

# D+C

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Soft-drink corporations  
resent Mexico's  
anti-diabetes policies

## USA

ODA-lessons that  
Donald Trump  
should learn

## SDGs

International community  
must become  
learning system



# Water

## Water issues

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Due to climate change and overexploitation of its water resources, Lake Chad is shrinking. The impacts on Nigeria are devastating, as journalist Damilola Oyedele reports. **PAGE 21**

### After us, the deluge?

Global warming is changing the oceans' rate of evaporation as well as the frequency and intensity of rainfall. Accordingly, extreme weather events occur more often. Deforestation and other kinds of destructive human action compound the problems. In many places, people and ecosystems suffer due to too much or too little water. Daniel Nordmann and Till Below of GIZ discuss adaptation options. **PAGE 24**

### Every farmer needs a toilet

Access to safe drinking water and sanitation is a Sustainable Development Goal (SDG). Ethiopia and Malawi still have a long way to go. Ibrahim Awol of an Ethiopian district's health office and Malawian journalist Raphael Mweninguwe assess matters. **PAGES 28, 31**

### Drinking water from the desert

The world's biggest reservoirs of fossil freshwater lie below Libya's desert. Through an extensive pipeline system, these aquifers provide the country with water for agriculture and human consumption. Moutaz Ali, a journalist, tells the story of humankind's largest irrigation scheme. **PAGE 34**

### Long-term strategy

South Sudan suffered four decades of war and is now haunted by yet more civil strife. Despite adverse circumstances, the GIZ is attempting to improve drinking water supply. It is also doing its best to make better governance possible in the long run. Anke Peine and Christian Grünhagen of GIZ elaborate what the agency is doing. **PAGE 36**

### Global danger

Hyderabad is a centre of India's pharmaceuticals industry, and German experts found multi-resistant bacteria (MRB) in its wastewater. Christoph Lübbert, a physician from Leipzig University, took part in the research. He says that MRB pose global threats and that awareness must grow among the general public, in private-sector companies and at policy-making levels. **PAGE 38**

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# Water transition

Without water, there is no life. It could not be more fundamental. Human beings die after a few days without drinking. Water is the most common element on earth and the most important food. Yet even though three-quarters of the earth's surface is covered with water, hundreds of millions of people lack sufficient or clean drinking water. Not all of them die. But many suffer since lack of water reduces vital body functions. People who have only very little water tend to use it only for drinking and cooking. Other things such as personal hygiene, laundry and dishwashing come second – and sometimes don't happen at all. Where there is no water, there is no proper sanitation either, so bacteria flourish, and diseases spread easily.

The topic is no longer being neglected internationally. In 2000, the UN adopted the Millennium Development Goals (MDGs), which included access to safe drinking water and sanitation, and in 2010 it declared these things to be human rights. Animals and plants need water too. When farmers lose their livestock or the yield of a whole season, they lose their most important assets and their livelihood is threatened. Where irrigation is available, people benefit. Water does not only mean life, but wealth too.

It is no surprise that this precious resource has always been the cause of conflicts – and things will probably get worse in the future. Water is said to be something like the new oil: in great demand, but scarce, and thus profitable. In view of the growing world population and climate change, distribution issues are becoming more pressing in many world regions, so tensions are set to escalate, pitting the rich against the poor, manufacturing against agriculture and commercial interests against the common good. The trend towards privatising water is particularly worrisome. Humanity must adapt to the impacts of climate change, distribute resources fairly and ensure sustainability. These issues are of global relevance. They affect people in prosperous countries with no apparent supply bottlenecks too. Wealthy nations exacerbate water scarcity in other places by importing virtual water – the water needed to produce the coffee and other agricultural commodities they consume. Germany's so-called external water footprint, which measures its water use in foreign countries, is bigger than its internal water footprint, which measures its water use at home.

Agriculture accounts for the greatest use of water – and especially farms of industrial scale do so. Meat production is particular water-intensive. "Third-world products" such as cotton, palm oil or cacao also require a lot of water. Indiscriminate water-use fuels conflicts, for example in the Gaza Strip. It also leads to the salinisation, for instance of the Aral Sea, and destroys the ecological balance of rain forests. In order to rise to the global responsibility, humanity will do well to consider demands the UN has made. They include subsidising more efficient irrigation methods and extensive agriculture. Renewable electricity generation should get preference, moreover, since it requires much less water than nuclear, coal and gas-powered technology. Pesticides and other chemicals should be used sparingly in order to contaminate less groundwater. The international community needs more and better sewage treatment. So far, most wastewater – including from industries – pollutes rivers and oceans untreated. Groundwater resources must be protected. In short, we do not only need a global energy transition, but a water transition as well.

► You'll find the contributions of this focus section as well as other related ones in the briefings section at: [www.dandc.eu/node/3051](http://www.dandc.eu/node/3051)



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## Debate



### Mozambique's "mini-war"

At the end of April, President Filipe Nyusi and opposition leader Afonso Dhlakama reached rapprochement on issues that triggered conflict in Mozambique. A ceasefire has lasted since Christmas. An end to the insurgent violence that has been rocking the country for three years thus seems to be in sight, argue Friedrich Kaufmann and Winfried Borowczak, two scholars, who know Mozambique well.

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## Tribune



### Mexico's sugar battle

Mexico has adopted a pioneering soft-drink tax to reduce obesity and fight the spread of diabetes. But the industry lobby is fighting back. It is even resorting to spyware, as journalist Sonja Peteranderl reports.

PAGE 14

### Enlightened self-interest

US President Donald Trump is not interested in official development assistance (ODA), as his budget proposals reveal. Scott Morris of the Washington-based Center for Global Development told Sabine Balk in an interview why ODA serves American interests and what the current administration should consider accordingly.

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## GLOBALISATION

# Shaking up the rural world

**Improving infrastructure and opportunities in rural areas is key to eradicating hunger and poverty. Entrepreneurship and job creation depend on a facilitating environment.**

By Ellen Thalman

Akinwumi Adesina, the president of the African Development Bank Group (AfDB), warns of a “disaster triangle” that is haunting his continent: poverty, youth unemployment and climate change. These phenomena make young people susceptible to extremist agitation and even to recruitment by terrorists, he says. He would like to see something like a “poverty eradication index” that holds officials accountable for the goals they have set.

The crucial challenge is to create opportunities for young people, especially in rural areas. In Africa, some 440 million young people will join a highly competitive labour market between now and 2030. So far, there simply are not enough jobs. Well-paying employment is hard to find in the fast-growing cities and even harder to find in the rural areas, where most Africans still live. As populations grow, food demand grows too, however, and accordingly, rural areas may benefit from providing food to cities. Agripreneurs can be quite successful,

even while masses of African smallholder farmers struggle to keep their heads above the water, and many are stuck in subsistence farming. Noi Paulina Selepe from Lesotho is an example. She was trained as a teacher, but has become a poultry farmer. In just a few years, Selepe has grown her poultry business to producing several thousand chickens every month. She did so by joining forces with local farmers to supply hotels and supermarkets in her region.

She is now the secretary general of the National Lesotho Farmers Union, representing 36,000 farmers. “It is my dream to change other people’s lives,” the teacher-turned-livestock farmer says. She sees opportunities for young people who make smart investments in agriculture and adds that they can exploit technological advances.

Entrepreneurship matters, agrees Muhammad Yunus, the Nobel Prize winner and founder of Grameen Bank, the pioneering microfinance institution from Bangladesh. “Human beings are entrepreneurs,” he pointed out at the conference “One World – No Hunger. Future of the rural world”, which was organised on behalf of Germany’s Federal Ministry for Economic Cooperation and Development (BMZ) in Berlin at the end of April. In Yunus’ eyes, many of the millions of young Africans looking for liveli-

hoods can start businesses, and such businesses deserve to be promoted.

Tony Elumelu, one of Nigeria’s most successful businessmen, sees things in a similar way. He established a foundation in 2010 to invest \$ 100 million over 10 years in young African entrepreneurs. The foundation gives out no-strings-attached seed capital and offers a mentoring programme for applicants with good ideas. Elumelu says: “Of course, Africans have to lead.”

Entrepreneurs need a suitable environment, however. Mo Ibrahim, the Sudanese-British entrepreneur and philanthropist, points out that things that matter include good governance, human rights, protection against discrimination as well as reliable infrastructure. “How can you do business in a place with no electricity?” he asks.

For too long, African economies have depended primarily on commodity exports. However, money made in sectors such as mining, oil and gas was not used to diversify economies, Ibrahim says. What is needed now is to shift the focus to the rural sector and take a long-term view. Services must be provided, he argues, since nobody wants to live in places “where there are no lights, no broadband, no good schools, no good medical facilities”.

The conference participants adopted a document called the “Berlin Charter” (see box, p. 5). It calls on G20 governments to promote “transformative change”. The key, they say, is investment in rural areas to support infrastructure and services, along with large-scale, active labour market policies. The aspiration is to lift at least 600 million people out of hunger by 2025.

Creating jobs and improving the long-term outlook for young people in rural areas is one of the goals of Germany’s current G20 presidency. “Only strong rural areas will be able to prevent hunger crises in the future and offer truly good prospects to young people,” says Gerd Müller, Germany’s federal minister for economic cooperation and development. “The future of humankind will be decided in the world’s rural areas.”

According to him, it is possible to eradicate poverty and hunger, reduce the exodus from rural areas and safeguard sufficient food supply for a growing world population if rural areas get innovation and new impetus. To make globalisation fair, policy-makers must ensure that rural areas do not lose out.

**Supplying fresh vegetables to urban people offers livelihood opportunities – for example in Nairobi.**



## Tangible goals

Governments should put in place agricultural, nutrition and anti-poverty policies to “lift at least 600 million people out of hunger and undernutrition” and “cut youth underemployment at least by half “ by 2025, according to the Berlin Charter. One demand is that the G20 and the UN act accordingly.

The charter calls for “significant, quantified and time bound targets” for creating job opportunities in rural areas. Priorities include:

- ending the ongoing food crises in East Africa, the Horn of Africa and elsewhere,
- boosting agricultural support in areas affected by drought and other impacts of climate change,
- improving young people’s access to education and vocational training and
- expanding access to information and communication technology.

The charter is part of Germany’s 2017 G20 presidency. It is in line with the United Nations’ Sustainable Development Goals (SDGs).

To achieve the charter’s goals, stakeholders must cooperate with the grassroots communities they aim to help, paying particular attention to women and youth, who tend to be neglected in the rural areas of developing countries. Young people, the charter argues, should be supported as business entrepreneurs, for example in agriculture.



Kenyan cut flower farm – rural businesses can become included even in global supply chains.

According to the charter, smallholder farms and small-scale fisheries have a big role to play, not least because of their indigenous local knowledge. A “bottom-up” approach to innovation requires local players and local governments to get a bigger say in decision-making. And youth organisations, women’s groups, farmer unions and civil society in general must be encouraged in holding government agencies accountable, the charter states. All too often, they are discouraged from doing so.

With many people leaving rural areas to seek jobs in cities, development strategies for rural areas must be integrated with those of urban areas.

Cities and towns matter as intermediaries in rural development and can help to address regional inequality. The charter is in favour of infrastructure investments and business incentives that contribute to linking smallholder farms to markets. On the other hand, the document emphasises that those who are unable to support themselves must be protected and guaranteed access to the basic human rights of food, water and sanitation.

The private sector, in particular, needs to make investments that help lift people out of poverty in the long run. It must support socially viable businesses that serve rural areas and promote youth em-

ployment, providing access to financial services, reliable contracts and fair pay. Moreover, the charter wants it to consider environmental impacts. Innovative finance such as micro-venture capital and guarantee fund can help modernise rural areas and ensure sustainable investments.

### LINK

**Berlin Charter, 2017: Creating opportunities with the young generation in the rural world.**  
[http://www.bmz.de/de/zentrales\\_downloadarchiv/themen\\_und\\_schwerpunkte/ernaehrung/170427\\_Berlin-Charter-en-final.pdf](http://www.bmz.de/de/zentrales_downloadarchiv/themen_und_schwerpunkte/ernaehrung/170427_Berlin-Charter-en-final.pdf)

ODA

## Cross-cutting issues

Global development issues are getting ever more attention in Germany. The government regards development cooperation as more important than it did some years back, and the media and general public are more interested too. One reason is the refugee crisis. Official development assistance (ODA) is meant to be part of the solution.

By Katja Dombrowski

The budget of the German Ministry for Economic Cooperation and Development (BMZ) has reached a record level. With €8,5 billion this year, it is about one third larger than it

Germany is the world's second most important ODA donor behind the USA. For the first time ever, the Federal Republic fulfilled the decades old pledge of spending at least 0.7% of its gross national income on development aid in 2016. Critics have pointed out that this level was only reached because spending on refugees inside Germany counts as ODA. Otherwise, the share would have been only 0.52% of GNI.

In the next legislative term, Gerd Müller, the minister of economic cooperation and development, wants to achieve the 0.7% goal without domestic refugee-re-

ler said when the Federal Government's 15th report on development policy was launched in Berlin in April.

The report is published every four years, elaborating the government's action in the field of international development and outlining future ambitions. Müller sees the growing world population and climate change as major global challenges that development policy must respond to. His particular concern is to make globalisation fair. A guiding principle of his three and a half years in office so far, according to Müller, has been: "Global markets need rules."

### FOCUS AFRICA

Müller points out three new priority areas that the ministry defined under his rule: rural development, education (especially vocational training) and health care. For instance, 14 so-called Green Innovation Centres were set up, helping to improve the economic situation of 800,000 smallholders, as the report spells out. Moreover, the BMZ is promoting a more practice-oriented approach in higher education. An example is the pilot project called "Entrepreneurial Universities in Africa". Based on lessons learnt from the Ebola epidemic of 2014, the Federal Government came up with a six-point plan for better crisis response.

In bilateral cooperation, Germany mainly focuses on Africa. This is reflected in the "Partnership with Africa" that Germany is promoting under its G20 presidency, and in the "Marshall Plan with Africa" that Müller favours (see D+C/E+Z e-Paper 2017/02, p.6 and 2017/05, p.20). Cooperation is meant to be done in partnerships at eye level. In the foreword to the report Müller writes: "The African countries must – like all our partner countries – assume greater responsibility and determine their future autonomously."

Generally, Müller wants all policy-makers to consider sustainability and global development. In his eyes, these are cross-cutting challenges on which all policy areas have an impact – from economics and trade to environmental affairs and agriculture. Foreign and security affairs are affected too. Additionally, he wants to foster private investments and sees the potential for a "much stronger role" of the EU. In any case, the BMZ is not a marginal ministry, but increasingly taking centre stage.



International development programmes play an ever more important role – not least because of the refugee crisis. This woman was saved in the Mediterranean Sea and brought to Italy.

was at the beginning of the parliamentary term three and a half years ago. In total, the government's ODA expenditure is even greater. In 2015 it amounted to almost twice the current BMZ budget (€16,2 billion). ODA spending is set to rise further.

lated expenses. In his view, however, ODA can do more to tackle the root causes of flight and migration. "Hundreds of thousands more would have come to Germany without the helping hand of German ODA, and such aid must be reinforced," Mü-

GLOBAL AFFAIRS

# Tangible advice



Health is on the G20 agenda: a patient in a Bangladeshi hospital.

**G20 policymakers' legitimacy hinges on rising effectively to global challenges such as worsening inequality. Doubts are growing whether the informal group is up to the task. The T20 – a group of think tanks based in G20 countries – offer research-based policy advice.**

By Axel Berger

The G20 has broadened its agenda beyond conventional economic and fiscal issues. The group of the 19 most important economies plus the European Union is now also dealing

with issues such as employment, climate protection and international development. The current German presidency, moreover, has put migration, flight, health and cooperation with Africa on the agenda as well.

The summit in Hamburg in July will be challenging. Huge protest rallies are expected. Moreover, Germany's Federal Government will have to manage the negotiations among the heads of state and government diligently. Controversies are likely, not least because US President Donald Trump has a track record of challenging principles that used to be shared by all G20 members, including the promotion of free trade and climate protection. Controversy might thwart the group's effectiveness and thus undermine its legitimacy.

Think tanks based in the G20 member countries must rise to the challenges too. It is their job to make proposals concerning the solution of global problems.

For this purpose, they are increasingly networking, cooperating and sharing insights from various countries and scientific disciplines. Every year, a different G20 government assumes the presidency. Accordingly, the scholars' networks must respond to changing policy priorities whilst ensuring continuity at the same time. Moreover, the think tanks are important players in domestic debates and can contribute to disseminating ideas in their home countries.

Think tanks from G20 countries have been cooperating since 2012. The group is called Think20 (T20) and is designed to

draft policies. In the context of the German G20 presidency, the T20 has been reorganised. The focus was on boosting the networks of the institutions involved, improving their systematic exchange with the G20 and ensuring continuity.

As an innovation, the T20 Africa Standing Group was established. It links African think tanks to peers in the G20. The T20 Africa Standing Group will meet regularly and advise the G20 in regard to African affairs. The involvement of researchers from emerging markets was boosted thanks to funding from Germany's Federal Ministry for Economic Cooperation and Development (BMZ). The German Development Institute/Deutsches Institut für Entwicklungspolitik (DIE) and the Kiel Institute for the World Economy (IfW) coordinated the process.

## NEW T20 ARCHITECTURE

In 2016/17, T20 activity was geared to creating topical task forces in order to draft evidence-based policy proposals. The task forces not only tackle conventional questions of economics and fiscal policy, but also consider achieving the Sustainable Development Goals, inequality, sustainable development in Africa and climate change. As the network is independent, it is free to deal with policy issues of great future relevance even though consensus on them may not yet seem feasible in the G20 context.

The task forces produce policy briefs in which teams of scholars make tangible proposals. More than 60 policy briefs have been prepared ahead of the Hamburg summit so far. They were submitted to the G20's working groups and discussed with policymakers.

The policy briefs are publicly available on the G20 Insights platform. This platform is meant to become a lasting node which will serve the T20 community for many more G20 presidencies after the current German one. The task forces too are designed to continue working. They are set to become a network of expertise on global challenges and national policy options.

## LINKS

**G20 Insights Platform:**

<http://www.g20-insights.org/>

**German T20 coordination:**

<http://www.t20germany.org/>

# Managing refugees and migration

Refugees in Idomeni,  
Greece in March 2016.

Many countries are struggling to cope with the growing challenges posed by refugees and migration. A coherent policy framework is needed to deal with the issues at a global level, especially in view of changing migration patterns, argue scholars from the German Institute for International and Security Affairs (Stiftung Wissenschaft und Politik – SWP).

By Lea Diehl

Governments tend to be ambivalent in regard to migration, write SWP experts Stefan Angenendt and Anne Koch. On the one hand policymakers consider migration policy a national issue, but on the other hand, they know their nations cannot rise to the challenges on their own anymore. In a recently published study, the two authors argue that migration and flight are becoming inter-twined as migrants and refugees often use the same routes. The authors use the term “mixed migration”.

Angenendt and Koch note that existing regulations do not fit mixed migration. According to the Geneva Refugee Convention, signatory countries are obliged to protect refugees. However, the decision whether or not to accept migrants is a matter of national sovereignty and depends on national interests.

The authors bemoan the fragmentation of relevant institutions and agreements. Some international agreements apply to the regional level, others are bilateral. The scholars appreciate some improvements, however, for instance that migration and flight figure in the context of the Sustainable Development Goals (SDGs).

The authors see several options for re-organising global migration governance and assess the respective advantages and disadvantages:

- One option is to expand the existing architecture and regional capacities. This approach would serve trust and facilitate the definition of shared standards. The downside, according to the authors, is that global formats such as the International Or-



ganisation for Migration (IOM) would not be enhanced.

- Another option is to turn the IOM into something like a world migration organisation. The scholars admit, however, that it would be problematic to put a single institution in charge of migration issues.

- A third option is to set up something like a UN migration secretariat which could be based on the existing architecture. Angenendt and Koch warn however, that such a secretariat must not compete with the IOM.

What kind of rules are needed in the destination countries and those of origin, depends on the specific kind of migration, according to the SWP study. It points out that well-regulated voluntary migration offers many opportunities. Remittances, for example, can boost the development of countries of origin. Such financial flows can even compensate for brain drain in the education and health sectors. The host countries benefit too, as migrants do valuable work that would otherwise not be done.

Involuntary migration, however, can put development at risk, the SWP scholars warn. In their view, developing countries and emerging markets are affected in particular as they have admitted 89% of international refugees and are home to 99% of

all internally displaced people. They add that the impacts of flight on development are under-researched.

## DEVELOPMENTAL IMPLICATIONS

A normative and institutional reorganisation of global migration governance must rise to five developmental challenges, according to Angenendt and Koch:

- The interests of host, transit and home countries must be balanced fairly.
- The fundamental rights of refugees and migrants must be protected; non-discrimination as well as inclusion in economic and social life are essential.
- Minimum standards concerning migration and integration must be defined and monitored.
- Safe routes for flight and migration are needed.
- Guidance must be provided for local policymaking concerning integration and re-integration.

## REFERENCE

Angenendt, S., and Koch, A., 2017: *Global Migration Governance (only available in German)*.

[https://www.swp-berlin.org/fileadmin/contents/products/studien/2017S08\\_adt\\_koh.pdf](https://www.swp-berlin.org/fileadmin/contents/products/studien/2017S08_adt_koh.pdf)





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## AUTHORITARIANISM

# Post-referendum repression

**Turkey's government is hounding opponents. Shortly after its narrow – and disputed – referendum victory in April, it extended the state of emergency and ran yet another purge of the police. The media had been silenced before the referendum and cannot hold authorities accountable anymore.**

By Hans Dembowski

Turkey's ranking is 155th of 180 countries in the World Press Freedom Index that Reporters Without Borders published in April. One year ago, it had been 151st.

Since late 2012, the international non-governmental organisation has been calling Turkey “the world's biggest prison for journalists”, indicating that 72 media personnel were being detained at the time. In the meantime, the number had risen to 160, as Kamil Taylan, a Turkish-German TV journalist, told the independent Round Table for Intercultural Media-Dialogue in Frankfurt at the end of April.

All of the accused media workers are blamed for terrorism, according to Taylan, although the criminal charges are flimsy. There is neither proof of media workers being members of illegal groups nor evidence of explicitly endorsing them, so they are

said to be guilty of displaying “supportive attitudes”, for instance on Twitter. Moreover, Taylan reports, many charge-sheet paragraphs are identical and must have been compiled in a copy-and-paste manner.

Typically, the accused journalists are accused of supporting both the Kurdish PKK and the Gülenist movement, Taylan points out. To independent observers, that claim does not make sense. The PKK and the Gülenists do not have much in common, apart from opposing the AKP government (see D+C/E+C e-Paper 2017/02, p. 28). Obviously, dissent now equals terrorism in the eyes of the Turkish government.

“There simply is no rule of law in Turkey”, Taylan says. Erkan Pehlivan, another journalist based in the Frankfurt area, agrees. He reports that 4,300 judges and state prosecutors were suspended after the coup attempt last July, and many of them were detained. The government does not feel bound by the law, he argues, and appoints judges as it pleases. At one point, for example, it turned 900 lawyers into judges in a matter of hours, and 800 of them were AKP members or supporters.

In some ways, Pehlivan feels reminded of Turkey's brutal military dictatorship in the 1980s. Back then, security forces were

known to use white Renault cars to abduct dissenters, many of whom thus “disappeared” forever. In recent weeks, according to Pelivan, eight people were taken away in VW vans in Ankara, and reports of torture and rape in custody are occurring once more, as they did in the 1980s.

In the last days of April, the government carried out yet another purge of the police. As Pelivan summarises, 9,000 police officers lost their jobs, and 1,000 of them were immediately detained, with the government issuing arrest warrants for another 2,000.

President Recep Tayyip Erdogan promised to bring “stability” to Turkey if voters approved a new constitution in the referendum held on 16 April. He won a narrow victory, but obviously does not feel reassured. His government immediately extended the state of emergency that has been in force since the coup attempt.

According to the official data, a mere 51.4 % of the referendum ballots were cast in favour of the new constitution. The main opposition party, however, claims that the results were manipulated. International observers have also pointed out procedural flaws. European election monitors criticised a last minute decision by the government to allow unstamped ballots because this step undermined an important safeguard. They also pointed out that the referendum was an uneven contest, as the closure of media houses and the detention of journalists ensured that opposing voices were not heard.

Human Rights Watch similarly stated that the campaign took place “in a highly repressive climate”. Hugh Williamson of Human Rights Watch appealed to president and government to “end the state of emergency and the repressive campaign against the media and the pro-Kurdish political opposition.”

Erdogan seems unimpressed. His government blocked access to Wikipedia, the online encyclopedia, on 29 April and purged another close to 4,000 civil servants from ministries and judicial bodies.

## LINKS

Reporters Without Borders:

<https://rsf.org/en/turkey>

Human Rights Watch:

<https://www.hrw.org/news/2017/04/17/turkey-end-state-emergency-after-referendum>



Of 160 detained Turkish media workers, Deniz Yücel is the best known in Germany because he has the German citizenship and works for a major German newspaper.

## Revealing cultural diversity

Brazil, Latin America's largest country, has a very diverse culture. However, many local cultures of remote areas do not get much attention. Revelando os Brasis is an initiative that gives local people opportunities to tell others about their life.

"Revelando os Brasis" is Portuguese and means "revealing the Brazils". The idea was born 13 years ago at the Instituto Marlin Azul, a civil-society organisation. It launched the project in partnership with the Brazilian Ministry of Culture in order to promote audio-visual literacy in Brazil's rural areas.

The project allows people to tell their stories on video instead of writing essays or books. In this way, a mosaic of Brazil's cultural diversity is created. Revelando os Brasis helps amateurs from remote areas to produce 15-minute documentaries concerning their hometowns.

Every year, the project starts with a national bid asking amateurs to submit proposals. The target group are people from small towns with less than 20,000 inhabitants. On this basis, 20 to 40 participants are selected and invited to Rio de Janeiro for a two-weeks workshop which teaches them how to make a short film.

The selected persons differ in age and profession. Schoolteachers, journalists, farmers, students, bricklayers, sociologists and even a retired railway worker have been chosen. Their diversity is reflected in the videos, which deal with regional dialects, habits, dance and music styles and other things. They focus on "unnoticed" culture, which barely figures in mainstream media.

Many participants come to Rio for the first time, reports Beatriz Lindenberg, the founder of Instituto Marlin Azul. "Imagine people from rural areas seeing an escalator for the first time," she says. "We create an environment of sharing, solidarity and mutual assistance."

When the participants return to their cities after the workshop, they have written a screenplay, drafted a production plan and received the money they need to make the documentary. Within three



months, they must produce a short film.

"This project has changed my life completely," says Arthur Leite, who took part in 2010. "I was born in a village of Ceará state, and since I was a child, I wanted to do cinema, but it was impossible, just inaccessible." His documentary was about an architectural complex built of rough stone by a family in his home village.

The films are not only shown in the big cities' cultural centres. Since many of the participants' home localities do not have a cinema, the Instituto Marlin Azul organises free screenings. It uses trucks equipped with projectors, projection screens and loudspeakers, so villagers can see the documentaries that show Brazil's amazing cultural diversity.



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### LINK

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## PHILANTHROPY

# Praise individuals, not the trend

The Bill and Melinda Gates Foundation relies on vast funding from billionaires Bill Gates and Warren Buffet. Among other things, it contributes to stemming diseases and enhancing global food security. The Open Society Foundations rely on funding from billionaire George Soros. They promote human rights, democracy and science in many countries. The individuals concerned deserve praise for their generosity and efforts to promote the common good.

By Hans Dembowski

Nonetheless, the growing influence of philanthropy in public affairs is worrisome. Ultimately, it reflects the huge and growing divide between the super-rich and masses of voiceless people. In many ways, civil society is increasingly being dominated by the few individuals who can afford to set

up powerful agencies to promote causes they cherish.

In important ways, philanthropic foundations have more clout than conventional non-governmental organisations that depend on masses of members. The foundations can take risks and test new approaches, and they have the resources to scale up anything that works out well. They have lots of money and are free to spend it without complex administrative procedures or public accountability. The foundations are accountable to no one but themselves. Indeed, many conventional NGOs depend on huge donations from philanthropic foundations.

Extremely rich philanthropists want to change the world. They have easy access to policymakers. One of their strategies is to co-finance projects under the condition that governments contribute too. They thus influence public budgets decisions.

Such decisions are at the core of democratic deliberation. Democratically elected governments should have the resources they need to provide and protect public goods. If they depend on philanthropists instead, the question arises whether they are taxing rich people sufficiently.

One must ask, moreover, whether everything philanthropists do really serves the common good. In the USA, donations to conservative think tanks that push a radical anti-tax agenda or fund climate-change deniers are tax-deductible. They are part of the global sustainability problem, not the solution.

Yes, many different philanthropists pursue many different agendas. Nonetheless, the mega-donors have one thing in common. They tend to be economically conservative. After all, the system has worked for them. Not all amassed their wealth in fair market competition, however, as some inherited their fortune. Others, for instance Bill Gates, benefited from distorted markets. Microsoft, the software company he founded, enjoyed a monopoly-like position in the 1990s. It did not make the best software, but people kept buying it because everyone else was doing so too. Compatibility matters. It took anti-trust proceedings in the US and the EU to break the grip that Microsoft had on the software market.

David Callahan, an American expert on philanthropy, sees a need for more stringent regulation. For good reason he wants foundations to be legally bound to disclose all grants they make, so the public can see what policies they are promoting. Moreover, he wants legislators to reconsider what kind of spending really deserves to be tax-deductible.

Praise for individual philanthropists must certainly be distinguished from praise for philanthropy in general. Individual donors are trying to do well, but their growing relevance means that inequality is growing and slowly weakening democracy.

All lives have equal value, but some people can spend more on philanthropy than others.



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## PEACEBUILDING

# Mozambique's "mini-war"

**At the end of April, Mozambique's President Filipe Nyusi and opposition leader Afonso Dhlakama reached rapprochement on issues that triggered a "mini-war" in 2013. An end to the insurgent violence seems to be in sight. A ceasefire has held since Christmas 2016.**

**By Friedrich Kaufmann and Winfried Borowczak**

Largely unnoticed by the global community, a "mini-war" broke out in Mozambique at the end of 2013. It involved the security forces of the government, which is run by the Frelimo party, and insurgent militias fighting in the name of Renamo, the opposition party. On major roads in the country's interior, vehicles were shot at, people died, others were injured. Thousands fled from their villages to neighbouring countries or camps on the outskirts of Mozambique's urban areas.

The police stormed opposition party



Peace protest in Maputo in June 2016.

offices. Political killings occurred daily. Afonso Dhlakama fled to the Gorongosa Mountains in Sofala Province after escaping assassination attempts. He stayed there, besieged by government troops, until the end of April.

Business, trade and transport had ground almost to a complete halt, but late last year, an internationally brokered ceasefire cooled the situation. How did the crisis

escalate in the first place? For a long time, Mozambique was considered a prime example of a country where peace was successfully established after extended civil war.

Indeed, the peace that was reached in 1992 after 15 years of warfare did last two decades. In 2013, however, Renamo took up arms again to force the hand of the Frelimo government, accusing it of not implementing the peace accord. The timing was precise. Parliamentary and presidential elections were scheduled for late 2014. Incumbent President Armando Guebuza was constitutionally barred from running for office again and Frelimo, in government since 1975, was split over who should succeed him. Moreover, corruption and personal enrichment had become endemic. Frelimo's reputation seemed to have hit rock bottom.

The Frelimo leadership did not like the prospect of an election campaign in the midst of a "mini-war"; but they felt even less inclined to postpone the polls. They

thus had no choice but to negotiate a deal with Dhlakama and consider his demands. The demands included the separation of the state from the Frelimo party, sweeping decentralisation of state and administration, better integration of former Renamo fighters into the regular security forces and a fair election campaign. In return, Renamo would stop the guerrilla attacks, participate in the electoral process and thus contribute

to the legitimacy of the 2014 elections. Renamo kept its promises, but found the election results deeply disappointing. Once again, Frelimo won, and so did its presidential candidate, Filipe Nyusi. There were claims of poll-rigging. Renamo initially refused to accept the results. Its MPs were only sworn in after international mediation and some concessions by Nyusi in early 2015.

At the same time, Renamo stepped up the conflict on both the military and political front. It switched from pin-pricking tactics to a full-blown insurgency in the six central provinces where it had won the majority of votes. Among other things, it demanded that Nyusi appoint Renamo members as governors of those provinces. That, however, was a demand the new president could not meet for fear of causing divisions within his own party.

In the second half of 2016, international mediation successfully helped kick-start negotiations between Frelimo and Renamo. In subsequent talks, Renamo dropped most of its demands, but kept insisting on two things: better integration of its former fighters into the security forces and the wholesale decentralisation of state and administration.

In the autumn of 2016, international mediators presented two papers on these issues. Neither has elicited a definitive statement from either conflict party so far. In view of stagnation, the mediators withdrew. Soon after, however, Nyusi and Dhlakama reached a ceasefire agreement and stated to talk with one another directly again in December. Both Nyusi and Dhlakama have recently indicated substantial rapprochement in cautiously optimistic comments, so an end to the "mini-war" may be near. Whether it actually comes to pass remains to be seen.



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DIABETES

# Mexico's sugar war



In 2013, President Enrique Peña Nieto introduced a national strategy to prevent and control obesity and diabetes.

**Mexico has adopted a pioneering soft-drink tax to reduce obesity and diabetes. But the industry lobby is fighting back. It is even resorting to spyware.**

By Sonja Peteranderl

On 17 August 2016, Simón Barquera received a text message that his daughter had just had an accident and was in critical condition. The message contained a link that supposedly gave information about the hospital where she had been taken. But it was a trap. If Barquera, a respected health expert with Mexico's National Institute for Public Health, had clicked on the link, it would have installed spyware on

his smartphone. It was the latest message of this kind in an entire series. All in all, Barquera received nine messages with infected links, according to a report from the Citizen Lab at the University of Toronto.

Mexico's sugar war is now being waged on the digital front. Attacks are being launched against health experts and activists who advocate for stricter laws and regulations because they want to prevent obesity and diseases like diabetes. Other leaders who got messages with infected links are Alejandro Calvillo, the founder of the consumer protection organisation El Poder del Consumidor (The Power of the Consumer), and Luis Encarnación of the network Coalición ContraPESO (Coalition CounterWEIGHT).

At a recent news conference, the three men demanded that unhealthy products should be marked in an unambiguous way and that Mexico's soft drink tax should rise. This innovative tax was introduced in 2014 as part of an overarching strategy. Consumers currently pay a tax of one peso per litre, or about a tenth of the purchase price, on sugar-sweetened beverages like Coca-Cola and other soft drinks. Soft drinks are a billion-dollar industry, and companies are fighting back.

In Mexico, soft drinks are as much a part of everyday life as meat and fast food. Mexico leads the world in per-capita consumption of sugar-sweetened beverages: on average every Mexican drinks 163 litres of so-called "refrescos" per year. That's almost half a litre a day.

## GLOBAL LEADER IN DIABETES

The country also has some of the highest rates of obesity and diabetes in the world. According to a UN report, over two-thirds of adult Mexicans are overweight or obese. Mexico has even surpassed the US as the country with the most overweight people. According to the OECD, Mexico has the highest diabetes rates of any developing country. Diabetes and heart diseases are among the leading causes of death.

Even young children are overweight or diabetic, and some suffer from related diseases like strokes or kidney, retinal and nerve damage. Obesity figures are beginning to plateau, according to Barquera, but he admits that "recent studies indicate that we still have not succeeded in containing the problem". In his view, Mexico's future depends on its ability to enact effective health policies and encourage people to adopt healthier lifestyles.

Low-income families in particular lack information about good nutrition. They also lack the time and money to buy healthy food and cook meals themselves. The problems get passed on to the next generation. Abelardo Ávila Curiel from

Mexico's National Institute of Nutrition assessed his country's obesity problem as "a serious epidemic" in an interview with CBS. "Among the poor we have overweight parents and malnourished children," the expert said. "The worst aspect is that children are being programmed to be obese."

The marketing of soft drinks has been very successful. Companies like Coca-Cola and PepsiCo spend billions every year to make sure their drinks become an integral part of daily life for children, minorities and low-income people. Their distribution systems reach remote villages. Aggressive marketing campaigns guarantee bulk sales. The corporations are involved in political lobbying and fund research that glosses over the impacts soft drinks have on consumers' health. In order to improve their image, companies also finance social campaigns or sporting events.

## 90 YEARS OF COCA-COLA

Coca-Cola has been producing and selling its soft drinks in Mexico since 1926. In the 1950s, the company began expanding its market share with aggressive advertising. "By the 1970s, sodas were well established as components of daily cultural life," health expert Marion Nestle writes in her book "Soda Politics". The company's influence extends to Mexico's power elite. Vicente Fox was the head of Coca-Cola's Latin American operations before he was elected Mexican president in 2000. During his time in office, the company became the market leader and almost doubled its sales.

The target groups of the beverage manufacturer include indigenous people, who often suffer discrimination, poverty, under- and malnourishment. Most are poorly educated and lack opportunities. Soft drinks are available in villages that lack basic amenities such as schools, clean drinking water or internet access. In San Juan Chamula, a village in southern Mexico, the Tzotzil people have even made Coke bottles part of their religious ceremonies. Belching after drinking apparently dispels evil spirits.

In 2015, just before Christmas, Coca-Cola released an ad that was intended to decry discrimination against indigenous peoples, celebrate diversity and togeth-

erness instead. The ad showed a group of young, slim, fair-skinned people handing out party decorations and Coca-Cola as presents in an indigenous village in southern Mexico. The video went viral – but not for the reason the beverage manufacturer had hoped. Thousands of Mexicans complained about the ad's colonialist attitude. They also disagreed with the idea that consumption was a solution to the problem of social disparities. Consumer protection organisations denounced the video as an "attack on the dignity" of indigenous peoples. The company apologised and withdrew the ad.

## REFORM PACKAGE TO FIGHT OBESITY

According to Barquera, information concerning the health crisis is spreading all over Latin America, with people organising on social media, for example. The problem is that the other side is running digital campaigns as well. "Unfortunately, those who oppose health policies that would serve the common good have larger budgets so they can neutralise social-media activism," the researcher regrets.

He says that campaigning has made a difference in some Latin American countries, but so far there has not been a coordinated, international push to implement the UN recommendations on sugar. The beverage industry, moreover, has proved unwilling to respect policy measures aimed at reducing obesity.

Industry compliance remains a pipe dream. Mexico introduced the national strategy to prevent and control obesity and diabetes in 2013 and passed the soft-drink tax in this context in 2014. To a large extent, however, the strategy expected the food industry to cooperate voluntarily. Moreover, it has numerous loopholes.

"Mexico lacks strict regulations on food and drink advertising that targets children," Barquera points out. He also calls for labelling that would allow consumers to quickly see whether a product is unhealthy and why. In his view, it would make sense to ban ads for unhealthy food and drinks near schools. He proposes government campaigns to promote drinking plain water rather than sweetened sodas. Promoting physical exercise would be helpful as well. Furthermore, Barquera be-

lieves that more must be done to prevent diabetes and to help diabetics manage their disease.

According to Barquera, beverage manufacturers, especially the multinational ones, present the greatest obstacle. They are fighting fiercely to undermine political efforts to reduce Mexico's sugar consumption. "These companies have exerted pressure on Congress, they have tried to infiltrate decision-making bodies, and they fund foundations that support their positions."

Despite all that, Mexico's sugar tax is considered a success. A study published in early 2016 in the medical journal *BMJ* offered proof that the tax has had a positive effect. By December 2014, purchases of taxed soft drinks had declined by 12 %. Low-income households were the most likely to change their consumption habits in response to higher prices. The authors emphasised, however, that continued monitoring is needed to understand consumer behaviour and health impacts over the long term. Moreover, surveys should be done to see what alternative beverages people opt for when they find soft drinks too expensive.

Research has shown that the soft-drink tax has not had a negative impact on the economy. There have not been mass redundancies, which was one thing the industry had claimed would happen.

Beverage manufacturers and other countries are keeping a close eye on developments in Mexico. The tax may well become a model if it can be shown to work. In the fall of 2016, Britain announced that a sugar tax, the "Soft Drinks Industry Levy" (SDIL), would go into effect in 2018.



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# A matter of enlightened self-interest

**US-President Donald Trump says he puts “America first” and shows little interest in multilateral cooperation. He also does not see the need for official development assistance (ODA) as his budget plans for 2018 show. In early May, Scott Morris, a scholar from the Washington-based think tank Center for Global Development, told D+C/E+Z in an interview what Trump’s plans mean for the US and the world.**

**Scott Morris interviewed by Sabine Balk**

**Do you think that President Trump is aware of the Sustainable Development Goals (SDGs) at all?**

I don’t think that the SDGs and the international community’s approach to development progress is something that resonates within the White House. Frankly, I don’t think that there is a lot of awareness at all about this agenda. To try to express some optimism, there is a chance that this will change over time to some degree. Mechanisms like the G20 can make President Trump hear from other leaders about the importance of this agenda. The presidents comments on foreign aid so far have been quite discouraging, and I think that there

is very little knowledge about what the objectives and attractiveness of foreign assistance are.

**You indicate that you would like to spread some optimism. Who or what could change Trump’s mind?**

What we see in his budget plans is very discouraging. The proposed budget cuts are alarming. But the US Congress has just expressed a markedly different view, passing a bipartisan budget deal. In both political parties, Republicans and Democrats, there is a strong commitment to long standing approaches to development assistance, so some hope that Congress will prevail in these discussions over the next few years is justified. The upcoming G20 summit in Germany is also very important. There is an emerging commitment to a gender agenda that seems to be driven by actors within the White House who are working with German actors to push a new facility, perhaps at the World Bank, focused on women in businesses and entrepreneurship. Setting aside the substance, this is encouraging simply because it is the normal for the US to be looking for deliverable results in the G20 context. And the fact that they have chosen

to pursue a development-relevant issue suggests that there are at least some actors in the White House who care for the subject.

**What initiative is this precisely?**

The focus is on some kind of approach to promote women in the private sector. I am not aware of any formal announcement yet, but there seems to be an initiative of Germans and Americans, involving the World Bank, to do something.

**Trump wants to slash the ODA budget in 2018. What exactly are his plans?**

The Trump administration launched the so-called “skinny budget”. That is where we saw very deep cuts in foreign aid. However, Congress and the White House later had to agree on a budget for this year, which was the bipartisan deal struck in May. It is actually a very good budget and includes substantial funding for foreign assistance. The budget compromise was actually a disavowal of what the White House wanted. As for the 2018 budget, we still are waiting for the details. They should be announced in a few weeks. But what we have seen so far is that there are likely to be cuts across the board, ranging from 20% to 40%. They touch virtually every area, even things that people thought were well protected like global health programmes or various types of humanitarian assistance. Beyond that we see a structural shift in the budget plans. The administration wants to weaken the development agency USAID and boost the power

## Update

The White House published its budget proposals in late May, while Donald Trump was travelling in Europe. It was not much different from the “skinny budget” published earlier and validated the concerns ex-

pressed by Scott Morris in our interview. According to CNN, the Trump administration wants funding for the State Department and international aid to be cut by 29.1%, with aid spending slashed in half.

Congress will have the final say on the matter. US media were fast to point out that the White House numbers were flimsy. In particular, they noted that they included a \$2 trillion math error, because money that was earmarked for tax cuts was also earmarked for paying down the deficit. The \$2 trillion, moreover, was

expected to result from higher tax revenues due to higher growth rates of an annual three percent. Most economists believe that the assumption is unrealistic. A Bloomberg News headline read: “Trump’s budget is designed to impress, not pass.”

**Hans Dembowski**





**US-President Donald Trump plans to weaken the development agency USAID: US aid delivery to North Uganda.**

of the State Department. This would be a shift away from a true development focus and poverty reduction in favour of a more policy-driven strategy. What we also see in the budget plans is a severe reduction in the number of countries to which the US would provide official development assistance. This would mean a full disengagement in a lot of countries.

**Which countries are effected mostly? Muslim countries?**

No, I do not see a consistence approach. There are some countries that stand out for deep reductions like Ukraine and even least developed countries like Sierra Leone. It’s hard to understand the rationale.

**What would deep ODA cuts mean?**

In many low-income countries, especially in sub-Saharan Africa, US foreign assistance accounts for a huge proportion of their funding in some key sectors. So whether it is vaccination or nutrition programmes, a lot of social protection in sub-Saharan countries largely depends on aid from the US.

**How does such aid serve US interests?**

Well, we do have strategic gains from being engaged in a wide range of countries. Number one is public security. In today’s world, you cannot isolate security threats to one country or one region, so the US needs

to be engaged in a wide range of countries. Our nation cannot only provide arms; political stability requires more. People need opportunities, livelihoods and a minimum level of social protection. They must see the benefits of international cooperation. If that is the case, we’ll have allies for upcoming security challenges. If we withdraw from many countries, however, we will feel the damage for many years to come.

**Is the US public aware of these issues?**

I think the underlying public support for foreign assistance is stronger than is commonly believed. After the election of Donald Trump, everyone worries that the American public has turned its back on the world. But more sophisticated polling reveals that there actually is a lot of support even for foreign assistance programmes. But there is also a lot of ignorance. One very common polling question put to Americans is how large the share of ODA should be in our budget. The answers consistently reveal a broad misunderstanding. People believe that ODA accounts for 20%, 30% or even 40% of our budget. In reality it is less than one percent.

**Why is it in the interest of the USA to rely on multilateral institutions and settings from the World Bank and the International Monetary Fund (IMF) to the G20?**

It is a matter of enlightened self-interest:

- First of all, the United States is providing global leadership by promoting these institutions, which reflect an agenda that has been shaped by the US over many decades. Issues such as trade or anti-corruption are high on this agenda.
- Second, international financial institutions provide tremendous leverage to US dollars. If you think of IMF engagement – for example, in Ukraine – in recent years, very large-scale financing packages were provided. These are packages that the US alone could not have provided bilaterally. So in countries where the US has very strong specific interests, we largely depend on the IMF and the World Bank.
- Third, multilateral institutions have the ability to be engaged in a very wide array of countries simultaneously in a way the US alone cannot. The USA should view the IMF and the World Bank as extensions of its own programmes and approaches internationally. This is particularly important at a time when rising powers like China are embracing multilateralism.



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# Daunting challenges in implementing SDGs

The agreement on the Sustainable Development Goals (SDGs) in September 2015 was a towering success of multilateral policy-making. Achieving the goals, however, will require more. To rise to complex challenges, the international community will have to take an approach of constant learning, with adaptive governance taking account of all relevant experience made.

By Lan Xue, Lingfei Weng and Hanzhi Yu

The SDGs were defined in an innovative and interactive process. Some elements were bottom-up, others top-down. Many different stakeholders were involved. Appropriate consideration was given to the three key dimensions of sustainability (social, economic and environmental). The policy process engaged developed as well as developing countries. It tackled poverty, climate change, inequality, peace and many other global challenges. The principle of “leaving no one behind” was addressed in rich and

poor countries alike. All in all, the SDGs add up to a sensible agenda that can safeguard humanity’s future.

Therefore, it was appropriate to celebrate this global agreement. Implementing it, however, will be an even more challenging job than setting the agenda. Serious controversies have taken place between developed and developing countries concerning the means of implementation (MoI). Every SDG includes MoI targets, and SDG 17 especially spells out that MoI must be strengthened. Further debate on the matter is certain to come. MoI are about funding, technology transfer and capacity building, but they also concern policy coordination, improving governance and refined data collection and statistics. The global partnership must be built, with all parties assuming responsibility.

These issues matter very much because the SDGs do not add up to an agenda that can be easily implemented. Indeed, implementation will prove quite challenging for four main reasons:

- The first challenge concerns the MoI. Many countries lack the resources and capacities they need to achieve the SDGs. To a considerable extent, they are unable to provide public goods at the national level, and now they are being asked to contribute to providing public goods at the global level. Internationally coordinated efforts are needed to enable them to do so. In the past, advanced countries supported less advantaged countries with official development assistance (ODA). ODA, however, has been becoming less relevant in recent years, not least because established donors’ efforts decreased after the global financial crisis of 2008. Emerging powers such as China have been adopting new strategies towards developing countries, especially in Africa, combining development assistance and economic cooperation. Nonetheless, the overall picture is not promising. Coordination among different stakeholders, namely the donors, the recipient countries and international institutions, has not been addressed properly.
- The second challenge is that the SDGs are diverse, complex and interconnected. It has been suggested that countries should define priority SDGs rather than trying to tackle all SDGs at once. Understanding inter-linkages among the different goals can enhance the effectiveness of policy action as progress on one goal can drive progress on others. On



China supports building African infrastructure: the light rail in Addis Ababa is an example.

the other hand, some goals may prove to be in conflict with one another. For example, there are trade-offs between promoting economic growth for poverty alleviation (SDG 1) and protecting terrestrial ecosystems (SDG 15). Both synergies and trade-offs must be considered thoroughly. Otherwise, it will be impossible to facilitate international harmony on SDG implementation.

- The third challenge is national governance. Private sector companies and civil society can play important roles in SDG implementation, but national governments must assume leadership in raising awareness, mobilising resources and carrying out national strategies. Unfortunately, lack of adequate governing capacity is not just a common symptom of underdevelopment – many experts consider it a core cause of underdevelopment. Weak governance is thus a pressing issue that must be addressed. ODA in terms of funding and capacity building can help, but it is indispensable that all national governments assume responsible ownership.

- The fourth challenge is to monitor progress adequately. The SDG agenda has 17 goals, 169 targets and 231 indicators. Such complexity is a major implementation hurdle. Making matters worse, some indicators lack interim time targets, and there is no mechanism to enforce them. Others use ambiguous terms such as “sustainable”, “substantial” or “efficient”. At the same time, it is important to avoid the common fallacy of considering quantitative indicators to be more important than qualitative indicators. To tackle such problems, a comprehensive indicator framework would be useful. Real-time report cards could contribute to measuring progress and ensuring stakeholders’ accountability. Promising work on these matters has begun. One such example is the SDG Index and Dashboards, which was created by the UN Sustainable Development Solutions Network (SDSN) as a complementary tool to the official SDG indicators (Sachs et al., 2016). This is a good start, but much more needs to happen.

### ADAPTIVE GOVERNANCE

These challenges imply that the SDGs cannot be achieved simply by telling administrative agencies to implement the agenda. In the process, policymakers will have to take new decisions continuously, taking

into account examples of success as well as failure. New governance mechanisms must be explored and developed (Xue, 2012). This means that the international community needs an approach of adaptive governance, at both national and global levels.

There is no universally accepted definition of “adaptive governance”, but several features are generally appreciated:

- Adaptive governance recognises complexity and uncertainty. There are always some conflicting goals in policy implementation, and implementation is best understood as a continuous experimental process.
- Adaptive governance is not simply about decentralisation in the sense of delegating responsibilities to sub-national levels. Proper alignment between national and sub-national institutions is essential.
- Adaptive governance respects the importance of local contexts and experiences.
- Adaptive governance is evolutionary, with goals and practices being reassessed periodically as a matter of course.

All summed up, the process of policy-making and policy-implementation should be organised as a learning system. Achieving the SDGs will require intensive international exchange and the involvement of national governments as well as other relevant actors. We propose an iterative approach with four reoccurring steps:

- Step 1: Use the SDGs as a comprehensive framework of development goals and identifying a country’s current status. The point is to identify development gaps, trade-offs and synergies in order to be able to act in the most efficient and effective way.
- Step 2: Identify development priorities through domestic policy process and strategise implementation accordingly. It would be unrealistic to try to close all gaps at once. Priorities must be identified to move forward efficiently. Setting priorities is fundamentally a political process that should involve all important stakeholders, with the most vulnerable groups deserving particular attention. Urban elites must not crowd out all others. A balance must also be struck between short-term needs and long-term threats. All this must be done in a way that fits the respective political order.
- Step 3: Create platforms to encourage mutual learning and experience sharing. Regional and thematic groups can also be created for various specific goals. The UN

Sustainable Development Solutions Network has recently launched proposals on the matter (SDSN, 2017).

- Step 4: Review and revise priorities and implementation strategies periodically. Such revision, of course, is not an end point, but serves to start a new round of iterative learning. In any case, good practices should be copied, and mistakes made by others should be avoided.

The SDGs offer an unprecedented opportunity for global development. It is the common vision for human society to maintain peace, ensure the dignity of all and eradicate poverty. All stakeholders involved should keep learning from recently made experiences and shoring up their act, then the SDGs may become a reality rather than a fond memory by the year 2030.



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# Water

Water is an indispensable resource. There is no life without it. It can also be a curse – when there is too much or when it is poisoned. Human communities need appropriate infrastructure to cope with the challenges, and progress is being made in many places. A decade ago, sanitation was not a topic policymakers liked to discuss. Many of them are not shying away from it anymore. As climate change will compound problems of both scarcity and over-abundance, however, adaptation to increasingly volatile precipitation is an urgent matter.



Photo: Narong Sangnax/picture-alliance/dpa



Thailand is frequently hit by floods. In 2011, the situation was particularly severe; streets turned into waterways like in this place west of Bangkok.

# The dwindling lake

**Due to climate change and overexploitation of its water resources, Lake Chad is shrinking. The impacts on Nigeria are devastating.**

By Damilola Oyedele

When European geographers first surveyed Lake Chad in 1823, it was considered one of the world's largest lakes. For several reasons, it has since shrunk by about 95%. Climate change is proving devastating. Moreover, too much water is being extracted as the populations of the countries surrounding the lake (Niger, Chad, Cameroon and Nigeria) are growing.

Lake Chad still provides water to about 38 million people for irrigation and other needs, even though its surface area has been reduced from 25,000 square kilometres in the 1960s, to 4,800 square kilometres in 2014. Its fish resources are important too. Dried fish, which is a popular source of protein for the people in the region, is becoming ever more expensive and scarce.

The dwindling of the lake has devastating impacts on Nigeria. Uneducated rural people used to be able to make a living from agriculture in Nigeria's Borno State, but in many places farms and livestock rearing have become unviable.

Some of the people affected have joined the Islamist militia Boko Haram, which pays fighters and is doing what it can to attract disillusioned youth. Other people have been migrating southwards looking for alternative livelihoods. In view of the tight labour market, only some of them find jobs. Others turn to criminal activity. The worst damage, however, is being done by the desperate herders who are migrating with their animals and disrupting life in areas they did not use to go to. Sometimes they even show up in the capital region of Abuja (see box, p. 20).

Benue State is known as Nigeria's food basket. The distance to what is left of Lake Chad is more than 1,000 kilometres. Nonetheless, Benue State has been badly hit by constant clashes of herders and farmers. Such violence first occurred in the late 80s, but it has become worse in recent years.

An estimated 3,000 persons were killed in Benue State between 1989 and 2013, and more than 1,200 died between April 2013 and July 2016 according to local media.

## DANGEROUS FAITH-AFFINITY

Other states have not been spared either. In December 2016, the Catholic Diocese of Kafanchan in Kaduna State reported that 808 people were killed in incidents there, while farm produce worth \$18.5 million was destroyed. The situation is especially tense as some Christian leaders accuse the state's



People crossing a tributary to Lake Chad.

Governor Nasir El-Rufai, a Muslim, of taking sides with the herders, who mostly belong to the Fulani, a predominantly Muslim tribe.

In Nigeria, affiliations to religious faith are potentially explosive. The people of southern Kaduna are mostly Christians, but the state's north is mostly Muslim. Indeed, Nigeria itself is split into a mostly Christian South and a mostly Muslim North. Some Christians say that the herders feel encouraged by the fact that President Muhammadu Buhari is Fulani.

Violent clashes are not the only consequence of generally increasing aridity and the dwindling Lake Chad for Nigeria. The UN has warned of famine in north-eastern Nigeria. The main reason is the Boko Haram insurgency, which however, is interwoven

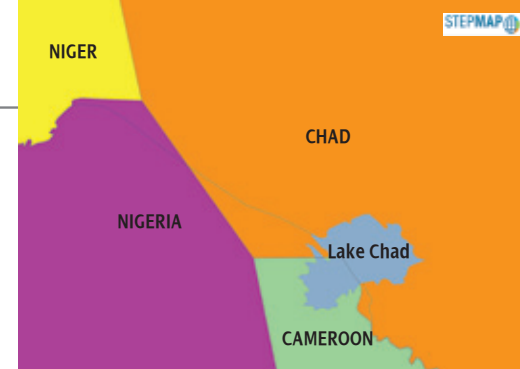
with issues of poverty and environmental degradation. The current food crisis is obviously being compounded by lack of water and cattle destroying harvests.

The Federal Government has responded to the clashes with a proposal to recreate grazing routes that herders used across the country in the 1960s. The proposal has triggered a political backlash, however, as it is considered to pander to the herders. Critics say it would only exacerbate problems of land ownership, as the grazing routes of the 1960s no longer exist in a more densely populated country today.

Some argue that nomads should not roam around with cattle but switch to ranching. For example, Dickson Tarkighir, a member of Nigeria's House of Representatives from Benue State, points out that ranching would ensure that the herders get access to facilities such as hospitals, veterinary doctors, schools et cetera. The big questions, of course, are on what land ranches might be established and who might provide the water they would need.

## ENVIRONMENTAL CHALLENGE

Sam Onuigbu chairs the House of Representatives' Committee on Climate Change. He argues that it is necessary to address the clashes, but that it is even more important to take steps to mitigate underlying



environmental problems, including the impacts of global warming. He attributes the massive decline in the size of the lake since the 1960s to constant changes in government policy. Somersaults by military regimes, which all had different priorities, compounded matters, according to him.

In Onuigbu's eyes, the current government is committed to tackling the issues of climate change. It has signed the Paris Agreement on climate action and has begun to draft and implement related policies. The parliament is working on legislation to mainstream all related issues.

Not all civil-society activists are convinced, however. Nnimmo Bassey, who heads the Health of Mother Earth Foundation (and contributed an essay on oil exploitation and fisheries on the Nigeria Coast in D+C/E+Z e-Paper 2017/04, p.37) warns that most of the responses to the dwindling of Lake Chad so far are too superficial. He sees a need for concerted international action, in particular by the countries of the Chad basin. The depressing truth is that the Lake

Chad Basic Commission has not been effective. It was set up by the four neighbouring countries as early as 1964, but it was not funded properly and faces various other challenges. It was supposed to regulate the use of water and other natural resources in the Chad basin and coordinate development projects and research.

Today, the most urgent action, according to Bassey, is to increase the volume of water in Lake Chad, which could be done by improving the management of the entire water shed of the Chad basin. This would include reviewing of the management of regional vegetation, he says: "We need to implement the Great Green Belt project, which should not be a question of planting trees for TV camera, but actually growing and developing an ecologic corridor where trees are relevant." The local people must be involved in planting trees and ensuring their survival.

Bassey acknowledges that Nigeria's current government is showing a stronger interest in environmental issues than pre-

vious ones. Nonetheless, he argues that too little is being done too late.

At the international level, some help is coming to avert famine in the Lake Chad region. At a summit in Oslo in February 2017, donors pledged almost \$ 700 million to address the humanitarian issues in the region over the next three years. Nigeria and Chad are also on the forefront of an international campaign to raise \$ 50 billion for the recharging of Lake Chad.

According to the UN Food and Agriculture Organization (FAO), Lake Chad is an "ecological catastrophe", which will lead to even more devastating consequences if it is not dealt with properly. To Nigerians, this is bad news. They are already feeling a lot of pain.



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## Cattle in the cassava field

Charles A. (name changed) was looking forward to harvesting the cassava on his farm in Gwagwalada near Abuja, Nigeria's capital city. He had already concluded an agreement with a company that wanted to buy the cassava, make pellets for livestock feed and export them to other countries. As a sign of good faith, the company had paid Charles some money.

On a hot afternoon in February 2017, however, Charles got a call that herds of cattle were in his cassava farm, eating up the plants and stems. He rushed there, and wanted to confront the herders. His farm

workers held him back. They knew that the situation was dangerous and might escalate into deadly violence.

"I watched them destroying my fields; I am now in debt." The farmer expressed deep frustration that something like this could happen. "We called the police, but they told me they were not equipped to handle cattle, and they even advised me not to fight with the herders, so they would not hurt me." Some herdsmen are known to be armed. Charles' loss amounts to the equivalent of about \$ 32,000.



Pastoralists depend on water resources too: livestock market in Kano State.

"The government is pushing young people like me to invest in agriculture instead of seeking white collar jobs," he says. "We talk about attaining food sufficiency in Nigeria by the end of 2017." He does not think he is getting the support he deserves.

To Nigerians, his story sounds all too familiar. In many parts of the country, herdsmen drive hungry herds onto fields, and again and again, they kill

farmers who dare to challenge them. The nomadic herders are desperate themselves. They need pastures and water for their animals, but such resources are becoming scarce in the regions they traditionally roam. They also have to defend themselves and their cattle from reprisal attacks and cattle thieves. The problems are most pronounced near Lake Chad, a slowly disappearing water body.

# Drought is the new normal

**In East Africa, agricultural policies must focus on the availability of water. The region is becoming more arid, so water supply cannot simply be left to nature. Adaptation to climate change is indispensable.**

**By Belay Begashaw**

Throughout Africa's history, drought has been a regular feature. It is a natural phenomenon that has caused calamities claiming lives of millions of people and causing enormous social, environmental and economic impacts.

East Africa – and especially the Horn of Africa – are affected in particular. Things are getting worse, however. Half a century ago, drought used to occur once every ten years, and then once every five years in the 1980's and 1990's. Since the turn of the millennium, it has occurred literally every other year. Many studies indicate that this trend will continue and intensify.

Some countries have seen an increase in average temperature of about one degree since 1970. In 2011, 13 million people in Djibouti, Eritrea, Ethiopia, Kenya and Somalia experienced one of the worst humanitarian crises in recent history according to UNEP. In 2014, 2015 and 2016, drought occurred in Ethiopia, Somalia and Kenya affecting more than 15 million people. Another drought struck this year in all the above mentioned

countries plus South Sudan. Once more, UN agencies are speaking of famine.

It is irritating that drought is still considered something unusual and that responses tend to be improvised and awkward. Mindsets must change. Drought is the new normal. Policies for the region, and especially its farms, must take this reality into account.

African agriculture is predominantly rain-fed. It is marked by low inputs and low outputs, resulting in hand-to-mouth livelihoods. About 80% of East Africa's sedentary farmers who live in areas with up to 1,300 mm of precipitation practice subsistence farming.

Traditionally, three factors are considered: land, labour and animal power (mainly oxen, donkey or camel). The farmers also use simple tools, of course. That the farms need water did not get much attention in the past, because rain was beyond human control.

The new narrative must be that water is the most critical input, even for subsistence farms. Accordingly, any kind of policy must consider water availability. It has become irresponsible to rely simply on nature.

Ensuring water supply in the form of irrigation will make a big difference. Of course, irrigation systems depend on rain too, but prudent watershed management, competent regional planning and sparing use of available water resources will help to make the most of whatever rainfall there is.

The point is that policymakers and grassroots communities will not rise to the relevant engineering challenges unless they accept that climate change matters. In drought-prone areas, all players must plan their action with water in mind. Doing so properly, they can save millions of lives and prevent humanitarian disasters.

Scientists and researchers will have to do their part. Agronomists and breeders need to come up with crop varieties that need less water. Technologists have to move aggressively on water harvesting and cost-effective irrigation equipment. Pathologists and entomologists have to be alert and respond to new pests and pathological strains emanating from the change in the seasons and planting materials.

Extension agents have to be well equipped to teach farmers and possibly consumers about all these new developments. Appropriate crop and livestock insurance policies and products could also be built into this new production system. Pastoralist communities and their herds must not be neglected either.

Drought can no longer be considered an unusual calamity. East Africa is now obviously a low-rainfall area, so the region must adapt to climate change. There is no alternative.



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**Drought often causes failed crops in Ethiopia.**



# After us, the deluge?

Climate change is particularly noticeable in the water cycle. Global warming changes the oceans' rate of evaporation and influences the frequency and intensity of rainfall. The result is extreme weather events. Deforestation and other kinds of destructive human action compound the problems. In many places, people and ecosystems suffer due to too much or too little water.

By Daniel Nordmann and Till Below

The World Economic Forum considers the emerging water crisis and the failure to appropriately adapt to climate change to be

among the greatest risks to the global economy and the stability of societies worldwide. Today, water is involved in nine of ten catastrophes around the world. Experts reckon that, by the year 2030, 40% of urban areas will be at high risk of flooding.

Water-related risks do not affect everyone equally. Climate scientists consider South Asia, sub-Saharan Africa and South America to be at greater risk than other regions. Accordingly, the developing and newly industrialising countries there are especially exposed. Within the countries, moreover, the poor are most affected, for example because they tend to live in infor-

mal settlements in valleys and on hillsides that are susceptible to flooding or landslides.

In the Paris Agreement, governments from over 190 countries proposed a solution to these challenges. According to the agreement, adaptation to the impacts of climate change matters as much as reducing greenhouse-gas emissions.

Climate-change adaptation is the attempt to avoid or reduce the negative consequences of climate change. To the extent possible, it should take advantage of the potential that climate change unleashes. For example, increases in local precipita-



Half of Thailand was under water in the fall of 2011. St. Mark's Square in Venice was flooded as well.



tion could replenish aquifers and thus be stored for use in times of drought.

The Sustainable Development Goals (SDGs) address adaptation, sustainable water management and the prevention of water-related catastrophes. Adaptation measures relating to water feature prominently in the Nationally Determined Contributions (NDCs) made by many developing and newly industrialising countries in the context of the Paris Agreement.

Water plays a key role both in climate-change adaptation and in sustainable development. But how can this issue be better mainstreamed in the planning and implementation of development efforts, and what does effective water-related adaptation look like?

## A NEW GOAL

Rotterdam, May 2016. At an international conference on climate-change adaptation, Wim Kuijken presented a prime example of successful measures. He is the commissioner of the Netherlands' Delta Programme, a government-appointed board responsible for flood and coastal protection. His pet project was the restoration of the flood plains of the Waal River. As a result, the city of Nijmegen is now better protected from severe flooding. As a bonus, the meadows are an attractive local recreation area, linking two protected areas.

Many adaptation measures consist of known solutions to familiar problems, like giving back more space to the rivers in order to reduce the risk of flooding. Totally new approaches are only rarely taken. Many experts argue that adapting to climate change is really nothing new and the best strategy would be to concentrate on sustainable solutions to conventional problems.

However, adaptation measures have a new and different goal. They are supposed to make people and the environment less vulnerable to a changing climate and reduce related risks. The big difference to traditional approaches is that adaptation depends on hypotheses concerning what local impacts climate change will have and what human beings can do about them.

To assess a project's likely impact and prove that it will serve the goals of the Paris Agreement, one thus needs an "adaptation

hypothesis". Funding for adaptation efforts is awarded according to such hypotheses. Studies have shown that projects usually deliver better results when they are grounded in a vulnerability or risk analysis.

## ESCAPING THE ENVIRONMENTALIST BUBBLE

One obstacle to restoring the Waal in Nijmegen was that, for a long time, the water authority, urban planners and the central planning boards were not in touch. Such compartmentalisation is typical of public authorities in many countries. Unfortunately, adaptation measures are still often considered stand-alone environmental projects.

State agencies often lack support from the top-level government and the institutional capacities they would need to mainstream climate-change adaptation in all areas of water management. As a result, many individual measures of quite limited scope and sustainability were developed within the bubble of agencies in charge of environmental protection.

The Paris Agreement calls on all countries to overcome this silo mentality and plan adaptation measures on a national scale. They should combine activities, promote coordination between sectors and facilitate the mainstreaming of adaptation on all levels. It is also important to encourage the widespread participation of representatives from every area of society.

It is especially promising to involve stakeholders such as affected companies and local researchers in decision-making early on. Their experience makes it easier to weigh the costs of adaptation against expected gains. This approach has proved useful in various developing and newly industrialising countries.

Two examples from Thailand and Albania (see boxes, p.26 and 27) illustrate that it makes sense to add adaptation measures to the established methods of integrated water resources management (IWRM). Both countries are combining conventional flood protection with innovative concepts, such as harnessing the power of ecosystems to prevent disasters.

In both cases, affected people were involved, and experts from different disciplines and institutions cooperated closely,

even across borders. For the measures to be accepted and last a long time, they must fit the plans and budgets of all parties concerned. In the future, it will become ever more important to be able to quantify sustainable successes. Doing so will also allow governments to better position themselves in regard to international climate affairs.



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## Documentation by drones

Thailand is one of the countries that is most threatened by climate change. In 2011, this emerging market in Southeast Asia witnessed the worst flooding in decades. After an unusually long period of intense rainfall, almost a tenth of its territory was under water.

Over 13 million people were affected by “the flood of the century”. According to estimates, the damages amounted to \$ 40 billion. The impact of the flooding was felt beyond the country’s borders. More than 9,000 factories had to close temporarily, making the world-market price of computer hard drives double, among other things.

Experience from around the world shows that conventional approaches to softening the impact of flood events, like building dams and polders, are expensive and often insuf-

ficient. Extreme events, which are likely to be exacerbated by climate change in the future, require more specialised tactics.

One promising adaptation measure is called Ecosystem-based Adaptation (EbA). EbA harnesses the power of ecosystems like river meadows, forests or wetlands to cushion the impacts of climate change for the good of societies. For instance, opportunities for water storage are used.

On behalf of Germany’s Federal Ministry for Environment, Nuclear Safety and Buildings (BMUB), the Gesellschaft für Internationale Zusammenarbeit (GIZ) is helping the Thai government to expand ecosystem-based measures. The management of river basins, as well as irrigation, have the greatest potential.

Adaptation projects like this one are undertakings with great political relevance. They always involve balancing a variety of interests. For example, implementing nature-oriented measures requires access to land that is currently being used in other ways. Farmers or private companies may lose usable areas and sources of income. However, from the civil-society viewpoint, such measures protect ecosystems and improve safety and the quality of life.

It is vital that project staff interacts thoughtfully with local people and affected interest groups and find their acceptance. The same applies to cooperation between the various agencies responsible for irrigation, forestry and water management.

Amart Suthamcharat, the director of Thailand’s Bureau of Water Resources Conservation and Rehabilitation, considers it “most important” that agencies “develop a sense

of integrated planning for sustainable water management beyond their specific mandates”.

It is essential to be as flexible as possible. Flexibility can be achieved by increasing water-storage capacities, for example. That is useful for absorbing floods, but also in times of drought. One method used in Thailand was to build a sediment trap in the upper course of a water reservoir in the catchment area of the Huai Sai Bat River in the northeast. It has significantly reduced the sediment deposits in the retention basin and thus increased the water storage capacity.

The people affected were involved in every step of the process. The locals were in favour of the measure, even though the loss of valuable land hurt some of them. On the upside, there is now more water available to the general public, including for agriculture, so the regional economy has benefited.

The new, interdisciplinary approach to water management relies on innovative technology. A monitoring system that relies on drones was developed. For research purposes, a local university regularly flies drones over areas where meadows are being restored and wetlands protected. The researchers thus make visible the positive project impacts. The experience of local climate change adaptation informed the National Adaptation Plan (NAP), which is supported by GIZ too. Due to such efforts, future flooding and droughts will cause less damage.

In 2011, record flooding put large areas of Thailand under water.



## Making flood-risk maps publically available

People in the flood-risk areas depend on accurate and fast information – concerning water levels, for example.

The Drin River Basin in the Shkoder region in north-western Albania is susceptible to severe flooding. The area has experienced inundations on a regular basis in the past. The region's changing climate will make these events more frequent and intense in the future.

Major flooding in 2010 and 2013 resulted in serious economic and environmental losses, which the region has yet to recover from. The flooding in December 2010 alone was responsible for economic damage amounting to more than € 60 million. More than three quarters of people living in rural areas and a fourth of people living in the city of Shkoder were directly affected by the flooding. Without sufficient protection from the rising flood risk, social, economic and health hazards will only increase in future.

In addition to individual construction measures, Albanian authorities are focusing on information, early warning systems, prevention and spatial planning. On behalf of Germany's Federal Ministry for Economic Cooperation and Development (BMZ), the Gesellschaft für Internationale Zusammenarbeit (GIZ) is advising the governments of Albania, Montenegro, Kosovo and Macedonia on climate-sensitive flood risk management.

With input from local people, working groups drafted one regional and eight local flood-risk management plans.



Local and national administrative bodies, universities, rescue services, utility companies and non-governmental organisations (NGOs) were represented in the groups. The German project supported all actors involved, in line with the principles of the EU Flood Directive.

The planning takes into account everything from prevention to disaster management and reconstruction. It takes an integrated and comprehensive approach, recognising the importance of climate information. It also pays attention to gaps in land-use policies and the regulatory framework that need to be closed for climate-sensitive flood risk management.

An important part of the planning are flood-risk maps that show which areas are especially vulnerable. These maps were made publically available, which was an innovation.

In order to give the rivers more space, municipalities are now considering ways to restore flood plains. They are also developing adaptation measures to lower the risks to people, the environment, important cultural institutions and businesses.

In the city of Shkodra, the newly-founded civil protection service was given tools and training so it can respond fast to major flooding. Awareness-raising campaigns are teaching local people the best way to act before and during floods.

The project supports the establishment of a cross-border flood forecasting system for the Drin River Basin. The national hydro-meteorological agencies of Albania, Montenegro, Kosovo and Macedonia are now sharing data in real time. In the near future, the relevant authorities in the flood zones surrounding Shkoder will be able

to warn people well ahead of impending floods. Accordingly, emergency services have more time to prepare for dangerous situations.

According to Arben Gjuraj, the deputy mayor of Shkodra, involving local people was one key to the project's success. "Learning by doing and adapting EU planning practices to the local situation and requirements was an additional long-term benefit for my staff," Gjuraj says. During the presentation of the plan, Oljana Ifti, Albania's deputy environment minister, cited the close cooperation between different government institutions as the most important success factor.

The project is currently providing support to municipalities to update flood-risk maps and implement selected adaptation measures, such as maintaining drainage channels.

# “Every farmer must have an improved latrine”

Where people do not have access to clean water and basic sanitation, diseases spread easily. In an interview, Ibrahim Awol, the vice head of the health office of the Ethiopian district of Meskan, which has about 200,000 inhabitants, assessed the main challenges rural people face and discussed the progress made in recent years.

Ibrahim Awol interviewed by  
Katja Dombrowski

## Why is access to clean water and sanitation crucial for disease prevention?

Water is the basic thing. Without clean water, personal hygiene is impossible, and diseases spread easily. Diarrhoea is the worst problem in the rural areas. But we also struggle with typhus, for example, or trachoma, an eye disease that leads to blindness.

## What do you do to address these problems?

In disease prevention, Ethiopia's Ministry of Health focuses on three areas:

- mother and child health,
- hygiene and sanitation and
- control of communicable diseases.

Eight years ago, we started a programme using health extension workers who visit the households and provide clinical services at health centres and health posts in all parts of the district. Since then, child mortality has been decreasing, for example.

## What are the main challenges in this area in regard to water and sanitation?

We do not have enough wells. According to the standards of the World Health Organization, every household should have access to a safe-water source within 1.5 kilometres. At the moment, only 68% of the households in Meskan do so. Furthermore, there should be two health extension workers for every 5000 people, and we haven't achieved that standard either. The construction of latrines is a huge problem too. Only 57% of the households have latrines at all, while very few households have im-



In the district of Meskan, only very few people have access to an improved latrine (left), most people have a traditional latrine (right), while 43 % of the households do not have access to any latrine.

proved latrines which are deeper, better protected and have a cover. However, even those who do have latrines, do not necessarily use them.

## Why not?

Well, they are not accustomed to it. It is a question of norms and culture. But we are educating the farmers about the advantages of latrines. Our goal is to eradicate open defecation completely. The health extension workers have trained 789 volunteers from the communities, the so-called health development army, and they educate the local people.

## Do you see any progress compared with the time before the programme started?

Oh yes, there were a lot of improvements. Four years ago, when the programme

against open defecation started in Meskan, only 18% of the farmers had a latrine. Through our health extension workers, mother and child health improved, and child mortality decreased. The main cause of death for under five year-olds is pneumonia, and about one third of affected children used to die. Now, that number stands at 12%. For diarrhoea, the second most important cause, the rate improved from 30% to 20%. That's because people have learned to take their children to the health centres or health posts when they are sick. About a third of all deliveries today also take place at health institutions. Eight years ago, that share was only four percent. The immunisation rate improved a lot too. The government's rota virus immunisation campaign contributes to reducing mortality as well.



Hand dug well in Silti district, constructed by GTM.

## No water, no hygiene

In some parts of Ethiopia, the government is unable to provide basic services such as adequate health care and access to safe water. Local non-governmental organisations are trying to fill the gap with support from international donors.

CBM Germany, a Christian development agency, supports the trachoma control programme of Garbet Tehadiso Mahber (GTM), an NGO in Ethiopia's Southern Nations Nationalities and Peoples Region. It was established in 1996 with the aim to help people with disabilities and impaired vision.

Trachoma is a communicable eye disease and the leading infectious cause of blindness. It is also one of the neglected tropical diseases, as defined by the World Health Organization (see D+C/E+Z

e-Paper 2016/11, p. 14 ). Ethiopia is the most endemic country of the world for trachoma. The disease is widespread in poor, rural areas, where the most marginalised people live. It mostly affects children and women.

In the fight against trachoma, GTM follows the so-called SAFE strategy. It includes:

- Surgery for trichiarsis, the advanced stage of trachoma caused by repeated infections that lead to poor vision and blindness,
- Antibiotics distribution to treat infections and stem the spreading of the disease,
- Facial cleanliness and
- Environmental improvements to reduce transmission.

Five days per week, GTM sends four outreach teams to remote villages to educate the

people, treat trachoma and do eye lid surgery – even in the most basic health posts that neither have electricity nor water. The teams bring along everything they need in their vans – from eye charts to sterile surgery instruments.

Unless people change their behaviour, however, treatment is rather useless in areas of high prevalence. That's why awareness raising is an important part of GTM's work. The bacteria are in the discharge from eyes and nose. If many people sleep in the same bed, use the same piece of cloth for cleaning hands and faces – especially of children – and do not wash their faces several times per day with soap, trachoma spreads fast. Flies transmit the illness too.

"Clean water is crucial," says Redda Teklehaimanot, a medical doctor and the founder of GTM. Without water, personal hygiene is impossible. If safe water is a scarce resource or if it takes a lot of effort to fetch it from far away sources, people will drink it rather than use it for washing hands and faces. Since many project areas do not have adequate water supply facilities (see interview), the NGO builds wells too as part of the trachoma control programme.

"We first identify communities with water problems with the help of concerned government offices," explains Wubante Yalew, programme officer of CBM Ethiopia. "We talk to the district water offices, who have maps that indicate the supply situation – and we talk with the people themselves." Community members contribute work, for instance, digging the hole to up to six meters by hand and

putting concrete rings into the hole once it is finished. They also provide construction materials such as stones and sand if available in the area. The wells are closed so they are protected from contamination, and they are equipped with long-lasting manual pumps.

"After construction, the wells are handed over to the district," Wubante Yalew says. District officials regularly disinfect the water with chlorine and take care of maintenance and repair, while community members control the families' water use. "They set the rules, depending on the potential of the well." In the rainy season, for example, every household may use 40 to 60 litres per day, while in the dry season the supply only suffices for 20 to 30 litres. The water itself is free, but each family pays a small fee of 65 birr (2.60 euro) on average per year for maintenance and small repairs as well as for one selected community member who guards the well.

Close to each well, GTM also builds an improved latrine. One reason is to keep the area around the well clean – which is necessary to keep the water clean. As a matter of principle, the provision of safe drinking water depends on appropriate sanitation. Another reason is education. "The public latrine serves as a model," Wubante Yalew says. It too is built with community help. The goal is for every household to have such an improved latrine on their compound.

**Katja Dombrowski**

**LINK**

**CBM:** <http://www.cbm.org>

**What needs to be done so that one day all people in your district will have access to clean water and sanitation?**

Well, we have to keep working. We need more wells so that every household can get safe water in an appropriate distance, and every farmer must have an improved latrine.

**How much does such a latrine cost, and do you give any support to the people to construct them?**

The construction of an improved latrine costs 2500 birr (about 100 euros). We don't give any financial support, but we have instructed young men from the communities how to make cement covers, and they help the farmers to do it. The programme is called sanitation marketing. For the young men, it is a job opportunity: we give them start-up capital as a grant, so they can start a business making those latrine lids.

**Is there any contribution from donors or NGOs in this field?**



Yes, there are local NGOs such as GTM (see box, p.29) constructing safe water wells with the help of international donors, for instance, and that is very helpful. There is also the One WASH National Programme, which is supported by the World Bank and the African Development Bank. In its context, we are constructing communal latrines in one town, near the market and the

bus station. Our main problem remains the budget – like in many African countries.



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Please visit our website [www.DandC.eu](http://www.DandC.eu)



## Funding matters

The sixth Sustainable Development Goal (SDG 6) is to provide universal access to safe and affordable drinking water as well as universal access to improved sanitation by 2030. Malawi, a landlocked country with a population of 17 million people, still has a long way to go – and depends on money that donors are channelling through civil-society organisations for good reason. They worry about government corruption.

By Raphael Mweninguwe

Malawi is one of the poorest countries on earth. According to the World Bank, its gross national income per capita was a mere \$ 340 in 2015. That year, slightly more than half of its people were living below the national

nessed serious violent conflict since becoming independent from Britain in 1964, and yet many people are stuck in poverty.

Experts blame the political establishment for its economic and social woes. Local people tend to agree. Malawi still does not have universal access to water and improved sanitation.

“How can a country achieve that when its leaders are busy stealing from the very same people they claim to want to help?,” asks Alexander Phiri, a father of three from Mtandile. Most people in this slum in the midst of Lilongwe, the capital city, lack access to safe drinking water and proper toilets. Most families depend on unprotected wells. Water kiosks sell safe water, but many families find the prices

He is referring to the “cash-gate” scandal of 2013. It was revealed that government officials and suppliers had stolen millions of dollars from government coffers. As a consequence, multilateral and bilateral donors such as the EU, the World Bank, the African Development Bank, Germany, Norway, the USA, the UK and others stopped supporting the country’s national budget. Together, their support had contributed about 40% to Malawi’s national budget.

The discontinuation of aid flows had serious impacts, not only on the Water, Sanitation and Hygiene (WASH) sector, but on health services in general and education too. The greatest gaps, however, have probably opened up in sanitation infrastructure. Toilets are considered some-



Many people get their drinking water from the rivers.

poverty line. Social and economic statistics are generally not encouraging even though Malawi is a peaceful country. It has not wit-

unaffordable. Phiri sees politicians at fault. In his eyes, “leaders are busy stealing taxpayer money at the expense of the poor”.

thing dirty, so government leaders prefer to raise their profiles with other topics. As Malawian institutions never committed

huge resources to sanitation, donor funding matters in particular. In the financial year 2014/15, government expenditure on WASH was the equivalent of a mere \$1.1 million.

Peter Kumpalume, the health minister, says the government has no money to fund all the sanitation programmes needed. On the other hand, he admits that poor sanitation alone costs the government the equivalent of more than \$12 million per year. That money is spent on drugs to treat diseases which could have been avoided with appropriate practice of sanitation. Kumpalume says that non-governmental agencies are crucial for improving matters. He considers them “partners who work with us to help deal with sanitation problems”.

A number of civil-society organisations have indeed been working in many villages in Malawi with a focus on WASH matters. One of them is United Purpose (UP) (formerly called Concern Universal), an international NGO. With funding from the British government and UNICEF, it ran its WASH programme in central Malawi’s Kasungu and Dowa districts, targeting 420,000 people who live in the jurisdictions of 11 Traditional Authorities (TAs). TAs are local-government units that are led by traditional chiefs. Thanks to UP interventions, almost 1,800 villages have been declared to be free of open defaecation (ODF).

Heather Campbell, the NGO’s country director, reports that 714 boreholes were drilled for about 180,000 people, with 42 boreholes serving schools. She sees “remarkable progress in sanitation and hygiene” since 2013, when the programme started.

Overall progress was not bad for a long time. According to WaterAid, 88% of Malawians used basic sanitation in 2012, while 10% had access to improved sanitation. From 1990 to 2012, the share of people who practiced ODF was reduced from 29% to seven percent. The financial bottlenecks after cash-gate have slowed progress down, however. Today, approximately 80% of the resources allocated to the sector are from international donor institutions that channel their funding through international and local NGOs.

Personal hygiene matters too, of course. Some studies show that only 37% of the population practice good hygiene. According to WaterAid, only four percent of schools in Malawi now have hand washing facilities and provide soap. Sanitation is poorly managed in other public institutions too, including markets and health facilities.

**PAN-AFRICAN CHALLENGE**

Malawi has signed international agreements relating WASH issues, most prominently the UN 2030 Agenda for Sustainable Development. There are African agreements as well. Ministers from AU members adopted the eThekweni Declaration in the South African town of the same name in 2008. The follow-up, the Ngor Declaration, was adopted in 2014. Malawi is a signatory of both.

African leaders acknowledge that sanitation is not getting the attention it deserves. UNICEF and the World Health Organization reckon that the number of people who practice ODF in Africa actually increased from 227 million to 233 million in the years 2000 to 2012. Such data show that infrastructure investment has not kept up with population growth.

One of the eThekweni commitments was to spend 0.5% of GDP on sanitation every year. Unfortunately, many countries failed to live up to it. In 2014, AU leaders thus had to admit that more needs to happen. Among other things, the Ngor Declaration commits AU nations to achieve universal access to improved sanitation by 2030. It is remarkable that this goal was set before the SDGs were adopted.

Malawi is still not investing 0.5% of GDP in water infrastructure. To be fair, the country has struggled with a serious draught last year. However, WaterAid argues that the ministries in charge of irrigation and water development should have specific budget lines dedicated to sanitation and hygiene. So far, only the Ministry of Health has such a budget line, and its focus is on curative, not preventive health care.

Action is required in urban areas too. Lilongwe and Blantyre are Malawi’s major cities. They have more than one million in-



habitants each, and their populations are growing fast. Their sewer systems, however, were built under colonial rule in the 1950s. In Blantyre, 10% of people’s homes are connected to sewerage pipes and treatment plants, while the comparative share in Lilongwe is 20%. So far, waste water from households and industries ends up in rivers and streams in both cities.

The rivers, however, are the main source of water for thousands of city dwellers. Because the sewer system is completely overburdened, moreover, ground water is contaminated – and so are the wells that many more people depend on. This is the main reason why water-borne diseases are common. The plain truth is that universal access to safe water is impossible without universal access to sanitation.

In both cities, new mayors were elected in January 2017. Both have promised to improve sanitation. It remains to be seen how they will mobilise resources for massive infrastructure investments.



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The screenshot shows the Facebook profile for 'D+C Development and Cooperation'. The page header includes the name 'D+C Development and Cooperation', a search bar, and navigation icons for friends, messages, and notifications. The main content area features a cover photo of a green and blue building labeled 'EL PARAISO'. Below the cover photo are buttons for 'Like', 'Follow', 'Share', 'Learn More', and 'Message'. The left sidebar contains the profile picture, name, and navigation menu (Home, Posts, Photos, About, Likes, Create a Page). The main feed shows a post from 'D+C Development and Cooperation' with the text: '#ClimateChange Adepton The Drin River Basin in the Shkoder region in north-western Albania is susceptible to severe flooding. The area has experienced inundations on a regular basis in the past. The region's changing climate will make these events more frequent and intense in the future.' Below the text is a photo of a person in a red jacket and white hat standing next to a measuring scale in a forest. The right sidebar includes a 'Magazine' section, a 'Community' section with '163,878 people like this' and '163,762 people follow this', and an 'About' section with links for 'Send message', 'www.dandc.eu', and 'Magazine'. At the bottom of the right sidebar, there is a 'Pages liked by this Page' section listing 'UWC Online - Univers...' and 'Cepel'.





# Freshwater from the desert

Contrary to common belief, the most important riches of Libya are not the oil wells, but water. The world's biggest reservoirs of fossil freshwater lie below its desert. Through an extensive pipeline system, these aquifers provide the country with water for consumption and agriculture. The so-called "Great Man-Made River" is the world's largest irrigation project.

By Moutaz Ali

Libya's Great Man-Made River (GMMR) currently transports almost 2.5 million cubic metres of water daily. It runs through an underground network of pipelines from

mainly a huge desert with a few scattered oases. Rain falls only on five percent of its surface. There is not a single river that would carry water the whole year round. Water scarcity has always been a huge problem.

The solution was found by chance when oil companies were drilling in the Libyan desert looking for crude in the 1950s. "They discovered basins containing huge amounts of water," says geologist Zakaria Al-Keep. "It was fossil freshwater which had been stored underground for thousands of years."

Libyan researchers were thrilled. They had been assessing various ways of obtain-

On 28 August 1984, Muammar Gaddafi, the dictator who was toppled and killed in 2011, laid the foundation stone in Sarir. The plan was to drill 1,350 wells across the four basins.

Many of those wells are now operational. Most are more than 500 metres deep. They are connected to the coast by prestressed concrete cylinder pipes. Each pipe is seven meters long; the diameter is four meters. In total, more than 4,000 kilometres of pipeline have been built. They deliver over 6 million cubic meters of water per day. An additional 2,000 kilometres are planned.

The GMMR is the world's biggest irrigation project ever. In 1999, the UNESCO awarded Libya a prize for notable scientific research regarding the use of water in desert areas.

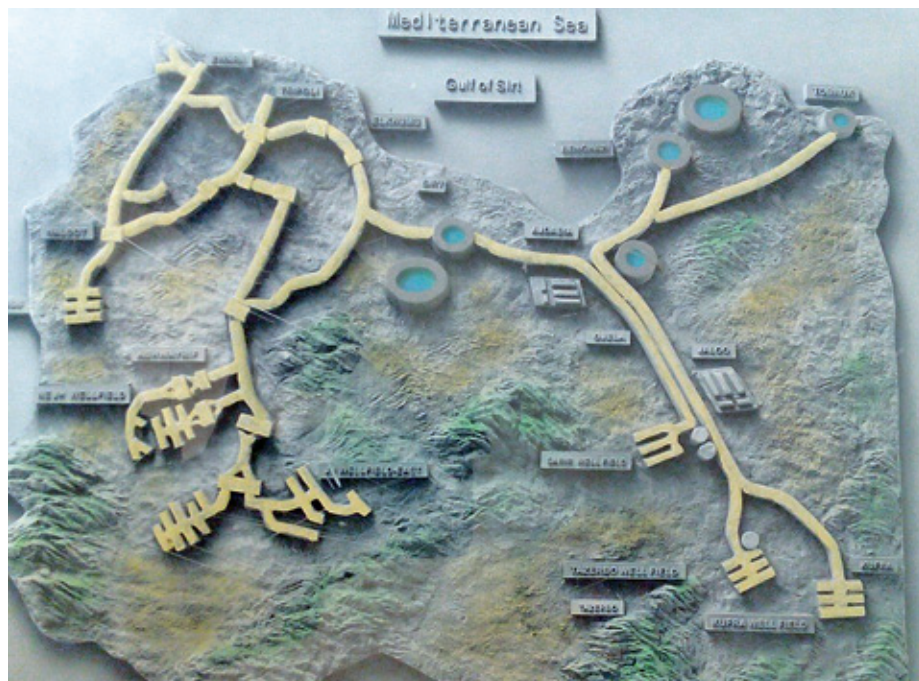
The infrastructure is owned by the GMMR Project Authority. The primary contractor for the first phases in the Gaddafi era was the Dong Ah Consortium. Currently, the main contractor is Al Nahr. Both are domestic construction companies. Korean and Australian firms have supplied some technical parts.

So far, Libya has managed to build the GMMR without financial support from other countries or loans from banks. Taxes on tobacco and fuel contributed to mobilise money, and of course oil revenues helped. The total costs of the GMMR amount to more than \$ 36 billion so far. By 2007, three out of five project phases were implemented, providing all major cities with water. Phase four has made good progress, but further construction was put on hold because of the revolution in 2011 and on-going civil war ever since.

## THE NUBIAN SANDSTONE AQUIFER SYSTEM

Fossil water is stored in deep layers of the earth. Most of it has probably been there since glaciers melted thousands of years ago. The Nubian Sandstone Aquifer System (NSAS) is the biggest fossil freshwater reservoir in the world, estimated at 373,000 billion cubic metres, covering some 2 million square kilometres.

The NSAS lies under the Sahara desert, underneath the territorial lands of



Model of the "Great Man-Made River" irrigation project in Libya.

the Nubian Sandstone Aquifer System in the Great Sahara desert to the coastal urban centres, including Tripoli and Benghazi. The distance is up to 1,600 kilometres. The GMMR currently provides 70% of all freshwater used in Libya.

Except for the green and fertile strip along the Mediterranean coast, Libya is

ing drinking water. Options included the desalination of seawater or importing water from Europe by pipeline or ships. Now another possibility was to exploit fossil water resources from four underground desert basins: Sarir and Kufra in the south-east and Murzuq and Jabal Hasawanain the south-west. The idea of the GMMR was born.



Desert road in south-western Libya.

Libya, Chad, Egypt and Sudan. In 2013, the governments of these four countries agreed on a framework for joint management of the water resources, which have the potential to meet their growing water demands for a long time.

Careful management is necessary, however. Most likely, the aquifers' water is not replenished by nature and will eventually be depleted. Accordingly, questions arise as to how long the resources will last. GMMR officials say that there so far is no decisive scientific proof of the origins of the water.

"In cooperation with different international institutions, we are measuring the level of the fossil water annually," says Mahmud Abu Aisha of the GMMR. "We discovered that the level of the underground water drops by one centimetre in some years, which means nothing." Surprisingly, however, the level actually rises in some years. His conclusion is that "there might be larger tributaries to our underground basins."

GMMR officials reckon that Libya's underground water could last for 650 years. Other experts claim the aquifers will be exhausted in 250 years. The default age of the pipelines, however, is 50 years. They must be renewed twice per century.

## AGRICULTURE AND ENVIRONMENT

Thanks to the massive freshwater flows from the GMMR, agriculture has become feasible also in desert areas. The government invested in seven big agricultural schemes. One is south of Tripoli, the capital. This project in the Jafara plains consists of 3,300 hectares, divided into 665 farms. These farms produce different kinds of citrus fruits, wheat,

barley and vegetables. There were plans to plant millions of palm trees farther south, but fighting in recent years disrupted developments.

Environmental impacts should generally be assessed before a major project is started. Libyan law demands that this must be done. But it did not happen in the case of the GMMR, as Khalifa Elawej, an advisor to the General Board of Environment, points out. The political decision to start was taken in view of an "acute shortage of water". At the time, the cost of fossil water was only a tenth of that of desalinated water. To date, no environmental impact assessment has been done.

According to Elawej, it is impossible to give an accurate account of the environmental effects because relevant data are unavailable. Lots of research would be needed. However, some impacts are obvious, he says. Positive impacts include:

- The GMMR has helped to expand the green areas in the north and west of the country, stemming further desertification.
- The green areas contribute to tempering the weather.
- Traditional water resources in the north have been spared as people can now rely on GMMR water instead.
- Agricultural production has increased. There are downsides too, according to Elawej:
  - The desert environment of the areas where the fossil water is taken from may be changing.
  - The pipeline network itself may affect the environment.
  - Some of the water is stored in open pools, and evaporation leads to salinisation.

Salinity of the GMMR water is high according to international standards, though it is not as bad as in the north's traditional wells, which are affected by an influx of seawater.

- Since most – and perhaps all – of the fossil water is not renewable, limited resources are being used.

## DESTRUCTION AND SABOTAGE

In the course of the civil war, the GMMR has suffered severe damage. During the revolution in 2011, NATO airplanes bombed water ducts in Brega. They also targeted a pipe factory, possibly in order to cut off Gaddafi's forces from their water supply. More recently, sabotage actions took place in the south. In March 2017, the GMMR administration issued a warning that repeated assaults on wells at Jabal Hasawna might completely stop the water flow to Tripoli and other north-western cities.

Libyans are proud of the GMMR. But they also know that they depend on it. Urban people used to have only very limited access to drinking water. "I remember the years when my father used to drive for two hours to visit friends at the next oasis and bring back some gallons of fresh drinking water," recalls Maia Ben Shaban, who lives in Tripoli. She has fond memories of the special day when the GMMR was linked to the city in 1996, substantially improving residents' standard of life.



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# Long-term structural development

South Sudan was marked by four decades of war and has been embroiled in yet another civil war since 2013. This devastating scenario has affected the country's entire infrastructure, including water and sanitation services. On behalf of the Federal Ministry of Economic Cooperation and Development (BMZ), GIZ supports the country to improve the infrastructure for supplying drinking water.

By Anke Peine and Christian Grünhagen

With the peace agreement in 2005 and independence in 2011, it finally became possible to plan and start building a public infrastructure for basic services. More than half of the people do not have access to clean drinking water, and the share of people who have access to adequate sanitation services is even smaller. The recent crisis has worsened the situation further.

The infrastructure for supplying drinking water is underdeveloped in South Sudan, primarily because of the decades of war and the lack of investments. Moreover, the institutional environment is not up to the task. There is an immense shortage of qualified personnel and knowledge at all levels, from the water utilities at local levels up to the national ministries.

In a first phase, GIZ supported important reform efforts at the national level. A strategy was adopted for the water sector. It included drafting legislation to define institutional responsibilities for water and sanitation. According to the Local Government Act of 2009, local authorities are in charge of providing basic services. Moreover, models for a sustainable and professional service provider operating under the local government authorities were piloted at the local level.

Local institutions had to be established. They gained some capacities and were provided with funding. On this basis, the actors involved had to figure out what their new roles were. This was a challenge for everyone holding office in administrative and government bodies as well as for all agencies hoping to support them and



Because there is no plumbing in much of South Sudan, the drinking water must be brought to customers in tank trucks.

the citizens in general. As a first step, service provision models had to be created, with all relevant actors assuming responsibility at the local level. Their interaction had to be rehearsed.

## CAPACITY DEVELOPMENT ON A SMALL SCALE

Preparing for larger investments, small water utilities were first conceived and established. They are owned by the municipalities of Yei (2012), Yambio (2013) and Torit (2015), but operated as private-sector entities. Since there was no or no fully operational infrastructure, the GIZ developed a new model. It included water kiosks, filling stations and trucks with water tanks. On this bases, local utilities could develop their technical, administrative and financial capacities. In Yei, the GIZ set up an entirely new system. It had two deep wells. The water from these wells was treated with chlorine and stored in a tank. The distribution network included a filling station and nine kiosks, to which water was piped relying on gravity. Tank trucks were acquired in the first crisis of violence in order to be able to supply water to the most vulnerable

communities. In Torit, however, there was some derelict infrastructure. It was rehabilitated with funding from KfW Development Bank.

To strengthen local capacities the new model depends on local staff and, when necessary, some external support. Major infrastructure investments were financed by KfW Development Bank under several conditions. The utility had to be legally established and appropriately equipped, for example. Moreover, the utility had to be staffed adequately. Urban development and the pipe network had to be planned properly. To ensure sustainability, moreover, tariffs must be designed diligently. They must cover costs, but they must not make water prohibitively expensive for poor people.

Owning privately operated utilities, the municipal administration set up boards of directors. These boards monitor performance and set strategic goals. Some directors are from government agencies, others from civil society. Successful water supply has boosted the boards' legitimacy as well as that of local governments. At the same time, the relationship between citizens and the lo-

cal administration has improved and an understanding of respective roles has grown.

In spite of South Sudan's current strife, at least 5,000 people in Torit and Yambio still have access to safe drinking water that is provided through kiosks and trucks.

## EXPERIENCE – SUCCESS – LESSONS

Working at the local level was important in order to achieve two goals:

- Water supply improved fast, with many people benefiting.
- Government institutions were built at the local level, and local actors assumed responsibility.

Jurisdiction over water and sanitary services was decentralised. The strong role of local actors has boosted civic engagement, commitment and institutional resilience. That this is true became evident when violence first re-erupted in December 2013. The local structures were able to maintain the small infrastructure systems without the presence of international agencies. Success was not interrupted.

Cooperating with various governmental levels not only helps to expand programmes fast. It also allows for resolving problems at the local level. Feedback from the local level, moreover, contributes to designing long-term models for providing basic services in other sectors nation-wide. For

example, the governance model of the water utilities' boards of directors was adopted in 2016 for locally operated slaughterhouses in Wau, Aweil, Kuajok and Rumbek.

One lesson learned is: Wherever local administrative structures exist, they should be relied on – and supported – in times of crisis. Doing so prevents conflicts, concerning tariffs, for example. Moreover, the sustainability of institutions must be fostered in particular in times of crisis. Existing systems can be expanded or adapted to provide humanitarian assistance. The acquisition of trucks with water tanks has proved useful in this context. They serve to supply water to remote areas as well as informal settlements of internally displaced people. Short-term humanitarian efforts should definitely rely on local partners and the infrastructure they use, wherever possible, and cooperate with them on improving such infrastructure.

Since 2015, the water utilities' operating costs have skyrocketed due to high inflation and the collapse of South Sudan's currency. The price of diesel has risen in particular. The envisioned tariff that was both cost-covering and poverty-oriented is no longer feasible in these circumstances. The utilities therefore need international funding. Otherwise, they will have to stop their vitally important services.

The GIZ is currently supporting water utilities in Yei, Yambio and Torit in spite of

the ongoing strife. It is providing funding and diesel to ensure water is supplied to the people. Once the security situation improves again, it will be possible to cooperate with local authorities on scaling up the water supply systems. That worked out well in Yei in 2014. Building sustainable institutions for the long run requires a minimum level of stability in regard to the economy and personal security, of course. In countries that, like South Sudan, are plagued by fragile statehood, stamina is needed – as well as the cooperation of all relevant partners in government, private sector and international development to improve people's livelihoods in the long run.



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Both authors are expressing their personal views in this essay.

## South Sudan: A country of civil war

Since the Comprehensive Peace Agreement (CPA) with Sudan in 2005 and the subsequent independence in 2011, South Sudan has only seen very few years without major unrest. Civil war re-erupted in 2013, and the economic crisis has since kept

getting worse. The country is facing famine and a refugee disaster. There is hardly any infrastructure. Basic services are mostly unavailable. The scenario is bleak in regard to roads, electricity, drinking water and sanitation. Less than half of the

population has access to safe drinking water, and fewer than one in five people have access to appropriate sanitation.

Over the past few decades, international humanitarian agencies, in particular international non-governmental organisations (NGOs) and UN bodies, have been providing basic services in the sectors of education, water and health. Masses of people depend on emergency relief, which, how-

ever, is really only meant to be a short-term intervention.

The investment gap for providing basic water and sanitary services amounts to some \$ 1.6 billion. The greatest challenge, however, is the "non-existence" of relevant institutions, capacities, infrastructure and laws, which are desperately needed to improve the infrastructure for supplying drinking water in the country.

# Global threat

Together, India and China account for 80 to 90% of global antibiotics production. Hyderabad in India is one of the manufacturing centres. German scientists and journalists have analysed industrial wastewater there and found it contained multi-resistant bacteria (MRB) – microorganisms that are carried to countries all over the world by trade, tourism and even migrating birds. Studies show that some 90,000 people in Europe die every year because of MRB infections, most of which occur in hospitals. Christoph Lübbert, a doctor from Leipzig University Hospital, was involved in the research in Hyderabad and warns of a global threat.

Christoph Lübbert interviewed by Sabine Balk

**Why has the MRB problem grown so much worse in recent years?**

From time immemorial, bacteria have had to defend themselves from naturally occurring antibiotics. Fungi, for example, produce such antibiotics. Today, bacteria also encounter human-made antibiotics, which are either derived from nature or produced by chemical synthesis. Such drugs have been excessively used for years, both in human medicine and in livestock raising. When bacteria are massively exposed to antibiotics, resistance emerges. That can happen in hospitals, in laboratories and pharmaceutical production plants. In practice, it mostly happens when an antibiotic is prescribed too often and too readily. Things become particularly dangerous when antibiotics get into the open environment and come into contact with bacteria that are already resistant. That is how MRB are incubated. They multiply fast.

**Is there really no defence against those bacteria?**

We normally still have two or three antibiotics left that are effective against extremely multi-resistant bacteria. That number is small. We are close to having our backs against the wall. If this trend continues, we will eventually have no effective antibiotic against certain germs. That is scary.

**Why is the problem in developing and emerging countries like India even more serious than in Europe?**

Antibiotics are consumed on a massive scale. They are available without prescription and are relatively cheap. Poor hygiene is also a problem, of course. Every year, some 60,000 newborn die of MRB infections in India, according to one study. Apart from that, patients in India are not tested to establish what pathogenic bacteria are present in the body and which antibiotics need to be used. All too often, the technology needed is unavailable. In many

everywhere. Even in Germany, awareness of the issue has grown only in recent years. We are learning more about the globalisation of pathogens and MRB daily. In India, more awareness of the dangers is needed, both in regard to healthcare and the natural environment.

**Why did you look for multi-resistant bacteria in India?**

For some time, we have been screening all patients who have been in a foreign hospital or on holiday abroad for MRB when they are admitted to our hospital in Leipzig. The



Indian pharmaceutical companies such as Dr. Reddy's Laboratories make antibiotics for the global market in Hyderabad.

countries, various antibiotics are used simply by trial and error, without adequate microbiological diagnostics. At Leipzig University Hospital, we routinely test for 24 substances. That is not standard practice

high incidence of certain MRB in people returning from India was noticeable, and we wanted to know the reason. Journalists working for the broadcaster NDR got in touch, moreover. They were interested in

the topic too and wanted to make a documentary. So, we went to Hyderabad together. We collected samples there and could prove that large populations of MRB were present in the open environment. Moreover, very high levels of both antibiotic and antifungal substances were present in the immediate vicinity of pharmaceutical manufacturing plants. That is worrying. In all probability, the main source of MRB is human and animal faeces, but the resistance development is being “fuelled” even more by pharma-industry effluents. We made a film about it and verified the findings in a systematic, scientific study (see Lübbert et. al., 2017).

#### What is the situation in Africa?

Africa has similar problems, but they have not been documented. If you take a close look, you will probably find even more resistance problems than those we know of today. However, Africa has no significant pharma industry that might release antibiotics into the environment. It has a different problem. The pharmaceuticals that are imported to Europe are quality-tested, even though there is no detailed evaluation of the circumstances of the manufacturing process. But the products shipped from India and China to Africa are often of lower quality. Africa gets what cannot be marketed globally.

#### As a pharma producer, China is just as important as India. What are conditions like there?

The big difference is that pharma producers rely on better infrastructure in China. Companies in China are connected to the regular water-supply system. In India, they have water delivered by lots of tank trucks every day. In most cases, there is no proper system for effluent treatment. In many ways, the situation resembles the early days of the industrial revolution in Europe. On the other hand, we do not know much about pharma production in China. The autocratic system there prevents independent research. In India, journalists and scientists can move around freely and are in a better position to flag up problems. The two countries work hand in hand, however. The raw materials for antibiotic products mostly come from China and

are processed in India, and then western pharma companies simply re-label them and market them with huge profits. There is hardly any transparency, and that serves the pharma companies' interests.

#### What do the Indian pharmaceutical companies say to the charges?

They are dodging the issue. At present, they are probably still focusing on profitability targets. They take the easy way out, denying and downplaying everything. The pharmaceutical companies have published a study of their own. It concludes that MRB pollution around industrial facilities is no higher than anywhere else in the country. But the methodology of the study was obviously flimsy. Pride in the fact that India has developed this industry and now sells pills to the entire world certainly plays a role too. It is like in Germany 30 years ago, and the diesel problems of the German automobile industry show that there are still areas where environmental awareness is lacking here. India is not the only place that needs more effective controls.

#### What must happen next to contain the MRB problem?

If we start wagging a finger, dictating conditions and telling Indian partners how to make pharmaceutical products, it will certainly trigger a defensive reflex. That won't work. But we need to make a few things clear in the international debate:

- First of all: we have a problem, and it is bigger than we thought.
- Second: these substances must on no account be released into the environment as a result of pharma production. All manufacturing processes must be clean. That rule has actually been established, but it is not enforced everywhere.
- Third: every country needs to assume responsibility because the health of its population and the population of the world is at stake.

In the worst cases, governments need to close factories or force them to modernise.

#### And what about western pharma corporations?

They also have a responsibility, of course. They must make the provenance of their products transparent. Details of where

and how their ingredients were processed must be clearly displayed on the packaging. When I ask for such information at present, neither sales staff nor senior management can give me an answer. It matters that the manufacturing locations keep changing. If producing a pill costs three cents less somewhere, production shifts there. Compulsory labelling would end the lack of transparency and could also reveal where and how much prices are marked up. In this sense, things are actually similar in the garments industry.

#### What should happen at the political level?

It would be a pity if our initiative were just a flash in the pan. I hope awareness of the global MRB threat will grow – among the general public, in the business community and at policy-making levels. It could become a topic at the upcoming G20 summit, and that would be the right forum for tackling the issue since India and China will take part. That is very important. It is encouraging, moreover, that our study is generating widespread interest in the scientific community. We need to expand and improve the body of research and evidence.



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#### LINKS

**NDR documentary on multi-resistant germs in connection with Indian pharmaceutical companies (only available in German):**

<http://www.daserste.de/information/reportage-dokumentation/dokus/videos/der-unsichtbare-feind-video-102.html>

Lübbert, C., et al., 2017: Environmental pollution with antimicrobial agents from bulk drug manufacturing industries in Hyderabad, South India, is associated with dissemination of extended-spectrum beta-lactamase and carbapenemase-producing pathogens.

<http://link.springer.com/article/10.1007%2F15010-017-1007-2>



Photo: Bellingh/Photography