

Financing Development

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Our changing climate: adaptation and protection

KfW Photo Archive/Jens Steingässer

KfW expert Harnisch:
“We need solutions that are
acceptable in the long term”

Africa:
Drought insurance for
emergencies

India:
Network expansion for
“green” electricity

“Germany is an international trailblazer”

A certificate from the Nobel Committee adorns the wall in the office of Jochen Harnisch, Head of KfW Development Bank's Environment and Climate Competence Centre and the bank's Sustainability Officer. His work as lead coordinating author from 2000 onwards helped to clinch the Nobel Peace Prize for the Intergovernmental Panel on Climate Change (IPCC) in 2007. Dr Harnisch (47), who has a PhD in physics, and his 15 employees work to support KfW Development Bank's efforts in the fields of climate protection and adaptation to climate change.

Do we have a clear enough understanding of the impact of climate change to be able to implement the right measures?

We know that climate change is happening, but how exactly it will unfold in the future is still unclear. But this does not mean that we should simply sit back and wait. There are already significant deficits with respect to adapting to our current climate, and these will only become worse as time goes on. That's because adapting to climate change involves adapting to the existing variability of the climate as well as the anticipated change. The reliability of the forecasts for climate change varies from region to region. The trend at least is clear for

about half of the regions, for example with respect to levels of precipitation or the frequency of droughts. But this is not the case for the other half. This is because there is not as much data available in those areas, and the meteorological processes in tropical regions are often more complex than in our latitudes.

So the forecasts are particularly uncertain for those regions where many developing countries are to be found?

That's right, but the problem sounds worse than it is. We need to adapt to the current climate and the future climate change. There is a massive shortfall in investment in many developing coun-

tries. Adapting to climate change should not be considered as a separate topic, but rather as an integral part of good development and good planning.

Adapting to climate change is estimated to cost hundreds of billions every year. Who can pay for it?

It is difficult to put an exact number to the costs, but they will be high. It is not clear what qualifies as adaptation to climate change and what does not. The industrialised countries will bear some of the costs, as they recently reaffirmed at the “Financing for Development” conference in Addis Ababa. However, only some of the necessary investment can be financed via development cooperation. Good governance is required, as is the mobilisation of domestic tax revenues and their distribution for the benefit of the entire population.

Industrialised countries have achieved a remarkable standard of living by exploiting natural resources. The emerging economies are hoping



Climate protection and adaptation as a political goal

The Federal Republic of Germany has always been a trailblazer in the field of international climate policy. The German Federal Ministry for Economic Cooperation and Development (BMZ) has also been involved in climate protection for decades, and works with partner countries to adapt to climate change and promote the use of renewable energies and the conservation of forests.

“Our aim is to prevent the earth's temperature from rising by more than two degrees,” said Minister Müller. “We can still achieve this goal – but only if all countries work together, including the developing and emerging countries. Germany will provide strong support.”

www.bmz.de/en/what_we_do/issues/klimaschutz/index.html

to follow in their footsteps, but climate protection calls for limits on the use of natural resources. Does protecting the climate pose an obstacle to escaping poverty?

We should guide developing countries onto a low-emissions path to development. Their growing economies require large amounts of energy, and they often still rely on coal, gas, large hydropower facilities or nuclear power. Although there is a lot of money available for the transformation processes required to limit global warming to two degrees, it is by no means enough to make renewable energies the universal standard.

Morocco has built a large-scale solar power plant in Ouazarzate with support from the German Federal Government and other donors. Would decentralised facilities not make more sense than mega-projects?

The exemplary solar farm shows the potential offered by solar energy in a developing country with high levels of expertise and ownership, if international donors are involved. Decentralised solutions can make sense in particular cases for hospitals, schools and villages in remote locations. Decentralised supply is undoubtedly an important approach in

Africa in particular, but more as a starting point. As development progresses, centralised networks will continue to be built that allow fluctuating levels of consumption and generation to be managed efficiently. We should implement the one without neglecting the other.

Many of KfW Development Bank's efforts to protect the environment promote technological solutions. Is that enough?

We will not be able to produce the emissions trends required to achieve the two-degree target without changing our way of life, even if this has often not been said explicitly in the past. The use of climate-friendly technology alone can help prevent the worst of climate change, but no more.

How can compensation payments for avoiding emissions such as the REDD system (Reducing Emissions from Deforestation and Forest Degradation) help protect the climate?

The trading of climate protection certificates has not produced the desired effect. The REDD system was developed to combine the protection of forests and the climate. The idea is to help create specific framework conditions for each country instead of focusing on individual areas in need of protection, in order to effectively put an end to deforestation.

KfW is one of just 20 institutions around the world that are developing programmes and projects for the Green Climate Fund (GCF). To what does it owe this honour?

We have worked hard to earn it, by striking the right balance of innovation, widespread impact and reliable implementation. Our partners in developing countries know that we will not patronise them, and that we will support them with our expertise and stamina.

What opportunities does the fund offer?

The initial capitalisation has already been secured thanks to the fact that the industrialised countries have issued commitments and the first contributions

have been paid in. The projects that will be implemented will be decided at the next meeting of the GCF board in November. The tools that the GCF will have at its disposal are not yet clear. Will they be more in the form of loans or grants?



KfW Photo Archive / Jörg Böhling

Renewable energies play an important role in meeting the two-degree target.

The long-term relevance of the GCF also depends on the political momentum following the COP 21 international climate conference in Paris.

Germany has decided to implement an ambitious energy turnaround. Does it serve as a model for other countries?

Germany is an international trailblazer. No other country follows such a consistent approach or provides as much funding for climate protection and adaptation in developing countries. I would like us to find the courage to set our own course instead of simply looking to international processes. We should work with partner countries with pragmatism and flexibility to develop specific approaches that are acceptable for the local decision-makers and population in the long term. //

Questions by Charlotte Schmitz.



KfW Photo Archive / Jens Steltingaesser

Dr Jochen Harnisch is Head of the Environment and Climate Competence Centre and Sustainability Officer at KfW Development Bank.

Assistance in times of drought

They have no other choice: in the grip of drought, African farmers slaughter their cattle in order to get through times of need. Once the drought is over they are faced with ruin. But now there is an alternative. An innovative form of insurance that allows governments to protect themselves against the consequences of drought has successfully completed its first trial period.

The year did not get off to a good start for the people of Senegal. The rains did not come. Drought was widespread, and cattle had nowhere to graze. People's livelihoods were threatened. Seventy-eight percent of the Senegalese population make a living from agriculture. And Senegal is not unique. Developing countries

are hit particularly hard by the consequences of climate change, and often lack the resources for adaptation measures. KfW Development Bank has launched the world's first drought insurance together with the UK's Department for International Development, the African Risk Capacity Agency and some African countries.



When the spring runs dry: payments under drought insurance help bridge times of need.

"The political will was there," said Dr Thomas Duve, Head of KfW's Southern Africa and Regional Funds department. "All that was lacking were the necessary structures and corresponding resources." KfW Development Bank provided EUR 50 million on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ) for the establishment of an insurance company (African Risk Capacity Insurance Company Limited, ARC Ltd.). A total of USD 170 million was mobilised for the new kind of insurance, and is available to governments that have worked out detailed emergency aid plans.

This insurance helps farmers when the rains fail to arrive and the cattle are going hungry. It responds much faster than traditional emergency aid, because it is possible to foresee when droughts will occur. This is possible through modern technology: two satellites in space constantly measure rainfall and generate forecasts of when harvests will fail and feed will be in short supply. That is when the emergency plans defined in advance by the participating states come into effect.

"While conventional emergency aid generally does not take effect until seven to nine months after the start of the drought, ARC Ltd. can respond much faster," Dr Duve said in praise of the new system. Those affected receive payouts under the insurance scheme within as little as 120 days. Drought insurance has successfully completed its first trial period. At the start of the year, ARC Ltd. paid out a total of around USD 26 million to three different countries, with USD 16 million going to Senegal. This allowed the people there to pay for food and fodder for cattle, bridging the period until traditional forms of emergency aid started to take effect. (cas) //



A safe refuge from cyclones

Climate change is having twice the impact on Bangladesh: the country is one of the most densely populated on the planet, and experiences natural disasters very frequently. The number of these disasters is rising due to changes in the climate. Half a million people have died in Bangladesh since the 1960s as a result of cyclones alone. Strong storms and frequent flooding are forecast for the decades ahead.

Shelters along the coast offer a safe refuge from cyclones. KfW Development Bank has provided EUR 52 million to promote 450 of these shelters since 1991 on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ). Fifty shelters are currently in the process of being built with finance from the BMZ's energy and climate fund. They are used on an everyday basis as primary schools and market halls. In rural regions they are often the only public buildings, and therefore a popular community meeting place. In the event of a catastrophe they can save lives. (cas)

Electricity flows through “green corridors”

New power lines for more renewable energy in India.

Demand for electricity is constantly increasing in India. A growing population and dynamic economy on the sub-continent require energy. Around 25 percent of the population – almost 300 million people – still have no access to electricity.

That is why the country is working at great speed to expand its electricity networks and power plants. Two years ago, the German Federal Government promised up to a billion euros to ensure that renewable energies play as big a part as possible in this growth. This was the basis on which KfW Development Bank put together one of the biggest loan packages in its history.

Loan agreements with a total volume of EUR 500 million have already been concluded with the Indian power company “Powergrid”, as well as contracts with a total volume of EUR 125 million with two regional suppliers. Further loans to a total volume of one billion euros are set to follow in the next one to two years. The money is being used to finance new switchgear substations, power line systems and transmission lines especially for transporting renewable energy in India, or “green corridors”.

These lines will be used to feed electricity generated using solar, wind and water power into the public grid in seven of India’s federal states. The share of India’s electricity mix accounted for by renewable energies is to rise from 12 to 15 percent by the year 2020. Another roughly 16 percent stems from large hydropower plants in the Himalayas. Supporting the expansion of renewable energies in India makes an important contribution

to the international climate protection efforts. This is because the country is currently one of the world’s biggest CO₂ emitters behind China and the US, with increasing tendency. Two thirds of its electricity still comes from fossil fuels, and the power plants are often outdated and inefficient.

“Continuing the expansion of solar and wind power in particular can put a halt to the rising emissions of greenhouse gases in India,” said KfW project manager Oliver Jünger. According to Mr Jünger, however, the essential thing is to make sure that climate-neutral, “green” electricity is directed to where it is needed. That is because 80 percent of it is generated in just seven of the country’s 29 federal states (Gujarat, Andhra Pradesh, Himachal Pradesh, Maharashtra, Karnataka, Rajasthan and Tamil Nadu). These regions are concentrated in the south

and west of the country. From there, the electricity has to be transmitted to the major economic centres where demand for power is high. “The transmission network is crucial. The green electricity can only get to the end consumers with new electricity lines. The expansion of the green corridors in India is one of the most ambitious network infrastructure projects in the world,” Jünger stressed.

A total of more than 6,500 kilometres of new power lines are being laid and more than 80 switchgear substations installed or renewed in India with financing from German Financial Cooperation.

The loan agreements concluded by KfW with its Indian partners to date are alone financing networks that transmit enough green energy to meet the average annual electricity requirements of eleven million Indians. (*miru*) //



Power lines in the federal state of Andhra Pradesh.

KfW Group/Oliver Jünger

REDD compensation payments saving the rainforests

One payment, double the benefit: combining the conservation of forests with climate protection is the trick that makes REDD so useful. REDD stands for Reducing Emissions from Deforestation and Forest Degradation - an international system of payments that rewards the conservation of forests. The German Federal Government is supporting this innovative approach to financing with the "REDD for Early Movers" programme in order to help the Brazilian federal state of Acre implement REDD.

The Brazilian federal state of Acre in the Amazon basin is home to a very special treasure: 14 million hectares of untouched rainforest. The 1980s saw trade union members fighting cattle farmers and logging companies in order to protect the forest. One of them, rubber tapper Chico Mendes, sadly made the headlines by paying for his commitment with his life. Since then, the government has developed an innovative policy that has enabled it to sharply reduce the rate of deforestation in recent years.

The destruction of forests is one of the biggest sources of greenhouse gases in the world, accounting for a share of approximately twelve percent. That is why protecting forests is key to protecting the climate. The REDD concept involves international compensation payments for the proven reduction of CO₂ emissions caused by deforestation.

The German "REDD for Early Movers" (REM) programme, which was presented at the Rio+20 conference in June 2012, pays out compensation for the climate protection efforts of pioneering regions that have already reduced their deforestation rates on their own initiative. Satellites are used to monitor how the forest coverage and therefore the emissions for a particular year have changed in relation to a historical average. In the Brazilian federal state of Acre, for example, five US dollars for every tonne by which emissions are cut are added to a state promo-



REDD rewards the Brazilian federal state of Acre for putting a stop to large-scale forest clearance, and helps to further reduce the rate of deforestation.

tional fund. The funding for the REM programme in Acre is provided by the German Federal Ministry for Economic Cooperation and Development (BMZ) and the International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB). It is managed by KfW Development Bank. Compensation has thus far been paid out for a reduction in emissions amounting to 3.05 million tonnes, which is the vol-

ume of CO₂ emitted by about 1.5 million cars each year in Germany.

There are many reasons for the outstanding success of the programme, which can above all be ascribed to the government's far-reaching political measures. The government invested in forest conservation for decades, both by creating incentives for the sustainable use of land and by reinforcing government regulation. The establishment of an innovative state system to promote environmental services called SISA (Sistema Estadual de Incentivos a Serviços Ambientais), which is considered one of the leading systems of its kind in the world, facilitated the creation of REDD with its performance-based payments.

A third of the REM funds that flow into Acre as a result of the payments into the state fund are used to further expand the SISA system and the fight against deforestation. Most of the money goes to local people, especially small farmers, rubber tappers and indigenous groups who make a particularly important contribution to preserving the rainforest. This results in an income from the sustainable use of the forest. 4,250 families have benefited from the incentives to date, and another 500 indigenous families have received support from a dedicated indigenous people's programme.

This means that the REM programme provides reimbursement for past climate protection efforts on the one hand while also creating incentives for further reducing the rate of deforestation and sustainable development on the other. Ecuador and Colombia's Amazon region are now following Acre's example and are in the process of qualifying as early movers in connection with the REM programme. (cas) //

Making production climate-friendly and sustainable

Using less water or electricity, or using plant remains as fertiliser, not only conserves natural resources but also makes economic sense. DEG (Deutsche Investitions- und Entwicklungsgesellschaft mbH), a subsidiary of the KfW Group, advises companies in developing and emerging economies on how to make their production activities sustainable. To this purpose, it not only offers energy efficiency checks, but also checks regarding the use of resources such as water, land and fossil fuels.

On the plantations of an Ecuadorian banana producer, banana stems are chopped up and made into compost. This produces an effective, natural fertiliser that can be spread over the fields again. Before, the stems had simply been left among the bushes following the harvest and therefore did little to improve the fertility of the soil. Now the green waste is collected and composted. This innovative and easy measure allows the use of artificial fertiliser to be reduced, which also significantly reduces costs.

The innovation is the result of a resource efficiency check that DEG financed for its clients. The advice focused on the areas of land fertility and biomass, after which the consultants drew up concrete proposals.

DEG has offered energy efficiency checks for some time. The number of services provided was added to on a step-by-step basis. Now, in addition to the advice the planning, implementation and the monitoring of specific measures are supported. DEG has conducted around 40 energy efficiency checks since 2010. It has also offered resource efficiency checks since mid-2014, with seven clients in the agricultural sector taking advantage of this service to date. The advice is for the most part provided by experts from partner companies such as Siemens, Bayer Technology Services, Fichtner or Wageningen University in the Netherlands. The

volume of the investments proposed on the basis of the efficiency checks ranges from USD 30,000 to USD 500,000. They are usually amortised within the space of three years. The investments are also a contribution to climate-friendly business.

“We are proud to build energy-efficient hotels and help protect the environment in the process,” declared one DEG client. After having received advice from DEG, the commercial developer of three hotels in Latin America decided to use energy saving light bulbs and a photovoltaic facility. The costs of USD 375,000 will be reclaimed after an estimated period of

five years. Energy consumption will be reduced by 414,000 KWh in relation to the original planning.

In addition to these advisory services, DEG also offers financing for investments in protecting the climate and the environment as well as renewable energies such as wind and solar power. In 2014 alone, new commitments with a total volume of EUR 691 million were entered into for these kinds of projects initiated by private companies. The financing commitments entered into in 2014 also facilitate the annual production of 4,000 GWh of green electricity, which supplies almost 5.5 million people. (cas) //



DEG advises companies on how to use water sparingly.

Breakwaters for Tunisia

According to forecasts, global warming will cause sea levels to rise not only in the far-off South Seas but also in the Mediterranean. This is a threat for a country like Tunisia, where the coast is home to around two thirds of the population, as well as to the country's most important economic centres. The beaches are also the bedrock of Tunisia's tourist industry, which is an important part of its economy. That is why KfW Development Bank is supporting the protection of the North African country's coastline on behalf of the German Federal Government.

Kerkennah is considered an insider tip among globetrotters. The low-lying island off the coast near the industrial city of Sfax is an untouched gem. But the almost undeveloped beaches are at risk from the sea, which is constantly gnawing away at the coastline. Every flood and storm surge carries away part of the land, which is irretrievably lost. A technology that has been protecting the beaches in the north of Germany for centuries is now to be used here: breakwaters, dykes and spurs will absorb the power of the sea and protect the valuable sand. There are also plans to replenish beaches, stabilise dunes using plants and construct artificial reefs.

As much as 127 kilometres of Tunisia's coast is currently threatened by erosion. KfW Development Bank is helping the Tunisian coastal protection agency APAL (Agence de Protection et d'Aménagement du Littoral) save the beaches. To this end, the German Federal Ministry for Economic Cooperation and Development has provided a total of around EUR 20 million from the German Federal Government's energy and climate fund in order to promote national and international climate protection efforts. The island of Kerkennah and the

beaches of RafRaf are just the beginning, to be followed by sections of coastline in the southern stretch of the Gulf of Hammamet between Hergla and Sousse, as well as the Boughrara Lagoon and Soliman Sebkha wetlands. With their mix of fresh and salt water, the lagoons are important places to spend the winter and rest for birds such as the barnacle goose, flamingo and avocet. The sensitive ecological balance of these wetlands is jeopardised by the anticipated rise in sea levels, which threatens to salinate them. By preserving the lagoons, the protection of the coastline therefore helps maintain biodiversity.

Tunisia's coastline is developed very close to the beach. Rising sea levels put the settlements at risk.



KfW Photo Archive/photobek.net

Rising sea levels also threaten North Africa's already limited reserves of drinking water. What surface water is available is increasingly polluted. Tunisia's water reserves are already overused. Water is set to become increasingly scarce as a result of climate change, as evaporation rates will increase and precipitation levels fall. If rising sea levels were to force salt water into springs, the supply of drinking water would deteriorate even further. Floods would result in the salinisation of fertile farmland. This is another reason why protecting the coast in Tunisia is an important investment in the future.

The coastal protection measures are set to benefit around 400,000 of the region's inhabitants directly. From a long-term perspective the measures play an important part in supporting tourism, which accounts for seven percent of the country's gross domestic product. In addition to tourism, the coastal protection measures also benefit industry, fishing and agriculture. (cas) //

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