



Annual Report 2014–2015



»Thinking long-term, acting now«

For more than 35 years BORDA is working with partner organisations to improve the living conditions of socially disadvantaged groups and protect the environment. In 2014 BORDA was active in five different regions worldwide.

Key to our work is the close cooperation with local partners, experts on the ground, and governments as well as community members and schools.

Knowledge exchange and capacity building are at the core of BORDA's work to ensure sustainable change towards a healthier future.

BORDA's expertise in the area of decentralised solutions for basic needs services covering water, waste water, alternative energy generation and waste management is requested in fragile states like Mali or Iraq. To support refugees as well as local communities in ongoing crises, BORDA is now active in the Middle East and West Africa.

with support from:



2014 in Retrospect

4

Table of Abbreviations

6

Project Overview

8

Middle East and Central Asia

10

Eastern and Southern Africa

18

Southeast Asia

26

South Asia

34

Las Américas

32

Free Hanseatic City of Bremen

50

Weltwärts-Aktionstage

52

World Water Week

54

Emergency Response

56

Facts and Figures

58

Outlook 2015

60



2014 in Retrospect

»Thinking long-term, acting now!«
Although this BORDA slogan was developed several years ago, it still, more than ever, reflects BORDA's work in 2014.

Stefan Lentz



Stockholm World Water Week 2015 around the need for gender-sensitive indicators for the Sustainable Development Goals.

»Thinking long-term, acting now!«

Although this BORDA slogan was developed several years ago, it still, more than ever, reflects BORDA's work in 2014. For the first time in BORDA's history, we have started to strategically branch into a new field of activity: working on improving current living conditions for people, for whom the term future has receded into the distance. For example, for the first time since the tsunami catastrophe in Southeast Asia 10 years ago, BORDA is engaging in the area of humanitarian aid again (page 54). Meanwhile, in Kurdistan, northern Iraq, BORDA is establishing reliable sanitation systems for refugee camps for a BMZ special initiative (page 56).

In September 2014, in the context of World Water Week in Stockholm, the German Foreign Office and the German WASH-Network (including BORDA) began to jointly develop the strategic foundations for the future of German humanitarian aid in the WASH sector (page 56).

Additionally, for the first time in 14 years, BORDA is conducting a number of food security and rural development measures in crisis-ridden Mali. In 2015, BORDA will also further develop special initiative projects, similar to the one in Mali on combating hunger, in various BORDA regions worldwide.

BORDA's internal organisational structure also saw significant changes in 2014. At the BORDA headquarter in Bremen three new positions were created in the areas of Food Security, Monitoring & Evaluation, Project Administration and Scientific Relations, in order to secure their strategic relevance and co-ordinate and align measures globally.

2015 is going to be historic year to shape the next 15 years of universal sustainable development.

BORDA will be there thinking long-term, acting now!

Dear Reader,

There has not been a year in the history of BORDA where thoughts of the future were as omnipresent as in 2014.

With the Millennium Development Goals (MDGs) coming to an end in 2015, the process of developing a plan for the new era of the Sustainable Development Goals (SDG's) has begun. In February 2014, BORDA together with the German WASH-Network invited to an evening to discuss the relevance of water, sanitation and hygiene in the Post-2015 Agenda with the newly elected members of the German Federal Parliament in Berlin, Germany. Also in early 2014 started the process for the 7th World Water Forum in Korea, where BORDA was highly involved in 2014 as well as 2015. Later in 2014, BORDA together with organizations like WECF, UNESCO, WWAP, UNEP, GiZ, and networks like AMCOW and SuSanA started to prepare an event for the

Table of Abbreviations

| | | | |
|----------|---|----------|---|
| ACP | African, Carribean and Pacific Group of States | DTF | Devolution Trust Fund, Zambia |
| ADB | Asian Development Bank | ECOSAN | Ecological Sanitation |
| Aus | Australian Government Overseas Aid Program | EDMS | Electronic Document Management System |
| AUWSSC | Afghan Urban Water Supply and Sewerage Corporation | ESP | Environmental Services Program |
| ATVI | Afghan Technical Vocational Institute | EU | European Union |
| Bappenas | National Development Planning Agency, Indonesia | GIZ | Deutsche Gesellschaft für Internationale Zusammenarbeit |
| BMGF | Bill & Melinda Gates Foundation | GFK | Glasfaserverstärkte Kunststoffe / Fibreglass reinforced |
| BMZ | Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung / German Federal Ministry for Economic Cooperation and Development | HIE | Health Impact Evaluation |
| CAPS | Center for Advanced Philippine Studies | IDRC | International Development Research Centre Canada |
| CASS | Centre for Advanced Sanitation Solutions, India | IMTA | Instituto Mexicano de Tecnología del Aqua |
| CBS | Community Based Sanitation | IWA | International Water Association |
| CEPT | Center for Environmental Planning & Technology | KEU/CEU | Kommission der Europäischen Union / Commission of the European Union |
| CMAK | City Managers Association of Karnataka, India | KfW | Kreditanstalt für Wiederaufbau, German Development Bank |
| CSP | City Sanitation Plan | LA | Las Américas / Latinoamérica |
| DBNS | Decentralised Basic Needs Services | M&E | Monitoring and Evaluation |
| DERES | Decentralised Renewable Energy Systems | MDG | Millenium Development Goals |
| DESWAM | Decentralised Solid Waste Management | MoU | Memorandum of Understanding |
| DEWATS | Decentralised Wastewater Treatment Systems | NGO | Non-Governmental Organisation |
| | | OAV | Ostasiatischer Verein Bremen e. V. (German Asia-Pacific Business Association) |
| | | O&M | Operation & Maintenance |
| | | P-Locsan | Projects on Low Cost Sanitation |

| | | | |
|---------|---|-------|---|
| prefab | pre-fabricated / prefabrication | USDP | Urban Sanitation Development Programme, Indonesia |
| QMS | Quality Management System | VER | Voluntary Emission Reduction |
| R&D | Research and Development | VUSAF | Union of Assistance for Schools in Afghanistan |
| RGRHCL | Rajiv Gandhi Rural Housing Corporation Limited | WASH | Water, Sanitation and Hygiene |
| SADC | Southern African Development Community | WECF | Women in Europe for a Common Future |
| SANIMAS | Sanitation by Neighbourhoods | WHO | World Health Organisation |
| SANMAP | Sanitation Mapping | WSP | Water and Sanitation Program of the World Bank |
| SBS | School Based Sanitation | WSIP | Urban Water Supply Improvement Programme |
| SCI | Sustainable Cities International, Canada | WWAP | World Water Assessment Programme |
| SEA | Southeast Asia | | |
| SME | Small and Medium sized Entities | | |
| SUBV | Senator für Umwelt, Bau und Verkehr, Bremen (The Senator for Environment, Construction and Transport, Bremen) | | |
| THW | Technisches Hilfswerk | | |
| ULSA | La Universidad Tecnológica la Salle, Nicaragua | | |
| UNAM | Universidad Nacional Autónoma de Mexico | | |
| UNI | Universidad Nacional de Ingeniería | | |
| UNEP | United Nations Environment Programme | | |
| UNESCO | United Nations Educational, Scientific, and Cultural Organization | | |
| UNICEF | United Nations International Children's Emergency Fund | | |
| USAID | United States Agency for International Development | | |



- Regional Office
- Project Partner

LAS AMÉRICAS

Pedro Kraemer
Phone +52.5549.59 39 81
Mail mex@borda-la.org
Web www.borda-la.org

BREMEN

Fahrenheitstraße 9
28359 Bremen
Phone +49.421.40 89 52 0
Fax +49.421.40 89 52 50
Mail office@borda-net.org
Web www.borda-net.org
FB facebook.com/borda.bremen

EASTERN AND SOUTHERN AFRICA

Andreas Schmidt
Rose Garden Road
Plot No: 312 Mikocheni
PO Box. 105744
Dar es Salaam
Tanzania
Phone +255.222.77 12 09
Mail dar@borda-sadc.org
Web www.borda-sadc.org



MIDDLE EAST AND
CENTRAL ASIA

Mail kbl@borda-afg.org

SOUTH ASIA

Stanzin Tsephe
 Survey No. 205
 (Opp. Beedi Workers Colony)
 Kommaghatta Road, Bandemath
 Kengeri Satellite Town,
 Bangalore, 560060 India
 Phone +91.80.28 48 67 00
 Fax +91.80.28 48 21 44
 Mail bangalore@borda-sa.org
 Web www.borda-sa.org

SOUTHEAST ASIA

Frank Fladerer
 Kayen No. 176
 Jl. Kaliurang km 6,6
 Yogyakarta 55283
 Indonesia
 Phone +62.274.88 82 73
 Mail yogya@borda-sea.org
 Web www.borda-sea.org



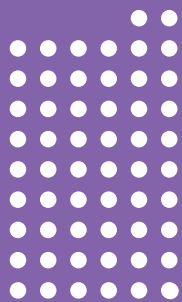
258 m³

Wastewater
purified per day



1,812,594

Turnover in €



56

Employees



Middle East and Central Asia

Training professionals to deliver sustainable decentralised basic sanitation and wastewater treatment in Afghanistan and improving basic sanitation in refugee camps and neighbouring areas in Northern Iraq

Background Many years of civil war and Taliban rule have resulted in massive devastation of Afghanistan's civil infrastructure. The destruction has been accompanied by the loss of local capacities which are now urgently needed to rebuild. As Afghanistan's urban centres have grown rapidly in the ten years since the fall of the Taliban regime, so has the demand for suitable technologies and capacity building, towards sustainably restoring civil infrastructure. Solutions to improve waste treatment and disposal are urgently needed to protect freshwater resources. Children in contact with contaminated water sources have a high risk of contracting life-threatening diseases and conditions such as diarrhoea. These risks have resulted in a high child mortality rate in Afghanistan.

In the autonomous Kurdistan region of Northern Iraq, both Syrian refugees and internally displaced people are struggling under difficult living conditions that prevail in the region's numerous refugee camps and surrounding areas. Although the growing number of people in search for refuge has led to the establishment of further camps, most camps still lack adequate management systems for waste water, faecal sludge and solid waste. As a result, unsafe pit latrines in direct proximity to refugee shelters contaminate water sources and pose a permanent risk to the refugees and local population.



Afghanistan

Iraq

Project Goals The objective of the vocational training in Afghanistan is to educate Afghan craftsmen and small-scale entrepreneurs in the implementation of basic sanitation and decentralised wastewater treatment systems. The aim is not only to improve sanitation, but to also protect natural resources. The project was launched in 2011 and focuses on the cities of Kabul, Kunduz, Jalalabad and Herat. In addition to conducting training courses, the programme establishes a manufacturing plant for pre-fabricated DEWATS systems made from fibreglass.

At a policy level, BORDA is working towards the integration of decentralised wastewater treatment solutions into legal frameworks on domestic wastewater treatment and the recognition of decentralised solutions as an instrument of city-wide disposal planning. At an operational level, at least 15 biogas plants will be built by the end of 2015. Overall, the project aims to provide at least 25,000 people with access to improved sanitation facilities. The connections to wastewater treatment systems will reduce the organic contamination of the water by 80%. The goal is to also improve the hygiene conditions in settlements and public institutions for over 70% of respondents of a Health-Impact-Evaluation (HIE) study which confirms hygiene, health and environment improvements.

The aim of the special initiative in Northern Iraq is to improve public health by reducing the risk of hygiene-related diseases and epidemics. BORDA works with relevant actors and decision-makers, and plan and implement improved sanitation systems considering existing wastewater infrastructure. The project also aims at training and educating local enterprises, authorities and community members, in order to create opportunities and build capacity for employment and income.

Target Groups The main target group of the special initiative in Northern Iraq is the people in the refugee camps in Kurdistan and the residents of the surrounding areas.

The vocational trainings in Afghanistan target handicraft enterprises and their employees who have not received formal training. Further target groups include provincial decision makers in the field of public waste management, public health, and environmental protection. The project aims to inform these target groups of the advantages of basic sanitation and decentralised wastewater treatment. The beneficiaries of the planned construction comprise residents as well as visitors and employees of public institutions (such as hospitals, schools etc.) which are located in poor urban settlements that lack adequate sanitation and wastewater treatment.

Co-operation Partners In Afghanistan, BORDA co-operates both at a policy and operational level with the Ministry of Urban Development Affairs (MUDA), the Afghan Urban Water Supply and Sewerage Corporation (AUWSSC), the National Environmental Protection Agency (NEPA), and the German Federal Enterprise for International Cooperation (GIZ).

For vocational training and education, BORDA works closely with the Afghan Technical Vocational Training Institute (ATVI) and the Agency for Consulting and Training (ACT). Sanayee Development Organisation has performed the HIE studies for BORDA Afghanistan since 2013. In 2014, several partnerships in Capacity Development were formed, one of which is the civil-society organisation HELP e.V. who collaborates in the field of biogas.

Since the start of the project in Northern Iraq, co-operations have expanded with organisations working in the fields of Water, Sanitation and Hygiene (WASH). In refugee camps in Suleymaniyah, BORDA worked together in close co-operation with the Federal Agency for Technical Relief (THW) to build two decentralised wastewater treatment plants. BORDA has also worked closely with UNHCR, UNICEF, Arche Nova, the Erbil Refugee Council, the WASH-Cluster and local governments.

Results 2014 After the elections and new government formation in Afghanistan in 2014, day-to-day business was considerably affected. Project site visits and partner visits were reduced to a minimum and the BORDA Afghanistan office had to be closed for several days. However, despite the restrictions, BORDA continued to form new partnerships and projects; move forward with the construction of wastewater treatment systems; and continued vocational training.

With increased demand for DEWATS systems from MUDA, the construction of several highly visible decentralised wastewater treatment plants was planned, two of which are for housing complexes. In 2014, an additional 10,000 people gained access to improved sanitation due to the construction

- ▶ In 2014, an additional 10,000 people gained access to improved sanitation due to the construction work from MUDA and other partners such as the Aga Khan Foundation.



work from MUDA and other partners such as the Aga Khan Foundation. At the end of the year, a total number of 23,484 Afghan people received access to improved sanitation systems through BORDA's projects. So far, the 31 installed DEWATS systems treat approximately 258 m³ of wastewater per day with the treatment efficiency level reaching 80% of initial contamination levels. The strong support from partners such as the Aga Khan Foundation and MUDA helped to increase third-party financing to 98% for construction measures.

In the field of vocational training, BORDA also made several steps forward in 2014. Through BORDA Afghanistan's respective partner organisations, 653 people have so far been trained. Those trained include 196 masons, 22 foremen, 43 DEWATS maintenance staff, 66 engineers, 54 fibreglass laminators and installers, 164 university students, and 108 vocational school students. In addition, foremen of HELP were trained to independently implement biogas plants as well as to further teach other craftsmen. As a result of these trainings, 15 biogas plants are planned to be constructed by the end of 2015. Linked to this project is the newly founded Biogas Consortium Afghanistan (BCA). The Biogas Consortium Afghanistan was initiated in 2014 by BORDA and HELP with support from MEW and MRRD, UNEP and other regional partners, and was officially inaugurated in October 2014. The platform provides relevant stakeholders with the opportunity to share information on wastewater treatment and biogas generation in rural and urban areas.

The manufacturing of pre-fabricated DEWATS plants made from fibreglass also continues to operate year-round. In 2014, the number of employees increased to 22, of which are now twelve craftsmen for lamination and installation, three employees in administration and seven support staff.

To evaluate and improve hygiene conditions in settlements, six HIE Baseline studies were conducted since the start of the project in 2011. The studies were conducted in Herat, Mazar and Jalalabad. In 2014, BORDA, VUSAF, UNEP, FAO and HELP organised football games for boys and volleyball games for girls as events to also provide education on hygiene and health improvement and ecology. Through these measures, a total number of 406 boys and girls have participated since project start.

In the last months of 2014, several bilateral conversations were held in order to present the DEWATS approach in Northern Iraq. Prior to the construction of the first pilot plants, small feasibility studies were done to consider the individual conditions in the refugee camps. In this context, BORDA also looked into more information on specific local legislation. The first DEWATS plants (in-situ/concrete and prefabricated/fibreglass) were tendered and installed in close co-operation with the THW. Further construction is being planned in co-operation with UNHCR, UNICEF, Arche Nova and the Erbil Refugee Council.

With permission from the local government, BORDA and a local NGO gave away 500 kerosene heaters (including canister) during the 2014 winter to refugees from Syria and internally displaced people from other regions of Iraq.

- ▶ With permission from the local government, BORDA and a local NGO gave away 500 kerosene heaters during the 2014 winter to refugees from Syria and internally displaced people from other regions of Iraq.

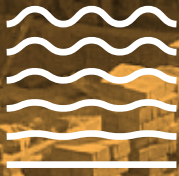


Summary and Outlook Due to the change in government and the international troops leaving Afghanistan, BORDA had adjusted its expectations for 2014. What was surprising, in spite of the circumstances, were the results that BORDA was still able to achieve: the objectives in training and education and construction were fulfilled or will likely be achieved by the end of the project period. The integration of decentralised solutions into the legal framework in Afghanistan only awaits confirmation of the »Urban Water Supply and Waste Water Policy« by the government, which will likely resume work in 2015. In order to promote the institutionalisation of DEWATS technology, BORDA and GIZ (WSIP) are developing a number of manuals on the maintenance and construction of standardised decentralised wastewater treatment systems. Once finished, the manuals will be made available to MUDA, AUWSSC and KM and introduced across Afghanistan through IDLG. However, such national measures require final confirmation from all ministers of the Afghanistan parliament. BORDA hopes that the new, successful co-operation with HELP and the planned construction of 15 biogas plants will provide the necessary experience in construction and operation and maintenance to enable BORDA to support national and international programming through the Biogas Consortium Afghanistan (BCA). To continue to build local capacity and ensure sustainability, BORDA Afghanistan plans to develop further training measures specifically for plumbers, and to continue offering DEWATS-specific training courses at vocational schools.

- ▶ After the first DEWATS plants have been installed in Northern Iraq and the construction of further systems are planned and tendered in the second half of 2015, BORDA will focus on informative and educational events for decision-makers, engineers and city planners.

After the first DEWATS plants have been installed in Northern Iraq and the construction of further systems are planned and tendered in the second half of 2015, BORDA will focus on informative and educational events for decision-makers, engineers and city planners. With the implementation of the first pilot plants, BORDA can now begin to develop tailored training programmes for political decision-makers and institutions from the building sector as well as educational programmes for residents and users to create opportunities for income generation. In addition, the need for toilet and biogas systems and solid waste programmes will be analysed in 2015 and implemented accordingly.

As of the end of 2014, it appears that all of the defined objectives, indicators and outcomes can be achieved by the end of the project period, although some risks remain, such as security, plant capacity, quality of materials and construction, and the actual use of infrastructure. ●



20,000

People will usefully be addressed
for the sewage sludge in Zambia



1,723,987

Turnover in €



31

Employees



Eastern and Southern Africa

**Protecting Natural Resources
through Improved Sanitation:
Sustainable health and environment
protection through decentralised
wastewater and faecal sludge
treatment and decentralised solid
waste management in poor,
densely-populated settlements**

Background Tanzania, Lesotho, Zambia and South Africa are all experiencing increasing migration from rural areas to the cities. This shift presents politicians and authorities with a huge challenge: how to provide all inhabitants in the cities with adequate sanitation? As is often the case, the poorer population who live in unplanned settlements often suffer the most from the lack of sanitation infrastructure. Not only does the lack of income make the creation of sanitation infrastructure difficult, but there is often limited access for waste management service providers and their large trucks in the densely built areas, which further aggravates the possibility to provide reliable waste(water) services. Therefore, the protection of the natural environment, health and dignity requires increased application of flexible, decentralised wastewater and solid waste management systems.



Mali

Tanzania

Zambia

Lesotho

South Africa

Project Goals During the previous project phase, BORDA focused on the implementation of demonstration and educational projects. In the current 2013–2015 period, the emphasis will be on capacity development and the construction of decentralised wastewater and solid waste management systems. In doing so, the number of people in Lesotho, Zambia, South Africa and Tanzania who will gain access to safe sanitation facilities and reliable waste collection and recycling systems will continue to increase. The project aims to achieve the following results:

1. To increase the project's efficiency and effectiveness, BORDA will develop performance-oriented co-operation packages for institutional BORDA partners such as government authorities and public water and waste companies, and private service providers. In addition, BORDA will implement a continuous, performance-based monitoring and evaluation system which will integrate at least 50% of the projects.

2. To protect natural resources and human health, decentralised wastewater and faecal sludge management and treatment systems will be implemented by the end of 2015 in the four countries in neighbourhoods that are unserved by public or centralised infrastructure. In South Africa and Zambia, decentralised wastewater solutions will become an integral part of national, regional and local policies on domestic wastewater treatment and municipal drainage planning. In Tanzania, BORDA is developing a DEWATS implementation plan in co-operation with Dar es Salaam's local water authority DAWASA for implementation in at least two town wards. In Lesotho, a concept on correct operation and maintenance of decentralised wastewater treatment systems will be developed in co-operation with relevant authorities and users. Eventually, the concept will be applied to at least 80% of the current 130 DEWATS plants which exist in Lesotho.

By the end of the project period, at least 5,000 people in South Africa and at least 10,000 people in both Tanzania and Zambia will be provided with access to improved sanitation systems such as toilets and wastewater or faecal sludge management and treatment. The treatment plants implemented are projected to reduce pathogen levels in the treated wastewater by at least 80%. Furthermore, BORDA aims to finance at least 90% of the construction costs through fundraising. In order to scale up the impact and develop local capacities, specialist companies will be trained in planning, constructing and operating DEWATS plants in three of the four countries. Five companies in Tanzania and three companies in both South Africa and Zambia will benefit from the planned training programmes. BORDA's Zambian partner organisation WASAZA (Water and Sanitation Association of Zambia) will be trained to conduct professional training courses with public and private service providers in Zambia.

3. BORDA will also provide consulting and training measures on demand for institutions and organisations in other countries within the region (e.g. Kenya, Uganda, Rwanda and Zimbabwe).

4. By the end of the project, BORDA will establish decentralised solid waste collection and recycling and disposal systems in informal settlements in Tanzania. At least 13,000 households in Dar es Salaam will be provided with regular and reliable services from surrounding DESWAM facilities. This will be achieved through integration of decentralised collection and disposal services into municipal waste management strategies for informal settlements, and the training of at least six local service providers in providing regular solid waste services in informal town districts.

Target Groups In Eastern and Southern Africa, BORDA co-operates with political and commercial players as well as civil-society organisations. One core target group is poor households in densely populated urban areas. BORDA aims to establish decentralised sanitation systems as flexible and cost-efficient alternatives to centralised systems, and promotes the creation of a market with supply and demand for decentralised solutions. For that reason, BORDA targets public and private players of the water and wastewater sector as partners. In addition to providing consulting services to these partners, the partners will also be provided with educational opportunities through training programmes that aim at developing their expertise and abilities. To further support this process, »Local Capacity Builders« (LCBs) will be trained as local educational experts from the public or private sector. In the field of DESWAM, BORDA Tanzania focuses on co-operation with local municipalities. However, private service providers are also supported through consultancy and training.

► BORDA aims to establish decentralised sanitation systems as flexible and cost-efficient alternatives to centralised systems, and promotes the creation of a market with supply and demand for decentralised solutions.

Co-operation Partners In Tanzania, BORDA co-operates closely with the Dar es Salaam Water and Sanitation Authority (DAWASA), Hamburg Wasser, the Municipality of Ilala, the public housing associations Tanzania Building Agency (TBA) and National Housing Corporation (NHC), as well as with a range of local service providers in the field of waste and wastewater management. In 2014, IFAKARA Health Institute and BORDA launched a research project on effective solutions for faecal sludge disposal. Within the framework of the International Water Stewardship Programme (IWaSP), GIZ and BORDA work together to develop capacity in district authorities and resident groups. District authorities and private households are also targeted in the co-operation between BORDA and the International Solid Waste Association (ISWA) for the purpose of developing DESWAM educational programmes. Additional partners include the World Bank, UNEP and UN-HABITAT, the Tanzanian NGO NipeFagio, and WaterAid.



In Zambia, BORDA continues to work closely with WASAZA and the Development Trust Fund (DTF) in the field of training and construction. BORDA's partner organisation Southern BioPower educates local craftsmen and builds and operates DEWATS and biogas plants. BORDA also co-operates with the Zambian National Bureau of Standards (NBS) and the National Construction Council (NCC) regarding the development of a national technical standard on the construction and operation of biogas plants.

In the field of faecal sludge treatment, BORDA co-operates with WSUP (Water and Sanitation for the Urban Poor). The collaboration aims to support the technical construction of faecal sludge treatment plants in poor areas of Maputo (Mozambique) and Antananarivo (Madagascar).

In Lesotho, BORDA develops local capacities through the long-term partnership with Technologies for Economic Development (TED).

In co-operation with the University of Kwa-Zulu-Natal (UKZN) and the water supplier of the City of Durban, EWS (eThekweni Water and Sanitation), BORDA conducts research and demonstration projects in South Africa. BORDA is co-financing a PhD project on performance and performance increase of the Anaerobic Baffled Reactor (ABR), a particular module that is frequently used in DEWATS plants. The co-operation with the Durban-based NGO Decentralised Environmental Solutions (DES) ended in 2014, as BORDA's focus has shifted to municipal and private service provider partnerships.

Furthermore, in each of the four countries, volunteers from the German weltwärts/Engagement Global federal programme are supporting the activities in the country offices.

- ▶ In co-operation with the University of Kwa-Zulu-Natal (UKZN) and the water supplier of the City of Durban, EWS (eThekweni Water and Sanitation), BORDA conducts research and demonstration projects in South Africa.

Results 2014 In 2014, BORDA Eastern & Southern Africa continued to improve its achievements concerning efficiency and effectiveness. Treatment effectiveness of DEWATS systems typically ranges at 80% in Tanzania, Zambia and Lesotho. To increase efficiency and effectiveness, co-operation packages for private waste collectors and DEWATS system providers were respectively developed for all four countries. In order to develop co-operation packages for authorities and public enterprises, BORDA was able to form strategic alliances with GIZ, UNEP, DTF and the EU. Monitoring and evaluation measures have been conducted so far in Zambia and Tanzania. Those results formed the basis for the development of internal DEWATS guidelines, developed in 2014 by regional BORDA members during a workshop. In 2015, Lesotho will also be involved in the programme.

To establish decentralised sanitation services, BORDA has planned a standardised DEWATS system in South Africa. In 2015 it will be constructed and afterwards handed over to become a part of the City of Durban's sanitation programme. Furthermore, BORDA trained three water utilities on how to plan wastewater and sanitation systems. Another two planning offices, which are regularly subcontracted by Durban's responsible authority, received training on how to plan, construct and run DEWATS systems. In Tanzania, an implementation plan for decentralised wastewater treatment systems was developed together with Dar es Salaam's water authority, and funds were raised for the construction of three further DEWATS systems. Construction is planned for 2015. Currently, the faecal sludge treatment plant in Kigamboni alone provides regular pit emptying services within an area where more than 8,000 people live. The projects that are currently being planned will notably increase the number of beneficiaries.

- ▶ In Tanzania, an implementation plan for decentralised wastewater treatment systems was developed together with Dar es Salaam's water authority, and funds were raised for the construction of three further DEWATS systems.



In Lesotho, all measures have been running since 2013. In 2014, the operation and maintenance plan for DEWATS systems was further developed in a workshop with users. Also, parts of the 130 DEWATS plants were integrated into the concept.

In Zambia, BORDA had a strong contribution in the past year to the development of the national biogas standards. The goals that BORDA set to be reached by 2015 will most be achieved. Until now, all of the projects are financed 100% through third-party funds. By the end of 2014, two Zambian specialist companies were intensively trained on how to plan, construct and operate decentralised wastewater and faecal sludge treatment systems. BORDA's partner and Local Capacity Builder WASAZA, who had been trained as a trainer for developing local capacity, conducted further educational programmes in 2014. However, WASAZA cannot yet offer regular sector training programmes. A faecal sludge treatment plant which was constructed in 2013 continues to provide services to an area where 20,000 people live.

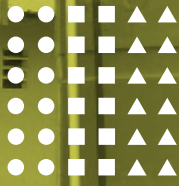
Since 2013, together with a local company, BORDA has continued to work on the development of pre-fabricated DEWATS modules in Kenya. The first prototypes will be installed in 2015.

In Madagascar, a large faecal sludge treatment system is being planned in a slum in the capital city Antananarivo in partnership with WSUP. The untreated sludge, which is emptied from pit latrines and can be a health and environmental hazard, will be collected by service providers and then dumped into a DEWATS system for safe treatment and the production of biogas and other recycling products. The plant is currently designed and aims to serve about 20,000 people in the area.

The establishment of solid waste management systems in Tanzania is constantly moving forward. A World Bank funded project to improve solid waste disposal infrastructure is being planned. In 2014, BORDA was able to continue to consult and educate two local service providers to upgrade their services through BORDA's support. DESWAM solutions in Tanzania currently provide service for approximately 6,000 households in informal settlements of Dar es Salaam.

► **DESWAM solutions in Tanzania currently provide service for approximately 6,000 households in informal settlements of Dar es Salaam.**

Summary and Outlook The emphasis in Eastern & Southern Africa is developing competencies and implementing decentralised wastewater and solid waste management systems. In the next year in Tanzania, both programmes, DEWATS and DESWAM, will focus on educational measures for local communities, public and private service providers and authorities. In Lesotho, BORDA and TED will concentrate on strengthening local capacities for construction. In South Africa, the focus in 2015 will continue to be research as well as conceptualisation and realisation of construction for low-cost housing and peri-urban areas. The emphasis in Zambia has, however, shifted. In 2015, the extension of training measures and their funding, monitoring and evaluation will be the focus, as well as establishing national biogas standards. ●



1,500 t

Waste collected in
2014 and recycled



124

Employees



1,582,497

Turnover in €



Southeast Asia

**Sustainable Resource Management
in Indonesia, Cambodia,
Laos, the Philippines and Vietnam**

Background Despite the continuous economic growth, between 16 and 33% of the 500 million people living in Southeast Asia are extremely poor, with a per capita income of less than €1,000 per year. Increasing industrialisation and urbanisation increase the threats to public health and are resulting in increasing pollution of natural resources and the climate. The rapid population growth in the cities is leading to serious political and public administration challenges. Realistically, in the mid- to long-term, the public authorities will not be able to provide sanitation for a significant part of the population. As a result, many people will be forced to use unsanitary conditions and open spaces, resulting in large amounts of untreated wastewater in ground and surface water. Similarly, the inadequate solid waste management infrastructure, and with it, illegal and uncontrolled waste dumping, leads to risks of spreading infectious disease and pollution of freshwater resources which tend to most significantly impact poor urban and peri-urban communities.



Project Goals Our Southeast Asia project aims to improve the living conditions of marginalised populations and overall social structures in Indonesia, Cambodia, Laos, Myanmar, the Philippines and Vietnam. The following goals were defined for the current project period:

1. Satisfy basic human needs by providing sanitation facilities and systems, and improving hygiene conditions in settlements and public institutions.
2. Protect health, the environment and natural resources through establishing, constructing and disseminating wastewater treatment and solid waste disposal infrastructure.
3. Promote the use of renewable energies and the reduction and prevention of greenhouse gas emissions through biogas use, composting and climate protection measures.
4. Promote the financial support for measurements to improve hygiene and sanitation on behalf of public and private decision-makers.
5. Train and secure employment for professionals and experts on the implementation of sanitation projects.

Target Groups The target groups of BORDA in Southeast Asia comprise residents in poor, densely populated urban and peri-urban settlements, users of public facilities (e.g. schools, hospitals) as well as small-scale entrepreneurs who do not appropriately use and pollute natural resources. Special attention is given to women and children, as they are particularly vulnerable to the effects of a lack of basic needs services. Other target groups include sector-relevant ministries and authorities as well as private and public service providers in development co-operation. Both the project goals and project implementation are integrated with the work of the latter target groups.

Co-operations-Partners In Southeast Asia BORDA co-operates with decision-makers on the national, regional and local level as well as with international institutions in the field of water, sanitation and climate protection such as UNICEF, UNESCAP, UN HABITAT, World Bank, Asian Development Bank, Europe-Aid, SNV Netherlands and the International Water Association. BORDA also has good relations with internationally active NGOs including WaterAid, Room to Read, World Trade Organization, German development agencies (for example, GIZ, KfW, CIM) and a number of universities. Since 2014, BORDA has received support from UNESCAP to establish a regional DEWATS centre for Southeast Asia, and UN-HABITAT has supported DEWATS-related workshops in Vietnam, Laos and Cambodia. Volunteers from the German weltwärts programme regularly support the projects in the Southeast Asian region.

In Indonesia, BORDA has had long-term co-operation with BEST (in Tangerang and Surabaya), LPTP (Yogyakarta) and AKSANSI (Yogyakarta and country-wide). Furthermore, BORDA also works together with the Indonesian Ministry of Public Works (PU), the national planning authority BAPPENAS and a range of international actors such as WSP, SECO, IUWASH/ USAID and USDP. Financial contributions to BORDA's projects came from the Indonesian national government, ADB and Islamic Development Bank. Efforts to integrate BORDA's activities into the national governmental development programme PPSP were supported by the Ministry of Public Works (PU) and the Ministry of the Interior. In the Philippines, BORDA South-east Asia co-operates continuously with BNS Philippines in Manila. The strategic BORDA partner in Vietnam is VAWR in Hanoi.

In Cambodia BORDA has a long-term co-operation with ESC in the capital city Phnom Penh. There are also a number of different ministries such as the MoEYS, MoE and MoH as well as UNICEF and organisations in the field of corporate responsibility that BORDA works together with on issues such as infrastructure finance and wastewater management in schools and hospitals. In Laos' capital Vientiane, BORDA co-operates with the government partners DHUP, MPWT, JICA and several private users of DEWATS.

Results 2014 In 2014, more than 36,000 people at over 300 new sites in Southeast Asia were provided with access to sanitation facilities and safe wastewater treatment and disposal. According to health impact evaluation activities, the beneficiaries confirmed that through the implemented systems, hygiene and health conditions improved by 30 percent. As some systems constructed in 2014 are not yet finished and not yet in operation, some of the evaluations can only take place in 2015. Concerning protection of natural resources and water bodies, the construction of more than 300 DEWATS facilities in Indonesia, Cambodia, Laos, Myanmar and Vietnam have the potential to prevent a staggering 1.3 million cubic metres (m³) of untreated wastewater from being discharged into the environment. In 2014, Indonesia's now 12 DESWAM recycling facilities managed to collect, sort and recycle more than 1,500 tons of waste. Through donations, public and private investments and international development programmes, 7.5 million euros in contributions for the sanitation sector were raised by governments and private organisations. In the Southeast Asian region, BORDA and its partners mentored and trained a total number of 2,280 professionals from ministries, local water authorities and public administration during the last year. Also, BORDA could create employment for nearly 3,200 workers from small construction companies and 240 workers in waste sorting and related fields.

Initiated through a large number of successful BORDA projects since 2001, Indonesia continued their national programme (PPSP) on the improvement of public wastewater

► Concerning protection of natural resources and water bodies, the construction of more than 300 DEWATS facilities in Indonesia, Cambodia, Laos, Myanmar and Vietnam have the potential to prevent a staggering 1.3 million cubic metres (m³) of untreated wastewater from being discharged into the environment.



► In 2014, a total number of 276 community-based DEWATS plants and 19 DEWATS for small-and medium-sized enterprises were constructed, and more than 1560 employees of town administration offices were trained to plan and implement decentralised wastewater treatment systems.

disposal systems in 2014. The programme, which is financed through national funds and international players such as IDB and ADB, led to the implementation of several thousand community-based measures on planning, construction and operation of DEWATS. In 2014, a total number of 276 community-based DEWATS plants and 19 DEWATS for small-and medium-sized enterprises were constructed, and more than 1,560 employees of town administration offices were trained to plan and implement decentralised wastewater treatment systems.

In the area of decentralised solid waste management (DESWAM), BORDA increasingly emphasises conducting nationwide training programmes. The measures are implemented in co-operation with Indonesian government authorities and represent one way of preparing DESWAM for country-wide dissemination. The registration process for BORDA's composting projects to be recognised as Voluntary Emission Reduction (VER) was finalised in 2014.

In Cambodia, despite the difficulties to mobilise local co-financing, BORDA managed to continue the school sanitation project. However, the service packages of the project which ran in co-operation with the Ministry of Education, UNICEF and GIZ had to be adapted in accordance with a mutually developed minimum standard. Besides washing and toilet systems, the standard also contains DEWATS solutions, although much less than initially intended. In 2014, BORDA was able to connect ten schools to basic sanitation, affecting a total number of 2,526 students.

Political work, one of the work emphases of BORDA's work in Laos, has started to pay off: since the new wastewater management action plan, which explicitly highlights DEWATS as a wastewater management option, came into force in 2014, the political framework conditions to establish DEWATS in relevant governmental departments in Laos are excellent. In the mid-term, these positive conditions will help to secure project financing.

In the Philippines the national wastewater management plan came into force in 2014. The plan is part of existing legislation on water and will strengthen water utilities in their role and perception as service providers for wastewater solutions. As mobilising full financing for wastewater treatment plants is difficult in the Philippines, BORDA will support these water utilities in the future with feasibility studies for DEWATS projects. The difficulties in fundraising led to BORDA only constructing three instead of 12 DEWATS plants in 2014. In the Philippines, BORDA is focussing on the continuation of the »progressive realisation« approach.

The Ministry of Agriculture in Vietnam has introduced DEWATS as an official wastewater treatment option for animal husbandry. Construction of initial plants is planned for 2016. As land prices increase heavily, the cost of DEWATS implementation is increasing unexpectedly. In 2014, access to basic sanitation was provided for one school, one noodle-processing business and one low-income community. The political situation in Myanmar is still challenging. Nevertheless,



BORDA managed to intensify co-operation with the Myanmar Engineering Society, Yangon- and Mandalay City Development Committee, implement learning and demonstration projects, and conduct trainings with DEWATS implementers.

- ▶ Also in 2014, BORDA promoted the use of decentralised sanitation systems at all levels and on a broad basis.

Summary & Outlook Also in 2014, BORDA promoted the use of decentralised sanitation systems at all levels and on a broad basis. Nevertheless, the Southeast Asia project finds itself confronted with a number of challenges in the individual countries. In Indonesia the numerous DEWATS construction projects require improved technical and organisational control of the plants and their operation in order to secure quality and continuity. In regards to DESWAM, there is a high need for quality management and the improvement of the additional component for the voluntary carbon emission trading scheme, VER. For Cambodia, BORDA plans to standardise its school sanitation solutions in order to promote regional dissemination. The co-operation with the Cambodian ministry of agriculture regarding the introduction of DEWATS as a means to food security in rural areas will be intensified. In regards to financing in the Philippines, BORDA will focus on the »progressive realisation« approach and the development of operator plans and training for wastewater treatment. In Vietnam BORDA will support the ministry of agriculture's environmental programme through planning of DEWATS systems for medium-sized pig farmers (< 100 pigs). Due to the high land price, the focus in Vietnam will shift to peri-urban areas and the private sector. In Myanmar for the year 2015, BORDA has plans to acquire funds to finance the infrastructure of 2-3 pilot projects, a study trip for decision-makers to Indonesia and the expansion of project activities to Mandalay. ●



209

Cities achieved
with projects



1,192,918

Turnover in €



81

Employees



South Asia

Poverty alleviation and protection of natural resources and the climate in India, Nepal and Bangladesh: sustainability through improved sanitation and development of decentralised wastewater and solid waste management infrastructure

Background In the South Asia region, India, Nepal, and Bangladesh have economies which are growing as the countries struggle with the progressing urbanisation. Despite the general economic growth trend in those countries, poverty is still a major problem, as the majority of people, especially in India, do not benefit from the growing economy. Still, despite the overall progresses in reducing extreme poverty and the efforts of government and private institutions over many years, the achievements in expanding and improving sanitation continue to be insufficient.

A staggering 50 % of the 1.2 billion people in India find themselves forced to defecate in the open as they do not have access to a toilet. In Nepal still 35.4 % of the population do not have access. In regard to solid waste disposal, there are estimates that each person in India produces approximately 0.4 kg of waste per day, and that 94 % of the 4,800 tons generated every day are disposed of improperly. The lack of existing sanitation infrastructure and the insufficient expansion of new sanitation infrastructure inevitably leads to accumulating pollution of the natural environment. This situation results in serious negative consequences for people's health and the country's economic performance.



Project Goals In this project phase between 2011 and 2014, BORDA aimed at the protection of natural resources and the climate in India, Nepal, and Bangladesh. Marginalised populations in particular were to be supported through improvements to the sanitation infrastructure for wastewater and solid waste and the provision of access to safe water sources and renewable energy. However, in South Asia BORDA has been focusing on the comprehensive provision of information on decentralised sanitation services to professionals and decision-makers rather than building DEWATS or DESWAM systems. The following goals had been defined for the recently completed project term:

- 1.** Management processes that regulate internal and external co-operation will be professionalised and BORDA's efficiency, service capacity and performance for DEWATS projects will be increased by 50% compared to 2010. An electronic data management system will be launched in order to archive training and educational material, specialist presentations, articles, and efficiency and effectiveness-related data on DEWATS projects. The system will enable data retrieval based on demand-specific search queries.
- 2.** BORDA's project partners in India and Nepal will operate successfully as service providers for improved sanitation and wastewater solutions in the areas of city-wide disposal planning, training, construction planning and construction. These services will be offered in at least 45 Indian and five Nepalese cities.
- 3.** The Consortium for DEWATS Dissemination (CDD) will support its member organisations in the field of education and public relations. Within this project phase, at least 5,000 relevant sector stakeholders in India and 500 in Nepal will be informed of the advantages of decentralised sanitation solutions.

Target Groups The project primarily targets poor and marginalised populations who do not have access, or only have limited access, to safe sanitation infrastructure. In the densely populated areas of larger cities, BORDA aims to improve solid waste and wastewater management structures sustainably. In remote mountainous areas, BORDA aims to provide access to safe drinking water and sources of renewable energy. BORDA also targets institutional groups such as public and private facilities and organisations. Governmental authorities and municipalities are often provided trainings and seminars, but they are also crucial partners for the planning of sustainable sanitation infrastructure. Training and other educational programmes and services also address local enterprises and NGOs that are active in the field of hygiene, wastewater and solid waste.

Co-operation Partners As this project period aimed at multiplying the success of previous project terms, BORDA considered it essential to build strategic alliances with partner organisations. As a result, numerous co-operations with crucial actors were developed, such as partnerships with international donors like the Bill & Melinda Gates Foundation. The Bill & Melinda Gates Foundation granted BORDA and CDD Society not only 1 Million USD, but also signalled their support for the next project period. In this period, the Asian Development Bank (ADB) granted BORDA's local partner CDD Society with four projects, one of them, for instance, aims at the development of settlement hygiene and wastewater management schemes for 30 cities in Bangladesh. Another crucial result of this fourth project term is the strategic co-operations which BORDA developed with various government organisations. The most important partners are Karnataka State Pollution Control, the municipalities of Mysore and Shimla, and the various ministries that made use of BORDA's services (advanced trainings, city-wide sanitation planning etc.). Also, BORDA established stable relationships with more than 100 private companies, amongst which are mainly construction companies, architects and providers of wastewater treatment systems.

► As this project period aimed at multiplying the success of previous project terms, BORDA considered it essential to build strategic alliances with partner organisations. As a result, numerous co-operations with crucial actors were developed, such as partnerships with international donors like the Bill & Melinda Gates Foundation

Between 2011 and 2014, BORDA South Asia partnered with the following international development organisations: the German Federal Agency for International Co-operation (GIZ), Bremen State Office for Development Co-operation, the German state-run volunteer programme *weltwärts*, German Ministry for Economic Co-operation and Development (BMZ), *econ-tur* International Agency for Sustainable Projects, European Union, ICCO Cooperation, Bill and Melinda Gates Foundation, Water-Aid, EAWAG, Asian Development Bank and the World Bank's Water and Sanitation Program (WSP).

Long-term co-operation agreements exist with the following partner organisations: In India, CDD Society in Bangalore (including their extensive partner network), Design Collaborative in Pondicherry, ExNoRa International in Chennai, Rural Literacy and Health Program in Mysore, Indian Institute of Youth Welfare in Nagpur, Centre for Integrated Development in Ahmadabad and the Rajiv Gandhi Rural Housing Corporation Ltd. in Bangalore.

In Nepal BORDA has a co-operation agreement with ENPHO which is a member of the non-Indian CDD-Network and carries out specific network tasks in Nepal.

Other important partners for BORDA in India, Nepal and Bangladesh are public administrations and public institutions and private enterprises (particularly municipal planning agencies, federal housing authorities, development organisations, construction companies and architects' offices).

Results 2014 By the end of the project term in 2014, nearly all of the previously set goals were completely achieved. Only regarding the ambitious targets on knowledge management was the goal not completely achieved as BORDA was not able to introduce the electronic data management system all over



- ▶ **BORDA also boosted the number of training units from 18 to 29, representing a performance increase by 61% in the field of advanced education.**

the South Asia region in time due to technical issues. In the field of project management BORDA complied strictly with all financing guidelines of the BMZ: project contracts were signed by all implementation partners involved and activities were agreed on by means of DAS (Detailed Activity Sheets). Both quarterly reports as well as annual reports were regularly written. On top of that, three annual meetings, three bi-annual meetings and 12 quarterly reviews were held for the purposes of revision and planning. Also, BORDA complied stringently with BMZ's local guidelines on project fund management.

The goal to reduce the share of BMZ funding, from more than 80% in 2011 to 40% of CDD Society's overall budget by the end of the project term, was realised in the final project year. Currently the share of BMZ funding is 38% of the total budget of CDD.

Regarding productivity and broad impact increase through knowledge management, BORDA increased the number of projects per engineer by 200% meaning that per person and year 4.5 DEWATS systems can be built compared to 1.5 in 2011. BORDA also boosted the number of training units from 18 to 29, representing a performance increase by 61% in the field of advanced education. A knowledge management department was already established in 2012. Up until now they have implemented various electronic data management systems such as an activity-based funding programme, six databases for: requests, contacts, projects, trainings, M&E and a library database. The department also installed a network-wide M&E database in order to monitor functioning and performance of the 122 DEWATS plants, and they also installed a management system for electronic knowledge distribution by means of articles and newsletters.

When it comes to training projects, construction planning, realisation of DEWATS infrastructure and city-wide disposal planning in both India and Nepal, BORDA's project partners competently operate independently. BORDA had planned to reach at least 45 cities in India through our partners' services. However, in this project period a total number of 209 cities were provided with various service packages. Together CDD, other project partners, and participants of training programmes built 195 DEWATS plants in 34 different towns. Also, 32 trainings with a total number of 526 participants reached people from 169 cities and eleven different countries (India, Nepal, Afghanistan, Zambia, Kenya, Tanzania, Lebanon, Germany, Myanmar, Cambodia, and Mexico). Another six cities were provided with BORDA's City Sanitation service package. In Nepal BORDA's project partner ENPHO was able to carry out four DEWATS service packages within this project term, twice as many as during the previous period. The projects were run in four different Nepalese towns: Bhaktapur, Dhulikhel, Pokhara and Gokarna.

The aim to support the CDD Network members regarding advanced education and public relation measures through CDD Society was by far achieved in this project term. Initially, 5,000 relevant sanitation sector stakeholders were supposed to be informed about the advantages of BORDA's DEWATS service packages in India, and another 500 in Nepal. In fact, within the framework of both two international and national conferences as well as three regional workshops, 58,000 sector stakeholders were informed about DEWATS. The employees of the project participated in five international and 35 national conferences as well as 35 regional workshops, and 1,077 visitors were informed about sanitation challenges and solutions at the CASS training centre's sanitation exhibition.

Personnel-wise there were a number of important changes during the last year of the project period. The local project co-ordination of the BMZ project was passed on to three local executives on the partner level. However, the BORDA South Asia team will continue to support them on questions of project coordination and leadership. Also, after 14 years as the head of the BORDA South Asia programme, Mr. Pedro Kraemer handed over full project leadership to his colleague of many years, Mr. Stanzin Tsephel.

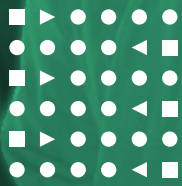
► Initially, 5,000 relevant sanitation sector stakeholders were supposed to be informed about the advantages of BORDA's DEWATS service packages in India, and another 500 in Nepal.

Summary and Outlook As the final results at the end of this project period show, the degree of target achievement has been very high in the South Asia region. All in all, nearly all the defined goals and indicators were reached and some of them even greatly surpassed. Those surpassed were particularly the funding opportunities and capacity for plant construction, but also the overall influence of the project increased. Although the project's facility never moved, the outreach expanded to 209 cities in eleven different countries. Also in the field of partnerships, the project improved and extended its co-operations with government and international organisations such as ADB, World Bank and the the Bill & Melinda Gates Foundation.

- ▶ In the following project period, both BORDA and its partners are challenged to work towards creating the relevant economic and socio-economic conditions which will help to realise decentralised sanitation solutions

As the formal registration process for BORDA's representatives in India is now complete and BORDA will have an office distinct from CDD Society's offices, BORDA is going to shift its focus to project co-ordination and networking. As a local partner, CDD Society will continue to be in charge of local project realisation. In the following project period, both BORDA and its partners are challenged to work towards creating the relevant economic and socio-economic conditions which will help to realise decentralised sanitation solutions. The project will now further emphasise measures such as strategic partnerships with political and administrative decision-makers through consultancy and guidance. ●





218

Trained professionals



194,332

Turnover in €



13

Employees



Las Américas

**Poverty alleviation and protection
of natural resources in Mexico,
Nicaragua, Haiti, Cuba and Ecuador**

Background In the Latin American and Caribbean countries, called »Las Américas«, less than 20 % of all domestic wastewater is treated. With issues such as lack of priorities for improved sanitation and safe wastewater treatment and disposal, and limited value of environmental awareness, the knowledge and actions on ecological and health-related issues of untreated wastewater have been limited. In addition, investments and costs for building and running wastewater treatment plants are high, so private service providers often face financial problems. Although urbanisation in Las Américas is relatively low in comparison to some of the other regions that BORDA works in, poverty remains an issue in many countries of Las Américas. Within the region, the figures vary significantly between countries: in Haiti for example, a staggering 78 % of the population are considered poor, in Nicaragua it is still 32 % of the population.



Project Goals BORDA's activities during the preparatory phase in Las Américas primarily focused on the countries Mexico and Nicaragua. In Ecuador and Columbia BORDA's engagement was reduced, while it has expanded to Haiti and Cuba. The Las Américas projects aim at improving basic sanitation and wastewater treatment in poor urban settlements. Establishing a partner network is crucial in that regard. In the year 2014, the Las Américas project was still in an exploratory and preparatory phase. In 2015 it will become an independent region. In order to set up the necessary project structures, reaching the following goals will be crucial:

1. Establish a partner network for future project implementation.
2. Educate skilled personnel and develop capacity for implementing measures in the field of improved sanitation and decentralised wastewater treatment.
3. Raise funds that finance at least 50% of each project.
4. Establish country offices in selected countries.

Target Groups Low-income populations of Las Américas are particularly in need of improved sanitation systems. For this reason, BORDA primarily targets poor urban and peri-urban settlements. Additional target groups are employees and visitors of public institutions such as schools or hospitals and small and medium-sized enterprises whose activities affect the natural environment and bodies of water. To develop resources to realise sanitation projects in Las Américas, BORDA is co-operating with public and private institutions in the field of sanitation and wastewater management to train local organisations on how to implement sanitation, hygiene and wastewater treatment projects.

Co-operation Partners Additional to the co-operation with the German Ministry for Development and Co-operation (BMZ), BORDA works closely with a number of local organisations in Las Américas. In Mexico, existing partners are SARAR-Transformación and FAN-Mexico. In Nicaragua, BORDA co-operates with the Universidad Nacional de Ingeniería (UNI), La Universidad Tecnológica Salle (ULSA) of León, the municipality of the city of León as well as the Co-operation Office of the Hamburg Senate. In Cuba, co-operation contracts were made with the Grupo Estatal de Trabajo La Bahía and the two NGOs Pro-Naturaleza and Cuba Solar. In Haiti BORDA co-operates with the environmental authority, Direction Nationale de l'Eau Potable et l'Assainissement (DINEPA) and the International Red Cross. Co-operations in Ecuador have been established with ENYATEC, Ayuda en Acción, UN-Habitat and the district administration Junta Parroquial of Pacayacu. Moreover, BORDA works with additional partners in each of the five countries, mainly with international development organisations.

Results 2014 By the end of the preparatory project phase in 2014, BORDA planned to establish strategic partnerships with three organisations in at least two different countries. The aim of these co-operations is to develop the partner's capacities on implementing basic sanitation and decentralised wastewater treatment systems. However, BORDA achieved a total number of six capacity building partnerships in five different countries: Mexico, Nicaragua, Cuba, Haiti and Ecuador. Eight skilled personnel were educated long-term (more than 12 months) and 210 skilled workers were trained within the framework of eight training courses. Also, BORDA presented the DELSA approach (Decentralised Solutions on Settlement Hygiene and Wastewater Management) to professional audiences at six conferences. Two project offices now exist in Mexico and Nicaragua as well as three country-teams and two country representatives who have already been established permanently. The basis for BORDA's network – and the basis of BORDA's work in the Las Américas region – is represented by nine co-operation contracts. Also, between 2012 and 2014, 144 organisations were informed of BORDA's work in Las Américas (39 governmental institutions and municipalities, 38 NGOs, 16 small and medium-sized enterprises 23 skill centres and 28 donors).

► Eight skilled personnel were educated long-term (more than 12 months) and 210 skilled workers were trained within the framework of eight training courses.

Another aim for this project period was to raise 50% of the funds from third-party sources for at least six single basic sanitation measures. By the end of the project period eight of such single measure projects were carried out: four bio-gas and four DEWATS plants. In order to plan and implement these eight systems, seven seminars, 18 pre-studies, 12 feasibility studies and one master's thesis on DELSA measures in the watershed were conducted. In order to finance the single



► BORDA applied for six grants of which two were successful for a total amount of €980,000.

measurements, BORDA applied for six grants of which two were successful for a total amount of €980,000. As a result, funding exceeded 50% of the projects costs for each of the eight projects.

Summary and Outlook At the end of the preparatory phase, a network of partner organisations for the future implementation of decentralised basic sanitation projects has been established in five countries of Las Américas, and capacity for construction and maintenance of systems is being developed. All of the goals set for this project period were well achieved. In 2014, the exploration and preparation phase was completed and Las Américas will now become an independent project region. ●

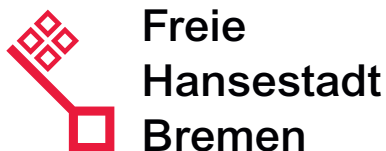


Successful Activities

- Supported by the Free Hanseatic City of Bremen



Demonstration of decentralised wastewater management in schools and low income settlements in Durban and other South African cities – continuation



In cooperation with the utility eThekweni Water and Sanitation (EWS), the Pollution Research Group (PRG) and the University KwaZulu-Natal (UKZN), as well as the local company HERING South Africa the following activities were successfully accomplished:

1. Planning - and consultancy activities by BORDA Bremen
2. Local supervision of the demonstration plant in Newlands Mashu (system operation, system supervision, further development in close cooperation with eThekweni Water and Sanitation)
3. In cooperation with the University of Kwa-Zulu-Natal, eThekweni Water and Sanitation was supported to safely use treated wastewater from the effluent of a DEWATS system for small scale agricultural activities, including the nutrient content in the effluent, selection of suitable irrigation techniques and crops as well as the assessment of their water and nutrient uptake characteristics.

All planned project results have been achieved:

Through new research findings, the interest on decentralised wastewater management and reuse grew significantly in 2014. This, in line with the process of legal approval of relevant water regulations, can initiate a significant improvement for the local population in terms of sanitation in existing and future settlement projects through decentralised wastewater management and reuse.

The increased participation of local communities in the sensitive area of wastewater management will strengthen local ownership, responsibility and participatory decision-making processes on the long term.

weltwärts-Aktionstage



The weltwärts-Aktionstage-event took place in November 2014 in Bremen. Organised by former weltwärts-volunteers together with econtur gGmbH, the event was partly taking place at the Bremen Youth Hostel and the Haus der Wissenschaft.



The event had three main program aspects: the development of a weltwärts-Bremen alumni network, thematic workshops for further qualification of the former volunteers, and public relations. The workshops 2014 were based on the topics »social entrepreneurship«. The public event aimed at informing all external participants about the weltwärts-program and possibilities to become a volunteer. Mrs. Ulrike Hiller opened the public event at Haus der Wissenschaft, followed by presentations by weltwärts-Bremen and the partner organisations, former volunteers, and other stakeholders from Bremen working in the area of development cooperation. A cultural program as well as an exhibition by key Bremen development cooperation stakeholders was part of the event.

Around 25 weltwärts-volunteers from all over Germany attended the three-day event in Bremen. Various measures to reach the volunteers and the public were developed during that time. After the event, the organisers evaluated all activities and the learnings will be incorporated in the planning for the next weltwärts-Aktionstage in 2015.

The logo for World Water Week features the words 'WORLD WATER WEEK' in a bold, blue, sans-serif font. The text is arranged in three lines: 'WORLD' on the top line, 'WATER' in the middle, and 'WEEK' on the bottom. The letters are slightly overlapping. The background consists of a series of thin, light blue lines that curve and flow from the top left towards the bottom right, creating a sense of movement and water flow.

WORLD WATER WEEK

World Water Week in Stockholm is an annual focal point for addressing the world's water and sanitation challenges. The 2014 conference theme was Water and Energy, with an emphasis on the relevance to connect water and energy for development. This year more than 3,000 people from 270 organisations and 143 countries participated in World Water Week in Stockholm. This annual reunion of numerous international key experts, practitioners, decision-makers and innovators is not only a valued chance for networking and exchanging views and experiences – World Water Week is also a unique opportunity to develop new ideas, approaches and strategies.

For the 2014 WWW, the German WASH-Network (including BORDA) and the German Federal Foreign Office conducted a seminar on »Streamlining Strategies for Humanitarian Aid in the WASH Sector«. The event was hosted in co-operation with UNICEF, Sanitation and Water for All (SWA), the Sustainable Sanitation Alliance (SuSanA) and the Federal Department for Foreign Affairs of Switzerland. The seminar aimed at developing the strategic foundations for the future of humanitarian aid in the areas of water, sanitation and hygiene (WASH). During the seminar, several pressing challenges of humanitarian aid were presented from various perspectives and were also analysed

in regard to their political effects. On this basis, and with the help of the participants, the strengths and weaknesses of existing strategies and steering mechanisms were identified and then detailed recommendations for the ongoing national strategy processes were developed (for example, for Germany).

Another example of how the 2014 World Water Week promoted exchange of thoughts and cross-sector co-operation is SuSanA's »Making WASH in Schools More Sustainable« publication project. The publication was previously initiated in Stockholm during a SuSanA working group meeting where members discussed the need for a resource which showcases the best practices in school sanitation worldwide. The publication was thus launched during the 2014 WWW and features a BORDA project from Zambia amongst the case studies.

World Water Week (WWW) in Stockholm is amongst the largest and most important conferences on water and sanitation worldwide. Like the »World Wide Web«, WWW links people and knowledge from all over the world and has become an indispensable institution for many in the sector. For BORDA, the highlight of the 2014 WWW in Stockholm was the workshop session on emergency sanitation and the launch of SuSanA's best-practice school sanitation publication.



Northern Iraq: Emergency response



Since 1977, BORDA has established itself as a development co-operation organisation which addresses not only sustainable water and sanitation solutions and reuse, but improving living conditions through Basic Needs Services. However, BORDA has more recently also gradually branched into providing expertise for humanitarian disasters and emergency situations, for example in the autonomous region of Kurdistan, Northern Iraq.

Traditionally, emergency situations have been approached through humanitarian assistance or »disaster relief«, which focuses on saving lives and alleviating suffering in the case of sudden, severe situations and aims at minimising the resulting problems, rather than the root of these problems. However, on an international level, there has been increasing recognition of the need to link humanitarian assistance with development co-operation. One reason is the shift to recognise »permanent« emergencies, such as for protracted refugee situations, such as the situation in the autonomous region of Kurdistan, Northern Iraq.

As the conflict in Syria continues, the number of refugees in Northern Iraq has increased to more than 247,000 people, of which approximately 40% are children. The vast majority of Syrian refugees in Iraq are hosted in the Duhok,

Erbil, and Sulaymaniyah regions. In October 2014, BORDA began working in the refugee camps towards improving basic needs services, strengthening social structures and public health and protecting water resources through proper sewage disposal and treatment.

In the refugee camps that BORDA is working with, the number of people per camp varies from 3,000-10,000 people. The general situation is temporary tents with public toilets and single units, which are now being transitioned to more permanent units with one toilet per family. As untreated sludge from septic tanks is often deposited just outside of the camp area, the surrounding farmers and population are affected due to the effluent and odour deposited close by. As a result, BORDA's primary role is to improve the wastewater situation in the camps by constructing wastewater treatment facilities and capacity development for operation and maintenance to improve the hygienic and environmental situation. Furthermore, BORDA is assisting to ensure that other aspects of basic living are also addressed: through co-operation with other organisations and funding from the State of Bremen and the BMZ, BORDA was able to provide 1000 kerosene heaters and jerry cans to refugees and other displaced persons to help them through the cold winter.

In 2015, BORDA will continue to work on implementing solutions for sludge treatment in camps and the implementation of prefabricated units to meet the needs for solutions in refugee camps. In addition, BORDA will continue to work together with the WASH cluster both towards discussing standards and to strengthen capacity development within local communities and local government, to integrate local interests and the needs of relief and development work.



Facts and Figures

Turnover by Donors

private Donors
| 5,100€

EZ Bremen
■ 96,280€

other Donors
■ 100,722€

GIZ
■ 192,660€

Bill & Melinda Gates Foundation
■ 261,963€

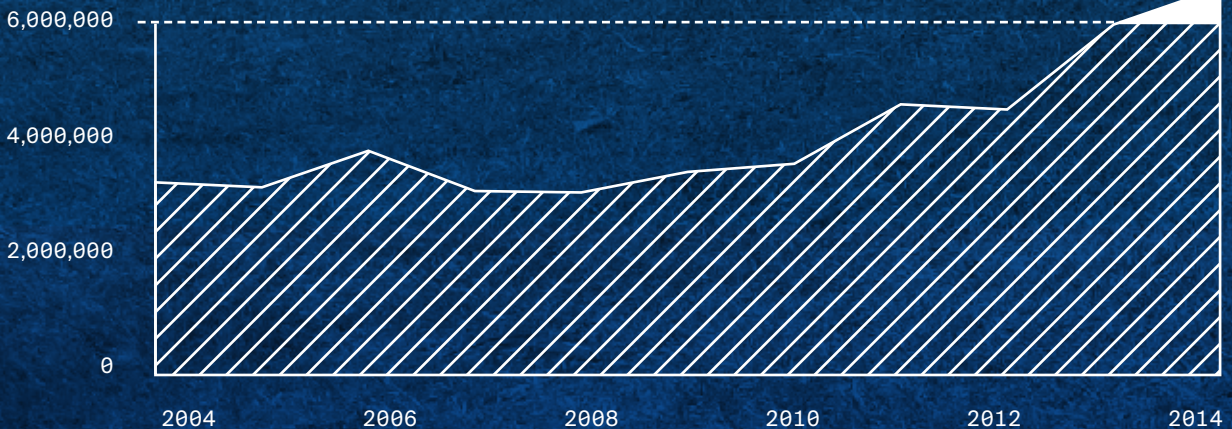
Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung

Change in Turnover 2004 – 2014

6,541,160€

2013
2014

↑ 10%



- 124 - Southeast Asia
- 81 - South Asia
- 56 - Middle East and Central Asia
- 31 - Eastern and Southern Africa
- 19 - Bremen
- 13 - Las Américas

324 Employees

- Project Management
- Public Relations
- Knowledge Management
- Social
- Technicians

5,884,435€

Turnover by Locations

Middle East and Central Asia – 1,812,594€

Eastern and Southern Africa – 1,723,987€

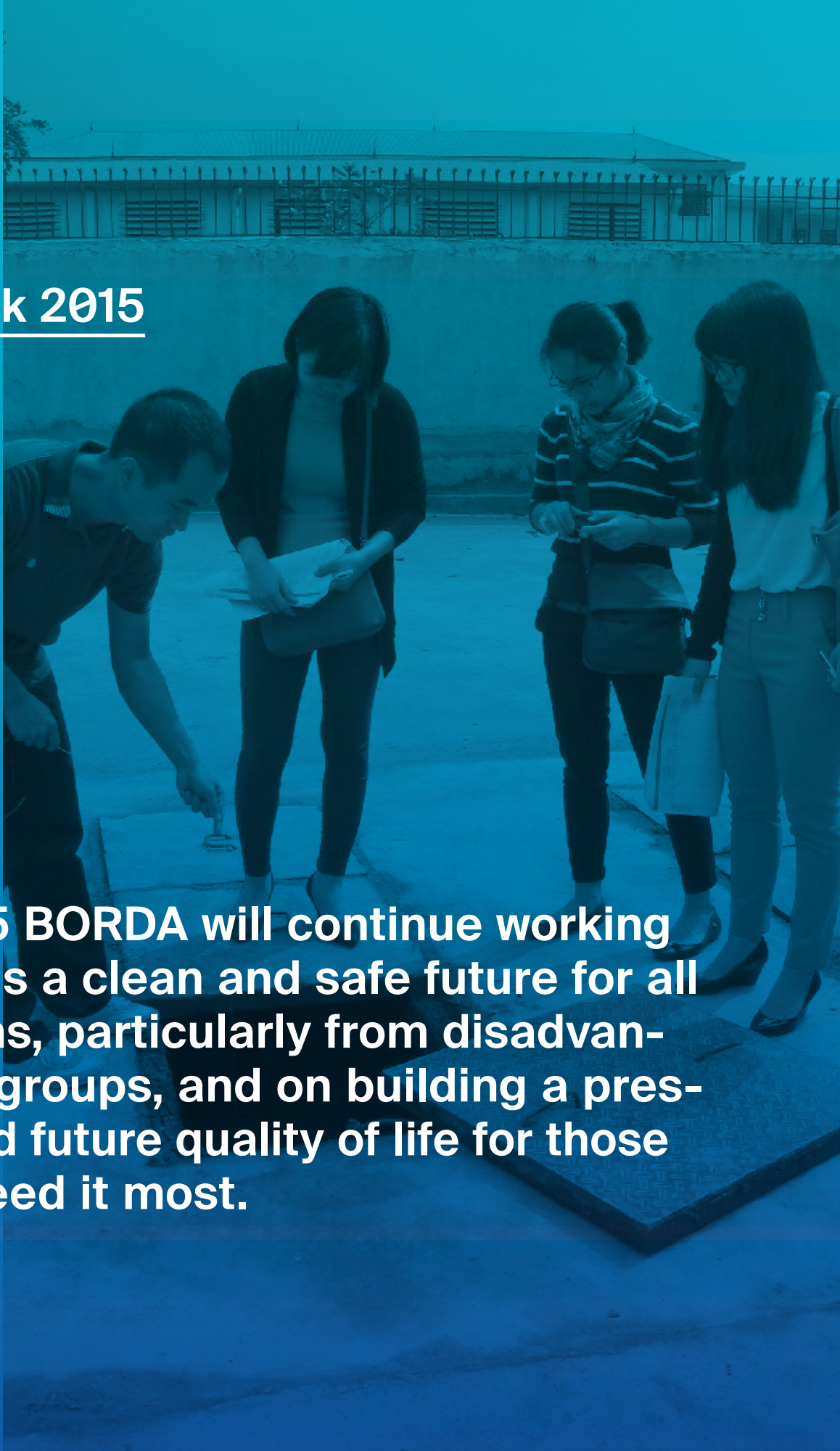
Southeast Asia – 1,582,497€

South Asia – 1,192,215€

Las Américas – 194,332€

Over-regional – 35,535€

Outlook 2015



In 2015 BORDA will continue working towards a clean and safe future for all persons, particularly from disadvantaged groups, and on building a present and future quality of life for those who need it most.

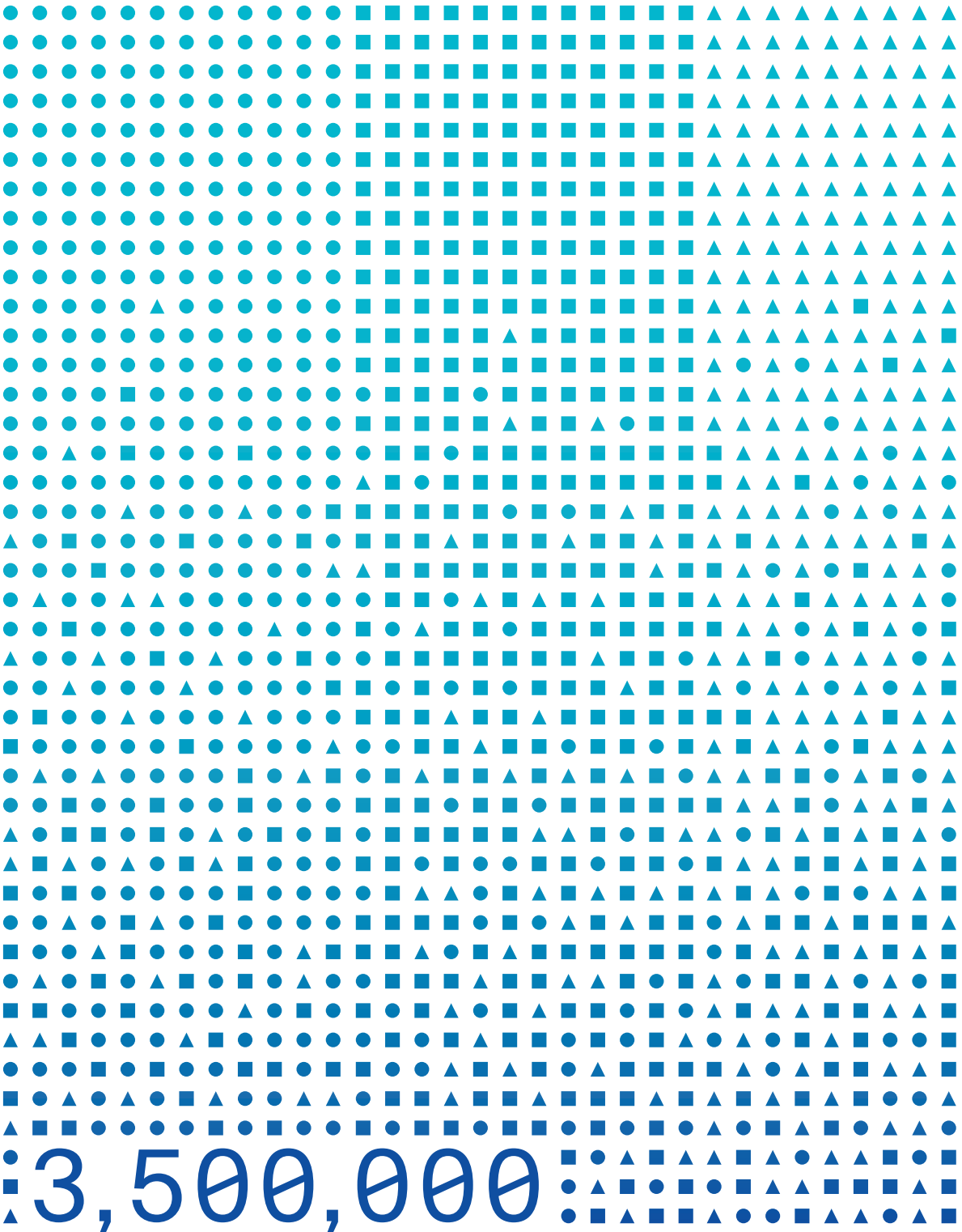
BORDA will also carry on and intensify the project work in our new field of activity, emergency response and relief, which we systematically branched into in 2014. The BMZ project in Northern Iraq, for example, was launched past year and aims at improving the basic sanitation supply in refugee camps and their neighbouring villages. In 2015, this project will focus on the installation of DEWATS systems. BORDA's interest in continuing emergency response and relief work is also clear in the plan to establish a local BORDA office in the Iraqi town of Erbil next year. In that way, BORDA is able to safeguard the presence in Iraq in the long term as well as to secure effective implementation of BORDA's characteristic multi-level approach.

Additionally, BORDA's project in Mali, which started in 2014 and focuses on addressing the reasons that people flee their homes, will continue next year with an emphasis on capacity development.

Whereas in the past, BORDA and the WASH sector focused mainly on the areas of water, sanitation and hygiene (WASH), the focus has increasingly shifted to consider the entire nexus at a higher level of water, energy, food and climate change. These four issues are strongly interrelated and interdependent, which is why the development and application of integrated solutions have the potential to tackle these four most pressing challenges of our time in a manner which is efficient, effective, and most of all sustainable. Hence in the future BORDA will also work increasingly on projects in the field of renewable energy and food production. In addition to the above-mentioned project in Mali which also aims at reconstructing water supply systems for agricultural use in the hunger-stricken country, another BMZ project called »A world without hunger« is going to be launched in three different countries in 2015. This special initiative will run in three BORDA regions between 2015 and 2017 and comprises several projects, including: a project on climate protection and the enhancement of food security and earning capacity in Las Américas; a project on integrated school sanitation in rural and peri-urban regions of Cambodia; and finally another nexus project on retrofitting existing plants to integrate food production and sanitation in peri-urban poor settlements in India.

In 2015 BORDA will continue working towards a clean and safe future for all persons, particularly from disadvantaged groups, and on building a present and future quality of life for those who need it most. To continue to reach these aims, we will continue to actively participate in for a like the 7th World Water Forum in Korea, the Faecal Sludge Management Conference in Vietnam and the Stockholm World Water Week 2015. BORDA's core activities in the field of development co-operation will expand, for example, in Las Américas, which will become an independent regional project in 2015. In the long-term, this will allow BORDA to increase resources in Las Américas, a prerequisite to extending all activities in the region. This will further improve the protection of the people, health and environment by supplying integrated decentralised sanitation solutions to more people in more places.

3.5 million tons of waste are produced by the world population every day. BORDA supports local communities to collect, separate, and recycle the waste produced by households in poor urban areas. Composting and recycling of sellable material creates new income streams, keeps nutrients in the cycle and the total amount of waste going to a final landfill is reduced significantly.



| | |
|--------|---|
| Text | Annika Petruch, Nuria Wieskotten, Roslyn Graham, Maren Heuvels |
| Photos | all rights reserved by BORDA Page 52, suze/photocase.com |
| Print | Hinkelstein-Druck, environmentally-friendly production |
| Paper | Igepa Circle matt white 115g/250g, 100% Recycling, FSC® Der Blaue Engel, EU Ecolabel |
| Layout | gegenfeuer.net |

Thinking long-term,
acting now.



Fahrenheitstraße 9
28359 Bremen

fon: +49.421.4089520
fax: +49.421.40895250

office@borda-net.org
www.borda-net.org
[facebook.com/borda.bremen](https://www.facebook.com/borda.bremen)