



Federal Ministry
for Economic Cooperation
and Development

BMZ Water Strategy

A key contribution to implementing the 2030 Agenda and the Paris Agreement

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1 Executive summary and key policy messages

For the global development agenda, the decisions taken in 2015 – above all the adoption of the 2030 Agenda for Sustainable Development and the Paris Agreement – mean a crucial paradigm shift and change of perspective with far-reaching consequences, not least in the water sector. With this new water strategy, the German Federal Ministry for Economic Cooperation and Development (BMZ) is responding to the ambitious and challenging goals of economically sustainable, integrated and low-carbon development, and placing them in the context of a holistic approach.

This water strategy paper is binding for all staff of the BMZ and Germany's implementing organisations for development. Based on the principle that all actors share responsibility, which also underlies the 2030 Agenda for Sustainable Development, this action plan will serve as a guiding framework. For our partners – particularly civil society actors, non-governmental organisations, private institutions, research institutions and the private sector – it is also an offer of cooperation. It thus supersedes the sector strategy published in 2006.

One new feature of this strategy is that it places water-sector activities in the context of the BMZ's overall contribution to implementing the 2030 Agenda, the Paris Agreement and other global agreements such as those on human rights. Also new is the way it links development cooperation in the water sector with mitigating the causes of displacement.

The strategy paper explains the BMZ's objectives, serves as a basis for official development cooperation activities in the water sector and defines solutions for these objectives. It thus provides the basis *inter alia* for country strategies, political dialogue with partners and other donors, and the work of our official implementing organisations. When development cooperation in other sectors touches on water issues, the activities in question must also be aligned with this sector strategy. This is made all the more important by the fact that it will only be possible to implement the United Nations 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs) by paying sufficient attention to the cross-sectoral links. Key interfaces and areas of activity involving adjacent sectors will therefore be described in separate strategic documents (http://www.bmz.de/en/publications/type_of_publication/strategies/QBS_en.pdf). Typically, these links tend to occur in the following six SDG constellations:

- (1) water, education, health, and food and nutrition,
- (2) water, sustainable economic development, employment and vocational training,
- (3) water, agriculture and energy,
- (4) water, environment and climate change,
- (5) water, good governance, urban development and
- (6) water, population growth and migration.

KEY MESSAGES

- Where there are competing interests for water use, German development cooperation will attach priority to the human rights-based approach and the leave no one behind (LNOB) principle contained in the 2030 Agenda.

- German development cooperation will make the case for leveraging the potential of water as a resource for reducing conflict and mitigating the causes of displacement.

- In all development cooperation measures that deal with water resources either directly or indirectly in the context of water quality contamination, we will emphasise the importance of complying with the principles of integrated water resources management (IWRM).

- Projects involving investment in water infrastructure will support partners in operating sustainable service delivery structures. These projects will be accompanied by measures to support the capacity development of institutions and their staff. The measures will aim to enable partners to sustainably mobilise their own sources of funding, use these funds efficiently and transparently, and institutionalise technical and managerial expertise.

- Preventive development cooperation measures to protect water security will be based on climate modelling. Given climate change, rising demand and dwindling freshwater resources, water risks are likely to increase.

2 Water is life – an analysis

For a life without poverty in a healthy environment and a developing economy, human beings need access to water, sanitation, wastewater management and sustainable water resources management.

Although major progress was indeed made in water supply under the Millennium Development Goals (MDGs), 1.8 billion women, men and children are still forced to drink water that is contaminated and therefore poses a risk to their health¹. And significantly less progress was made in sanitation. Worldwide 2.4 billion people are still living without adequate sanitation – with serious consequences for their health and the environment. The lives of girls and women are often adversely affected by long, time-consuming and in some cases unsafe journeys to fetch water or use toilets. More than 80 per cent of wastewater worldwide flows untreated into the environment – with significant health-related, economic, ecological and social consequences². Delivering public services to a rapidly growing urban population is also a major challenge in the water sector. The human right to water and sanitation was proclaimed by the UN General Assembly in 2010³, and specified in further detail in 2015 in two separate human rights⁴. This once more underlined the fact that the binding right to an adequate standard of living (International Covenant on Economic, Social and Cultural Rights, Art. 11⁵) also includes the right to water.

The World Economic Forum places water-related risks since 2011 among the five global risks that are most likely to occur and have the greatest potential to cause damage⁶. Between 1992 and 2012, for 95 per cent of all people affected by natural disasters – a total of more than 4.2 billion – the disasters concerned were water-related (flooding, drought or storms). The costs of the damage caused amounted to 1.27 trillion US dollars. Forecasts predict that the value of the goods at risk will reach 45 trillion US dollars by 2050 – an increase of 340 per cent on the figure for 2010.⁷

One of the key challenges of the 21st century is to secure a sustainable water supply and provide a

growing world population with as much safe water as they require in order to meet their basic needs, and undergo social and economic development. In some regions of the world the water resources available per capita are dwindling. Increasingly, this is constraining development. One ominous trend in this context is sinking groundwater levels – in some cases on a massive scale, as we see particularly in regions of India, Pakistan, Mexico and Saudi Arabia⁸. Climate change is exacerbating the situation, in some regions for instance when a lack of precipitation causes aquifers and reservoirs to dry up. In many places water-related extreme weather events and disasters such as flooding and drought are also becoming more frequent and extreme. A further challenge is the growing demand for water generated by economic and population growth, and rapid urbanisation. It is estimated that by the year 2050, demand for water will increase by 55 per cent⁹; two thirds of the world's population face severe water scarcity at least one month a year, i.e. their demand for water is at least twice as high as the supply. Of these four billion people, 1 billion live in India and a further 0.9 billion in China¹⁰. Agriculture is the largest water user worldwide, accounting for 70 per cent of withdrawals, followed by industry (including energy production), which accounts for 20 per cent of water extraction.

Furthermore, untreated industrial, agricultural and domestic wastewater is polluting water resources. Ecosystems become damaged for instance when water resources are overused and contaminated as a result of changes in land use. In many places climate change is also negatively impacting the natural water cycle. Damaged ecosystems are losing their natural ability to store and purify water, and protect against flooding. Species loss in inland water ecosystems is almost twice as high as in terrestrial and marine habitats; today, wetlands have already been reduced by half, and continue to be threatened by the aforementioned trends.

Competition for water will increase – both nationally, and in relation to transboundary water bodies. This can give rise to social, domestic and transboundary conflicts that adversely affect social stability and regional development. As water scarcity increases there is a growing risk that violent conflicts may ensue. With that said, past experience has also shown that communication on water resources often becomes key to further cooperation. Water can then bring people together both within and between different countries. Efficient institutions in the water sector are becoming more important in making this process succeed. Good governance is pivotal in dealing successfully with the challenges in the water sector, not least in order to also fight corruption, which is often considerable in this sector.

Poor water resource security leads to a deterioration in the natural resource base on which human life depends, and constrains sustainable economic development. This contributes towards structural causes of displacement and migration, such as poverty, malnutrition and inequality. Just under a third of the people internally displaced for the first time in 2015 (a total of 8.3 million people) fled their homes due to flooding¹¹.

In response to the challenges in the water sector, over the last few years the BMZ – one of the largest donors in the sector – has invested an annual amount of some 350 to 400 million euros. In Africa alone this created access to water for 25 million people and access to sanitation for 5 million. Water supply and sanitation utilities were strengthened, and their employees provided with professional training. In integrated water resources management and adaptation to climate change in the water sector, Germany is supporting development cooperation activities in 17 catchment areas of transboundary rivers and lakes. At the international level Germany has succeeded repeatedly in helping set the international water policy agenda. This is particularly true with regard to sanitation and regulation. Together with other federal government ministries, the BMZ has succeeded in communicating internationally the message that a universal supply of water and sanitation services, food and energy can only be environmentally sustainable when the international community recognises the interconnectedness of these sectors.

3 The objectives of German development cooperation in the water sector

The framework for the objectives of German development cooperation in the water sector is provided by the 2030 Agenda with its 17 Sustainable Development Goals (SDGs)*, plus German development cooperation's cross-sectoral objectives: sustainable development, reducing poverty and inequality, realising human rights, preventing conflict, and protecting the environment and the climate.

The SDGs make particular reference to the water sector in SDG 6 and its indicators. There we read that the international community intends to achieve universal and sustainable access to water supply and sanitation for all by 2030 (targets 6.1 and 6.2). By the same date it also intends to protect water resources against pollution and overuse (targets 6.3 to 6.6).

Given the interdependent nature of sustainable development, water issues are also relevant to achieving other SDGs. At the same time, achieving the targets in the water sector (SDG 6) is also dependent on developments in these other SDGs. In other words SDG 2 (food and nutrition), SDG 3 (health), SDG 7 (energy), SDG 8 (work and economic growth), SDG 11 (urban development), SDG 12 (consumption and production), SDG 13 (climate action), SDGs 14 and 15 (terrestrial and marine biodiversity), and SDG 16 (peaceful, just and inclusive societies) are all directly linked to the water sector. The 2030 Agenda once again focuses on these links. Furthermore the overarching principle of the 2030 Agenda – “leave no one behind”, which means achieving the Sustainable Development

* Germany's new updated 2016 National Sustainable Development Strategy is the key framework for implementation of the 2030 Agenda in Germany (www.nationale-nachhaltigkeitsstrategie.de). An annex to the present water strategy includes an overview of agreements under international law and documents that are relevant to the water sector.

Goals for all human beings and all sections of the population – also applies to the water sector.

German development cooperation is pursuing four broad objectives in the water sector that build on the SDGs and German development cooperation's cross-sectoral objectives. These are presented below.

Water is hugely important in underpinning health, nutrition, education and economic development. In the 2030 Agenda these cross-cutting links are reflected in the targets. We therefore intend to base our engagement in the water sector closely on the 2030 Agenda and the human rights to water supply and sanitation:

- Expand our engagement for water supply and sanitation, wastewater management and climate-smart water resources management, and align this with the needs of partner countries and particularly disadvantaged groups
- Increase our orientation towards results, and monitoring
- Further develop our leading role in improving sanitation through international networks and partnerships such as the Sustainable Sanitation Alliance and our cooperation with the Bill & Melinda Gates Foundation
- Attach greater weight to the importance of water as a factor in global crises and for achieving objectives in other sectors of German development cooperation. In line with partner country needs, we aim to increase our support for water security activities by a third.

→ OBJECTIVE 1 CREATE ACCESS TO SANITATION AND DRINKING WATER AND ENSURE HYGIENE

The BMZ believes that realising the human rights to water supply and sanitation is key to sustainable development and poverty reduction because these help give people prospects, create options for them to act and guarantee their participation in basic public services.

Accordingly, the BMZ is committed to targets 6.1 and 6.2 of the SDG for water. This includes a particular focus on poor and marginalised sections of the population, including persons with disabilities. These targets for access will also help achieve SDG 2 (food and nutrition), SDG 3 (health), SDG 4 (education), SDG 5 (gender equality), SDG 8 (work and economic growth) and SDG 11 (urban development).

Consequently, in the future we intend to ...

- assign greater importance to sanitation for households in projects. For example, by expanding the BMZ initiative “Sanitation for Millions” we intend to reach four million people by 2022, and improve water supply and sanitation in at least 1,000 schools and at least 500 health facilities.
- attach priority to the human right to water in conflicts over use that cannot otherwise be resolved, particularly where there is competition between agriculture/energy and drinking water supply.
- reserve between four and six per cent of funds to support results-based monitoring and evaluation in projects.

→ OBJECTIVE 2 PROMOTE WATER RESOURCE SECURITY

Water resources are essential for supplying people with drinking water and food, for economic development and for preserving ecosystems and biodiversity. To ensure that water resources are available reliably for these purposes, they must be sustainably managed and protected. Changes resulting from global population and economic growth, new patterns of consumption and land use, and pollution, are all factors that negatively impact water resources independently of climate change, which is exacerbating these trends even further.

The BMZ supports achieving targets 6.3 to 6.6. of the SDG for water: improve water quality and water-use efficiency, implement integrated water resources management (IWRM), and protect and restore water-related ecosystems. This will not only help achieve the SDGs for food and nutrition, energy, work and economic development, urban development, production and consumption, climate action, and the preservation of marine and terrestrial biodiversity; it will also help implement the Convention on Biological Diversity, the Convention on Wetlands (also known as the Ramsar Convention) and the Paris Agreement.

Support will focus in particular on building resilience to the impacts of climate change, and sustainable water management in agriculture – the latter being the largest water user – without which it will not be possible to achieve either SDG 6 (water) or SDG 2 (food and nutrition).

Consequently, in the future we intend to ...

- raise our engagement for water resources management from the current level of 10 per cent of our water sector funding to 20 per cent. We will focus on improving people's lives perceptibly by reducing water scarcity and flooding. This means we will engage in developing natural and engineered water storage capacities and local water management.
- tackle water scarcity and its damaging effects on people, economic activity and the natural environment – by supporting the recycling of treated wastewater, systematic rainwater management and desalination.
- protect water resources – by tackling water pollution in order to preserve drinking water resources and ecosystems. Based on dialogue with our partners, we will redouble our commitment to the proper management of wastewater, solid waste and faeces. We will support measures for regulation and investment, such as the construction and management of wastewater treatment plants and landfills, as well as smaller off-grid systems.
- press ahead with the sustainable protection of water quality and quantity by increasing our support for integrated water resources management in agricultural projects of German development cooperation.



OBJECTIVE 3

CONTRIBUTE TO CLIMATE CHANGE MITIGATION AND ADAPTATION

Climate change impacts directly on the Earth's water balance. Higher temperatures, changes in precipitation and more frequent extreme weather events are among the primary impacts of climate change. In many regions droughts and flooding will increase. In many cases, challenges that already exist are being made worse by the effects of climate change. More efficient and appropriate water resources management is thus becoming even more important. Germany is also committed to reducing greenhouse gas emissions in developing countries. Through development cooperation we will for instance support energy efficiency in water supply, and sustainable wastewater management to reduce emissions of methane and nitrous oxide.

The BMZ also aims to position water more prominently in the context of adaptation to climate change. German development cooperation is working to achieve this both in partner countries and at the international level. Adaptation and mitigation activities in the water sector will help achieve SDG 13, which aims to tackle climate change and its impacts.

Consequently, in the future we intend to ...

- focus particular attention on supporting the efforts of our partner countries with regard to water infrastructures in the context of adaptation to climate change (as documented in their Nationally Determined Contributions – NDCs).
- begin dialogue on water infrastructures with the climate finance facilities, with a view to raising the importance of these infrastructures in the facilities' portfolios.
- introduce water as an issue in the context of adaptation to climate change in international processes (at climate conferences).

→ **OBJECTIVE 4**
**UTILISE WATER AS A RESOURCE FOR
PEACE AND TO TACKLE THE CAUSES OF
DISPLACEMENT**

Weak governance, the impacts of climate change and environmental degradation, and water use by human beings can adversely affect the availability of water resources. This can exacerbate competition for water use both between and within countries and regions, and thus contribute to migration and conflict. Moreover, deficits in the delivery of basic public services weaken the legitimacy of the state.

Through development cooperation in the water sector, Germany will also help mitigate the structural causes of displacement and promote peace. It will support communities hosting refugees in delivering basic services such as drinking water supply, and promote sustainable, just and participatory water management – also in transboundary settings. German development cooperation will thus support partner countries in improving people's lives and increasing the legitimacy of the state. In the long term this will help stabilise countries and regions and prevent conflicts and displacement.

Consequently, in the future we intend to ...

- broaden our engagement in transboundary water management for regional stability, to include new catchment areas that face considerable water scarcity and conflicts over use.
- in regions from which refugees and migrants originate, improve people's lives by boosting water security.
- align our engagement with needs as regional hotspots develop, by mitigating the causes of displacement and supporting host communities in improving their water supply, sanitation and solid waste management.

4 German development-policy solutions in the water sector

Through the 2030 Agenda all countries have pledged to assume responsibility for sustainable development and the global good, and to ensure national implementation of the 17 SDGs (in accordance with the principle of ‘universality’). At the same time the 2030 Agenda recognises that its implementation and the achievement of the SDGs present particularly major challenges for the developing countries which they will barely be able to cope with without external support. Developing countries can adapt the SDGs to national circumstances and draw up corresponding plans for implementation.

Through development cooperation, Germany is supporting partner countries in developing and implementing such plans that cohere with national cross-sectoral strategies and plans – such as those for the 2030 Agenda or the Nationally Determined Contributions (NDCs) submitted in conjunction with the Paris Agreement on climate change. The BMZ is already making reference to these processes at intergovernmental consultations and negotiations. To ensure the actors concerned can verify that objectives are actually being achieved, German development cooperation is also promoting improved monitoring and reporting systems, both at the international level and in partner countries. In harmony with the 2015 Addis Ababa Action Agenda (AAAA), we are also supporting partner countries in redoubling their efforts to mobilise their own financial resources, and to use these funds efficiently and transparently.

To achieve these objectives in the water sector, German development cooperation will design the solutions it offers to match each partner country’s economic, social and natural circumstances. In order to realise these objectives it will often also be essential to work together with relevant adjacent sectors, while maintaining a clear division of responsibilities. This means that during project planning and implementation we will need to look at arrangements for

cooperation that include these adjacent sectors, and where appropriate strengthen them. The BMZ is also committed to supporting the integration of these cross-sectoral cooperation arrangements in partner structures.

4.1 REALISING THE HUMAN RIGHTS TO WATER SUPPLY AND SANITATION

The solutions we offer to help realise the human right to water and sanitation are founded on the human rights-based approach pursued in German development cooperation. The present strategy also provides further guidance for supporting sector reforms and delivering public services.

4.1.1. *The human rights-based approach in the water sector*

The human rights-based approach and the BMZ strategy paper “Human rights in German development policy”¹² are mandatory in German development cooperation. Using a set of guidelines¹³, all development programmes are assessed with regard to their effects on human rights, and any risks. The BMZ supports partner governments in creating access to water supply and sanitation in ways that respect and protect human rights, and is itself committed to the following human rights criteria in the water sector:

- Water which is safe for human consumption and sufficient for personal and domestic use must be available (within reasonable distance) to all. It must be both affordable and acceptable (e.g. in terms of how it smells).
- Sanitation must also be accessible for everyone in all life settings. As well as being affordable, the facilities must be secure, hygienic, and socially and culturally acceptable, such that personal safety and privacy are guaranteed

and the dignity of those using the facilities is preserved. Disability, age and gender (among other things) place special demands on the safety and usability of facilities.

When implementing projects our actions are guided by the human rights principles of non-discrimination and equal opportunity, participation and *empowerment*, accountability and transparency.

At the same time, these human rights allow countries to set a nationally appropriate level of service delivery (national definitions of access) that is geared to each country's capabilities. Countries must do everything to provide everyone with equal access to drinking water and sanitation, continually improve this, and above all avoid any retrograde steps in the level of provision.

The 2030 Agenda explicitly acknowledges these obligations with regard to the human rights to water supply and sanitation. Furthermore, the monitoring criteria for the SDGs go significantly further than the criteria for the MDGs.¹⁴ For instance, they include a focus on service on premises and safe management of faeces. SDG monitoring also attaches much higher priority to drinking water quality than previously. German development policy expressly supports the SDG monitoring criteria.

Where funds and capacities are limited, a significant conflict of objectives can arise between national and SDG criteria for access. In this case human rights and the postulate of water supply and sanitation for disadvantaged groups provide crucial guidance. German development cooperation advocates aligning national regulations with the drinking-water quality guidelines of the World Health Organization¹⁵, and will encourage partners to look more closely at these standards where no such alignment has yet taken place.

In countries where poverty is a major problem, German development cooperation pledges to gear the results of its measures explicitly to people afflicted by poverty and marginalisation, and to attach priority to water supply and sanitation for these groups (in accordance with the LNOB principle). This means we will pay particular attention to the needs of people who suffer discrimination on the grounds of gender, age, disability, background or income. We will focus

on peri-urban zones and informal settlements where the rapid growth in population density means that pollution and health risks are often particularly high – as are water prices. We will also operate in the field of rural water supply and sanitation

4.1.2 Orientation when supporting sector reforms and service delivery

Good governance, pro-poor policy, capable and legitimate institutions on all levels with well-trained professional personnel, financing systems that are not susceptible to corruption, and efficient and effective public financial management, are important factors in providing access to water supply and sanitation for all. We will support partners in designing their national policy, and planning and implementation, on a pro-poor basis. Capable regulatory authorities that operate as autonomously as possible within the legal framework of the state create an enabling environment for the poverty-oriented and gender-sensitive development and expansion of service delivery systems.

Effective providers not only ensure the sustainable operation of technical and organisational capacities, but also gradually extend their services to those who have previously been served either inadequately or not at all. They create access to water for all on a sustainable and non-discriminatory basis. Utilities can be run either privately or by state operators, but they must be subject to effective state supervision. They must be sustainably financed – the standard to aim for here is a system of fees that recovers costs, and takes into account the ability of low-income households to pay. Depending on the context, subsidies may also come into play. Inclusive business models will aim to help create access for poorer sections of the population. The demand among utilities for well-trained professional personnel must be met; this should keep pace with investment in infrastructure and maintenance needs.

Baseline studies and good monitoring are important foundations for planning and supervision as well as for the systematic development of service delivery. They also help to fight corruption. Investment in these foundations should be pursued particularly where Germany is engaged in development cooperation on a long-term basis.

Depending on the context, German development cooperation will support the establishment and development of centralised, semi-centralised and decentralised supply systems. In urban areas, piped water supply is the standard to which we aspire. In sanitation and hygiene a further focus is on the management of faecal matter and wastewater. Key orientation for promoting sanitation solutions is provided by the SDG targets 6.1 and 6.2, and human rights. Where these solutions – such as water kiosks – do not meet the monitoring criteria for 6.1 and 6.2 they should at least constitute plausible interim steps, or contribute towards other SDGs. In many partner countries, users are responsible for domestic connections. German development cooperation must take this into account, and measure its performance by actual use of the supported infrastructure and improved hygiene behaviour. To achieve this we will sometimes need to work with institutions outside of the water sector. German development cooperation is also mindful of access beyond the household level, e.g. in schools, clinics, workplaces and other public spaces. This corresponds to a recommendation made by the United Nations Secretary-General's Advisory Board on Water and Sanitation (UNSGAB).¹⁶

One key aspect when implementing the human rights to water supply and sanitation is consumer behaviour, e.g. hygiene behaviour at household level – particularly when there is no facility within the household. In these cases, water supply and sanitation projects will be complemented by public awareness-raising measures.

We will also focus particular attention on cooperating more closely with the health and education sectors, as well as the food and nutrition security sector. This will involve for instance integrated measures to promote health and health awareness, including activities in the field of water, sanitation and hygiene (WASH) in educational institutions and health facilities. Single-sex toilets and hand washing facilities in educational institutions are an important factor – which is included in the criteria for measuring SDG 4 (the SDG for education).¹⁷ SDG target 2.2 on malnutrition, and stunting and wasting in children under 5 years of age, can also only be achieved through cross-sectoral cooperation. The water sector

will contribute to this by developing and promoting nutrition-sensitive WASH measures at household level.

Water supply

To make an effective and efficient contribution towards national implementation of the 2030 Agenda, and against the background of the SDG monitoring criteria, German development cooperation is increasing its support for partner countries to connect households to the water supply network, ensure water treatment, and guarantee the operation, maintenance and management of the pipes and other infrastructure. As partner countries move towards introducing piping systems with household connections everywhere, interim solutions may be necessary. These include for instance shared taps or water kiosks. Such solutions represent significant progress, because people then drink only treated and hygienic water.

In this context German development cooperation will also support measures to make the use, protection and management of water resources more efficient and sustainable. Drinking water supply for all can only be realised sustainably when water resources are kept in a good state.

Sanitation

German development cooperation will make a contribution towards access to sanitation as envisaged by SDG target 6.2. It will strive to end the deplorable situation in which people are forced to “relieve themselves” in the open. It uses the entire range of available technologies to do so – from decentralised to centralised systems. The sustainable management of faecal sludge and sludge from wastewater treatment plants will be included in the design of programmes from the outset.

In German development cooperation, the approach to sanitation will be based on the idea of a circular economy. This means we will take a comprehensive view of sanitation, embracing everything from the relevant human needs to toilets, the collection and transport of wastewater and faecal matter, and finally their treatment followed by reuse or disposal.

In the sanitation sector, demand first of all has to be generated. Here it is especially important to involve target groups – especially women, people with

disabilities and marginalised groups – and to orient activities towards their needs. Supporting the supply side will usually mean establishing and developing professional service providers, which entails considerable potential for creating employment.

Hygiene

“Hygiene for all” forms part of SDG target 6.2, and refers to behaviours that help prevent infectious diseases. These include regular hand washing with soap and water, for instance after going to the toilet, and menstrual hygiene. This is very difficult, however, when there is no clean water, soap, sanitary products, or private and clean toilets, or when people are not aware of the importance of hygiene.

As well as establishing distribution channels for affordable sanitary products, awareness-raising campaigns and the practice of new routines – not least in formal and informal educational institutions – help bring about behavioural change. One particularly effective approach here is the sustainable integration of WASH into the education and health system. Hygiene-related measures can be implemented on their own, or to complement water supply and sanitation programmes.

4.2 WATER, ENERGY AND FOOD SECURITY – ADVANCING THE NEXUS PERSPECTIVE

Security of supply in one sector can constrain the security of supply in another. This requires an integrated perspective – which Germany committed to when it signed the 2030 Agenda. Only this nexus perspective will enable planners to optimally reconcile the interests of the water, energy and agriculture sectors as they compete to use scarce resources. Only this perspective will enable us to manage conflicts appropriately, and keep within the planet’s ecological limits. This will enable the actors concerned to create sustainable holistic solutions as opposed to sector-based “silo” solutions. We envisage that experts from the water, energy and agricultural sectors will come together as equals at the policy-making level to develop coherent policies and integrated planning approaches. It may also make sense to include other sectors such as the environment or economic development. It will be especially important at the planning

stage to promote integrated and systemic approaches, remove harmful incentives and mutually harmonise management instruments in the sectors. Relevant cross-sectoral strategies will also be integrated.

The link between water, energy and food security is particularly close, because measures in one sector almost always affect the other two, and solutions to challenges in one of the sectors can often be found in the adjacent sectors. Moreover, supplying people with water, food and energy is usually dependent on the same natural resources – chiefly water and soils – as well as ecosystem services such as water storage and purification, erosion control etc. Agriculture plays a pivotal role in the conservation of water resources. Not only does it use the most water; land use is also crucial in determining whether water is stored underground, aboveground or in ecosystems, or is rapidly drained. Producing energy also requires water – for dams or for cooling purposes, for instance. At the same time energy, ideally obtained from environmentally sustainable renewable sources, can solve many water problems when it is used to pump, desalinate or treat water. Energy is therefore an integral part of the system. Energy is a major cost factor both in water purification and distribution, and in wastewater treatment.

The BMZ’s actions are therefore guided by the 2030 Agenda vision, which promotes integrated approaches and the nexus perspective, and is strengthening policy coherence between the agricultural, energy and water sectors. Through development cooperation Germany will support partners in addressing access and security of supply from the nexus perspective, and remaining within the planet’s ecological limits. We believe that this approach will help alleviate conflicts over use in the water sector, and at the same time in the long term help achieve several of the 2030 Agenda’s SDGs.

4.3 MANAGING WATER RESOURCES SUSTAINABLY AND EFFICIENTLY

The key guiding principle for German development cooperation in the water sector is integrated water resources management (IWRM). This principle operationalises the 2030 Agenda’s sustainability

targets for the water sector. It embraces the three dimensions of sustainable development comprehensively, and where possible on a par with each other. IWRM aims to support sustainable social and economic development without jeopardising ecosystems. A key element here is the reconciliation of competing interests between the sectors that use water, including interests that cut across national boundaries. This involves taking into account the perspectives of all users at the level of a watershed early on. There is often significant competition for use, for instance between sectors or between cities and their environs. In many cases this competition is based on considerable political and economic interests.

4.3.1 Promoting good governance

The key prerequisite for sustainable and efficient water resources management is good governance in the water sector. This requires capable, transparent and credible administrations on all levels. This is why German development cooperation will support the establishment and development of institutional and organisational structures. These include watershed organisations that manage water resources at the local, regional and transboundary levels, foster cooperation and prevent conflicts. They also include the responsible ministries that develop and implement appropriate legal frameworks and introduce efficient and participatory mechanisms for cooperation. At the local level the establishment of water user communities helps people to manage water together with all the relevant actors. Effective grievance mechanisms are also crucially important. German development cooperation will make sure that it includes the knowledge and expertise of women in water resources management in appropriate ways, for instance in planning and management processes, in order to support women's empowerment and help ensure that investment is sustainable.

Good governance is also founded on fact-based water resources management, which is why German development cooperation will support the establishment and development of the latter. Although the data available is often incomplete, it is usually possible to identify the key deficits and challenges and tackle them systematically. Remote sensing methods, data from the population and new IT tools are improving the availability and evaluation of data significantly.

Even so, unless data are put to appropriate use the results will remain limited.

4.3.2 Managing water demand and supply

Water scarcity is often “economic water scarcity”, i.e. is caused more by the poor management of existing water resources and inadequate investment in their management than by limited natural water availability. In countries affected by water scarcity the BMZ will support demand management measures that are designed either to reduce water consumption or increase the efficiency of its use – often in cooperation with the agricultural and energy sectors. Water prices are an important management instrument in this setting. Societies need to be made more aware of the fact that water is a precious and scarce good.

Alongside demand management, it may be necessary to increase the water supply, for instance by treating wastewater or by artificially recharging groundwater with rainwater. Underground rainwater storage can at the same time prevent flooding. Water supply can also be increased by rehabilitating water-based ecosystems such as wetlands and – under certain conditions – by desalinating seawater or brackish water.

When water scarcity becomes acute, drinking water supply takes priority. And when water is scarce, non-renewable water sources will sometimes also be tapped. As sustainable management is not possible in these scenarios, German development cooperation will advocate orienting water use of this kind towards drinking water supply. Only in humanitarian emergencies will we promote further extraction of fossil resources. At the same time – while taking energy consumption into account – we will strive to make full use of all appropriate alternative options to increase the water supply. German development cooperation will continue to refrain from supporting the use of non-renewable groundwater for other purposes, such as agriculture.

4.3.3 Preventing the contamination of water resources

A further priority of the BMZ is to develop wastewater management and the treatment of wastewater in the form of faecal and wastewater sludge management – in order to protect water bodies and because wastewater is an important resource that can be used in situations of water scarcity, as well as

for energy production, irrigation and fertilisation. Here we will support context-specific solutions that include in particular decentralised approaches and the rehabilitation of infrastructure. German development cooperation will be based on the idea of reuse, and will promote the safe use of faecal sludge, sludge from wastewater treatment plants, and wastewater to generate energy, or in pre-treated form in agriculture (e.g. for irrigation or fertilisation).

Water quality is also heavily dependent on the responsible management of fertilisers and pesticides in agriculture, on sustainable solid waste management, on environmental regulations for industry and mining, and on regulation of the direct discharge of industrial wastewater into the wastewater system.

4.3.4 Involving all relevant water-using sectors

One prerequisite for achieving SDG, as well as SDG 2 (food and nutrition) and SDG 7 (energy), and for protecting the global common good, is that the agricultural and energy sectors make the sustainable and efficient management of water resources a priority. In the agricultural sector – which is the largest water user – there is a tension between the sustainable management of water resources and their use for food security, not least in irrigation and land use. Knowledge of water management in the agricultural sector is an important resource that should be used and passed on to subsequent generations. The consideration of cost-benefit ratios and interactions need to be addressed explicitly in order to successfully implement the 2030 Agenda.

Sustainable water resources management ensures the preservation of ecosystems, which in turn store and purify water. These aspects of IWRM are reflected in approaches such as wetland restoration, water source protection measures, reforestation, erosion control and organic farming. Other relevant measures include the establishment of nature reserves, and advisory services to integrate biodiversity goals into water management.

Beyond the agricultural and energy sectors, water is also an important economic factor in industry, business and tourism. If insufficient water is available, if the available water is not of the right quality or if the water-related risks are high, this

acts as a constraint on investment and economic development. Development cooperation measures in the water sector thus also always contribute to promoting the suitability of areas as locations for business. It is estimated that 78 per cent of jobs worldwide are dependent on water, approximately half of them heavily so.¹⁸ This is why technologies for increased water efficiency, for the reuse of industrial process water and wastewater, and cooperation arrangements for water management that include the private sector, are very important. Water issues should be included in advice on structural and industrial policy, in order to enable companies to incorporate water-related risks into their decision-making on choice of locations and financing, so that they can then produce on a more water-efficient basis, or themselves develop and market water-efficient solutions and technologies. This will help prevent problems in water resources management. The financial sector should contribute to this and integrate water risks (scarcity or flooding) into criteria for lending and investment decision-making, or provide appropriate financing solutions for production methods that conserve natural resources.

When people in industrialised countries consume products from developing countries that are often manufactured on a water- or energy-intensive basis, this affects the management of natural resources in the exporting countries, where it may then contribute to an overexploitation and contamination of water resources. Many goods such as meat or textile products contain a large amount of “virtual water” – water that was used to produce these goods. From a water sector perspective, it is therefore important to support measures that foster sustainable consumption and production as envisaged by SDG 12 – whether they involve bilateral development cooperation, cooperation with the private sector or education on development policy issues. These measures will aim to produce a positive environmental balance sheet. This is why we need to consider water and land resources, along with CO₂ emissions, on an integrated basis.

4.4 MINIMISING CLIMATE-RELATED WATER RISKS

German development cooperation will use its long-standing experience and proven technologies in the water sector to support those regions that face even greater challenges due to climate change – for instance because precipitation is changing perceptibly, extreme weather events are becoming more frequent or water scarcity is increasing.

We will support our partners in revising their water strategies in light of climate change and in integrating elements of adaptation to climate change into development planning and public budgeting processes, to ensure that they are incorporated systematically. To this end the BMZ is supporting the processes of the National Adaptation Plans (NAPs) – a key instrument for implementing the adaptation component – and the Nationally Determined Contributions (NDCs), which were agreed at the level of the Framework Convention on Climate Change. Specifically, these instruments aim for instance to protect existing water resources and tap new ones, in order to improve resilience against drought and flooding risks. They often also seek to diversify water resources, and review and where appropriate modify approaches to flood risk management, and increase the efficiency of water supply and sanitation.

Our support will focus on

- increasing water storage capacities in ecosystems and infrastructure
- tapping new resources by reusing treated wastewater and possibly using desalinated seawater and brackish water
- implementing inclusive programmes to reduce water losses
- implementing ecosystem- and non-ecosystem-based adaptation in flood protection systems, for instance in the form of retention areas, or the preservation or restoration of species-rich resilient vegetation, or dams
- protecting and restoring rivers and streams, and wetlands.

We will also promote the establishment of monitoring and early warning systems to adapt to the impacts of climate change, as well as cross-sectoral and regional cooperation to strengthen water resource security. Strategies to strengthen resilience at the level of water users will also become more important. This will include rainwater storage in households, and especially adaptation solutions in irrigated agriculture (small-scale irrigation schemes, drip irrigation systems).

Guided by the vision of the 2030 Agenda, German development cooperation activities will be aligned with the processes and resolutions of the UN Framework Convention on Climate Change, including the 2015 Paris Agreement and the national climate strategies of our partner countries. German development cooperation will be oriented towards current climate projections and their interpretations, as well as the publications and methods of the Intergovernmental Panel on Climate Change (IPCC).

What is crucial, however, is not only adaptation measures in the water sector, but also a more systematic and rigorous integration of water-related issues into climate activities in neighbouring sectors – for instance when designing programmes, drawing up guidelines for support, or developing strategies for climate change mitigation and adaptation. To achieve this, experts from the water and climate sectors must work together more closely. The BMZ intends to make broader use of the expertise and experience of German development cooperation in the water sector for adaptation to climate change, and for preventing water-related disasters, in order to achieve SDG 6 (water) and SDG 13 (climate action).

4.5 PREVENTING CONFLICTS, MITIGATING THE CAUSES OF DISPLACEMENT

In areas with high migration such as the Middle East, North Africa and sub-Saharan Africa, German development cooperation is involved in measures to improve water supply and sanitation in refugee camps and in communities hosting refugees. To reduce secondary migration, and foster integration and development in affected communities, the BMZ also fosters cash-for-work programmes in the water sector, as well as vocational training measures that benefit refugees and local citizens alike.

To prevent conflicts, German development cooperation is supporting and establishing dialogue and cooperation arrangements for water management at the national and transboundary levels. The BMZ intends to further step up its engagement for transboundary water management, because this is an important instrument for reconciling interests. We will therefore focus particularly on supporting the establishment and harmonisation of legal and political foundations for international cooperation, for instance in the form of water agreements or water charters, dialogue and mediation processes, and basin commissions. German development cooperation will also support fragile developing countries in living up to their responsibility for providing basic services more effectively. This will increase state legitimacy.

4.6 ACHIEVING LONG-TERM RESULTS AND SUSTAINABILITY

To ensure that the results of development cooperation measures in the water sector are lasting, they embrace all three dimensions of sustainable development – economic, social and environmental. They also address possible interactions transparently, and during the planning phase already take into account positive – and possibly negative – impacts that will occur later. Key to long-term results and sustainability are partner orientation, the involvement of stakeholders including water users, good governance, sustainable finance and an orientation towards structural results.

4.6.1 Alignment with partner needs

German development cooperation is oriented towards the needs of the partner country concerned. It operates through the country's national administrative structures, to ensure that the partners assume responsibility for the projects, and that the measures are in harmony with country-specific plans and conditions. Responsibility for development measures and their execution – and thus also their preparation and implementation – rests with the cooperation partner. The tasks initially performed by the German side must also be handed over to the cooperation partners at a later date, who will then continue them without external support. Our programmes are therefore designed so that the activities

can be continued by the partner self-reliantly. Here we should remember that the desired results usually cannot be achieved in the short term. Many development cooperation projects, particularly in the water supply and sanitation sector, require time because in many cases, besides the structural changes they also involve behavioural changes.

In fragile states it may also be necessary to support programmes and projects via the local civil society, the local private sector or direct contributions. For all partner countries, German development cooperation will endeavour to pursue an approach that is harmonised with other development partners and donors in the partner country.

4.6.2 Multi-stakeholder approach – involving stakeholders

In line with the 2030 Agenda, German development cooperation will support multi-stakeholder approaches in which partners work together on an equal footing. It will aim to achieve dialogue with users and stakeholders of a measure – during planning, implementation and monitoring. We will be especially careful to ensure that women, young people, people with disabilities and marginalised sections of the population are involved. German development cooperation will also support civil society in participating in planning and implementation processes, and make sure that women take part. Where this makes sense and where state supervision as effectively guaranteed, German development cooperation will involve the private sector. We promote participation by local communities and transparency in the form of committees on which elected representatives of local authorities and user representatives jointly discuss planning, operation and maintenance together with the operators. When it comes to the actual delivery of public services, however, we will usually support professional institutions.

The BMZ will also promote stakeholder approaches for instance to protect the interests of all water users in the private sector, civil society and the public sector. In the water stewardship approach, measures will be jointly identified, developed and implemented in order to minimise water-related risks for all stakeholders. The private sector will also make a financial contribution towards implementation of the identified measures.

By supporting the development-oriented contributions of civil society and the private sector, the ultimate aim here is to systematically leverage the development cooperation instruments created.

4.6.3 Promoting good governance, and efficient and effective institutions

Inadequate water supply and sanitation, as well as the overexploitation and contamination of water resources, are often caused by weak governance and corruption. A well-organised sector policy, legal frameworks offering certainty, and capable and transparent institutions on all levels, are key prerequisites for investment and development cooperation measures to generate sustainable and structural results. To achieve this, we will systematically support partner institutions through approaches for institutional and human capacity development at the national, regional and local levels.

Good governance in the water sector requires a clear division of roles and functions between the institutions that make policy, regulate the sector and deliver services. Key elements of effective and credible institutions are transparency, accountability, cost efficiency, non-discrimination and anti-corruption, as well as appropriate participation by users. Capable institutions require well-trained responsible officers, experts and scholars. To meet these needs we need to develop vocational training and higher education. To increase local problem-solving capacities, German development cooperation will support application-oriented scientific expertise in partner countries.

4.6.4 Ensuring sustainable finance

Investment in the water sector is almost always of a long-term nature. This is why it must be sustainably financed. This can only work when sources of income are reliable. The costs of service and maintenance must be covered sustainably. Key to this are cost-covering fees – not least in order to foster environmentally sound behaviour. To make access to water supply and sanitation for all financially possible, the fee system must at the same time be geared to consumers' ability to pay and their demand for water. Costs of up to 5 per cent of household income for water supply and sanitation can serve as a point of reference here. For sections of the population

living in poverty or otherwise marginalised, the cost recovery principle does not exclude the possibility that basic services can be delivered at prices that do not cover costs – and in extreme cases free of charge. One alternative to such a social fee system can be direct transfers to individuals. The latter mechanism is particularly suited to financing additional water requirements, for instance due to AIDS or disability.

Due to the long-term positive effects of poverty- and environment-centred measures in water supply and wastewater management, costs can also be recovered by using supplementary state subsidies. The aim here is to preserve the assets created by the investment that has been supported and to ensure that the partner is able to continue operating the infrastructure self-reliantly. Subsidies for operation must be institutionalised sustainably in policies and laws of the partner country concerned. German development cooperation will provide partner institutions with capacity development support in the field of finance and mitigation of corruption risks.

The inclusion of environmental indicators and water-specific criteria (occurrence of drought, flooding) in investment and lending decisions, in product design and in risk management will prevent water resource management problems and corresponding follow-on costs should such events occur.

4.6.5 Generating structural results

Improving the social, economic and environmental conditions under which people live is closely linked to structural reforms in the water sector. The BMZ will support the development of a poverty-oriented sector policy that is rooted in the human rights-based approach and geared to sustainable natural resources management. Important contributions to the structural changes made by German development cooperation also include inclusive investment. Approaches and technologies must prove their worth in the partner country. Solutions are viable when people, businesses and institutions on the ground possess sufficient knowledge and capacity. At the same time these solutions also have to be accepted by people, and meet their expectations appropriately as regards technical and social progress. We also need to take into account environmentally sound alternatives, as well as the LNOB principle. A bal-

ance will need to be struck between these elements on a case-by-case basis. To underpin the investment, utility companies will also require capacity development as well as human resource support measures. The key component of structural change is the promotion of knowledge-based management to facilitate decision-making founded on reliable data and information.

Changes in the water sector usually require time. This is why projects and programmes are usually planned across several phases in order to work towards the desired results. At the same time, water projects have to be planned under conditions of major uncertainty due to the fact that the impacts of climate change often cannot be fully foreseen. German development cooperation therefore has to reconcile the need for long-term planning with an environment that makes planning difficult.

5 How we will be involved, and where

To achieve the development policy goals and respond flexibly to the partner country's needs, we will use a broad range of forms and instruments of development cooperation. Our focus will be on bilateral and regional cooperation. Technical and Financial Cooperation occupy a central role in this. Furthermore, German development policy also involves participation in various international organisations and processes. We also cooperate with other partners such as civil society, the university sector and the private sector, and harness their expertise systematically.

Bilateral and regional water programmes will be implemented on the BMZ's behalf by the *Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH*, the Federal Institute for Geosciences and Natural Resources (BGR) and the *Physikalisch-Technische Bundesanstalt (PTB)* (Germany's national metrology institute) for Technical Cooperation (TC), and by the KfW Development Bank (KfW) for Financial Cooperation (FC). Pursuant to Germany's Guidelines for Bilateral Financial and Technical Cooperation, TC implements capacity development measures that enable people, organisations and societies to manage their own sustainable development processes and adapt to changing circumstances and frameworks. FC is tasked to support investment by cooperation partners by providing funds, along with human resource support measures to underpin the investment. Our financing instruments encompass grants, loans from budget funds (standard loans), interest-reduced KfW loans subsidised by the federal government (development loans), KfW-financed loans at close-to-market terms (promotional loans) and shareholdings. Furthermore, through its involvement in the World Bank and the regional development banks the BMZ will also influence multilateral programmes in the water sector and strive to help closely harmonise bi- and multilateral engagement.

Moreover, the BMZ also supports projects of non-governmental private institutions. Through Engagement Global, the BMZ supports engagement for development

in Germany by associations, schools and local authorities, as well as volunteer and exchange programmes, which sometimes also involve the water sector.

Where this is conducive to achieving objectives, the BMZ draws on the experience of the German and European water sectors and networks. Operator partnerships are one possible instrument here. German development cooperation also integrates the experience of civil society and academia, where appropriate. Organisations such as the German Water Partnership and the German WASH Network, which represent numerous companies and non-governmental organisations (NGOs), are key points of contact here.

The BMZ supports or cooperates with international networks and platforms in four areas

- (1) for good governance in the water sector, with the Water Integrity Network (WIN), the OECD Water Governance Initiative and the Global Water Partnership (GWP);
- (2) for monitoring SDG 6 and reporting within the UN (HLPF) on water-related targets, with the monitoring initiative for water GEMI, the World Water Assessment Programme (WWAP), the Global Analysis and Assessment of Sanitation and Drinking Water (GLAAS) and UN Water;
- (3) for strengthening water supply and sanitation with the Sustainable Sanitation Alliance (SuSanA), via the German Toilet Organisation (GTO) and in cooperation with the Bill&Melinda Gates Foundation (BMGF), and
- (4) in the future with organisations in the field of water scarcity and water in the context of climate change (e.g. the Alliance for Global Water Adaptation – AGWA).

The BMZ engages in international sector dialogue, for instance to drive the development of an international

system within the UN framework for implementation and monitoring of the 2030 Agenda.

6 Outlook

The BMZ will respond appropriately to the increased importance of water in the internationally agreed 2030 Agenda. In the coming years it will maintain its role as a professional and recognised partner in the water sector. It will also contribute to a new dynamism in the sector, which will be necessary in order to achieve SDG 6 and other SDGs and implement the Paris Agreement – with the priorities indicated below.

The processes of the Framework Convention on Climate Change and the 2015 Paris Agreement will also lead to greater scrutiny of measures in the water sector with regard to their potential for climate change mitigation and adaptation. As there is growing pressure to act in the face of increasing water risks, it will be necessary to strengthen cross-sectoral measures and expand Germany's development engagement accordingly.

Water supply and wastewater management, and sustainable water resources management, will remain key focuses of German development cooperation in the future.

6.1 SUPPORT THE ENGAGEMENT OF PARTNER COUNTRIES

The BMZ will support partner countries in achieving SDG 6 and related SDGs, and in shouldering their responsibility for sustainable development and the global common good. In this context we will focus on firmly establishing human rights, IWRM and nexus approaches in policymaking and implementation, and press ahead with adaptation to climate change.

6.2 POSITION WATER AT THE INTERNATIONAL LEVEL

The BMZ will work to ensure that the water sector is accorded the status at international level that is commensurate with its importance. The 2030 Agenda provides ideal leverage for this, because it

links the challenge of access with the challenge of water resources and the cross-sectoral approach to sustainable development. Against this background the BMZ will make the case for a reorganisation of the international water architecture within the framework of SDG 6.

Above all, the BMZ will work to further disseminate the nexus perspective, keep access on the international agenda, drive implementation and actively advance new and emerging themes – such as higher water storage capacities as a way of adapting to climate change. Furthermore, the BMZ will advocate stepping up cross-sectoral activities that link water with climate change issues.

6.3 MOBILISE MORE FUNDS AND FACILITATE ACCESS TO FINANCE

In line with the Addis Ababa Action Agenda the BMZ will support partner countries in mobilising more national resources than hitherto, and in using these transparently, efficiently and effectively in order to achieve objectives. The BMZ will also work on innovative funding mechanisms in order to tap additional sources for achieving the 2030 Agenda. Co-financing and joint financing arrangements will be considered as possible ways of raising the needed investment funds.

The BMZ will make the case for a higher prioritisation of water in the European Union's development cooperation, for instance in the European Development Fund. Ultimately the fight against corruption and mismanagement pursued by improving transparency and accountability in public financial management will be key to securing the needed finance. Germany has been one of the major donors in the water sector for many years.

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