



Federal Ministry  
for Economic Cooperation  
and Development

# Water – the source of development

BMZ PAPER 08 | 2019  
POSITION PAPER





# Contents

1. WATER – THE UNDERESTIMATED CRISIS	4
2. INCREASING TRENDS – URBANISATION, MIGRATION, CLIMATE CHANGE	6
3. WHAT WE ARE DOING	7
Laying the groundwork: sustainable systems for water security	7
1. Clean water and sanitation – a vital source of health	10
2. Business and jobs depending on water – water for sustainable economic development	11
3. Living in (water) security – alleviating the causes of conflict and migration	12
4. Too much, too little and increasingly unreliable – adapting to climate change in the water sector	13
4. LOOKING AHEAD: SAFEGUARDING THE FUTURE – WORKING TOGETHER FOR A WATER-SECURE WORLD	16

# 1 Water – the underestimated crisis

## NO LIFE WITHOUT WATER

Water security for all – that is what the 2030 Agenda for Sustainable Development envisages in Goal 6, “Ensure availability and sustainable management of water and sanitation for all”. Water and sanitation for all is also a human right that must be realised. Yet the United Nations has sounded a warning, saying that the world will not achieve SDG 6 unless massive efforts are undertaken:

- 2.1 billion people have no clean drinking water;
- 4.5 billion people have no decent sanitation facilities;
- 40 per cent of wastewater is not properly treated, even in the more wealthy countries;
- a third of rivers in Latin America, Africa and Asia are massively polluted;<sup>1</sup>
- in the last 100 years, 64 per cent of the world’s natural wetlands have disappeared.<sup>2</sup>

## WASTED, POLLUTED, DISAPPEARED – WATER, A SCARCE RESOURCE

Only 1 per cent of the world’s water is readily available for use. 97.5 per cent is salty seawater or brackish water. Most of the other freshwater is frozen. The water resources that are available are unevenly distributed across the world and the volume of groundwater and rainfall varies from region to region. This means that there is not always enough water to

meet the needs of people, businesses and the environment. Often, poor water management further reduces the amount of water available.

## WE ALL DEPEND ON THIS SCARCE RESOURCE

Supplies of clean water are dwindling. Yet by 2050, we will need up to 30 per cent more water to meet the needs of people, agriculture, power generation and industry.<sup>3</sup> Water is vital to efforts to combat hunger and achieve sustainable economic development.

- Water is the most important of all foodstuffs; it is fundamental to nutrition and a healthy life.
- 40 per cent of global grain production will be at risk from a shortage of water by 2050.<sup>4</sup>
- 78 per cent of jobs worldwide depend on water.
- Agriculture consumes 69 per cent of available water resources.
- 19 per cent of available water resources are needed by industry. Water is also required in energy generation (SDG 7), either for dams or for cooling purposes.

## TOILETS – PART OF A LIFE IN DIGNITY FOR ALL

Water on its own is not enough. Often, poor people living in suburban or rural areas have no access to clean drinking water or to decent toilets connected

1 UNEP, A Snapshot of the World’s Water Quality. Towards a global assessment,

[http://www.wwqa-documentation.info/assets/unep\\_wwqa\\_report\\_web\\_lores.pdf](http://www.wwqa-documentation.info/assets/unep_wwqa_report_web_lores.pdf), p. 15.

2 Ramsar [https://www.ramsar.org/sites/default/files/documents/library/factsheet3\\_global\\_disappearing\\_act\\_0.pdf](https://www.ramsar.org/sites/default/files/documents/library/factsheet3_global_disappearing_act_0.pdf)

3 UN-Water (2019) World Water Development Report – Leaving no one behind. Executive Summary

4 UN-Water (2019) World Water Development Report – Leaving no one behind. p. ix

to proper wastewater management facilities. They live in undignified and insanitary conditions. People in water-poor regions are worst affected.

- The negative impact this has in terms of poor hygiene and diarrheal disease is more severe than the impact of HIV/AIDS, malaria and tuberculosis put together. (WHO)
- 10 per cent of the global disease burden could be reduced by improving water supply, sanitation, hygiene, and water resource management.<sup>5</sup>
- In many countries, GDP is reduced by up to 5 per cent through productivity losses as a result of illness caused by inadequate water supply and sanitation.

Girls and women suffer particularly badly from a lack of access to proper toilets and clean water.

- In many regions, they are the ones who are responsible for fetching water for their families. Worldwide, there are 844 million people who spend at least half an hour a day fetching water.<sup>6</sup> In just one day, women in 25 sub-Saharan countries spend a total of 16 million hours collecting water.<sup>7</sup>
- For many girls, particularly those in resource-poor countries, puberty marks the start of inequality of opportunity. When schools lack proper facilities, many girls stay away for several days a month when they are menstruating or drop out of school altogether.<sup>8</sup>

### THE WATER-RELATED GOALS SET OUT IN THE 2030 AGENDA CAN ONLY BE ACHIEVED THROUGH JOINT ACTION.

The international community has already made some considerable progress.

- Many countries have got better at managing their water resources.
- Since 1990, the proportion of people without access to safe drinking water has been halved and 2.6 billion people now have access to improved drinking water.
- 2.1 billion people have access to improved sanitation.

Germany has made an active contribution to this through its development policy and is working hand in hand with its partner countries, multilateral partners, the public and private sector and civil society to achieve worldwide water security.

Germany has been one of the world's three largest donors in the water sector for many years now and the progress achieved on a global scale has been in some part due to its expertise. On average (2014–2017), net annual German ODA for the water sector has amounted to 600 million euros.

#### DUE TO GERMAN DEVELOPMENT COOPERATION:

- millions of people in Africa, Asia and Latin America now have access to drinking water and sanitation. In sub-Saharan Africa alone, 10 million people benefited from expanded coverage between 2015 and 2018;
- the environment is being protected – the establishment of sewage plants and water protection zones is relieving the burden on existing water resources and reducing the amount of dirt and waste entering rivers and oceans;
- many transboundary water conflicts have been eased.

5 WHO (2016). WASH Fact Sheet. [http://www.wpro.who.int/entity/apac\\_rfhe/wash\\_factsheet\\_rfhe.pdf](http://www.wpro.who.int/entity/apac_rfhe/wash_factsheet_rfhe.pdf).

6 UN-Water (2019) World Water Development Report – Leaving no one behind. p. 35

7 UN-Women (2015): <https://www.unicef.org/media/files/JMPreport2012.pdf>

8 UNESCO (2014): <https://unesdoc.unesco.org/ark:/48223/pf0000226792>

## 2 Increasing trends – urbanisation, migration, climate change

Rapid urbanisation, a growing world population and economic progress are all placing increasing pressure on water resources. For the first time in history, the majority of the world's population is living in cities and by 2050 two thirds of people (66.4 per cent)<sup>9</sup> will be living in urban areas. This will place increasing demands on existing supply networks. Provision is particularly at risk in poor urban areas, which have often grown informally.

### SUSTAINABLE WATER SUPPLY FOR GROWING CITIES IN BURKINA FASO (2019–2021, 6.5 MILLION EUROS)

**Burkina Faso** is experiencing rapid **urbanisation**. Inadequate access to potable water and appalling standards of hygiene **pose a serious threat to people's health**. Through its development cooperation, Germany is supporting the establishment of a sustainable system of water supply and sanitation. Since **2006, 1.5 million people have gained access to clean drinking water**. And **half a million people now have sanitation facilities**.

Water needs are growing and so, as a result, is competition over the resource. This increases the risk of conflict and migration. The large numbers of refugees experienced in recent years, particularly in the Middle East and Africa, have underlined the link that exists between available water and displacement and migration.

→ 90 per cent of all natural disasters are water-related (droughts, floods).<sup>10</sup> In 2017, almost a third of all new internally displaced persons had left their homes due to flooding.<sup>11</sup>

Fluctuating water availability is also evidence of a changing climate. Whilst floods and heavy rains are on the increase, temporary water shortages and droughts are also becoming ever more frequent. Coastal areas are under threat from rising sea levels.

→ 2 billion people live in countries with serious water shortages.

9 UN-Water (2019): World Water Development Report – Leaving no one behind. Facts and Figures. p. 7

10 UN-Water (2019): World Water Development Report, Leaving no one behind – Fact and Figures, p. 3

11 Internal Displacement Monitoring Centre (2018): Global Report on Internal Displacement. p. 6, <http://www.internal-displacement.org/global-report/grid2018/downloads/2018-GRID.pdf>

## 3 What we are doing

### LAYING THE GROUNDWORK: SUSTAINABLE SYSTEMS FOR WATER SECURITY

#### Strong institutions for effective water management

In order to help achieve sustainable water supply and sanitation for all, the BMZ is supporting public institutions such as regulatory authorities, water utilities and river commissions. By offering technical support and financial incentives, the aim is to improve efficiency (e.g. through transparent budget processes, reduction of water losses, customer focus) and effectiveness (e.g. clear understanding of role and functions, sustainably managed water utilities, transparent appointment procedures). This serves to increase trust in public utilities. In recent years, Germany has supported reforms aimed at modernising the water sector in, for example, Kenya, Tanzania, Zambia, Albania and Peru. These reforms have included introducing legislation to regulate responsibilities at national, regional and local level, setting socially equitable tariffs and sustainable water extraction quotas, defining standards for water provision and involving citizens.

#### REFORM PROCESSES IN TUNISIA (2017–2020, 300 MILLION EUROS)

One instrument used in **German-Tunisian cooperation** is that of **policy-based loans**, which are used to support the country's reform efforts. Tunisia has displayed **strong political leadership**; it has achieved all the jointly agreed targets, including the **introduction of a new wastewater standard**. On this basis a strategic and legal framework for the water sector can now be developed, which includes reforming water tariffs.

As a result, authorities are working more effectively, utilities are covering their costs and water sources are being protected over the long term. In many partner countries, water is a highly politicised sector. There may be, for example, interference by local government representatives in the management of utilities, a lack of transparency in budget allocation, a lack of transparency and accountability, as well as nepotism in the appointing of supervisory boards. That is why efforts are needed to tackle corruption, inequality and discrimination at all levels in water supply and allocation, in order to reflect the basic guiding principle outlined in the 2030 Agenda of “leaving no one behind”.

#### Sustainable sources of finance – targeted allocation of financing

It is important to put businesses on a sounder financial footing. Costs can be reduced and revenues increased through improved management (e.g. reduction of water losses, improved collection of payments), investment in cost-saving equipment (e.g. energy efficient pumps) and regular adjustment of tariffs in line with the relevant regulatory framework. Germany has many years of experience in supporting measures of this kind.

In cases where water companies are likely to continue being dependent on state support into the medium term, the government can give them scope to invest by taking out external loans and passing on those funds to the utility. Support of this kind may, for example, be needed when a region is experiencing a particularly high influx of migrants.

Ultimately, however, there is a need to take on long-term loans (in the form of infrastructure bonds, for example) and also borrow funds on the domestic capital markets, particularly when it comes to funding plant and equipment such as pipelines and sewerage systems. Thanks to Germany's wealth of experience with local authority financing, it is well placed to provide support in this area.

### INVESTMENT FUNDS FOR INDIAN MUNICIPALITIES

(2008–2020, 265 MILLION EUROS)

To help **Indian municipalities** access funding for investments in areas such as water and wastewater, Germany is supporting an **infrastructure fund, the Tamil Nadu Urban Development Fund (TNUDF), which provides local currency loans and grants.**

An innovative form of municipal financing was also introduced in 2008 with the issuing of bundled municipal bonds.

### Inclusive approach to water resource management

In its development cooperation, Germany follows the internationally accepted practice of Integrated Water Resources Management (IWRM). This means that the various competing claims being made on water resources, often by a number of countries at once, are taken into consideration; then, in a process involving all user groups including marginalised and vulnerable sections of the population, as broad as possible a consensus is reached on how to share the resource. In 2017, the BMZ announced it would be doubling its support for Integrated Water Resources Management.

### INTERNATIONALLY BINDING WATER CHARTER (2016–2018, 3 MILLION EUROS)

**In the Niger basin region,** a water charter has been ratified with the support of German development cooperation. The charter sets out **legally binding standards** on water resource use in the water catchment area (quantity, quality) and rules governing **cooperation between the riparian states** over the long term.

Within the IWRM concept, agriculture (SDG 2) plays a key role. It is the sector using most water and so it is here that there is the greatest potential for protecting water resources. German development cooperation focuses particularly on regulating wa-

ter extraction (e.g. extraction of groundwater) and protecting the resource from pollution (e.g. through fertiliser). Technical solutions aimed at more efficient use of water resources (e.g. drip irrigation) are also supported. As a basic principle, the amount of water consumed must be guided by the renewable water resources available.

### WATER-EFFICIENT CROPS IN BENIN (2017–2010, 11.7 MILLION EUROS)

A German development cooperation project to introduce **water-efficient crops** in **Benin** has helped to protect the groundwater and **increase yields by 17 per cent.**

### PROMOTING WATER EFFICIENCY IN MOROCCAN IRRIGATED AGRICULTURE (2010–2020, 18.8 MILLION EUROS)

In the province of Agadir, Germany is supporting a development project to increase water efficiency by modernising the irrigation systems used in agriculture. Water-saving technologies, such as irrigation pipes and drip irrigation, have allowed water resources to be distributed and used in a more sustainable way in those areas where the irrigation systems have been rehabilitated and less water to be consumed in total. The aim is to cut water consumption by nearly two thirds and boost agricultural production. This has direct benefits for the poor rural population (approximately 35,000 people).

In the energy sector, it is important to make the best possible use of water – particularly in dry areas. It should also be linked up with other forms of energy, such as wind power. Alternative sources of energy can be used so as to relieve the burden on **drinking water supplies.** German Development Cooperation advocates water-saving technologies such as recycling water, making use of grey water or using dry cooling technology in thermal power plants.



At the same time, there are some energy-intensive techniques that can help solve many water problems, such as pumping, desalination or water treatment. German Development Cooperation is supporting efforts to secure and use **alternative water resources**, for example the **reuse of treated wastewater** and the desalination of brackish water and sea water.

#### REUSING WATER BY TREATING WASTEWATER IN JORDAN (SINCE 2005)

**Jordan** is one of the 10 most water-stressed countries in the world. Its existing water resources are subject to constant overuse and the groundwater table is falling lower and lower. In order to address this problem, German Development Cooperation is supporting a programme for treating domestic wastewater in the wider area of Irbid so that the wastewater can be used for irrigation purposes. The project is made up of various components and building work will take place in various stages. **One example is Shallalah sewage treatment plant, where investment (including networks) is around 43 million euros.** This will relieve the strain on **groundwater resources and provide clean water for a further 500,000 people.**

The BMZ can also offer its expertise to help partners identify new water sources.

#### DISCOVERING NEW SOURCES OF WATER IN NAMIBIA (2014–2019, 3.09 MILLION EUROS)

With support from German Development Cooperation, new groundwater resources have been discovered in **Namibia's** populous north. This has enabled the **region to achieve water security** despite the changes in the climate.

In order to ensure there is a sustainable supply of water, food and energy, all three areas need to work together. The cultivation of agrofuels may take up land

that would otherwise have been used for growing food crops; also, it requires water. Agricultural use of land in upstream river areas can impact electricity generation in hydropower plants downstream. One exemplary approach to dealing with this is the Water-Energy-Food security Nexus. This means helping all the various stakeholders to undertake a joint planning process that takes account of the impact their activities have on those operating in other sectors.

#### MONITORING IRREGULAR GROUNDWATER EXTRACTION IN TUNISIA (2019–2020, 1.5 MILLION EUROS)

In **Tunisia**, German Development Cooperation is supporting efforts to estimate the amount of groundwater being used, often through irregular extraction, for agricultural purposes. By analysing **satellite images**, it is possible to **assess how much groundwater has been extracted.**

#### Digitalisation and data flow for better management

The global market for digital water supply solutions was worth an estimated 21.3 billion US dollars in 2016.<sup>12</sup> Digital solutions have become a vital aspect of development cooperation. There is also great potential to progress even further with a smart combination of digital and analogue elements.

Digital solutions allow many resources, such as energy and staff, to be used more efficiently. The BMZ is supporting its partner countries in such areas as the mapping of distribution networks using GPS data or the collection of real-time information on the condition of pumps in remote rural areas.

Smartphone-based payment systems are becoming increasingly popular. This makes it easy for customers to pay their bills and also to report to the supplier any failures they may have spotted (e.g. leaks). Using mobile phone data, the supplier can then identify where the failure has occurred in the system.

<sup>12</sup> *Global Water Intelligence, 2016*, <https://www.ge.com/sites/default/files/GE-Ecomagination-Digital-Water.pdf>

## 1. CLEAN WATER AND SANITATION – A VITAL SOURCE OF HEALTH

Clean water, toilets and wastewater treatment plants are vital to good health (SDG 3) and food security (SDG 2).

### SUPPORT FOR COMPREHENSIVE WASTEWATER MANAGEMENT WORLDWIDE (2015–2021, 7 MILLION EUROS)

German Development Cooperation is supporting the development and worldwide application of diagrams (Shit Flow Diagrams, SFDs) showing the journey that wastewater takes and where there are gaps in the system. SFDs have so far been developed for over 100 towns and cities in Africa, Asia and Latin America; this has created a sound basis for planning sanitation solutions covering entire towns and cities, from which over 100 million people worldwide can benefit.

We are working in the world's often rapidly **growing cities** to help install more connections to the central distribution network in poor urban areas. At the same time, we are also helping with the implementation of **decentralised solutions** that will provide water and sanitation to **displaced people or people in rural areas**. The funding committed for new investment projects in 2017 will provide new or improved drinking water connections to 24.2 million people. With the support of some 400 water and wastewater utilities, the supply of drinking water for 16.5 million people was improved indirectly between 2015 and 2017.

### ELIMINATING SOCIAL INEQUALITY IN MOROCCO (2019–2022, 11.5 MILLION EUROS)

A new incentive system for achievement of SDG 6 was introduced in **Morocco** in 2018. Under the **Aid on Delivery project**, the executing agency receives a bonus of 2.5 million euros if it achieves its goal especially quickly (connecting poor peri-urban areas to the network). This serves to **successfully reduce social inequalities in towns and cities**.

It is not only households that need drinking water and adequate sanitation facilities; it is essential for good health that **schools and health care facilities** also have **proper provision**. According to the WHO (2018), half of all schools in sub-Saharan Africa have no access to drinking water and only a third of schools have a toilet. By improving coverage for schools and health care facilities, Germany has not only reached particularly vulnerable groups through its development cooperation but has also gained valuable “champions” for the cause, who raise awareness within their families of the importance of clean water, toilets and hygiene.

### SANITATION + EDUCATION – HAND IN HAND (2018–2020, 2 MILLION EUROS)

Since 2011 the German Development Cooperation programme **Fit for School** has been helping education ministries in South-East Asia to improve access to sanitation and hygiene practices in schools. The programme has so far reached **over 3.1 million children** in the **Philippines, Cambodia, Laos and Indonesia**.

## GLOBAL COVERAGE OF WASH IN HEALTH CARE FACILITIES

Source: WHO (2016): Delivering quality people-centred health care for all: The role of water, sanitation and hygiene in achieving quality UHC.



38%

do not have any water source



19%

do not have improved sanitation



35%

do not have water and soap for handwashing

## 2. BUSINESS AND JOBS DEPENDING ON WATER – WATER FOR SUSTAINABLE ECONOMIC DEVELOPMENT

It is estimated that 78 per cent of jobs in the world are dependent on water.<sup>13</sup> The 2019 World Economic Forum once more named water crises as amongst the top five global risks.

Water shortages, pollution, droughts and flooding – exacerbated as they are by the effects of climate change – all pose a threat to businesses and production. As a consequence, investments fail to materialise, jobs are lost and push factors for migration increase. Commercial operations can only function if they have reliable and functioning water supply and sanitation.

German Development Cooperation is supporting countries to manage their water resources effectively; this is vital to ensuring sustainable production chains and thus preserving supplier businesses, production facilities and jobs in both urban and rural areas.

It is supporting the spread of hydropower as a climate-relevant and socially and environmentally sound technology not only with the aim of generating more renewable energy, but also in order to increase water storage capacities. We operate in line with the relevant guidelines for support in this sector, particularly internationally agreed environmental and social compatibility standards. The textile-, chemical-, food- and mining sectors all require large quantities of good quality water for production; at the same time, they often are the source of massive water pollution, which can lead to conflicts. Under the *Water Stewardship* approach, public and private actors convene with representatives of civil society to find ways of ensuring that water is available over the long term for all users whilst also fostering economic development and job creation. In cooperation with the private sector, efforts are made to ensure that human rights due diligence is adhered to along the entire length of the supply and value chain.

### GROWING CONSUMPTION LEADS TO AN INCREASING DEMAND FOR WATER

Source: watercalculator.org; virtuelles-wasser.de; reset.org



= 75 litres of water



= 13,000 litres of water



= 400,000 litres of water



= twice as much water as it contains

Our consumption patterns also have a decisive influence on whether water resources are used in a sustainable way. Production of many of the articles we consume requires massive amounts of water, even though it may not be immediately apparent. In order to flag up how much water has been used in the production process, the BMZ is promoting such initiatives as a water “traffic light”. This makes it easy for consumers to find out how much water has gone into their shopping basket and help them shop in a more water-conscious way.

There are also international partnerships involving German water utilities and businesses that deliver technical innovations and management solutions and facilitate knowledge transfer.

#### REDUCING WATER LOSSES IN BOLIVIA (2015–2019, 11.7 MILLION EUROS)

German Development Cooperation is advising 23 water utilities in **Bolivia** on how to reduce technical and commercial water losses and improve drinking water quality. As a result, **average water losses have been cut from 28 per cent to 22 per cent.**

The Deutsche Investitions- und Entwicklungsgesellschaft (DEG) and the World Wildlife Fund (WWF) have developed a Water Risk Filter, which enables businesses and investors worldwide to rapidly and easily assess their water risks at production sites, throughout their supply chain and/or in their investment portfolio ([www.waterriskfilter.org](http://www.waterriskfilter.org)). The Water Risk Filter suggests possible ways of minimising water risks in an environmentally and socially compatible way. This boosts resilience to the effects of climate change.

Another focus of German Development Cooperation is vocational education and training in the water sector. Well-trained staff are urgently needed, particularly in sectors undergoing rapid technical progress, such as desalination and wastewater treatment. The BMZ is therefore supporting tailor-made training courses for operators (for example in Afghanistan), vocational training in the water sector and improved higher education (for example in Vietnam, Jordan and Peru).

#### WATER STEWARDSHIP FOR JOBS IN UGANDA (2012–2019, 29.7 MILLION EUROS FOR 9 COUNTRIES)

The International Water Stewardship Programme was able to act as a reliable broker to bring together Uganda's second-largest sugar manufacturer, Kinyara Sugar Limited, with the Ministry of Water and with civil society (NGO Ecotrust) to work on a way of sustainably using local water resources. As a result, the company has now invested 48 million euros locally, 2,600 new jobs are being created in Uganda and the resource is being protected sustainably.

### 3. LIVING IN (WATER) SECURITY – ALLEVIATING THE CAUSES OF CONFLICT AND MIGRATION

“Water, peace and security are inextricably linked,” stated the UN Secretary-General at a meeting of the UN Security Council in 2017.<sup>14</sup> Water has already become a factor in internal conflicts and a source of international tension. Increased water needs and changes in the climate will only serve to increase competition over the resource between different water consumers and countries.

Communities hosting refugees in the Middle East and Africa are having to share their in parts already scarce water resources. Water utilities are coming under increasing pressure to provide adequate water and wastewater services for both the local population and the refugees. This often presents a great challenge for the host communities and demands that they be very sensitive of any potential for conflict.

#### STRENGTHENING HOST COMMUNITIES IN LEBANON (2018–2022, 38 MILLION EUROS)

German Development Cooperation has resumed its activities in the water sector **in Lebanon** in order to tackle the root causes of displacement and mitigate the consequences of flight and displacement. The “host communities” programme **improves the provision** of drinking water and also the health and sanitation situation **for communities hosting Syrian refugees** by rehabilitating existing distribution networks and building new ones in various villages and in the region around Beirut.

German Development Cooperation endeavours to bring together the transitional aid provided in response to disasters or conflicts with the more medium- and long-term development measures being implemented in the field of water and sanitation. This is the only way to ensure that people's needs are met at all times without interruption.

14 [https://www.securitycouncilreport.org/atf/cf/%7B65BFCF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/s\\_pv\\_7959.pdf](https://www.securitycouncilreport.org/atf/cf/%7B65BFCF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/s_pv_7959.pdf)

**SANITATION FOR MILLIONS  
(2016–2019, 5 MILLION EUROS)**

Through the **Sanitation for Millions** initiative, Germany and the Gates-Foundation are supporting Uganda, Jordan and Pakistan – all countries that have taken in refugees – to implement sustainable sanitation and hygiene solutions. Over 200,000 **people** have already benefited from the **measures implemented in schools, mosques and health centres**.

Regionale Ansätze der deutschen EZ, wie die Unterstützung von lokalen Organisationen in 18 Einzugsgebieten mit zum Teil grenzüberschreitender Flüsse und Seen, stärken die grenzüberschreitenden Kooperationen und Abstimmungen und können zu einer größeren regionalen Stabilität führen.

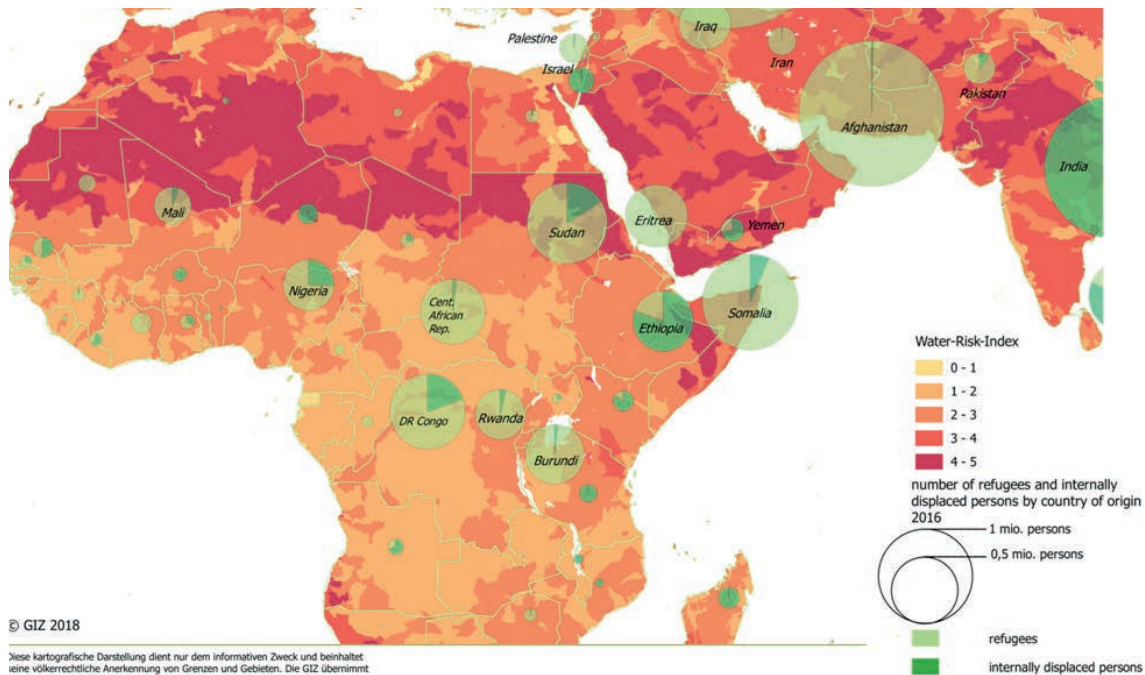
**4. TOO MUCH, TOO LITTLE AND INCREASINGLY UNRELIABLE – ADAPTING TO CLIMATE CHANGE IN THE WATER SECTOR**

Climate change has significantly increased challenges in the water cycle; the impact varies widely from region to region:

In water-rich areas, heavy rains have become more frequent, whilst areas already susceptible to drought have become even drier. It is increasingly difficult to predict the amount of water available. That is why water is the sector most frequently named as a priority in countries' Nationally Determined Contributions for implementing the Paris Climate Agreement.

**WATER RISK AND THE NUMBER OF REFUGEES AND INTERNALLY DISPLACED PERSONS BY COUNTRY OF ORIGIN**

Source: BMZ Strategy for Interlinkages between Water, Displacement and Migration



© GIZ 2018

Diese kartografische Darstellung dient nur dem informativen Zweck und beinhaltet keine völkerrechtliche Anerkennung von Grenzen und Gebieten. Die GIZ übernimmt keinerlei Gewähr für die Aktualität, Korrektheit oder Vollständigkeit des



**IMPROVED PLANNING FOR  
WATER SECURITY IN AFGHANISTAN  
(2018–2021, 9 MILLION EUROS)**

Although **Afghanistan** has sufficient water resources, it lacks a planning instrument to ensure that the available water is used efficiently. With the support of German Development Cooperation, a **standardised planning instrument** has now been introduced in **4 of the country's 5 river catchment areas**. This instrument allows water supply and demand to be better assessed and priority areas for investment to be identified.

Through its development cooperation, Germany is helping people and ecosystems to adapt to these specific challenges. It uses proven and tested instruments such as Integrated Water Resources Management and the recycling of treated wastewater. These efforts are, however, based on climate scenarios that take into account the climate-related difficulties of predicting rainfall.

**NOT A MIRAGE – WATER FOR  
THE TROUBLED OASIS IN MOROCCO  
(2017–2020, 7.1 MILLION EUROS)**

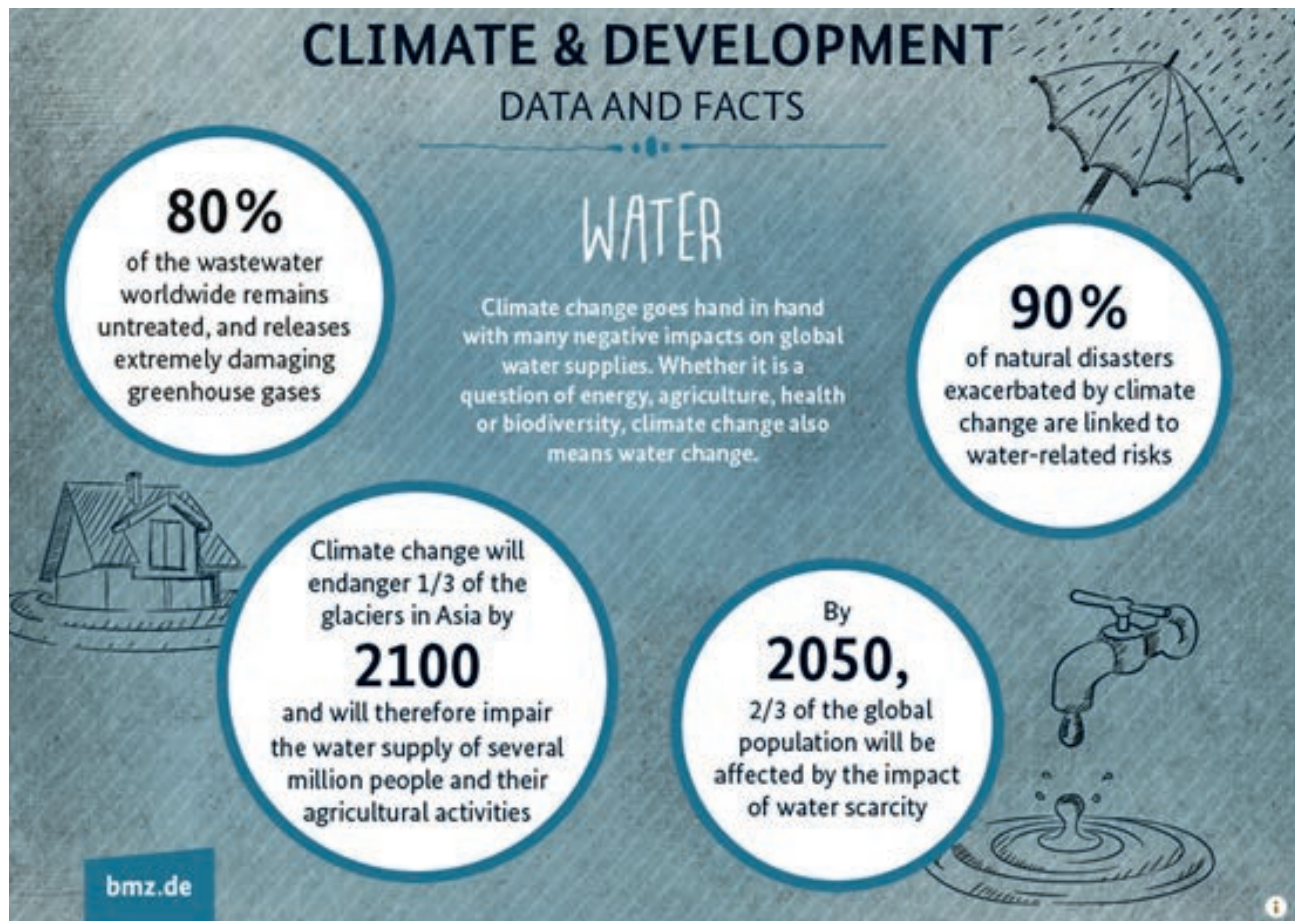
The region around the Tidgheste oasis near Ouarzazate in **Morocco** is becoming ever drier. This water scarcity is making farming increasingly difficult. Through a development project, Germany is supporting a **local sustainable water management initiative** which uses, for example, innovative rainwater management methods. The village community is now equipped to **survive up to two years of drought**. In this way, it can protect crops, incomes and jobs.

The BMZ helps countries to establish a resilient infrastructure. In urban areas in particular, it provides support and investment for the expansion of storm- and wastewater drainage systems and for the conservation or creation of near-natural infrastructure, such as infiltration areas. When these aspects are taken into account in spatial planning, it is possible to prevent groundwater and surface water being contaminated by wastewater when flooding occurs.

The BMZ is also helping its partner countries to collect and interpret hydrological and meteorological data. This helps them to plan for the future and provides a more reliable basis for their decision-making. It is important to find infrastructure solutions that will help countries cope with unusually heavy rainfall and rising sea levels. When sea levels rise and groundwater is overexploited, this can cause a dramatic lowering of land elevation; coastal cities in particular are then under threat.

Around a quarter of the bilateral commitments made under the BMZ's water portfolio contribute to fulfilment of Germany's pledges on adaptation financing. Using proactive measures, e.g. developing resilient water infrastructure in cities and innovative financing methods, we focus on realising our partner countries' adaptation targets.

The BMZ is increasing its activities aimed at mitigating climate change in the water sector. These activities focus, for example, on energy-efficient water supply and wastewater management, the use of renewable energies or the use of sewage gases for biogas generation. Measures to save specific water-related ecosystems, such as marsh lands, help to protect major carbon sinks.



Source: <http://www.bmz.de/en/issues/klimaschutz/water-and-climate/index.html>

## 4 Looking ahead: Safeguarding the future – working together for a water-secure world

We all need to increase our efforts and we need to translate the political will to achieve water security for all into a reality:

- **Enhanced international coordination.** We can only achieve our global water goals by working together. That is why we are pushing for the international water conference that the United Nations proposes holding in 2021 to be used as a wake-up call for achieving SDG 6.
- **Using water as a resource for peace.** We acknowledge the importance of water as a major resource for peace and are expanding our support for transboundary water management as a means of strengthening regional stability.
- **Focus on youth.** Providing access to clean drinking water and safe toilets in schools and health care facilities will be an important focus of our work on achieving the health, education and water goals of the 2030 Agenda. Together with the EU, we will be expanding our activities and paving the way for the healthy development and education of future generations, particularly girls and young women.
- **More strategic water and sanitation partnerships.** Water utilities need properly trained staff if they are to operate efficiently. We will in future be increasingly promoting partnerships between municipalities and utilities so as to ensure a continuous transfer of knowledge and technology. In this way, we aim to create utilities in our partner countries that operate on sustainable principles.
- **Appropriate toilets for all – including the poor (LNOB).** We are campaigning for more decentralised sanitation systems so that poor areas can be connected rapidly and affordably. We are doing this by working more closely with global networks like the Faecal Sludge Management (FSM) Alliance and the Sustainable Sanitation Alliance (SuSanA). We will work with these networks to bring together important partners, develop urgently needed innovative solutions and, for example, help informal service providers make the formal transition to becoming independent operators.
- **Involving business more in efforts to achieve SDG 6.** We want to promote the equitable use of water resources through the Water Stewardship approach. We will leverage funding from other donors and from the private sector in order to enhance water security in Africa in particular.
- **Focusing on innovative business models.** We will support utilities and water managers in pursuing new solutions using digital technologies that will allow poor areas to be covered by water and sanitation infrastructure.
- **New financing models for the water sector.** There should be a greater focus on local capital markets when developing innovative financing mechanisms for efficient water utilities.
- **Strengthening innovative technologies for obtaining and reusing water.** Regions under particularly great water stress need alternatives. We will be increasingly pursuing the use of alternative water resources through the desalination of sea water and brackish water. Treated wastewater can be used for irrigation.



- **Contributing to climate goals through water projects.** We will be advocating that the water sector be made a greater focus of adaptation and mitigation activities both in the partner countries and at international level.
  
- **A more resilient infrastructure.** When it comes to climate change adaptation, water is the area in which our partner countries most commonly wish to work with us. We will take greater account of water security (and insecurity) in the planning and implementing of new infrastructure projects. Development measures aimed at preserving water security will be aligned with climate scenarios.
  
- **Achieving more through a multisector approach.** Together with the agriculture and energy sector, we are consciously focusing on the water-energy-agriculture nexus so as to preserve ever scarcer water resources for all.

**PUBLISHED BY**

Division 413 – Water, urban development, mobility

**DESIGN AND LAYOUT**

wbv Media, Bielefeld

**AS AT**

April 2019

**ADDRESSES OF THE BMZ OFFICES**

→ BMZ Bonn

Dahlmannstraße 4

53113 Bonn, Germany

Tel. +49 (0) 228 99 535-0

Fax +49 (0) 228 99 535-3500

→ BMZ Berlin

Stresemannstraße 94

10963 Berlin, Germany

Tel. +49 (0) 30 18 535-0

Fax +49 (0) 30 18 535-2501

**CONTACT**

[poststelle@bmz.bund.de](mailto:poststelle@bmz.bund.de)

[www.bmz.de](http://www.bmz.de)



