

ACTING GLOBALLY

International activities of the German
Environment Agency







German Environment Agency

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As at: February 2021



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Our future
is global



1 The pulse of globally effective environmental protection

Almost all **environmental problems have a global dimension**. Whether it is protecting the climate, dealing with growing mountains of waste, or the health risks posed by toxic chemicals – no nation alone can tackle these major issues. That would also be doomed to failure: a globalised world, which distributes materials, products and waste all over the globe, calls for global answers. **European and worldwide environmental agreements, programmes, networks and partnerships** are therefore the driving force for globally effective environmental and climate protection.

International agreements on the environment have existed for about 60 years – between East and West, between developed and less developed nations, between more and less affected countries. Agreements have also been concluded bilaterally or between several regions. The aim is always to reduce environmental pollution and develop strategies to better deal with known and future risks.

However, the way to get there is not a simple one. Until an international agreement is reached, hundreds of people around the world are working to fine-tune wording, sound out voting behaviour, work out funding options and anchor implementation mechanisms. In the end, sometimes only a few votes are missing in order to allow an agreement to enter into force.

Is it worth the effort?

It's worth it. The Montreal Protocol can be considered proof:

On 16 September 1987 after long negotiations 24 countries agreed to phase out the production of long-life chlorofluorocarbons (CFC) following a set timetable. CFC are effective refrigerants and propellants, but they destroy the planet's ozone layer, which protects us from carcinogenic UV rays. Thanks to the Montreal Protocol, which came into force in 1989, the ozone layer is expected to slowly recover by the end of the century. Beside that so-called HFC (fluorinated hydrocarbons) are also to be significantly reduced by 2047. Although HFC do not harm the planet's ozone layer, they are strong greenhouse gases. The Montreal Protocol is proof that joint action can avert man-made threats and – alongside the Paris Convention of 2015 – is considered a major climate treaty.

The **German Environment Agency (UBA)** has been committed to international environmental protection for over 40 years. It is **Germany's central environmental authority**. Following the motto "For people and the environment", all environmental issues of national, European and global significance are addressed here. The Act on the Establishment of a German Environment Agency of 22 July 1974 specifies central tasks: scientific research and advice to the German Federal Environment Ministry, management

of an information system for environmental planning and environmental documentation, and the assumption of federal administrative tasks.

Since then, the UBA has grown steadily, both in the number of staff and in the scope of tasks and responsibilities. Today the Agency employs around **1600 experts at four locations in Germany**. Its headquarters is located in the city of Dessau in Saxony-Anhalt, 110 kilometres southwest of Berlin. The UBA's International Relations Unit reports directly to the Presidential Department. Experts for international activities perform different functions in a global context:

- ▶ The German Environment Agency is the **contact point for international agreements**. In this function it advises companies and state authorities and is responsible for data collection, reporting, the development of technical standards and the further development of the objectives of certain agreements.
- ▶ The German Environment Agency is responsible for the **enforcement** of 56 different **international regulations, conventions, and agreements** in the environmental sector. It acts as a national coordinating body, for example for the German Emissions Inventory under the Framework Convention on Climate Change and the Kyoto Protocol.
- ▶ The German Environment Agency operates two of the more than 700 **WHO Collaborating Centres**

worldwide: for drinking water hygiene (WHO Collaborating Centre for Research on Drinking Water Hygiene) and for air quality (WHO Collaborating Centre for Air Quality Management & Air Pollution Control). **It operates a reference laboratory for air quality at European level.**

- ▶ The German Environment Agency is the largest **institution for application-oriented environmental research** in Europe. As a specialist scientific authority, it primarily advises the German Federal Environment Ministry, but also European and international institutions on many issues relating to environmental protection and sustainability.
- ▶ The German Environment Agency is an important **source of official information** for the media, the public, businesses, and associations on many environmental issues.

The combination of these functions makes the UBA so effective. **This brochure provides an overview** of how the German Environment Agency is operating and its most important functions and tasks in an international context. The brochure presents examples of important agreements, programmes and treaties and points out how Germany is committed to protecting health, the environment and the climate within the EU and internationally.

The German Environment Agency's goal is the **transfer of knowledge and technology** not only in Germany, but throughout the world. The UBA is therefore



involved in various export initiatives, cooperations, and projects and operates the bilingual online portal “Cleaner Production Germany” for environmental technology transfer.

Another goal of the UBA’s work is to **integrate environmental issues with other topics**. For example, protecting the climate is tightly coupled to protecting natural resources from overuse and societies from social upheaval. Organised waste management and a modern circular economy on one hand prevent air and water pollution, on the other reduce health risks and create jobs.

Above all, the German Environment Agency believes that the **major challenges** of the coming years and decades **can only be mastered together**. The agency

is therefore **anchored in a network of environmental authorities and international cooperation partners from research, business, and society**. Networking is indispensable, not least because environmental problems are never static. The world is changing and therefore international activities must be living matter: they need to continue to develop, address previously unknown hazards and substance risks and involve new partners. The experts at the German Environment Agency promote these further developments and, thanks to their expertise, consider themselves prepared for future questions and challenges.

**“Only together will we
overcome crises”**



Prof. Dirk Messner

...has been President of the German Environment Agency (UBA) since 2020. The political scientist has served as director of the Institute for Environment and Human Security at the United Nations University in Bonn and has long been involved in sustainability programmes, such as “The World in 2050”, a global research consortium on the implementation of the Agenda 2030. Dirk Messner firmly believes in the persuasive power of facts and research and the importance of international networks – only in common action, he states, “politicians and society can find answers to pressing environmental issues.”

*“Only together will we
overcome crises”*

Interview with German Environment Agency President Prof. Dirk Messner

A few weeks after you became UBA-President, the Corona crisis started. Why do politics and people react so differently to the pandemic than to climate or environmental crisis?

Humans react promptly to shocks that bring immediate and tangible danger. But we are not very good at dealing with risks that seem to lie far in the future. We push them away. Sometimes we must suffer from more occasions in order to take a problem seriously. Over the past 20 years there have been various global crises at two to three-year intervals. This short rhythm has at least increased the awareness of the

fact that global crises exist and that nations have to work together.

Environmental crises develop slowly and insidiously. Do we have tools to combat?

Our tools are not as sharp as they would be in an acute emergency. The climate crisis, for example, is still an abstract danger for people in Europe, as the predicted tipping points are in the second half of the century. Our current political system only takes into account one or two generations to come. The long-term orientation crucial for climate and sustainability

policy is not yet firmly in place. It's a learning process for civilization.

What lessons from the pandemic could be useful for environmental crises?

The pandemic has taught us that even rich societies are vulnerable and we must build resilient and future proof structures. It has proofed the importance of global cooperation. Crises always will return unless we act jointly. That is why we will continue to need international environmental agreements in the future.

The pandemic has reduced global greenhouse gas emissions by six to eight percent in 2020 – more than all climate agreements combined.

Lockdown is the most expensive form of climate protection imaginable, because it generates enormous economic and social costs. Beside that the pandemic only shows a one-time effect. What we rather need globally, is long-term effective restructuring of economies and societies. Prosperity has to be disconnected from emissions and pressure on ecosystems in order to be able to halve greenhouse gas levels every decade. We know that this is technologically and economically feasible.

Which factors are decisive for restructuring?

Energy supply must be converted to 100 percent renewable energies, and we are on the right track for that. When it comes to mobility, we need to shift to

electricity or other non-fossil fuels – this is about to start. There is need for climate-friendly agriculture and forest protection. And we have to build our cities differently, they need to be energy-efficient, green, liveable, and built with environmentally and climate friendly materials and concepts.

Does that apply globally?

All societies must rise to the challenge. In less developed regions of the world, undoubtedly poverty reduction is the top priority, and the link between fighting poverty and climate change is often still not evident. My experience tells me that there is motion in Africa, India and also China. Holding lectures there, you find their ears open these days. This wasn't the case before. The UN Agenda 2030 is defining clear global sustainability goals. But it is also true that we cannot solve environmental problems without eradicating social injustice.

Politicians are in charge of environmental and climate protection. Why is the UBA internationally active?

Most environmental problems are global. Climate, species loss, marine protection, land use, material cycles: it's all globally interlinked. Germany started with environmental protection rather early on. Our wealth of experience is broad and in demand internationally.

How is the cooperation with the German Federal Environment Ministry working?

The German Environment Agency acts independently in its research and develops solutions for environmental and sustainability issues. Politicians must decide which solutions are to be implemented. Our proposals cannot always be implemented, since conflicting interests are often negotiated in the political process. In essence, UBA and the Ministry are following the same goal: We want to stabilise the climate, promote sustainability, and make ecosystems more resilient. Our proposals must be attractive enough to be of interest to politicians as well as to every citizen.

What role do research and innovation play in this process?

A very large one. About one third of our work is application-oriented research. Independent research and innovative solutions form the basis to work seriously in all functions and generate confidence in our statements and proposals.

How can scientific results help to solve environmental problems?

Firstly, by operating like an early warning system. We draw attention to problems that politicians do not yet see. This was the case with climate change, microplastics in the environment, and the danger posed by certain chemicals. Secondly, science helps to address concrete questions. For example: should



renewable energy supply be set only nationally, or rather on a European or even international scale? What role will hydrogen as a new energy source play in the future? Our experts design scenarios that help politicians come to decisions.

Do politicians pay sufficient heed of scientific recommendations?

Democracy takes time. But Corona has shown that quick action is possible when dangers are recognised. I am optimistic because decisions based on scientific evidence are made every day. I have been discussing global environmental issues and sustainability with decision-makers from politics and business for 20 years. In Germany definitely the challenges up to now have been recognised by the majority of decision-makers.

How did international relations change in recent years?

There are two opposing waves. After the fall of the Berlin Wall, there was more cooperation and multilateralism, which made people optimistic. In recent years, however, in many countries we experience a national backlash. It's of huge importance that cooperation-oriented states, companies and civil society networks show that collaboration is key to prosperity, peace, and democracy in a globalized world.

Will the UBA become even more international in the future?

The agency is already very active internationally, as this brochure clearly points out. Our focus for the next few years will be on European challenges and problems. The European Green Deal sets an important course that can serve as a model worldwide. Sustainable management of chemicals and health protection will also be priorities. In general, I would like the UBA to become even more visible at national, European and global level. I am firmly convinced that only through global, constructive exchange we learn from each other and overcome crises.



**Shaping the
environment**

3 Working fields at the German Environment Agency

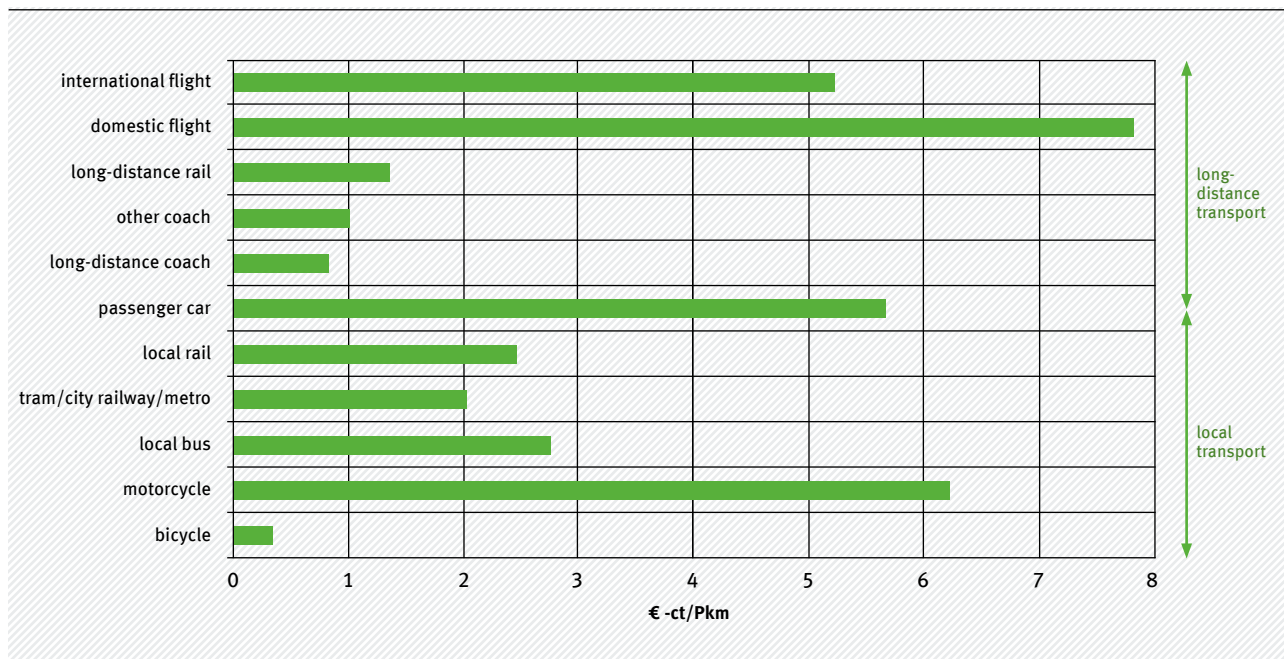
Transport

Mobility is part of everyone's personal freedom. However, transport in its current appearance is one of the biggest air contaminants in the world. Traffic is source for large quantities of greenhouse gases due to the combustion of fossil fuels. Not least, vehicle emissions and traffic noise endanger the health of millions.

How does **environmentally and climate-friendly mobility** look like? What limits and standards can curb the environmental and health impacts? How can we motivate people to care about sustainable transport services? The **design of mobility** is not least a question of environmental justice: often it is precisely people on low incomes who are particularly affected

Passenger transport in Germany 2017

External costs in EUR-ct per passenger-kilometres



Source: own calculation of German Environment Agency (Umweltbundesamt)

by traffic-related air pollutants and noise, despite contributing less to the problems related to mobility.

The German Environment Agency has been dealing with issues of this kind for many years. UBA's activities are focusing on the **development of European emission limits** for trucks and passenger cars, especially analysis and measurement methods, and on the further development of international standards and norms within CEN/ISO and UNECE. The Agency also supports international bodies in **developing environmental standards for air and sea transport**. One important achievement, for example, is the significant reduction of the permitted sulphur content in fuels for ships valid from 2020.

Measures and laws in the transport sector are highly dependent on reliable data. The German Environment Agency is publishing the Handbook on Emission Factors for Road Traffic (HBEFA), a publicly accessible database containing specific emission values for the most common vehicle types. These data are basis for meeting international commitments on climate and emissions reporting. It can also be used to create scenarios for the future and model the effects of measures to reduce emissions.

More and more people are living in large cities and conurbations. Global urbanisation leads to more traffic and aggravates the associated problems. At the same time, digital tools and services are changing the

way we travel and get around – this can provide an opportunity for greater sustainability in the mobility sector.

The UBA's transport experts are devoting a great deal of attention to issues relating to future-compatible mobility. For example, the UBA acts as expert advisor and coordinator in the pan-European programme for transport, health, and the environment (THE PEP). Since 2016, it has also been the national coordinating body for the European Mobility Week and supports numerous local authorities each year in implementing creative ideas – following the idea that sustainable mobility also needs the courage to find new solutions.

Further information:

- ▶ Transport bit.ly/3fNEnzo
- ▶ Transport turnaround for all: bit.ly/2Jq2LLq
- ▶ End of life vehicle reuse recycling recovery rates: www.bmu.de/DL1997-1
- ▶ Handbook Emission Factors for Road Transport (HBEFA): hbefa.net/e

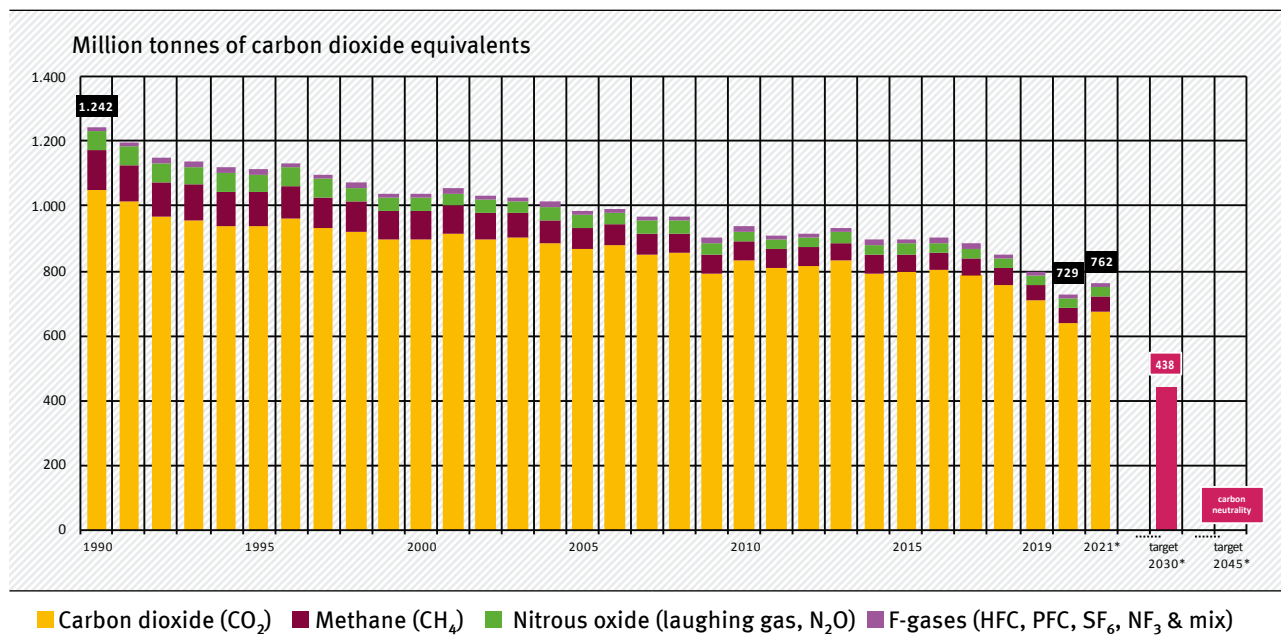
Climate protection

Germany is an industrialised and densely populated country. Its specific CO₂ emissions are high. Germany therefore bears responsibility for climate protection at national, European and international level.

Climate change affects the lives of billions of people worldwide. Measures against climate change will influence the way we work, consume and travel in the future. It is therefore all the more important that

science and politics are closely interlinked. Which technologies effectively curb greenhouse gas emissions? How must emission inventories and emission reports look like? Which strategies will help to adapt to climate change? Research can help to find answers and provide a solid basis for political decisions. This applies to negotiations under the UN Framework Convention on Climate Change (UNFCCC), as well as to OECD, G7 and G20 meetings.

Greenhouse gas emissions since 1990 by gases



Emissions without land use, land use change and forestry.

* adjusted targets 2030 and 2045: according to the amendment of the Federal Climate Protection Act (KSG) of 12.05.2021

Source: German Environment Agency, National Greenhouse Gas Inventories 1990 to 2020 (as of 01/2022), for 2021 preliminary data (as of 15.03.2022).

The German Environment Agency supports the German Government in preparing for international negotiations. It contributes its expertise to support German and European positions and communicates key messages and results of political summits to the general public. Since 2013 the German Environment Agency has represented Germany on the Steering Committee for the climate protection reports of the UN Environment Programme (UNEP) and is part of the review team.

The UBA makes its expertise available to others. **For example, the agency advises and supports states in developing their own emissions inventories.** In addition, as part of the UBA's **International Climate Initiative**, experts at the Federal Environment Ministry are evaluating projects in emerging and developing countries that want to optimise their strategies for adapting to climate change. The **German Emissions Trading Authority (DEHSt)** at the UBA has also been active in international capacity building for years. It advises and supports countries, for example in Latin America, Central and East Asia, in setting up procedures for monitoring emissions, for accredited testing laboratories and for the use of modern information technology in emissions trading.

A key pillar in climate protection is the transition from fossil fuels to renewable energies. The EU's Renewable Energy Directive sets clear targets to achieve transition. The German Environment Agency operates

the register of guarantees of origin for electricity from renewable energy sources in Germany based on the directive and regularly informs both the EU and the public about the status quo and progress in energy system transformation.

The UBA takes part in international discussions on **geoengineering** and is active in relevant working groups. For example, it has ensured that commercial measures for marine fertilisation are not permitted globally. Research projects of this kind must first be examined by authorities and can only be approved under certain conditions.

Further information:

- ▶ Geoengineering: bit.ly/3o2cXbY
- ▶ Policy Brief: Governance of geoengineering: bit.ly/2HQti46
- ▶ Trend table THG: bit.ly/36lDXNN

Circular economy

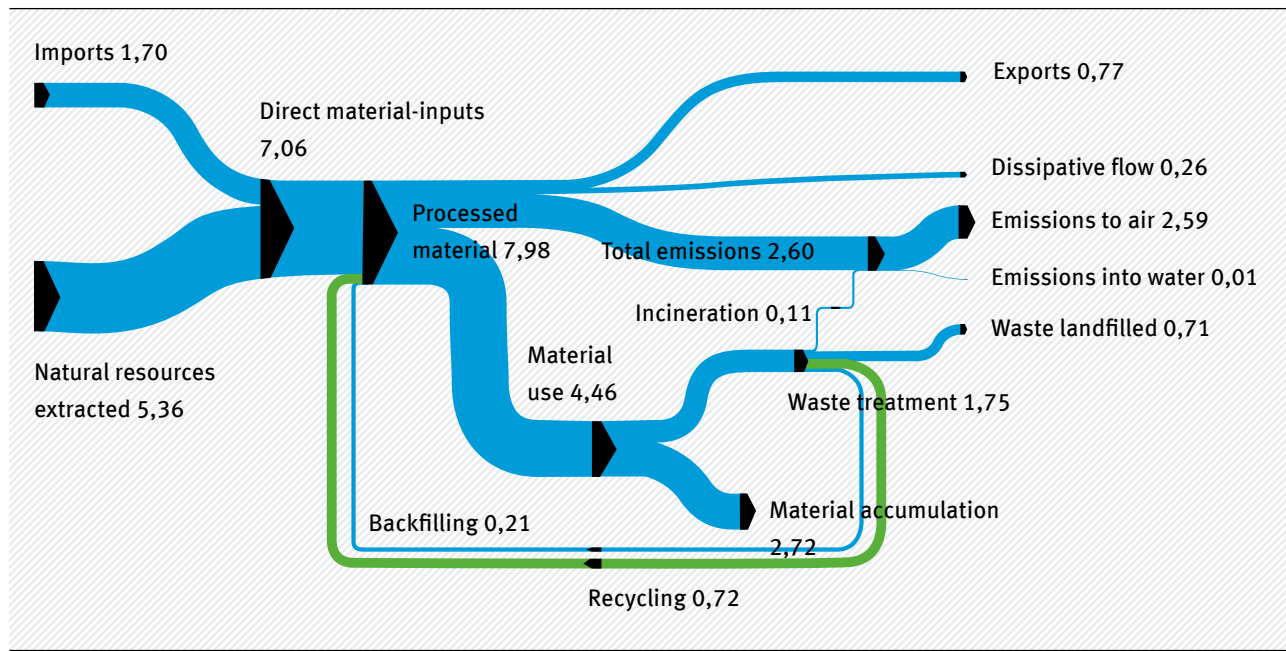
Raw materials are basis for prosperity, economic growth and quality of life. However, humanity is consuming too many of its limited material resources at far too fast a rate. So far, no country has succeeded in establishing comprehensive and high-quality cycles for all these materials and products. Though intelligent handling of waste is holding great potential in different aspects: it reduces greenhouse gases, makes cities clean and liveable, reduces air and water pollution and creates jobs.

Establishing a circular economy is a priority issue at the German Environment Agency. Activities are following the simple idea that broken or discarded products are not rubbish, but valuable secondary raw material: new plastic products can be made from plastic waste, expensive metals can be recovered from electrical appliances, mobile phones and computers, used paper and used glass can be used to make new paper and new glass.

The UBA has long been committed to working to-

Circular Economy: Material flows in the EU-27 (2017)

Factual dimension of material flows in Gt per year (billions of tons per year) in 2018, EU-27



Source: <https://ec.europa.eu/eurostat/web/circular-economy/material-flow-diagram>, use of the image is covered by the Creative Commons License

wards a circular economy. **The crucial factor for a true circular economy is looking at the entire life cycle** – i.e. not only at the disposal and recycling of waste, but also at the production and consumption phases: if a product is designed and built in an easily recyclable way right from the start, subsequent recycling becomes much easier and more worthwhile. If a minimum percentage of recycled material in products were made mandatory by law, lucrative markets for secondary raw materials would be created and recycling would become a normal part of global economic cycles.

There will, however, always be material that is difficult or impossible to recycle. For example, this applies to waste which contains **harmful substances**. The German Environment Agency therefore also supports the development and spread of incineration technology that reliably destroys pollutants and at the same time generates energy from waste as efficiently as possible.

Studies by the German Environment Agency show that emerging and developing countries can reduce greenhouse gas emissions by up to 18% through modern waste management. Even in OECD countries and many European countries, waste management is often not yet sufficiently sustainable or efficient. This is why the UBA is involved in multilateral initiatives, networks with actors in international cooperation and in certain priority regions. It is an active member of the Steering Committee of the Municipal Solid Waste

Initiative, which supports cities in emerging and developing countries in the climate-friendly transformation of their waste management systems, for example through technology transfer and the promotion of particular projects. The Federal Environment Ministry has provided substantial funding to support emerging nations and developing countries in their efforts to introduce modern waste management to reduce the amount of waste discharged into the oceans.

A circular economy is essential because it conserves resources and climate in equal measure. This also applies to our food. Around one third of the world's food production is dumped, resulting in greenhouse gas emissions of over three gigatons. The German Environment Agency is therefore also contributing its expertise to the **further development of EU guidelines on food distribution** to reduce waste.

Further information:

- ▶ Competence Centre Sustainable Consumption: bit.ly/3KEmd1p
- ▶ European Week of waste prevention (EWAV): bit.ly/3u1WNEm
- ▶ Municipal Solid Waste Initiative: bit.ly/36ntIsm

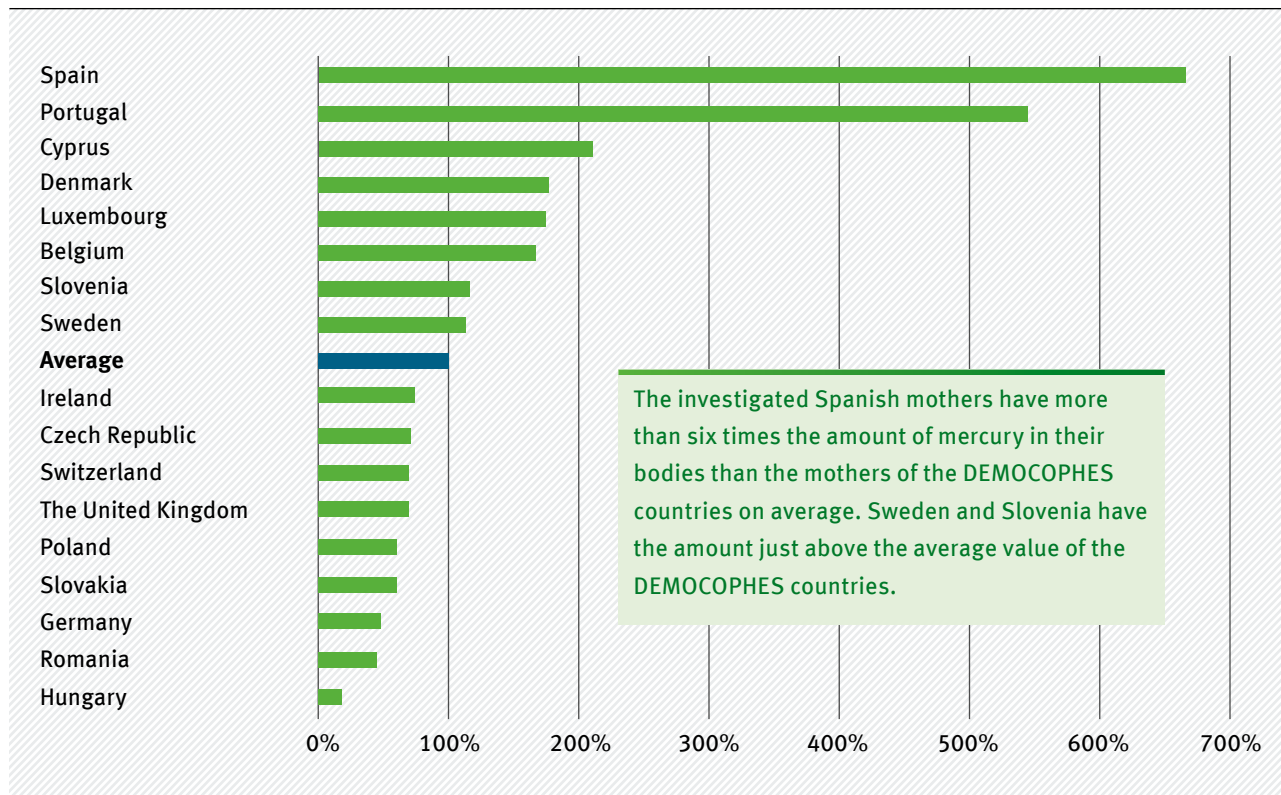
Health

Harmful substances in the environment pose a threat to human health. Water and air analyses indeed record the levels of pollutants, but they reveal little about the exposure of an individual. This requires human biomonitoring. Biomonitoring involves meas-

uring the actual exposure of an organism to a given substance, which may come from various sources and may have been absorbed through the respiratory tract, mouth or skin. For example, it might analyse how much mercury is present in blood or urine of individuals or population groups.

Health

Amount of mercury in the body of examined European mothers (investigation period: 09/2011-02/2012)



Source: Den Hond E, Govarts E, Willems H, Smolders R, Casteleyn L, Kolossa-Gehring M, Schwedler G, Seiwert M, Fiddicke U, Castaño A, Esteban M, Angerer J, Koch H M, Schindler B K, Sepai O, Exley K, Bloemen L, Horvat M, Knudsen L E, Joas A, Joas R, Biot P, Aerts D, Koppen G, Katsonouri A, Hadjipanayis A, Krskova A, Maly M, Mørck T A, Rudnai P, Kozepešy S, Mulcahy M, Mannion R, Gutleb A C, Fischer M E, Ligočka D, Jakubowski M, Reis F M, Namorado S, Gurzau A E, Lupsa I R, Halzlova K, Jajcay M, Mazej D, Tratnik J S, López A, Lopez E, Berglund M, Larsson K, Lehmann A, Crettaz P, Schoeters G (2014): First Steps toward harmonized human biomonitoring in Europe: Demonstration project to perform human biomonitoring on a European scale, Environmental Health Perspectives 123 (33), 255-263.

The German Environment Agency has been involved in international human biomonitoring projects since 2010. The “Consortium to Perform Human Biomonitoring on a European Scale” (COPHES), for example, under the leadership of the German Environment Agency, has developed guidelines **on how different countries can adopt a uniform approach to biomonitoring** and thus achieve comparable results. Since 2017, the UBA coordinates on the basis of these guidelines the **“European Human Biomonitoring Initiative” (HBM4EU)**, in which 109 partners from 28 countries by now investigate human exposure to key environmental pollutants and develop concrete recommendations for policymakers.

Healthy living is only possible in healthy air. Since pollutants cross national borders, several **international agreements such as the Geneva Convention on Air Pollution Control** regulate the reduction of sulphur emissions, nitrogen oxides, volatile organic compounds and heavy metals. Air pollution control is one of the classic tasks of the Federal Environment Agency. The UBA is home to the **“WHO Collaborating Centre for Air Quality Management and Air Pollution Control”**, an interface between national and international expert committees and institutions in the field of outdoor and indoor air hygiene of the 53 WHO member states in the European region. The Agency also supports the WHO in the “Task Force on Health Effects” of the Geneva Convention on Air Pollution.

Industrial plants are often one of the main sources of substances hazardous to health. Many types of emissions can be significantly reduced by using appropriate technology. As the official national coordinating body, the German Environment Agency therefore contributes its expertise to what is known as the **Sevilla Process**. Here, Europe-wide binding requirements for industrial facilities are developed on the basis of **“Best Available Techniques” (BAT)**. The German Environment Agency also promotes the adoption of efficient environmental and technical standards for industrial facilities beyond the EU - for example in India, China, Russia, Israel, the Ukraine and Iran. Due to the large number of facilities and their often poor technical standards, the potential for reduction is particularly high in some of these countries. Even relatively simple and adapted technology can noticeably reduce pollutant emissions and help protect people’s health.

Further information:

- ▶ WHO Collaborating Center Lufthygiene: bit.ly/3Jc7zOA
- ▶ Best Available Techniques reference documents (BREFs) - Download: bit.ly/3tXOQjg

Chemicals

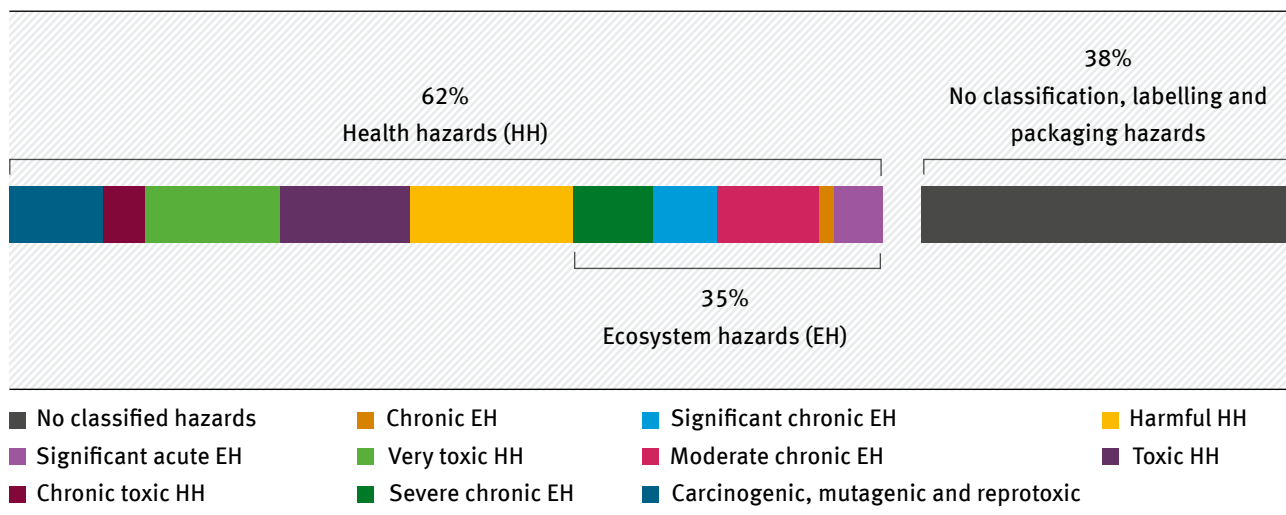
Chemical substances have a global impact on humans, animals and the environment. As the world's fourth largest producer of chemicals, Germany has special responsibility. The German Environment Agency is therefore committed to the environmentally friendly and safe use of chemical substances and to the sustainable management of chemicals. Together with the German Environment Ministry, it founded the "International Sustainable Chemistry Collaborative Centre" (ISC3) in 2017, based at the UN

site in Bonn. The purpose of ISC3 is to bring together knowledge, activities and competencies for sustainable chemistry and network them internationally.

At European level, the EU chemicals regulation REACH regulates the registration, evaluation, authorisation and restriction of chemical substances. The German Environment Agency is responsible for **assessing substance-specific environmental risks**. For example, it has proposed the legal restriction of perfluorinated carboxylic acids, which are

Share of the volume of chemicals consumed in the European Union in 2016 by hazard categories

based on European Environment Agency 2018



According to data from Eurostat, the statistical office of the European Union (EU), compiled in 2018 by the European Environment Agency, approximately 62 per cent of the 345 million tonnes of chemicals consumed in the EU in 2016 were hazardous to health. In presenting the data, the Agency noted that volumes of hazardous chemicals consumed are not a proxy for the risks posed by those chemicals. [Introduction]

Source: European Environment Agency, use of the image is covered by the Creative Commons License.

widely used in extinguishing foams, as lubricants and in non-stick coatings, and which are increasingly causing environmental problems. The UBA was also a pioneer in identifying what are known as endocrine disruptors, which harm hormonal processes in humans and animals.

The authorisation of biocidal products and pesticides in Europe is another key area of work. These substances are used in large quantities worldwide and endanger health, animals and plants in many countries. In order to identify the potential hazards before chemicals are used, their effects on humans, animals and plants are examined during authorisation procedures using internationally recognised and harmonised test methods. The German Environment Agency is involved in the OECD Test Guidelines Programme, which is in charge to develop these methods. The laboratory results form the basis for evaluation, classification and labelling of biocidal products and pesticides, as well as of industrial chemicals and pharmaceuticals. The UBA also contributes to OECD work on harmonising the assessment bases for biocides between Member States.

Despite the strict tests, the current intensive use of pesticides is not ecologically sustainable. Back in 2016 the German Environment Agency has therefore developed a five-point programme for sustainable plant protection. Recommendations include minimising the use of resources to what is strictly necessary and clearly communicating the environmental risks to users. It is also important to internalise the external

costs of chemical plant protection to make clear that unsustainable use of the substances can lead to high costs for health and environment. The same applies to the use of biocidal products.

Here too, the UBA is working at EU level to ensure that measures are taken to ensure their sustainable use.

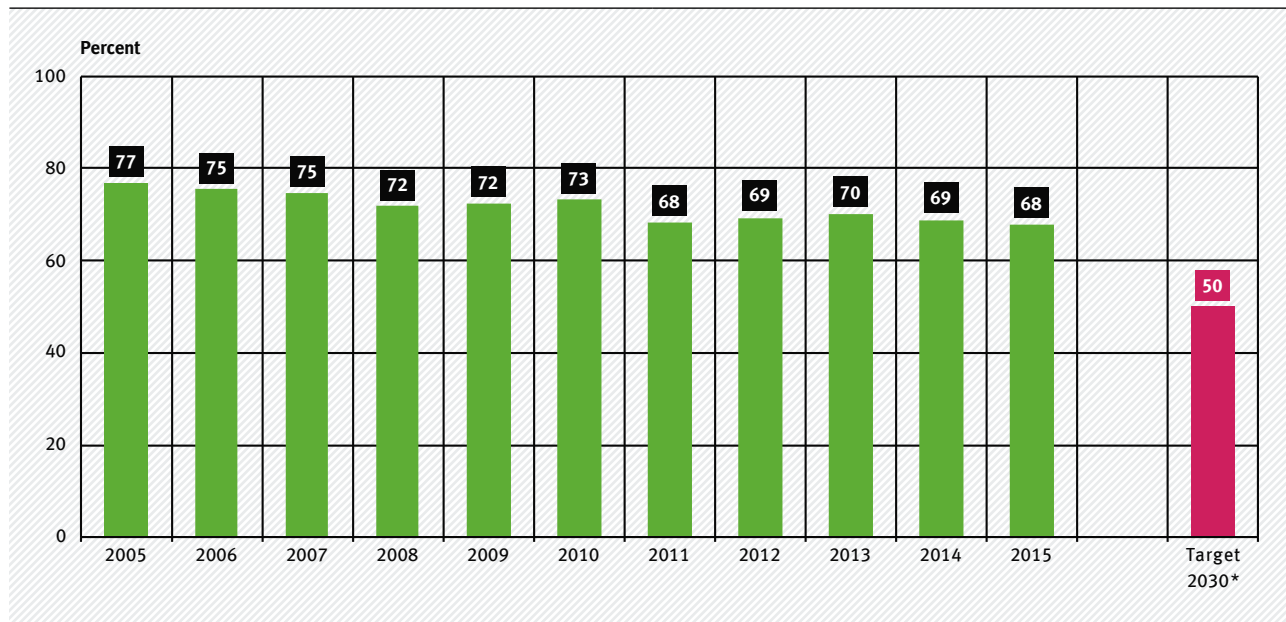
Germany has many years of experience with **chemical accidents**. The German Environment Agency is therefore involved in an OECD working group in which nations exchange findings from accidents and knowledge on safety in industrial facilities and safety management. **The NaTech project run by the OECD, UN and EU** and led by the UBA, is dealing with effects of climate change on safety issues. The project developed recommendations for facility operators and authorities on how they can better prepare for storms, floods or forest fires and ensure accident-free operation of facilities.

Further information:

- ▶ International Sustainable Chemistry Collaborative Centre: isc3.org
- ▶ NaTech Risk management: bit.ly/3z8vfBm
- ▶ Biocidal products: bit.ly/3tUUbl9

Natural resources

Proportion of vulnerable ecosystems where critical loads for eutrophication are exceeded



* Federal Government's Strategy for Sustainable Development: The proportion of land affected by excess nitrogen deposition should fall by 35 % between 2005 and 2030. Based on a value of 77 % in 2005, this gives a target value of 50 % for 2030.

Source: Schaap et al. 2018. PINETI-3, Modellierung und Kartierung atmosphärischer Stoffeinträge von 2000 bis 2015 zur Bewertung der ökosystem-spezifischen Gefährdung von Biodiversität in Deutschland

Healthy, fertile soils are essential for the production of food and animal feed, but also for water and air quality and climate protection. The German Environment Agency works to identify stresses and threats to soils at an early stage and to develop preventative measures. The **protection of drinking water resources** as well as of streams, rivers and lakes and marine protection are also among the German Environment Agency's key areas.

Soil protection was one of the global UN-Sustainable Development Goals adopted in 2015. The focus is, among other things, on minimising land degradation and restoring degraded areas. The UBA is particularly involved in the development of measurable and practical indicators of degradation and in communication with European and international partners on the matter.

Water protection and marine conservation are also objectives of international agreements and the German Environment Agency is involved in their implementation. Action plans have been drawn up for the North Sea and the Baltic Sea, for example, to combat pollution of the seas with plastic waste. The German Environment Agency has supported the development of corresponding G7 and G20 action plans and is involved in the development of the International Maritime Organisation's action plan. The German Environment Agency is also involved in **shaping the Global Plastics Convention**, which aims to make a significant contribution to reducing the discharge of plastics into the oceans and other environmental areas. To reduce eutrophication and pollution of the oceans, multilateral agreements and European regulations also oblige Germany to monitor, report and draw up management plans, and the UBA is involved in these efforts.

Oceans are stores of raw materials. Research into the effects of deep-sea mining on the marine environment is therefore an important area of work for the German Environment Agency. It cooperates, inter alia, with the International Seabed Authority, which adopts mining codes and grants mining rights for deep-sea resources.

Drinking water is our most important commodity. It is therefore one of the German Environment Agency's tasks to keep **scientific principles and standards for safe drinking water supply** up to date and

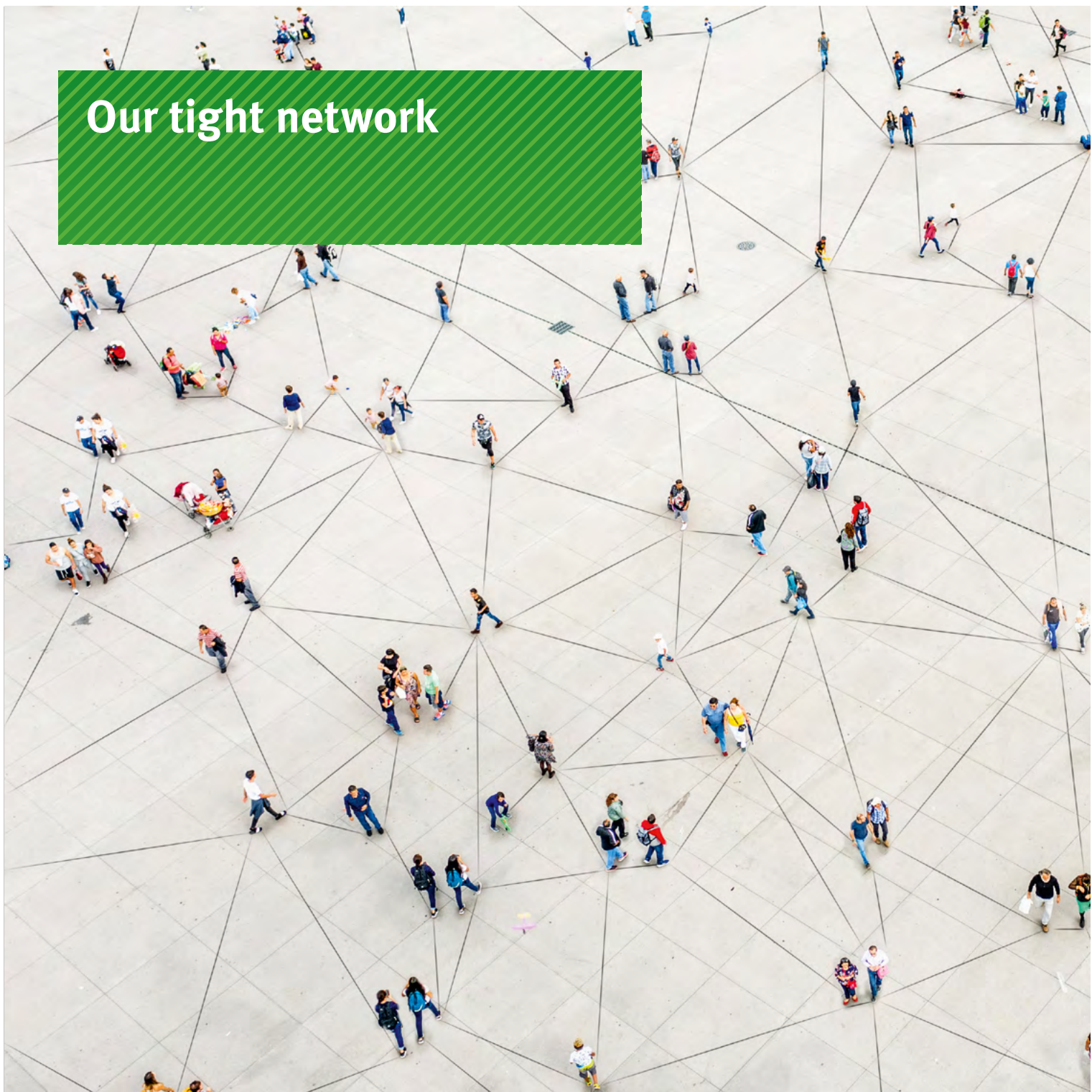
to continue to develop them. The Agency assesses health risks that may be associated with the production, treatment and distribution of drinking water. It develops concepts for controlling or avoiding these risks. A technically sophisticated simulation facility operated by the UBA makes it possible to investigate whether and how pollutants or germs introduced into lakes or rivers could harm flora and fauna.

The WHO Collaborating Centre for Research on Drinking-water Hygiene at the German Environment Agency performs important work on issues regarding global supply of drinking water. The Collaborating Centre represents Germany in implementing the UN Water Convention's Protocol on Water and Health. The Centre also advises and assists water and health authorities in less developed countries on how to monitor drinking water and introduce policies that give more people access to safe drinking water.

Further information:

- ▶ Global Soil Partnership: bit.ly/39WUTw5
- ▶ Baltic Marine Environment Protection Commission (HELCOM): bit.ly/3MPRmR8
- ▶ WHO Collaborating Center Drinking Water: bit.ly/3i7TSEg

Our tight network



4 The German Environment Agency as a partner in international programmes and networks

Networks play an important role in international environmental protection: they connect people and institutions, enable the exchange of knowledge, data and technology, and create platforms where actors can learn from each other and work together to achieve goals faster. Last but not least, strong networks have a clear voice when it comes to communicating research results and scientific recommendations to policy makers. The German Environment Agency is part of numerous networks, initiatives and partnerships – this chapter introduces some of them.

The German Environment Agency as a partner in research programmes

Chemicals are everywhere – in water, soil and air, in food, consumer goods and many workplaces. Most people are unaware of the long-term effects on health and the environment, and little is known about interactions between different substances. **Chemicals of concern** are therefore the focus of **international research initiatives** in which the German Environment Agency is involved. The initiatives bridge science and politics: when the spreading and the effects of a chemical substance have been scientifically proven, it is easier to regulate the substance through policy. This often simultaneously initiates or intensifies the search for safer alternatives.

The **NORMAN research initiative**, co-initiated by the German Environment Agency, is concerned with chemicals in water. It brings together some 80 environmental authorities, universities, water suppliers and industry associations from 20 countries to learn more about the spreading of chemicals of concern in water. These include plant protection products, flame retardants, pharmaceutical ingredients, persistent and endocrine disrupting substances. All these substances are often widely used but not regulated by law.

The NORMAN partner institutions have developed analytical methodology that can detect a large number of chemicals and their decomposition products simultaneously and in short time (known as non-target screening). The results are stored digitally and serve as a data pool in which analysts can search for individual pollutants. Bioassays, these are tests that determine the effects of substances in organisms, are a second research approach. Of particular interest are **interactions of various substances** that can intensify problematic effects. In future, the institutes involved intend to make their expertise on substance analysis and substance databases available to other international programmes – e.g. the OSPAR Commission for the Protection of the North Sea and North-East Atlantic.

The **EU research project LIFE APEX** is investigating the exposure of seals, otters and birds of prey to chemicals. Because predators are placed at the end of the food chain, the data provide a kind of early warning system for the spread of problematic substances, for their longevity and accumulation in organisms and food chains. Edible fish will also be tested to determine whether regular fish consumption exposes humans to health risks.

Human biomonitoring is used to measure the exposure of a person to a particular substance. At European level, the EU Commission has launched the **“European Human Biomonitoring Initiative” (HBM4EU)**. The consortium of 116 partners from 30 countries is headed by the German Environment Agency. The initiative aims to generate facts and figures to make the handling and use of chemicals safer and thus better protect human health. The consortium has drawn up a list of single substances and groups of substances of concern whose effects need further investigation.

Since 2020 the German Environment Agency has been involved in the **initiative “The World in 2050”**, which advocates for the ambitious implementation of the 17 global Sustainable Development Goals (SDG) of the United Nations. These SDG, adopted in 2015, form the framework for worldwide sustainable development that is socially just, ecologically viable and economically future-proof. One point is clear: all societies are facing fundamental upheavals.

The initiative is pooling top researchers from all areas of sustainability worldwide. They have jointly developed an agenda based on the 17 SDG, with closely interlinked individual goals. **The agenda defines six transformation areas for political and economic action:** the decarbonisation of industry and energy production, the closing of material cycles, concepts for smart cities, the digital revolution, access to education and healthy food for all. The aim of The World in 2050 is to ensure that sustainable development concerns are more quickly and concretely reflected in political and economic decision-making processes. Last but not least, it contributes to giving people a clear idea of a future that is worth living in but also sustainable.

The German Environment Agency as a partner to environmental networks

Environmental problems do not stop at national borders. Since problems and issues are often similar on a global scale, experts in the various environmental authorities and agencies can learn a lot from each other. 37 European environmental authorities have therefore joined the **Network of the Heads of the European Environmental Protection Agencies**. They cooperate in several working groups, for example on adaptation to climate change, recycling issues and noise abatement. But they discuss also how European laws can be effectively implemented nationally or how an engaged population can participate in research projects.

The Agencies network is in close contact with several General Directorates of the European Commission and supports the Commission in environmentally relevant legislative projects. It also draws attention to previously neglected issues and helps to ensure that European environmental policy addresses new issues in a timely manner. These new topics include, for example, the enormous potential of digitalisation for sustainable management, green finance and strategies for low-risk chemistry.

The fact that many German Environment Agency staff members assume responsibility in the **European Environmental Information and Observation Network (EIONET)** underscores the diversity of topics covered by the UBA. EIONET comprises some 350



institutions across Europe that transmit data and information. The European Environment Agency, based in Copenhagen, coordinates and prepares these data flows. Its mission is to provide up-to-date and relevant information to policy makers and the public. At the UBA, the national focal point of the European Environment Agency coordinates data delivery and cross-network cooperation on issues and projects within and outside Germany.

Environmental specimen banks are a veritable store of data for environmental and chemicals policy. Scientists in Germany have been collecting samples of people, plants and animals since the 1980s. The samples are stored at extremely low temperatures and their chemical state is virtually frozen. The Federal Environmental Specimen Bank (UPB) contains about 350,000 samples and is the largest collection worldwide. It allows experts to look back into the past and shows, for example, whether the exposure and distribution of a particular chemical has increased or decreased over time. This can be decisive for the legal regulation of a substance.

The German Environment Agency is responsible for the administrative management and technical coordination of the UPB. In addition, it would be easier to clarify, whether political regulation of hazardous substances such as mercury or organic pollutants is having an effect and how pollution is developing worldwide, if all 30 or so environmental specimen banks around the world were to work more closely together. Moreover, environmental specimen banks

should be encouraged where they do not yet exist, for example in developing countries.

The work of environmental networks can also influence each individual consumer. The **Global Ecolabelling Network (GEN)** is an association of currently 29 organisations worldwide and coordinates the award of eco-labels for products. The German Environment Agency is a member of the network with the widely known “Blue Angel” eco-label. Eco-labels should provide orientation at the point of purchase as to which products are more energy-efficient, conserve resources, emit fewer pollutants and are more climate-friendly than others. Type I eco-labels are based on criteria and certification that are independent of the manufacturer. The product life cycle is considered comprehensively and the results are transparent and publicly available. GEN serves as a platform for the exchange of information and experience, supports newly founded eco-label organisations in setting up structures and ensuring the quality of the processes. Internal peer reviews ensure that members use comparable criteria and quality features for their eco-labels.

Further information:

- ▶ Norman-Network: bit.ly/37jRftt
- ▶ HBM4EU: bit.ly/2HRxDE9
- ▶ Global Ecolabelling Network: bit.ly/3pZJnYg

**Implement global
agreements nationally**

UNITED NATIONS  NATIONS UNIES



5 The German Environment Agency in the context of implementing international conventions

What ought to be the use of international agreements, if they are not implemented or are not implemented consistently? National enforcement authorities play a central role in all international environmental protection activities: the objectives and agreements must be translated into practical policies.

The **German Environment Agency is the authority responsible for the enforcement** of various agreements. This includes environmental conventions such as the Geneva Convention on Long-range Transboundary Air Pollution, which protects forests and water bodies from **long-range air pollutants**. Other agreements at first glance may not appear closely linked to environmental protection: For example, **what does a German environmental authority have to do with Antarctica? In this chapter we present three agreements and their implementation as examples.**

What appears clear and simple proves in reality quite complex and requires a lot of specialist knowledge. The Contracting States have to agree on a harmonised approach to enforcement. Only then it can be ensured that the political implementation of the respective nations becomes comparable. Also important for success is cooperation and coordination of actors along the enforcement chain. An exchange of experience

and information between all parties involved supports the development of best practices and provides a platform for the further development of international environmental goals.

Example 1: The Antarctic Treaty System

Protective shield for perpetual ice

The Antarctica is one of the few regions of the world still largely untouched by man. The huge southern ice shield has serious influence on world's climate, it documents important epochs of Earth history and gives home to unique animals and plants. The Antarctica therefore is worthy of the highest degree of protection.

In 1959, the Antarctic Treaty was the first agreement between East and West after the end of the Second World War and it is still valid today: for more than 60 years the territorial claims of seven of the twelve signatory states have been in abeyance. The Contracting Parties undertake to protect the Antarctica and its peaceful use in the long term. Since 1981 Germany has been one of the voting Consultative States with its own scientific research stations.

Since 1998, the Environmental Protection Protocol (USP) has regulated essential issues for environmen-

tally sound behaviour in the Antarctic and prohibited the commercial mining of raw materials. Germany implemented the USP in 1998 with the Protocol on Environmental Protection to the Antarctic Treaty (AUG). It designates the German Environment Agency as the national licensing authority for all activities in Antarctica that are organised in Germany or emanate from German territory. This ensures that an independent institution checks and approves the permissibility of all activities.

The German Environment Agency primarily appraises and approves planned research activities. This includes activities at the year-round stations Neumayer III and GARS O'Higgins, at three other non-permanent stations and from the research vessel Polarstern. With special permit scientists may, for example, approach animals or take soil samples as part of their work, which is prohibited for all other visitors. The UBA also reviews and approves cruises, individual tourist travel and journalistic activities. A prerequisite for all permits is that adverse effects on animals and plants and harmful changes to the air, water, glacial and marine environment must be as much as possible excluded.

In 2017, Germany also transposed the liability annex to the USP into national law. In case of accidents, the liability for the cause of the damage applies: the party responsible is liable for preventive and countermeasures as well as the costs of disposal.



The German Environment Agency also acts as the **national contact point for the Committee of Environmental Protection**, which advises the Contracting States and discusses environmental protection measures, their effectiveness, topicality and further development. The tasks for the future are clearly defined: It will be more important than ever to counter the growing pressure for tourism, combat climate change and establish protected areas in order to preserve Antarctica's unique biodiversity for future generations.

Further information:

- ▶ Antarctic Treaty: bit.ly/3q6jYfl
- ▶ Arctic Council: bit.ly/2Vkeqgh



Example 2: Kyoto Protocol and Paris Convention

Climate protection is a clear statement

In international climate protection, debates often revolve around the issue of which nation has to save how many greenhouse gas emissions within which time frame. According to the **Kyoto Protocol to the UN Framework Convention on Climate Change** of 1997, industrialised countries must reduce their annual greenhouse gas emissions between 2008 and 2012 by an average of 5.2 percent compared to 1990. The EU pledged an eight percent reduction for this period, and Germany contributed significantly to the European reduction target with a 21 percent reduction.

However, quantitative targets only make sense if the obligated nations regularly document their greenhouse gas emissions and thus create transparency and comparability. The creation of national emission inventories is therefore a key pillar under the Kyoto Protocol. In Germany, the German Environment Agency is responsible for emissions reporting. It coordinates the German reporting obligations under the UN Convention, the Kyoto Protocol and – in future – the Paris Convention.

Preparation of the annual emissions inventories follows a set of rules that defines how data is collected and how emissions are calculated and presented for all committed nations. In Germany, it is mainly the Federal Statistical Office, trade associations and

research institutions that provide the necessary data, for example on energy production, industrial production, agriculture and waste disposal. The national inventories are then reviewed for accuracy and completeness by an international expert group from the UN, in which the German Environment Agency is also represented.

From 2023, the **Paris Convention** requires not only developed countries but also emerging economies and developing countries to report on their greenhouse gas emissions. Since the calculation of inventories is complex and time-consuming, the German Environment Agency supports developing countries in capacity building and implementation of the new reporting obligations. And by the way, the inventories cover not only greenhouse gases from normal economic life, but also from forest fires or underground peat and coal fires – especially as a result biological sinks for greenhouse gases are lost.

Within the EU, **emissions trading** is the most important instrument for climate protection. And within Germany, the **German Emissions Trading Authority (DEHSt) at the German Environment Agency** regulates certificate trading. The approximately 170 employees are responsible for national allocation, monitoring the emission reports of affected companies from the energy sector, industry and aviation, as well as for the coordination and further development of European enforcement measures.

In the context of the project mechanisms, DEHSt acts as a link to the UN Climate Change Secretariat. It examines climate protection projects of German companies abroad that are to be credited under the Clean Development Mechanism (CDM) for the fulfilment of tax obligations in emissions trading. In these cases, measures taken abroad must lead to additional emission reductions that are not already covered by political requirements in emerging or developing countries. In addition, the savings must be demonstrated clearly in terms of methodology and the project may not have negative impacts on local water, soil or air. Since 2005, DEHSt has approved around 700 climate protection projects abroad. Since then, German plant operators have used this route to purchase credits for around 420 million tonnes of CO₂.

Further information:

- ▶ Towards a joint implementation of the 2030 Agenda / SDGs, the Paris Agreement and the Sendai Framework: bit.ly/3t9m2oR
- ▶ RESCUE - Paths to resource-efficient greenhouse gas neutrality: bit.ly/3ImOqZb
- ▶ DEHSt: bit.ly/3I9uLvw
- ▶ Market mechanisms: bit.ly/3tXKqJl

Example 3: Geneva Convention on Air Pollution

Breathe deeply again

Some 50 years ago, headlines about extensively diseased forests and dying fish in Scandinavian waters shocked the public in Germany and Central Europe. At a time, when East and West still lay confined by borders that were difficult to cross, one message caused quite a stir: scientists had shown that air pollutants are transported across vast distances and cause severe damage to ecosystems far away from their point of emission.

In 1979, 30 European countries, the USA and Canada signed the **Geneva Convention on Long-Range Transboundary Air Pollution** under the auspices of the United Nations Economic Commission for Europe (UNECE). The German Environment Agency has been actively involved from the very beginning, as the forest dieback in Germany in the 1980s led to considerable industrial policy and social impacts.

Today, more than 40 years later, **the Parties are seeing positive results**: the agreement has **significantly reduced long-range transport of air pollutants and the associated environmental problems**. In particular, sulphurous acidic emissions, which damage forests and kill fish, have been massively reduced, as has the emission of heavy metals. According to the Gothenburg Protocol, nitrogen oxides, volatile organic compounds, ammonia and particulate matter must also be significantly reduced by 2020.

There are now 48 States cooperating in the Convention. **The German Environment Agency is represented in almost all working groups of the Convention and has headed the Coordination Center for Effects, which manages research on the effects and assessment of pollutants in ecosystems, since 2018.** It also supports the Task Force on Measurements and Modelling, which **is dedicated to background exposures, models for airborne transport processes and comprehensive monitoring**. Last but not least, the UBA is committed to capacity building and knowledge transfer to Eastern European countries to help them set up measuring stations and emission inventories.

The participating states operate national measurement networks to monitor pollutant levels. At the heart of the measurements in Germany is the German Environment Agency's air monitoring network. The stations are located all over Germany, far from local sources of pollution and collect pollutants in air masses transported over long distances. A wet-only deposition system measures pollutants that enter the soil, plants and surface waters via precipitation. The UBA is also planning a monitoring station in Berlin, which for the first time will focus on air pollution caused by long-range pollutants in urban areas.

One of the strategic objectives of the Geneva Contracting Parties is to better link air pollution control, climate protection and the protection of biodiversity. Another future focus is the hemispheric transport of substances emitted from practically the other side of the world. Information about their transport routes and effects could lay the foundation for political agreements, that transcend not only borders, but also continents.

Further information:

- ▶ Convention on Long-range Transboundary Air Pollution: bit.ly/3tUUCMb



Work it out



6 The German Environment Agency as contact point for international agreements

International agreements require national contact points – i.e. an institution, an authority or a department responsible for a particular agreement. These contact points answer questions, provide advice and collect scientific data. As a rule, they are in close contact with other authorities in their own country, and in particular with the contact points of other contracting states and the secretariat of the agreement. As a scientific expert advisory body, **the German Environment Agency is the contact point for various international agreements**, conventions and protocols. This chapter presents three of them and the work of the UBA as the respective contact point.

As environmental issues are complex, it is essential that **experts from different sectors** are always involved. The German Environment Agency ensures this networking by pooling the expertise of different disciplines and specialised subdivisions and utilising this expertise for its work. In addition, there is usually an official contact point in the Federal Environment Ministry for the respective agreement, with which the German Environment Agency is in close contact.

Example 1: The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

No-go for toxic waste

The world has had a global waste management convention since 1989. The so-called Basel Convention was the first to establish rules for the worldwide **supervision and control of transboundary movements of hazardous waste**. The basic idea is that hazardous waste can no longer be transported unchecked across national borders, where it pollutes the environment and poses a serious threat to people.

Today the agreement covers many types of waste for which a globally standardised notification and control process is required. In addition, technical guidelines for environmentally sound disposal have been adopted over time, for example for the handling of mercury-containing waste materials or for the co-incineration of waste in cement plants. The additional ban amendment came into force in 2019. It prohibits the export of hazardous waste from OECD countries to non-OECD countries, irrespective of whether the waste is to be recycled or disposed of in the country of destination.

6 Contact point for international agreements

Under the German Waste Shipment Act the German Environment Agency has been the **contact point for the Basel Convention** since 1994. The UBA provides general information and advises authorities and business. It contributes its expertise on waste disposal and recycling in international forums and meetings and has participated, inter alia, in the development of guidelines for the management of waste containing persistent organic pollutants. The German Environment Agency is also the licensing authority for waste transports passing through Germany.

The Agency is also engaged in partnerships with environmental organisations and economic actors to help developing countries establish improved disposal structures, for example for mobile phones or electronic waste. Last but not least, it has the task of compiling annual statistics on the quantities of waste

imported and exported, which is done with the help of data input from the federal states.

Waste does not always have to be toxic in the classical sense to cause great damage worldwide. One example of this is the vast quantities of plastic waste that pollute ecosystems worldwide and are life-threatening to plants and animals. The contracting states therefore decided that from 2021 onwards contaminated plastic waste will be subject to monitoring and may no longer be freely traded.

An essential element for the success of the Basel Convention is that modern, **efficient structures for environmentally sound waste management** are created in the importing countries. The German Environment Agency plays an advisory role in networks that support individual countries in establishing recycling structures with high environmental standards. In Ghana, for example, it was possible to contribute to the establishment of structures for the collection, sorting and recycling of electronic waste and packaging.



Further information:

- ▶ Basel Convention on the control of trans-boundary movements of hazardous wastes and their disposal: bit.ly/2Js26cm

Example 2: Stockholm Convention on Persistent Organic Pollutants (POP Convention)

Not longer POPular

Although certain chemical substances serve their purpose in industry or agriculture, they pose serious risks when they enter the environment. These problem substances include **persistent organic pollutants** (POPs). These chemicals often contain chlorine or fluorine and are hardly degradable in nature. Rather, they are distributed all over the earth, accumulate in the food chain and harm human and animal organisms.

This chemical hazard has been tackled by **the Stockholm Convention** since 2004. The now 184 signatory states want to end or at least limit the production, use and release of POPs. There are also provisions under the Convention on the disposal of POP containing waste.

As a scientific authority, the German Environment Agency **is the national contact point for the Convention and responsible for implementing the Convention and the EU POPs Regulation in Germany**. This includes: minimisation of still existing applications, identification of further POPs and participation in the development of technical standards (BAT/BEP). The important exchange of information with the Convention Secretariat and other contact points is also handled through the UBA. Every four years the German Environment Agency prepares a

comprehensive report and a National Implementation Plan (NIP) showing how Germany is carrying out its commitments.

Initially, the Stockholm Convention's list of banned substances included twelve substances ("dirty dozen") consisting of pesticides, PCBs, dioxins and furans. The number has since risen to 30. New additions include the brominated flame retardant HBCD, the pesticide Endosulfan and the fluorinated impregnating and fire extinguishing agent PFOA. The German Environment Agency considers the **updating of the lists** to be an important tool for better protection against hazardous and non-degradable chemicals in the future. In addition, the development of **alternative substances** is an important prerequisite for phasing out the applications and exemptions still allowed. In 2016, for example, the German Environment Agency published a "Guide on sustainable chemicals" to inform manufacturers and users about more environmentally friendly alternatives. With the help of the free online tool SubSelect, manufacturers and users worldwide can evaluate the sustainability of the substances they are using.

Above all, the regular Conferences of the Parties are an indicator of how seriously the international community takes the worldwide phase-out of POPs. In these conferences participants decide on listing further chemicals, the tasks of subordinate working groups and financial support for developing countries. At the recent 2019 conference there were

positive developments: For example, the use of certain perfluorinated chemicals – substances that were previously considered irreplaceable – was further restricted. From the German Environment Agency's point of view, this is proof that the Stockholm Convention is effective, even for substances that are economically important but pose a significant risk to health and the environment.

Further information:

- ▶ Stockholm Convention on Persistent Organic Pollutants: bit.ly/2VhHVAD

Example 3: Strategic Approach to International Chemicals Management (SAICM)

Strategy for a sustainable chemical industry

Chemicals fulfil many useful technical functions and are therefore produced, transported, traded and used worldwide. The downside of many substances is that they can harm the environment and human health.

SAICM aims to reduce the **risks posed by chemicals**. Since 2006, the “Strategic Approach to International Chemicals Management” has brought together various activities at global level to improve safety in handling chemical substances. As the national contact point for the implementation of SAICM in Germany, the UBA coordinates the participation of the relevant stakeholders in Germany. The International Sustainable Chemistry Collaborative Centre (ISC3) in Bonn supports these activities by organising confer-

ences and expert discussions on individual topics such as the spread of pharmaceutical residues in the environment or chemicals in construction products. Within the framework of SAICM, the nations together with representatives of the participating UN institutions, industry and civil society, have defined several **emerging policy issues**. These particularly urgent cases involve substances such as flame retardants in electrical appliances, heavy metals in paints and perfluorated chemicals. These substances are used worldwide and are therefore a global risk.

SAICM's greatest success so far has been in **strengthening the expertise and cooperation** of all parties concerned regarding substance-related risks that are not adequately regulated elsewhere. Experience shows that in addition to the transfer of knowledge and technology, capacity building in emerging and developing countries is a precondition for enforcing a sustainable management of chemicals and waste worldwide.

The SAICM mandate ended in 2020 and will be prolonged at the Fifth session of the International Conference for Chemicals Management (ICCM5). Chemicals sales will continue to grow strongly worldwide. This also increases the risks to the environment and health. It is therefore of great importance that international cooperation, partnerships and coordination processes are intensified after 2020, especially since economic development is almost always linked to the use of chemicals. Environmentally sound and safe handling of substances is therefore essential for

sustainable development worldwide and closely linked to the goals of UN Agenda 2030.

Germany has taken over the preparation of the ICCM5. The aim is for the parties involved **to set the course for the post-2020 period** and to agree on strategies to ensure better and safer handling of chemicals around the world.

The German Environment Agency considers the idea of a sustainable chemical industry to be particularly important in this context – i.e. substances, materials, and manufacturing processes that have low harmful effects, can be recycled, and conserve natural resources. The mechanisms for this are already in place in SAICM: national action plans, binding agreements, networking and transparent reporting.

Further information:

- ▶ Strategic approach to an International Chemicals Management: bit.ly/39tGyH9



Giving advice for Europe's environment



7 The German Environment Agency in expert advisory bodies of the EU

Many decisions in environmental politics are made in the EU or prepared in the OECD. The technical and scientific expertise of the German Environment Agency is essential, even though when decisions at first glance are not closely connected to the conservation of ecosystems or natural resources. **We present two activities that can have a great impact as powerful levers.**

EU Ecodesign Directive. The refrigerator in the kitchen, the PC and printer in the office, the boiler in the cellar – everyday products account for a large proportion of material and energy consumption. With the Ecodesign Directive, the EU aims to improve the environmental performance of many appliances and increase their lifespans. Up to now for 28 product groups there are energy efficiency requirements in place, including acidifiers, light sources, refrigerators and washing machines. From 2021, there will also be requirements regarding the reparability of equipment. In future, it should no longer be possible to obtain spare parts only from the manufacturer, rather they should be available from any repair shop. The idea behind this: if appliances are easy to repair and therefore used for longer, both raw material consumption and waste volumes are reduced.

Which products have to meet which particular requirements? This question has to be agreed upon

between public authorities, business representatives and environmental and consumer associations. The German Environment Agency is involved in the process at several points. For example, it prepares statements on how concrete requirements should look, based on the consultations and its own studies. The UBA also monitors whether the implementation of the guidelines is working well in practice. It also advocates that the Ecodesign Directive should focus more on the consumption of raw materials in the future. **An UBA's research study on material efficiency** provides the data basis for strategies on how to reduce material consumption while increasing the sustainability of appliances.

The Ecodesign Directive – combined with the labeling of exceptionally efficient products – has been a success: The total annual energy savings across the EU are of similar size of the total primary energy needs of Italy and Denmark.

In the future, the aim will be to ensure that computers, tablets and mobile phones, in particular, are used for a longer period of time – for example, by requiring manufacturers to provide upgrades and security updates. The German Environment Agency also is convinced that the issue of recycling management must become more important. This includes banning substances that interfere with recycling and introduc-



ing a quota for the use of recyclates in certain product groups. Last but not least, it is crucial that consumers look for appropriate efficiency labels when making purchases. To raise awareness, the UBA regularly provides information via the Internet, its website and other information channels about the advantages of economical and durable appliances.

Further information:

- ▶ Eco-design: bit.ly/36hMyTP

Green Finance

Those who want to counter crises and promote sustainable economic activity need not only strategies, but also sufficient financial resources in the

long run. How can private capital be channelled in such a way that it benefits the development of a climate-friendly energy supply or the protection of the climate and ecosystems? Is it possible to link economic goals of investors with objects for global sustainable development? How can the transformation of economic processes become transparent and cost-efficient? Do legal hurdles make Green Finance difficult or perhaps even impede it?

The international community is seeking answers to these complex questions at various levels. Germany wants to become one of the leading financial centres for sustainable investments. The German Environment Agency contributes to this with its technical and scientific expertise.

At OECD level, Green Finance has become very important. Politicians, experts and representatives of the capital market debate in committees and at conferences about suitable strategies for helping investors better consider climate risks and evaluate investments from an ecological perspective. **The UBA is represented in the OECD's Working Party on Climate, Investment and Development**, where it reports on examples of best practice and its own research findings, for example on the internalisation of environmental costs or economic opportunities through climate protection.

In the EU, too, the issue of Green Finance has been a very hot topic for some years now. The High-level Expert Group on Sustainable Finance was established in 2017. Among other things, it has proposed the development of a taxonomy for sustainable investment – a classification, as it were, which ranks planned financial assets or investments according to their climate compatibility. Financial actors in the so-called Technical Expert Group have developed such a taxonomy. As a member of an external advisory group, the German Environment Agency played an active role in the process and submitted proposals for an ecologically sustainable classification system.

This taxonomy for the first time provides clear guidelines for sustainable investments to the financial market. It is also an important reference for developing a planned eco-label for “green” financial products of which the German Environment Agency is involved. A label of this kind would make it easier

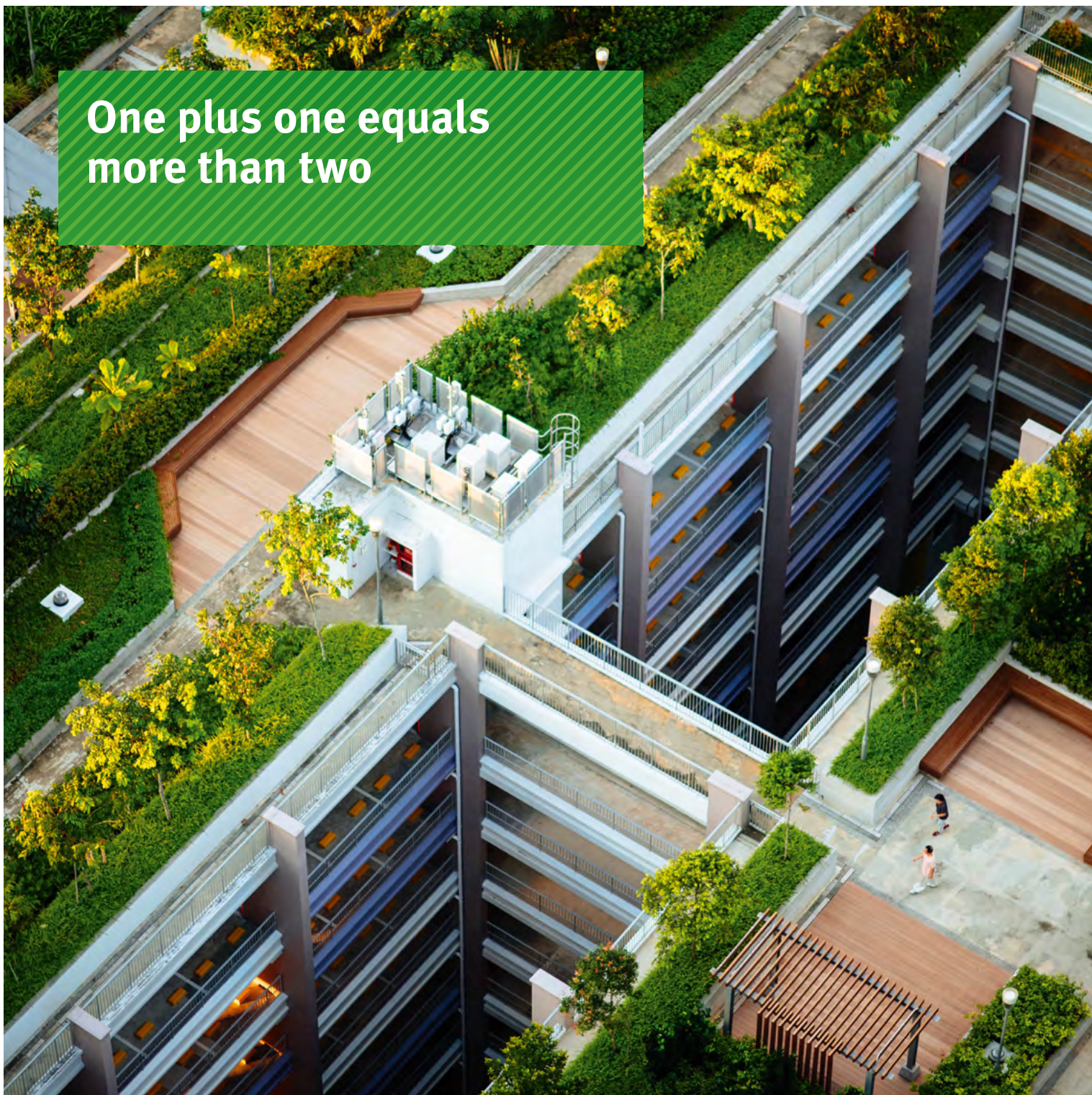
for investors to distinguish between climate-friendly and climate-damaging investments. Similar classifications should also be developed for investments that have an impact on marine protection, recycling management and biodiversity.

In Germany, the UBA participates in the Federal Government's Sustainable Finance Advisory Council, which was established in 2019. It will develop recommendations on how Germany can promote a sustainable financial sector: Should actors in the financial market be obliged to disclose their shares of ecological feasible as well as conventional investments? Should every major private investor have to present a climate protection strategy? Last but not least, **the German Environment Agency is part of a network of environmental authorities in Germany, Switzerland, Austria, Lichtenstein and Luxembourg**. In close cooperation with investors from the participating countries, this group of five nations aims to raise awareness of environmental issues and environmental data and thus interlink science and finance.

Further information:

- ▶ Sustainable Finance Advisory Council: bit.ly/3J6bfBk
- ▶ Sustainable Finance in the EU: bit.ly/3pWgo7j
- ▶ OECD Working Party on Climate, Investment and Development: bit.ly/2K7RrEe

One plus one equals
more than two



8 The German Environment Agency as a partner in bilateral cooperation

International environmental and climate protection often operates under the umbrella of large, global agreements. Sometimes, however, a more focused approach with just a few partners is more promising – for example, when it comes to individual sectors or very specific consulting work. This is why the German Environment Agency is involved with many countries through bilateral dialogues or regionally limited environmental programmes. Here we present three of these activities.

Environmental partnership with China.

Even though each individual country has significance in international environmental protection, the route taken by economically strong nations and major emitters is often decisive. This also applies to China. “What China does, matters”: How will the economy develop in this huge nation? Which role does sustainability play in China? What do strategies look like that interlink environmental and climate protection with, for example, poverty reduction?

These issues are addressed by the China Council for International Cooperation on Environment and Development (CCICED). The Council sees itself as a platform for the exchange of knowledge and experience and as a bridge between China and the international

community for development and environmental protection.

In this high-ranking advisors body, around 60 Chinese and international experts discuss important issues for the future, such as environmental governance, green urbanisation, sustainable consumption and sustainable energy systems. The recommendations and working papers of CCICED influence the 5-year plans of the Chinese State Council.

The German Environment Agency has been represented in CCICED since 2017. Basis for UBA’s participation is an environmental partnership that the Chinese and German Environment Ministries entered into as part of their bilateral cooperation in 2013. Between 2017 and 2019 a working group headed by the German Environment Agency worked out goals and paths for sustainable development in China: What must strategies look like to achieve key environmental targets in 2050? The dialogue focuses on issues related to chemicals, biodiversity and climate

Further information:

- ▶ Sino-German Environmental Partnership: bit.ly/3q2hi2s
- ▶ CCICED: bit.ly/37UgkLw



protection – areas in which the German Environment Agency can draw on extensive expertise.

Advisory Assistance Programme

For environmental and climate protection in Europe, not only the activities of the EU member states are of great importance, but also those of the entire European continent. For 20 years, the Federal Environment Ministry has therefore been supporting environmental protection not only in Central and Eastern European neighbouring nations, but also in the Caucasus, Central Asia and other countries bordering the EU with its Advisory Assistance Programme (BHP). And there are good reasons to do so: for some EU Member States adoption and enforcement of EU environmental legislation, for example, remains a challenge. The BHP enables and facilitates progress towards EU environmental standards in other countries.

The German Environment Agency is a central point of contact in this respect: The BHP project service unit at the UBA coordinates consultations with the Federal Ministry, the addressees of the advice, the implementing organisations and other technical authorities. **To date, experts from all departments of the UBA have provided technical support to some 380 projects in the Advisory Assistance Programme,** with some 20 new projects being added each year.

The concrete questions depend on the need for advice in the respective country. What measures will reduce air pollution in cities in Bulgaria or Mongolia? How can the safety of industrial facilities in the Danube

region be improved? How can the UN goals for sustainable development be anchored in the countries of the Caucasus and Western Balkans? How can Turkey organise separate collection and recycling of waste according to modern standards?

The German Environment Agency supports states in implementing international obligations, assists in drawing up environmental policy programmes, and advises on resource-saving and environmentally sound technologies. The focus is on strengthening authorities, e.g. through concrete recommendations for action or guidelines, as efficient environmental administrations play a key role in reducing pollution and for effective environmental policy. In this way, BHP and German Environment Agency are helping to improve the environmental situation not only for local people but also across borders. The necessary cooperation among the states will become more intensive and new cooperations will be established.

Further information:

- ▶ Advisory Assistance Programme:
bit.ly/3Kylvmi

Environmentally friendly textile production in India

Many textiles for the German market are produced in India – often associated with high environmental pollution and working conditions that are harmful to health. Although India has strict environmental limits for textile production in some cases, they often fail in practice because existing facilities are often poorly managed and maintained, and authorities and operators do not communicate and cooperate enough.

To improve the situation, the German Environment Agency has been advising Indian authorities and textile companies since 2012. The technical dialogue focuses on what is known as Best Available Techniques (BAT). Within the EU, BAT leaflets describe appropriate, environmentally sound processes for the manufacture of certain products and the mode in which facilities should be sized, operated and monitored.

Since 2013, the German Environment Agency and the German Agency for International Cooperation (GIZ) have been cooperating with the environmental authority of the state of Gujarat – one of the largest hubs of the Indian textile industry. As part of a **Joint Declaration of Intent**, a BAT document has been developed to make textile production more environmentally friendly and improve the management of the facilities. It becomes apparent that even inexpensive and simple measures can have great effects. Indian machine builders, chemical suppliers and manufacturers of filters and other environmental technologies are also closely involved.



In addition, the leather industry, together with the Indian National Environmental Protection Agency, has developed a regulation to reduce emissions from leather production.

The willingness of national and regional authorities and plant operators on site to cooperate is crucial for success. **The German Environment Agency's ongoing advisory work on both management and technology issues has enabled a relationship of trust between industry, authorities and environmental protection organisations.** The participants are jointly developing solutions for more ecological textile production that make energy and material use more efficient and cost-saving, while at the same time processes comply more easily with limit values for waste water and exhaust air. In the near future, the

Gujarat BAT document will be extended to cover the entire textile industry in India. To this end, the German Environment Agency has developed a cooperation agreement with national authorities.

Further information:

- ▶ Best Available Techniques reference documents (BREFs) in India: bit.ly/3P2rrX8

**We'll keep staying
on task**



9 Outlook

As a technical authority with more than 40 years of expertise, the German Environment Agency will continue to conduct research and derive policy recommendations from it. After all, environmental policy decisions are sustainable and reliable for everyone when they are based on a solid foundation of facts.

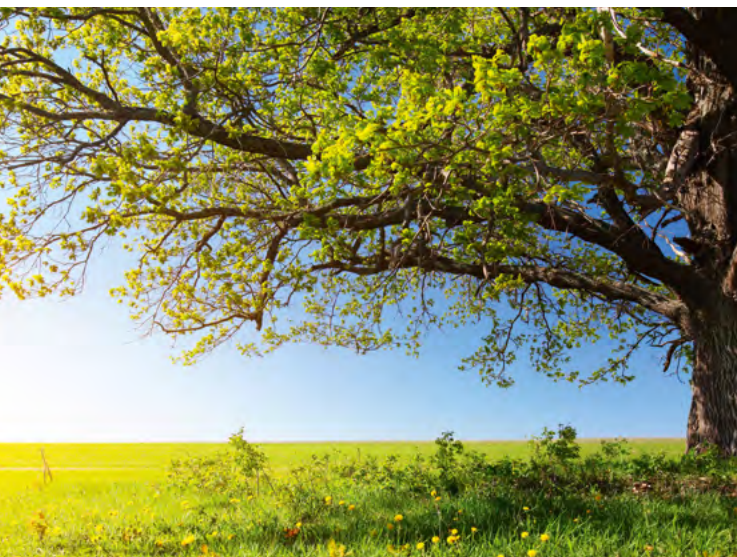
In future, UBA will intensify its knowledge contributions for enhancing the development of international conventions and their global implementation.

At the same time the UBA will become even more international. It will exchange and coordinate research results and knowledge with international partners to an even greater extent, deepen cooperation and promote the formation of knowledge-based networks.

The German Environment Agency's cooperation with other European environmental agencies on key issues of European environmental policy, for example, ties in here. The idea behind this: If recommendations to politicians are not only supported by one country, but by a community of competent authorities, institutions and universities, they will have a greater impact.

Together with other environmental authorities, non-governmental organisations and sustainability research efforts, the UBA intends to focus more on questions around the holistic transformation of our economic and social systems towards sustainability. How can we decarbonise our energy systems, our industry, our mobility and housing? How can digitalisation be made sustainable? Can the world's megacities be designed to conserve natural resources and create a high quality of life for people?

For these big questions we need not only technical expertise, but also **curiosity and willingness to change**. An "International Academy for Sustainability and Environmental Protection" could provide a



hub for this by communicating research results and ideas on current issues and developing and describing common approaches. An academy of this kind is currently being established at the German Environment Agency.




The German Environment Agency would like to increase its **involvement** in European third-party funding programmes - this applies both to European programmes such as Horizon Europe and to activities within the international research landscape. In continuing its cooperation with China in the Chinese Council for Environment and Development, the UBA is seizing the opportunity to contribute its own experience and develop strategies together with internationally renowned experts.

Good policy advice and international cooperation must serve to preserve limited resources, protect the climate and environment, and respect human needs. The global sustainability goals of the United Nations provide clear guidelines for this. The German Environment Agency's international work therefore supports the implementation of the UN sustainability agenda – true to its motto “For people and the environment”.





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