of forests and securing the future timber supply. The following approaches are suitable ways of achieving this:
  - Creation of diverse, stable and high yield mixed forests
  - Risk reduction by avoiding unstable density or excessive stocks as a consequence of consistent forest tending (cleaning, thinning)
  - Planting of site-adapted species of trees with a high level of resistance and growth rate
  - Forest planting concepts and production periods which lead to optimum yields in harmony with nature conservation and environmental protection requirements
  - Use of high quality, site-adapted, resistant and high yield forest plants
  - Maintaining the genetic diversity of forest lants.



- ✓ The provisions in the Federal Forest Act are a suitable framework to further extend short-rotation plantations to areas outside woodland and, in this way, to make a flanking contribution to raw material supply. No new rapid-growth plantations will be sown in forests.
- ✓ Within the framework of forest management measures, more use should be made of the short-lived options of planting nurse crops e.g. after windthrow, transformations, advanced-planting, targeted forest renewal and the concerted periodic use of skid roads for the production of energy timber.
- ✓ Together with the *Länder* the federal government will examine the support conditions and adapt them in order to contribute more to the above solutions.

## 3.6 Hunting

### Initial situation:

Forests and game belong together. The forest is a habitat for many species of animals including huntable ones. Hunting specifically serves the purposes of sustainable forestry. The Federal Hunting Act stipulates that hunting must maintain a healthy, diverse game population that is adapted to the cultural conditions, and that it should nurture and



protect the game's natural environment. Roe deer, red deer and wild boar are the most frequent species of hoofed game to be found in German forests. The hunting bag for these species of animals has increased considerably over the last forty years. The roe deer bag in Germany has almost doubled and in the hunting season 2009/2010 it amounted to more than one million. The red deer bag has risen by 50 % (67,000). Fallow deer and wild boar bags have even multiplied five-fold.

### Future challenge:

The increase in hunting bags confirms the growing intensity of hunting but also documents a major growth in the hoofed game population. The reasons for the large game populations are diverse. Besides a changing grazing offering (increase in natural regeneration areas, more mast years, rise in maize cultivation), mild winters also lead to higher reproduction rates. At the same time, habitat fragmentation and growing uneasiness amongst game can lead to impairments of their natural activity patterns and render hunting more difficult. The complaints by forest owners about growing damage from game have increased markedly.



The hoofed game species are herbivores and they also eat parts of forest trees. With the exception of wild boar, they can also cause extensive damage in forests. 19 % of the growing trees without any





protection show evidence of browsing or debarking. Spruce and pine trees present above-average levels of debarking damage, followed by Douglas firs. In Germany 2.6 % (0.3 million hectares) of forests have been fenced in to protect them from debarking damage by game. The sought-after mixed forests that are adaptable to climate change, high yielding and economically viable can only succeed without additional investment in prevention against damage by game if there are regionally adapted hoofed game populations. The basis for adjusted hoofed game populations are the silvicultural, agricultural, wildlife biological and landscape ecological requirements. The conflicts between agricultural, forestry and hunting



interests are often triggered by inadequate law enforcement. The Federal Hunting Act sets out a clear legal framework for achieving the social goals in respect of forest and game. Game is to be protected whereby protection must be carried out in such a way that any impairment of proper agricultural, forestry and fishery use, in particular wild game damage, can if possible be avoided. On the regional level there is a major deficit between the statutory remit and its practical fulfilment.

#### Possible solutions:

- ✓ Hunting specifically helps sustainable forestry. Adapted hunting methods safeguard the conservation of forests and promote the natural regeneration of forest ecosystems with a diverse structure.
- ✓ The game populations are to be regulated in such a way that the natural regeneration of all the main species of trees is possible without fencing. The quota plans for number of hoofed game killed are to be adapted to regional/local specificities.
- ✓ Hunting is a highly emotional subject. One-sided, blanket demands can further increase the tension and do not help to solve the problem. Solutions can only be worked out in an ongoing discussion process in which all the stakeholders are involved. Together with the forest owners, farmers, hunters, sport, leisure and environmental associations, concrete measures and model projects should be developed for conflict minimisation on the regional level and, on this basis, a model elaborated for hunting in forests.
- ✓ Landowners and hunters should become involved to a greater degree in local bodies and exercise their rights. The problems can only be solved on the regional level in a dialogue with political circles, public administration, owners and interest groups. Information and continuing training offers on avoiding damage from game and on the legal

framework should be extended to landowners and hunting syndicate members. Furthermore, measures that improve habitats like the restructuring of forest stands (mixed forests), resting zones for game (red game) and visitor flow management are suitable ways of achieving a balance between forests and game.

- ✓ The requirements and conception of game-friendly and forest-friendly wild game management should be discussed more by the public at large with all stakeholders. At the same time, they should be further developed as an essential component of hunting training schemes. The local hunting organisations should do more to provide the public at large as well with reliable information and findings.
- ✓ The effectiveness and efficiency of hunting should be further increased with consideration given to the owners' interests.

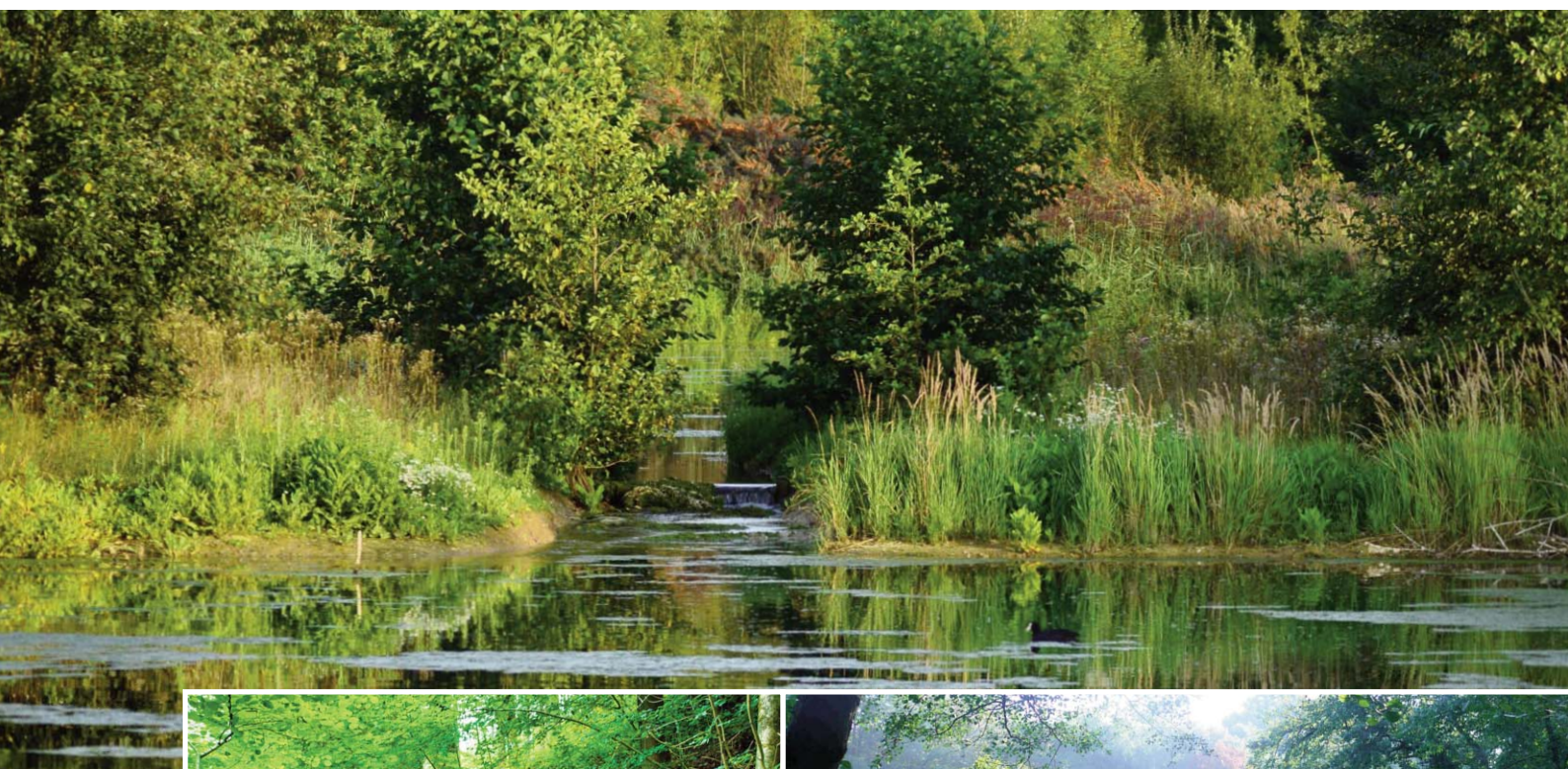
### 3.7 Protection of soil and water management

#### Initial situation:

In the forest ecosystem soil plays a key role as a supplier of nutrients and water for trees. A multitude of soil organisms contribute to forest biodiversity. The humus in our forest floor contains considerable amounts of carbon and has a major potential for carbon sequestration from the atmosphere that has been largely ignored up to now.

When it comes to water management, forest and forest soil ensure an even run-off rate, reduce peak flood levels and protect against erosion. They act as an important filter for drinking water. Pollutants are filtered out. The leachate under forests is normally of good quality and is, therefore, particularly important for drinking water use. In forest management in Germany protection of forest soil is important as a central means of production in order to maintain the vitality, productivity and stability of





forests and avoid damage to the soil. Soil damage caused by impairment of soil structure e.g. through excessive contamination with pollutant inputs or compaction, may also have negative effects on leachate quality, quantity and erosivity with knock-on adverse effects on society, the user of water resources.

The sulphur input rates in forests have fallen considerably since the 1980s, nitrogen compounds to a lesser degree. Nevertheless, deposits in almost all measuring areas in forests exceed the critical loads for nitrogen and acid inputs at which harmful changes in the ecosystem are to be feared. This brings with it a risk of acidification of the soil and a loss of its filter capacity. Enduringly high nitrogen inputs have both

an acidifying and a fertilising effect. This “overfertilisation” (eutrophication) of forest ecosystems leads to a change in the plant communities and a reduction in the number of species. Nitrogen inputs not only impose a burden on forest ecosystems but also jeopardise the quality of ground water.

#### **Future challenge:**

The forest soil and its productive capacity are at risk in Germany, especially from atmospheric acid, nitrogen and pollutant inputs. Over a period of several years inputs lead almost imperceptibly to sweeping changes to forest soil. Many forest ecosystems have reached the limits of their resilience.

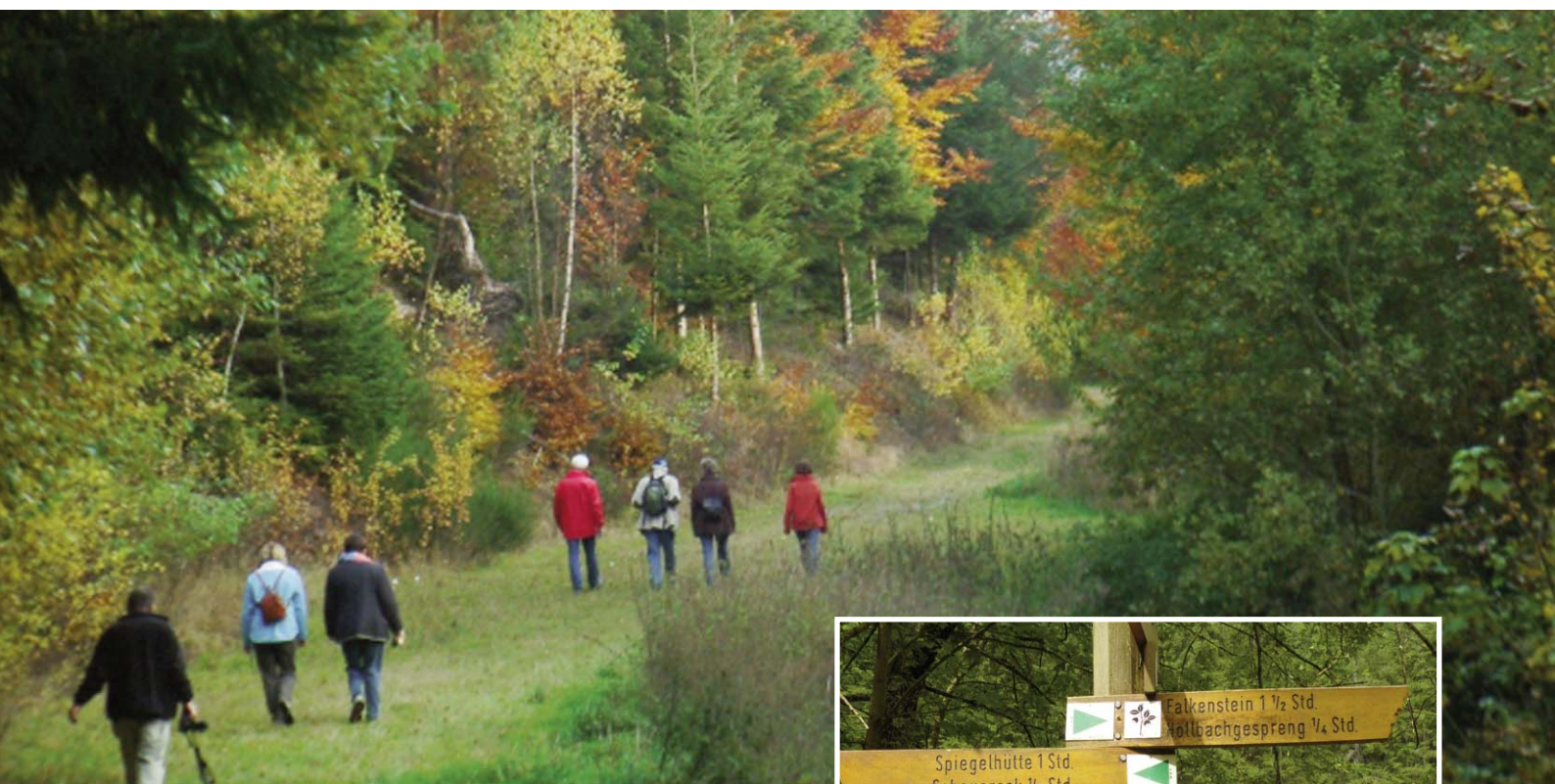
At locations with a low nutrient level, the increased use of full-tree harvesting (timber, bark and crown) for the production of bioenergy can lead, in the long term, to the removal of more nutrient elements and, by extension, to depletion of the soil.

More intensive forest traffic in woodland areas during timber harvesting calls for innovative work, technological and logistic concepts.

#### Possible solutions:

- ✓ The emission of air pollutants is to be reduced further. The critical loads and levels for acidifying and eutrophying air pollutants, heavy metals and ozone are to be complied with by 2020. The high nitrogen inputs are a continued source of dissatisfaction. The main sources of nitrogen contamination are ammonia from animal husbandry and fertilisation as well as nitrogen oxides mainly from traffic as well as from the energy sector and household fires. The corresponding provisions should be consistently applied and, if necessary, refined.
- ✓ Support for compensatory measures for acidifying inputs like forest liming is maintained.
- ✓ The admixture of wood ash may not lead to pollutant accumulation in forest soil. Nor should any fertilisers be used in future to increase yield.
- ✓ The federal government is against a European framework soil directive.
- ✓ Given the importance of soil as a valuable production capital, clear cutting should be avoided within the framework of the *Land* forest laws.

- ✓ Specialised machinery, which makes sense for ergonomic, health, work and economic reasons, must be used in such a way that it protects forests, soil and the environment. In order to meet these requirements, the use of trained, qualified staff is essential. The federal government and *Länder* will support the competent technical institutions when it comes to the testing of new technologies and methods and the drawing up of recommendations.
- ✓ If, for soil protection and nature conservation reasons, greater care must be taken during timber harvesting then particularly low-impact methods are to be used and promoted (e.g. use of cable cranes and skidding horses).
- ✓ Any further opening up of protected areas, particularly in Natura 2000 areas, should only be undertaken if no protection goals are considerably impaired or destroyed.
- ✓ In the case of full-tree harvesting, account must be taken of the requirements of soil protection and nature conservation. As little use as possible should be made of the clearing of root stocks.
- ✓ Uniform recommendations for the priority mapping of locations with a sufficient nutrient supply and a stable soil structure should be developed for the additional, sustainable use of energy timber assortments from forests.
- ✓ In order to further reduce soil and vegetation damage, more initial and further training courses should be staged on state-of-the-art, innovative timber harvesting techniques and effective forest inventory methods.
- ✓ Ways of improving the remuneration of forestry services for water supply are currently being examined.



### 3.8 Recreation, health and tourism

#### Initial situation:

The close links between the population in Germany and forests enjoy a long tradition. Germany has approximately 230 inhabitants/km<sup>2</sup>; this makes it one of the most densely populated countries in Europe. Forests play an important role especially in conurbations and peripheral conurbations for the mental and physical regeneration of the people living there. They are extensively used for recreation, leisure and sport. Around two-thirds of the population visit a forest at least once a year. In principle, entering forests for the purposes of recreation is permitted in Germany. There are only constraints in individual cases like, for instance, forest harvesting, hunting, forest renewal and in protected areas (e.g. in the core areas of national parks and biosphere reserves). Most of the visitors behave in a responsible manner in forests and respect the need to protect flora and fauna as well as the necessary constraints imposed by forestry and hunting.



#### Future challenge:

Leisure activities in forests and nature experiences are a good way of raising awareness amongst the population at large about nature and also about the need for sustainable forest use.

Major leisure and recreation pressure on forests and inappropriate behaviour can, however, also impair the forest ecosystem, game, forestry and forest ownership. When there are high numbers of visitors, the inappropriate, unregulated pursuit of leisure activities can place an increased burden on forests. At "hotspots" this can result in damage to the soil, the vegetation and the animal world as well as to an impairment of forest management. Damage to vegetation, for example from browsing and debarking, caused by disrupting game is

particularly problematic. Elevated risks as a consequence of intensive leisure activities may also mean that resources have to be invested in ensuring traffic safety.

#### Possible solutions:

- ✓ The tried-and-tested instrument of visitor flow management is to be used extensively in highly frequented and ecologically sensitive areas and refined in order to reconcile, to a greater degree, the needs of nature conservation and landscape protection, forest visitors, forest owners and forestry. Ensuring nature-compatible recreation within the framework of the right of free access continues to have priority over specific recreation concepts (forest rallies, fitness trails etc). As far as possible individual and non-profit recreation activities are to remain free of charge.
- ✓ Special recreational offers, in particular professionally organised events, are in principle to be remunerated financially by the user as well. The federal government and *Länder* are to elaborate recommendations for the nature-compatible leisure use of forests together with the representatives of forest owners, forestry, local authorities and the associations concerned (for instance, the German Olympic Sports Confederation [DOSB]/Sport and Nature Committee).
- ✓ New tourism, environmental education and leisure schemes are to be supported in consultation with forest owners.
- ✓ Suitable offerings are to be developed to provide information and raise awareness amongst forest visitors about the nature they experience and the mode of action and contribution of sustainable forestry. This is a good opportunity for close cooperation between the relevant associations.

### 3.9 Education, public relations and research

#### Initial situation:

In Germany foresters receive a high standard of training at four universities and 5 polytechnics to equip them for the complex tasks and requirements of sustainable forestry. Skilled workers and master craftsmen undergo comprehensive training in the practical side of their work in the dual education system. Some additional courses are available to cater for more specialised tasks. At the universities and numerous other research institutes of the federal government and the *Länder*, the links between forests, the environment and society are studied and possible solutions to concrete problems elaborated. The forestry administrations of the *Länder* and their *Land* enterprises promote and support private forest owners and their associations by offering consulting activities to and assuming management duties for them.

Within the framework of its research departments, BMELV provides annual funding amounting to € 8 million for forestry and timber research in Hamburg and Eberswalde. The Agency for Renewable Resources (FNR) in Güstrow financed timber recycling under its support area “timber/lignocellulose” to the tune of € 3.3 million in 2010.





The majority of the population in Germany now lives in towns. Hence, they are increasingly losing touch with rural areas and knowledge about the need for and the workings of the sustainable use of land and nature. This also applies in particular to forests, forest conservation and an understanding of forestry and the services it renders to society.

Furthermore, fewer and fewer people work in or with forests. This means that knowledge about the importance, the need for and the methods of forest management along with the contribution of sustainable forestry is dwindling.

#### **Future challenge:**

One of the most important pre-conditions for forests being able to fully carry out the social tasks expected of them is acceptance of sustainable forestry by the population at large. The importance of the sustainable use of forests as well as the social and economic importance of forests and forestry must be highlighted more from the angle of jobs, value added, nature conservation and climate protection.

The consequences of the growing alienation in particular amongst the owners of small wood plots must be countered by targeted consulting and information offerings. The structural developments in the *Land* forest administrations have, in some cases, led to reductions in the consulting services for small private forest owners. This can have a negative impact especially on the necessary timber mobilisation and environmental education on site.

Improving the decision-making foundations for political circles is an ongoing task. Particularly in the case of environmental forest monitoring (crown condition assessment, Federal Forest Inventory, forest meteorological stations, forest soil inventory and permanent observation plots), there is a major need for accompanying research. Knowledge about the impact of climate change on forests and the links between forest management and biodiversity must be improved and any existing gaps filled.

#### **Possible solutions:**

- ✓ Forest-related education in sustainable development is very well suited to counteracting the growing alienation of people not only from forests but from their natural environment in general. It should, therefore, attributed greater importance. The responsible, longer-term handling of resources, the principle of sustainability, can be illustrated very well using the example of forest management. Forest administrations and associations continue to show a commitment to environmental forest education and consumer education. Training and information offerings should be posted as comprehensively as possible on the website [www.treffpunktwald.de](http://www.treffpunktwald.de) and include and involve all types of forest ownership.
- ✓ BMELV is examining the setting up of an advisory council for sustainable forestry education and consumer education. Forest-related education work, which draws on the concept of education in sustainable development, is to be supported and promoted in cooperation with all kinds of forest owners.

✓ The federal government will assign greater importance in departmental forest research to the following areas:

- Impact of climate change on forests and ways of increasing the climate protection performance of forests and timber;
- Impact of climate change on the biodiversity of forest ecosystems;
- Environmental forest monitoring and biodiversity monitoring in forests;
- Development of more effective approaches to the preservation and sustainable use of biodiversity in managed forests, clarification of the links between biodiversity and the economic and ecological functions of forests;
- Ongoing scientific estimates of future timber needs and ways of sustainably securing supply including suitable biomass potential outside forests;
- Development of innovative timber products and more efficient production methods, particularly through the cascaded utilisation of timber.

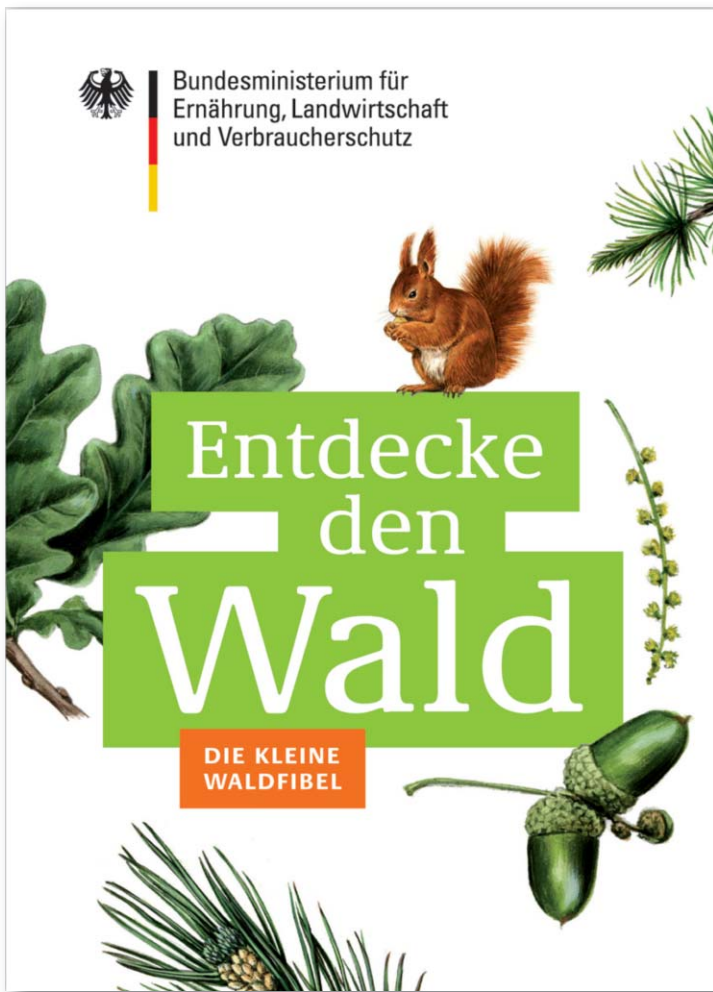
✓ Important research activities are carried out and coordinated in the departmental research of the federal government and Länder. This network must be further extended and cooperation with other European organisations must be stepped up through existing ERA-NET schemes. The research opportunities offered by the 7th and the planned 8th EU Framework Programme on Research are to be intensified.

✓ The education and further training of private small forest owners and the taking over of the findings of relevant research and development products into everyday practice should be extended further (see 3.2).

✓ Qualified workers are needed to continue multi-functional forest management. They should be trained in economics, technology and also in the basics of the natural sciences. They should master the methods and instruments of sustainable management taking into account the diverse range of services of general interest rendered by forests. Lastly they should implement the latest findings from research and development in practice.

✓ The United Nations have declared 2011 to be the International Year of Forests. BMELV uses this opportunity for a comprehensive information and awareness-raising campaign on the subject of forests. The federal government has its own series of activities and provides funding amounting to € 2.5 million for the umbrella campaign "Forest Cultural Heritage". Within this framework all the concerned associations and organisations promote forests and their diverse functions and have an opportunity to network and publish their activities ([www.wald2011.de](http://www.wald2011.de)). In addition, a target group-oriented information medium ("Forest Guide") is published. In a suitable form it aims to encourage greater understanding and sense of responsibility when people visit forests.





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NOTICE:



**Editor**

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