

»» Innovation Works Technology for Development

Annual Report 2012 on Cooperation
with Developing Countries



Bank aus Verantwortung

KFW

EUR 6.2 billion to create prospects for the future

KfW Development Bank and KfW's subsidiary DEG have again increased their new commitments. In 2012, they committed development funds worldwide totalling EUR 6.2 billion, EUR 0.5 billion more than in the previous year. KfW Development Bank provided funding of EUR 4.9 billion, primarily to public institutions, while DEG committed EUR 1.3 billion for entrepreneurial investments.

The programmes we support are proposed by partner countries during governmental negotiations with the German government and are then set down in a development strategy for each country. On behalf of the German government, particularly the Federal Ministry for Economic Cooperation and Development (BMZ), KfW Development Bank examines whether the projects make a meaningful contribution to development and are eligible for support. If this is the case, KfW experts provide ongoing advice and assistance to partners for the entire duration of their projects.

KfW's subsidiary DEG – Deutsche Investitions- und Entwicklungsgesellschaft – promotes the development and expansion of private-sector structures. It advises and finances companies that invest in economically and developmentally sustainable schemes. DEG does this by providing long-term financing from its own funds.

Promoting development on behalf of the German government

Financial cooperation with developing countries and emerging economies is subject to the German government's strategic guidelines and requirements. In this respect, KfW is both a bank and a development institution, with vast financing expertise, a thorough understanding of development, and extensive international experience. KfW uses this unique mix of skills to ensure that development projects achieve the maximum impact, and to support the German government in meeting its international obligations, such as protecting the environment, fighting poverty and combating climate change. In addition, by using its own resources, KfW helps to increase Germany's official development assistance contributions and take some of the strain off the federal budget.

Actively working for the benefit of people around the world

KfW and DEG support innovations and technological advances in Africa, Asia, Latin America and South-Eastern Europe.





■ Countries where KfW Development Bank and DEG operate

📌 Projects described in the report

Dear Readers,

Humanity faces fundamental changes in the 21st century. Climate change is affecting our ecosystem and threatening the basis for our very existence. In many places, it is exacerbating the problem of poverty. A rapidly growing world population is putting increased pressure on our resources. Humans are both the drivers and the victims of this change. It is therefore our responsibility to tackle the global challenges as a community.

New approaches are needed to solve these problems. Innovation and modern technology play a central role in this. They are a common thread which runs through every response to the challenges of our time. Without technological advances and a willingness to innovate, these challenges will be difficult to overcome. In some cases we need a real leap forward in technology.

As international development financiers, we at KfW therefore support our partners in implementing innovations and deploying modern technologies. We finance a broad spectrum of projects, from simple technical applications to complex, technological solutions. As a "responsible bank", we finance the innovative capacity of our partners, whether these are countries or private-sector companies.

In its development cooperation work, KfW always operates on behalf of the German government and seeks to promote its political objectives. Over EUR 1.6 billion of federal budget funds was allocated to us in 2012 alone, most of it by the Federal Ministry for Economic Cooperation and Development (BMZ). Moreover, we received extensive federal guarantees for our development loans. We would like to express our sincerest gratitude for this support and trust.

In our Annual Report 2012, you will see how innovation and technology can help achieve basic developmental goals. For instance, you will learn how mobile phones in Niger are helping with education, how innovative social entrepreneurs in India are providing assistance in meeting basic needs, how biogas in Senegal is helping to provide clean electricity, how computer software in Brazil is protecting the rainforest, and how Morocco is using the sun to generate energy.

We hope you enjoy reading the report.



Dr Norbert Kloppenburg
Member of the Executive Board
of KfW Bankengruppe



Bruno Wenn
Chairman of the Board
of Management of DEG



Working closely together: Bruno Wenn (left)
and Dr Norbert Kloppenburg.



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Top: Modern technology brings new treatment opportunities. Bottom: Using smartcards, poor people receive health care and social benefits.



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Thanks to innovative technology, the Georgian city of Batumi has an environmentally friendly water treatment plant.



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New research collaborations are succeeding in the battle against sleeping sickness.

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Top: Good training creates prospects for the future. Bottom: Fishermen in Mauritania are benefiting from modern satellite technology.



The spread of mobile communications is creating many new jobs.



Top: Solar power plants exploit the sun's enormous energy potential. Bottom: Barcodes protect the Brazilian rainforest against illegal logging.

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»» Introduction: Innovation and technology **key to sustainable development**

Today, people travelling through remote regions in Africa no longer have to worry when they need to make an urgent phone call. In an emergency, someone nearby will readily take a mobile phone out of their pocket and let them make a call. More than half of the population of Africa already use mobile phones. Modern information and communication technologies have had an impact on the daily routine of people in developing and emerging countries for some time now, and have revolutionised life there. Mobiles phones are being used for banking, to look up market prices and to facilitate trading relationships.

However, the pace of technological advance varies significantly. The success story of mobile phone technology has to be repeated by other technologies, such as those involving the climate, the environment and production methods: innovative approaches are needed so that people around the world can use them, and they must be deployed in a targeted manner to resolve pressing problems, like ensuring food security and providing energy. If this succeeds, the international community will have the historic opportunity to overcome the enormous challenges which the world is facing.

The changing world harbours enormous challenges

It is evident from the rapidly growing world population, famine and rising sea levels that our world is changing. Nobel prize-winning scientist Paul Crutzen says that we are already living in a new geological epoch – the Anthropocene. This age is marked by the fact that important changes in global ecosystems are no longer being caused solely by natural processes, but instead primarily by humans. It is therefore our collective responsibility to steer the Earth onto a new, sustainable development path. If we stick to the current growth pattern and continue our unlimited exploitation of resources, we will destroy our ecosystem and endanger the natural basis for our existence. It is up to us to respect the planetary boundaries and decouple development from resource consumption. We also need to find new production methods and change our consumption patterns and lifestyle. This is not just about raising awareness of the global environment. Only through technological innovations can development be made sustainable in the long term. This is particularly important for developing and emerging countries – and thus for German Development Cooperation too.



Technological innovations

Technological innovations affect products, processes and services. An important distinguishing feature is their scope. Innovations may be incremental, i.e. they improve or enhance existing technologies step by step or modify them to meet special circumstances, or they may be radical, generating a fundamental shift in a technological regime and involving completely new technical functions, a new knowledge base or a new organisational form.

Strengthening technological expertise in developing countries

Technology, innovation and the enabling frameworks for their use are becoming increasingly important in development cooperation. Upon closer observation, it becomes apparent that technology is a common thread which runs through the responses to all of the global challenges of our time. Above all, the fact that resources are becoming scarcer means that we urgently need to implement technology and boost innovative capacity. For example, in arid regions, technology enables water which was not previously usable to be made fit for drinking. In areas plagued by hunger, it can boost agricultural productivity.

Technology and innovation are essential for a competitive economy

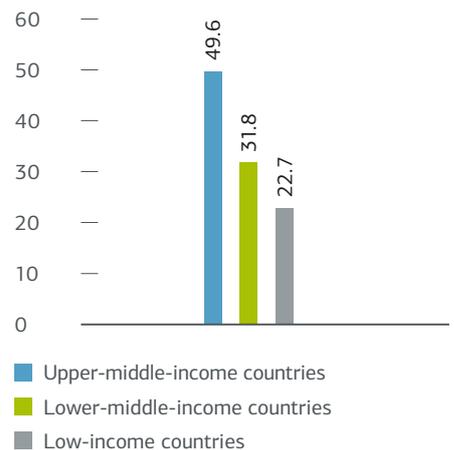
Innovation and technology also play a central role in increasing the economic capabilities of developing and emerging countries. Global competition is tough: countries now need much more than the traditional location advantages, like low wages or resource wealth, if they are to succeed in earning a place for themselves in the international division of labour. In the future, competitiveness will be increasingly dependent on whether countries are able to add value further up the production chain. This requires the capacity to innovate.

Demand for technological expertise has also increased in traditional sectors, such as farming. Consistently high product quality and the implementation of standards, such as for food safety, are necessary in order to succeed on the world market, and this is impossible without technological advances.

Innovative capacity does exist, not just in larger emerging economies, but also in developing countries, as demonstrated by the success of some innovations which originated there. One example is Kenya's

Penetration of recent technologies*

Figures in % of level in high-income countries



Source: World Bank

*e.g. PCs, Internet, mobile phones

M-Pesa payment system, which offers basic services for transferring money and making cashless payments without the sender and the recipient needing to have a regular bank account. Clever business ideas like this are meeting with brisk demand, which in turn creates new markets.

Development cooperation is needed

Development cooperation organisations play an important and active role by supporting partner countries in exploiting the potential of technology. On behalf of the German government, KfW Development Bank and KfW subsidiary DEG are working to meet these challenges. KfW works particularly closely with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Germany's agency for international cooperation. The following chapters describe how KfW and DEG are helping countries and companies to deploy innovative technologies in order to improve basic services, create employment and competitiveness, and combat climate change. ■

»» Making technologies useful for people





Chapter 1

Meeting basic needs with innovative technologies

People need food, water, energy, education and access to health care. This requires innovative approaches – for example in Niger, Vietnam, South Africa and Tunisia.

A Once a month, teachers in the West African country of Niger make their way to the nearest regional capital to pick up their pay from a treasury department payment office. Because there aren't any payment offices in their local village, they have to walk to a larger village nearby and hope to find a ride on a moped or bus. Some of them are on the road for as long as a week to get their wages

“As a result, classes are often cancelled at Niger schools,” explains Nicole Turad, KfW project manager. When teachers are absent, students suffer, along with the Niger education system. The illiteracy rate in this extremely poor country is roughly 70%. Children attend school for only 4.3 years on average, significantly less than children of similar ages in neighbouring countries.

However, education is a basic human need and crucial for development. Promoting education is therefore an important part of Germany's development policy. Educational programmes supported through KfW promote school attendance and improve the situation in the classroom. Innovative technological approaches play an important role in this.

Teaching not travelling: More classroom time for students

Take Niger as an example. Banking by mobile phone, a modern technology, helps solve the main problem there – how to get teachers their monthly pay without them having to leave the classroom and their students for extended periods of time. Working with its Niger partners, KfW is introducing a new, mobile payment system for teachers



Innovative programmes in Vietnam are helping improve mother and child health.

»» Telemedicine is helping deliver high-quality health care to the poor.

Gabriele Götz,
KfW project manager

in rural areas of the country. Teachers are given a bank account for receiving their pay, as well as a cash account with a mobile phone company, which is linked to the phone's SIM card. By moving money between the two accounts, they can use their mobile phone to obtain their pay in cash from the mobile phone company's local offices or from selected shops in the area.

Far fewer classes are expected to be cancelled thanks to this technological approach to development. This benefits teachers and students alike. In a pilot project, roughly 1,000 teachers will be given mobile phones, and modern software will be introduced. If the project shows promising results additional 6,000 teachers will be included.

In Niger, mobile communication makes it possible to bridge large distances in the most remote regions without the need to travel, saving poor people the time they would otherwise devote to farm work, for example. But in addition to education, this technology also helps to satisfy other basic needs, such as health care.

Telemedicine: Digital innovations save time and money

In many developing countries, the vast majority of people live in rural areas, yet most health care facilities are located in the cities. Therefore, when people in the countryside become ill, they usually have to travel to hospitals, clinics and doctors in urban areas. Mobile communications and high-speed data connections over the Internet are creating new treat-

Three questions for:



**Stephan
Opitz**

Director General
of KfW Develop-
ment Bank

Mr Opitz, why is KfW, a bank, focusing on funding technology in developing and emerging countries?

Many countries have already achieved remarkable development results. Nevertheless, we currently face enormous challenges worldwide, some of which stem from this very success. To meet these challenges, we need innovations and technological advances, in some cases even a technological revolution. This is where we come in – we're not simply a bank but also an experienced development organisation.

Technology is complex and expensive. Is it possible to reach poor people with it?

Innovation, technology and poverty reduction are not mutually exclusive. However, employing technology to fight poverty makes sense only if people are able to make use of it. We're committed to making this possible.

Is technology the key to solving global problems?

Technology alone is not a panacea. The right incentives and enabling frameworks also have to be in place. We need pricing that reflects scarcity, as well as effective institutions and educational establishments that develop capacities in the countries themselves. As a centre for technology and research, Germany is ideally placed to collaborate with its partners in this area. This collaboration benefits all parties and makes the future more secure.

ment opportunities, for instance through "telemedicine".

In general, telemedicine refers to medical services provided using information and communication technologies to bridge physical distances. Telemedicine enables doctors to consult by video, particularly on difficult medical issues. Specialists can advise their colleagues on how to diagnose and treat patients, for instance when analysing X-rays and the results of blood tests. They can also be video-linked during surgery. In this way, telemedicine can make a substantial contribution to improving the quality of health care in remote regions. It also enables doctors and health care workers in remote regions to take part in online training sessions, thus enhancing the quality of local medical services.

Working on behalf of the BMZ, KfW plans to support the Viet Duc Hospital ("Vietnam-Germany Hospital") in Hanoi in further developing telemedicine in

Vietnam. The hospital, which was set up with support from Germany, is already at the forefront of technology, and discusses difficult cases with Australian doctors by videoconference. It now plans to expand its telemedicine network, initially to two rural provincial hospitals in northern Vietnam and two district hospitals affiliated with them. "That will help to ensure that the poor have access to high-quality health care," explains Gabriele Götz, the KfW project manager responsible for the scheme.

Until now, Germany's development cooperation with Vietnam has focused on joint programmes, primarily to help provide rural health services in selected provinces with better medical equipment. The introduction of telemedicine is now being supported with a loan of EUR 7 million. "We expect to see an even greater impact from our commitment," says Gabriele Götz. The alternatives would be considerably more expensive – Vietnam would have to build new hospitals. There are

Modern technology is making an important contribution to diagnosing symptoms.



»» The modernisation of irrigation technology which Germany is supporting in Ecuador makes our work easier. The changes in technology mean that we now can make better use of water by delivering the exact amount that we need. As a result, the soil always stays moist.

Maria Paredes, head of a local council in the Ecuadorian province of Tungurahua

plans to expand the telemedicine network to five provinces.

Sustainable cultivation methods for long-term food security

In a world where roughly 900 million people are threatened by starvation. Food security plays a crucial role: up to 75 % of people in developing countries make their living from farming. However, many farmers still have very low yields. Droughts and floods cause crop losses. Often there is no effective irrigation system or modern machinery, and expertise with cultivation methods is lacking. Seed, fertiliser and pesticides are frequently in short supply.

Agricultural yields can be significantly boosted by using efficient cultivation methods that preserve resources. Private-sector initiatives make an important contribution to achieving this. They assist farmers by providing technological support, financing, additional training and access to markets.

Creative entrepreneurs help improve harvests

B One example of this is the Farmsecure company in South Africa, which has collaborated with DEG and Standard Chartered Bank (SCB) to develop a “goods purchasing and pre-harvest working capital programme” for farmers. Farmsecure’s involvement means more than simply helping farmers cover costs for working their fields. It also provides them with extension advice on a wide range of topics and technological support in cultivating crops (scientific farming). Furthermore, harvest prices are locked in on the commodity futures exchange (thus providing a price guarantee), and crop insurance protects farmers against unexpected weather events, such as droughts and floods (thus mitigating risk). The company offers its customers a complete package covering advice, financing and insurance, thus making it an attractive business partner for farmers.

Thanks to the support of Farmsecure, a total of 300 farmers have been able to reduce production costs, increase productivity, and ultimately make higher profits. The area of land under cultivation has nearly doubled in the past three years.

DEG has a holding of about 10 % in Farmsecure. “We want to provide the farming company with stability and planning certainty for the coming years”, says Franziska Hollmann, head of the Agribusiness Division at DEG. Conversion to sustainable, efficient cultivation methods is possible only with long-term funding.

Adapting technology to guarantee water supplies

Technological innovations are essential for meeting the basic human need for safe water. Roughly 900 million people worldwide have no access to drinking water, and in many regions water is becoming scarce. This is being exacerbated by climate change and the world’s rapidly growing population. KfW and DEG are focusing on technological approaches to provide more people with sufficient drinking water. This involves tailoring the technologies needed to local needs and what is possible in the partner countries.



New irrigation technology is improving yields: Maria Paredes from Ecuador



Electricity from millet stalks

Detlev Höhne, Commercial Director of Stadtwerke Mainz AG, on an outstanding “village power plant” in Africa



Detlev Höhne

“Working with our ‘Energy for Africa’ foundation and our local partners, we built a biomass power plant in Senegal. It is providing more than 1,200 residents

of the village of Kalom with electricity from renewable sources. The project helps to cover basic needs and, in the process, protect the climate. It is intended to serve as an example of how a functioning ‘village power plant’ modelled on a German municipal power plant can be set up in a rural African community. DEG has supported this public–private partnership project with EUR 200,000 of funds from the BMZ’s develoPPP.de programme. The power plant oper-

ates using pyrolysis. Dry bio-waste, primarily peanut shells and millet stalks, is converted into gas by a process of incomplete combustion. The gas is cleaned and then burned in an engine, which in turn powers a generator to produce electricity. The fuel source is provided mainly by local farmers, who can now sell what were previously useless shells and stalks to the village power plant.

In other words, the project not only provides sustainable energy for a rural area in Africa but also creates economic opportunities. Microenterprises can use the energy for more efficient production. The project was awarded the 2012 Public–Private Partnership Innovation Prize by the BPPP, the German Federal Association for Public–Private Partnerships.”

Producing energy from millet stalks.



Water is scarce in Tunisia: Modern desalination plants are helping remedy the situation.

D For example, in Tunisia, where water is scarce, modern desalination plants are planned to remedy the situation. In the land where the Arab Spring was born, rising population numbers mean that the amount of drinking water being used is increasing steadily. However, groundwater resources are limited and, in some cases, saline. This problem is especially prevalent in the southern part of the country, where very high salinity makes the water undrinkable.

The solution? Reverse osmosis, which is still a relatively unknown technology in

Tunisia. The process involves mechanically pre-treating saline water and then using special membranes to remove salt from it. Tunisia is benefitting here from a technology that has been used for some time with good results in industrialised regions, like California, US, and Andalusia, Spain. It makes sense to use this new technology in arid Tunisia in order to preserve scarce resources and produce drinking water. “We will be able to supply water to more than one million people,” says Laura Vogel, KfW project manager. She is confident that the project will pave the way for further technological innovations

in Tunisia, because if reverse osmosis is successful in desalinating brackish water, the next step will be to desalinate sea water. Thanks to these technological advances, water supply in southern Tunisia is being placed on a better footing.

Solar power by SMS

Besides clean water, people need access to energy in order to improve their lives sustainably. In sub-Saharan Africa, the majority of the population is not connected to the national electricity grid.

More than 85% of rural households in Tanzania and Kenya lack a connection to the grid. DEG is using an innovative solar project to help provide power in regions of Africa that are a long way from the grid. It is supporting the Berlin company Mobisol GmbH in developing and marketing “solar home systems” in Tanzania and Kenya under a public–private partnership. “Few people in rural areas were able to afford solar home systems,” explains Tobias Bidlingmaier, senior investment manager in the Special Programmes Department at DEG.

Mobisol therefore decided to offer solar systems in combination with an innovative payment system. A mobile communications modem is delivered with each solar home system. Using a mobile payment system (M-Pesa), customers pay by SMS in low monthly instalments, which are based on what the household has paid for energy in the past. The system is run and monitored from Germany by means of an online database. This enables the company to respond promptly to technical problems or to engage a local maintenance firm if repair is needed.

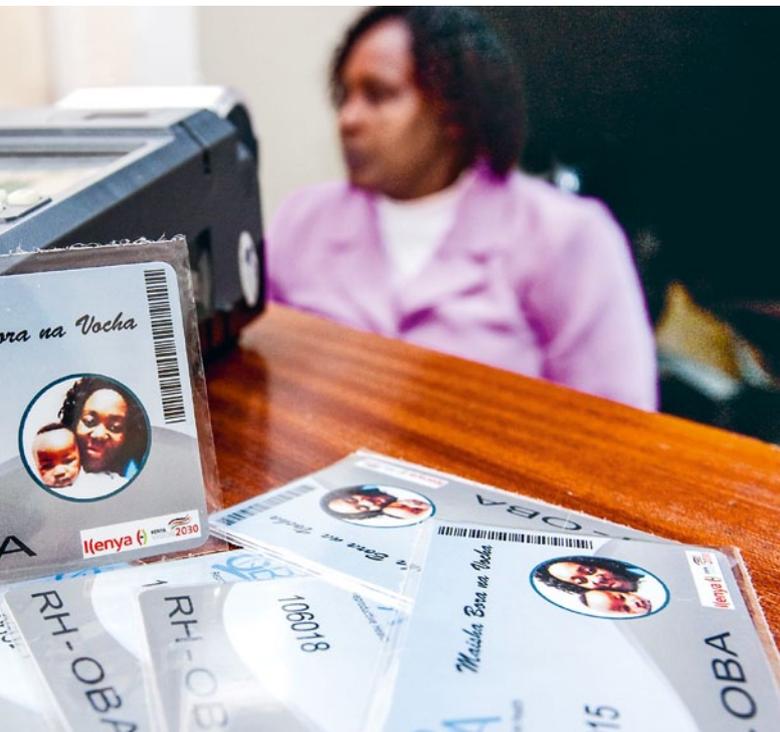
The local economy benefits from the innovation in several ways. Partner companies handle the sale, installation, and maintenance of the systems. Using electricity, microenterprises can deploy more efficient production technologies, leading to new business ideas. Surveys from the pilot phase indicate that about 30% of Mobisol customers have started using the electricity from the system for business purposes. ■



The digital smartcard makes it easier to identify people. It contains a digital chip and, depending on its intended use, also a photo and biometric data.

Solar power systems are providing households with reliable, sustainable energy off the grid.





»» Smartcards are much more secure than paying in cash.

Sanna Stockstrom,
KfW project manager

Electronic systems mean greater security

“Identifying yourself and using electronic payment methods is much more secure than paying in cash,” says Sanna Stockstrom, KfW project manager. The smartcard also keeps a record of the money paid out, which helps to stem corruption and fraud. The new technology ensures that every family receives the amount to which it is entitled. The level of social benefits depends on the number of family members and the number of school-age children living in the household. This data is verified via the smartcard and can be updated quickly if necessary. With this programme, KfW is reaching roughly 29,000 households living in absolute poverty in Malawi.

The impact of electronic technology is also increasing in the health care sector in Kenya, where KfW has been funding health vouchers for women for a number of years on behalf of the BMZ. The vouchers entitle them to health care services at the hospital of their choice. “We’re giving women greater freedom to make their own decisions,” says Julia Fimpel, KfW project manager. The system is now being converted to electronic vouchers.

This also involves a smartcard reader which identifies people by means of a biometric fingerprint. The electronic procedure helps prevent misuse and saves money, enabling the programme to be extended to more women in future. ■

How smartcards are reinforcing people’s rights

New technologies help to remove doubt in ascertaining identity. This makes the work of health and social services easier.

Billions of poor people throughout the world lack official identification. However, it is essential that people possess identity documents and can prove who they are if they are to be granted and exercise their rights. To participate in democratic elections, or receive social benefits or health services, people need to be able to prove their identity. Today, the electronic smartcard plays a key role in this regard. Resembling a credit card, the plastic card contains a digital chip and, depending on its intended use, also a photo and bio-

metric data. The smartcard can also have a barcode and can be used as a payment and cash card, for example when paying out social benefits.

KfW is using this technology to support the development of a social security system in Malawi. In order to be able to identify poor people who are entitled to benefits, their data must be collected, compared, and constantly updated. In the future, smartcards will be used to do this, storing the data and allowing it to be retrieved at any time.



In the Georgian city of Batumi, KfW is funding the construction of the region's first mechanical biological treatment plant, managed by Marika Gvianidze

Modern treatment plant, safe water

Drinking water for people and an investment
in economic development for the city of Batumi

E In the Georgian city of Batumi, KfW is funding innovative water-supply technology and modern management on behalf of the BMZ and the European Commission. The operator and the consulting firm were awarded the 2012 Innovation Prize by the International Water Association. Today, all households in the city are connected to an information system, and a new tariff system has been introduced. “By accessing the latest data on his or her computer, each administrator can see which customers have paid

their bills and who still owes money,” says Christian Schaub, KfW project manager. In addition, the first mechanical biological treatment plant in the entire region began operation in 2012. One of its key features is a drying process for sewage sludge that is very energy efficient. The required heat is provided by a solar-powered dryer. The sewage sludge can then be used for farming. Thanks to the new plant, the bathing water quality in the sea is improving and energy efficiency is rising. Batumi has become a tourist gem on the Black Sea.

Crumbling water mains have been replaced and numerous new pipes have been installed. Residents and tourists alike are benefiting from the improved water supply. Until recently, water was available for only three hours per day, and some 90 % of drinking water was lost. Now, high-quality drinking water flows 24 hours a day. The project, which cost a total of EUR 120 million, was financed with a KfW loan, grants from the German government and EU funds, along with assistance from the Black Sea Trade and Development Bank.

Creative business models

The focus is not on profit:
India's Vineet Rai is both a visionary and a financier of social entrepreneurs.

F If you follow Vineet Rai on Twitter, then you'll know that he's always on the move – travelling thousands of kilometres each year with his Jeep through rural India or flying to Thailand, Dubai or the US. There are faded photos of him with a chicken farmer and videos of him with well-tailored investors. Vineet Rai moves between worlds. He is close to India's poor, close to potential capital donors, and close to social entrepreneurs.

Rai manages funds that support these entrepreneurs. The forestry expert is a firm believer in the concept of social entrepreneurship, where the focus is not on profit. "Instead, success is measured by the company's benefit to society, that is, whether it is capable of improving people's lives, particularly the poor," he says with conviction. Rai explains that in India some 700 million people live in rural areas. That is an enormous market, and the people who live there are renowned for their inventive spirit and strong capacity to innovate.

An inventive spirit and a strong capacity to innovate

The subcontinent has many creative entrepreneurs who develop new ideas for making products and services accessible, in particular to the poor. Rai provides capital to support these efforts. Twelve years ago, he founded Aavishkaar, an investment company that sets up funds to stimulate sustainable development in rural India with entrepreneurial creativity and technological innovations.

Today, Aavishkaar manages four funds that have invested more than USD 160 million in social enterprises. "Social entrepreneurs take more risks than conventional entrepreneurs," says Rai. They often start their businesses under difficult conditions – where infrastructure is lacking, residents have little education or extreme climatic conditions prevail.

Investment and technological advances should reduce hardship by helping to fight poverty and meet basic human needs.



Vineet Rai – a committed manager

This is where modern, customised technology comes into play. For example, there is a project to support a company that manufactures cash dispensers specially designed for rural India and installs them in the remotest of regions, such as along the border with Pakistan. The cash dispensers are more modern than those in Europe and also less costly. They are solar-powered and consume very little energy. This enables people in remote locations to withdraw cash and transfer funds.

With his energy and innovative approach to funding, Rai has also won over KfW and the German government. To date, KfW Development Bank has invested EUR 5 million of BMZ funds and EUR 5 million of its own resources in the Aavishkaar II fund. ■

»» Success is measured by the company's benefit to society.



Sleeping sickness poses a medical challenge. In Africa some 30,000 people are believed to be infected and 60 million more are at risk.

The dangerous bite of the tsetse fly

New research collaborations on medical innovations are under way to finally put an end to neglected diseases.

It is still no easy task to diagnose and treat sleeping sickness. “People are often afraid of the treatment, which is not without risk,” says Spanish doctor Olaf Valverde. For years he has been working in remote regions of the Democratic

Republic of the Congo to fight the tropical disease, which is spread by the bite of the tsetse fly. Until recently, treatment consisted of arsenic-based medicines developed decades ago, with potential deadly consequences. In addition, a costly

»» The battle against sleeping sickness remains an immense challenge.

Olaf Valverde, Spanish doctor

Extensive research involving modern medical technologies is needed to develop new treatment methods.



lumbar puncture is needed for a definitive diagnosis.

The battle against sleeping sickness therefore remains an immense challenge. It claims lives every day in Africa. Some 30,000 people are believed to be infected and 60 million more are at risk, particularly in rural areas of Sudan, Chad, the Democratic Republic of the Congo, Angola and the Central African Republic. Sleeping sickness is one of the “neglected” diseases. The potential profit from diagnosing and treating these diseases is very low, since people in the Democratic Republic of the Congo or Sudan who are ill have no money and thus no voice. The World Health Organization (WHO) refers to this as the “10/90 gap”, meaning that only 10% of all research funds go towards studying diseases that are responsible for 90% of the world’s health problems. According to WHO estimates, more than one billion people suffer from these poverty-related diseases, including tuberculosis, malaria, dengue fever and cholera, not to mention African sleeping sickness.

New partners working together closely

There is new hope for those suffering from these diseases. So that they receive better help in future, KfW is supporting “product development partnerships” (PDPs), which have been formed to stimulate research and development and quickly make medicines and vaccines available in the fight against neglected diseases. They also coordinate the collaboration between partners from industry, universities, research institutions and NGOs. They enter into contracts with producers that ensure coverage of production costs and a small

profit. Research is expensive, and this is the only way to incentivise companies to develop modern ways to treat and diagnose these diseases.

Funding for these projects is being provided by a number of governmental donors. On behalf of the German Federal Ministry of Education and Research, KfW has contributed EUR 20 million to three PDPs. It is funding specific projects submitted by the PDPs, such as for treating sleeping sickness. The funds are added to the project budget and can be used for a variety of purposes, for example laboratory work, regulatory approval of medicines, or to finance clinical trials.

Success in the fight against sleeping sickness

The PDPs funded by KfW have already recorded two successes in the fight against sleeping sickness. A new treatment has been developed and introduced that does not involve arsenic, meaning that there is new hope for those infected for the first time in 25 years. In addition, a new diagnosis technique is at an advanced stage of development. Instead of a lumbar puncture, a blood sample is now taken with a simple finger prick.

But much is still to be done. “The new medicines still need to be kept cold and administered at a hospital,” says Doctor Valverde. Ultimately, he says, the goal is to develop a simple pill that does not require refrigeration, so that people can take it in their villages. The prospects for success are good. Researchers are now testing a promising pill to treat sleeping sickness: fexinidazole. ■

»» A job is the
best ticket out
of poverty





Chapter 2

Innovation creates more jobs and growth

Sustainable development is impossible without jobs, income, and competitiveness. New technologies lead to new jobs.

“A secure job is the best way for people to escape poverty,” says Dirk Niebel, German Federal Minister for Economic Cooperation and Development. According to Niebel, the issue is not just income but also self-esteem, social recognition and integration.

Creating new jobs is an enormous challenge. According to UN information, some 200 million people worldwide are reported as unemployed, 75 million of them under the age of 25. A further 900 million have work but live on less than two dollars a day – the “working poor”.

Because of population growth, 600 million jobs will have to be added worldwide over the next 15 years just to keep pace with current employment levels, according to the World Bank’s annual World Development Report for 2013, entitled “Jobs”.

In developing countries, 50–80% of workers are currently employed in the informal sector. They work as street vendors, tailoresses or car washers.

Researchers in industrialised and developing countries working together

In order for these people to be able to escape poverty and gain economic opportunities, new and, above all, better jobs have to be created. To achieve this, innovation and new technologies in the global economy are of central importance. However, the use of new technologies can also have a negative impact on employment for labour-intensive processes. It is therefore important to promote the structural changes in national economies which are necessary to move further up the value chain, thereby making the countries more competitive and creating jobs in new sectors. In view of this fact,

partner countries are showing greater interest in collaborating with research institutions around the world in order to develop the required skills and expertise. KfW is thus integrating research collaborations into projects and supporting exchanges between institutions for scientific research in industrialised and developing countries.

Global knowledge stimulates innovation

Improved access to global knowledge also spurs private companies to create their own innovations. In developing countries and emerging economies, creative companies that are willing to take risks play a decisive role when it comes to creating a competitive edge and jobs. Around the world, nine out of ten workers are employed in the private sector. DEG is financing such innovative companies in partner countries, and working together with them to achieve technological progress, which also leads to higher productivity and provides access to new markets.

The Internet and mobile communications are enabling more and more people to acquire knowledge. This is even more

important in view of the fact that they often have only a low level of basic education due to gaps in the school system. The global information society means that people can go online or use their mobile phones to access more education, skills and information, which can be put to productive use. Mobile banking transactions and easy access to market information lead to advances in production and a competitive edge, which help to create new jobs. This provides micro-entrepreneurs and small-business owners with a way to earn a higher income and escape poverty, particularly in developing countries.

How mobile phones create new jobs

Mobile communications in Africa are a good example of just how much potential technology can unleash. According to figures from the World Bank, roughly 16 million people in Africa had mobile phones in 2000. By early 2012, the number had grown to nearly 650 million – more than in the European Union or the US. The mobile communications market in Africa is now the world’s second largest, after Asia, and it is continuing to grow (see figure).

Investment in mobile communications in Africa in recent decades has created many new jobs, both in mobile communications companies themselves and in companies that use mobile communications to expand their business. Numerous small entrepreneurs are building their businesses around mobile phones. Their customers can rent mobile phones at kiosks for single conversations or recharge their batteries there.

DEG recognised this trend early on and in 2001 helped launch Celtel (now Airtel), the first network provider in Africa, with USD 15 million. Over the past ten years, DEG has helped finance numerous other mobile communications projects in Africa.

Mobile phones can also make it easier to access financial services. African farmers use mobile phones to transfer money, as well as to get information about current prices and to sell their produce to the highest bidder. They are no longer subject to the whims of middlemen, meaning that they generate greater income for themselves.

New technology gives greater access to financing

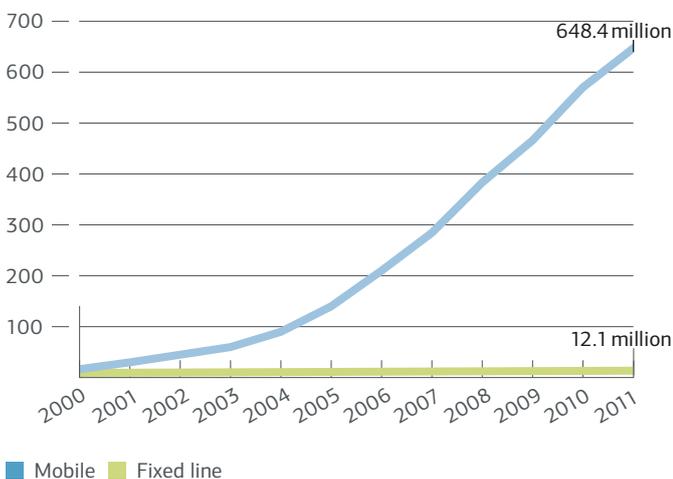
Nevertheless, surveys indicate that lack of access to financial services remains a significant impediment to growth for micro, small and medium-sized enterprises (MSMEs). The rural poor have little opportunity to use the formal financial system in order to save, make bank transfers or obtain loans, since the nearest bank branch is often far away. People in rural areas therefore put aside money or valuables and have to rely on couriers in order to send money to faraway recipients. When they need money, they often have to resort to expensive private lenders. All of this increases costs and reduces income and investments for the future.

In the West African country of Ghana, only 21 % of the population have their own bank account, and most of these people live in cities. To enable people living in rural areas to benefit from access to the formal financial system, the Bank of Ghana (the central bank) has begun developing a modern, country-wide and cashless payment system (“e-zwich”) on

Africa’s mobile revolution

Mobile phone and fixed landline subscriptions in Africa 2000–2011

Phone subscriptions in Africa, in millions



Source: World Bank



The “mobile revolution” in Africa has brought Rajab Ngari Inachira an income.

behalf of the government. It can also be easily and securely used by illiterate people, those with little education and the elderly.

On behalf of the BMZ, KfW is currently supporting the central bank in expanding this system to rural areas and introducing a new “rural branchless banking system”. The goal is to provide up to five million people with a smartcard for banking business over the next six years. The system works according to a simple principle – smartcard owners can identify

»» After leaving school, I couldn’t find a job at first. Today, by recharging mobile phones and making minor repairs, I earn enough to support my family.

Rajab Ngari Inachira, owner of a mobile phone kiosk



»» KfW is helping us to map land rights in Honduras electronically using modern IT technology. Property titles mean that we now have legal certainty and can use the land better, which creates economic momentum, jobs and income.



Norvin Goff Salinas (left) is president of the Organización Moskitia Asla Takana (MASTA). He fights for the rights of the indigenous population.

themselves in shops with their fingerprint and then deposit or withdraw cash, transfer money and pay bills – whether doctor or farmer, street vendor or office worker.

The system also allows MSMEs in rural areas to benefit from innovative and affordable financial services. Entrepreneurs gain expertise in financial issues. Through secure investment options, people can compensate for fluctuations in their income and save capital for future investments. All of this opens up more new opportunities for economic development than Africa has ever seen before.

New technology helps to administer taxes effectively



New information and communication technologies are also becoming more widespread in Uganda.

The Ugandan tax authorities are relying on IT to make their tax system more efficient and effective, and Germany and other donor countries are supporting them in this task.

As part of a new e-government project, KfW is financing the further expansion of central IT systems. “Our project will make it easier to process, verify and analyse data,” says Jonas Blume, KfW project manager. Tax returns can already be filed

electronically in Uganda. Expanding the systems will mean that data can be used in a more targeted way in future, enabling taxes to be imposed fairly. Overall, the entire tax assessment process will become more transparent and comprehensible and administrative procedures will take less time. This will benefit the economy and create jobs.

Technological expertise is key to development

It has long been clear that developing countries and emerging economies need technological advances before they can expect to see economic recovery and sustainable development. To achieve this, countries themselves must put often highly complex technologies in place and

Indonesia: Training on modern machinery creates job opportunities for young people.



then later enhance and adapt these in order to become globally competitive. Accordingly, if development is to be sustainable, young people in developing countries must be well trained in the use of new technologies. This is why KfW is

supporting training in Indonesia for male and female vocational students, employees of small companies and the unemployed, teaching them to use IT-assisted machinery to process metal, textiles, leather and wood.

At five regional training centres and 14 partner schools, trainees acquire technical skills that until now were relatively unknown in Indonesia, such as computer-assisted metalworking. "Our trainees have great opportunities on the labour market," says Dr Nurdianto, director of the SMK Jenangan Ponorogo vocational school in East Java. This is because they are working with the latest technology and have learned how to use computer-assisted tools.

The training centres also perform work for neighbouring companies. "This helps young people to become familiar with the entire production and marketing process," explains Clara Winkler, KfW project manager. Basic and advanced training for qualified, technologically adept workers thus creates the long-term basis for Indonesia to develop further on its own.

However, modern technology plays an important role not just in advanced Asian countries but is also crucial in countries that have long been unable to develop self-reliantly due to crises and conflicts.

New hope when war ends: Technology helping people find jobs

 In South Sudan, a brutal civil war claimed the lives of some two million people over several decades. Following a peace treaty, the country gained its independence in 2011, but the economic and social system has remained precarious. Government health, education and social services are practically non-existent. Only one third of the population is literate.

Now that the war is over, roughly 150,000 former soldiers and other uniformed forces are expected to return to civil life. On behalf of the German Federal Foreign Office, KfW plans to support Africa's 54th nation in developing new opportunities for these former combatants with modern, technological assistance. Together with its partners, it is working to implement an electronic database designed to help place these individuals with training institutions, farming cooperatives or other employers. An electronic personnel file is created for each former soldier, containing his qualifications and desired

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Seed capital for inventors

India's SIDBI provides loans to inventive technology companies.

Kartik Gopal Alai is convinced of the creativity that his fellow citizens possess. "One in three patents registered in the US stems from an inventor with Indian roots," says Alai, manager at the Small Industries Development Bank of India (SIDBI), a state development bank much like KfW. Nevertheless, it is difficult in India for inventors and young entrepreneurs with good ideas to secure financing for their investments. Commercial banks are generally unwilling to make loans because they feel that the risks are too high.

By contrast, SIDBI is backing India's capacity for innovation. In particular, it is seeking to support entrepreneurs who are making strides in climate and environment protection using modern technology, and promoting work and jobs in the process. KfW is providing funding to SIDBI for this programme in the form of low-interest loans amounting to EUR 54 million.

"The project is aimed at small and medium-sized enterprises that carry out their own research and tailor their products and services to the Indian market and local conditions," says Maike Lerch, KfW project manager. SIDBI itself also benefits from KfW's lengthy experience with its environmental innovation programme in Germany.

"Technological innovations are an important driver, especially for small and medium-sized enterprises in India," says Alai with conviction.

work. At the same time, job vacancies and training opportunities are stored electronically. “With the new computer system, it takes just a few mouse clicks to find work or training opportunities that match each ex-combatant,” explains Kathrin Kästle, KfW project manager for peace and security. Because the conflict ended only recently, there are few formal jobs in South Sudan, says Kästle, but this makes it even more important to help

former combatants get some qualifications and place them in existing openings. Computer technology is expected to make a substantial contribution to this effort.

In this fragile state, it is particularly crucial that people find work and feel that they have opportunities for the future. Only then can this crisis-ridden country avoid new conflicts and achieve development and stability. ■

Jobs create opportunities for the future – especially for people in “fragile” South Sudan.





The cable is pulled onto dry land:
In total, it is 10,000 kilometres long.

High-speed Internet for 27 African countries

A discussion with KfW's Andre Collin and Chris Wood, managing director of the IT company WIOCC, about the EASSy submarine cable

»» New markets are being created for modern IT products.

Chris Wood

What has changed in East Africa as a result of the East African Submarine Cable System (EASSy)?



Chris Wood: Our fibre-optic cable is 10,000 kilometres long and connects 27 countries along the coast of East Africa. This makes

it possible for up to 250 million Africans to communicate with one another and the world, quickly and reliably.



Andre Collin: The cable closes a digital gap, facilitating communication between people, organisations, ministries and companies. Poor and disadvantaged people in rural areas also have better access

to knowledge. Information about economic developments and market prices is now quickly available. That creates greater competitiveness and promotes growth and employment, leading to new jobs.

Chris Wood: In particular, EASSy gives a boost to the telecommunications sector, one of the most important employers in East Africa. Many companies are using the high-speed connections to improve efficiency and their services for customers.

Andre Collin: Kenya is seeing spirited competition between network providers. In cities and rural areas, workers are busy digging trenches and laying fibre-optic cable to provide more people with high-speed Internet access.

Chris Wood: That's right, but it's not just in Kenya. All along the coast, companies are investing in fibre-optic connections to link landlocked countries as well, such as Uganda, Rwanda, Burundi, Malawi and Zambia. This is creating new markets for modern IT products, like smartphones and tablets.

Is this also having an effect on competition?

Chris Wood: Wholesale prices for IT products have fallen by up to 70%, which is accelerating development in the sector. In 2011 alone, the number of Internet users in East Africa rose from 20 million to 25 million.

What role does KfW play in financing?

Andre Collin: Total costs amount to USD 235 million. Working together with other development banks, KfW took the lead role in providing USD 70.7 million in financing. The remaining funds came from local and international telecommunications providers. ■

»» Thanks to EASSy, poor and disadvantaged people in rural areas have better access to knowledge.

Andre Collin



When fishing grounds along Mauritania's coastline are better protected, indigenous fishermen benefit.

How satellites are helping protect fish stocks

The protection of Mauritania's coastline is strengthening its fishing industry. This is securing existing jobs and creating new ones.

J The computer screen shows lots of tiny ships blinking in various colours. They are at sea along the coast of Mauritania. Commander Mohamed Nemane clicks on a blue ship. A box pops up with detailed data. "That's the Ocean Eagle. She's headed to Casa-

blanca at 11 knots," says the director of satellite monitoring for the fisheries authority in Nouakchott. It is a 226-metre-long freighter, not a vessel fishing illegally. Nemane and his team don't need to intervene this time and can keep their patrol boats at anchor.

All ships passing through Mauritanian waters are required to send position data. Otherwise, they won't be given a passage licence. A modern satellite system receives the signals. These are sent to a small, nondescript monitoring station on the outskirts of the Mauritanian capital of Nouakchott, where workers at four computer stations keep a careful eye on the ships' routes. Radar is beeping in the background, tracking ships that lack satellite transmitters. "Motorised vessels are prohibited from navigating in the conservation area along the coast," explains the Commander. If the radar shows a vessel in this area, patrol boats are dispatched to intercept the intruder.

German development cooperation is supporting fisheries monitoring in Mauritania. KfW financed the construction of the modern satellite system, the deployment of monitoring ships and patrol boats, and the construction of radar equipment and piers. All of this is designed to protect the coastline and to support and strengthen the fishing industry. In this area, KfW works closely with GIZ, which has provided an advisor to Mauritania's Fisheries Ministry.

In Mauritania, 60,000 people depend on fishing for their livelihood

Fishing is an important source of income in Mauritania, accounting for about 25% of government revenues. Approximately 60,000 Mauritians make their living from fishing, either as offshore fishermen or as workers in the fishing industry. They support roughly 300,000 family members. "Through monitoring, we have been able to reduce illegal catches and preserve the economically important fishing grounds," says Robert Roth, KfW project manager.

This is enabling the country to further expand its production chain. Existing jobs are being secured, and new ones created in fishing, the processing industry and trade, especially for women. Moreover, the country is acquiring a significant amount of foreign currency through the sale of fishing rights. The project is also helping protect nature and resources, particularly the precious "Banc d'Arguin" nature reserve along Mauritania's coast, where thousands of migratory birds

spend the winter. UNESCO has declared this area a World Heritage Site. It is also the spawning and breeding grounds for millions of juvenile fish. Modern monitoring technology helps to protect these fishing grounds and the livelihoods of the local population who depend on them.

The nature park is home to the indigenous Imraguen fishermen

The park is home to the Imraguen, who are fishermen by tradition. The village of Mamghar lies on a spit of land directly on the border with the national park. Here, KfW is financing an additional radar installation in order to provide complete signal coverage to the 750-kilometre-long coast. Several pirogues are on the shore and in the water. Men are loading nets onto a small truck. A fisherman who goes by the name of Kenech is standing in the sun, wearing a turban, scarf and glasses. He says

that both his father and his grandfather were fishermen.

For many years, Kenech has been taking his pirogue to the other side of the spit, just outside of the conservation area, to go fishing in the sea. Sometimes the catch is good, sometimes bad, he says with a laugh. But he says he earns enough to send his five children to school and provide for his family. Today, he says, large ships that could compete with him for his catch are no longer to be seen near the coast – they are all far out at sea.

At the monitoring station in Nouakchott, Commander Nemane can confirm this observation using modern satellite technology. With one mouse click, he enlarges the image on the computer. The sea near the coast is clearly discernible – and no ships are to be seen near the conservation area. ■

Top: Pinpointing ships with modern satellite technology – Commander Mohamed Nemane explains the technology. Bottom: Fisherman Kenech from the village of Mamghar



»» Humans need to do more to protect and preserve their resources





Chapter 3

New technologies are laying the groundwork for the green economy

Economic growth and environmental impact need to be decoupled in order to facilitate a low-carbon development path. Technological advances are helping make energy use more efficient.

Climate change is one of the greatest challenges of our time. The rise in average global temperatures is leading to higher sea levels, melting glaciers, water scarcity, flooding and desertification. This has far-reaching economic and social consequences.

Most of those hardest hit by climate change live in developing countries, yet the main emitters of greenhouse gases are industrialised countries and, increasingly, rapidly growing emerging economies.

Preserving resources, protecting the environment

The facts are obvious. Climate change goes hand in hand with the overexploitation of natural resources. In the coming years, humans will need to

do more to protect and preserve their resources and to drastically reduce emissions that impact the climate, like carbon dioxide. “To accomplish this, a transformative approach is needed, one that decouples greenhouse gas emissions from development and economic growth. We need a third industrial revolution, we need to move towards a green economy,” urges Jochen Harnisch, KfW’s Climate Change Policy Coordinator. What he means by this is sustainable economic activity that balances the needs of humans, nature and the environment while using fewer resources and generating fewer emissions.

This kind of development can only be achieved by using environmentally sound and efficient technologies, and more



»» Generating the first 20 MW is always the hardest part.

Kirsten Offermanns,
KfW project manager

Skilled African workers are crucial to implementing modern sources of energy.

innovative ideas and methods. Coming up with these is an important first step, because they help to reduce energy consumption, generate energy in a way that is less harmful to the environment and the climate, and thus reduce CO₂ emissions – a fundamental prerequisite for climate protection.

Innovative technologies must prevail over those that are resource-intensive. Countries can spur technological advances by supporting research and providing start-up assistance for innovative technologies.

However, the public sector alone is unable to provide the enormous amount of capital needed for low-carbon development. The private sector, too, must play its part by investing in the development of low-emission technologies and innovative methods. For this reason, KfW and DEG support companies committed to sustainable, responsible economic activity.

Renewable energy is key to climate protection

The global economy continues to grow – and with it demand for energy. As a

result of this growth, energy consumption is steadily increasing, particularly in Africa, Asia and Latin America, but also in the US. According to forecasts by the International Energy Agency (IEA), demand for energy will rise by a third by 2035. Fossil fuels still predominate in the global energy mix, and they continue to receive six times more subsidies worldwide than renewable energy. They received USD 523 billion in 2011 alone.

The United Nations therefore declared 2012 the year of Sustainable Energy for All. By 2030, every individual should have

access to modern energy. At the same time, it is envisaged that the proportion of renewable energy in the global energy mix will double, as will the rate at which energy efficiency increases.

Developing and emerging countries often have affordable options with major potential for increasing energy efficiency and exploiting renewable energy sources, like water, wind, biomass, solar and geothermal. In many countries, KfW is funding modern technologies that make it possible to take advantage of these sources. One example is East Africa.

Geothermal energy: Steam at a temperature of up to 200 degrees

Along the East African rift valley, conditions are ideal for geothermal energy use. Just 1,000 metres below the surface, steam reaches temperatures of up to 200 degrees. Closer to the surface are hot springs, whose water first needs to be heated to steam. Hot steam can power turbines, with the water being pumped back into the ground after it cools. Once tapped, the steam provides a steady, affordable energy source. East Africa's potential is estimated to be 15,000 megawatts (MW), or ten times greater than the combined capacity of all power plants in Kenya today.

However, exploiting these climate-friendly energy sources is an expensive, risky endeavour. "Exploratory drilling costs up to EUR 10 million," says Kirsten

Offermanns, KfW project manager. And there is no guarantee that the steam or hot spring we believe to be there will actually be found. In other words, the initial investment and risk are very high. Without guaranties, banks are unwilling to finance such risky projects.

KfW has therefore worked with the African Union to establish the Geothermal Risk Mitigation Facility (GRMF). The GRMF funds up to 80% of the costs of geological surveys and up to 40% of the costs of exploratory drilling. Funding is awarded through a bidding process. "We select the best ideas and reward those who implement their projects quickly and successfully," says Offermanns. Ultimately, she says, the goal is to see this clean technology established in East Africa as soon as possible. "And generating the first 20 MW is always the hardest part," notes Offermanns.

The BMZ and the EU have contributed a total of EUR 50 million to the GRMF. Offermanns is delighted that additional donors have now begun to show interest in this financing instrument.

Energy efficiency is key to resource protection

For the International Energy Agency (IEA), energy efficiency is the key to protecting the climate and natural resources. With stringent efficiency policies and an appropriate level of investment, growth in consumption could be cut by half.

However, many developing and emerging countries are reluctant to target their policies towards efficient energy use. Nonetheless, companies possess considerable potential to reduce their energy consumption and increase energy efficiency. DEG therefore offers a free energy efficiency review to its clients in the manufacturing industry, offering them advice and support to exploit this potential.

K PT Wirajaya Packindo, an Indonesian manufacturer of corrugated cardboard and cardboard packaging, used DEG funds to finance the purchase of a machine to produce paper, while at the same time welcoming the offer of an energy efficiency review. "The reviews are carried out by efficiency experts from Bayer or Siemens," says Jochen Steinbuch, DEG project manager.

The German experts spent a week studying areas where the company was wasting energy and where it could put energy to more efficient use. As a result of the review, the paper manufacturer switched from coal to gas for its power plant and acquired a steam generator. "Since Wirajaya not only produces energy with the generator, but also makes use of the heat it produces, the power plant's efficiency has risen from 40% to 90%," says Steinbuch. This saves the company a substantial proportion of its energy costs while reducing CO2 emissions by 70,000 tonnes a year.

An innovative form of energy: Using geothermal energy requires modern technology.



A further 20 companies have since made use of the DEG energy efficiency review to analyse their production processes. Although not all companies implement the suggestions, Steinbuch says that the efficiency review is an innovative tool. “It makes management more aware of energy costs and thus builds climate protection directly into the production process,” he notes.

KfW itself also has a long tradition of funding energy efficiency. For instance,

KfW has long been providing financing in Germany for the construction of energy-efficient homes and the renovation of old houses and apartments. It also promotes energy-efficiency measures in commercial enterprises by means of grants and low-interest loans. Both KfW Development Bank and DEG use this experience in their engagement in developing countries and emerging economies. An important objective of this work is to support countries with innovative and efficient technologies, transfer German expertise

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Innovative entrepreneur:
Thomas Schneider

L At a giant plant on the outskirts of Ho Chi Minh City, male workers are wringing out wet, freshly dyed hides. Conveyors moving leather hides rattle above their heads. Across the way, female workers are busy piling up the dried hides. Thomas Schneider, founder and managing director of TanTec, is proud of his production process: “We use only half as much electricity as other tanneries,” says Schneider. He sees using resources efficiently as a way of managing his business better.

Protecting resources, saving costs

TanTec: Clean tannery in Vietnam

In designing his work processes, Schneider has focused on saving energy and protecting the environment. The company’s production is all housed in one large building and, because it uses an elevated storage system, forklifts don’t need to travel far. “Each piece of equipment is connected to an integrated monitoring system that controls energy use,” says the 57-year-old. He draws electricity from the grid and also has his own solar power equipment on the roof.

Effluent from tanneries can endanger the health of workers and neighbouring residents, and damage the environment. To combat this, Schneider has installed a biofiltration system. Plants clean 40% of the effluent, with TanTec treating the remainder chemically. The treated water is returned to the plant using a windmill. “The filtration system saves us up to 300,000 kilowatt hours

annually and 15% in chemicals. And we no longer have any costs whatsoever for the disposal of sludge,” Schneider explains. Since the filtration system also extracts nitrogen from the effluent, the plants grow very quickly. His workers harvest them to produce biogas, which is then used at the tannery.

Model for sustainable production in Asia

TanTec has become one of the world’s most modern tanneries, serving as a model for sustainable and environmentally friendly production in Vietnam and throughout Asia. This is also the reason why DEG supported Thomas Schneider’s company with a loan of EUR 4 million and German public-private partnership (PPP) grants. It enabled Schneider to finance a number of projects, including the biofiltration system.



Sustainable waste management makes an important contribution to protecting the environment.

and work with partners to adapt this expertise to local conditions.

Solid waste – From problem to resource

Innovative, alternative concepts for the use and protection of resources are needed in order to preserve them. The solid-waste industry plays an important role in this process, since the lack of organised waste disposal provision accounts for 3–5% of greenhouse gas emissions worldwide. In addition, illegal dumping contaminates groundwater, streams and rivers. Unregulated waste dumps also emit methane and poisonous chemicals, endangering the health of many people.

M One of many countries facing these challenges is Turkey. The country has adopted a national plan for waste management that is designed to bring its waste disposal methods into line with EU standards.

It has already registered initial success. A flagship landfill funded by KfW is now in operation in the city of Samsun on the Black Sea.

The municipality there treats the leachate at a modern reverse-osmosis plant, collects gas emitted by the landfill to generate electricity, and burns off unusable gas by means of a low-emission, high-temperature flare. “We can also process solid hospital waste,” says Meltem Sekmen Kutbay from the Samsun waste management department.

Furthermore, training in the new technology is provided to city employees, and staff at hospitals and waste disposal companies in a programme initiated by KfW. “Working with our partners, we introduced an integrated waste-management system in Samsun that includes all the stakeholders for the first time,” says Marie-Lena Glass, project manager in the Municipal Infrastructure Division.

»» Working with our partners, we introduced an integrated waste-management system that includes all the stakeholders for the first time.

Marie-Lena Glass,
KfW project manager in the
Municipal Infrastructure Division

»» In the future, we also want to separate out organic waste and use it to generate biogas.

Meltem Sekmen Kutbay,
Samsun waste-management
department

Today, the city's administration is increasingly coming to view its waste as a resource. It has now sited a private recycling company at the landfill to recover raw materials from the city's solid waste. But Meltem Sekmen Kutbay is already thinking about the next step: "In the future, we also want to separate out organic waste and use it to generate biogas."

Developing sustainable waste management is an important step on the path to the green economy, because using waste as a raw material lowers resource consumption and protects the environment. Hidden in every ton of solid waste are materials like paper, cardboard, metal, glass, plastics and other recyclables of particular interest to resource-poor developing countries and emerging economies that lack raw materials.

Waste from electronic equipment contains valuable precious metals

Waste from electrical and electronic equipment also contains rare earths and precious metals, and a growing number of specialised processes have been developed to reclaim them. In 2010 German industry covered approximately 14% of its raw-materials requirements with reclaimed materials, known as secondary raw materials. In 1995 the proportion was only 2%.

The more raw materials a country can extract from its solid waste, the less exposed it is to rising prices. As is shown by the example in Samsun, the use of modern technologies and sharing of expertise is also giving rise to a new economic sector. ■

Clean energy from the sun:
A solar power plant





Reducing greenhouse gases with German technology

The German Climate Technology Initiative is supporting the fight against global warming.

The German Climate Technology Initiative (DKTI) is supporting the international community's goal of fighting climate change by limiting global warming to two degrees. It is an important component of Germany's climate finance strategy, and it relies on German industry's ability to innovate.

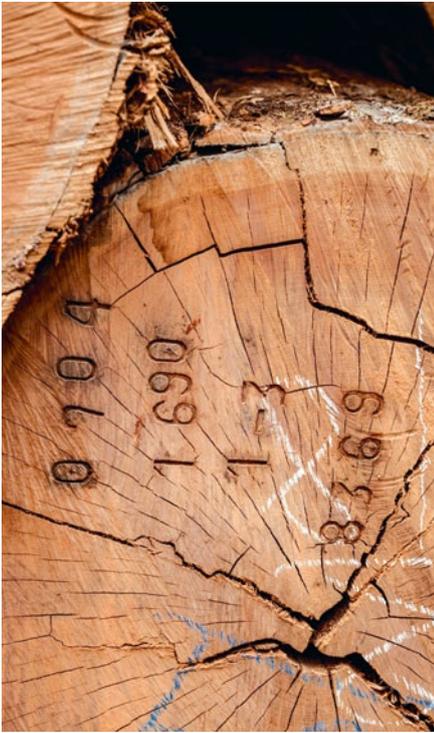
KfW and GIZ are implementing the DKTI's programmes on behalf of the German government. The DKTI is a joint initiative between the BMZ and the German Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety (BMU). Financing comes from the special Energy and Climate Fund, which in turn is funded from the proceeds of auctions of emission allowances. One of the main goals is to provide modern technology to developing countries and emerging economies, thus enabling them to pursue a low-carbon development path.

This is achieved by exploiting the potential in many developing countries for generating renewable energy – for example, in Morocco. In Ouarzazate, in the south-eastern corner of the country, solar radiation is 50% higher than at Germany's sunniest spots. This is where a concentrated solar power plant is planned, producing clean energy which will benefit

530,000 people. The highlight of this modern facility is a molten-salt reservoir that stores heat for three hours, making it possible to generate electricity even after the sun goes down.

“Developing countries like Morocco can use these kinds of climate technology to achieve large reductions in their greenhouse gas emissions and develop their economies in a sustainable manner. We are supporting this process,” says Julia Crause, KfW sector economist and head of the DKTI secretariat. According to Crause, DKTI's strength is “financing cutting-edge, climate-friendly technology. At the same time, we are helping countries create the right conditions for bringing innovative technologies to market.”

DKTI is funding not only the use of renewable energy but also climate-friendly mobility, energy efficiency in buildings and in industry, and solid waste prevention for climate protection. In doing so, it is making a conscious decision to focus on technologies where German industry has significant expertise, and is integrating these into the growth markets of partner countries. Since 2011, DKTI has helped launch projects and programmes throughout the world by providing funding of over EUR 1 billion. ■



Using barcodes makes it easy to check whether the wood was harvested legally. Right: Preserving the evergreen rainforest makes an important contribution to climate protection. Photo below: Today, wood harvesting is subject to strict control in Brazil.

Using barcodes to protect the rainforest

Brazil: Computer software helps fight illegal logging.

N The road through Brazil's Tapajós National Forest runs straight as an arrow. KfW project manager Hubert Eisele is driving along it to see the progress being made by the Integrated Natural Forest Management project, which KfW is supporting together with GIZ. The project is designed to help stop depletion of the rainforest and curb illegal logging in the Amazon. Eisele makes a stop at a checkpoint in the middle of the jungle, where a trailer loaded with harvested timber is being

inspected. Each log is stamped with a number, which is also listed on the transport documents.

Checks are made online to determine whether the wood is legal

Eisele is satisfied: "The checkpoints can scan the barcode and immediately check online whether the wood was harvested legally." It used to be virtually impossible to check such transport licences in the middle of the jungle, and forgeries and fraud were commonplace.

With the support of KfW, the Brazilian environment authority IBAMA has developed an electronic wood-transport licence – DOF (Declaração de Origem Florestal) – to prove the wood's origin. "In essence, this is an Internet database that all checkpoint workers can access," explains Eisele. Today, individuals who want to harvest wood have to obtain a permit from IBAMA or the relevant regional authorities and apply electronically for the corresponding amount of wood to be transported. "In addition,

users have to state the time they intend to transport the wood and the route they plan to take,” Eisele goes on to say. Only at that point do they receive the barcode and wood-transport licence – and they can expect to have these inspected at numerous checkpoints along the way. Until the late 1990s, the Amazon was virtually being plundered, with 28 million cubic metres of tropical wood being harvested each year, 70–80 % of that illegally.

Successful forest protection – Less logging

However, since 2004 logging in the Amazon has dropped by 75 %. “This is of course due in part to the fact that the Brazilian government protects the rainforest much better now than it did in the past,” says Eisele. “But using the innovative database and software has also increased transparency, improved inspections and thus played an important part in the process.”

The modern system is now being used in several of Brazil’s states, with plans to introduce it country-wide. It has been so successful that Brazil is now exporting it to other countries in the region, helping to stop the destruction of the Earth’s “green lung”. ■



»»»

Complex software that is easy to use

Indian-German scientific collaboration facilitates energy-efficient construction.

»» It is exciting to see how hard Indian architects are working to shade buildings in order to keep the sun out. In Germany we do everything we can to get in as much sunlight as possible.

Hans Erhorn, head of the department of heat technology at the Fraunhofer Institute for Building Physics (IBP).

Even though conditions are different, both countries can save energy by using appropriate construction methods, materials and technologies for residential buildings.

Germany’s Fraunhofer Institute has developed a software application for calculating a building’s energy efficiency. The results are summarised in energy performance certificates. To enable this software to be used in India as well, KfW helped put together a scientific partnership between the Fraunhofer Institute (IBP) and India’s renowned The Energy and Resources Institute (TERI). Mili Majumdar, direc-

tor of sustainable construction at TERI, is full of praise for the German software: “It is very user-friendly and takes into account construction methods, materials and Indian weather conditions,” she tells us.

Work to modify the software took 18 months. “We provided information about geography, meteorology and construction materials, and Fraunhofer integrated this data into the software,” says Majumdar. Now, Indian architects too can issue energy performance certificates. This is more important than ever, since enormous residential and office complexes are being built in Indian cities, some with up to 2,000 residential units. This means it is vital to use energy efficiently.

More than 20,000 residential units tested for energy efficiency

KfW is putting to work its years of experience in funding similar projects in Germany and supporting the Indian promotional bank National Housing Bank in granting loans to buyers seeking to purchase apartments in energy-efficient buildings. In order to qualify, the building must be roughly 30 % more energy efficient than is customarily the case in construction in India today. The software provides the data needed to do this, thus creating the basis for funding energy-efficient construction similar to that in Germany. The software has now been used to assess over 100 types of building, covering more than 20,000 residential units.

»» Outlook: Shaping the world of tomorrow

Technology has already set many things in motion. But there are limits to the amount of ecological stress that our earth can withstand, and in the coming years humans will constantly be faced with new challenges that require new technological approaches. Even though we may not yet be aware of some of these challenges, there are already a few trends which suggest how important it will be to continue pushing forward with technological development in the coming years.

This is especially evident in countries that have experienced rapid economic growth in the past. While this has lifted many people out of poverty and helped some achieve new prosperity, in many places it has increased social and economic inequality. In order to avoid social

tension and strengthen social cohesion, it is particularly important to invest in education and to continue closing the digital divide. Improving access to knowledge is the only way to ensure that broad sections of the population share in overall economic successes. Technology will make an important contribution to this in the coming years.

Ensuring food security for coming generations

Around the world, there have already been great successes in the fight against hunger. Nonetheless, millions of people in Africa, Asia and Latin America still do not have enough to eat. Ensuring food is available for them as well as for coming generations is one of the greatest and most important tasks faced by the development community. Modern agricultural technology can help plants adapt

better to their surroundings, for example by making them more resistant to drought. As population numbers grow, improved production and processing technologies also contribute to food security. This is why KfW is funding modern storage technology in Burkina Faso, for example, to help reduce post-harvest losses. DEG is financing companies that are encouraging the use of sustainable, efficient cultivation methods in southern Africa.

Intelligent transport systems are fundamental for trade

Modern societies need transport systems. A good, intelligent transport infrastructure is one of the bases for stable economic development. It is a basic requirement for trade and the economy, for participating on the global market and for creating jobs and thus income. But because of the rapid pace of urbanisation, today's transport routes are no longer adequate. By 2015, developing countries and emerging economies will be home to two thirds of the roughly 60 cities in the world with more than five million residents. Unless technological control systems are implemented, this growth will be difficult to manage. It is therefore crucial to facilitate investments in technology, intelligent transport and traffic routes, and climate protection. For instance, the German government and KfW are considering helping their partners in South Africa to replace antiquated city buses with new vehicles that are energy efficient and clean. These have many advantages, including the option to operate them with biogas generated from landfills.

Renewable energy: An important contribution to climate protection

Renewable energy from the sun, wind, water and biomass is already making an important contribution to climate protection. A key task in the coming years will be to integrate these new sources of energy into the transmission and distribution networks of developing and

emerging countries. On behalf of the German government, KfW will in future be providing increased funding for intelligent, automated electricity systems, as well as for new technologies that make it possible to store electricity longer at either centralised or decentralised locations. One example of this is Bosnia, where KfW plans to finance the construction of a pumped-storage power plant.

Without technology, disaster risk management is impossible

Extreme weather events often lead to substantial losses and damage that destroy the livelihoods of millions of people. Such catastrophes will become more and more frequent as a result of climate change. People in developing countries are particularly exposed. This makes it increasingly important to protect

these people, which means supporting adaptation to climate change. Without the use of technology, effective disaster risk management is inconceivable. This includes geographic information systems and hydrological and meteorological monitoring stations, as well as communication systems. For example, Jordan is planning to rehabilitate existing hydrological monitoring networks and create new ones, and Zambia is preparing to build an early-warning system for meteorological disasters.

Technology is not an end in itself. If it is to be beneficial, people need to be able to use it. This applies to all areas in which we fund the use of technology and have already been able to make an impact. KfW and DEG are convinced that the potential is far from being exhausted. ■

»» Technology is not an end in itself. If it is to be beneficial, people need to be able to use it.

»» Overview: Commitments in 2012

Funding by KfW Development Bank and DEG

KfW once again increases its commitments in development finance

More than EUR 4.9 billion for development programmes worldwide

KfW Development Bank has increased its new commitments again, substantially exceeding those for 2011 by approximately EUR 400 million. In 2012, KfW committed more than EUR 4.9 billion for development programmes all over the world. This means that it has increased its volume of new commitments almost by a factor of four in the last ten years.

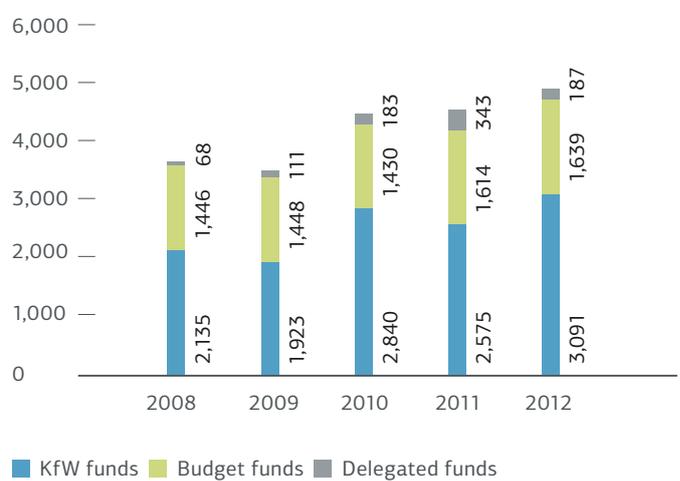
KfW Development Bank performs most of its work on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ), but it also acts on behalf of other German federal ministries, such as the Federal Foreign Office, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), the Federal Ministry of Economics and Technology (BMWi) and the Federal Ministry of Education and Research (BMBF). In addition, it is increasingly working with European Union (EU) institutions, particularly the European Commission and the European Investment Bank (EIB), as well as with development organisations and development banks in other EU member states.

In 2012, KfW again structured most of its financing using funds raised on the capital market. KfW used approximately EUR 3.1 billion of its own funds for international development financing, compared with EUR 2.6 billion in the previous year. This means that roughly 63% of the financing that KfW deploys on behalf of the German government in developing and emerging countries currently comes from its own funds.

KfW's own funds are predominantly attributed to Germany as Official Development Assistance (ODA). In this way, KfW supports the German government in meeting its international obligations to protect the environment, fight poverty and combat climate change. By using its own resources, KfW helps to increase Germany's official development assistance contributions and at the same time takes some of the strain off the federal budget.

KfW normally pays grants from budget funds to poor and less developed countries. Countries that are slightly more developed may also receive non-repayable grants for certain projects. These types of project often make a direct contribution to fighting poverty or preserving global public goods, such as tropical rainforests. More advanced countries are usually granted development loans on terms in line with those on the capital market.

Origin of total commitments 2008–2012 (in EUR million)



KfW's engagement in the regions of the world

On behalf of the German government, KfW Development Bank funds development programmes in Africa, Asia, Latin America and South-Eastern Europe. In more advanced developing and emerging countries, KfW is increasingly deploying its own funds. This in turn means that the German government's budget funds can be used to provide more grants to the particularly impoverished least developed countries (LDCs), most of which are in sub-Saharan Africa. KfW's commitments from budget funds to this group of countries rose by an average of around 8% annually between 2005 and 2011.

Sub-Saharan Africa

KfW once again committed the bulk of funds from the federal budget to sub-Saharan Africa, amounting to EUR 742 million (45%) (previous year: EUR 626 million, or 39%). Total commitments amounted to EUR 870 million (18%) (previous year: EUR 874 million, or 19%). KfW is focusing on fighting poverty in this region and creating the basis for economic development. It operates in the areas of water supply,

education, health care, and crisis and conflict prevention.

Asia/Oceania

In the year under review, EUR 378 million (23%) of budget funds (previous year: EUR 417 million, or 26%) were deployed in Asia/Oceania. At EUR 1.6 billion (33%), the region accounted for the largest share of total commitments (previous year: EUR 1.4 billion, or 31%), since KfW mainly deploys its own funds in countries that are more advanced (2012: EUR 1.2 billion). In Asia/Oceania, KfW predominantly funds climate and environmental programmes, but it also supports urban development, vocational training and the expansion of transport systems.

North Africa/Middle East

Commitments of budget funds to North Africa/the Middle East amounted to EUR 191 million (12%) (previous year: EUR 232 million, or 14%). Total commitments rose significantly, reaching EUR 686 million (14%) (previous year: EUR 400 million, or 9%). Of this amount, EUR 495 million came from KfW funds. Support in the region mainly focuses on water supply and sanitation, and renewable energy generation.

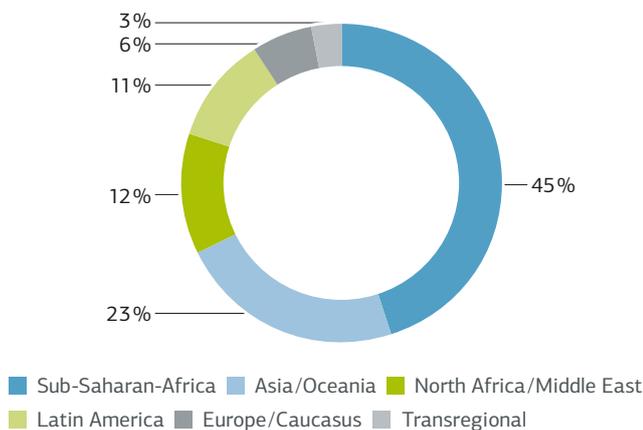
Latin America

Funding in Latin America from budget funds amounted to EUR 187 million (11%) (previous year: EUR 134 million, or 8%). A total of EUR 396 million (8%) (previous year: 535 million, or 12%) was committed to the region, EUR 202 million of this from KfW funds. KfW's support in the region is focused on protecting natural ecosystems and biodiversity.

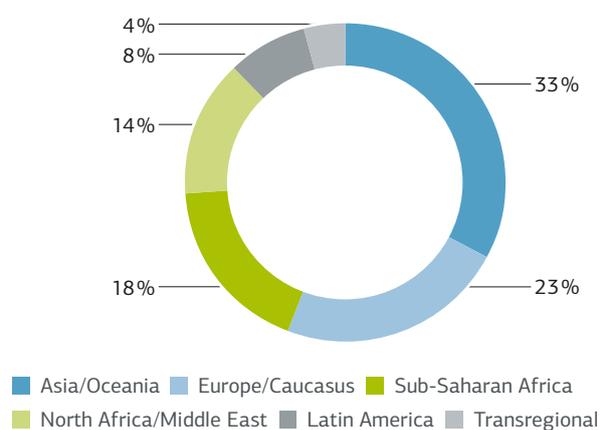
Europe/Caucasus

KfW committed a total of EUR 922 million from its own funds to economically more advanced countries in Europe/Caucasus. A total of EUR 1.1 billion (23%) (previous year: 812 million, or 18%) was committed to the region in 2012, with EUR 100 million (6%) of this coming from budget funds. In this region, KfW is particularly active in the water sector and in funding SMEs.

Budget funds committed in 2012 by region



Total commitments in 2012 by region



KfW priority development sectors

In 2012, KfW continued to work towards improving people's lives in partner countries. It supported projects and programmes in the German government's priority areas in order to achieve a lasting developmental impact.

Social infrastructure

Most funding, roughly EUR 2.0 billion (40%), went towards public infrastructure (previous year: EUR 1.4 billion, or 31%), with KfW supporting partner governments in providing people with safe drinking water and in building schools and health-care facilities. A total of EUR 1.1 billion was committed to water supply, solid waste management and sanitation. KfW provided EUR 329 million to support projects in the education sector, including building schools, purchasing teaching materials and providing advanced training to teachers. It also provided EUR 212 million of support for health-care systems.

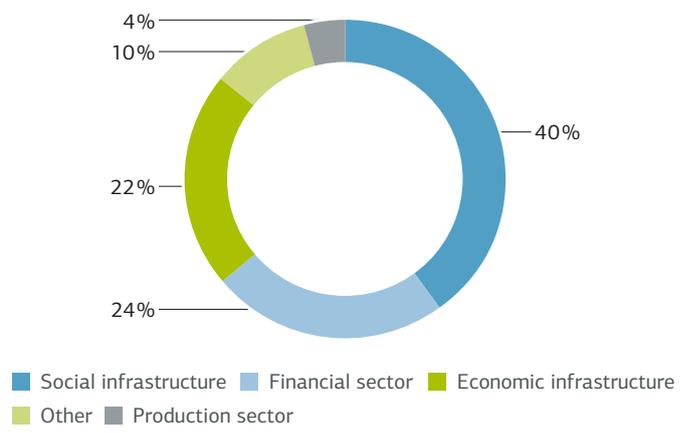
Financial sector

Supporting the financial sector has traditionally been very important to KfW. In 2012, this sector again had the second highest level of commitments, at EUR 1.2 billion (24%) (previous year: EUR 1.1 billion, or 25%). About 40% of these commitments went to the microfinance sector. KfW is funding environmental loans and supporting microfinance institutions that help small companies implement their business ideas. The support provided thus also helped promote economic development and protection of the environment and the climate.

Economic infrastructure

Funding in 2012 for economic infrastructure amounted to roughly EUR 1.1 billion (22%) (previous year: EUR 1.0 billion, or 23%). The vast majority of the programmes in this area focused on renewable energy use and on efficient, climate-friendly use of energy. In the process, developing countries and emerging economies were also supported in embarking on a "low-carbon development path". Funding was also provided to develop transport and communication.

KfW commitments in 2012 by priority development sector



Delivering development results for people

When KfW funds projects and programmes on behalf of the German government, it is essential that they improve people's living conditions. Numerous development results are achieved in key sectors.

Climate and environment

In the future, protecting the climate and environment will be an important part of KfW Development Bank's work. In 2012, roughly EUR 2.8 billion was committed to projects in this area, constituting around 57 % of the volume of new commitments. We estimate that these projects will save around 16 million tonnes annually in carbon dioxide emissions in the coming years.

In addition, KfW is supporting nature conservation. Contracts concluded in 2012 are allowing ten additional conservation areas in Azerbaijan, Brazil, Guyana, Georgia and Mauritania to be funded. These have a total area of about 26,000 square kilometres, almost as large as the Republic of Rwanda.

Water, sanitation and farming

KfW is reaching an estimated 40 million people worldwide with its new commitments for water supply and sanitation. New irrigation projects are helping to reclaim or modernise roughly 3,750 hectares of irrigated land for farming. This is directly improving the income and living conditions of nearly 90,000 people.

Financial sector

In 2012, KfW Development Bank commitments helped to create and safeguard access to financial services for more than 6.7 million people, over half of them women. The vast majority of people – some 80 % – are being supported through microfinancing. This is helping to improve the income situation of needy people in particular. The new commitments facilitated roughly EUR 1.7 million in additional loans.

Health

Projects in partner countries are helping improve the delivery of health-care services to people. Commitments in 2012 for family planning and HIV/AIDS prevention programmes were directed at roughly 50.3 million people of reproductive age worldwide. Funding was used to promote vaccination campaigns and fight polio, reaching some 38 million children in Tanzania, Nigeria and Tajikistan. Thanks to the funding of infrastructure activities in the health-care systems of Afghanistan, Kyrgyzstan, Uzbekistan and China, around 25 million people are benefitting from access to local health-care facilities that have been rehabilitated and modernised.

Education

In 2012, KfW funded education projects around the world, reaching around 4.1 million people, nearly half of them girls and young women. This work helps to make educational systems stronger by providing financing to construct primary and secondary schools, purchase teaching and study materials, and offer advanced training.

Transitional aid and reconstruction

In 2012, commitments were made for 17 projects in the area of transitional aid/reconstruction. These reached around 9.2 million people in 12 countries.

Our contribution to the UN Millennium Development Goals

In 2001, 191 heads of state and government agreed on quantitatively verifiable targets to evaluate the international community's development policy efforts – the UN Millennium Development Goals (MDGs). As a result, international development cooperation has attracted enormous public attention. In September 2010, the goals were reaffirmed at the MDG special summit in New York as a joint responsibility and challenge for industrialised, emerging and developing countries. The most important MDG, halving the number of people suffering from poverty, has already been achieved, thanks in particular to China. The other goals show marked regional differences and require greatly increased efforts.

Through the projects and programmes that it finances, KfW Development Bank is helping reduce poverty, protect the climate and the environment, and improve social cohesion. A special MDG reporting system, created jointly with the University of Göttingen in Germany, identifies how the expected effects of the new projects can be allocated across the Millennium Development Goals.

This also takes into account the fact that the projects can have an impact on several areas. For instance, projects and programmes dedicated to addressing climate change can sometimes also help fight poverty. Under this MDG reporting system, their effects are allocated accordingly. According to these calculations, 69 % of new commitments in 2012 can be expected to have a direct positive impact on achieving the eight MDGs. The remaining 31 % of the funding contributes to two key development policy objectives that, although mentioned prominently in the Millennium Declaration, are not expressly set out in the MDGs, namely the “contribution to economic growth” (22 % of funds) and “promotion of good governance, peace and democracy” (9 % of funds). These two objectives

also have an indirect positive impact on realising the MDGs.

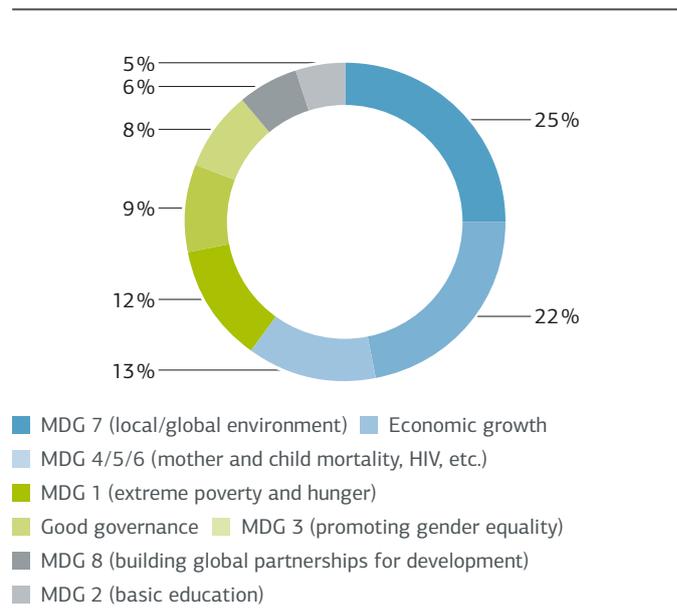
The new funds committed in 2012 primarily affect the MDGs as follows:

- **MDG 1:** 12 % of funding helped to reduce extreme poverty and hunger.
- **MDG 2:** 5 % helped to improve primary education.
- **MDG 3:** 8 % helped to promote gender equality.
- **MDG 4, 5, 6:** 13 % helped to reduce mother and child and mortality rates and to fight HIV/AIDS, malaria and

other dangerous and communicable diseases.

- **MDG 7:** 10 % benefitted the global environment (protection of the climate and biodiversity), and 15 %, the local environment (water supply and sanitation).
- **MDG 8:** 6 % went towards building global partnerships for development, particularly the promotion of technology transfer, an open, regulated and non-discriminatory trading and financial system, and communications technology.

New commitments in 2012: Primary effect on MDGs



DEG celebrates 50th anniversary with record year

Roughly EUR 1.3 billion for entrepreneurial investments

Funding business expanded further

In 2012, DEG was able to further expand its funding business. In its 50th year of existence, DEG's financing commitments totalling EUR 1.33 billion set a new record (2011: EUR 1.22 billion). Commitments in 2012 facilitated 108 entrepreneurial investments in 40 countries, with a total volume of more than EUR 12 billion.

The DEG portfolio (own funds and trust business) grew by 5.5% to nearly EUR 6 billion, spread across 575 companies in 82 partner countries. The overwhelming majority of this – EUR 5.9 billion – was made up of financing from DEG's own funds. Trust business using funds from the German government and the European Union constituted close to EUR 66 million.

DEG thus was once again one of the largest European development finance institutions funding private-sector development. Its financing facilitated entrepreneurial investments, even under difficult conditions. DEG mobilises additional capital, thus increasing the leverage of its funding.

Commitments by type of funding

Risk capital amounted to EUR 506 million, of which EUR 349 million consisted of equity participation (2011: EUR 274 million) and EUR 157 million of quasi-equity loans (2011: EUR 235 million). Overall, loans totalling EUR 979 million (2011: EUR 945 million) were committed. Of these, EUR 807 million (2011: EUR 700 million) were denominated in USD. No new guarantee commitments were made in 2012 (2011: EUR 4 million).

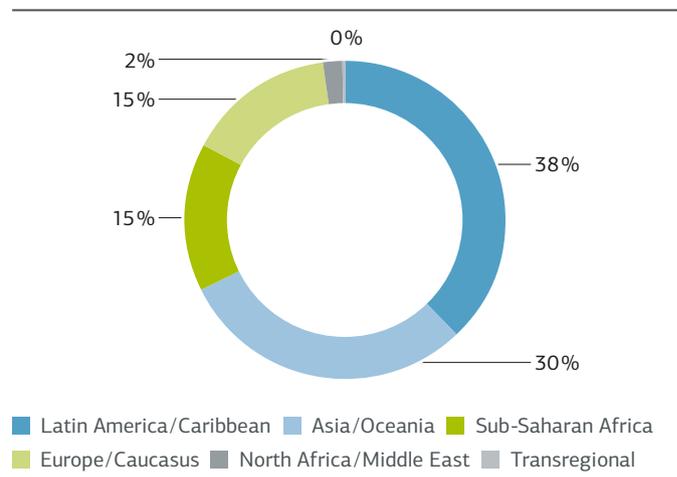
Commitments by region

The largest share of DEG commitments went toward schemes in Latin America, with a total volume of nearly EUR 497 million (2011: EUR 348 million), followed by Asia with EUR 388 million (2011: EUR 418 million). The largest share of funding for Africa, EUR 204 million (2011: EUR 219 million), involved commitments for sub-Saharan Africa. EUR 31 million was allocated to North Africa/the Middle East.

The Europe/Caucasus region received a total of EUR 205 million (2011: EUR 186 million), of which EUR 188 million was for Europe (2011: EUR 138 million) and about EUR 3 million (2011: EUR 6 million) for a transregional scheme.

DEG's investment in least developed countries (LDCs) included funding for Ethiopia, Bangladesh and Uganda.

DEG commitments in 2012 by region



More funding for industry and manufacturing

Commitments by economic sector

DEG increased its commitments for industrial and manufacturing companies in 2012. These companies create skilled jobs and contribute to the transfer of technology and knowledge. In 2012, DEG provided EUR 352 million for investments within manufacturing industry, a substantial increase over the previous year (2011: EUR 270 million). The companies which received financing included automotive suppliers, recycling companies and textile producers.

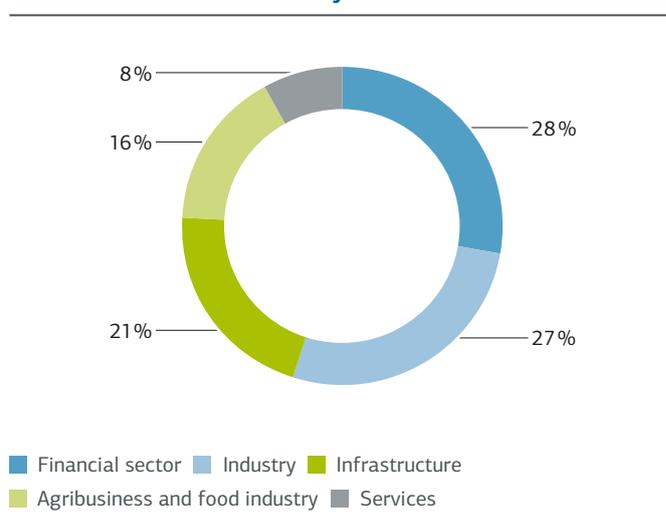
The need for investment in infrastructure remains extremely high in many developing and emerging countries. Many schemes are undertaken using private-sector companies. In 2012, DEG financed infrastructure investments with nearly EUR 280 million (2011: EUR 342 million), including numerous renewable energy power plants.

Agribusiness and the food industry is an important sector in many developing countries, since this is where many people earn their living. DEG was able to significantly increase its support in 2012, committing nearly EUR 213 million for investments, particularly in the processing of raw materials (2011: EUR 86 million).

Financing of EUR 102 million for the services sector also set a new record (2011: EUR 19 million), with funding going particularly to tourism schemes.

In 2012, DEG continued to provide funding to improve the range of financial services available to companies in partner countries. It made new commitments of nearly EUR 381 million to the financial sector for loans to banks and other financing institutions (2011: EUR 506 million). This is of particular benefit to SMEs, improving the range of financing available to them.

DEG commitments in 2012 by sector



DEG priority sectors

Strategic priorities

As a pioneering investor, DEG again made significant commitments to important partner countries for development in 2012, including those in Africa, totalling roughly EUR 235 million (2011: EUR 233 million). Another DEG priority is providing funding to SMEs, which otherwise have little access to investment capital. In this area, it committed more than EUR 465 million in financing.

Companies are particularly in need of risk capital, i.e. equity participations and quasi-equity loans. DEG provided EUR 506 million to these strategically important business areas, thus maintaining the record level achieved in the previous year (2011: EUR 509 million).

DEG also significantly expanded its financing of and support for German companies that invest in emerging and developing countries. It provided roughly EUR 182 million to German companies – a new record for this segment (2011: EUR 99 million). In particular, it is helping finance investments in the manufacturing industry, including in Mexico and the Russian Federation.

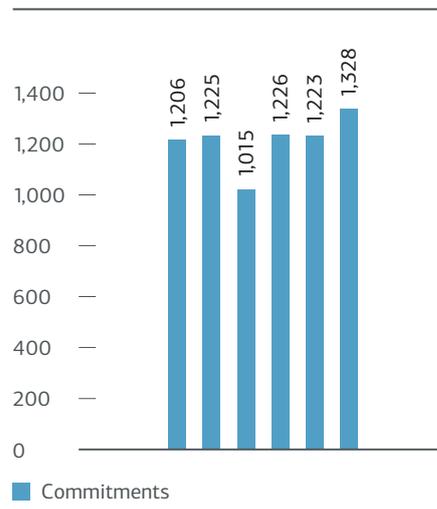
Consulting and funding programmes

The development programmes that DEG is commissioned to implement are designed to support measures carried out by private companies that contribute to development. This involves combining public funds with funds from the companies themselves. In 2012, commitments were made for a total of 172 projects. Through the programme “Development partnerships with the private sector”, which is run by the German Federal Ministry for Economic Cooperation and Development (BMZ), funding was provided for the develoPPP.de programme, as well as for accompanying measures (e.g. to improve energy efficiency), feasibility studies, transaction cost subsidies and an innovation voucher programme. Roughly EUR 16 million was made available to develoPPP.de.

Almost two thirds of the projects funded were related to resource and climate protection, and to energy, both of which are priority areas. The programme “Climate partnerships with the private sector”, which is run by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), aims to

promote and expand the use of climate-friendly technology. In 2012, DEG also delivered funding from the Bill & Melinda Gates Foundation and the BMZ to the Competitive African Cotton Initiative (COMPACI) and to the new Coffee Partnership for Tanzania (CPT) programme. COMPACI (USD 59 million) is reaching roughly 650,000 African cotton farmers, and CPT (USD 26 million) is expected to benefit some 85,000 coffee farmers in Tanzania. Both programmes are being implemented in collaboration with local companies.

Growth in DEG commitments in 2007–2012 (in EUR million)



Environmental and social standards

Investments in climate protection

Climate and environmental protection is one of DEG's strategic objectives. In 2012, new commitments totalling more than EUR 384 million went towards investments in climate protection (2011: EUR 193 million). Financing principally targeted investments designed to improve energy efficiency. In addition, DEG provided nearly EUR 14 million from developPPP.de (2011: EUR 7.5 million), and accompanying measures for projects related to climate protection. In 2012, more than EUR 578 million, or roughly 44% of total volume, went towards schemes promoting climate protection, adaptation to climate change and environmental protection.

Sustainability

If investments are to succeed in the long term, they must be ecologically and socially sound. DEG is guided by this conviction, which it actively promotes in its dealings with the companies it helps finance. For all schemes DEG committed financing to in 2012, companies were contractually required to uphold their respective national regulations and, additionally, to comply with international environmental and social standards. The latter include the performance standards of the International Finance Corporation (IFC) as revised in 2012, and the core labour standards of the International Labour Organization (ILO). By implementing environmental and social action plans, DEG once again assumed an important role in schemes with potentially significant environmental and social risks in order to improve the situation within companies and promote wider application of international standards in partner countries. DEG tracks agreed activities and steps for the entire duration of the schemes.

International cooperation

DEG has cooperated closely with its European partner institutions in the Association of European Development Finance Institutions (EDFI) for many years. Eleven EDFI members, plus the European Investment Bank (EIB) and the Agence Française de Développement (AFD), have joined forces as partners in the Interact Climate Change Facility (ICCF) to finance climate-friendly schemes undertaken by the private sector. The facility was set up in 2011, and is funded with around EUR 305 million. In 2012, six projects were co-financed with ICCF funds totalling USD 108 million.

The three largest EDFI members – DEG, FMO from the Netherlands, and Proparco from France – have been working closely together for many years, and in 2012 they jointly committed loans and equity financing totalling EUR 736 million for 19 new involvements (2011: EUR 1 billion).

Since 2003, European Financing Partners (EFP), a financing consortium established by the EIB, DEG, and 12 other EDFI members, has been funding private investments in countries of the African, Caribbean and Pacific Group of States (ACP). To date, approximately EUR 800 million has been made available, primarily for Africa.

DEG financing: Delivering for development

Roughly 435,000 new jobs

In 2012, DEG commitments amounting to EUR 1.3 billion facilitated entrepreneurial investments worth a total of more than EUR 12 billion (2011: EUR 6.8 billion). This significant increase is attributable to large-scale investments involving renewable energy. The co-financed investments helped create or secure roughly 164,000 jobs in companies, as well as approximately 271,000 jobs at supplier firms and with end borrowers in financial sector projects. More than half of these were created through agricultural projects that integrate small farmers and suppliers into the value chain.

More state revenues for partner countries

Co-financed companies are expected to add roughly EUR 827 million annually to the state revenues of partner countries through tax payments, and generate some EUR 4.1 billion per year in net foreign exchange revenues. These substantial contributions by the private sector can help to reduce budget deficits, strengthen foreign-currency revenues in the long term and facilitate investments.

Millennium Development Goals and corporate social responsibility

About 73 % of schemes made a direct contribution to achieving at least one international Millennium Development Goal (2011: 63 %), particularly MDG 7 (Ensure Environmental Sustainability), MDG 1 (Eradicate Extreme Hunger and Poverty), and MDG 3 (Promote Gender Equality and Empower Women). In addition, many companies implement a commitment to corporate social responsibility by paying above-average wages, offering retirement and health-care benefits, and building clinics, nurseries and schools.

Quality assurance for development

DEG uses its corporate-policy project rating tool (GPR) to evaluate and manage the development quality of its projects. This tool can be used to perform analyses both before a project is begun (ex ante) and after its completion (ex post). The evaluation of projects receiving new commitments in 2012 showed an average development quality rating of 2.0, which represents a marked improvement that resulted from increased quantitative effects (2011: 2.4).

Disbursements

By KfW Development Bank and DEG

In 2012, KfW disbursed a total of EUR 2.9 billion for projects and programmes in its partner countries. Of this, more than EUR 1.5 billion came from federal funds. Total disbursements were therefore somewhat lower than in the previous year (2011: EUR 3.3 billion).

At EUR 1,094 million, DEG's disbursements were slightly higher than in the previous year (EUR 1,078 million).

Debt conversion, cancellation and rescheduling

For partner countries with a particularly high level of foreign debt, debt conversion has proved to be an important development policy tool. In this case, a partner country makes a commitment to the German government that funds will be used for development projects within the country. In exchange, Germany agrees to waive repayment of debts of at least the same amount. KfW takes part on the German side in implementing such debt conversions by reviewing and evaluating the project proposals submitted. It then enters into an agreement with the partner country that addresses the details of the debt conversion.

In 2012, KfW concluded new debt-conversion agreements with Egypt, Bosnia and Herzegovina, Côte d'Ivoire, El Salvador, Kyrgyzstan and Tunisia that provide for the waiver of a total of EUR 143 million of debt. In addition, Germany cancelled EUR 155 million in debts owed by partner countries under earlier agreements after confirming that the funds were being used for development programmes.

In 2012, KfW also took part in preparing and implementing international debt-rescheduling agreements under the auspices of the Paris Club, including debt relief agreed to for the Democratic Republic of the Congo in connection with the HIPC (Heavily Indebted Poor Countries) initiative designed to fight poverty in these countries. As a result, outstanding debts of EUR 133 million of the country were cancelled.

»» Statistical annex

Total commitments by KfW Development Bank and DEG in 2008–2012 (in EUR million)

KfW Development Bank	2008	2009	2010	2011	2012
FC grants	882	1,112	1,036	1,336	1,347
FC standard loans	351	230	179	145	179
FC development loans	1,033	878	2,142	1,713	1,600
– budget funds	213	106	215	134	112
– KfW funds	821	772	1,927	1,579	1,487
FC promotional loans	1,314	1,151	913	996	1,603
Delegated funds	68	111	183	343	187
Sum	3,648	3,482	4,452	4,532	4,916
DEG (own risk) ¹	1,225	1,015	1,226	1,223	1,328
Total (KfW + DEG)	4,873	4,497	5,678	5,755	6,244

Differences in the totals are due to rounding.

¹ Figures include risk sub-participations.

Origin of total commitments by KfW Development Bank in 2008–2012 (in EUR million)

KfW Development Bank	2008	2009	2010	2011	2012
Budget funds	1,446	1,448	1,430	1,614	1,639
KfW funds	2,135	1,923	2,840	2,575	3,091
Delegated funds	68	111	183	343	187
Total	3,648	3,482	4,452	4,532	4,916

Differences in the totals are due to rounding.

Breakdown of total commitments in 2012 by region (in EUR million)

	KfW Development Bank				DEG		Combined	
	Budget funds		Total commitments		Total commitments		Total commitments	
Sub-Saharan Africa	742	45 %	870	18 %	204	15 %	1,074	17 %
Asia/Oceania	378	23 %	1,623	33 %	388	29 %	2,011	32 %
Europe/Caucasus	100	6 %	1,120	23 %	205	15 %	1,325	21 %
Latin America	187	11 %	396	8 %	497	37 %	893	14 %
North Africa/Middle East	191	12 %	686	14 %	31	2 %	717	11 %
Transregional	41	3 %	221	4 %	3	0 %	224	4 %
Total	1,639	100 %	4,916	100 %	1,328	100 %	6,244	100 %

Differences in the totals are due to rounding.

Total commitments in 2012 by country (in EUR million)

Ranked by budget funds

Rank	Country	Budget funds ⁽¹⁾	KfW funds	Funds from other ministries/donors	DEG
1	Afghanistan	151.51	0.00	0.03	0.00
2	Tanzania	79.00	0.00	52.32	0.00
3	Ethiopia	74.00	0.00	3.65	17.95
4	Democratic Republic of the Congo	71.05	0.00	6.50	0.00
5	India	69.13	562.48	0.00	136.68
6	Brazil	65.42	20.00	0.00	69.98
7	Mozambique	57.00	0.00	0.00	0.00
8	Zambia	47.53	0.00	0.00	7.54
9	Palestinian territories	46.50	0.00	0.00	0.00
10	Jordan	41.40	79.50	0.00	0.00
11	Yemen	39.00	0.00	0.00	0.00
12	Liberia	36.00	0.00	0.00	0.00
13	Morocco	35.60	361.60	0.00	0.00
14	Bangladesh	34.98	0.00	0.00	42.91
15	Namibia	30.98	0.00	0.00	13.29
16	Rwanda	30.27	0.00	0.00	0.00
17	Honduras	30.00	0.00	0.00	27.36
18	Kenya	29.00	0.00	0.54	7.41
19	Peru	27.45	7.50	0.00	55.13
20	Mauritania	26.60	0.00	0.00	0.00
21	Uganda	22.25	0.00	0.00	8.81
22	Burkina Faso	21.00	0.00	0.00	0.00
23	Egypt	19.35	54.35	0.00	20.64
24	Niger	19.08	0.00	0.00	0.00
25	Vietnam	18.00	44.00	0.00	14.18
26	Ghana	17.50	0.00	0.00	39.97
27	Zimbabwe	17.00	0.00	0.00	6.35
28	Georgia	16.99	25.00	0.00	1.88
29	Nigeria	16.78	0.00	0.00	0.23
30	Guatemala	16.25	0.00	0.00	0.00
31	China	15.70	589.91	0.00	43.34
32	Pakistan	13.03	0.00	0.00	0.00
33	Mongolia	13.00	0.00	0.00	34.04
34	Ukraine	12.00	0.00	1.80	0.00
35	Kosovo	12.00	20.00	4.90	0.00
36	Albania	11.80	12.00	34.99	2.50
37	Laos	11.60	0.00	0.00	2.19
38	Bolivia	10.38	0.00	0.00	0.00
39	Serbia	10.00	289.00	15.83	0.00
40	Nepal	10.00	0.00	0.00	0.00
41	Cameroon	10.00	0.00	0.00	0.00

Total commitments in 2012 by country (in EUR million)

Ranked by budget funds

Rank	Country	Budget funds ⁽¹⁾	KfW funds	Funds from other ministries/donors	DEG
42	Malawi	8.50	0.00	0.00	0.00
43	South Africa	8.00	0.00	0.00	30.64
44	Cambodia	8.00	1.52	0.00	11.95
45	Nicaragua	7.00	0.00	0.00	19.42
46	Kyrgyzstan	6.00	0.00	0.00	0.38
47	Azerbaijan	5.67	124.14	0.00	0.00
48	Tajikistan	5.00	0.00	0.00	0.00
49	Lesotho	5.00	0.00	0.00	0.00
50	El Salvador	5.00	57.89	0.00	8.00
51	Guyana	4.80	0.00	0.00	0.00
52	Armenia	4.50	55.00	0.00	15.41
53	Lebanon	3.90	0.00	0.00	0.23
54	Republic of the Congo	3.58	0.00	0.00	0.00
55	Uzbekistan	3.50	0.00	0.00	0.00
56	Sri Lanka	3.00	28.00	0.00	24.83
57	Burundi	3.00	0.00	3.00	0.00
58	South Sudan	2.99	0.00	0.00	0.00
59	Mexico	1.00	39.26	0.00	105.71
60	Madagascar	0.50	0.00	0.00	0.00
61	Indonesia	0.14	0.00	0.00	41.07
62	Turkey	0.00	151.19	20.00	48.14
63	Belarus	0.00	0.30	0.00	0.00
64	Bosnia and Herzegovina	0.00	0.00	17.47	0.00
65	Benin	0.00	0.00	5.37	0.00
66	Chile	0.00	0.00	0.00	59.31
67	Uruguay	0.00	0.00	0.00	39.53
68	Panama	0.00	0.00	0.00	23.80
69	Côte d'Ivoire	0.00	0.00	0.00	19.16
70	Argentina	0.00	0.00	0.00	19.09
71	Costa Rica	0.00	0.00	0.00	18.00
72	Moldova	0.00	0.00	0.00	15.62
73	Montenegro	0.00	0.00	0.00	13.00
74	Paraguay	0.00	0.00	0.00	11.86
75	Colombia	0.00	0.00	0.00	11.37
76	Algeria	0.00	0.00	0.00	10.00
77	Senegal	0.00	0.00	0.00	7.54
78	Kazakhstan	0.00	0.00	0.00	1.43
79	Dominican Republic	0.00	0.00	0.00	0.06
	Transregional	213.50	431.81	20.13	138.53
	Other	0.08	136.34	0.00	89.32
	Total	1,638.78	3,090.78	186.54	1,328.01

1) Budget funds of BMZ, BMU and the Federal Foreign Office

Breakdown of total commitments in 2012 by priority sector (in EUR million)

	KfW		DEG		Combined	
Economic infrastructure	1,092	22 %	271	20 %	1,363	22 %
Public infrastructure	1,955	40 %	9	1 %	1,964	31 %
Financial sector	1,159	24 %	381	29 %	1,540	25 %
Production sector	208	4 %	565	43 %	773	12 %
Other	502	10 %	102	8 %	604	10 %
Total	4,916	100 %	1,328	100 %	6,244	100 %

Differences in the totals are due to rounding.

Total KfW Development Bank commitments by BMZ priority area (in EUR million)

BMZ priority area	2011		2012	
	EUR million	%	EUR million	%
Energy (including energy efficiency, renewable energy)	1,023	23 %	788	16 %
Economic reform, development of a market economy	982	22 %	1,008	21 %
Drinking water, water management, sanitation/solid waste management	771	17 %	948	19 %
Transport and communications	288	6 %	78	2 %
Democracy, civil society and public administration	256	6 %	197	4 %
Environmental policy, conservation, sustainable use of natural resources	239	5 %	1,008	20 %
Health, family planning, HIV/AIDS	220	5 %	268	5 %
Food security, agriculture/fishery	148	3 %	72	1 %
Education	109	2 %	313	6 %
Peacebuilding and crisis prevention	28	1 %	51	1 %
Other, non-attributable	471	10 %	186	4 %
Total	4,532	100 %	4,916	100 %

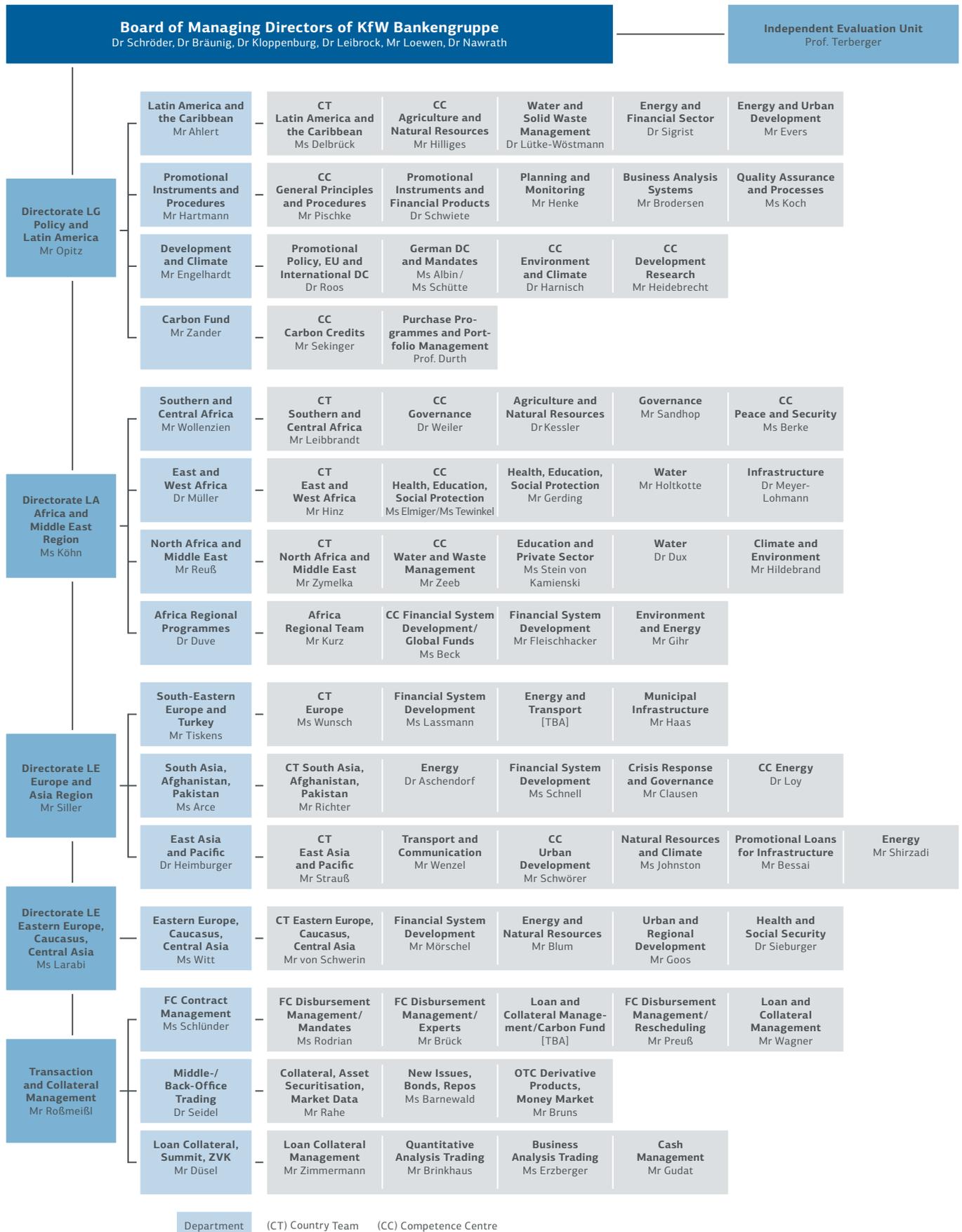
Differences in the totals are due to rounding.

Total DEG commitments by sector (in EUR million)

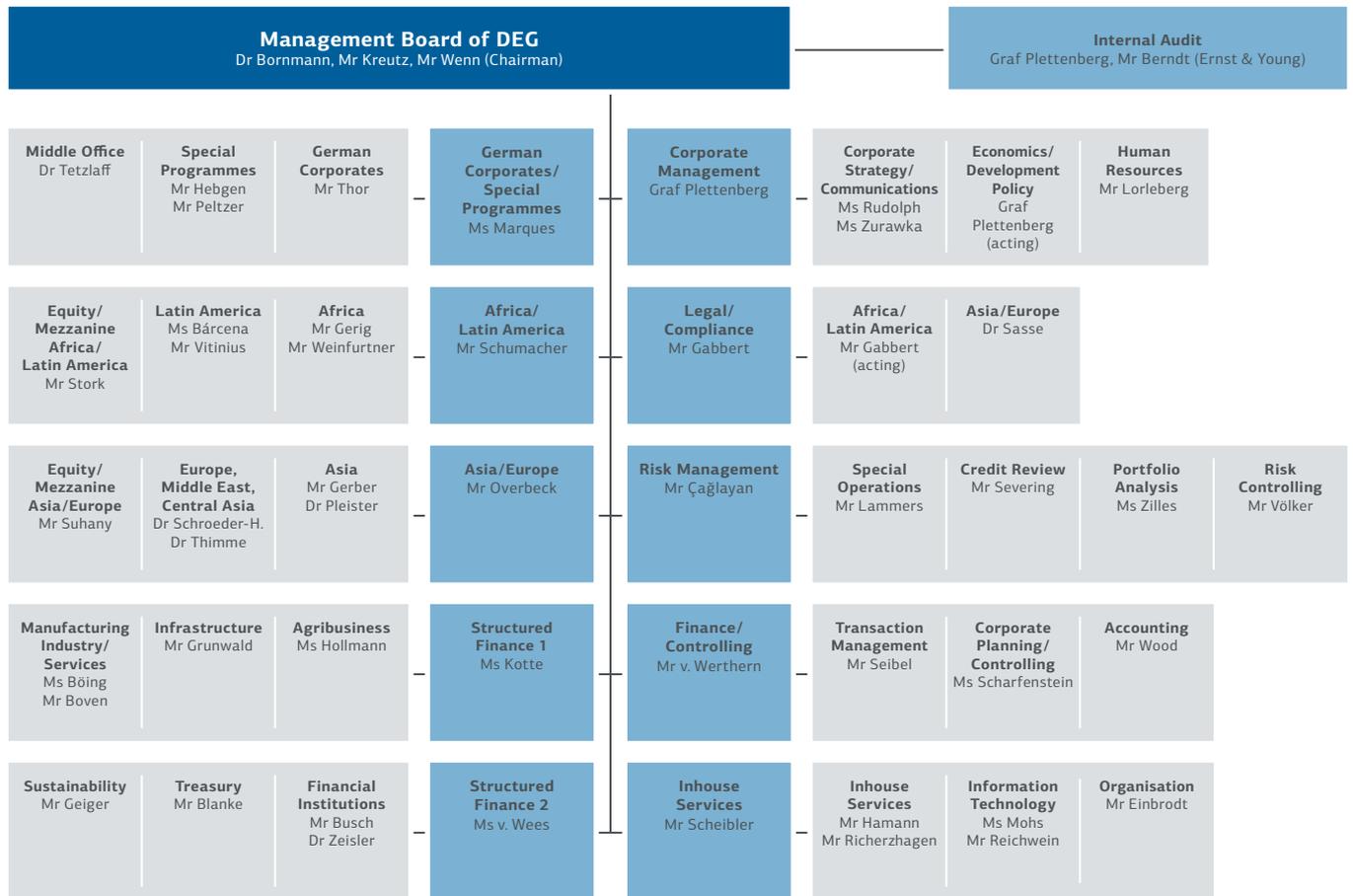
Sector	2011		2012	
	EUR million	%	EUR million	%
Production sectors	356	29 %	565	43 %
– Agribusiness and food industry	86	7 %	213	16 %
– Industry, mineral resources, mining, construction	270	22 %	352	27 %
Economic infrastructure	330	27 %	271	21 %
– Energy sector	154	13 %	164	13 %
– Transport and storage	114	9 %	83	6 %
– Communications	62	5 %	24	2 %
Public infrastructure	12	1 %	9	1 %
– Water supply, sanitation/solid waste management	0	0 %	9	1 %
– Education	0	0 %	0	0 %
– Health	12	1 %	0	0 %
Financial sector	506	41 %	381	29 %
Other services	19	1 %	102	8 %
– Trade and tourism	14	1 %	77	6 %
– Real estate, rental, business service providers, etc.	5	0 %	25	2 %
Total	1,226	100 %	1,328	100 %

Differences in the totals are due to rounding.

Organisational chart of KfW Development Bank



Organisational chart of DEG



1 April 2013

Worldwide commitment

Offices of KfW Development Bank and DEG



Accra, Ghana
Addis Ababa, Ethiopia
Amman, Jordan
Ankara, Turkey
Baku, Azerbaijan
Bamako, Mali
Bangkok, Thailand
Beijing, China
Belgrade, Serbia
Bishkek, Kyrgyzstan
Bogotá, Colombia
Brasília, Brazil
Bujumbura, Burundi
Cairo, Egypt
Cotonou, Benin
Dakar, Senegal
Damascus, Syria
Dar es Salaam, Tanzania
Dhaka, Bangladesh
Dushanbe, Tajikistan
Guatemala City, Guatemala
Hanoi, Vietnam
Islamabad, Pakistan
Istanbul, Turkey
Jakarta, Indonesia
Johannesburg, South Africa
Juba, South Sudan
Kabul, Afghanistan
Kampala, Uganda
Kathmandu, Nepal
Kiev, Ukraine
Kigali, Rwanda
Kinshasa, Democratic Republic of the Congo
La Paz, Bolivia
Lilongwe, Malawi

Lima, Peru
Lusaka, Zambia
Managua, Nicaragua
Manila, Philippines
Maputo, Mozambique
Mazar-e Sharif, Afghanistan
Mexico City, Mexico
Moscow, Russian Federation
Nairobi, Kenya
New Delhi, India
Niamey, Niger
Ouagadougou, Burkina Faso
Phnom Penh, Cambodia
Podgorica, Montenegro
Pretoria, South Africa
Priština, Kosovo
Quito, Ecuador
Rabat, Morocco
Ramallah-Al-Bireh, Palestinian territories
Sana'a, Yemen
San Salvador, El Salvador
Sarajevo, Bosnia and Herzegovina
Singapore, Singapore
Skopje, Macedonia
Tashkent, Uzbekistan
Tbilisi, Georgia
Tegucigalpa, Honduras
Tirana, Albania
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