



Federal Ministry
of Transport, Building
and Urban Development

National Cycling Plan 2020

Joining forces to evolve cycling



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A Introduction

Cycling accounts for a sizeable and increasing share of the traffic volume in Germany. In addition, it can help to tackle many current and future transport and social challenges, because it has a positive impact on the environment, the climate, the quality of life in towns and cities and people’s health. Against this background, the Federal Government attaches great importance to promoting cycling as part of a modern transport system in urban and rural areas.

The Federal Government’s task is to create the regulatory framework for the evolution of cycling. It thus promotes cycling in its capacity as the lawmaker and by constructing cycle tracks on federal highways. It upgrades tow paths along federal waterways so that they can be used for cycling purposes. In conjunction with its responsibility for sustainable transport and urban development policies, it has adopted the National Cycling Plan (NCP), which it uses to act as a promoter, catalyst, facilitator and coordinator.

However, the NCP is addressed not only to the Federal Government but also, more importantly, to the federal states and local authorities. This is because, as part of Germany’s federal system, it is they who have prime responsibility for individual measures to promote cycling in local communities. In addition, the successful promotion of cycling requires support from trade associations, businesses and, not least, the general public.

The present NCP (NCP 2020) covers the period from 2013 to 2020 and follows on seamlessly from the first NCP (NCP 2002-2012). In terms of content, it is not simply a continuation, but rather an evolution, because the promotion of

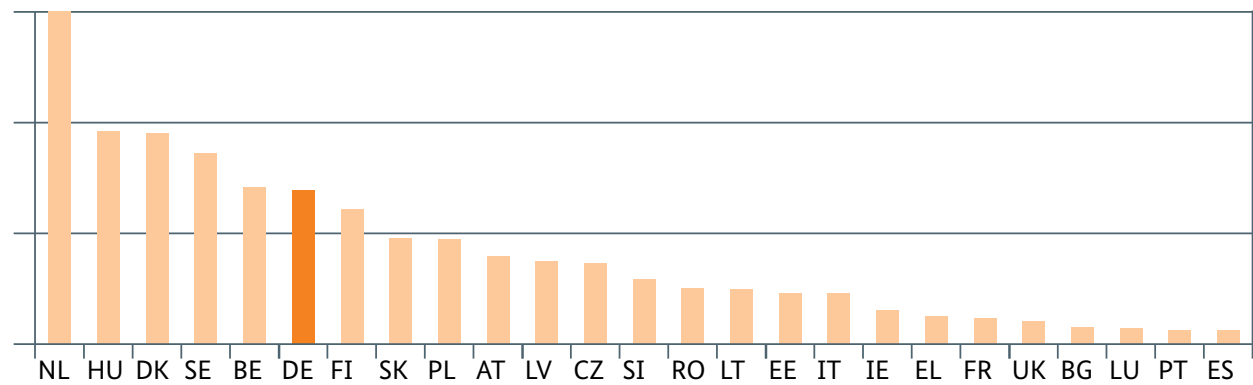
cycling is now focused on the new transport and societal challenges. As part of an integrated transport and mobility policy, its aims go beyond the promotion of cycling and also encompass the strengthening of “ecomobility”, which comprises local public transport, walking and cycling.

The promotion of cycling benefits everyone, including those people who mainly use their car or walk. Because cycling is an environmentally friendly means of transport that does not produce noise or harmful emissions. It requires little space. In combination with local public transport and walking, it makes it possible to reduce the levels of motor vehicle traffic, especially in city centres, thereby tackling congestion and lowering pollutant and noise emissions. This is one of the main reasons why towns, cities and regions with a high modal share of cycling are usually rated as especially vibrant and liveable. In addition, cycling is an economic factor that is becoming increasingly important.

For those people who use their bicycle as part of their daily routine and in their leisure time, cycling offers further advantages. It guarantees affordable mobility. Over distances of up to six kilometres it may even be the quickest way of travelling. And it also has many health benefits.

In many places, the enhanced importance of cycling is manifested in growing modal shares of cycling and greater public attention. Germany is already in the top third of European countries in terms of cycle use. The NCP 2020 is designed to unlock the further potential inherent in cycling. The NCP 2020 describes the strategy to be used to evolve the promotion of cycling in Germany. To this

A comparison of modal shares of cycling in Europe
(Netherlands = 100 %)



Source: European Commission, 2011, own graph

end, it identifies the individual action areas, objectives and problem-solving strategies and sets out specific proposals for action. The title of the NCP 2020 – “Joining forces to evolve cycling” – underscores the fact that the promotion of cycling is a challenge for society as a whole.

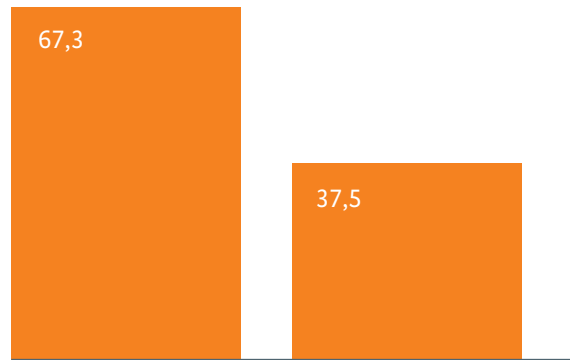
The potential inherent in cycling

Cycle use in figures

There are currently around 70 million pedal cycles in Germany. Just over 80 % of all households have a least one bicycle. 25 % have three or more bicycles.¹ Twenty years ago, only 70 % of all households owned bicycles.² Today, suitable bicycles are available for almost all mobility and transport purposes. For those people who do not own a bike, cycle hire schemes, which are becoming increasingly popular, offer an alternative.

The activities of the Federal Government and those of many other players, especially from federal states and local authorities as well as from industry and trade associations, within the framework of the NCP have helped to enhance the attractiveness of cycling and, as a result, to increase the number of cyclists. Thus, for instance, the “Mobility in Germany” study showed that, over the period from 2002 to 2008, cycling increased by 17 % nationwide in terms of the number of journeys. This is the highest rate of growth of all

Number of vehicles in private households in 2011 (in millions)



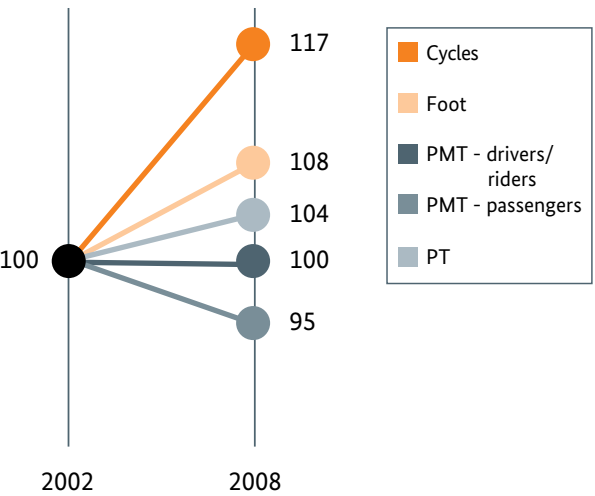
Cycles Passenger cars

Source: BMVBS, 2010

means of transport. Cycling’s share of all journeys made rose from 9 to 10 % (nationwide average) in the same period.³

And the number of cyclists and cycle use a whole are increasing, especially in urban areas – both at weekends, when people cycle mainly as a leisure activity, and on workdays, when people cycle mainly to go about their day-to-day business This relates not only to how frequently cycles are used. It is also apparent that the length of the journeys being made by bicycle is increasing on average.⁴

Traffic volume by principal means of transport in 2002 and 2008 (percentage change compared with 2002)

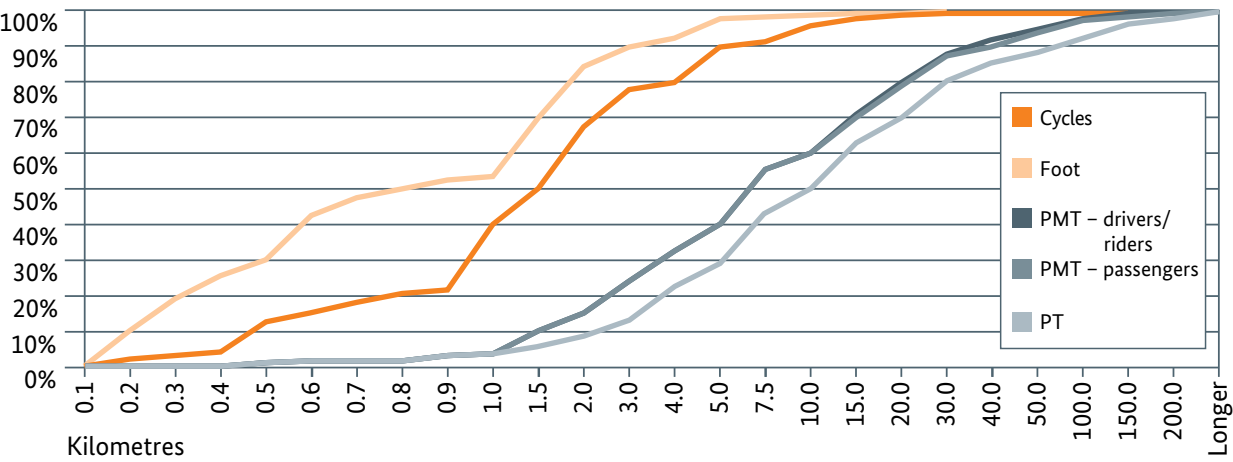


Source: Federal Ministry of Transport, Building and Urban Development, 2010

Just how dynamic these trends are can be illustrated by taking as examples a few towns and cities in which it has been possible to increase the modal share of cycling, in some cases over two-fold. In Munich, for instance, the proportion of journeys made by bicycle rose from 6 % in 1996 to 17 % in 2011. In Frankfurt, the proportion rose from 6 % in 1998 to 14 % in 2008. In Rostock, it rose from 9 % to 20 % in the ten years up to 2008.⁵

Cycling is also booming in towns and cities such as Bocholt (35 %), Münster (38 %), Oldenburg (43 %) or

Journey lengths by principal means of transport (aggregate)



Source: BMVBS, 2010

Greifswald (44 %).⁶ At the same time, however, there are towns and cities where it is stagnating or even declining. Sometimes, there are sizeable differences in terms of the volume of cycling between the communities of a single town or city, or within a district between the core city and its urban hinterland, or between different topographical features (e.g. bottom of valley vs. mountain ridge).

Encouraging people to switch to cycling

Distances up to five kilometres are ideal for cycle use. Currently, around 90 % of all cycle trips are in this range. At the same time, however, around 40 % of all journeys over this distance are made by private motorized transport.⁷ Here, there is definitely still untapped potential for cycle use, especially when we consider that it has been proven that, in towns and city centres, the bicycle can often be the fastest means of transport over short distances.

But there is even more potential waiting to be harnessed. In terms of all means of transport, more than three quarters of all journeys are over a distance of ten kilometers or less.⁸ New technologies, such as pedelecs⁹, and combining cycling and public transport, are making it increasingly possible to cover these – or even longer – distances by bicycle.

The trend towards cycling

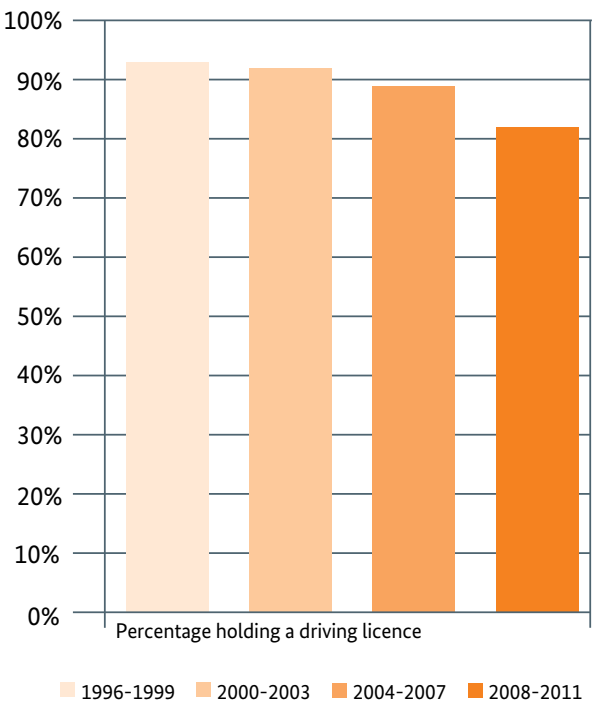
Alongside objective considerations such as distance and cost, “soft” factors, such as individual preferences or the way in which a means of transport is regarded by society, also play a part in people’s travel choices. Currently, a trend towards a new “culture of cycling” is emerging. Changes are becoming apparent, for instance the declining rate of car access and use among young adults.¹⁰



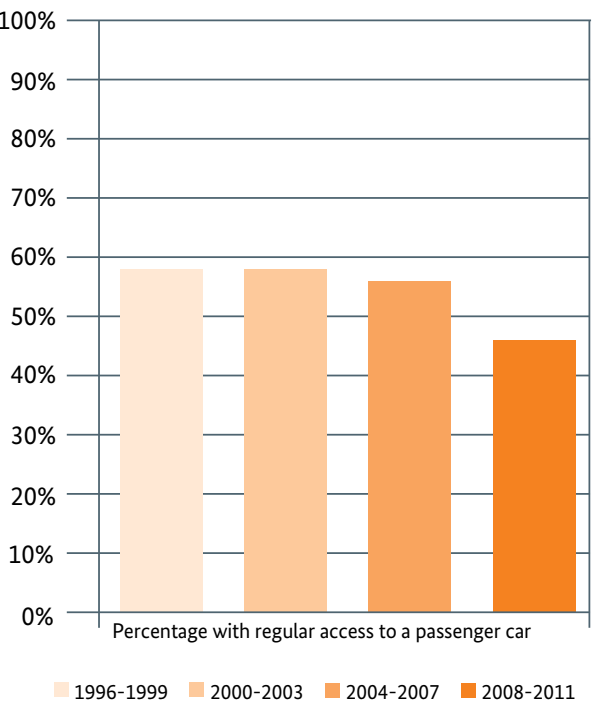
¹ Federal Statistical Office: Ausstattung privater Haushalte mit ausgewählten Gebrauchsgütern 2011, Wiesbaden, 2012.
² Federal Statistical Office: “Zahl der Woche”, press release, 2 June 2012.
³ BMVBS (ed.): Mobilität in Deutschland 2008, Ergebnisbericht, Bonn/Berlin, 2010.
⁴ BMVBS (ed.): Deutsches Mobilitätspanel, Bericht 2011, Karlsruhe, 2011, p. 53.
⁵ Figures provided by the towns and cities.

⁶ Figures provided by the towns and cities.
⁷ BMVBS (ed.): Mobilität in Deutschland 2008, Ergebnisbericht, Bonn/Berlin, 2010.
⁸ ibid.
⁹ Pedelec = pedal electric cycle. For the difference between pedelecs and pedal cycles/mopeds see the chapter headed “Electric Mobility”.
¹⁰ BMVBS (ed.): Deutsches Mobilitätspanel, Bericht 2011, Karlsruhe, 2011, p. 53.

Number of 18 to 35 year olds holding a driving licence (1996-2011)



Number of 18 to 35 year olds with regular access to a passenger car (1996-2011)



Source: BMVBS, 2010

Society holds the bicycle in higher esteem than previously, and this is also illustrated by the fact that people are more willing to spend more money on bicycles and accessories. In 2011, the average selling price of bicycles was € 495. That was an increase of almost 30 % over 2008.¹¹ Another factor is that, especially in urban areas, bicycles are increasingly becoming a status symbol and a feature of a special way of life.

Objectives of the promotion of cycling

Improve the regulatory framework for cycling and harness potential

In 2008, the nationwide modal share of cycling was 10 %. On this basis, cycling's share of the total volume of traffic can be significantly increased over the period to 2020 as the NCP 2020 is implemented. The potential to do so exists, provided that a cycle-friendly environment is created (see box).

The bases for a possible increase in cycling are the aforementioned changes in the societal environment plus the fact that a significant proportion of the journeys made by the public each day are shorter than five kilometres.

Promote cycling as a component of an integrated transport and mobility policy

Cycling, as an important part of the road scene, must be an element of an integrated transport and mobility policy pursued by the Federal Government, the federal states and local authorities. At Federal Government level, therefore, the objectives of the NCP 2020 to promote cycling will inform the fundamental transport development strategies, for instance the Energy and Climate Change Strategy or the Mobility and Fuel Strategy. Cycling, as an integral component of good transport infrastructure, is also playing a part in the preliminary deliberations on the preparation of a new Federal Transport Infrastructure Plan in conjunction with the evolution of mobility. Altogether, cycling, together with walking, will be taken into account even more

¹¹ ZIV: Mitglieder & Kennzahlen 2012, Bad Soden a. Ts. 2012.



Possible modal share of cycling in 2020

At a workshop, experts working on behalf of the Federal Ministry of Transport, Building and Urban Development developed estimates on how cycling might develop in Germany over the period to 2020.¹² These estimates were based on findings and forecasts from large-scale nationwide surveys on mobility patterns – “Mobility in Germany”, Mobility in Towns and Cities” and “German Mobility Panel”. In addition, there were scenarios and variation calculations from the project entitled “The potential inherent in cycling for tackling climate change”, which was commissioned by the Federal Environment Agency, and findings from the project entitled “The potential inherent in cycling for savings in road transport”, which was commissioned by the Federal Highway Research Institute.

The outcome is that it is believed possible that cycling could have a 15 % share of all journeys made. For rural areas, this total means an increase in the average value from 8 % at present to 13 % of all journeys made in 2020. For urban municipalities, the growth will be from 11 % to 16 %. However, depending on the initial situation, these figures have to be further differentiated.

¹² Dresden University of Technology/Prof. Gerd-Axel Ahrens: Expertenbasierte Potenzialanalyse Radverkehr, short study, Dresden, 2011.

than in the past as a further pillar of the mobility system alongside motorized transport and public transport. This applies to future plans, programmes and strategies and to the organizational structures. The federal states and local authorities are recommended to adopt a similar approach.

Implement the vision of “cycling as a system”

The NCP 2020 – like its predecessor, the NCP 2002-2012 – is based on the vision of “cycling as a system”. If we are to achieve this, we need more than just cycle-friendly infrastructure. Just as important are intensive communications and public relations activities as well as the field of service. The only way to exhaust the potential inherent in cycle is by conducting activities in all these fields. It is therefore necessary that policymakers at all levels – Federal Government, federal state and local authority – take all three elements into account in their plans and programmes, attaching equal importance to each element and underpinning them with action. Specific action strategies can be found for the individual fields in the relevant chapters on the action areas.

Make a contribution towards tackling societal challenges

Promoting cycling can make a contribution towards tackling various societal challenges. The issue of health plays a special role here. The exercise that people get on a bicycle and the associated physical activity can improve their circulatory function, strengthen their immune system and generally support their motor skills. Children, in particular, can benefit from this. In addition, the reduction in climate change emissions and the prevention of noise, fine particles and other pollutants reduce the pressure on people and the environment and create a better climate in both urban and rural areas. Against the background of demographic change, cycling is a major building block in safeguarding people’s mobility and enabling them to enjoy social inclusion.

Different starting conditions

The NCP 2020 addresses the different starting conditions from one municipality to the next. The aim is to ensure that the promotion of cycling is more nuanced and has

The Federal Ministry of Transport, Building and Development’s Energy and Climate Change Strategy

With its Energy and Climate Change Strategy, the Federal Ministry of Transport, Building and Urban Development will identify possible potential in the sectors for which it is responsible – transport and building – that can make a contribution towards achieving the energy and climate change targets of the Federal Government in the medium and long term. This also includes the promotion of cycling. The strategy is based both on the Federal Government’s September 2010 Energy Strategy and on the new conditions created by the Federal Government’s June 2011 decisions to accelerate the transformation of the energy system.

Mobility and Fuel Strategy

The Federal Government has reached agreement on the development of a Mobility and Fuel Strategy that does not favour a specific technology and is to include all modes of transport. Its significance was underscored once again in the Federal Government’s 2010 Energy Strategy. It is thus also a major pillar of the Federal Ministry of Transport, Building and Urban Development’s Energy and Climate Change Strategy. The Mobility and Fuel Strategy is to take all alternative technologies and sources of energy into account, not least in order to boost environmentally friendly forms of mobility.



a wider impact. In this way, it will be possible to provide more targeted support to cycling in rural areas, where it has so far been of only minor significance.

One model that is designed to make it easier to differentiate involves considering municipalities in accordance with different stages of development:

- municipalities that are just starting to promote cycling (“starters”);
- municipalities with an advanced level of cycling promotion (“climbers”); and

- municipalities with a high level of cycling promotion (“champions”).

This model can provide guidance to the municipalities themselves on how to select appropriate measures to promote and boost cycling for any given situation. At the same time, it is in many places a basis for the measures in the various action areas of the NCP.

Starters, climbers and champions

Subdividing the stages of development into the “starter”, “climber” and “champion” categories is based on a model developed by the European Cyclists’ Federation (ECF). The bases for classification are, first, cycling’s share of the total traffic volume and, second, the existing level of (institutional) cycling promotion. However, it should be borne in mind that the share of cycling depends not least on local conditions, such as the topography, the type of settlements and the settlement pattern. The differences between the individual stages of development are as follows:

1. Starter:

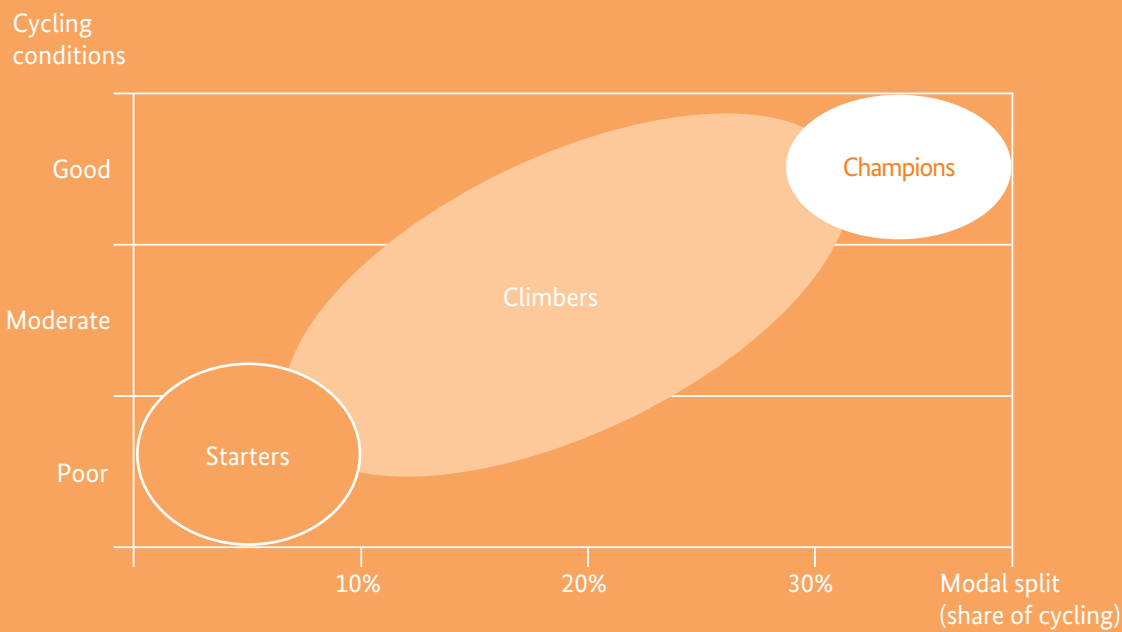
The “climbers” have already developed a certain dynamism in the promotion of cycling. The ways in which this manifests itself include (ambitious) targets, promotion strategies and extensive measures taken by the municipalities. Here, the modal share of cycling is already between 10 % and 25 %. These towns and cities have at least a basic infrastructure, but there are mostly still gaps in the overall network. In many cases, permanent organizational structures (cycling working group, cycling officers, etc.) have already been created.

2. Climber:

Bei den „Aufsteigern“ ist bereits eine gewisse Dynamik in der Radverkehrsförderung vorhanden. Dies äußert sich u. a. in teilweise ambitionierten Zielwerten, Förderstrategien und umfangreichen Maßnahmen der Kommunen. Der Radverkehrsanteil liegt hier bereits zwischen rund 10 % und rund 25 %. In den entsprechenden Städten und Gemeinden ist mindestens eine Basisinfrastruktur vorhanden, die meist aber noch Lücken im Gesamtnetz aufweist. Auch sind vielfach bereits feste organisatorische Strukturen (Arbeitsgruppe Radverkehr, Radverkehrsbeauftragte etc.) geschaffen worden.

3. Champion:

The “champions” are those municipalities that have a high modal share of cycling (> approx. 25 %) and in which cycling promotion enjoys widespread social and political support and is regarded as a matter of course. In addition to the public sector, other stakeholders are also involved (e.g. businesses, churches). The main challenges for municipalities in this category are to further increase cycling by providing dedicated infrastructure and to provide additional convenience, communications and service. In addition, the “champions” also always set an example of best practice, so their experience and the lessons they have learned should also be harnessed for use in other municipalities.



Source: PRESTO project, 2010





B Action areas

The NCP 2020 uses nine action areas to identify the major actions required for evolving cycling and describes/recommends the specific steps that have to be taken by the Federal Government, federal states and local authorities, each within their own sphere of responsibility.

The topics of the action areas are interconnected. The “road safety” action area, for instance, contains aspects from both the “infrastructure” action area and the “communications” action area.

1 Planning and developing a cycling strategy

1.1 Current situation

Integrated cycling planning

Safe and convenient cycling infrastructure that meets demand is the most important foundation for promoting cycling. Without it, it will not be possible to achieve a significant modal share of cycling. By itself, however, it is not sufficient. In keeping with the vision of “cycling as a system”, there must be more and better public relations activities/communications and services at all levels.

In addition, cycling infrastructure in many municipalities and at federal state level is not the outcome of integrated and strategic planning. In many places, it is merely the result of the available funds and/or space. Moreover, cycling infrastructure frequently just happened to be provided where road construction schemes were already planned.

Cycling networks

Seamless and, above all, fit-for-purpose cycling networks are a fundamental prerequisite of cycling. They should link all major origins and destinations. Depending on the local situation, carriageways, cycling facilities, dedicated (separate) cycle tracks or rural roads (dirt tracks, forest roads, farm tracks, etc.) are used for this purpose. Away from the main traffic arteries, in particular, a mixture of cycling and private motorized transport is to be encouraged, not least for road safety reasons. 30 km/h zones, traffic-calmed areas and cycle-only roads are thus important elements of seamless cycling networks. In the case of private roads (e.g. forest roads and farm tracks), the rights

of the landowners or leaseholders must be respected, and any use of this land for cycling must be coordinated with them.

One major factor that has to be taken into account is that utility cyclists have very different needs and requirements, for instance regarding speed or their perception of or need for safety, depending on the purpose of their journey, their age and their experience. This may result in the need for different routes for different user groups (e.g. routes to school or tourist routes separated from main routes with high speeds).

In recent years, many towns, cities and districts – or in some cases entire regions and federal states – have developed cycling networks. However, not all of them are safe and convenient to use over their entire length, nor do they all meet the needs of users. Moreover, the individual network components do not always feature state-of-the-art technology. This means that there are often unresolved conflicts, gaps in the networks and bottlenecks and that signage is sometimes inadequate or non-existent.

Services for cyclists

Alongside other measures, a range of services makes the use of a bicycle additionally attractive, especially for utility cycling. Examples include the following:

- Cyclists can be assisted by mobile navigation systems and precipitation radar when choosing their time of departure and route.
- Facilities for charging pedelec batteries increase their range and are making these vehicles increasingly attractive.
- New options for access to cycling can be created by package deals for cycle leasing, for instance for large companies or the hospitality sector.
- Allowing bicycles to be taken on local public transport creates attractive journey options.
- Services for bicycles themselves include bicycle tube vending machines, mobile repair services, public tyre inflators and cycle washes.
- Telephones for reporting broken glass on cycle tracks or other ways of reporting damage (e.g. via web portals) not only enhance the quality of the cycling infrastructure but can get cyclists involved in their communities in a constructive and positive manner.
- The lack of a “boot” for storing shopping and transporting bulky items can be offset by left-luggage lockers and delivery services.
- In both utility and leisure cycling, directional signage can help cyclists to get their bearings. However, it is important that the design is uniform and that the network of signs does not have any gaps.
- In Germany, the cycling infrastructure includes information signs, shelters and cycle lockers, and not just in tourist regions.
- Cycle parking stations normally offer not only sheltered and secure cycle parking facilities but mostly provide further services (e.g. cycle repair and cleaning, hire of cycles and/or accessories, etc.).

1.2 Action required

Integrated cycling planning

It is imperative that the numerous and diverse requirements of cycling be taken into account in an integrated manner at local authority level and at higher levels in cycling strategies. This involves incorporating communication measures and providing a range of services that cater for all the needs of cyclists. In addition, tourist cycle routes are to be included.

Cycling networks

Local cycling networks are to be designed such that they are inherently consistent and free of barriers. Here, due regard must be given to the aspects of cycling relating to safety, convenience and speed. On this basis, and within the financial means available, a cycle-friendly design of the entire network of routes that can be used for cycling is to

be achieved. When planning cycling networks, the needs of the different user groups must be taken into account, for instance those of inexperienced or fast cyclists or people riding (cargo) cycles with more than two wheels or towing trailers.

Today, however, systematically developed network planning for utility cycling which defines individual network categories with the relevant quality benchmarks is still the exception. This is especially true of smaller municipalities. Nor is area-wide cycling network planning with problem analyses and the establishment of priorities with regard to specific measures standard practice at the level of the districts, regions and federal states.

What is important is that local cycling networks not only be created but that they also be interlinked to form coherent networks covering entire regions and federal states. There has so far been virtually no coordination at the level of

districts, regions and federal states. If there has been any at all, it has frequently only been with regard to tourist routes. To facilitate supraregional planning, the standards and structures of the German infrastructure for spatial information (GDI-DE), for instance, could provide useful support for spatial representation. The advantage of the GDI-DE is that it can superimpose data from different sources. This can be done in a restricted-access online portal without the data having to be stored locally.¹³

1.3 Problem-solving strategies

The **Federal Government** will continue to champion safe and convenient cycling infrastructure that meets demand. It will do so by constructing cycle tracks on federal highways to enhance road safety by segregating traffic. In this context, the importance of the individual routes to the network as a whole is to be taken into account wherever possible. As a basis for this, the federal states are responsible for drawing up appropriate network strategies covering the entire state. In addition,

the Federal Government will, as part of its activities to implement the NCP, identify gaps in cycling facilities on federal highways crossing federal state boundaries. The findings will be used to prepare a cycling network map showing, in particular, the cross-boundary gaps in the cycling network. Where a cycling facility is required for road safety reasons, the Federal Government will – in cooperation with the federal states and as far as resources allow – progressively close the network gaps between the federal states on the roads where it is responsible for construction and maintenance, in order to create a coherent inter-urban network.

In addition, it will process the existing knowledge relating to “cycling strategies” and make it available to local authorities, especially to the “starters”. One of the areas on which this will focus is the coordination/integration of the planning activities of different regional and local authorities, authorities responsible for road construction and maintenance and public transport authorities.



¹³ For more information, contact the GDI-DE Coordination Point at the Federal Agency for Cartography and Geodesy, Richard-Strauss-Allee 11, 60598 Frankfurt am Main, mail@gdi-de.org.



Cycling and urban development

Cycling is a form of mobility that is especially compatible with the objectives of urban development, not least because of its low land take. In addition, cycling makes a contribution to the vitality of city and district centres. The promotion of cycling can thus significantly support the objectives of an integrated urban development policy, not least with regard to the “compact city” and as a contribution to noise mitigation and air quality management plans. For this to happen, however, it is essential that cycling promotion be closely dovetailed with urban development and regional planning. This includes enshrining cycling measures in planning activities at local authority level. Equally, cycling must be taken into account as part of urban development assistance and neighbourhood enhancement programmes at federal state level. In this context, the federal states are called on to support and implement, in suitable cases, measures to promote sustainable mobility – and thus for cycling in particular.

Against this background, a major approach at local authority level for taking greater account of cycling is integrated urban and transport planning. Given its growing importance, cycling should not just be an obvious component of transport development planning and mobility policy in general. Rather, it should also be enshrined in development and sub-regional planning (for instance to protect cycle route alignments from fragmentation when there are competing schemes), in sectoral plans (e.g. for local transport) and in other sectoral strategies (e.g. for the retail trade).

So far, this form of integrated planning has not been very widespread. The active control of spatial planning and settlement development and of local siting policies for the retail trade or schools is important if cycle-friendly structures are to be developed and preserved with a view to creating the “compact city”.

The “starter” municipalities, in particular, face serious challenges in developing a strategy for increasing the modal share of cycling. Thus, at the start of the lifetime of the NCP 2020, the Federal Government will also develop a “starter kit”, which will provide guidance for the first steps at the local level and contain a compilation of proposed measures. After the lessons learned from this have been evaluated, the Federal Government will also, if necessary, develop similar kits for “climbers” and “champions”. With overarching transport and environmental policy objectives in mind, such as enhancing road safety and reducing noise and pollutant emissions, the Federal Government will, as part of the NCP 2020 and within the existing constraints on funding, organize a competition to promote especially successful implementation strategies in municipalities. The federal states, as the competent tier of government, are called on to adopt similar approaches, possibly as part of financial assistance programmes or existing funding instruments. The creation of strategic foundations with the help of cycling strategies deserves particular attention here. For the “climbers” and “champions”, the Federal Government will promote an exchange of experience and the provision of practical examples and will expand this, for instance by publishing guides

The **federal states** are called on to draw up cycling network strategies covering the entire federal state and to perform a greater coordination and control function with regard to cycling projects that involve more than one authority responsible for road construction and maintenance. In addition, it is recommended that main utility cycling routes be systematically promoted and that the preparation of cycling strategies and high-quality network plans at the local authority network level be supported by including appropriate conditions in the funding provisions.

The **local authorities’** task is to ensure, in the areas for which they are responsible, the provision of area-wide and safe basic cycling networks that meet demand. The network density should be progressively increased, so that it eventually covers all the major cycling origins and destinations. In this context, district councils, in particular, should perform their overarching coordination function within the districts to a greater extent, including in relation to utility cycling.

In addition, they have an important role to play in the issue of integrated urban and transport planning. Local authorities are therefore recommended to include cycling in their transport development plans and to treat it on an equal footing with the other means of transport. It should be integrated into local transport plans to order to inter-link and coordinate it with local public transport.

In addition, the plans of **the federal states, local authorities and authorities responsible for sub-regional planning** should reflect cycle links to a greater extent and make them binding in order to safeguard them against competing plans.

2 Infrastructure



2.1 Current situation

Roads and paths

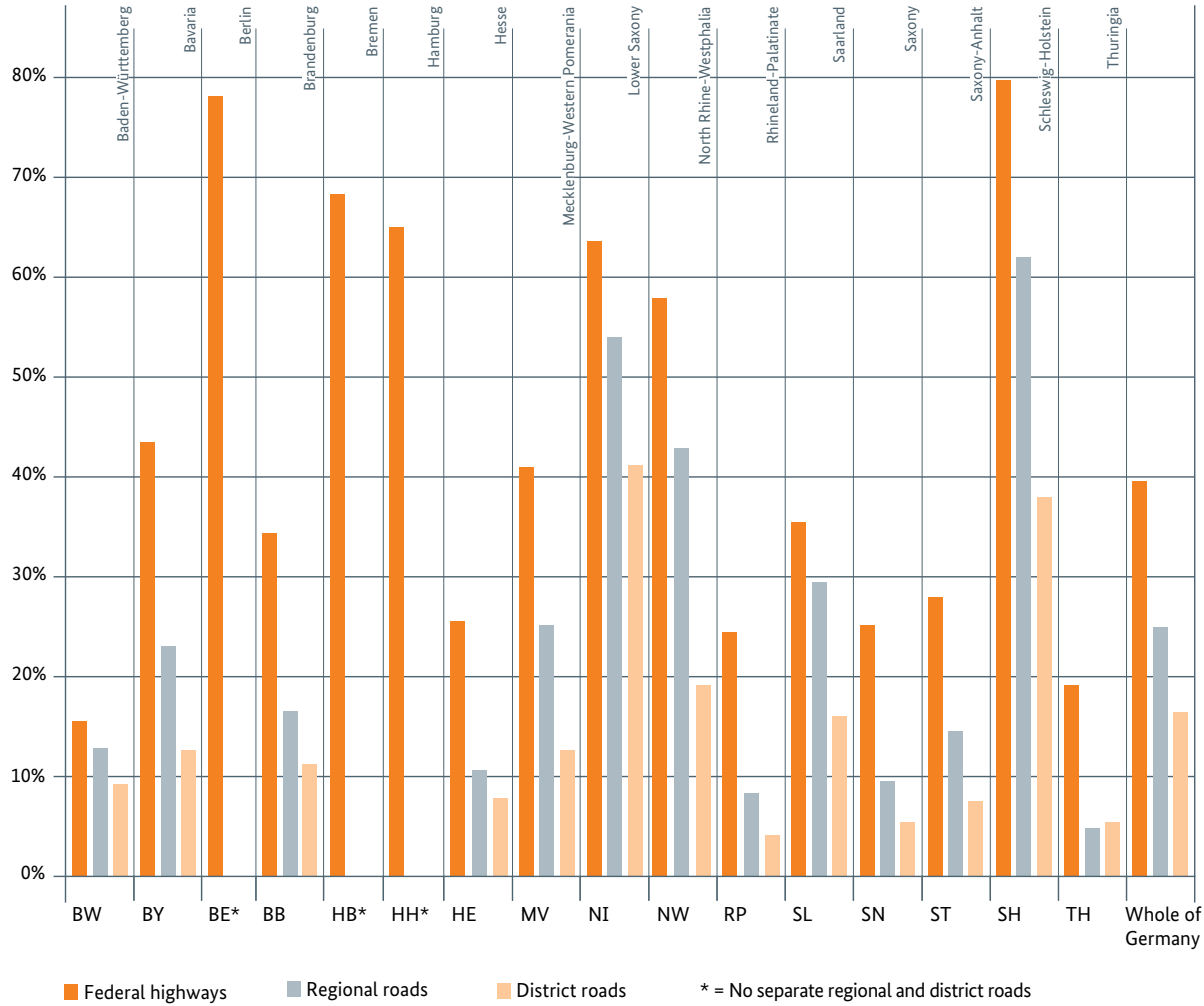
In recent years and decades, many federal states have succeeded in providing substantial cycling facilities outside built-up areas, comprising predominantly shared off-road footways/cycle tracks. There are now around 19,000 kilometres of cycle tracks running along federal highways alone. The figure is 25,000 kilometres on regional roads and 16,000 kilometres on district roads. However, the level of provision differs greatly from one federal state to the next and is only high in a few exceptional cases, such as Schleswig-Holstein and Lower Saxony.¹⁴

Within built-up areas, the situation is less clear-cut. Many local authorities have used the extensive apparatus provi-

ded by the different types of cycle tracks and lanes. Thus, in addition to mixed traffic on the carriageway (e.g. in 30 km/h zones) and constructed cycle tracks, solutions involving road markings are becoming increasingly popular, for instance advisory or mandatory cycle lanes. In many places, this has led to a rapid and low-cost upgrade of the networks. However, in smaller municipalities, in particular, there are still many shared footways/cycle tracks, which do not meet the different requirements of riders and pedestrians.

The change towards more marking-based solutions can be traced back to good practical experience and positive findings in safety research. The ranges of application for these forms of cycle tracks and lanes were subsequently widened in the regulatory framework (German Road Traffic Regulations and Administrative Regulations

Percentage of federal highways, regional roads and district roads with cycling facilities (by federal state)



Source: BMVBS, 2012

governing the Road Traffic Regulations) and in the technical regulations. However, the constructed cycle track still has its justification.

Cycle parking and directional signage for cyclists

Secure parking facilities help to make cycling more convenient and overcome people's reluctance to cycle. In addition, uniform directional signage for cyclists is required.

As far as cycle parking is concerned, many municipalities have increasingly high-quality facilities in the street environment or at public transport stops. This reflects the realization that a lack of parking facilities can be a key obstacle to the use of cycles. Nevertheless, there is still a great shortfall in the provision of cycle parking facilities. The situation is especially difficult in densely built neigh-

bourhoods, where bicycles parked on footways result in problems for pedestrians, for urban design and the design of the road environment. The challenge to be tackled is the provision of suitable parking facilities for cycles as well.

The purpose of directional signage for cyclists is to enable them to find their way to their destination and to ascertain their current location. In addition, it acts as an advertisement for cycling. Many federal states and regions have significantly expanded their signage in recent years. Those instances where the federal states have set an example of good practice, addressing the issue as a coordinating authority and defining standards, have had a positive impact. Guides published by individual federal states provide advice to the local authorities on installing their own directional signage for cyclists.

¹⁴ BMVBS: Längenstatistik der Straßen des überörtlichen Verkehrs, Stand 01.01.2012.

Technical regulations governing cycling

The Road and Transport Research Association, among others, publishes and updates technical publications for the spheres of road construction, road traffic engineering and transport planning.

In connection with cycling, the following publications in particular should be consulted as a reference framework for the planning, construction and operation of cycling infrastructure: “Guidelines for Integrated Network Design”, “Guidelines for the Design and Construction of Roads” (sections entitled “Alignment”, “Cross-Sections” and “Junctions”), “Guidelines for the Design and Construction of Urban Roads”, “Recommendations for Cycling Facilities” and the Advisory Leaflet on Directional Signage for Cyclists.

This applies unless the technical regulations are inconsistent with the German Road Traffic Regulations and the Administrative Regulations governing the Road Traffic Regulations or – for the federal trunk road sphere – inconsistent with the Guidelines for the Legal Treatment of Roads passing through Built-Up Areas and the Principles for the Construction and Funding of Cycle Tracks along Federal Highways where the Federal Government is responsible for construction and maintenance. Thus, for instance, the minimum widths for cycling facilities in the Administrative Regulations governing the Road Traffic Regulations (alongside other criteria) are a prerequisite for requiring the mandatory use of cycle tracks. Independently of this, the technical standards (e.g. the Recommendations for Cycling Facilities) provide a reference framework describing the dimensions to which planning should aspire.

Under the aforementioned conditions, the technical regulations constitute a suitable basis for the planning of safe cycling infrastructure and ensure an appropriate quality of cycling. Important basic principles are:

- adequate and safe dimensioning of the individual design elements;
- ensuring eye contact between road users;
- problem areas must not be excluded;
- the design must ensure road safety and a smooth flow of traffic;
- the interests of pedestrians must be taken into account;
- the unity of construction and operation must also be ensured in cycling facilities.

2.2 Action required

Roads and paths

In connection with the promotion of cycling, it is necessary to further upgrade the cycling infrastructure. In addition, the maintenance and refurbishment of existing cycling facilities is becoming an increasingly important task, the significance of which must not be underestimated, including from a financial perspective. A systematic condition survey should form the basis for this.

When constructing new cycling facilities, and when refurbishing or upgrading existing facilities or road infrastructure in general, it is crucial that the cycling facilities be appropriately dimensioned and that state-of-the-art practices always be applied. When road works are carried out, the aim should, whenever possible, be to enable cyclists to pass through the works site seamlessly and without encountering any obstacles.

Particular attention should be paid to smaller municipalities, because many of them have some catching up to do in establishing safe and convenient cycling infrastructure that meets demand. To be able to close the existing gaps in the network of non-built up roads in the foreseeable future, alternative solutions to the construction of cycling facilities on regional, district or local roads with low levels of traffic are becoming increasingly important.

Moreover, the rising level of cycling is already resulting in capacity problems in some towns and cities, especially at intersections. Given the general trend towards greater cycle use, it is likely that these problems will also become an issue that has to be addressed by many other municipalities. This has to be taken into account when planning infrastructure, as do the interests of different types of cyclists, which have to be weighed up against the interests of other road users (not least pedestrians).

Cycle parking and directional signage for cyclists

As the number of cyclists rises, there will also be an increasing demand for cycle parking. To meet this demand, cycle parking facilities are to be provided at railway stations and bus stops, in city centres, at workplaces and at public authorities. Action is also required in the case of dwellings, especially in buildings where access to parking facilities has so far been difficult (for instance in cellars). In densely built neighbourhoods, in particular,



it may be necessary to provide sufficient space for cycle parking so that pedestrians are not obstructed. In some towns and cities, car parking spaces on the edge of the carriageway are used for this purpose. In areas where cycles are parked for a lengthy period of time, in particular, sheltered cycle parking should also be provided wherever possible.

As high-value bicycles become increasingly popular, there are likely to be more stringent requirements to be met by measures to prevent theft, and these requirements have to be taken into account. When addressing the issue of cycle theft, it is not only cycle parking that is involved. Greater use should also be made of police and technical measures, and registering and/or security-coding bicycles will increase their chances of being recovered.

On the basis of cycling network planning, seamless directional signage in municipalities, regions and federal states is advisable. This signage should be designed following principles that are largely uniform throughout Germany. It is true that some federal states have already defined appropriate standards. Nevertheless, there are still a large number of differing signage types and systems, especially at local authority level. This not only means that signage is not uniform. The fact that the contents of the signs are frequently not related to one another makes it difficult for cyclists to find their way. In addition, poor maintenance reduces their utility value for cyclists in practice.

2.3 Problem-solving strategies

As cycling increases, further types of innovative infrastructure will have to be developed. These also specifically include “cycle superhighways”, because they also make cycling attractive over longer distances. This can help to reduce congestion, relieve the pressure on local public transport at peak times and improve people’s health. At

the same time, greater attention is to be paid to maintaining existing cycling facilities and to upgrading and refurbishing them in line with requirements.

The **Federal Government** is shouldering its responsibility in this context and will continue to fund the construction and maintenance of cycle tracks on federal highways for which it is responsible. Particular importance is to be attached to roads passing through built-up areas, in order to enhance road safety in smaller localities and rural regions, in particular, and to promote cycling in these areas.

To be better able to appraise the possible ways of making cycling safer on regional, district or local roads with low levels of traffic outside built-up areas and without cycle tracks, the Federal Government is funding a pilot project to explore the scope for application of advisory cycle lanes as an alternative solution. In addition, the Federal Government will review the regulatory framework with a view to improving road safety and promoting cycling.

Given the importance of the technical regulations for everyday planning, the Federal Government will continue the range of advanced training courses offered by the Cycling Academy, most of which address the issue of raising awareness of the need for a high quality of cycling infrastructure. For several years now, the German Road Safety Council, in collaboration with the Cycling Academy, has provided a range of advanced training courses addressed specifically to small and medium-



sized towns and cities to help them catch up in the planning and design of cycling infrastructure.

In addition, the Federal Government supports the development of technical regulations governing directional signage for cyclists.

To improve the parking situation, the Federal Government will also publish examples of good practice (including examples of good design), kick start innovative solutions and pass on the existing findings to local authorities and other players. This also relates to a compendium of lessons learned regarding the problems of abandoned bicycles in the public realm.

The **federal states** are called on to press ahead with the construction of new and the upgrading and refurbishment of existing cycle tracks on regional roads, in their function as the authorities responsible for the construction and maintenance of these roads. In addition, they are to shoulder greater responsibility for funding local authority infrastructure by using exiting financial assistance programmes and, if appropriate, launching new programmes in order to provide greater support to municipalities in developing an appropriate cycling infrastructure.

As far as the fleshing-out of directional signage is concerned, the federal states should define standards. A common basis (for instance in the form of technical regulations) is crucial to ensure that signage is largely uniform throughout Germany. However, minor differences between the individual federal states can be accepted. The federal states and local authorities are responsible for providing signage on the cycling networks, in both cases on the roads for which they are responsible. In some cases, the local authorities require financial assistance from the federal states to do this.

In addition, the federal states can, through their building regulations, introduce requirements for the whole state regarding the number and quality standards of cycle parking facilities. Where they do not avail themselves of this, the federal states should at least give the local authorities the option of regulating this in local byelaws.

The **local authorities'** task is to base their planning activities and the construction of cycling infrastructure on state-of-the-art technology and future growth. This also applies to the maintenance, upgrading and refurbishment of cycling facilities. In towns and cities with a high level of cycling, in particular, special measures can be taken to focus on important aspects. For instance, traffic lights can be phased such that cyclists enjoy a “green wave”. In addition, local authorities are called on to provide an adequate number of good-quality cycle parking facilities and, if there is no federal state regulation governing this, to enact local byelaws.

Housing developers, the retail trade, larger companies and authorities plus other private and public sector clients are called on to provide a sufficient quantity of good-quality off-road parking facilities.



3 Road Safety

One of the crucial aspects on which acceptance and use of the bicycle depends is road safety. Here, the major factors are road user behaviour, infrastructure and vehicle technology (of both pedal cycles and motor vehicles). In addition to the objective accident figures in the official statistics, it must be borne in mind that some accidents (e.g. single vehicle accidents) are not reported to the police and are thus not recorded.

The issue of subjective safety also plays a major role in determining people's willingness to use a bicycle. A person who feels especially unsafe on a bicycle will cycle less.

3.1 Current situation

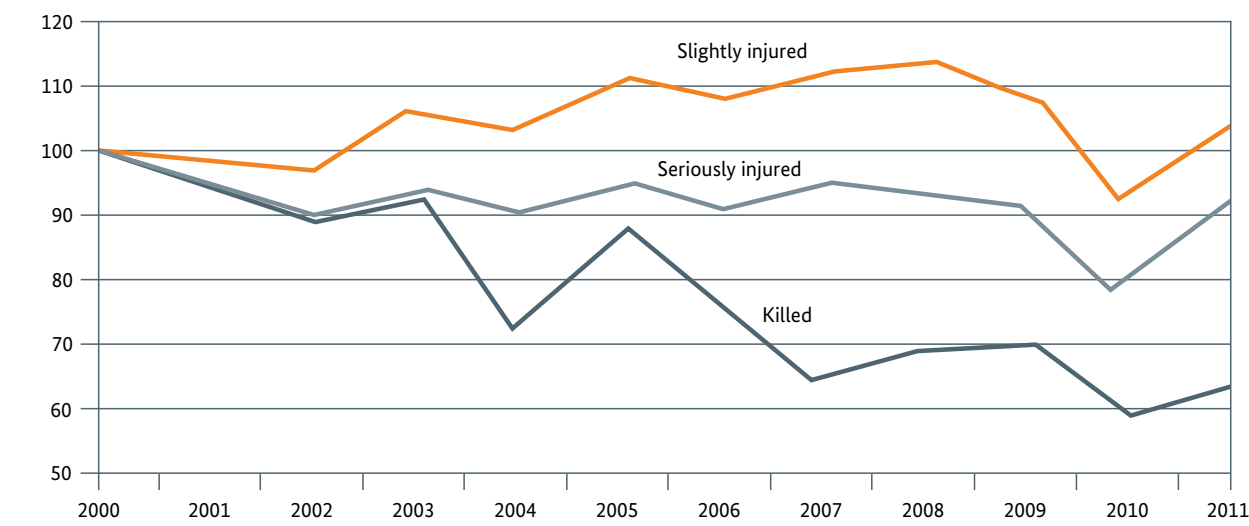
In recent years, cycling in Germany has, on the whole, become safer, even though, in 2011, the number of fatalities rose slightly compared with the previous year and there was a significant increase in the number of seriously injured cyclists.¹⁵ Despite rising levels of cycling, the number

of cyclists seriously injured and killed has, all in all, been falling in recent years.¹⁶

However, compared with the sharp decline in the overall number of road users killed and injured, cycling has so far only been able to derive below average benefit from the safety gains achieved in road traffic. An additional cause for concern is that fewer and fewer cyclists feel safe on the roads. This, at any rate, was the finding of the 2011 "Fahrrad-Monitor" study, which showed that only just over one half of those surveyed said that they felt very safe or mostly safe as a cyclist in road traffic. Two years earlier, in 2009, the figure had been two thirds of all those surveyed.¹⁷

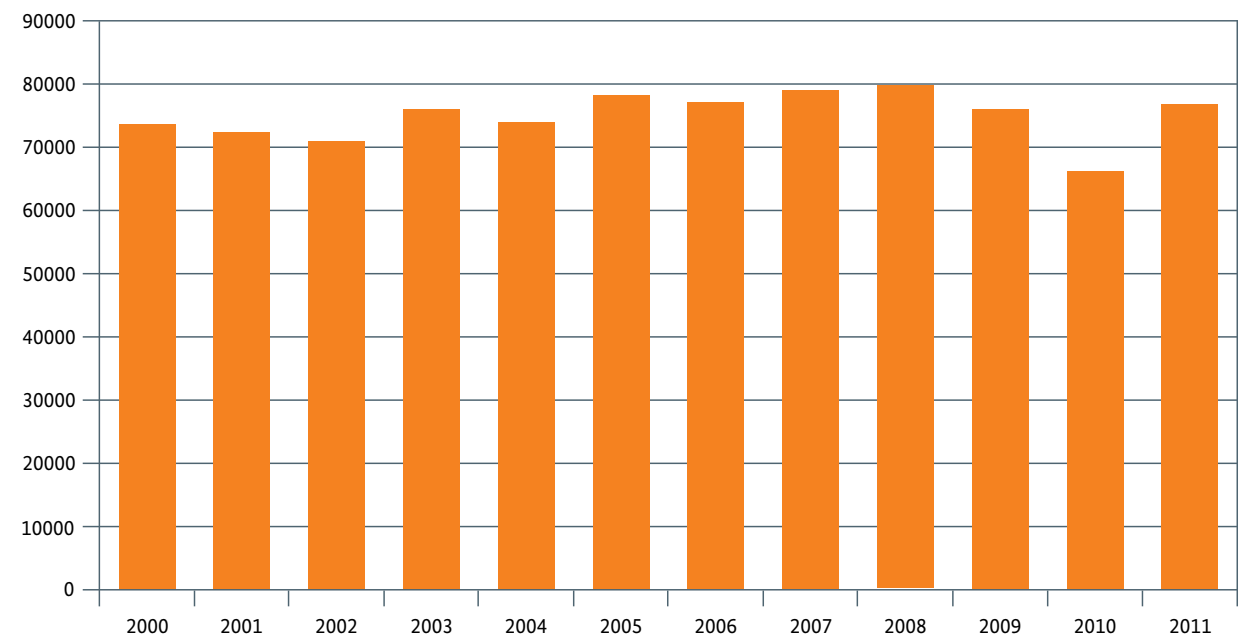
Most accidents involving cyclists occur within built-up areas (91 %). However, accidents on non-built up roads have especially serious consequences. It is here that 40 % of fatal accidents occur.¹⁸ Children aged ten or over and elderly people run a particular risk of being involved in an accident. Measured against the number of all road casualties, children and young people account for

Number of cyclists killed, seriously injured and slightly injured compared with 2000 (2000 = 100 %)



Source: Federal Statistical Office, 2012a, own graph

Personal injury road accidents involving cyclists (in absolute figures)



Source: Federal Statistical Office, 2012a, own graph

¹⁵ Federal Statistical Office: Verkehrsunfälle 2011, Wiesbaden, 2012.
¹⁶ Federal Statistical Office: Zweiradunfälle im Straßenverkehr, Wiesbaden, 2011.
¹⁷ Sinus Market and Social Research: Fahrrad-Monitor Deutschland, Heidelberg, 2011.
¹⁸ Federal Statistical Office: Verkehrsunfälle 2011, Wiesbaden, 2012.



the largest group.¹⁹ When elderly people are involved in accident, the consequences are usually especially serious. In 2011, just over 50 % of all cyclists killed were over 65 years old.²⁰

In most cases, it is not the cyclists who cause the accidents. Rather, they are usually the innocent victims. Thus, for instance, in 75 % of accidents between passenger cars and bicycles, the car drivers were chiefly to blame for the accident, and in 79 % of accidents between HGVs and bicycles it was the HGV driver who was at fault. On the other hand, in the case of accidents between cyclists and pedestrians – the total number of which is much lower – the majority of accidents are caused by the cyclists.²¹

3.2 Action required

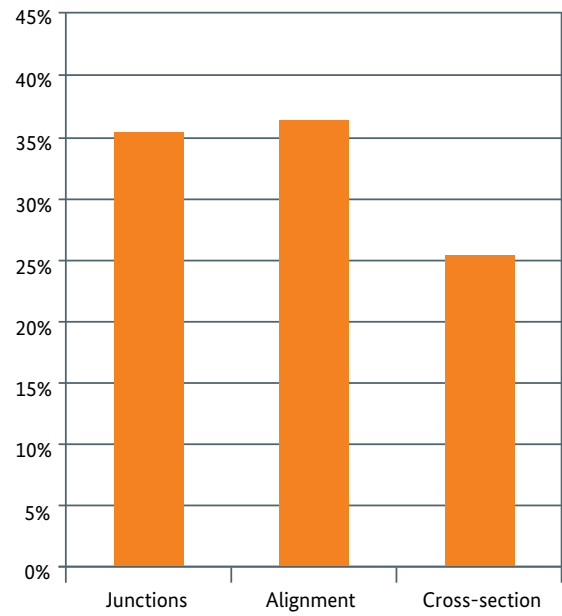
The objective of cycling promotion must be to enhance road safety as cycling levels rise. There are positive examples from towns and cities that have already succeeded in doing so, for instance Kiel, Karlsruhe or Oldenburg.

Behaviour

The general road user culture plays a particularly important role here. Rather than regarding one another as “adversaries”, road users should take constant care and show mutual respect, as required by Section 1 of the German Road Traffic Regulations. Another key prerequisite of road safety is that all road users must know and comply with the rules of the road. If they do not do this, conflict is inevitable in road traffic. Cyclists, too, shoulder great responsibility here. This is shown not least by the sharp rise in the level of traffic light offences between 2009 and 2011.²² Of course, knowledge of and compliance with the rules are required of everyone who uses the roads. Because other violations that are often regarded as “trivial offences”, such as exceeding the speed limit or parking on cycle tracks, can pose significant risks to traffic. In this context, one of the main problems is that many people are still poorly informed about the rules governing the mandatory use of cycle tracks

Given that riding under the influence of alcohol is the second most common cause of accidents for which cyclists are to blame within built-up areas, there is a need

Distribution of identified planning shortcomings in cycling safety to individual design areas



Source: BAST, 2010

for continuous and, if appropriate, intensified enforcement and education, for instance by mounting campaigns that address the issue of “alcohol and road traffic”. There is currently no need for legislative action to reduce the blood-alcohol limit for cyclists. However, the problems associated with cycling under the influence of alcohol will continue to be closely monitored.

Behaviour-related road safety activities should always be planned to target different groups and should include all road users. It is important not to instil fear among cyclists, because this can result in them adopting dangerous behaviour, for instance riding on the footway or failure to keep a safe distance from parked vehicles. On the other hand, of course, cyclists must not underestimate the dangerousness of their own behaviour or the risk of inappropriate behaviour by other road users.

Infrastructure and traffic regulation

Violations of rules and accidents may be evidence of shortcomings in the infrastructure. This is also indicated by the findings of a study conducted by the Federal Highway Research Institute, which discovered that in

those places where there is a high incidence of accidents, there are usually design features that increase the risk of accidents.²³ Road environment designs that are too complex and thus confusing can be too challenging for all road users, especially for motor vehicle drivers and cyclists travelling at high speeds. Cycle facilities must therefore be designed such that cyclists can be easily seen in good time by drivers of motor vehicles, especially at hotspots, that cyclists themselves have good visibility and that pedestrian/cyclist conflicts are avoided wherever possible. In the interests of all road users, infrastructure and traffic rules are required that prevent or offset unintentional inappropriate behaviour wherever possible and support safe road user behaviour.

If cycling facilities are not designed to meet the needs of users, if they cannot be used because of illegally parked vehicles or if they are in a poor state of repair, cyclists will often use other transport infrastructure that is not intended for use by cyclists. Another cause of inappropriate behaviour can be that when cycling facilities are planned, insufficient attention is paid to the fact that cyclists are reluctant to make detours.

The findings of road safety audits conducted throughout Germany prove that, in the case of planning on main roads within built-up areas, a significant proportion of the safety deficiencies (40 %) ascertained by independent experts affect cycling.²⁴ There are likely to be special difficulties in the years ahead, when rising levels of cycling and – for instance as a result of the increasing popularity of pedestrians – higher average cycling speeds encounter existing infrastructure that is not designed for this. Thus, for road safety reasons, too, state-of-the-art technology is to be used, especially when constructing new cycling facilities and refurbishing or upgrading existing facilities.

In addition to road safety, the designers of cycling facilities must also bear in mind that cyclists also need to feel safe in the dark. For this reason, the visibility and lighting of cycling facilities are just as important. This also applies to parking facilities.

Safety technology

So far, active and passive motor vehicle safety technology has been primarily focused on the protection of the vehicle occupants and not on the protection of other road



users. Whereas, for instance, significant improvements have been achieved in the field of underrun protection on HGVs, no satisfactory solution has yet been found, in particular, to the problems associated with the “blind spot” on HGVs and vans. In addition, there are shortcomings in the field of protection against accidents for non-motorized road users. Safety systems to prevent accidents when car doors are opened or to increase the distance between a motor vehicle and a bicycle it is overtaking can also help prevent accidents.

Ongoing advances in technology (e.g. in the fields of cycle lighting, brakes or trailers) have made a major contribution towards enhancing cyclist safety. The market penetration of bicycles with a high level of safety will be favoured by the emerging trend towards the purchase of premium-priced models.²⁵ However, most of the bicycle population is still not state-of-the-art. One of the major obstacles is the lack of secure parking facilities and the resultant risk of theft. To make matters worse, shops are allowed to sell bicycles that do not totally comply with the provisions of the German Road Traffic Registration Regulations. The purchasers are then responsible themselves for any equipment that has to be retrofitted (for instance if the bicycle has no lights).

Cycle helmets can reduce the severity of head injuries sustained by cyclists involved in a fall. Despite this, cyclists

¹⁹ Federal Statistical Office: Zweiradunfälle im Straßenverkehr, Wiesbaden, 2011.

²⁰ Federal Statistical Office: Verkehrsunfälle 2011, Wiesbaden, 2012.

²¹ Federal Statistical Office: Zweiradunfälle im Straßenverkehr, Wiesbaden, 2011.

²² BMVBS (ed.): Deutsches Mobilitätspanel, Bericht 2011, Karlsruhe, 2011.

²³ BAST (ed.): Unfallrisiko und Regelakzeptanz von Fahrradfahrern, Bergisch-Gladbach, 2009.

²⁴ BAST (ed.): Sicherheitsrelevante Aspekte der Straßenplanung, Bergisch-Gladbach, 2010, p. 16ff.

²⁵ Sinus Market and Social Research: Fahrrad-Monitor Deutschland, Heidelberg, 2011.

very rarely wear a helmet. In 2011, the rate of those who did so was only 11 % across all age groups. Nevertheless, this was at least a rise over the previous year. Among children aged 6 to 10, the proportion even rose from 38 % to 56 %.²⁶

3.3 Problem-solving strategies

In keeping with the Federal Government's 2011 Road Safety Programme, the NCP supports the objective of reducing the number of persons injured or killed on the roads by 40 % nationwide. Cycling can – and must – make its contribution to this.

To achieve this objective, strategies are required at Federal Government, federal state and local authority level to continuously implement, over a long timeframe, dovetailed measures in the fields of behaviour, infrastructure and traffic regulation as well as technology. Here, the prevention of accidents must take precedence over strategies to mitigate the consequences of accidents. However, it must be stressed that cyclists also shoulder a lot of responsibility themselves regarding road user behaviour and accident prevention.

With its road safety programme, the **Federal Government** has already produced a major building block for enhancing road safety. Its main priorities are an improvement in road user culture and the protection of vulnerable road

users. The Federal Government will contribute to this by mounting campaigns and carrying out further traffic education measures. One focus will be on activities that target children and elderly people.

Section 1 of the German Road Traffic Regulations requires all road users to show mutual respect. There needs to be greater compliance with this requirement, and so communications will be focused on improving road users' knowledge of and compliance with the rules of the road, especially regarding accident-related issues, and on encouraging them to drive defensively and look ahead. All road users alike must feel called upon to comply with the rules of the road and reduce risks by means of appropriate driving behaviour.

The Federal Government's road safety activities will comprise further aspects, ranging from an increase in the helmet wearing rate through the use of fluorescent and retroreflective materials to the requirement that cyclists have their own bicycle serviced at regular intervals. In this context, the Federal Ministry of Transport, Building and Urban Development will continue to be proactive in encouraging cyclists to wear a helmet in order to further increase the wearing rate. Examples include the "Ich trag' Helm" (I wear a helmet) campaign and action as part of the "Runter vom Gas" (kill your speed) campaign. The federal states and local authorities are called on to likewise focus



²⁶ BAST: Kontinuierliche Erhebung zum Schutzverhalten von Verkehrsteilnehmern 2011.



mobility education and road safety activities on similar measures in their areas of responsibility.

In addition, the Federal Government, in cooperation with the federal states, is currently exploring whether, and if so to what extent, the level of penalties in the field of cycling should be increased. This relates not only to offences committed by cyclists, but also offences committed by motorists that have an adverse impact on cyclists (e.g. illegal parking and/or stopping on cycle tracks).

In both communications on the ground and in the punishment of traffic offences, it is of fundamental importance that all road users be included in equal measure, in keeping with their importance for the rate of accidents. Enforcement should thus not only target cyclists, but should also include other road users, for instance when a motorist fails to give way when turning and causes an accident.

The basis for a targeted road safety strategy must be the analyses of the traffic environment and accident causes. As part of a comprehensive baseline study, the Federal Government will thus also investigate cyclist safety, summarizing the most recent findings of accident research and further improving the data basis. This also includes an investigation into the causes of single bicycle accidents and the question as to how they can be prevented. At the same time, the Federal Government will work towards an optimized capture of data relating to seriously and critically injured cyclists, in particular, and their specific injuries (including the impact of cycle helmets) and to the causes of accidents. In addition, the Federal Government is currently studying the impact of pedelecs on road safety.²⁷

To improve safety on roads where it is responsible for construction and maintenance, the Federal Government

will, as part of the devolution of responsibilities, encourage the federal states to systematically apply the road transport infrastructure safety management system (e.g. safety audits at the planning stage, safety classification, road inspections by the highway maintenance depots) in order to avoid or correct safety-related deficiencies during planning and operation respectively.

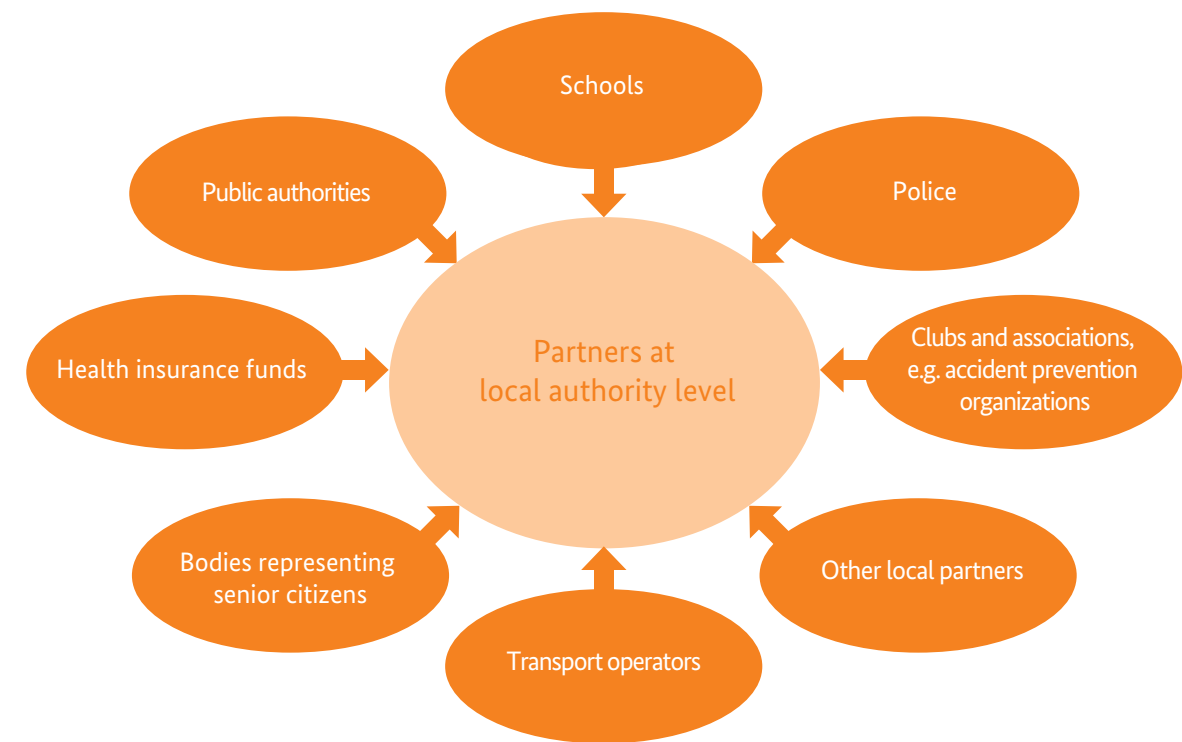
Within its capabilities to shape the regulatory framework and the technical regulations, the Federal Government will be committed to ensuring that they are updated on the basis of the most recent findings on enhancing road safety.

The existing safety potential inherent in technical improvements on vehicles is to be harnessed. Some motor vehicle manufacturers are already developing warning systems (e.g. for doors opening), external airbags and systems to prevent turning accidents (as caused by HGVs, for instance). Assistance systems to prevent turning accidents are seen as most likely to achieve results. To speed up the introduction of appropriate systems, the Federal Government has thus established a "Round Table on Turning Assistants for HGVs", comprising representatives from manufacturers, trade associations and the Federal Highway Research Institute. As soon as solutions have reached the necessary level of technical maturity for rollout, the Federal Government will lobby the national and international bodies to make their introduction mandatory. The Federal Government will also encourage the manufacturers to install these safety systems in their vehicles at an early stage, if possible before their fitting is made mandatory.

In addition, the Federal Government will do everything it can to ensure that the provisions governing cycle equipment – especially those governing lighting – are made more user-friendly and adapted to reflect the state of the art.

²⁷ BAST: F&E-Vorhaben 82.0533/2011 Potentielle Einflüsse von Pedelecs und anderen motorunterstützten Fahrrädern auf die Verkehrssicherheit unter besonderer Berücksichtigung älterer Radfahrer.

Possible players in a local “road safety” network



Source: own graph

The **federal states** and local authorities are called on to analyze accident blackspots on the ground and to develop strategies and packages of measures derived from these analyses. An important instrument of road safety activities at federal state and local authority level is road safety networks, which pool the competencies of public authorities, the police, trade associations, schools and transport operators and raise awareness of the issue of road safety. At federal state level, programmes and networks such as the “Mobile Bavaria – Getting there safely” and “Safe Roads in North Rhine-Westphalia” programmes and the “Road Safety Forum and Network” in Brandenburg have proved helpful. Here, the local authorities receive support in their road safety activities in the form of an exchange of experience and information, competence building, projects and campaigns.

With a view to a safe design of infrastructure, the federal states and local authorities are called on to systematically apply the recommendations of the technical regulations for the basic requirements to be met by the dimensions and alignment of cycling infrastructure. This applies not only to plans for new projects, but also to the upgrading and refurbishment of existing infrastructure. To ensure that the infrastructure provides a high level of road safety, the federal states and local authorities are recommended to widen the road infrastructure safety management system to cover regional and local roads. The formation of federal state accident commissions to develop road safety strategies is wholeheartedly welcomed. The major instruments of a safety management system are road safety analyses of the existing infrastructure and safety audits when planning new projects.



In addition to improvements to the infrastructure, which are a major prerequisite of more road safety, greater enforcement of the rules of the German Road Traffic Regulations is important, and this applies to all road users, including cyclists. Finally, local traffic authorities should exploit the existing possibilities for traffic calming and designating 30 km/h zones. Outside built-up areas, it may be advisable, on roads without cycling facilities (and especially with a high level of cycling), to consider speed limits in accordance with the German Road Traffic Regulations, in order to enhance the safety of cyclists and other road users.

4 Communications



One of the major tasks to be performed in the promotion of cycling is to communicate to the public that cycling is a fun activity with positive effects and to ensure that there is a cycle-friendly climate in general. Because people’s mobility patterns with regard to their travel choice and road safety depends not only on the infrastructure, but also on their attitude towards cycling in general. This can be influenced by communications. This action field goes beyond publicity campaigns. It targets not only people on the ground and the media (“outward” communications). Communication measures must also address policymakers, public authorities and the “multipliers” (“inward” communications).

4.1 Current situation

In the NCP 2002-2012, communication activities were not a separate action area. Nevertheless, numerous and diverse lessons have been learned in this field in recent years. The Federal Government’s involvement has focused on organizing competitions, mounting campaigns and staging conferences. Examples include the National Cycling Congress, the “Innovative Public Cycle Hire Schemes”

model competition, the “German Cycling Prize” (called “best for bike” until 2011), and the “I wear a helmet” and “Start your brains, not your car” campaigns. In addition, the Federal Government has provided financial assistance to numerous players, enabling them to implement pilot communication projects.

Within the federal states and municipalities, the approaches range from broadly based campaigns with a local slogan (e.g. “Nuremberg mounts its bikes”, “Aachen cycles”, “Munich – capital of cycling”) to innovative stand-alone projects which, as a whole, are a manifestation of a more dialogue-focused relationship between transport planners and society. In addition, numerous associations, insurance companies, foundations and both regional and national media have addressed the subject of cycling.

However, the lessons learned from the multiplicity of stand-alone activities have not yet been systematically analyzed, and local practitioners are thus rarely aware of their full scope. Thus, when planning communication measures, it is frequently necessary to start “from scratch”. In addition, it is mostly the case that transport

planners still attach significantly more importance to infrastructure projects than to complementing these projects by communication tools.

4.2 Action required

Placing communications on a permanent basis as a separate action area

Successful communication activities have to be strategically planned and professionally delivered. Here, it must be borne in mind that some “soft” measures, whose aim is to bring about behavioural changes or to involve major societal stakeholders, only have an impact in the long term. What is crucial is that communications must be seen as a permanent task at all levels of action and that the individual measures must be pursued with continuity.

In relation to infrastructure, it is true that communication measures are not free, but they are certainly cost-effective. They are required at every stage of cycling promotion. It is important to realize that no point in time is “too early” and that no budget is “too small”. In municipalities with

high cycling growth rates, there is a need to manage this growth, for instance by improving road user culture. To ensure that the findings can be applied elsewhere, communication measures at all levels should, wherever possible, be evaluated to determine their effectiveness.

Communication with policymakers, public authorities and multipliers

Approaching decision-makers and multipliers is frequently a crucial factor determining the success of cycling promotion. Thus, before mounting a publicity campaign for cycling as a means of transport, it may be effective to first exert influence on policymakers and public authorities in order to gain support “in one’s own ranks”.

Policymakers need foundations on which they can competently take decisions on communication measures. Here, impacts that go beyond transport policy (such as impacts on health, urban development and quality of life, reduction of CO2 emissions, etc.) are also to be prepared and communicated. At the same time, they are players themselves. The fact that well-known figures act as role models is also frequently underestimated.

Numerous parameters that have a crucial impact on cycling are shaped outside the traditional promotion of cycling. For this reason, the support of representatives from government, industry and society, the police, the media, the retail trade, the architectural and planning professions, the property industry and religious communities or foundations has to be gained for cycling.

Communication with the public

To reflect the increasing diversity of possible uses of the bicycle and to reach new target groups, cycling-related communications will, in the future, have to be more targeted and distinguish between different transport purposes, people's circumstances and social milieus. The focus of the communication activities should also be based on the starting situation in the municipalities ("starters", "climbers", "champions"). Experience has shown that the initiative of the employees responsible for cycling in any given case is crucial to press and public relations activities related to cycling. For implementation, however, it is usually advisable to draw on the knowledge of expert players – for instance appropriately trained staff within the public authorities or specialist agencies (especially for campaigns).

In addition to communicating the positive effects of cycling, another task of communications lies in the field of road safety activity, namely encouraging safety and mutual respect between all road users. Here, it is crucial that all road users feel that these messages are addressed to them and their own behaviour. To encourage people to make different travel choices, greater use should be made in the future of marketing approaches that illustrate the quality of a combined use of different means of transport and portray the bicycle as an element of efficient mobility chains.

Finally, cycling planning activities should seek to actively involve people in their communities as part of a dialogue-focused strategy. This is designed to create public acceptance and trust and to enable people to contribute to the promotion of cycling.

4.3 Problem-solving strategies

The **Federal Government** will develop an umbrella brand with its own logo, which it will use primarily for its own measures in the field of cycling promotion. It will, however, also make it available to the federal states, local authorities and all other societal stakeholders involved in cycling if they are interested. This is designed to consolidate activities that have so far often been isolated and to enable better delivery of cycling promotion activities nationwide. Many of the key players – including the federal states and the local government associations – will be involved from the outset in the development, to ensure that the brand enjoys a high level of recognition and acceptance.

In addition, the Federal Government will provide and oversee a model campaign, which can be used by all local authorities, to encourage more considerate behaviour by all road users. Interested municipalities are to have the opportunity to obtain the necessary "toolkit" from the Federal Government in order to implement the measures it contains, possibly with the help of local partners and sponsors. Other campaigns – especially already existing ones – could, for instance, be made available nationwide in cooperation with the federal states.

In addition, the Federal Government will consider, with the federal states, how the existing certification systems

for cycle-friendly municipalities can be dovetailed/standardized and then, if appropriate, applied nationwide. The aim is to encourage municipalities to apply for such an award and then use it as good publicity in their own communications activities.

The Federal Government has already funded individual competitions for the award of prizes to especially cycle-friendly players in specific action areas. It will systematically widen this approach to form a nationwide "showcase", awarding prizes to especially successful examples and publicizing them throughout Germany in a compact evaluation. Possible topics include not only existing examples, such as "cycle-friendly employers" and "cycle-friendly housing industry", but also "cycle-friendly retail trade" or "cycle-friendly schools".

The **federal states** should develop campaigns and competitions and establish and support network structures (such as working groups for communications in municipalities) as the basis for communications on cycling throughout the federal state and for the transfer of knowledge and skills. Regional events can be held at which leaders and multipliers can be targeted at the federal state level. They can provide additional incentives for the municipalities by organizing competitions and sponsorships models in which local authorities can provide one another with mutual advice and support.

However, the bulk of communication activities have to be performed by the **local authorities** on the ground. At the regional level, the districts could operate as a focal point for networking and coordinating the towns and cities.

Campaigns such as "Cycling to Work", mounted by local health insurance funds and the German Cycling Club, can help to improve cycle use within local government initially and to achieve greater support for cycling promotion. Networking can be supported by establishing

a "round table" comprising representatives from the public authorities, government and trade associations. In addition, it is recommended that reports ("Cycling Progress Reports") be submitted to the decision-makers on a rotating basis.

Communication with the public should also be continuous wherever possible. Sustained press activities with positive reports on the issue of cycling, in keeping with the saying "do something good and tell everyone about it", will ensure that cycling is always at the centre of attention. Regular public information in the form of leaflets, participatory campaigns, competitions and prizes, for instance the award of prizes to cycle-friendly shops, will provide incentives and attract the attention of the public. A corporate design will support visibility and underscore the link with other cycling promotion measures.

It is possible to actively involve the public by providing ways for reporting infrastructure deficiencies (for instance through local inspections with decision-makers or telephones for reporting broken glass). In addition, "starter kits for new residents" can be used to jointly market local and regional public transport services as well as walking and cycling.

The **societal stakeholders**, such as clubs, associations, initiatives, institutions of higher education, agencies, foundations and the media, are called on to help gain and evaluate experience in the field of communications and to contribute their resources (knowledge, willingness to implement, networks) to the promotion of cycling at the local level as part of projects, networks or, for instance, competitions. They could join forces with industry and business as promoters or supporters for effective cycling communications. Moreover, this group can range from health insurance funds and pharmacies to the retail trade and motoring and transport user organizations (such as the ADAC, ACE, ADFC, VCD, etc.).



5 Cycle tourism



Cycle tourism has developed into a significant element in the leisure and tourism sector and is now an important segment within the tourism industry. Cycle tourism provides many people with an opportunity to get to know the bicycle as a means of transport. Positive experience can then form the basis for more frequent use of the bicycle for utility cycling. At the same time, high-quality cycling infrastructure in holiday regions is also used by the local population for their day-to-day journeys by bike. Thus, the promotion of cycle tourism is always a combination of the stimulation of economic development and the promotion of cycling, and at the same time it stimulates rural development and rural areas.²⁸ In rural municipalities, in particular, political support for cycling can be generated this way. Finally, given the structure of the service providers, the promotion of cycle tourism is always also the promotion of small and medium-sized enterprises.

5.1 Current situation

Cycle tourism is an important economic factor in Germany alongside the cycling industry. In 2009, the Federal Ministry of Economics and Technology commissioned the “Baseline Study on Cycle Tourism in Germany”. This study revealed that cycle tourism in Germany generates around four billion euros in gross value added and over nine billion euros in gross turnover.²⁹ Around 153 million day trips and 22 million overnight stays were attributed to cycle tourism. This is a total of around 175 million days a year. Taking value-added tax into account, cyclists making day trips spend on average around 16 euros per person and day. Cycle tourists who make one overnight stay during their trip spend an average of around 65 euros per person and day. The local hospitality sector, in particular, benefits from the money spent by cycling tourists, which accounts for almost 63 % of their gross turnover. Service facility operators, the retail trade as well as transport operators and municipalities also benefit.

²⁸ European Parliament: Das Europäische Fahrradnetzwerk EuroVelo – Herausforderungen und Chancen für einen nachhaltigen Fremdenverkehr, Brüssel, 2009.

²⁹ BMWi (ed.): Grundlagenuntersuchung Fahrradtourismus, Forschungsbericht Nr. 583, Berlin, 2009.

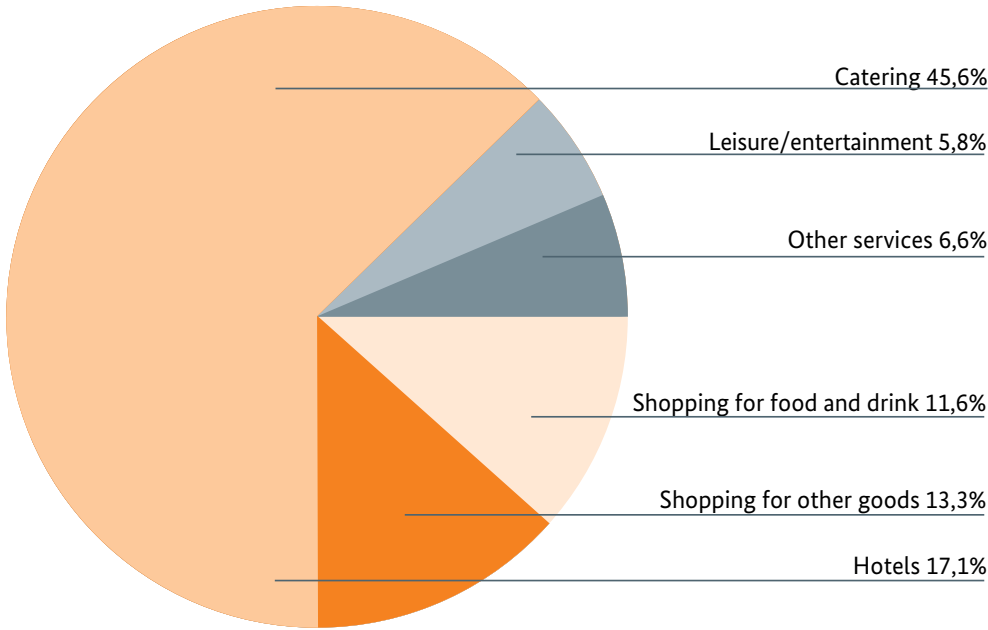
In recent years, the range of services for cycle tourists in Germany has been constantly evolved. Over 200 tourist cycle routes (predominantly regional) now criss-cross the country. The twelve long-distance cycle routes of the “German Cycling Network” form the basis for cycle tourism and have been incorporated into the European Cycle Route Network (EuroVelo). The “Cycle Tourism in Germany” study, commissioned by the Federal Ministry of Economics and Technology, found that the network of tourist cycle routes has a total length of 76,000 kilometres. If all types of cycle route in Germany are added, the total length is an estimated 150,000 kilometres. This figure includes around 50,000 kilometres of long-distance cycle routes.³⁰ Given this great supply, the quality of the cycle routes is becoming increasingly important. The classification system for long-distance cycle routes, which was developed by the German Cycling Club, is the most widespread quality benchmark in this context.

Even today, however, there is still no seamless network of long-distance cycle routes and service facilities. In practice, it is apparent that the strategy of providing supraregional cycling infrastructure is hampered by the fact that there are numerous and diverse responsibilities

for tourism, cycle route construction and transport and these responsibilities are spread over many levels. This also impacts on funding and on construction and maintenance work, as well as on the integrated marketing of regional and supraregional services and on environmentally sound journeys to and from cyclists’ destinations.

The “German Cycling Network” includes the D3 long-distance-cycle route, which is also part of the R1 European Cycle Route. Taking this route as an example, the German Tourism Association successfully trialled the cross-boundary coordination, planning and marketing of a cycle route with the support of the Federal Ministry of Economics and Technology, the Federal Ministry of Transport, Building and Urban Development and the federal states through which the route passes (North Rhine-Westphalia, Lower Saxony, Saxony-Anhalt, Brandenburg and Berlin) as part of the “Upgrading and Marketing the D3/R1 Long-Distance Cycle Route across Federal State Boundaries” pilot project of the Federal Government and the federal states. The 960 kilometre long route from the German-Dutch border to the German-Polish border has been modernized, provided with new signage and professionally marketed. In addition, strategies have been developed which can

Sectors benefiting from cycle tourism in Germany



Source: BMWi, 2009

³⁰ BMWi (ed.): Grundlagenuntersuchung Fahrradtourismus, Forschungsbericht Nr. 583, Berlin, 2009.



- | | | | |
|-----------------------------|-------------------------|-------------------------|-------------------------------|
| 1 North Sea Coast Route | 4 Midland Route | 7 Pilgrimage Route | 10 Elbe Cycle Route |
| 2 Baltic Sea Coast Route | 5 Saar – Moselle – Main | 8 Rhine Route | 11 Baltic Sea – Upper Bavaria |
| 3 R1 European Cycling Route | 6 Danube Route | 9 Weser – Romantic Road | 12 Oder-Neisse Cycle Route |

Source: ADFC, own graph

now be applied to the other routes of the “German Cycling Network” by the Federal Government, the federal states and the tourist regions.

Along federal waterways, towpaths have been upgraded and renewed using federal funding, thereby making them accessible to cyclists. In various regions, directional signage for cyclists and communications on long-distance cycle routes have also been intensified using funds for the implementation of the NCP. In addition, lessons have been learned from the conversion of disused railway lines into tourist cycle routes, the carriage of cycles on public transport and cycle hire schemes in tourist regions. These findings have been evaluated and made available to experts and other interested members of the public (including on the NCP portal www.nrvp.de).

5.2 Action required

Cycle tourism presents many opportunities. The popularity of the bicycle as a leisure accessory and means of transport will continue to increase. It has to be assumed that, as the population gets older, the number of cyclists will increase, and thus also the number of cyclists making day trips. In addition, the proven health benefits of cycling and people’s desire to take exercise in the countryside will further intensify the trend towards cycling. Moreover, rising energy costs and growing environmental awareness will make the bicycle increasingly attractive.

The positive trends of recent years mean that there is a continuing need for coordination in the promotion of cycle tourism between stakeholders in the tourism sector, the cycling industry, local/regional authorities and transport providers.

The diversity of the cycle tourism offer is desirable, but it must not be so complicated that visitors from home and abroad have difficulty using it. To prevent this, there must in the future be routes that are better coordinated across federal state and local authority boundaries, including the appropriate signage. Depending on the local and regional situation, the development of cycle tourism should focus not only on a (further) expansion of the route network, but also, and in particular, on an improvement in the quality of the existing routes. There is also a need to make it easier for international visitors to access the individual services, such as cycle hire schemes and



cycle route planners, and to integrate these services more systematically into the system as a whole. In addition, it should also be easier, in the future, to access the various services provided by individual private sector players, such as the hospitality sector or cycle retailers, for instance by creating a single website.

In recent years, it has become apparent that the range of services in the field of gentle and active mobility contributes to the attractiveness of tourist locations and regions and is in demand among visitors as a separate quality. Cyclists must be able to travel to and from their destination in an environmentally sound manner. These options need to be more intensively developed and advertised to reduce transport’s carbon footprint and for the benefit of the cycle tourism regions. The carriage of cycles on long-distance trains can significantly improve the accessibility of holiday regions and also help to reduce congestion in holiday traffic. Improving and standardizing the arrangements of the individual local and regional transport



service providers for the carriage of cycles will also help to improve the combination of means of transport. This is especially true within the tourist regions.

The rapid spread of pedelecs will unlock huge new potential for cycle tourism – in terms of both target groups and destinations. Electrically assisted cycles make longer cycle tours or cycling in hilly, mountainous or windy regions more attractive, and not just for elderly or mobility-impaired people. Pedelecs can also open up new areas as destinations for cycle tourists. Both here and in established tourist regions, infrastructure, services and marketing have to be adapted to the changing requirements and target groups.

In many places, the focus of activities to promote cycling is on the establishment of additional tourist cycle routes. As cycle tourists become increasingly quality-conscious, their expectations regarding uniformly high quality standards and the provision of a range of services in the regions, such as parking facilities and thief-proof left-luggage facilities at places of interest, also grow. The German Cycling Club's "Bed+Bike" seal of quality provides reliable guidance to cycle tourists in search of accommodation. However, its brand recognition needs to be improved, both in the hospitality sector and among cycle tourists.³¹

5.3 Problem-solving strategies

The **Federal Government** will continue to champion the upgrading and expansion of the "German Cycling Network". This relates to the inclusion of, for instance, the "Iron Curtain Trail" in the route network, but mainly to future cooperation across federal state boundaries. The basis for the latter will be the outcome of the Federal Government/federal state pilot project on Germany's Route 3.

In addition, the Federal Government is promoting the standardization of the stock of data on cycle route infrastructure and the nationwide link-up of cycle route planners. Building on the baseline study on cycle tourism in Germany, the Federal Government will, among other things, survey and evaluate the success of measures to promote cycle tourism. In addition, it will provide targeted information on funding possibilities and on

examples of good practice for service facilities in the field of cycle tourism.

To support the marketing of cycle tourism, the German National Tourist Board, in cooperation with the German Cycling Club, has been successfully conducting the "Discover Germany by Bike" project since 1999. The brochure developed for this purpose, the eighth of edition of which

was published in 2012, regularly presents selected long-distance cycle routes throughout the Federal Republic of Germany. The most recent edition describes 170 routes that are advertised nationally and internationally. This measure is to be continued in the years ahead.

At **federal state** level, regional networking fora to coordinate the development of cycle tourism offers should be

supported. Cross-border routes that form part of larger networks should be given priority when funds are awarded.

Cycle tourism can also be advanced in the federal states by publicizing funding possibilities in a targeted manner and by providing guides and offers of advice. The stock of data on cycle tourist infrastructure and places of interest should be provided for mobile uses, such as navigation devices and route planners, and should include additional data from the hospitality sector, the retail trade and service providers. Here, the federal states have a coordination function. Combining the route planners with local public transport information systems is especially important, because this will help to interlink the different means of transport and promote intermodality and multimodality.

By promoting cycle tourism in a targeted manner, **local authorities and regions** can also unlock local and regional potential for utility cycling. Mobility management should also take cycle tourism into account and, among other things, be focused on strengthening ecomobility in visitors' journeys to and from their destination. In municipalities and regions that are already very popular with cycle tourists, it would be advisable to increase the funding for maintenance, quality improvement and cycle tourism services.

To a greater extent than in other areas, **societal stakeholders**, especially the hospitality sector, play a major role in cycle tourism. They, and the relevant associations (e.g. also regional tourism associations), should thus be more closely involved in the assessment and safeguarding of quality standards. People working on a voluntary basis could make contributions, for instance in the provision of directional signage or the classification of long-distance cycle routes. There are also tasks for private sector players in an integrated strategy for marketing local and regional services and the development and provision of services.



³¹ Sinus Market and Social Research: Fahrrad-Monitor Deutschland, Heidelberg, 2011.

6 Electric Mobility



6.1 Current situation

On the cycling market, electric mobility is currently developing at an especially dynamic pace. In recent years, sales figures of “pedelecs” have risen by 30 to 50 %. Pedelecs is commonly taken to mean electrically assisted cycles on which the motor only provides assistance when the rider pedals (see box). In 2007, only 70,000 such vehicles were sold, but by 2011 this figure had risen to 310,000. Recent forecasts and surveys indicate that this trend will continue unabated.³² In 2009, only 24 % of those interviewed in the “Fahrrad-Monitor” survey said that they were interested in pedelecs. Today, that figure has almost doubled (47 %). A total of 24 % of those planning to purchase a new cycle are considering buying a pedelec. In the over-60 age bracket, the share is as high as 54 %.³³

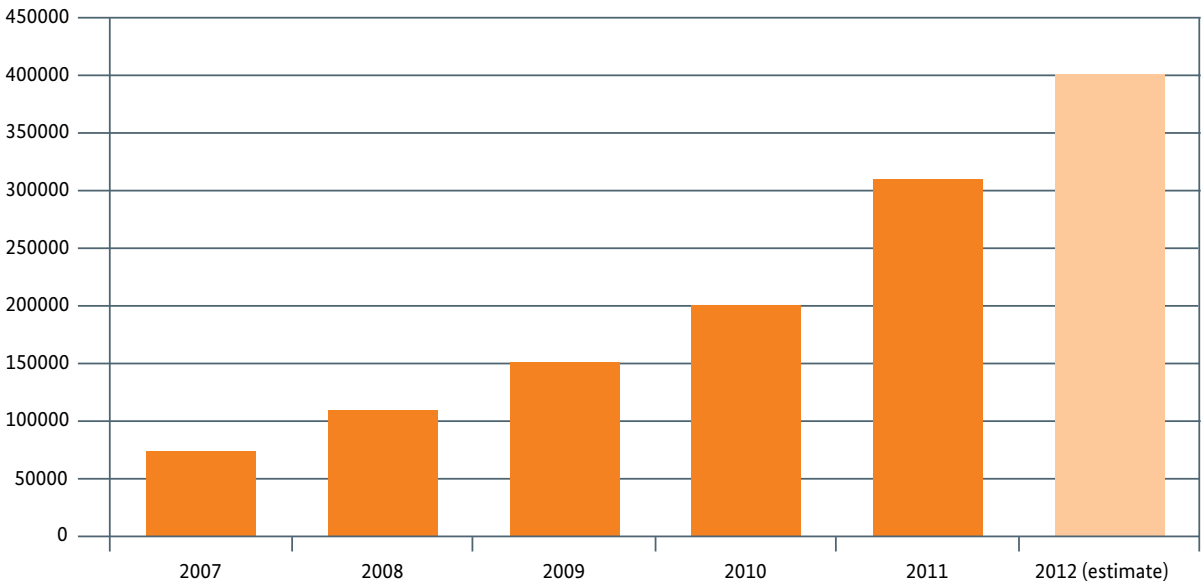
Pedelecs enable new regions to be opened up for cycling and address new target groups, because the electrical assistance means that cyclists can reach higher average speeds, cover longer distances and ride up hills more easily. This unlocks new potential for both cyclists and the cycling industry.

Thus, for instance, commuting over longer distances, especially between cities and their urban fringe, becomes a new option. In hilly terrain or mountainous regions, this new technology makes cycling more attractive for broad user groups in both utility and tourist cycling. And finally, pedelecs mean that the catchment area of public transport hubs is extended beyond the usual distance that “normal” bicycles can cover. This can reduce the pressure on busy bus feeder services, for instance to railway stations, in rush hour periods. Last but not least, the combination of buses and pedelecs is an attractive alternative to the car in sparsely populated regions.

That fact that riding a pedelec requires less effort than riding a conventional bicycle makes them interesting to elderly people, in particular. But they can also be used by new target groups and for new journey purposes (see box). In addition, new models with an attractive design appeal to people who use their bicycle for sports activities in their leisure time.

³² ZIV: Mitglieder und Kennzahlen 2012, Bad Soden a. Ts., 2012.
³³ Sinus Market and Social Research: Fahrrad-Monitor Deutschland, Heidelberg, 2011.

Sales of electric bicycles in Germany
(in absolute figures)



Source: ZIV, 2012

When is a pedelec a pedal cycle?

When deciding whether a vehicle is a pedal cycle or motor vehicle, the Federal Government and federal states currently take Directive 2002/24/EC as their basis. Against this background, a pedelec is considered to be a pedal cycle for the purposes of road traffic law if it is equipped with an auxiliary electric motor having a maximum continuous rated power of 250 W that assists the rider when pedalling. The output must be progressively reduced as the vehicle gathers speed. It must cut off when the vehicle reaches a speed of 25 km/h or sooner if the cyclist stops pedalling. However, pedelecs covered by the aforementioned EC Directive are motor vehicles (eBikes or fast pedelecs). They are subject to different requirements and regulations (e.g. insurance plates required, possibly compulsory helmet wearing) and are not covered by the NCP 2020.

6.2 Action required

Because pedelecs are usually in the upmarket price range and have a higher weight, they require parking facilities that are thief-proof and, wherever possible, accessible, at both the cyclists’ homes and at their possible destinations (workplace, railway stations, etc.).

Moreover, as pedelecs become more popular, the requirements to be met by the design of the street environment and by the cycling infrastructure will, in some cases, become more demanding. It is true that sufficiently wide

cycle tracks, wide curve radii, an anti-skid surface and the avoidance of bollards, staggered barriers and steps are already required. However, the need for this will grow, not least due to the fact that cyclists can easily achieve higher speeds on pedelecs. The need to enable cyclists travelling at higher speeds to overtake slower cyclists will also become more important. The technical regulations already include the necessary standards. Given that the number of pedelecs will continue to rise, it is becoming increasingly imperative that these standards be implemented in practical design.

Transporting goods by pedal cycle

The pedal cycle also lends itself to the transport of goods – both for private purposes and in commercial transport. New types of bicycle or tricycle (e.g. cargo cycles and child-carrying cycles) and the appropriate accessories (e.g. trailers) are being constantly evolved and are becoming increasingly popular.

In many places, cycle courier services have been established for a long time. Various companies use cycles to deliver letters and parcels. In the future, the use of pedelecs or starting aids and newly developed collection and distribution strategies will enable the commercial sector to use pedal cycles to perform more logistics functions. By using a pedal cycle, couriers can achieve a high level of productivity, especially on the “last mile” in urban traffic, provided that there is appropriate cycling infrastructure. But municipalities also benefit, because the problems associated with traditional distribution operations (e.g. double parking, noise and pollutant emissions) are reduced.



To harness this potential for commercial transport, it is necessary, among other things, to establish delivery bases for the “last mile”, which can be used jointly by the various delivery companies. Cargo cycle hire can be a practical alternative to renting a car for people who have a short-term need to transport goods.

Pedelecs can also be used to take children to their day care centres and to transport shopping. In collaboration with local cycle shops and educational institutions, action days can be organized, for instance, at which child-carrying cycles are demonstrated.

This trend will be supported by gearing the infrastructure to the specific needs of road users riding (cargo) cycles with more than two wheels or cycles towing a trailer.

Pedelecs also confront all road users with new challenges. First, pedelec users have to be in full control of their vehicle, which has different handling characteristics to those of a conventional cycle. Second, other road users, especially motorists, have to adapt to new traffic situations. For instance, the speeds at which pedelecs are travelling must not be underestimated by turning motor vehicles.

Given the rapid growth in this market segment and the fact that electrically assisted cycles exhibit a multiplicity of distinctive technical features, it is also necessary to create clarity regarding a uniform interpretation of the law and to adapt the legal situation.

6.3 Problem-solving strategies

The **Federal Government** is taking pedelecs into account in its activities to promote electric mobility. The main objective here is to develop solutions for incorporating pedelecs into mobility strategies that enable an appropriate combination when different means of transport are used and ways of addressing new challenges regarding the infrastructure. The activities to implement the NCP will build on and evolve this.

As pedelecs become increasingly popular, it will be the task of the Federal Government and the federal states to adapt the legislation governing licensing, equipment and road user behaviour to this new market segment and to generally ensure a uniform interpretation of the law in order to enhance the road safety of pedelec users and third parties. The main basis for this will be the findings of research commissioned by the Federal Highway Research Institute.

In addition, adapting the standards and legislation to the safety requirements can also make an important contribution towards reducing the risk of pedelec users being involved in an accident. The design of pedelecs must adequately reflect the more demanding requirements regarding the mean speed at which they travel and their higher weights. This applies especially to the performance of the brakes and the stability of the frames.

In addition, the Federal Government will lobby to ensure that the charging systems are standardized and thus made user-friendly. This will also help produce uniform charging infrastructure. Given the speed at which the market is developing, these bases need to be created as quickly as possible.

Last but not least, the increasing spread of pedelecs will also result in new requirements to be met by cycle retailers and, above all, regarding the service and repair of the vehicles. The Federal Government will thus consult with the federal states and organizations representing employers and employees to determine whether, and if so to what extent, the training of cycle mechanics needs to be adapted. This will involve including aspects of two-wheeled electric mobility in the corresponding training regulation.

The **federal states** are called on to improve the protection of pedelecs or their batteries against theft by means of

retrofit schemes for parking facilities at railway stations and public transport stops. With the help of space-saving technology for cycle parking and by organizing design competitions, attractively designed integrated solutions can be developed. Depending on their location in the public or private realm, they can also be designed as covered cycle parking with charging facilities (“solar filling stations”) and additionally with a battery changing facility.

Taking the technical regulations into account in the conditions for the funding of cycling facilities ensures that the level of development required by these regulations (or a safe carriageway alignment) will also meet future requirements when there is greater pedelec use and that inappropriate investment is prevented.

The **societal stakeholders**, especially those from the field of road safety activities, are called on to step up their road safety campaigns that target pedelec users and other road users to make them aware of the special characteristics of pedelecs and the consequences for road user behaviour. At the same time, appropriate training courses should be offered.

7 Linkage with other means of transport

7.1 Current situation

Many people make intermodal or multimodal journeys. This means that they use different means of transport for one journey or on different days of the week. A bicycle is involved in one third of these cases.³⁴

If a bicycle is used in combination with other means of transport, local public transport is frequently the ideal partner, because buses, trams and light rail systems increase the bicycle's range, while the bicycle strengthens public transport by providing access to rural areas. In some cases, the bicycle can also reduce the pressure on local public transport at peak times.

One of the main prerequisites for good linkage between cycling and local public transport is that railway stations and public transport stops must be equipped with a sufficient number of high-quality cycle parking facilities, which should be covered wherever possible. Here, users still see significant shortcomings.³⁵ Protection against theft is also important. Cycle parking stations have proved successful, especially at local public transport hubs.

North Rhine-Westphalia, in particular, has such facilities, funded by the state, which provide not only secure and sheltered parking but also, in most cases, additional cycling-related services.

An alternative to parking is the carriage of cycles on buses, trams and trains. This is often not possible, or only to a limited extent, because of the nature of the vehicles (small number of spaces, difficult accessibility). In a few cases – primarily in tourist areas during the holiday season – there are thus special services, for instance buses with cycle trailers. Frequently, however, the conditions of carriage rule out the carriage of cycles in all or certain vehicles and/or at certain times in order to prevent overcrowding.

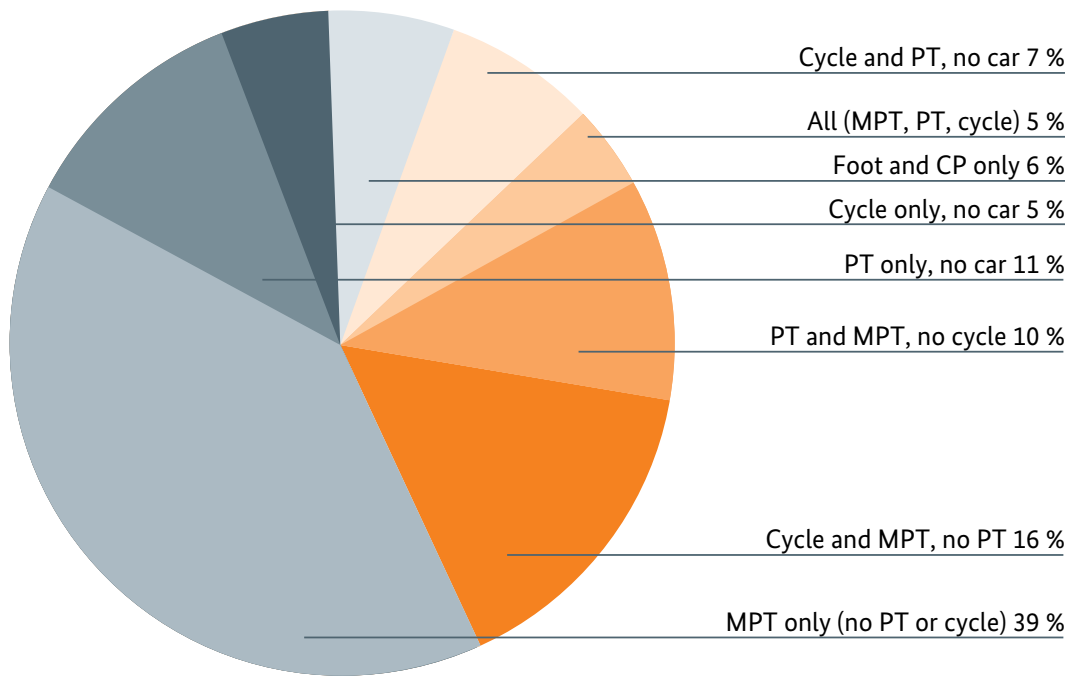
A third possibility for the combined use of cycles and public transport is public cycle hire schemes, with bicycles provided on a decentralized basis in the public street environment, frequently at local public transport stops. There has been a sharp rise in the number of such hire schemes in recent years.

What do “intermodality” and “multimodality” mean?

“Multimodality” means the use of different means of transport for different journeys, for instance on different days of the week. The number of road users making multimodal journeys has risen constantly in recent years and is now already 44 % of the population.³⁶ The increasing use of flexible offers, such as car sharing, cycle hire schemes and other new mobility services, is supporting this trend and will continue to intensify it.

“Intermodality” means the use of different means of transport for one journey. A classic form of intermodality involves cycling to the railway station, changing onto the train and then onto the bus.

Combinations of means of transport
(share in %)



Source: BMVBS, 2011, own graph



³⁴ BMVBS (ed.): Deutsches Mobilitätspanel, Bericht 2011, Karlsruhe, 2011, p. 53.
³⁵ Sinus Market and Social Research: Fahrrad-Monitor Deutschland, Heidelberg, 2011.
³⁶ BMVBS (Hrsg.): Deutsches Mobilitätspanel, Bericht 2011, Karlsruhe 2011.

7.2 Action required

The crucial factor determining the attractiveness of the intermodal or multimodal use of transport is the quality of the interfaces between the different modes and a smooth transition from one mode to another. The various ranges of mobility services should therefore be considered more strongly as parts of a uniform system, so that each means of transport can be deployed in accordance with its inherent strengths. Cycling, as an independent system, must be integrated into this.



It should be possible to use cycles, local public transport and other alternative means of transport (e.g. car sharing, rent-a-bike schemes) in a flexible, user-friendly and combined manner. This requires a seamless door-to-door mobility chain, which also has to be actively marketed. In many cases, the necessary approaches in the field of mobility management are still the exception. Better coordination of the different ranges of mobility services is required.

This also includes creating a fare structure that will encourage the use of different means of transport, for instance in the form of integrated mobility services on a “mobile card”, which enables the uncomplicated use of local public transport, car sharing, taxis, rent-a-bike schemes, cycle parking stations and other services with a single card and on a single invoice. This could be based on existing systems such as Deutsche Bahn AG’s railcard (“BahnCard”).

Finally, there should, in the future, ideally be a sufficient number of high-quality and accessible cycle parking facilities at all suitable local public transport stops.

7.3 Problem-solving strategies

The **Federal Government** will lobby for an improvement of the parking situation at railway stations. To this end, it will hold talks with DB AG and the federal states with the aim of initially developing and trialling appropriate improvements for typical cases as part of pilot projects. The lessons learned from these projects are then to be applied to other stations. In addition, the Federal Government expects the railway undertakings to adopt their own cycle policy and provide customers using long-distance trains with an attractive range of services for the carriage of cycles.

The Federal Government will compile and disseminate examples of good practice involving the combination of cycling and local public transport. It joined forces with the Association of German Transport Companies to develop an electronic standard for uniform access to public transport using an electronic ticket (“eTicket”). As part of the measures to interlink local public transport and cycling, it can also be used for cycle hire schemes as simple access to the services of all providers. The providers of cycle hire schemes are thus recommended to make greater use in the future of a common standard for accessing their services.

As part of their funding of local public transport, the **federal states** can bring about an improvement in the parking situation, especially at existing station facilities and major bus stops, by coupling the financing of station refurbishments to the creation of bike-and-ride sites and by launching additional bike-and-ride programmes. The delivery of more cycle parking stations should also be included in the measures.

Example of a mobility management system at local authority level



Source: City of Munich

In addition, the carriage of cycles could be included in the federal states’ local public transport acts in connection with the measures to promote ecomobility. The conditions relating to the carriage of cycles are to be included as a major factor in the ordering of services and, in particular, the procurement of vehicles. An additional option involves reaching agreement on the free or low-cost carriage of cycles as part of the service contracts with the local public transport providers. Here, however, ways of covering the additional costs of this have to be explored.

At the local level, the **authorities responsible for public transport** – frequently the municipalities themselves – should use their local transport plans to create optimum conditions for the carriage of cycles and the provision of parking facilities. The cities and towns are responsible for implementation on a case-by-case basis, especially as far as parking is concerned. With regard to the carriage of cycles, simple and safe access to stops and platforms is required. Other players may be responsible for this (e.g. transport operators).

In addition, the **local authorities** are called on to join forces with the authorities responsible for public transport and the transport operators to create optimum conditions for seamless mobility chains wherever possible and to develop and market ranges of cross-modal mobility services. To this end, a local mobility management system is to be introduced as a cross-cutting responsibility at local government level.

Finally, **employers** are called on to encourage their staff to cycle as part of a corporate mobility management scheme. A corporate mobility management scheme makes it possible to improve the necessary mobility of the workforce on their journeys to and from work and on official trips and to organize this mobility such that it is efficient and sustainable. Appropriate strategies have been promoted by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety’s “efficiently mobile” action programme. In addition to the proposed activities regarding corporate mobility management, the Federal Government will review the fiscal regulations governing official cycles.

8 Mobility and road safety education



The basic foundations for adults’ mobility behaviour are laid when they are still children and young people. It is absolutely essential that children and young people learn the necessary skills and acquire the necessary experience that will enable them to make flexible use of the different means of transport in accordance with their own mobility needs when they are older. The bicycle plays an important role here, because it empowers adolescents, in particular, to go beyond the relatively narrow range of destinations that they can reach on foot.

However, comprehensive mobility and road safety education goes beyond the training of children and young people. At child day care centres and schools as well as in clubs and other similar institutions, mobility and road safety education also addresses the mobility behaviour of parents and educators as the main role models. Aside from this, mobility training in connection with road safety is also important among adults, especially among elderly people.

8.1 Current situation

Cycle use among schoolchildren

Children and young people use their bicycle for around 20 % of their journeys, which is around twice as frequently as other population groups.³⁷ However, contrary to the general trend, there has been a continuous and significant decline in the modal of share of cycling in this age group in recent years.³⁸

Mobility and road safety education

On the basis of the updated recommendations of the Conference of Ministers of Education and Cultural Affairs on mobility and road safety education from 2012, the federal states may develop their own curricula, ranging from simply teaching children the rules of the road to providing them with mobility skills.

There are numerous examples of how this framework guidance has been implemented in schools. They include integrating the issue of mobility and road safety education into everyday school life and addressing it in depth in the form of project days and awareness weeks. Aside from this, primary school children receive cycle training in their fourth year at school almost everywhere in Germany.

As a rule, the schools are supported in their activities by the police and road accident prevention organizations. In addition, the “RADschlag” project (www.radschlag-info.de) project, which is organized by the German Transport Club, the Auto Club Europa and the German Sport University in Cologne and was supported by funds to implement the NCP between 2008 and 2011, provides a comprehensive and well-founded overview of the specific ways of providing knowledge to different age groups. There are also further schemes that support road safety activities in schools, such as the annual cycling tournaments organized by the German Automobile Club.

There are a few structures that promote the active provision of mobility and road safety education in schools with a uniform standard of quality. Commissioning a local authority mobility management system with the coordination of mobility and road safety education is one example of a structure that has been helpful. As far as the provision of knowledge is concerned, the institutions that provide in-service teacher training are of major significance.

Mobility training for adults

In Germany, mobility and road safety education comes to an end when people are adolescents, usually when they pass their driving test. They only hear about new developments, for instance in the field of traffic rules, by chance and partially. They rarely learn about new forms of mobility (e.g. rent-a-bike schemes, car sharing), and there are few possibilities for adults who are inexperienced in cycling to gain experience with expert tuition.

³⁷ BMVBS (ed.): Deutsches Mobilitätspanel, Bericht 2011, Karlsruhe, 2011, p. 53.
³⁸ *ibid.*

8.2 Action required

There is a need for comprehensive mobility and road safety education to illustrate the benefits of cycling to future generations. Children and young people must be put in a position where they make travel choices based on the strengths of the different types of transport – not least with a view to their later behaviour as adults. The bicycle should be an integral component of this. The provision of knowledge for this must be significantly expanded, starting while children are still at day care centres but focusing mainly on schools, with parental involvement. It is not very helpful if schools prohibit their pupils from cycling to school before they have passed their cycling test, nor is it legally necessary. Because it is well known that regular cycling practice helps children learn how to be in full control of their bicycle. Nor is it very helpful if parents take their children by car, even over short distances.

The numerous examples of good practice involving integrated approaches to mobility and road safety education and cycle training are still not well known enough. In addition, the question as to whether examples of good practice are emulated depends on the commitment of individual schools, teaching staff or parents.

The opportunities and potential associated with a comprehensive approach to mobility and road safety education are still not being adequately exploited. The accident figures for children and young people aged ten or over underscore the need. Given that mobility and road safety education often comes to an end after cycle training, that it is usually not included in school tuition and that an increasing number of young people are not learning to drive or only doing so later, the shortcomings in the teaching of mobility-related subjects become apparent.

8.3 Problem-solving strategies

As far as resources allow, the **Federal Government** will provide support to encourage the dissemination of the existing information, experience and materials with a view to providing comprehensive mobility and road safety education.

In the future, more information and publicity campaigns on road safety and mobility issues targeting adults should be provided. In this context, the Federal Government will lobby television stations to broadcast a road safety

programme – along the lines of the earlier programme called “The Seventh Sense” – which graphically depicts the dangers that exist on the roads and how to behave correctly. In addition, further strategies and measures for activities targeting adults are to be developed, for instance in a cross-departmental working party with the involvement of the federal states and trade associations.

The **federal states** are responsible for school curricula, and thus have one of the most important tasks in the field of mobility and road safety education. Examples of good practice are the “Mobility Curriculum” from Lower Saxony or the curricula from Bavaria. The continuation of similar schemes at secondary schools is advisable. At the same time, mobility and road safety education should be extended more than in the past to cover pre-school children and the years after children take their cycling test.

The teaching staff at all types of school should be appropriately trained or instructed. By establishing networks to address the issue of safety for children travelling to and from school, the federal states can build capacities and promote activities by local stakeholders.

The **local authorities** can support the schools in their activities by providing good infrastructure, thereby laying the foundations for independent and safe (cycling) mobility among children and young people. This can also include the establishment of a 30 km/h speed limit in front of schools for road safety reasons. As the authorities responsible for maintaining schools, or more generally as the authorities responsible for child care and educational institutions, they can provide a major impetus to the implementation of the federal state requirements and set an example of good practice for non-state providers. The

appointment of a central point of contact can be helpful to consolidate responsibilities and encourage the individual institutions to participate.

However, **child day care centres and schools** are major players themselves. Here, the activities should be intensified as far as the existing human and financial resources allow. Because active mobility and road safety education does not necessarily mean more activities, but merely shifts in emphasis in the work with children. It can, for instance, be very simply integrated into regular lessons. Older pupils should be included in these activities. It can be augmented by a mobility management system that addresses the travel choices made by parents and educators. Cycling-to-school plans, which can be developed jointly with pupils, facilitate independent and safe mobility among children and young people.

The only way to provide comprehensive mobility and road safety education in Germany is through the involvement of **further state and societal stakeholders**, such as the police, accident prevention organizations, insurance companies, pressure groups, motoring organizations and transport clubs. It is imperative that this involvement be recognized, continued and – wherever possible – expanded.

This also applies to the **mobility training of adults**. The local authorities should integrate appropriate schemes, such as cycle training for elderly people or for people from ethnic minorities, into their cycling promotion activities to a greater extent. Here, the Federal Government will, if necessary, provide additional support by continuously revising and adapting the learner driver training syllabus and the driving test and also – in consultation with the federal states – the training of driving instructors.



9 Create and safeguard qualities

One of the major foundations for the quality of activities to promote cycling is research and innovation plus the transfer of knowledge to people in the public authorities, the police, trade associations and the private sector who deal permanently or frequently with cycling-related issues.

9.1 Current situation

Research and innovation

In recent years, research into cycling has been department-focused, especially as part of the Federal Highway Research Institute's accident and safety research, the Federal Ministry of Transport, Building and Urban Development's "Urban Transport" research programme, the "Cycle-Friendly City" pilot project and other projects launched by the Federal Environment Agency, and as part of the mobility research conducted by the Federal Ministry of Economics and the Federal Ministry of Research. In addition, individual federal states and municipalities have commissioned universities and other research establishments to research specific issues.

In parallel, various programmes and projects at EU level have produced groundbreaking findings on cycling, for instance through the development of a quality management system for cycling (BYPAD).

Transfer of knowledge and advanced training

The targeted transfer of information on state-of-the-art technology, examples of good practice, successful pilot projects and the latest research findings for practical use at the local level is currently being successfully delivered, with the support of the Federal Government, by the Cycling Academy and the cycling portal of the National Cycling Plan (www.nrvp.de), in particular. In addition, the latest research

findings are provided in the Federal Ministry of Transport, Building and Urban Development's research information system (www.forschungsinformationssystem.de). The international transfer of knowledge is supported by the series of publications entitled "Forschung Radverkehr / Cycling Expertise", which is funded by resources for implementation of the NCP.

Compared with other European countries, Germany is in an outstanding position in this field, with its long tradition of cycling-related research, numerous innovative practical solutions and the targeted transfer of the latest research findings in the promotion of cycling.

9.2 Action required

Research and innovation

To continue to reflect the dynamism of the mobility and cycling fields of knowledge, and to develop the necessary bases for future decisions taken by policymakers, public authorities and planners, it must be a prime objective to preserve and evolve the proven quality of research in Germany.

Transfer of knowledge and advanced training

The NCP portal on the Internet provides an outline of current practical issues and research topics. However, they have not been prepared in a systematic manner, and the presentation of the research is limited to activities at Federal Government level. Even there, there is already such an abundance of information that it is not always easy to get an overview.

The expert community (planners, cycling officers, etc.) can be helped by a systematic analysis of the lessons already learned from the promotion of cycling. The range of

further training courses, fact-finding events and networking opportunities is now reaching an increasingly large audience. But there is still need for action, for instance as regards approaching local government officials, public authorities, private sector consultants and other players who have so far had little to do with cycling, and as regards new forms of knowledge transfer. The international transfer of research findings and knowledge can also be further improved.

9.3 Problem-solving strategies

The **Federal Government** will evolve the cycling portal into a transfer agent, especially with regard to the exchange of experience. This is to be complemented by expert workshops at which an in-depth dialogue on topical issues can be conducted.

As part of the cycling portal, a research database will also be established and maintained with the aim of providing an overview of the research projects of the different players (especially the federal states, trade associations, foundations, etc.). The latest research findings are to be published there and systematized for ease of access in terms of the relevance to the people who are responsible in the federal states and municipalities for the practical implementation of cycling promotion. At the same time, this will also make it possible to identify gaps within the research field. The cycling portal will also provide more support than in the past to the international transfer of knowledge, for instance by means of multi-lingual pages.

To be able to continuously address the need for research, non-capital funding will be provided – in addition to the Urban Transport Research Programme – for implementation of the NCP for topical research issues, for instance with regard to road user behaviour, motivation and cycling target groups. The starting point for all further activities will be a baseline study with a review of the situation of cycling promotion in the Federal Republic of Germany.

The Cycling Academy will continue to be the key instrument of further education and networking at Federal Government level and will be evolved with new target groups (e.g. police, transport operators, planners, various multipliers) and new event formats in mind. Existing courses for specific target groups (e.g. tourism professionals) should be expanded wherever possible.

Zusätzlich werden vom Bund Leitfäden und Sammlungen guter Beispiele zu verschiedenen Einzelthemen veröffentlicht, um damit das vorhandene Wissen zu bündeln und für die praktische Anwendung nutzbar zu machen.

In addition, the **Federal Government** will publish guides and compilations of good practice in order to consolidate the existing knowledge and harness it for practical application.

The federal states have an important part to play in funding and implementing their own research projects and providing support to ongoing research projects and mobility data collections. Their action should be integrated into the research database that is to be established on the cycling portal.

To improve the transfer of knowledge, the federal states could introduce sponsorship models for local authorities, in which the municipalities would provide each other with mutual support, for instance in the form of information. The federal states are also recommended to make knowledge in the field of cycling promotion and integrated mobility a more prominent feature of the university education of planners and other professional groups.

The local authority stakeholders should make active use of the different opportunities for continuing and advanced training that now exist. This applies in particular to those municipalities that are just starting to promote cycling ("starters").

Guides

The guides and compilations of good practice are to be published as a separate series with their own corporate design in accordance with the new umbrella brand.

Possible themes are:

- Cycling strategies
- Monitoring
- Cycle parking facilities
- Communications
- Service facilities
- Mobility education
- Cycling in planning law





C Instruments

The promotion of cycling needs a sound basis if the objectives it pursues are to be achieved. Continuity and the provision of adequate human and financial resources are crucial factors determining success. In addition, efficient organizational structures must ensure that they are deployed in an optimum manner and involve the relevant stakeholders.

The NCP 2002-2012 showed that concerted action by the Federal Government, federal states and local authorities in their respective areas of responsibility is the right approach for implementing a cycle-friendly policy. This has to be continued and intensified. In addition, the non-governmental stakeholders have important functions to perform in the promotion of cycling.

Organizational structures

Many public authorities already have members of staff who have extensive responsibility for matters relating to cycling (e.g. cycling officers) and who are in a strong position, both in terms of the time at their disposal and the influence they can exercise. This has turned out to be a successful model, especially at local authority level. It is thus recommended that clear-cut responsibilities for cycling be created – increasingly also in districts – and that the necessary human and financial resources be provided. This also explicitly applies in the same way to the federal states. Given the different starting conditions (“starters”, “climbers”, “champions”), the Federal Government will conduct research to draw together lessons learned and positive examples of corresponding structures in federal states and municipalities in a guide.

In addition, networks are a crucial basis for enabling cooperation between various stakeholders with differing interests. They should be used at all levels to exchange information, coordinate positions and measures and achieve broad-based support for implementation. It should be borne in mind that cycling, as a cross-cutting issue, is part of various fields of activity (e.g. transport, health, environment, urban planning, safety, tourism) and that various government departments are responsible, which should be included in a suitable manner (e.g. in joint working groups).

To ensure efficient work, the districts, federal states and Federal Government should seek to establish a “network of networks”. The working groups of cycle-friendly municipalities in North Rhine-Westphalia, Baden-Württemberg and Bavaria and – sometimes in a similar form – also in other federal states plus different structures in municipalities are examples of good practice that have emerged in very different ways, and the lessons they have learned should be exploited. Against this background, the federal states, in particular, are called on to launch cross-local authority networks based on this model and to provide active support to networks at district and regional level wherever this has not yet happened.

The Federal Government supports cooperation between the various federal state networks as a coordinator and facilitator. In addition, it will continue and further expand the networking instruments that have already been introduced and trialled. With the creation of the Cycling Working Group of the Federal Government and federal states, a body now exists to coordinate the Federal Government, federal states and other stakeholders. The Local Authority Cycling Conference complements this as regards the exchange of ideas and experience between the Federal Government and the local authorities. The National Cycling Congress provides a forum for an exchange of ideas and experience between the Federal Government, the public authorities and the expert community. The Cycling Advisory Council has proved successful as an advisory body for the control of cycling policy. The Federal Government will continue and further strengthen these structures. In addition, to further raise responsibility for cycling and highlight how much importance is attached to the promotion of cycling, a cycling officer will be appointed at the Federal Ministry of Transport, Building and Urban Development. Furthermore, a cross-departmental working group will be established within the Federal Government and meet regularly to address issues relating to the promotion of cycling.

Provision of funding

Adequate human and financial resources are major foundations for the promotion of cycling. Funds for investment in infrastructure cover the construction of new cycling facilities and the upgrading, refurbishment, routine maintenance and renewal of existing facilities. Funds are also required for communications, service and other non-capital measures. One advantage is that measures in the cycling sector are mostly very cost-effective. Moreover, the expenditure on cycling is offset by savings elsewhere, for instance in the health sector, in environmental costs and in other infrastructure expenditure.

Funding and support framework

The Federal Government shoulders its responsibility for promoting cycling. It will thus focus its funds for investment in cycling infrastructure – provided that it is responsible for funding and that funds are available – on the needs for the construction of new cycling facilities and the renewal of existing facilities along federal transport infrastructure. To calculate the appropriations required, the Federal Government, in consultation and cooperation with the federal states and local authorities, will conduct a study to determine the funding needed for investment in the cycling infrastructure at the various levels in the next ten years.

To build on its function as a catalyst of cycling promotion, the Federal Government will focus the funding of inno-

vative projects in a more targeted manner and intensify it. In this connection, the support provided so far as part of the implementation of the NCP will be realigned and consolidated to address thematic focus areas. This will involve giving greater consideration to the different starting situations (“starters”, “climbers”, “champions”). Depending on the availability of funds, this promotion is to be complemented by integrated pilot projects based on the model of “cycling as a system” and/or by “lighthouse” projects, which can be launched in all fields of cycling promotion (e.g. cycle superhighways or cycle parking facilities). This is designed to promote recent developments in cycling against the background of the Federal Government’s climate change, environmental protection and road safety policies, and it is designed to set an example of good practice.

By continuing to provide the Funding Guide on the cycling portal over the entire lifetime of the NCP 2020, the stakeholders involved in promoting cycling will be informed of the existing funding options at all levels.

The federal states are recommended to develop comparable funding instruments. This applies especially to non-capital measures in the fields of communications and service. Likewise, it is important that, for capital projects in municipalities, the conditions for support as part of financial assistance programmes and/or the relevant guidelines be created and/or widened and that the appropriate funds be provided. In this context, de minimis limits should be abolished or (significantly) reduced to promote low-cost measures in the cycling sector. The award of funding must always be combined with an evaluation.



Local authorities’ funding needs

Local authorities are responsible for the bulk of the tasks relating to the promotion of cycling, in terms of both infrastructure and “soft” measures. Against this background, the activities to evolve the NCP also included commissioning a brief study which, in an initial estimate, has identified, inter alia, the funding needs of towns, cities and districts in relation to their population.³⁹

The estimate is based on extensive research into existing appropriations and funding needs in Germany and other countries. The figures have been broken down by category (“starters”, “climbers” and “champions”). They can provide guidance to the local authority stakeholders (see table for details).

Accordingly, towns and cities, irrespective of their size, are likely to have the following funding needs per inhabitant and year:

- around 6 to 15 euros for the construction, maintenance and operation of the infrastructure, with 1 to 3 euros of this
- for routine maintenance alone;
- around 1 to 2.50 euros for parking facilities in the public realm; and
- around 0.50 to 2 euros for “soft” measures (communications, service, etc.).

Together with other measures (e.g. cycle hire stations), this results in funding needs totalling 8 to19 euros per inhabitant and year for the individual towns and cities if they are to achieve their objective of providing a good overall standard. The actual total varies depending on the starting situation and future prospects.

The funding needs of the districts are, on the whole, lower. Here, the estimate is 0.30 to 4.70 euros for the infrastructure, depending on the starting situation, and between 0.50 and 1.50 euros for other, non-capital measures – a total of between 1 and 6 euros per inhabitant and year,

Funding needs of towns, cities and districts for various areas of responsibility
(in euros per inhabitant and year; ranges reflect different starting situations and prospects)

		Infrastructure (refurbishment/ construction and structural maintenance)	Infrastructure (routine maintenance)	Sub-total (columns 1 + 2)	Parking facilities	Non-capital measures (incl. commu- nications)	Other measures (cycle hire schemes, cycle parking stations)	Total (columns 3 – 6) rounded
		1	2	3	4	5	6	7
Towns and cities	Starters	5 - 12	1,10	6,10 - 13,10	1,10 - 2,50	0,50	0,50 - 2	8 - 18
	Climbers	8 - 12	1,70	9,70 - 13,70	1,20 - 1,50	0,50	1 - 2	13 - 18
	Champions	12	3	15	0,10 - 0,80	1	2	18 - 19
Districts	Starters	0,20 - 4,60	0,10	0,30 - 4,70	0,50 - 1			1 - 6
	Climbers	0,30 - 4,10	0,10 - 0,40	0,40 - 4,50	0,50 - 1,50			1 - 6
	Champions	2,40 - 3,00	0,50 - 0,70	2,90 - 3,70	1 - 1,50			4 - 5

³⁹ PGV Hannover: Finanzierung des Radverkehrs, short study, Hanover, 2012.

Regular observation – monitoring

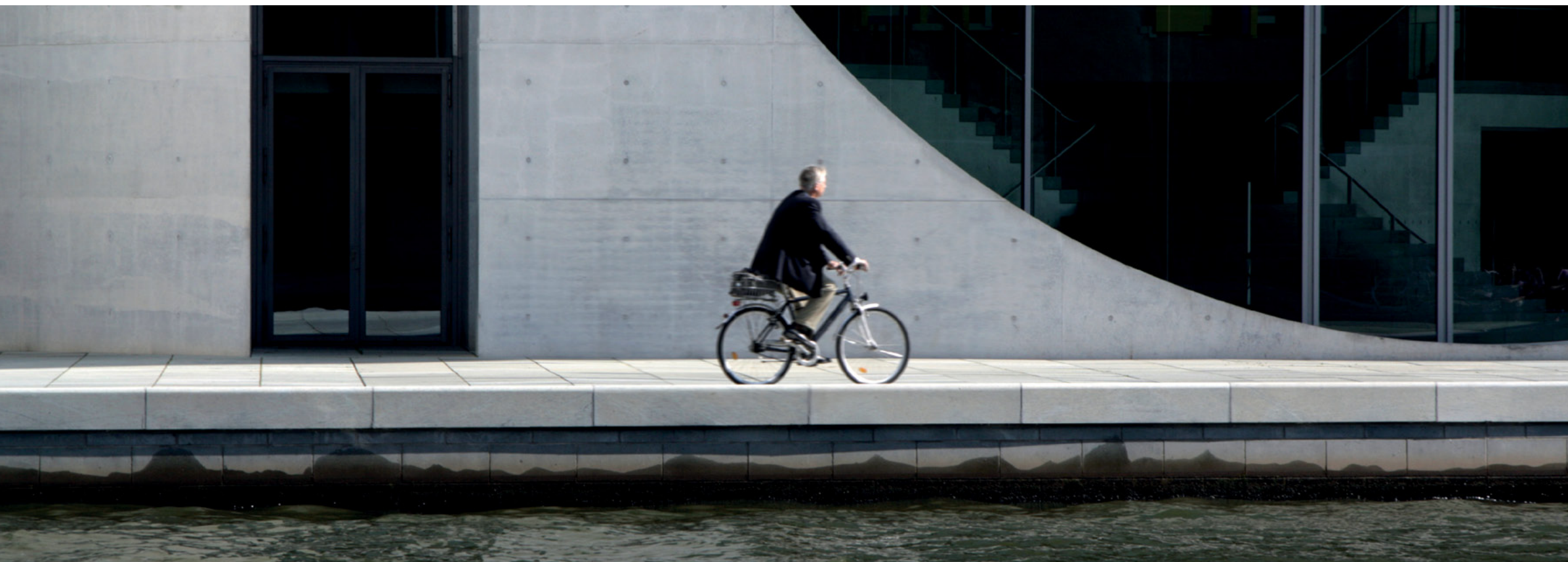
Regular observation of the situation regarding cycling in Germany is important to be able to appraise the actual situation and future trends, adapt the measures to promote cycling if necessary and, if appropriate, check the effectiveness of the funds committed. This is a task of the Federal Government, the federal states and local authorities in equal measure.

In this connection, the Federal Government will regularly (every two years) compile and publish key data relating to cycling trends. These include, in particular, data on the cycle population, cycling infrastructure, traffic volumes and road safety. This will not involve collecting any new data but will draw on existing official and non-official data sources. To complement this, the “Fahrrad-Monitor Deutschland” study will be continued under the auspices of the Federal Ministry of Transport, Building and Urban Development. It will be carried out every two years to determine people’s attitudes and opinions regarding the bicycle, cycle use and cycling policy.

Against this background, the Federal Government’s Cycling Report will perform an overarching function. Its purpose will be to draw conclusions, on the basis of the regularly collected data, for the evolution of cycling promotion at Federal Government level.

The federal states and local authorities are recommended to develop monitoring systems of their own to enable them to identify the need for measures and the impact of the measures they take on the ground and to effectively control the future direction of their activities to promote cycling. In its role as facilitator and coordinator, the Federal Government will launch a user forum in which data, methods and lessons learned from the different surveys can be exchanged. This exchange can also be used to adapt the studies to one another. One of the main objectives is to dovetail the methodological approaches and the basic data and to include uniform questions in the studies on selected issues (e.g. road user behaviour) to improve the comparability and synergies of the surveys.

In addition, the federal states and local authorities should launch their own surveys and (automatic) cycling censuses so that they can conduct targeted analyses and planning. In this context, the Federal Government provides a calculation tool, which enables practical use to be made of censuses that cover a short period of time. The corresponding extrapolation method was developed in one of the Federal Ministry of Transport, Building and Urban Development’s research projects.⁴⁰ This makes it possible to conduct in-depth analyses and make detailed forecasts on trends in cycling, thereby improving the foundations for planning. In addition, the federal states should promote local surveys or in-depth surveys for towns and cities when nationwide traffic surveys are carried out. In addition to simply capturing data relating to the level of cycling, further indicators should be taken into account, especially those used by the Federal Government for the regular description of cycling. Additionally, more detailed information on cyclists’ satisfaction, comparable to a barometer of customer satisfaction, could be helpful at federal state and local authority level.



⁴⁰ BMVBS: FE-Vorhaben 77.495/2008 Hochrechnungsmodell von Stichprobenzählungen für den Radverkehr, further information can be found at www.hochrechnung.radverkehr.de.



D General Framework

Situation of cycling in Germany

Cycling promotion activities to date

The Federal Government started to promote cycling back in the late 1970s with, among other things, the “Cycle-Friendly Cities” pilot project. In the 1980s, a programme for the construction of cycle tracks on federal highways was created as part of the budget item entitled “Renewal, refurbishment, upgrading and construction of federal highways”. Since 2002, there has been a separate budget item for the construction and structural maintenance of cycle tracks on federal highways, from which a total of 877 million euros has since been invested nationwide.

In parallel, the federal states have also stepped up their expenditure on the construction of cycle tracks on regional roads. An important milestone in the promotion of cycling at federal state level was the creation of the first working group of cycle-friendly towns and cities in North Rhine-Westphalia in the 1990s. It has since set an example of good practice in the field of cooperation between the federal state and local authorities and between local authorities.

At the local authority level, individual towns and cities started strategic cycling promotion in the 1970s (e.g. the “Cycle Tracks” task force in Bonn or the Cycle Tracks Commission in Freiburg). In the 1990s, they were joined by cities such as Kiel and Leipzig, then Karlsruhe, Frankfurt am Main and Berlin and districts such as Nienburg/Weser, Euskirchen and Ostvorpommern.

The first National Cycling Plan was adopted in May 2002. The objectives of the NCP 2002-2012 were to increase the modal share of cycling, to encourage cycling as a component of a sustainable and integrated transport policy and of modern, socially acceptable and environmentally friendly local mobility and to improve road safety.

In order to better harness the potential inherent in utility cycling, the vision of “cycling as a system” was developed. In this vision, infrastructure, services and communications are to be viewed and promoted as equal pillars of activities to promote cycling.

The bicycle as an economic factor

In recent years, around 4 million bicycles have been sold each year in Germany. Total turnover, including accessories, is estimated at 5 billion euros a year. The market has thus stabilized at a very high level.⁴¹ Pedelegs now account for a significant proportion of the turnover. And the demand for bicycles continues to rise. In a survey conducted as part of the 2011 Fahrrad-Monitor study, 29 % of Germans stated that they intended to buy a new bicycle in the next twelve months and would spend an average of 620 euros when doing so. Two years previously, in the same survey, only 13 % had expressed interest in a new bicycle. The planned average price at that time was only 570 euros.⁴²

The cycling industry is also an important sector of the economy beyond the mere selling of bicycles. Cycle tourism makes a major contribution to this. The total annual turnover of the cycling industry in Germany – including the turnover in the cycle tourism sector – is around 16 billion euros. Arithmetically, this safeguards around 278,000 full-time jobs in Germany.⁴³

The companies that make up the German cycling industry, as well as cycle retailers and the multiplicity of other providers of cycling-related services, are predominantly small and medium-sized enterprises. The promotion of cycling thus also supports growth and employment in SMEs.

Cycling as a sport

In Germany, cycling is also popular as a sport, which is another reason why it is of such importance. The report entitled “The Economic Significance of Sport in Germany”, which was published on 14 December 2011⁴⁴, states that sport cycling is the most intensively pursued sport in Germany. A total of around 927 million training sessions are cycled in a year. This puts sport cycling ahead of all sports, including running (679 million sessions) and swimming (575 million sessions). It is the most common sport in the over-16 demographic, in particular. 34 % of all Germans regard cycling as a kind of sport. Among younger people (under 16), sport cycling is the third most popular sport (11 %) after football (22 %) and swimming (16 %).

⁴¹ ZIV: Mitglieder und Kennzahlen, Bad Soden a. Ts., 2012.

⁴² Sinus Market and Social Research: Fahrrad-Monitor Deutschland, Heidelberg, 2011.

⁴³ Information based on data provided by the ZIV, the BMWi and the Federal Statistical Office (compiled by VSF e.V.), 2012.

⁴⁴ German Bundestag Sports Committee, committee document 17 (5) 107.

Promotion of cycling under the NCP 2002-2012

Under the NCP 2002-2012, the Federal Government created an option for funding “non-capital measures” in the field of cycling that are especially innovative and transferable to other municipalities and stakeholders. For this purpose, annual appropriations totalling 2 million euros were initially provided, rising to 3 million in 2008.

A total of over one hundred projects have been funded. The spectrum ranges from competitions, pilot projects, publicity campaigns, research projects and action to raise public awareness to measures to improve road safety. It also includes feasibility studies on cycle superhighways (Hanover-Braunschweig-Göttingen metropolitan region) and the German Cycling Prize (previously called “best for bike”), which is awarded annually, and campaigns such as “Cycling to Work”, “Cycling to the Shops”, “Cycle-Friendly Employers” and “Cycling in the City”.

A new quality of cycling promotion at Federal Government level was reached with the establishment of the cycling portal (www.nrvp.de) and the German Institute of Urban Affairs’ “Cycling Academy”. Both receive significant support from the Federal Government and provide important information and training for staff from local authorities, federal state authorities, consulting architects and engineers and trade associations. The Cycling Academy, in particular, has made a major contribution here. Since 2007, it has staged over one hundred events at which over 6,000 persons have received training in legal issues, the technical regulations and the development and implementation of cycle-friendly strategies.

In the implementation of the NCP 2002-2012 and in the selection of the projects, the Federal Ministry of Transport, Building and Urban Development was assisted by an advisory council comprising representatives from academia, trade associations, federal states and local authorities. Coordination with the federal states and local authorities is effected through the Cycling Working Party of the Federal Government and federal states, which meets twice a year.

In addition, the NCP 2002-2012 also continued and intensified the construction of cycle tracks on federal highways and transport and safety research programmes. In addition, funds were provided for upgrading towpaths on federal waterways, which can also be used for cycling purposes, and separate stand-alone programmes, such as the competition organized by the Federal Ministry of Transport, Building and Urban Development entitled “Innovative public cycle hire schemes – new mobility in towns and cities”.

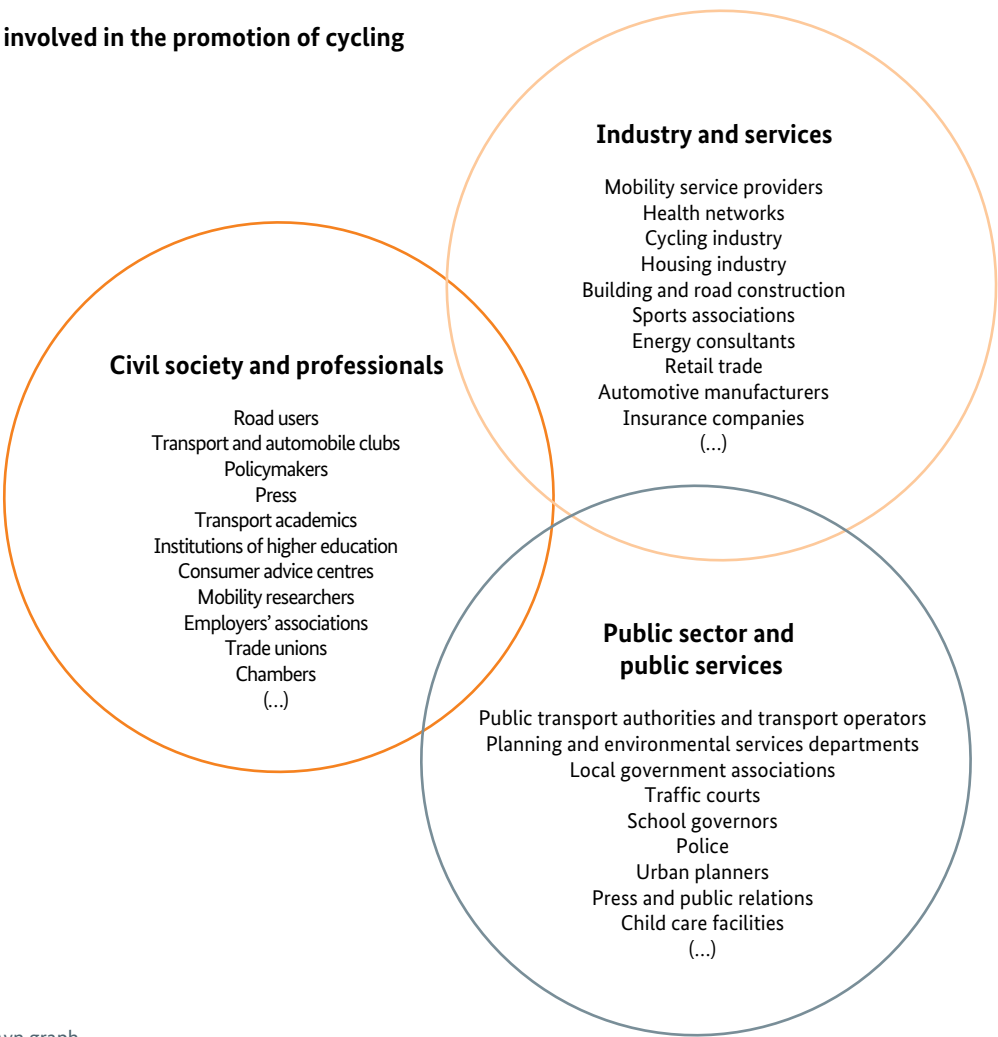
Sports scientists state that cycling also has considerable economic importance, in addition to the health benefits and all the other aspects. A study conducted by the University of Mainz found that around 426 euros is spent on sport cycling per person and year.⁴⁵

The use of mountain bikes or racing cycles as sports equipment results in specific requirements that have to be met by roads and paths where these vehicles may be ridden. Thus, for instance, ensuring the environmental and social acceptability of mountain biking on forest roads posed a pressing challenge to local authorities for a long time. In the meantime, transferable problem-solving approaches have been developed in, for instance, Baden-

Württemberg, Thuringia and the Sauerland, with the involvement of societal stakeholders. It is recommended that working groups be established at regional level, that suitable infrastructure be created, that directional signage be improved and that sports routes be included in online route planners or that GPS data be provided. Depending on local circumstances, the good practice approaches should also be adopted by other federal states and regions.

⁴⁵ Research project: „Wirtschaftliche Bedeutung des Sportkonsums in Deutschland“ commissioned by the Federal Institute of Sports Science and the Federal Ministry of the Interior, 2009-2011.

Players involved in the promotion of cycling



Source: own graph

Stakeholders involved in cycling promotion and their responsibilities

The roles of the Federal Government, federal states and local authorities

Only through concerted action by the Federal Government, federal states and local authorities will it be possible to boost cycling in Germany as a whole. For this to happen, cycling promotion needs to be recognized as a communal responsibility of all tiers of government.

The Federal Government contributes to a sustainable transport policy with regard to cycling by shaping the regulatory framework and providing funds within its area of responsibility. In this context, the Federal Government has an important responsibility as the authority responsible for construction and maintenance. In this capacity, it ensures that safe cycling infrastructure is provided on federal highways. With the NCP, however, it has also successfully

assumed the functions of promoter, facilitator, coordinator and catalyst by funding innovative and transferable schemes and pilot projects plus research and by disseminating examples of good practice. It is thanks not least to the activities of the Federal Government that many governmental and non-governmental stakeholders have been motivated to launch their own cycling promotion programmes, projects and initiatives, with reference to the NCP. The funds committed under the NCP to date have thus provided a major impetus and triggered positive effects.

The federal states and local authorities are called on to likewise shoulder their responsibility. Many are already doing so. In this context, the federal states play an active role as authorities responsible for construction and maintenance of their own roads as part of the devolution of Federal Government responsibilities as well as in their capacity as coordinators at federal state level. In addition, they are in a situation where they can provide direct financial assistance to the promotion of cycling in

Promoting cycling in rural areas

Current situation and challenges

Cycling in rural areas deserves special attention. In addition to use by tourists, sometimes at high levels, the bicycle is a traditional means of day-to-day transport in all age groups in rural areas, especially for those who do not have a car of their own. Here, therefore, cycling can ensure mobility and constitute an important complement to local public transport. In rural areas, however, an average of only 8 % of journeys are made by bicycle, whereas in urban areas this figure is 11 %.⁴⁶

It is not apparent why short distances should not also be covered by bicycle in rural areas as well. There are plenty of opportunities for this. 75 % of all journeys in rural areas are within a town or village.⁴⁷ Here, too, 50 % of all journeys made by car are shorter than five kilometres. However, in some cases the conditions for cycling are very different in the individual districts. They differ, for instance, between the centre and outlying communities or between localities in valleys, on slopes and on mountains. In addition, schools, housing, shops and other amenities are becoming increasingly dispersed, because many of the traditional localities are losing their public services. Against this background, cycling in rural areas should be especially promoted.

Possible solutions

For reasons of sustainability, the promotion of cycling in rural areas must create networks that meet demand and include farm tracks. Moreover, when incorporating the network of roads and paths into the landscape, elements should be considered that emphasize the values of ecology and cultural landscapes (e.g. different types of greenery on verges). The crossings with inter-urban roads must be designed and constructed such that they are safe and must be regularly inspected. Link-up with long-distance cycle routes should be sought.

The districts are the key players here. As part of their statutory responsibilities, they operate as authorities responsible for construction and maintenance and as road traffic authorities. In addition, as the authorities responsible for public transport, active districts, in consultation with transport operators, local authorities and user organizations, develop combined mobility strategies for the integrated transport authorities, which should comprise not only cycle parking facilities at public transport stops and railway stations but also cycle buses and rent-a-bike schemes. Here, specific solutions, such as the carriage of cycles in shared use taxis or rent-a-bike schemes on large trading estates, could be increasingly considered and implemented. The contributions to the “People and Success Stories” competition (www.menschenunderfolge.de) provide valuable ideas.

In addition, the districts should support the municipalities in the planning and implementation of cycling measures and in communications on cycling as coordinators, expert advisers and points of contact for funding and requests for grants. This is an important function, but it must be performed on a voluntary basis.

To ensure that the regional cycling networks are at least coordinated among the various authorities responsible for construction and maintenance, the federal states should stipulate in their road and highway acts that the districts are responsible for this. The districts would then officially be the authorities responsible for network planning and the delivery of the cycling facilities. To enable them to perform these functions appropriately, they must be supported. In addition, the federal states should launch programmes to activate the districts as central coordinators of cycling promotion in the municipalities. .

⁴⁶ Dresden University of Technology/Prof. Gerd-Axel Ahrens: Expertenbasierte Potenzialanalyse Radverkehr, short study, Dresden, 2011.

⁴⁷ *ibid.*



municipalities. Appropriate capital and non-capital funding instruments are required for this purpose. The federal states are encouraged to create these or to make greater use of existing funding instruments to promote cycling. Finally, the local authorities have central responsibility for implementing specific measures on the ground. They are called on to do this systematically in keeping with the principles of a sustainable transport policy and against the background of the vision of “cycling as a system”.

The promotion of cycling concerns everyone

The efforts made by the Federal Government, federal states and local authorities will, however, not be successful unless they enjoy broad-based societal support. Thus, institutions, associations and clubs plus members of the public are called on to encourage cycling in their own environment and to make a positive contribution to the image of cycling.

In particular, this is addressed to those non-governmental stakeholders who have not (yet) established a close relationship with cycling. The retail trade can benefit through higher turnover, as can the housing sector through advantages on the housing market or employers through healthier employees. In addition, insurance companies, health insurance funds, schools, integrated transport authorities, churches or trade unions may also have an intrinsic interest in promoting cycling. However, the stakeholders will not derive any

benefit unless they provide services that meet the needs of cyclists. The retail trade, for instance, should provide appropriate parking facilities or ranges of services.

To achieve a greater impact reaching into the public at large or individual groups, multipliers from government, the public authorities, industry and society should be recruited to actively encourage cycling. This applies in particular to well-known figures, who can act as role models. This can be done when cycling promotion programmes and strategies are being developed as well as in appropriate campaigns. Appropriate activities are also required at the regional and local levels, in particular. They are being supported nationwide by a more intensive exchange of experience, for instance on the continuation of the Cycling Academy and the evolution of the cycling portal.

Cycling’s contribution to objectives of society as a whole

Cycling promotion can make a contribution towards tackling various challenges facing society and towards meeting the specific targets set out in corresponding plans and programmes at federal state, Federal Government and EU level.

Climate change and energy

If climate change is to be curbed, massive reductions in greenhouse gas emissions are required. In the future, the transport sector will also have to make an appropriate contribution to this.

One response to this is the Federal Government’s Energy Strategy, which provides for a reduction in final energy consumption in the transport sector. To this end, a package of various approaches is being pursued, which are designed to help reduce energy consumption and CO2 emissions:

harness the potential for efficiency, develop innovative drivetrains, research alternative fuels, create appropriate incentives by means of instruments focused on climate change mitigation and environmental protection, and boost alternatives to private motorized transport.

The bicycle is a zero-emission means of private transport that is already available today. It is a fast and low-cost way of satisfying local mobility needs.

In its **Energy Strategy**, the Federal Government set itself the objective of reducing energy consumption in the transport sector by 10 % by 2020 and by 40 % by 2050 against 2005 levels.

The European Commission established a similar benchmark in its **2011 Transport White Paper** (“Roadmap to a Single European Transport Area - Towards a competitive and resource efficient transport system”). It recommends aspiring to a 60 % reduction in greenhouse gas emissions by 2050 against 1990 levels.

Environmental protection

Beyond the sphere of climate change, there is a need for further action in the environmental field. Air pollution and traffic noise generate serious risks to health.⁴⁸ Despite tighter standards governing exhaust emissions in the transport sector, emissions of fine particles and oxides of nitrogen have not dropped like they were expected to do. The increasing sealing of land through spaces used for

building and traffic and the severance effects of these areas are contributing to the loss of habitat for fauna and flora, a decline in the number of individuals and the loss of biodiversity in general. Against this background, too, the pedal cycle can make a contribution to sustainable mobility, because it requires less space, emits fewer emissions and produces less noise.

The **6th EU Environment Action Programme** states that, in the long term, a level of air quality is to be achieved throughout Europe that does not pose any risk to human health and the environment. As a milestone, the programme provides for concrete emission reductions by 2020 (sulphur dioxide 82 %, nitrous oxides 60 %, particulate matter 59 %, etc.).

The **EU Environmental Noise Directive** requires strategic noise mapping, especially on major roads and in agglomerations, and the development of action plans, with the objective of managing noise. Appropriate provisions can be found in federal legislation governing pollution control.

Building on the 2007 National Biodiversity Strategy, the objective is to limit additional land take for buildings and transport to 30 ha per day throughout Germany by 2020. In addition, EU environment ministers decided in 2010 to reduce the loss of biodiversity to zero by 2020. In the “settlements and transport” action area, the biodiversity strategy also addresses the preservation or restoration of connecting corridors to prevent severance effects and boost linkages. Landscape fragmentation is defined using the number and area of non-fragmented spaces with low levels of traffic as indicators and through the effective mesh size (mean degree of fragmentation of the land).⁴⁹



Health

In Germany, lack of exercise is one of the key causes of classic lifestyle diseases such as obesity, high blood pressure, cardiovascular diseases and adult-onset diabetes. On the basis of data provided by the World Health Organization (WHO), it has been calculated that there are health benefits worth 0.125 euro per kilometre cycled by people with an active lifestyle.⁵⁰

with an opportunity to integrate sufficient exercise into their day-to-day journeys. Cycling has the greatest effect in terms of preventing cardio-vascular disease over distances greater than five kilometres, where cycling can replace commuting by car, in particular. In addition, cycling also assists the early development of motor skills, concentration and the sense of balance and direction in children.

Against this background, cycling makes a major contribution to the health of the population by providing people

In 2008, the Federal Cabinet adopted the “**National Action Plan for the Prevention of Unhealthy Eating, Lack of Exercise, Obesity and related Diseases**”. The objective of the initiative is to promote a healthy lifestyle through a sustained improvement in people’s dietary and exercise habits, including as part of local mobility that is beneficial to health and environmentally sustainable.

At the international level, the UN Economic Commission for Europe (UNECE) and the World Health Organization (WHO) adopted the “**Transport, Health and Environment Pan-European Programme**” (THE PEP) in 2009, in which they formulated the objective of promoting safe and environmentally friendly mobility that is beneficial to health.

In 2011, the UN General Assembly adopted the **Declaration on the Prevention and Control of Non-Communicable Diseases**, thereby providing a fresh impetus to the promotion of exercise through transport and urban planning that creates an enabling environment.

⁴⁸ WHO Study: The burden of disease from environmental noise. Quantification of healthy life years lost in Europe, 2011.
⁴⁹ BMU (ed.): Nationale Strategie zur biologischen Vielfalt, Berlin, 2007, p. 128 f.
⁵⁰ BMVBS (ed.): Kosten-Nutzen-Analyse: Bewertung der Effizienz von Radverkehrsmaßnahmen, 2008.

Demography

Demographic change will transform Germany in the decades ahead. Rising life expectancy means that the population will get older and older, while lower birth rates mean that it will decline and become more diverse its composition. In rural regions, in particular, the population will decline at a disproportionately high rate.

With the growing proportion of elderly people and a reduction in the population density in rural areas, new strategies have to be developed in order to preserve the transport infrastructure in rural regions and to ensure that institutions that provide public services are accessible. In particular, independent mobility for elderly people and also people without their own car is to be ensured.

To accompany its demography strategy, the Federal Government adopted the research agenda entitled “**The New Future of Old Age**” in November 2011. One of its research areas is called “social inclusion: stay mobile and stay in touch”, which is exploring, among other things, new approaches to ensuring mobility for elderly people.

In addition, the Federal Government will, as it implements its **demography strategy**, enter into a dialogue with the federal states and local authorities and discuss, among other things, how the mobility of people in rural areas can be safeguarded through local mobility measures. The opportunities presented by cycling as a mobility instrument will have to be taken into account here.

In settlements without amenities that are within walking distance, cycling will become increasingly important, beyond its traditional function as a feeder to local public transport, for people wishing to purchase a few items. It can make an independent contribution as part of an integrated mobility strategy in rural areas. In addition, as the use of pedelecs – including those with trailers – and electrically assisted cargo cycles increases, it will be easier to cover longer distances, for instance to centralized retail sites.

Urban development

Attractive city centres and strong neighbourhood and district centres are important locational factors in delivering the vision of the “compact city”. Pedestrians and cyclists contribute to a vibrant public realm, thereby enhancing the attractiveness of city centre shops, restaurants and leisure facilities. In addition, people who frequently use their bicycle to go shopping tend to spend more money at their local shops. Families, in particular, are attaching increasing

importance to a safe and quiet residential environment with a high amenity value in the public realm. This is often the only way to keep them in the city. Because it requires less space than other vehicles, the bicycle makes a contribution to the compatibility of high population densities with people’s requirements for mobility and amenity value in the public realm.

The “**City Centres White Paper** – Strong Centres for our Towns and Cities”, which was presented by the Federal Ministry of Transport, Building and Urban Development in 2011, contains a wide spectrum of measures for better quality of life and higher amenity value in our town and city centres. As an important building block of urban mobility, it mentions not only attractive footway networks and reliable and affordable public transport systems, but also, in particular, measures for attractive cycle track networks.

The “**Leipzig Charter on Sustainable European Cities**”, which was adopted by the ministers responsible for urban development in the Member States of the EU during the German EU Council Presidency in 2007, includes recommendations on creating and securing high-quality public spaces and on safeguarding affordable and efficient urban transport, paying particular attention to deprived neighbourhoods. It explicitly establishes a link between urban development policy and the modernization of pedestrian and cycle networks.





E Prospects

Potential to 2020

The potential for cycling to enjoy a 15 % share of the traffic volume in the whole of Germany, which was identified during an expert workshop held as part of the activities to evolve the NCP, is a realistic scenario for the possible development of cycling in the years ahead. If this potential is to be fully harnessed, continuous efforts will be necessary at all levels.

The nationwide trend will be supported by activities of the federal states and local authorities, some of which have set themselves their own objectives for increasing cycling's share of the traffic volume. Thus, for instance, according to information provided by Baden-Württemberg, the modal share of cycling in that state is to be doubled from 8 % to 16 % by 2015, with a target of 20 % for 2020. Berlin is committed to an increase from 13 % (2008) to between 18 and 20 % (2025), Hamburg to doubling the share of cycling to 18 %, Potsdam to an increase from 20 % (2003) to 27 % (2012) and Nuremberg from 11 % (2008) to 20 % (2015).

The total potential that actually exists is best shown by taking a look at the Netherlands or Denmark, where it has been possible to achieve a modal share of cycling of 31 % and 19 % respectively.

Against the background of different geographical and other local circumstances, a more sophisticated approach is required to developing and exploiting the possible potential inherent in cycling. Here, as elsewhere, the different starting situations in the federal states, regions and municipalities ("starters", "climbers", "champions") must be borne in mind. Against this background, the following developments are suggested for the three groups:

- The highest growth rates are to be sought among the "starters". The municipalities in question are thus called on to take all the measures necessary to move up to the group of the "climbers".
- The relatively high dynamism that exists among the "climbers" in the promotion of cycling should be further intensified. These municipalities should improve the modal share of cycling during the lifetime of the NCP in parallel with the possible increase in cycling throughout Germany.

- The task of the "champions" is to keep their current level and, ideally, to enhance it. They are recommended to focus on encouraging people to also use their bicycle for longer distances in order to further increase cycling mileage.

The potential increases are only meant as guides for the different levels of development, which may vary depending on specific local circumstances. The main determinants are the topography, settlement pattern and social structure, which may mean an upward or downward divergence.

Looking ahead to 2050

The impetus provided by the NCP will go beyond 2020, because it is designed to help exploit the full potential inherent in cycling nationwide at local authority, federal state and Federal Government level and more firmly enshrine cycling as part of an integrated transport policy. The role that cycling will play in the transport system of 2050 depends on numerous societal factors, whose direct consequences are difficult to assess at present.

At any rate, the bicycle will have an important place in the transport system of 2050, because it exhibits significant benefits – it is environmentally friendly, it has a low carbon footprint, requires little space, contributes to the quality of life in towns and cities and is inexpensive for users and the public sector. If, in addition, it is possible to achieve a sustained improvement in cycling safety and adapt the cycling infrastructure to the rising and changed demand, Germany will justifiably be able to call itself a cycle-friendly country in 2050. This will not happen, however, unless all stakeholders commit to strengthening the role of the pedal cycle as an integral and equal component of the transport system.

Literature/sources

BAST (ed.): Unfallrisiko und Regelakzeptanz von
Fahrradfahrern, Bergisch-Gladbach, 2009

BAST (ed.): Sicherheitsrelevante Aspekte der
Straßenplanung, Bergisch Gladbach, 2010

BAST: Kontinuierliche Erhebung zum Schutzverhalten
von Verkehrsteilnehmern 2011

BMU (ed.): Nationale Strategie zur biologischen Vielfalt,
Berlin, 2007

BMVBS (ed.): Kosten-Nutzen-Analyse: Bewertung der
Effizienz von Radverkehrsmaßnahmen, 2008

BMVBS (ed.): Mobilität in Deutschland 2008,
Ergebnisbericht, Bonn/Berlin, 2010

BMVBS (ed.): Deutsches Mobilitätspanel, Bericht 2011,
Karlsruhe 2011

BMVBS (ed.): Deutsches Mobilitätspanel, Bericht 2012,
Karlsruhe 2012

BMVBS: Längenstatistik der Straßen des überörtlichen
Verkehrs, Stand: 01.01.2012

BMW (ed.): Grundlagenuntersuchung Fahrradtourismus,
Forschungsbericht Nr. 583, Berlin, 2009

Dresden University of Technology/Prof. Gerd-Axel Ahrens:
Expertenbasierte Potenzialanalyse Radverkehr, short
study, Dresden, 2011

European Commission: Eurobarometer 2011

European Parliament: The European Cycle Route Network
EuroVelo –Challenges and Opportunities for Sustainable
Tourism, Brussels, 2009

Federal Statistical Office: Zweiradunfälle im
Straßenverkehr, Wiesbaden, 2011

Federal Statistical Office: Verkehrsunfälle 2011,
Wiesbaden, 2012

Federal Statistical Office: Ausstattung privater Haushalte
mit ausgewählten Gebrauchsgütern 2011, Wiesbaden, 2012

German Bundestag Sports Committee: committee
document 17 (5) 107, report entitled Die wirtschaftliche
Bedeutung des Sports in Deutschland

PGV Hannover: Finanzierung des Radverkehrs, brief study,
Hanover, 2012

PRESTO (Promoting Cycling as a Daily Transport Mode)
project: Give Cycling a Push. Cycling Policy Guide –
General Framework, 2010

Research project entitled: Wirtschaftliche Bedeutung
des Sportkonsums in Deutschland commissioned by
the Federal Institute of Sports Medicine and the Federal
Ministry of the Interior, 2009-2011

Sinus Market and Social Research: Fahrrad-Monitor
Deutschland, Heidelberg, 2011

WHO study: The burden of disease from environmental
noise. Quantification of healthy life years lost in Europe,
2011

ZIV: Mitglieder & Kennzahlen 2012, Bad Soden a. Ts., 2012

Glossary of abbreviations

ACE	Auto Club Europa
ADAC	German Automobile Club
ADFC	German Cycling Club
BASt	Federal Highway Research Institute
BMU	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
BMVBS	Federal Ministry of Transport, Building and Urban Development
BMWi	Federal Ministry of Economics and Technology
BYPAD	Bicycle Policy Audit
CP	Car passenger
DSHS	German Sports University, Cologne
DTV	German Tourism Association
DVR	German Road Safety Council
DZT	German National Tourist Board
ERA	Recommendations for Cycling Facilities
FGSV	Road and Transport Research Association
FOPS	Road Transport Research Programme
GDI-DE	German Infrastructure for Spatial Information
LPT	Local public transport
MiD	Mobility in Germany
NCP	National Cycling Plan
PMT	Private motorized transport
PT	Public transport
RASt	Guidelines for the Design of Urban Roads
RIN	Guidelines for Integrated Network Design
SrV	Mobility in Towns and Cities
StVO	German Road Traffic Regulations
StVZO	German Road Traffic Registration Regulations
VCD	German Transport Club
VSF	Association of Cycle Retailers, Manufacturers and Service Providers
VwV-StVO	Administrative Regulations governing the Road Traffic Regulations
ZIV	Association of Two-Wheel Vehicle Manufacturers

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