



White Paper on Institutionalisation of Climate Action in Germany

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Registered offices
Bonn and Eschborn, Germany

ClimateSmart Cities Project
B-5/5, Safdarjung Enclave
New Delhi 110 029, India
T + 91 4949 5353
F + 91 4949 5391

Responsible
Mrs. Vaishali Nandan
E Vaishali.nandan@giz.de

Prepared by
Vibhor Sood
Soma Biswas

Author
German Institut for Urban Affairs/Deutsches Institut für Urbanistik gGmbH
Finya Eichhorst eichhorst@difu.de
Corinna Altenburg altenburg@difu.de

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Abstract

This white paper provides an insight into the organisation, structure and financing mechanisms of climate action at the municipal level in Germany. Based on a short analysis of the political and legal framework of climate action in Germany the emergence and impact of climate protection programmes for the municipal level is explained in more detail. In addition, support structures and institutions for non-governmental climate protection are examined. The main programmes for urban climate protection are frequently monitored, evaluated and adapted. Concluding, some recommendation based on the German governance system can be derived more generally for the Indian context.

1. Motivation and goals of climate action in Germany

The effects of climate change are clearly noticeable: rising temperatures, milder winters and more frequent weather extremes are already leading to far-reaching impacts on the environment and people. In Germany, especially heavy rainfall events, but also the hot and dry summers of recent years, are bringing climate change to the public's attention (cf. UBA 2019). According to the IPCC 6 report, there is no doubt that human-induced GHG emissions have warmed the climate system. To limit climate change, net GHG emissions must fall to at least zero. GHG emissions must be reduced immediately, rapidly and on a large scale to limit global warming to 1.5 degrees or at least 2 degrees (cf. IPCC 2021).

As an industrialised nation, Germany bears a particularly large responsibility. At 9.2 tonnes per capita, average CO₂ emissions in Germany are about twice as high as the global average (cf. BMU 2019). With the ruling of the Constitutional Court against the Climate Protection Act in Germany, it became clear that enormous efforts must be made and significantly more ambitious targets and climate protection measures must be pursued. The state has a responsibility to protect the natural foundations of life for future generations. However, this requires enormous efforts and far-reaching changes, not only at the federal level, but above all at the level of counties, cities and municipalities.

Multi-level system

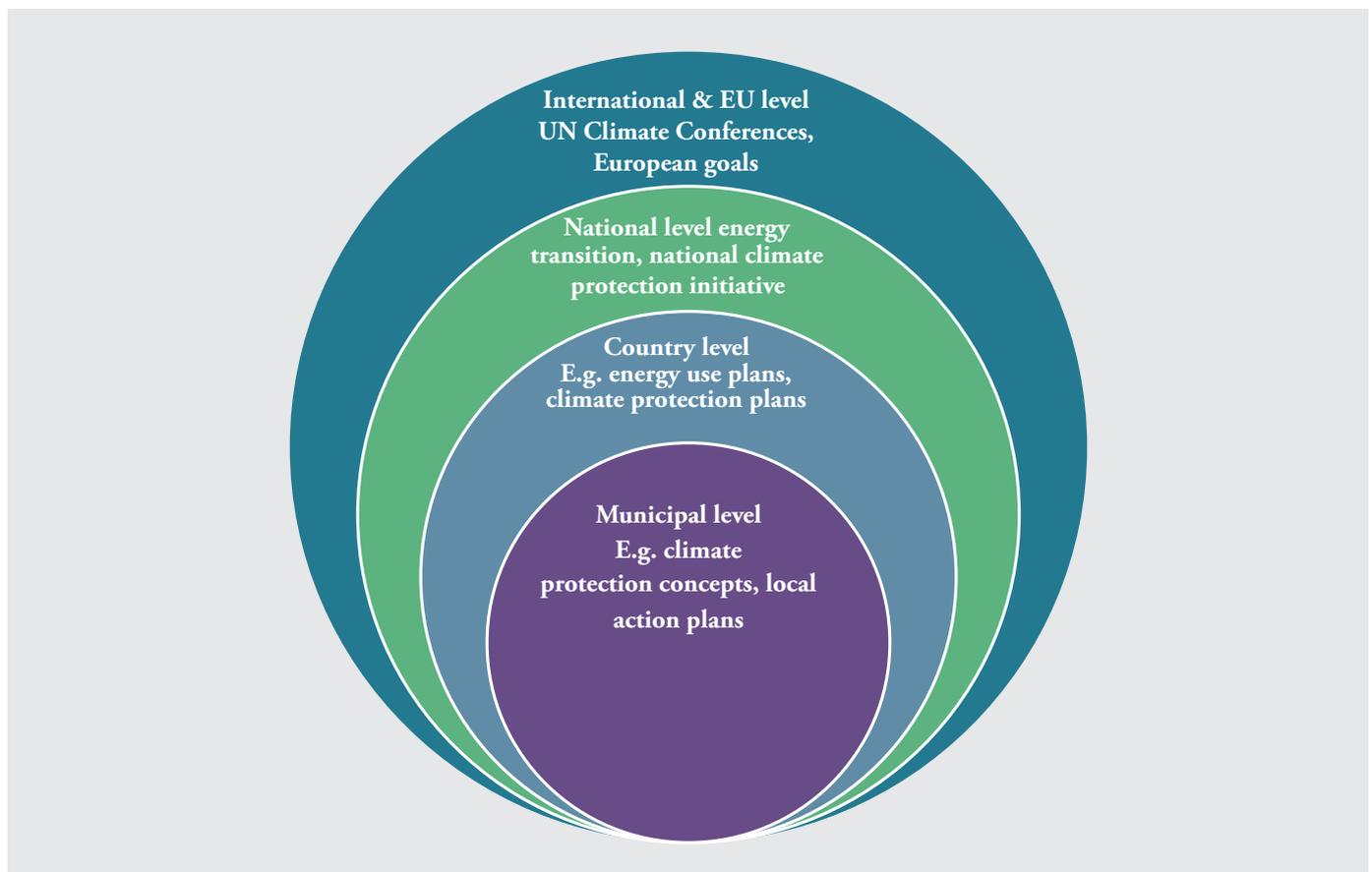


Figure 1: Multi-level system in climate protection, source: Difu

Municipalities and cities plan ambitious climate protection measures and implement them within the framework of their responsibilities in the multi-level system. In doing so, international, national and state-specific climate protection policies provide them with an orientation framework for their actions (see fig. 1) (UBA 2022).

With the Paris Climate Agreement in December 2015, all signatory states for the first time entered into a binding commitment under international law to reduce emissions from 2020 and limit global warming to well below 2 degrees, preferably 1.5 degrees. With the EU Climate Change Act the European Union expanded and concretised their efforts. The EU's political promise - the European Green Deal - to become climate neutral by 2050 thus became a binding commitment. After 2050, the EU is to achieve negative emissions (cf. Europäisches Parlament 2021). The countries committed to developing and submitting their Nationally Determined Contributions (NDCs). In doing so, they are guided by the targets for 2021 adopted by the EU Parliament in 2021:

- To reduce the EU's greenhouse gas emissions by at least 55 per cent until 2030 compared to 1990, which could rise to 57 per cent through new CO₂ sinks.
- To increase the share of renewable energies in total energy consumption to at least 40 percent, and
- To increase energy efficiency by at least 27 per cent.

With the Federal Climate Protection Act passed on 15 November 2019, the German Bundestag for the first time made Germany's climate protection targets for 2030 legally binding. With a view to the EU's climate targets, this created the legal framework in Germany that had long been called for. In 2021, the Climate Protection Act was amended after the Federal Constitutional Court upheld civil society lawsuits and ruled the existing law partially unconstitutional with regard to intergenerational justice and the fundamental right to climate protection. With the amended Climate Protection Act, the Federal Government is now setting ambitious targets with milestones on the road to greenhouse gas neutrality:

- The reduction of greenhouse gas emissions by 65 per cent compared to 1990
- The tightening of sectoral targets by 2030
- The goal of greenhouse gas neutrality as early as 2045, i.e. five years earlier than before. The energy sector and industry in particular are to achieve additional savings by 2030 (cf. BMWK 2021).

For the first time, the Climate Protection Act prescribes legally binding climate targets with annually decreasing greenhouse gas budgets for the sectors of transport, energy, industry, buildings, agriculture and waste management in Germany. The targets provide guidance for strategic decisions and measures to be taken, such as incentives, support and investment programmes. Achieving the targets lies in the responsibility of the respective ministries, which must identify, take, continuously evaluate and adapt measures for this purpose. In order to achieve the increased targets, an Immediate Action Programme 2022 was set up to provide an additional eight billion euros for a coal-free industry, for green hydrogen and green steel, for energy-efficient building refurbishment and climate-friendly transport (cf. BMUV 2021).

Political and legal framework conditions in Germany

Comprehensive framework conditions and legal foundations for climate protection are being created at international, EU and federal level. Yet, when it comes to implementing climate action on the ground, cities and municipalities play a particularly important role in the transformation process. Municipalities, cities, communities and districts have a wealth of areas of responsibility in which a large proportion of climate-relevant emissions are generated. They have direct opportunities for action in areas such as urban, neighbourhood and regional development, land provision, local transport planning, the creation of sustainable building laws, urban land use planning with land use and development plans, as well as procurement (Bündnis 90/Die Grünen Bundestagsfraktion, 2020). With their diverse functions as role models, planners, owners, utilities providers and largest public clients, municipalities are in a position to reduce emissions in the central sectors in a socially acceptable and sustainable manner (see fig. 2).

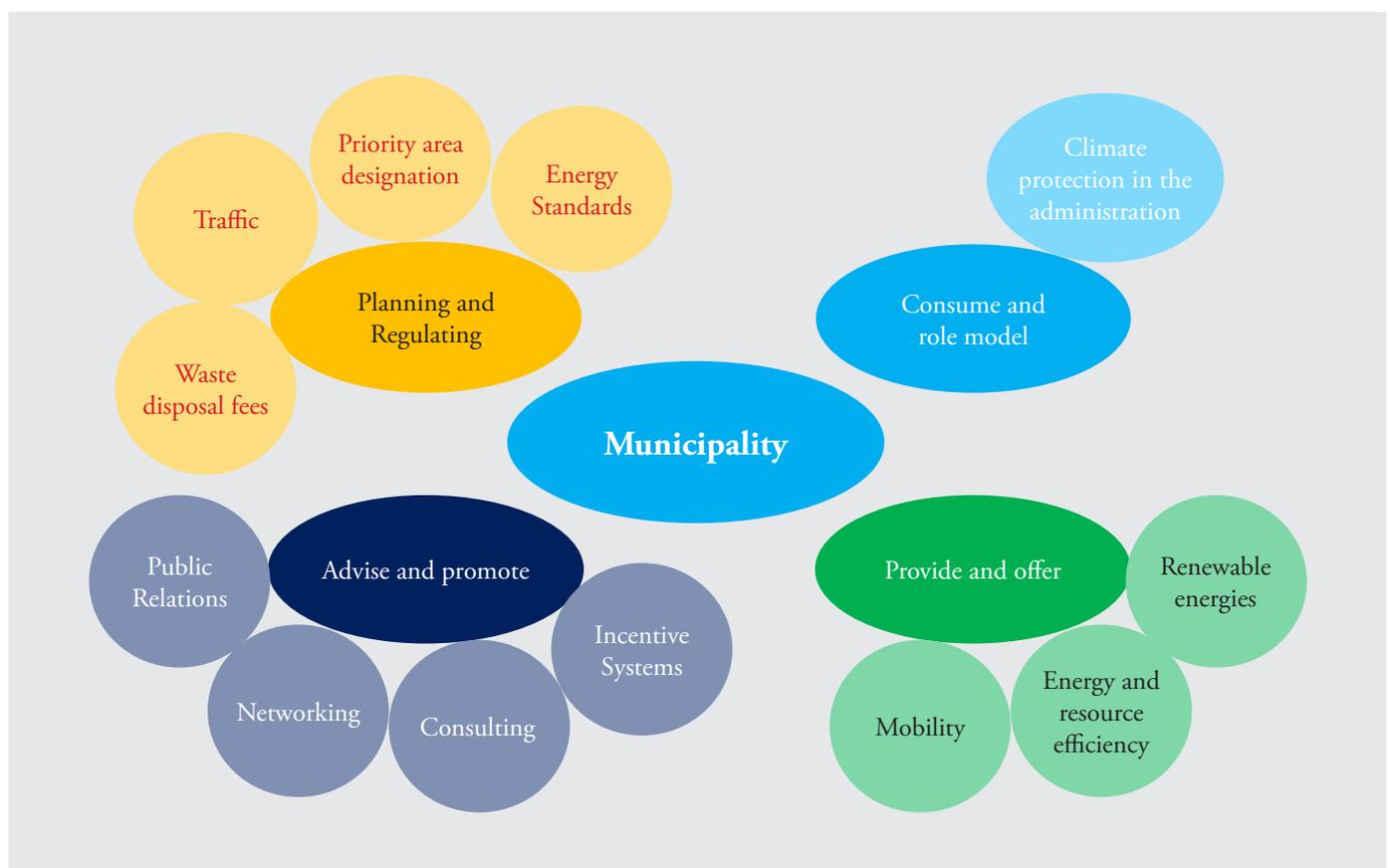


Figure 2: Role and areas of action of the municipality in climate protection, source: Difu 2020

Germany is a federal state in which formal legislative power is divided between the federal government and the Länder. Article 28 of the German Basic Law grants German municipalities the right to self-government (“Recht der kommunalen Selbstverwaltung”). It gives local governments the power to regulate local affairs, enact ordinances, levy local taxes and administer them according to their own objectives (Zengerling 2018). The financial resources and important fields of action of municipal services of general interest are the responsibility of the Länder, which in turn are guided by the framework conditions and targets set by the federal government. However, so far there is no general legal obligation for municipalities in Germany to participate in climate change mitigation measures. No specific, quantified responsibility of cities is laid down in the German Climate Act, but a general duty of public institutions to contribute to the climate target. As public corporations, municipalities are addressed in Section 13 of the Federal Climate Protection Act. They are required to take account of the Climate Protection Act “and the targets set for its implementation”, i.e. to make their contribution to becoming greenhouse gas neutral throughout Germany by 2045. The amendment of the law, passed in 2021, requires greenhouse gas emissions to be reduced by 65 percent from 1990 levels by 2030 and by at least 88 percent by 2040. Furthermore, the law provides tightening of sectoral targets by 2030 and achieving greenhouse gas neutrality as early as 2045, five years earlier than previously planned.

11 of the the 16 federal states have so far passed state climate protections laws, three federal states plan to do so (see fig. 3). Some of these include specific requirements also for the municipal level, such as mandatory tasks for climate-friendly municipal heat planning, energy management or installement of renewable energy on buildings. Still, there is now legal obligation for municipals to work on strategic concepts such as a local climate action plan nor to employ city staff on implementing climate measures.

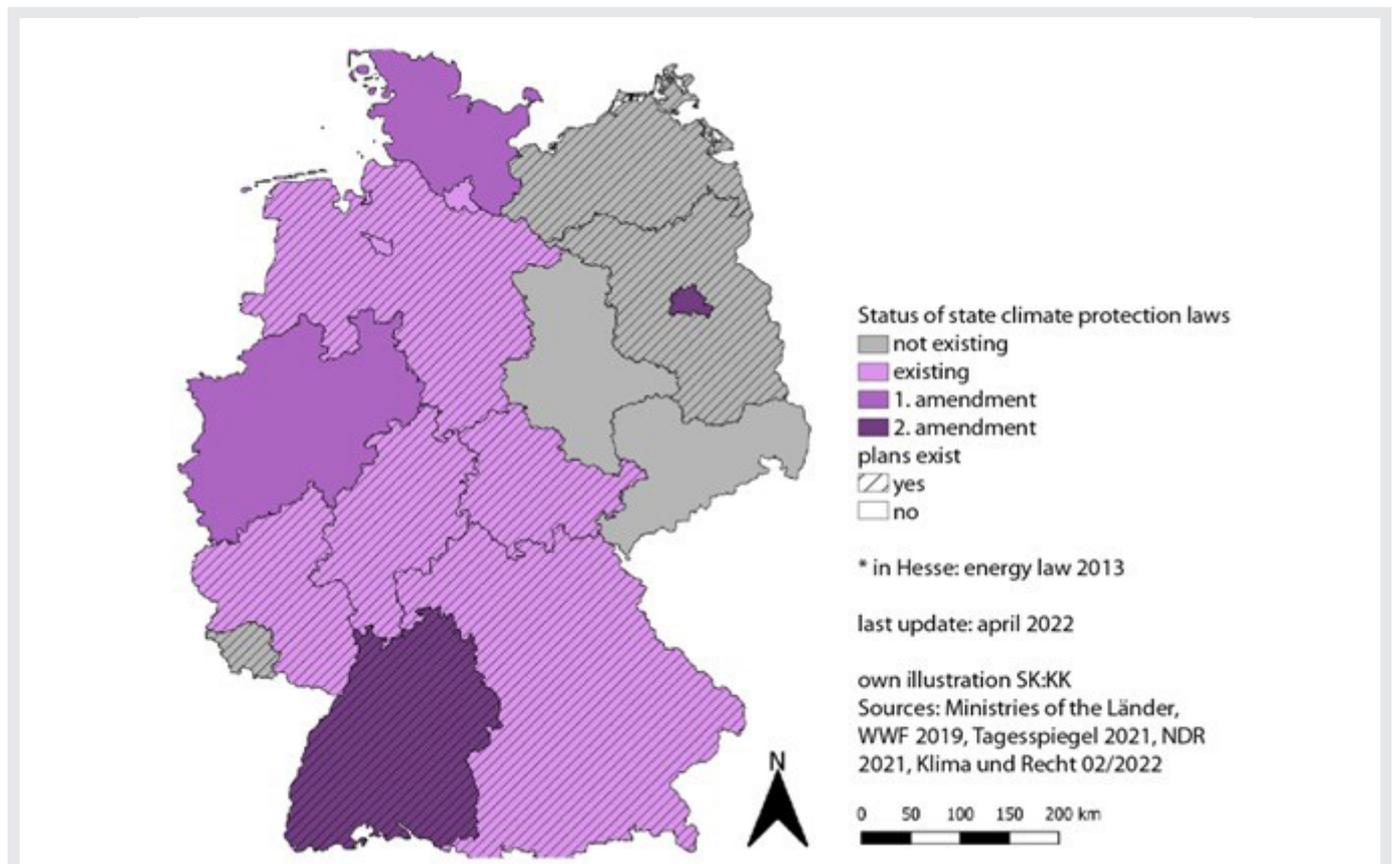


Figure 3: Status of state climate protection laws in Germany, source: SK:KK

Thus, climate protection as a strategic issue in Germany is not a compulsory municipal task, but one of many voluntary self-government tasks, which poses enormous challenges for many municipalities. Local decision-makers have the opportunity to develop strategies and plans according to their own ideas and to draft strategies on how they can, for example, reduce energy consumption in their administrations and regulate planning and building projects. However, the central problem is the often difficult financial situation, technical and personnel bottlenecks as well as conflicting goals in municipal task completion (Bündnis 90/Die Grünen Bundestagsfraktion, 2020). Due to the self-responsibility of the municipalities, a successful climate policy depends on concrete support offers, whereby sufficient financial resources and personnel capacities are the most decisive factors for most municipalities (Difu 2020).

2. National Climate Initiative as central funding mechanism

In order to master climate protection as the task of society as a whole, Germany has decided to provide financial and conceptual support to municipalities, citizens, businesses and educational institutions. With the National Climate Initiative (NCI), the Federal Government promotes and initiates climate protection projects throughout Germany and enables further greenhouse gas savings through strategic and investment measures. In 2008, the National Climate Initiative was established as the most important national source of funding for energy efficiency and climate protection activities by municipalities, companies, educational institutions and consumers from resources of the Energy and Climate Fund (EKF) and the federal budget. The EKF is a special fund financed by federal subsidies and the revenues of the European emissions trading system. In total, the volume of the EKF in 2021 was 12.5 billion euros. The newly elected government in autumn 2021 decided early in 2022 to rename the EKF to a Climate and Transformation Fund (KTF) and to expand its size by at least an additional 60 billion €. The fund works on a loan-basis as a federal special fund and is the central financial instrument for a number of different ministries with links to climate and transformation.

Development of the NCI

The National Climate Initiative was launched in 2008 in connection with the Federal Government's Meseberg Climate Resolutions of 2007 and is considered one of the most important instruments for promoting local climate protection. By providing financial incentives for climate protection measures in various fields of action, the NCI makes a significant, measurable contribution to achieving the necessary CO₂ savings at federal level and to establish climate measures at the local level (Goeke 2021). Through innovations, subsidies, legal requirements and the pricing of greenhouse gases, the federal government creates a broad portfolio of climate activities. With strategic and investment-supporting measures, a broad spectrum of relevant actors from society, science, business and municipalities is activated for climate protection. The programmes and projects cover a wide range of climate protection activities: from the development of long-term strategies to concrete assistance and investment support measures. The NCI helps to anchor climate protection locally, it makes climate protection tangible and creates numerous examples for imitation. Through the development of new technologies or innovative approaches of lighthouse projects, broad-based promotion is aimed at. The aim is also to strengthen the knowledge, competence and effectiveness of the actors and target groups. (Goeke 2021). From 2008 to the end of 2021, more than 39,800 projects were funded with over 1.35 billion euros from the NCI (BMU 2022a).

The NCI funding portfolio consists of 13 programmes, which are presented in funding guidelines and announcements (so-called funding calls) and are activated throughout the year or in recurring cycles. Within the framework of the NCI, municipalities can benefit from the funding opportunities regardless of their previous experience and learn from innovative project ideas of other municipalities. Basic criteria of the NCI funding programmes are a relevant GHG reduction potential, target group orientation and good funding efficiency (Goeke 2021). This shows how much money is spent on a measure to save one tonne of CO₂. Until 2022, the NCI was funded by the Federal Ministry for the Environment, since the Bundestag elections it has been the responsibility of the Federal Ministry of Economic Affairs and Climate Action. Figure 4 shows how the NCI is integrated across the different levels.

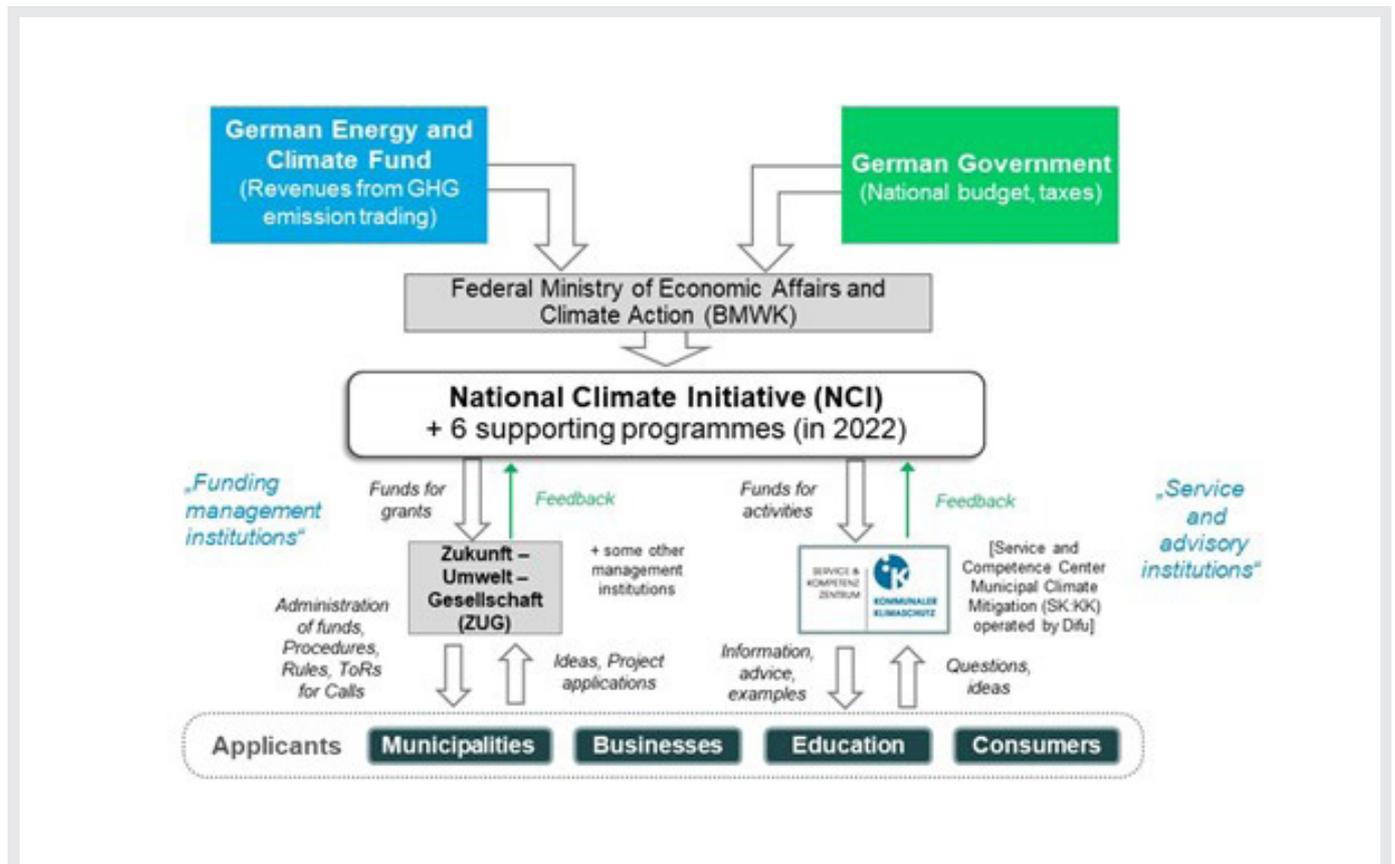


Figure 4: How the German NCI functions, source: Difu

Municipal funding programmes in detail

At the centre of the National Climate Initiative’s funding is the so-called “Municipal Guideline” “**Kommunalrichtlinie**” (KRL), which, as a broad-based funding programme, addresses a large number of actors. With a wide range of strategic and investment funding priorities, the “Kommunalrichtlinie” aimed at both newcomers to the topic and advanced climate protection actors. Through increased funding quotas for financially weak municipalities and former lignite mining areas with funding of up to 100%, climate protection is to be anchored in municipalities throughout Germany. In addition to municipalities, municipal enterprises and social institutions, since the latest amendment in 2021, energy service contractors, charities and non-profit associations are also among the applicant groups. There is also a special focus on the promotion of small municipalities, especially in rural areas. The strategic anchoring of climate protection is initiated and supported across the board through personnel funding and the preparation of integrated climate action plans.

The funding call “**Municipal Climate Protection Model Projects**” aims at the implementation of pioneering large-scale investment projects with lighthouse character. Due to their particularly high greenhouse gas reduction potential, the projects make a significant contribution to the gradual achievement of greenhouse gas neutrality by municipalities and, due to their nationwide visibility, encourage the imitation and implementation of further climate protection projects. With the funding “**Climate protection through cycling**”, the Federal Ministry for the Environment supports exemplary, investment projects that make cycling more attractive in everyday life, for leisure and for delivery and transport traffic. With the smaller funding programmes “**Refrigeration Climate Directive**”, the “**E-Load Bicycle Directive**” and the “**Micro-Depot Directive**”, the federal government supports investments in individual technologies or individual solutions such as air conditioning components, load bicycles or the climate-friendly design of delivery transport. Innovative approaches to climate protection are developed and piloted via the call for funding for **innovative climate protection projects** (Module 1). Successful approaches are to be applied and made visible through nationwide dissemination (Module 2) and thus taken up and imitated by other municipalities. All active funding opportunities are shown in figure 5. Funding programmes that have already expired include the “**100 percent climate protection master plan**”, which supported particularly active pioneering municipalities on their way to greenhouse gas neutrality, as well as “**Short Paths for Climate Protection**” and “**Climate Protection in Everyday Life**”, which facilitated climate-friendly action at neighbourhood level in associations and neighbourhoods (BMU 2022b).

		strategic	investment measures	eligible applicants
mass funding	Municipal Guideline	✓	✓	
	Refrigeration Climate Directive		✓	
	Micro-Depot Directive		✓	
	E-Load Bicycle Directive		✓	
funding of model projects	Municipal Climate Protection Model Projects		✓	
	Climate protection through cycling		✓	
innovation funding	Innovative climate protection projects	✓		

Municipalities
 Businesses
 Education
 Consumers

Figure 5: Funding opportunities within the NCI, source: SK:KK

In addition to the NCI funding, other funding programmes and ministries are also increasingly dedicated to climate protection. With a focus on energy-efficient building refurbishment, generation and use of renewable energies and energy-efficient urban refurbishment, the KfW bank provides attractive loans and grants to municipalities, municipal actors, social organisations, associations and private persons. Under the energy-efficient urban refurbishment, support is provided for the preparation of energy concepts and the hiring of rehabilitation managers. Climate protection and climate adaptation are promoted at neighbourhood level in the form of investments in energy-efficient supply systems, climate-friendly neighbourhood mobility and green infrastructure. With the amended Federal Promotion for Efficient Buildings (BEG), the Federal Office of Economic Affairs and Export Control (BAFA) has been awarding attractive funding for individual measures and the renovation of residential and non-residential buildings since 2021. The topic of communal heat planning is also increasingly in focus and will probably be found in future funding programmes.

Facts and Figures

Since the start of the National Climate Initiative in 2008 until the end of 2021, a total of 39,800 projects have been implemented. With a funding volume of 1.35 billion euros, more than 4.3 billion euros in total investments were triggered. Overall, the funding of investment and strategic climate protection projects reduced greenhouse gas emissions by around 32.2 million tonnes of CO₂ equivalents (net over the impact period) (BMU 2022a).

A consortium of independent research institutes regularly evaluates the NCI and its funding programmes. Based on the monitoring reports, the NCI is regularly adjusted with regards to its specific focus, funding conditions and orientations. The actors involved in the funding programmes are subject to a reporting obligation. The results of these surveys are reflected in the evaluation reports of the NCIs. However, due to its scope, the reporting obligation is highly burdensome for many municipalities, especially the smaller ones.

Even many cities that do not participate in any funding programme voluntarily publish their climate protection plans and evaluate their results. However, the inconsistency of the data basis, the different and sometimes unclear collection and evaluation methods, and the associated evaluations pose major challenges for comparing local climate plans and evaluate CO₂ reduction (Zengerling 2018). Many efforts are being made to improve this, for example through the development of municipal accounting standards for GHG emissions. The most relevant standard in Germany is the BSKO standard (Accounting system municipal), which was developed since 2015. Since then, the BSKO standard has been used more and more frequently by municipalities. A growing number of federal states provide free software for accounting according to the BSKO standard for their municipalities. Another advantage is that a large amount of data can be made available in this way, which can greatly simplify the accounting process for an individual municipality. As a result of its increasing relevance, the BSKO standard is being continuously developed (ifeu 2019).

In particular, the impact of strategic measures is sometimes difficult to ascertain and track. A project of the Institute for Energy and Environmental Research Heidelberg has addressed this issue with an impact monitoring. Between 2008 and 2019, more than 3,600 completed projects were funded with 163.6 million euros, including around 2,700 climate protection concepts. Over the impact period, this will trigger GHG emission reductions amounting to 8.8 million t CO₂. On the one hand, the funding triggers GHG reductions, but above all it also strengthens municipal climate policy and climate protection awareness. Overall, the potential for social change towards more climate protection is particularly high in the strategic funding measures. In particular, the funded climate protection managers make a significant contribution to initiating and implementing learning processes and are visible through public relations work (UBA 2022).

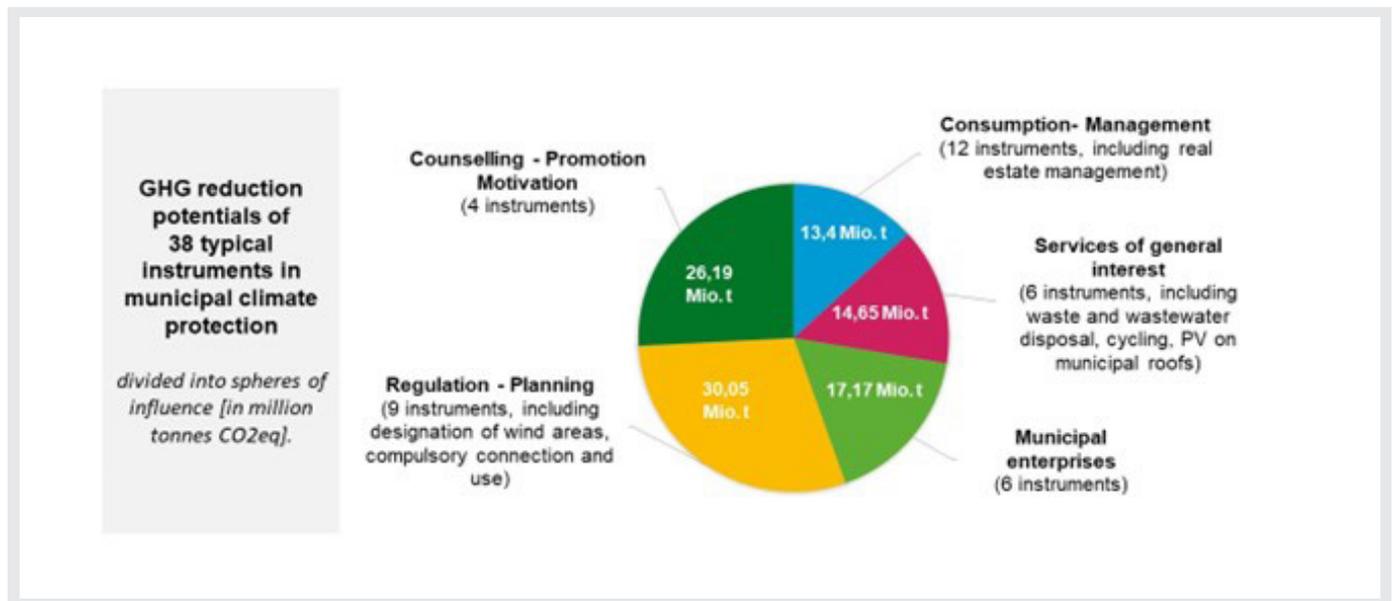


Figure 6: Impact potentials of municipal climate action measures, source: SK:KK, according to UBA 2022

Focus: Climate Action Managers and Climate Actions Plans in Germany

With the preparation of climate protection concepts, municipalities can identify their potential in the various fields of action, set priorities, develop synergies between different individual measures, and thus systematically anchor climate protection. However, the preparation, monitoring, coordination and implementation of integrated climate protection concepts requires sufficiently qualified personnel: institutions or individuals responsible for coordinating and monitoring the implementation of the respective development plans (Zengerling 2018). Climate protection managers are of fundamental importance for coordinated and well-anchored climate protection activities in municipalities and contribute significantly to implementing learning processes and making them visible in society (UBA 2022). They not only mainstream projects in municipal sectors and administration, but also form an important interface with citizens, municipal utilities, the private sector, NGOs and other actors. The focus of NCI funding is therefore an attractive start-up funding for personnel to strategically anchor climate protection in municipalities.

The last amendment of the municipal directive took into account the increasing ambition of municipalities and cities. More and more municipalities are setting themselves the goal of greenhouse gas neutrality by 2035. On the one hand, this is justified by the national targets, on the other hand, civil society pressure is increasingly growing, among others through groups such as Fridays for future. To make the urgency of the issue clear, many municipalities have declared a climate emergency. Since 2022, municipalities have been able to obtain funding for integrated pioneer concepts with which experienced municipalities can update and concretise climate protection strategies and measures and make them more ambitious. The goal of the integrated pioneer concept is to achieve greenhouse gas neutrality by 2040.

Another measure to actively integrate climate protection into municipal activities is the introduction of climate checks. These enable municipalities to integrate commitments to climate protection into draft resolutions. In this way, measures can be checked for their climate relevance in the simplest and most comprehensible way possible. An expansion of the draft resolutions to include the climate check leads, among other things, to a higher level of awareness among the employees of various departments and offices as well as to the identification of important fields of action with high savings potential. In this way, climate protection can be regularly considered in all relevant municipal activities (Difu 2021).

Goals and measures are important on the way to becoming a climate-friendly community. However, it is important to remember that many stakeholders must be involved along the way. Only if they are activated and sensitized can measures really be implemented. Climate protection communication is therefore not communication for its own sake. Rather, it takes on crucial tasks for the transformation process that needs to be mastered: from raising awareness, conveying information and knowledge, through exchange and dialog, to motivation, activation, mobilization and success stories. The range of activities and ideas is wide and varies depending on the field of action. However, nationwide initiatives such as “Stadtradeln¹” or “80 million together for energy change²” can help raise awareness and provide impetus for climate-friendly behavior.

3. Institutionalised support for municipal practice

In addition to the actual project funding, the Federal Environment Ministry has set up a comprehensive advisory service to support municipalities and municipal actors in strengthening their climate action. The Service and Competence Centre: Municipal Climate Protection (SK:KK), based at the German Institute of Urban Affairs (Difu), acts as a central hub for knowledge transfer and is the point of contact for all issues relating to municipal climate protection. Since 2008, it has been advising and supporting municipalities and cities as well as actors at the local level in the development and implementation of their ideas and projects within the framework of the national climate protection initiative and other funding programmes at the municipal, federal and EU levels. The SK:KK provides centralized and uniform advice on suitable funding opportunities in the field of climate protection and energy, organises various specialist events, webinars, training courses and conferences, and disseminates knowledge through various channels. By presenting good practice examples, it shows how municipal climate protection is already being implemented and which projects offer incentives for developing and implementing one’s own ideas. Topic-specific handouts and publications provide concrete knowledge for action, for example on the preparation of energy and greenhouse gas balances, on energy saving potentials in the municipality and on climate-friendly investments. In addition, strategic topics such as the path to a climate-neutral municipality, handouts for the organisation of climate protection in the administration and the first steps as a climate protection officer are addressed.

The aim is to intensively mobilise municipalities with little experience in the field of climate protection (so-called white spots) and to strengthen already climate-active municipalities to expand their scope for action. In addition to knowledge transfer, the focus lies on personal consultations, networking activities and the exchange of different actors. A steadily growing network of climate protection staff is coordinated and supported, in which knowledge and know-how is passed on from experienced KSMs to newcomers within the framework of the mentoring programme. In addition to networking activities at the municipal level, SK:KK is increasingly cooperating with various regional actors such as energy and climate protection agencies and government agencies at the state level as well as with the three associations of cities, districts and municipalities in Germany.

¹ <https://www.city-cycling.org/home>

² <https://www.bmwk.de/Redaktion/EN/Dossier/energy-efficiency.html>

The principal tasks of SK:KK as a temporary platform project commissioned by BMWK for the duration of a five years (2019-2023) are:

- Promoting the NCI and its programmes and municipal climate action in Germany as well as internationally
- Providing information, trainings and individual advice for municipalities on NCI programmes and funding (e.g. subjects of funding, eligibility requirements, application procedures), as well as on federal and Länder funding schemes
- Organizing public relations, national conferences and events
- Facilitating cooperation between stakeholders
- Providing political advisory to the BMWK.
- Organizing exchange, networking and consultation between stakeholders and different government levels in Germany (see Fig. 7 below).

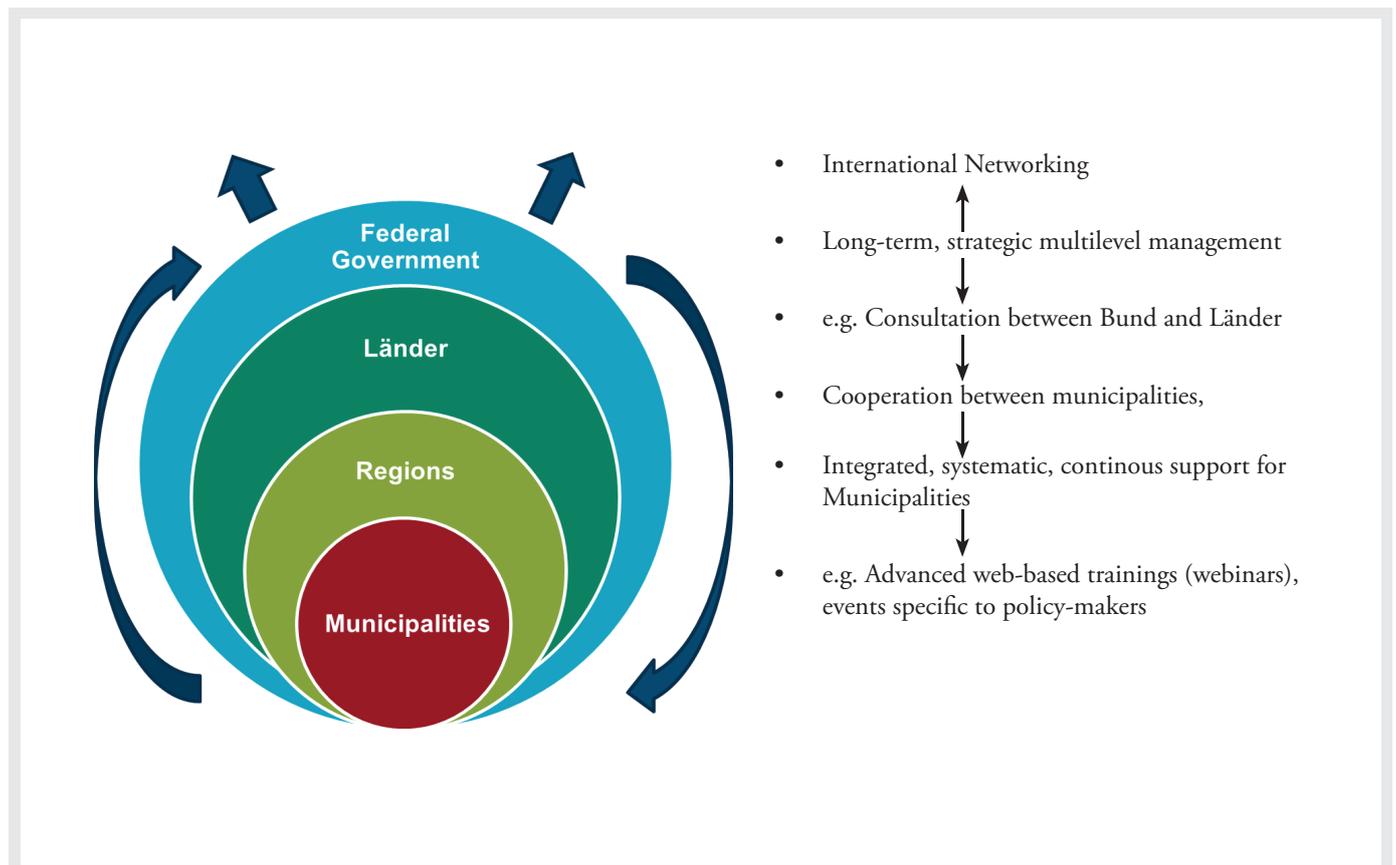


Figure 7: Tasks of SK:KK (Difu) as the institutional 'hinge' of the NCI between different stakeholders and government levels in Germany, source: Difu

ZKA: Centre for Climate Adaptation

In addition to climate protection, climate adaptation is also becoming increasingly important in municipalities. In order to support the planning and implementation of measures for adapting to the consequences of climate change and the selection of suitable funding, the Centre for Climate Adaptation (ZKA) was established in 2021 as an equivalent to the SK:KK, operating on behalf of the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV). With its practice- and demand-oriented advisory services, it specifically targets municipalities and social institutions throughout Germany and thus contributes to the development and implementation of broad-based, precautionary climate adaptation throughout Germany. A special focus is placed on those regions of Germany that are disproportionately affected by both climate change and structural change processes.

In Germany, the topic of climate adaptation was already placed on the political agenda by the Federal Cabinet in 2008 with the German Adaptation Strategy (DAS). Since then, progress in adapting to climate change has been systematically evaluated at federal level in action plans and monitoring, and successive implementation steps have been initiated. Since 2011, the Federal Environment Ministry has been funding local and regional projects with the programme “Measures for Adaptation to the Consequences of Climate Change” (AnpaSo), which provide answers to the consequences of global warming such as heat waves, floods or heavy rain events and support adaptation to climate change.

In addition, the Federal Environment Ministry promotes the development of strategies, concepts, further training and investment measures for climate adaptation in social institutions with the AnpaSo funding programme. Social institutions are to be supported in mitigating acute climate burdens and preparing comprehensively for the reduction of future climate burdens.

The federal states have also taken up the issue of adapting to the consequences of climate change. Numerous federal states have already published their own adaptation strategies and action plans or are currently working on them. Supported by funding programmes of the Federal Ministry for the Environment, also various municipalities have developed their own climate adaptation strategies and concepts in recent years. However, there is still a need for many more districts, cities and municipalities in Germany to orient themselves and define suitable measures for dealing with the consequences of climate change locally.

Other institutions of support:

The **Zukunft - Umwelt - Gesellschaft (ZUG)** has been available since 2022 on behalf of the Federal Environment Ministry for questions regarding application processes and the support of funding applications for numerous funding programmes of the National Climate Initiative. The project management agency oversees ongoing funding projects, offers application mentoring for first-time applicants and, as a link to the Federal Environment Ministry, develops suggestions for funding climate protection activities in a national context.

For the area of energy efficiency, the **Federal Office of Economics and Export Control (BAFA)** supports the National Climate Initiative in various programmes. Not only companies and municipalities can benefit, but also private individuals. For energy advisors, BAFA serves as an important contact point with information and support services.

As a knowledge centre for cycling and a central point of contact for the federal government, the **Federal Mobility Forum** supports municipalities, federal states and those interested in mobility issues in actively promoting cycling. Topics of sustainable, inter- and multimodal mobility, sustainable forms of transport and the implementation of the national cycling strategy form the basis of a lively and important cycling scene.

Knowledge exchange on climate action between the cities in Germany

The knowledge transfer hubs are important players in bringing together the various stakeholders, cities and municipalities, political levels, and municipal companies. Through the federal-state exchange, which is accompanied by SK:KK, the political representatives of the federal and state governments exchange information, funding strategies and current developments on climate action. At the federal state level, the state energy agencies play an important role in networking municipalities and disseminating information. A central event is the annual Municipal Climate Conference, at which particularly good climate action projects by municipalities are honored.

Relevant networks at European level in which German municipalities are represented are the Climate Alliance, the Covenant of Mayors, ICLEI - Local Governments for Sustainability and Energy Cities. Herein, mainly ambitious municipalities have joined forces. Further networking takes place in initiatives that specialize in individual sectors. For example, the Federal Mobility Forum at Difu or networking within the framework of urban development funding. In addition to SK:KK and ZKA, there is a number of competence centres as the Competence Center Municipal Heat Transition (KWW), the Service Agency Communities in One World (SKEW) the Competence Center Sustainable Consumption (KNK) and the Competence Center Nature Conservation and Energy Turnaround (KNE).

4. Current challenges, conclusions and outlook

The previous chapters outlined the current German urban governance system for climate protection. While Germany has made early efforts and advancements especially in the field of renewable energy, the challenges to achieve the current climate neutrality goal until 2045 are enormous. Current events have made this even more obvious. Due to the attack of Russia on Ukraine in February 2022, Germany plans to substitute the current fossil fuel imports from Russia as quickly as possible. However, as Germany's economy has been very dependent on the import of gas and oil from Russia, this poses another enormous challenge. The need to expand renewable energies while at the same time reducing energy demand and bringing about transformational change in buildings, infrastructure and the economy will be not only a challenge for the national level, but more so for Germany's cities and communities.

Intensified by the ongoing Corona pandemic, municipalities and cities are faced with the challenge of promoting climate protection alongside other pressing tasks despite tight budgets. In addition, there is a lack of skilled workers, which is further exacerbated by the increasing demand. About five times as many trained craftsmen would be needed just for the necessary pace of energy refurbishment. Despite the enormous efforts that need to be made in the fields of climate protection, climate adaptation and energy transition, it is clear that inaction would lead to significantly higher costs and consequential damage.

Due to the widespread increase in ambitions towards greenhouse gas-neutral municipalities, the topic of climate protection in municipalities is gaining further momentum. So far, implementation has been practised sporadically, mainly within the framework of pilot and model projects and with the use of funding (UBA 2022). The goal must be to integrate these systematically and to create framework conditions for rapid implementation and realisation. In this context, further legislation could be a way to define target obligations such as achieving greenhouse gas neutrality. The question of climate protection as a mandatory task is currently being discussed extensively and would have to be accompanied by corresponding support offers such as adequate financing of personnel capacities. It would also be important to have a uniform approach so that an exchange across federal state borders is possible and standards and quality requirements as well as evaluation criteria can be integrated (UBA 2022).

Climate protection is a cross-sectional task that can be anchored in municipalities through the design of ambitious sectoral laws and the establishment of local climate protection management. In particular, laws relevant to climate protection must be designed ambitiously and flanked by support measures. In this way, municipalities can achieve the necessary planning and investment security (UBA 2022).

5. Recommendations for the Indian context

This paper outlined the German governance system of local climate funding and touched upon some of the current major challenges for Germany as a whole and for communities specifically to achieve climate-neutrality. While both India and Germany are both federal countries, framework conditions, financial aspects as well as responsibilities between the multi-level-system differ widely. Recommendations resulting from this analysis hence need to be considered in their national context. However, on a meta-level it is possible to derive some general recommendation which might also be applicable to the Indian context.

Central support on national level crucial

- For German municipalities, it is crucial that the national government supports the development of strategic instruments such as Climate Action Managers and Climate Action Plans, in addition to investment measures.
- The NKI also initiated many innovative projects which aim at advancing climate protection on the ground and connect different actors, such as citizens and NGOs. Many of these projects also helped to mainstream climate actions, such as providing monitoring guidelines for local GHG protocols, setting standards for CAP processes as well as strengthening capacity building through training for climate staff in communities or educational facilities.

Knowledge transfer hub as a central point of contact

- Central agencies as SK:KK help municipalities to gain an overview of the funding landscape and to identify the appropriate funding and strategies.
- They provide information, support and training and contribute to capacity building.
- By working at different political and social levels, they can act as an important interface to the ministry and contribute to the strategic development of the funding programme

Think broadly: Broad-based funding – from pilots to mainstream

- Innovative pilot projects can create and promote role models that encourage other municipalities to follow suit. More important than focussing on pilot projects is to implement basic steps in all municipalities and to carry them over into broad-based promotion.
- Climate protection concerns everyone: The funding should not only focus on cities and pioneers, but should also consider regions and municipalities in rural areas that have been less active up to now. These areas often offer high, hitherto little-used climate protection potential.

Be agile: Monitoring and Amendments

- Regular monitoring is essential to adapt frameworks and align them with current developments. A uniform data basis and data collection is usually a major problem that should be addressed in coordination with the different levels.

Identify good practices and use multiplier effects

- Telling good stories and providing a platform for projects to show their benefits but also discuss challenges can inspire other municipalities and cities and contribute to a wider implementation of climate action.

Integrated thinking, networked action

- Think of climate protection as a cross-cutting task that covers many fields of action and touches on specialist departments. An integrated approach to the development and implementation of concepts, the identification of measures and the involvement of many actors helps to overcome silo thinking.
- Climate protection and climate adaptation, as well as all other fields of action of municipal administrations, must be thought of in an increasingly integrated way in the future (also in Germany).

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Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH

ClimateSmart Cities Project
Second Floor, B-5/5
Safdarjung Enclave
New Delhi 110029, India

T + 91 4949 5353
F + 91 4949 5391
E giz-indien@giz.de
I www.giz.de