

Water – Essential for Life



COOPERATION WITH DEVELOPING COUNTRIES



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VALUABLE, SCARCE AND COMPLEX

SOLVING THE WORLDWIDE WATER PROBLEM REQUIRES INTEGRATED MANAGEMENT



Water is a fundamental element of life. If there is too little of it or – in the case of floods – far too much, if the supply is erratic or if it is contaminated with toxic substances, then it affects all areas of life. Today, more than 50 nations suffer from water stress. Without decisive action this number will increase still further. In the worst case, 30 years from now nearly half the world's population will be living in countries suffering from a chronic lack of water. One of the most important tasks in the future is therefore to manage the competing demands, and using limited water supplies more efficiently while at the same time protecting them.

Only 1 % of the water available on Earth is drinkable fresh water which is not trapped as ice or snow. This water is not equally distributed and in many regions it is overexploited. Non-renewable, fossil groundwater supplies are being depleted. The situation is already precarious in the water-poor Middle East and in parts of Africa, and it is also growing increasingly serious in southern Europe, India, Central Asia and north-eastern Brazil. In northern China, too, more than 200 million people suffer from water scarcity.

Reconciling different demands for water use is a manageable task in small catchment areas of a few square kilometres. In large river basins with many competing user groups, however, the task quickly becomes extremely complex. If river basins also cross national boundaries the situation becomes politically delicate – and there are 145 nations that share rivers and other watercourses with their neighbours.

Thus, there is a need for Integrated Water Resources Management (IWRM), which takes into account regional and often transboundary user interests, along with their interdependencies and reciprocal effects. IWRM provides the foundation on which to develop and implement concrete measures for efficient use of water resources that is sustainable and at the same time socially just.

Water Balance Important

All activities that affect the water balance must be taken into account. In the case of a project to provide drinking water this can mean taking into consideration hydropower facilities, forest conservation and erosion prevention in the head waters of a river, waste contamination of water and soil, or overall land use planning. To this end, many stakeholders must work closely together: legislators, regulatory authorities, water supply companies, industry and agriculture, and not least the users themselves.

In many regions of the world the situation is being worsened by several factors. These include the anticipated rise in temperatures, more rapid evaporation, and much more infrequent, irregular, and more extreme rainfall that may cause floods, as well as rising sea levels that threaten the coasts.

KfW Entwicklungsbank is responding to these dangers with new approaches. Within the framework of IWRM, the "climate proofing" approach enables, for instance, the climate change risks of projects to be countered already at the planning stage. Amongst other things this may entail adapting the location, design and operation of the project to the changing conditions.

Third-Largest Bilateral Donor

Commissioned by the Federal Government of Germany, KfW Entwicklungsbank supports developing and transition countries in overcoming the considerable challenges of planning and financing in the water sector. For this purpose it provides ideas, concepts, financing and advice in more than 60 partner countries. This support is based on the Water Sector Strategy of the Federal Ministry for Economic Cooperation and Development (BMZ). Germany is the third largest donor worldwide in this area.

Where water is already in short supply or contaminated, KfW Entwicklungsbank concentrates on raising the efficiency of use, reducing water loss, and improving wastewater and solid waste management in accordance with IWRM principles, thereby protecting natural resources. We are particularly concerned with the associated political, economic and social conflicts. Therefore, we promote good governance in the partner countries in order to overcome differences and stimulate joint development.



"Securing the future of people and the environment will only work with enlightened and integrated water resources management".

James Leape
Director General
World Wildlife Fund (WWF)

Water and Energy – an Undervalued Interrelation

Water is needed for the vast majority of electrical energy production. However, still far too little attention is paid to how dependent energy production is on water and which interrelationships exist in this context.

Hydropower is currently the world's most important source of renewable energy. However, hydropower competes with agriculture and other water users for water from rivers and reservoirs. Biomass energy production is also dependent on water for cultivating "energy plants" such as maize.

Even solar power stations require water to clean the mirrors and as a processing and cooling medium for the steam turbines.

Water also plays an important role in conventional energy production: power stations

require huge amounts for cooling. Less power is produced when it does not rain and rivers get excessively warm. In turn, energy is needed to ensure a comprehensive water supply. Energy costs may make up half of the operation costs of water supply and sewerage companies.

Climate change will alter the global, regional and local water balance and increase competition for water as it grows scarcer. In addition, energy production facilities will have to be protected from flooding and other climatic extremes.

This shows that Integrated Water Resources Management is essential in all sectors – management that equally considers the environment and all user groups.

Energy from water



A CLEAR POLITICAL WILL

TUNISIA'S COMPREHENSIVE APPROACH PROTECTS PRECIOUS RESOURCES



The quality must be right before wastewater can be reused.

Water is a very scarce commodity in dry Tunisia. With over 26 reservoirs and several thousand wells, the country currently uses almost all of its renewable water resources. Yet in some regions the groundwater level is continuously falling, and the "blue gold" is being additionally endangered by wastewater and contaminated water percolating from solid waste dumps. Agriculture consumes more than 80% of the water. The Tunisian Government is doing everything possible to use the available resources more efficiently and to protect them from pollution by applying a comprehensive IWRM strategy.

Tunisia's biggest river, the Medjerda, is vitally important because water flows in it year-round. KfW Entwicklungsbank, on behalf of the Federal Government of Germany, is supporting a strategy for comprehensive water use in the river's catchment area by financing programmes for efficient drinking water and irrigation management, a modern wastewater system and controlled landfills. Rain and wastewater will be collected from private

households. It will then be treated bio-mechanically and some of it is reused in agriculture. Wastewater treatment is needed in order to protect the Sidi Salem reservoir, Tunisia's most important storage of drinking water, from contaminants and excessive algal growth.

Today our support of optimal water resource use includes the desalination of groundwater and brackish water. Furthermore, the treatment plants use organic sludge for producing biogas. When dried, this material becomes available as fertiliser for agriculture and as a fuel for co-incineration in the cement industry. KfW Entwicklungsbank's involvement is completed by its support for investments of industrial enterprises in environmental protection.

Tunisia's progress in waste management are particularly remarkable compared with those of many other emerging economies. In this area KfW Entwicklungsbank is supporting the country with long term financing of up to EUR 55 million and intensive consulting. "Tunisia

has the clear political will to take on the waste problem", says Bernd Hasel, waste management expert at KfW Entwicklungsbank. Within only eight years, the country has built up a nearly nationwide infrastructure for disposal of all kinds of waste. There are approximately ten landfills financed by KfW Entwicklungsbank as well as a national disposal centre for hazardous waste. The modern landfills minimise the production of landfill gases that damage the climate. The revenue from emission certificates partially covers the costs. This is beneficial for the climate and a major step forward in protecting valuable water resources.

KfW Entwicklungsbank's long-term involvement is producing results. Thanks to the comprehensive IWRM approach, which includes drinking water, irrigation, wastewater and solid waste, the quality of the ground and river water has greatly improved and its use has become significantly more efficient; all while protecting the climate and the environment.

MAXIMUM RETURN PER LITRE

SUFFICIENT WATER FOR FOOD SECURITY



No sector uses and needs water more than food production. Of all the fresh water humans currently use worldwide, 70% flows into agriculture – to fields, pastures, plantations, and greenhouses. In many dry regions this figure can even be as high as 90%. Accordingly, competition for the limited fresh water resources is severe. By 2050 the world population will grow to over 9 billion people. To feed them, agricultural production will have to increase sharply over the next 40 years.

In many regions, however, traditional agriculture will not be able to achieve such an increase. Even in areas where regular and sufficient precipitation falls, rain-fed agriculture still remains far below its potential. In countries where irrigation is necessary, much of the water is lost on its way to the fields. The systems are antiquated and defective, and good organisation is often lacking.

If water is not managed more efficiently, forecasts indicate that agricultural demand for water will nearly double by 2050. Of course, new water resources could be tapped, but only to a limited extent. Any intervention in the water cycle has severe consequences. Available water is becoming increasingly scarce in other areas, such as for drinking water, for conservation of biodiversity and natural habitats worthy of protection, as well as economic and social development. Therefore, any increase in agricultural

production simultaneously requires an improvement in water use efficiency and a limitation of its consumption.

One of the most important tasks of KfW Entwicklungsbank is to support partner countries in increasing yields using the same or a reduced amount of water, thereby diminishing the pressure on the water balance. The principle of "more crop per drop" aims to promote food security while protecting resources. Research assumes that these divergent objectives can be reached with appropriate innovations – but that this will require enormous investment and the transfer of know-how and expertise.

Even if the main goal is to produce more food, this must not disadvantage other water users, cause or exacerbate conflicts over water resources. This is particularly the case for the expansion of irrigated agriculture. Here also water may only be used after carefully considering the interests of all stakeholders. At the same time it is becoming increasingly important to introduce more efficient methods of irrigation and to improve existing systems.

Adapted to the Water Catchment Area

Projects for food security must be adapted to the specific characteristics of each water catchment area. Areas seen as unproblematic show a level or positive water balance, i.e. they have enough water to meet all needs. In such non-critical areas, primarily in Sub-

Saharan Africa and Latin America, irrigated agriculture could still be expanded. In these areas, KfW Entwicklungsbank supports the construction of new irrigation systems, advises on the introduction of sustainable cultivation techniques and promotes the organisation of water distribution by small farmer associations.

In threatened or critical catchments the water balance is variable or negative. The scarce water supplies have to be distributed equitably among all the user groups and thus used as efficiently as possible. In these arid regions, KfW Entwicklungsbank is financing measures that improve rain-fed agriculture to optimise use of precipitation. Slope terracing, reforestation, and contour bunds reduce rapid rainwater runoff, thus increasing water retention in the soil. In addition, treated wastewater is reused wherever possible.

To use water as economically and sensibly as possible, KfW Entwicklungsbank is developing adapted solutions together with its partner countries. In all programmes and projects the main goal of the German Development Cooperation and KfW Entwicklungsbank is to support partner countries in strengthening their agriculture and preparing for future food requirements.

FROM BARREN LAND TO GREEN GARDENS

INDIA: EROSION CONTROL IN WATER CATCHMENT AREAS BEARS FRUIT



Women now have two or three harvests a year and sell the surplus at the market.

The results are impressive. Where depressing yellowish brown colours once dominated there is now vibrant green; barren slopes have given way to a fertile garden landscape where tomatoes, chili peppers and millet grow. For hundreds of thousands of people in central India life has improved considerably. The groundwater level has risen significantly and there is water even in the dry season. Instead of just one harvest after the rainy season, families can now have two or three harvests and sell the surplus in the market. They no longer have to move to other regions during the dry months in order to



earn money there. In addition, many more children now go to school.

This was made possible by the Indian-German development programme for water catchment areas. Activities begun in 1992 in villages in Maharashtra and now cover approximately 300 communities. The programme has since been adopted in the states of Andhra Pradesh, Gujarat and Rajasthan. The project executing agency is the National Bank for Agriculture and Rural Development. Altogether more than EUR 70 million flow into this programme. KfW Entwicklungsbank is also providing nearly

EUR 20 million of support to its partner bank within the framework of a new umbrella programme for innovative approaches to natural resource management in India.

The figures show how urgently action is needed. Data from the Food and Agriculture Organisation indicates that 60% of agricultural land in India is already damaged by soil erosion and persistent desiccation. Climate change, which is particularly noticeable in India, is reinforcing this trend.

It is thus the top priority in the states mentioned to develop and implement appropriate erosion control measures, together with the residents, in order to conserve soil and water. "This holds back both the rainwater that falls into the valley as well as the valuable soil that is washed down with it", explains Marcus Stewen, ecosystem expert at KfW Entwicklungsbank. "The water can seep back into the soil, stabilising the water balance".

In Gujarat and Maharashtra, KfW Entwicklungsbank is also providing EUR 36 million to support a programme aimed specifically at the indigenous population. The programme is concentrating on small fruit plantations, where 40 cashew trees and 20 mango trees per family guarantee their long term income. There are currently 28,000 families benefiting from this programme.

CLEAN WATER AND SANITARY FACILITIES

BREAKING THE VICIOUS CIRCLE OF POVERTY



One out of six people must go to great efforts to fetch water – a task mainly left to women and girls. And this water is often dirty, contaminated with germs, and makes people ill. These people do not have their own water connection, standpipe or water kiosk that reliably delivers clean water. According to the World Health Organisation and the United Nations' Children's Fund, a total of 2.6 billion people must get by without the most basic sanitary facilities – without clean places to wash and without toilets or at least latrines nearby. A connection to a public wastewater disposal system is unattainable for two thirds of the world's population.

In many rural areas of Africa and southern Asia the precarious hygienic situation produces considerable negative effects. According to research by the World Health Organisation, four out of five cases of illness in developing countries are due to unsafe drinking water and lack of hygiene. Insufficient drinking water supply and lack of hygiene in homes and their immediate surroundings increase the mortality rate, damage productivity and income, and reduce educational opportunities. These factors are not only a sign of poverty, but are also one of its most important causes.

It is thus for good reason that constructing and modernising water supply, basic sanitation and wastewater management facilities are priority development areas for the Federal Ministry for Economic Cooperation and Development (BMZ) and KfW Entwicklungsbank. Currently 270 programmes and projects totalling approximately EUR 7 billion are being financed. These projects reach approximately 70 million people, noticeably improving their lives.

Urban areas are increasingly becoming the focus of attention. Of the 3.3 billion city dwellers, about 1 billion live in slums and informal settlements in urban peripheral areas. The city water systems cannot manage to provide drinking water for all. People often have to buy it at inflated prices from private water vendors or obtain water from wells and springs, where it frequently is of unsatisfying quality and available only sporadically.

An important element of our work is to guarantee a long-term drinking water supply that meets people's needs and to provide basic sanitary facilities. Strategies that have been developed with users and operators, and that are adapted to local conditions, ensure that as many people as possible receive clean water and can live in hygienic surroundings. On the outskirts and in the slums of African cities, for example, the model of water kiosks has proved particularly successful.

Better Living Conditions in Cities

In many countries the existing urban water distribution networks and disposal systems are only capable of providing insufficient or contaminated water. In extreme cases, as in many cities in the Middle East, the inhabitants have water only once a week for a few hours. In these cases our involvement is mainly aimed at distributing water more efficiently and reliably, improving water quality and reducing losses.

However, KfW Entwicklungsbank's work is not just limited to tackling the symptoms of the problems. Our commitment to improving institutional structures in the water sector and enhancing the management, administration and operation capabilities in partner countries is just as important. Ultimately it is good sector policy, regulation, transparency, accountability and participation that ensure sustainable drinking water supply and basic sanitation in the cities of developing countries.



"Investing in sanitation is about giving people health, dignity and development. It leads to fewer deaths and consequences from waterborne diseases in lowering child mortality and enhancing maternal health; fewer girls dropping out of school and more women playing an active role in their communities".

*Prince Willem of the Netherlands,
Chairman of the "United Nations
Secretary-General's Advisory Board
on Water and Sanitation"*

Taking Water Cycles into Account

However, the activities implemented are often not enough in the context of Integrated Water Resources Management. Water cannot be reproduced. Great natural cycles return the water used by humans back to nature, where it is returned once again to humans. At a time of growing contamination and water

scarcity these cycles are increasingly becoming the centre of attention. One figure illustrates how important this is: 90% of wastewater worldwide, especially in the great conurbations, is not treated.

In order to sustain the basic conditions of life for humans, nature and the economy, we are providing increasing support for

measures to collect wastewater, treat it and, where possible, allow it to be reused. Recycling the organic substances and nutrients contained in wastewater plays an increasingly important role in this regard. KfW Entwicklungsbank is making approximately EUR 1.6 billion available for such wastewater management projects.



Modern waste management returns recyclable materials to the economy.

Valuable Transformation

As the cities grow in developing and emerging countries, so do the mountains of waste. If these are not properly disposed of and treated, they threaten people's health. If solid waste hinders the flow of wastewater in sewers, it creates ideal conditions for pathogens to multiply. Unsecured waste disposal sites also contaminate rivers, lakes, coasts and oceans. These dangers must be taken into account through IWRM.

In this regard professional waste collection, treatment and storage on the one hand and municipal water supply and wastewater dis-

posal on the other complement each other. Furthermore, as part of a resource management plan, modern waste management can recover recyclable materials and return them to the economic cycle as raw materials, using them as a source of energy. Only the remaining unusable waste is disposed of in an environmentally acceptable way. Waste treatment and landfill gas recovery also allow significant reductions in greenhouse gas emissions.

However, hardly any developing country or even emerging economy has the financial

means and expertise for such measures. Therefore, to complement its activities in the field of water supply and sanitation, KfW Entwicklungsbank has committed approximately EUR 150 million in four partner countries for major waste management programmes. Along with establishing the institutional framework, these programmes create the fundamental structures for disposing of waste in a reliable and sustainable manner. Further projects are currently being prepared.

SUCCESSFUL MODEL

WATER KIOSKS MAKE DAILY LIFE EASIER IN ZAMBIA'S POOR NEIGHBOURHOODS



Water and more: kiosks are also meeting points for the community.

All the new water kiosks in Zambia's poor neighbourhoods are centres of bustling activity. Girls and women carry their canisters to fetch water for washing clothes or cooking. Anyone who quickly needs to buy some flour or sugar can find it here too, because the water kiosks serve also as small shops selling items of daily use. Not only do women no longer need to walk for hours to fetch water, but the clean water available in the vicinity also costs less than the dirty water from the tankers of illegal water vendors.

Local committees made up of future users decide where exactly the kiosks should be placed. These are mostly run by women who

are subcontractors of the city water companies. They receive a commission for every litre sold but may not exceed a fixed price.

The kiosk concept is the key element of a programme approach running since 2006 that has caused a sensation throughout the country. Thanks to the simple, low-cost technology the kiosks supply water precisely to those people previously considered to be too unappealing as customers because they could not afford expensive connections to the water supply system.

Construction of the kiosks is financed by the Zambian "Devolution Trust Fund", a water

and sanitation fund that municipal water companies can apply to for financial and advisory services. KfW Entwicklungsbank made crucial contributions to developing the concept and provides the largest financial contribution of EUR 9 million on behalf of the BMZ.

The trust fund's concept has become very popular. A water fund for the poor in Kenya has been established as well, and Zambia is considering applying this successful model to urban water supply systems across the whole country.

MORE SPACE FOR NATURE MEANS MORE

RICH REWARDS FOR THOSE WHO PROTECT ECOSYSTEMS



WATER

In the past, the forests bound the soil, gave rainwater time to seep into the ground and released this stored water back into the environment during dry periods. Today, such forests have almost disappeared in Kenya. In just 40 years the Kenyan population has grown from 6 million to 33 million people. This is putting enormous pressure on the environment as ever more fields are needed for growing crops and ever more pastures for grazing livestock. Steppe expansion, soil erosion and overgrazing are the results. There is no longer anything to hold back the very heavy, almost tropical rainfall, leading to a constant cycle of flooding and drought.

The worldwide loss of biodiversity, i.e. the decline in habitats, animal and plant species, and genetic diversity presents, together with climate change, the greatest environmental problem of our time. This biological diversity is irreplaceable; it stabilises the climate and water balance, and provides a supply of genetic resources that as yet have barely been studied. Essential for conserving biodiversity are intact natural ecosystems, not least floodplains and wetlands, especially in tropical and subtropical regions.

However, it is precisely in these regions that particularly strong pressures are being exerted on natural habitats. Many developing countries face urgent social and economic problems, and nature conservation is not first on their list of priorities. As a short-term solution, overexploitation of natural resources is more lucrative than the long-term conservation of forests or wetlands. The economic, ecological and health consequences are immense and remain underestimated to this day.

Water Cycles

In order to prevent such damage from the outset, all development measures that we promote, whether in agriculture, industry or urban development, incorporate the complex interconnections of the water cycle in their plans. The quality of each individual water catchment area determines subsequent action. Thus simple and targeted conservation measures to maintain a healthy water cycle can stabilise ecosystems and bring great benefits to people.

In KfW Entwicklungsbank's ecosystem protection programmes, erosion control plays a prominent role. Therefore the German Financial Cooperation, through the work of KfW Entwicklungsbank, is supporting the stabilisation of crucial water catchment areas in Ethiopia, the Sahel region, Costa Rica, the Dominican Republic, India and China by means of reforestation and soil conservation. This improves the local water balance and increases the water storage capacity of the soil, which is not only good for the farmers' fields but also for the region's drinking water supplies.

Around the world over 200 million mostly poor people live from natural ecosystems such as forests and river basins. Nature provides them with the essential basis of their livelihoods – food, clean water, fertile soil and fuel. Therefore measures to protect ecosystems, particularly in poor developing countries, will be successful only in cooperation with the local population.

This means that projects must take into account the interests of these people and help improve their living standards. Ecosystem protection must not just simply demarcate protected areas, but it rather should incorporate the sustainable use of ecologically valuable areas as well as agriculture, whose water management affects the entire water balance of the region. Sustainable ecosystem protection thus requires an interdisciplinary approach in which all competing user groups and sectors are considered at the same time.

NOT WITHOUT THE NEIGHBOURS

CROSS-BORDER ECOSYSTEM PROTECTION IN SOUTH-EASTERN EUROPE BENEFITS EVERYONE



An efficient wastewater system protects the World Heritage Site of Lake Ohrid.

The Prespa region in the area where Albania, Macedonia and Greece meet contains real natural treasures. Lynx and brown bear live in the woods, rare species of pelican and cormorant nest in the wetlands, and fish that harkens back to the ice age swim in the lakes along with other species that only occur here. This extraordinary diversity makes the entire Prespa region an ecosystem of global significance. UNESCO has declared Lake Ohrid a World Heritage Site.

However, this priceless natural habitat faces a double threat. The region is poor, particularly



in the Albanian part. People here must live on barely EUR 2 per day. This poverty leads to inappropriate agriculture, illegal felling, overgrazing and overfishing, which destroy the ecological balance and with it the livelihoods of the local people. On Lake Ohrid there was no functioning wastewater disposal and treatment system, neither on the Albanian nor on the Macedonian side. Wastewater from private households, commercial enterprises and industry flowed untreated into the lake, thereby contaminating it.

In order to halt this extremely damaging process, Albania, Macedonia and Greece have committed themselves to cross-border cooperation. They are being supported by the Federal Government of Germany, which is simultaneously promoting two cross-border projects in the region. The first is to protect biodiversity in national parks, which are particularly under threat, and the second is to establish an efficient wastewater system in the area of Lake Ohrid.

Thus, the projects are helping the park management in Albania and Macedonia to restructure their management plans in order to concentrate strongly on protecting biodiversity and draw up a land use plan for people living on the edges of the park.

On Lake Ohrid KfW Entwicklungsbank is committed to a new comprehensive concept, including improved drinking and wastewater services on the Macedonian side, which have been completed successfully; better drinking water supply for the Albanian part, which is now secured in the city of Pogradec and most of the surrounding villages; an efficient wastewater disposal, via centralized wastewater collection and modern sewage treatment plants. Meanwhile almost 70% of the inhabitants in Pogradec are connected to the central sewer network. The next project phase is already envisaged, which will further increase the connection rate, the extension of the now existing wastewater treatment plant including the highly needed phosphorus elimination and contribute to the creation of viable municipal water and sewage services providers.

The signs of success are already visible: Pogradec is now the second town in Albania with round the clock running water. People in Pogradec were also willing to pay more – an important precondition for sustainable operation of the sewage system.



"Human development is, in every respect, closely linked to the productivity of ecosystems. Healthy ecosystems make the world habitable; they purify air and water, maintain biodiversity integrity and provide many other critical functions. That is why development financing must also consider the 'Green Economy' as a priority for a sustainable future".

*Achim Steiner
UN Under-Secretary-General and
Executive Director of United Nations
Environment Program (UNEP)*

PROTECTING WATER AND USING IT FAIRLY

A BALANCING ACT THAT CAN SUCCEED ONLY WITH GOOD GOVERNANCE



Sufficient clean water for all – a simple enough challenge but extremely difficult to achieve, as the available supplies must be used in a way that is not only ecologically sustainable, but also socially equitable and economically efficient. It is often necessary to make difficult political decisions, which turn Integrated Water Resources Management (IWRM) into a balancing act. Success depends on comprehensive plans, efficient structures for legislation and administration, adequate involvement of all those affected and effective water supply organisations. In short, good public and corporate governance are fundamental to the water sector.

However, in many developing countries the legal foundations for a good water policy are absent. Although access to clean water was promoted as a human right, many countries are not able to meet this requirement, leaving many people without clean water. Water users or their representatives are often not sufficiently involved in their country's decisions on water policy. The allocation of water for industry, energy production, agriculture and private households is often determined according to short-term political interests instead of carefully considered IWRM plans.

In such an environment it is hardly possible for good corporate governance to develop. As a result, the performance of water service providers and the efficiency of irrigation systems are usually poor. Dubious water quality, areas with inadequate water supplies, dilapidated infrastructure or a lack of customer focus are the order of the day. Many companies in the water sector suffer, as water prices are too low while costs are high. At the same time, however, there are neither opportunities nor incentives to change anything. As a consequence the majority of the companies depend on state subsidies.

Considerable investments are needed to supply all people with sufficient water. However, such investments can only be effective over the long term if underlying conditions are improved. Therefore KfW Entwicklungsbank, together with the BMZ, is pursuing a dual strategy. It is helping partner countries finance urgently needed infrastructure while at the same time demanding and promoting reforms.

Long Term Strategies

Patience and endurance are needed to set reforms in motion that will allow good public and corporate governance to become rooted in a partner country. In order to achieve more, individual measures are embedded in a long-term promotional strategy, which often consists of so-called graduated plans with important benchmarks that must be reached before further financing follows. For a partner this could mean improving water legislation, preparing water resource management plans, adjusting water prices, or redesignating and formalising the tasks and structures of institutions concerned with water.

Transparency and Accountability

A call for adjusting water prices, which usually means price increases, is often not enough. At the same time, costs must be reduced, corruption and abuse tackled, and the quality of services improved. Central to our support are thus efforts to strengthen operating organisations, supply companies and user groups.

Without the principles of good corporate governance – transparent and efficient corporate policy, including accountability – no lasting improvements can be made in the water sector. Such corporate governance presupposes sufficient autonomy of the public and private supply companies to organise their business activities profitably. They must be independent in developing and implementing their own business strategies, in making investment and personnel decisions, including remuneration in line with performance and market rates. Supervisory boards, on which customers should also be represented, provide the necessary checks. State-run supervisory authorities must closely monitor adherence to legal standards in the socially and politically crucial water sector.

Whether centralised or decentralised structures, public sector or private companies are better suited to fulfil this task is the subject of lively discussions all over the world. There is no single ideal solution, but solutions must rather be agreed upon with local partners and adapted to different circumstances.

The challenges are often complex and cannot be resolved through isolated projects. For this reason KfW Entwicklungsbank promotes what are known as sector-wide approaches in many partner countries to support the planning and implementation of important sector reforms together with other donors.

Checking the water quality is part of good governance.



A REMEDY FOR INSTITUTIONAL DEFICIENCIES

GOOD GOVERNANCE HELPS PERU TO REFORM ITS WATER SECTOR

Peru is facing serious water problems. Almost a quarter of the population has no reliable access to clean water, while almost half lives without sufficient sanitation. Untreated wastewater severely contaminates both people and the environment. The country, however, is determined to reform its water sector. "The government has recognised", says Joschka Greve, a KfW Entwicklungsbank water expert, "that there is not only a great need for investment but above all a great need for reform".

In the past, state investment in the water sector fell short of reaching the entire population. The quality of water provision and the availability per day must urgently be improved. To remedy the greatest deficiencies Peru decided on considerable investments – under the slogan "Agua Para Todos" (Water for All) – and on far-reaching reforms in the entire sector.

For this reason the country is ready to be judged according to the principles of good governance in the water sector. Indeed, the budget support for the Finance Ministry, which has been agreed upon by the country and the Inter-American Development Bank (IDB) together with KfW Entwicklungsbank, will only be provided if Peru can demonstrate that it is carrying out jointly agreed reforms. The reforms affect all levels, from the legal structure through planning to price-setting. One milestone, for example, is that in the second year of the reform programme tariffs in at least 15 towns must be set to a level that covers the actual costs.

In order to achieve good governance within the water services companies, they will also be strengthened internally. This includes not only staff training but also greater participation by the general public, which in the future will be better represented on the supervisory boards. Contracts with the government establish the targets, incentives and penalties as well as a code of conduct for the companies.



"Water for all" is the aim of Peru's water sector reforms.

DEG: HARNESSING ENTREPRENEURIAL SPIRIT

PROMOTING SUSTAINABLE PRIVATE SECTOR INVESTMENT IN THE WATER SECTOR



TO IMPROVE STRUCTURES

In many developing countries state authorities and operators are struggling to provide the population with a reliable supply of drinking water. Financing, trained personnel and effective organisation are sometimes lacking. Here, committed private companies can fill the gap. However, this is not possible without long-term capital – which is often not available in developing countries.

This is where DEG – a part of KfW Bankengruppe – steps in. In developing, transition and emerging countries it promotes sustainable investments by financing and advising private companies. Regarding the water sector, DEG finances several projects by using its own funds, but also with the BMZ's Public Private Partnership programme "develoPPP.de". For example, DEG finances private sector operators investing in the purification and distribution of drinking water in urban centres. Another area of investment with private sector operators is alternative purification methods, such as seawater desalination, or wastewater disposal solutions that conserve natural resources, such as recycling treated wastewater for agriculture. In industry DEG is also involved in innovative processing methods. Likewise, in the production of electricity from hydropower there are much more efficient solutions today for plant construction than there were just a few years ago.

As part of the Federal Government's development cooperation, DEG makes long-term loans as well as venture capital available for private sector investment: Capital that companies otherwise have difficulty coming up with in the financial market, or that is not available in sufficient amounts. The support is usually achieved through equity investment and other quasi-equity finance and also allows the companies to carry out promising development projects, which they would otherwise hardly be in a position to finance.

In addition to providing finance, DEG advises its partners on how to structure their investments and set up comprehensive environmental and social management plans, thus helping to ensure the sustainability of the joint projects and at the same time promoting higher standards in the partner countries. Particular attention is paid to monitoring water consumption and adherence to sewage limits.

AFFORDABLE FRESH WATER SUPPLY FOR LARGE CITIES

MORE WATER FOR THE POOR IN MANILA



Access to clean drinking water for poor households in Manila.

Providing a regular water supply is often particularly difficult in large conurbations with millions of inhabitants. One possible problem is that water pipes are in such poor condition that the water does not even reach the people and must be purchased at considerable cost from mobile vendors, as in Manila, for instance. In the eastern part of Manila, DEG co-finances investments in the modernisation of the supply network.

The water supply has improved considerably for more than five million people. A constant supply of clean water is now available to 99% of the population at prices that everyone can afford. In the past, nearly two thirds of drinking water was lost due to damaged pipes. In addition, there was illegal tapping of the water pipes, which brought with it dangers of contamination. Today, a good decade later, water loss is down to 24%. This improvement is due to the work of the private water supplier Manila Water Company Inc.. After 1997,

when the company obtained the concession for water supply and wastewater disposal services in the eastern part of Metro Manila – an area of approximately 1,400 square kilometres with 23 cities and municipalities and a total of 5.6 million inhabitants – water connections tripled in just a few years.

As the first international financing institution, DEG had made available a long-term loan with a volume of USD 20 million which was used to renew damaged pipelines and extend the supply network. Manila Water Company was also able to reduce water theft – responsible for major losses – principally through the “Water for the Poor” project. So far, 1.2 million people have benefited from the programme, particularly those living in the slums of Manila. Communal connections provide clean drinking water to several households at once.

SETTING ENVIRONMENTAL STANDARDS

BIOLOGICAL WASTE WATER TREATMENT IN OMAN

Water is becoming scarcer around the globe, so it is essential that agriculture and industry develop methods for saving water and devise strategies to protect and treat water for reuse. Usually, the technology required for this reprocessing is lacking. Therefore the potential for enterprises offering intelligent, environmentally friendly solutions is considerable.

In the Middle East, for example, considerable environmental pollution is caused by oil extraction, a key economic activity. One by-product is polluted process water which needs to be decontaminated. Bauer Resources GmbH, a German enterprise with many years of experience in biological water treatment, has been awarded a contract for a pilot project in Oman. It is constructing a wetland system to provide waste water treatment with a low environmental impact. The company will operate the plant for twenty years.

The system is composed of an upstream oil separator, the plant-based treatment facility, in which micro-organisms bond to contaminants, and a downstream saline area. At the end of the process chain the water is treated and can be evaporated leaving salt, which can be processed to industrial salt. The wet-park is designed to treat 45,000 cubic metres of process water a day. It complies with the new environmental legislation of Oman and is setting an example for sustainable, proven environmental technology. Germany is providing management capacities and the technology, thereby ensuring a continuous transfer of know-how. DEG provided a USD 28 million quasi-equity loan for this progressive environmental engineering project.

Wetland systems using plants for treating water: an innovative environmental technology.



OUTLOOK

CONSERVING WATER AND USING IT WISELY



In many regions of the world water is still being used as if it was an inexhaustible resource. High population growth, rising demand for food, advancing industrialisation and the accompanying demand for energy are leading to a rapid decline of water resources and deterioration of water quality. In addition, climate change is aggravating water stress in many parts of the world. It is clear that this "blue gold" must be protected more than ever before. It must be used prudently, economically and efficiently. At the same time, access to safe water supply and sanitary facilities need to be increased in order to prevent diseases and create decent living conditions. Wastewater and solid waste management, safeguarding fragile ecosystems and water savings in food production are given high priority. Helping our partner countries to achieve this is our most important goal, now and in the future.

Integrated Water Resources Management (IWRM) has become an internationally recognised water policy concept, which also determines the Federal Government's policy. Putting IWRM concepts into practice avoids conflicts, prevents waste and misuse, and conserves water for the future. In addition, adapting to climate change will present huge challenges for the water sector. Therefore we offer our partners in both the public and the private sectors workable concepts to minimise climate change impacts on the water sector. Our goal in this area is to jointly finance and support solutions to help prevent water stress, but also protect against extreme climatic events such as disastrous floods and storms.

Investment for the People

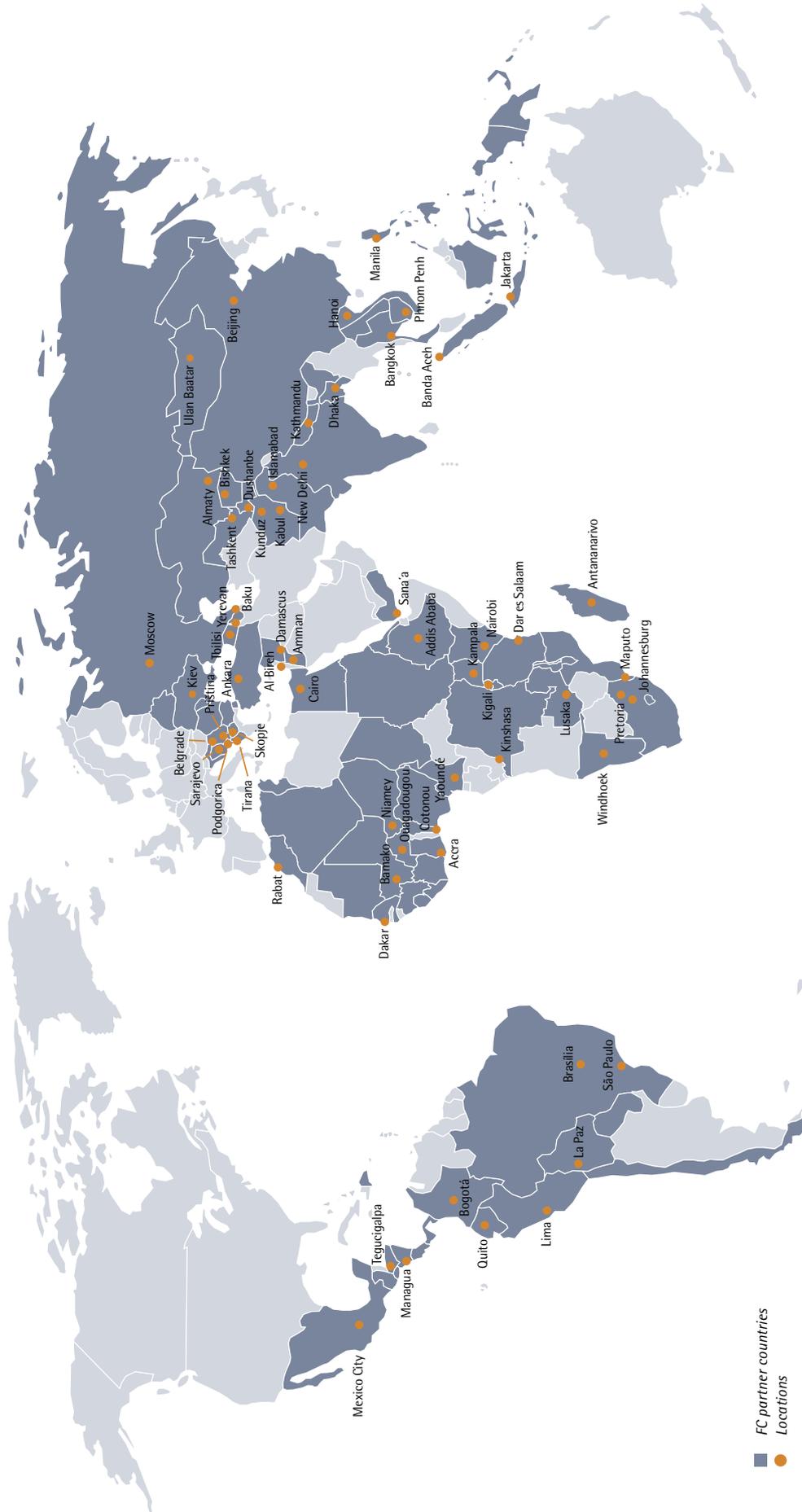
Urbanisation usually advances even faster than a population grows. Water services in the slums and outskirts of the world's cities are often inadequate. For this reason urban water supply and sanitation remain our main focus. Furthermore, we live in and with nature, attaining our livelihood from it. Ecosystems are an integral part of nature. They stabilise the climate, regulate the water balance and ensure biodiversity. This is important for all of us, although economic and social pressure on these natural habitats is particularly strong. Therefore, sustainable management of natural resources is essential, for people and for nature.

A fair water policy, implemented with the participation of all those concerned, as well as efficient supply systems – these goals cannot be achieved without good governance and corporate governance, features that are still absent in many of our partner countries. It is therefore important to us to work together with our partner countries to reinforce transparency, accountability, participation and customer orientation. Governments are increasingly allowing room for private sector involvement in the water sector.

Our aim is to support precisely those business initiatives in developing and transition countries which contribute to sustainable and efficient water use. Financing long-term solutions in the water sector frequently exceeds the budget capacities of partner countries. This is exactly where we come in with innovative ideas tailor-made solutions, and advice for partner institutions and decision-makers. We do not work in isolation, but rather embedded in sector strategies and in concert with other donors. This is the only way to meet the huge challenges of the future.

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OFFICES OF KFW ENTWICKLUNGSBANK AND DEG



FC partner countries
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