



BORDA

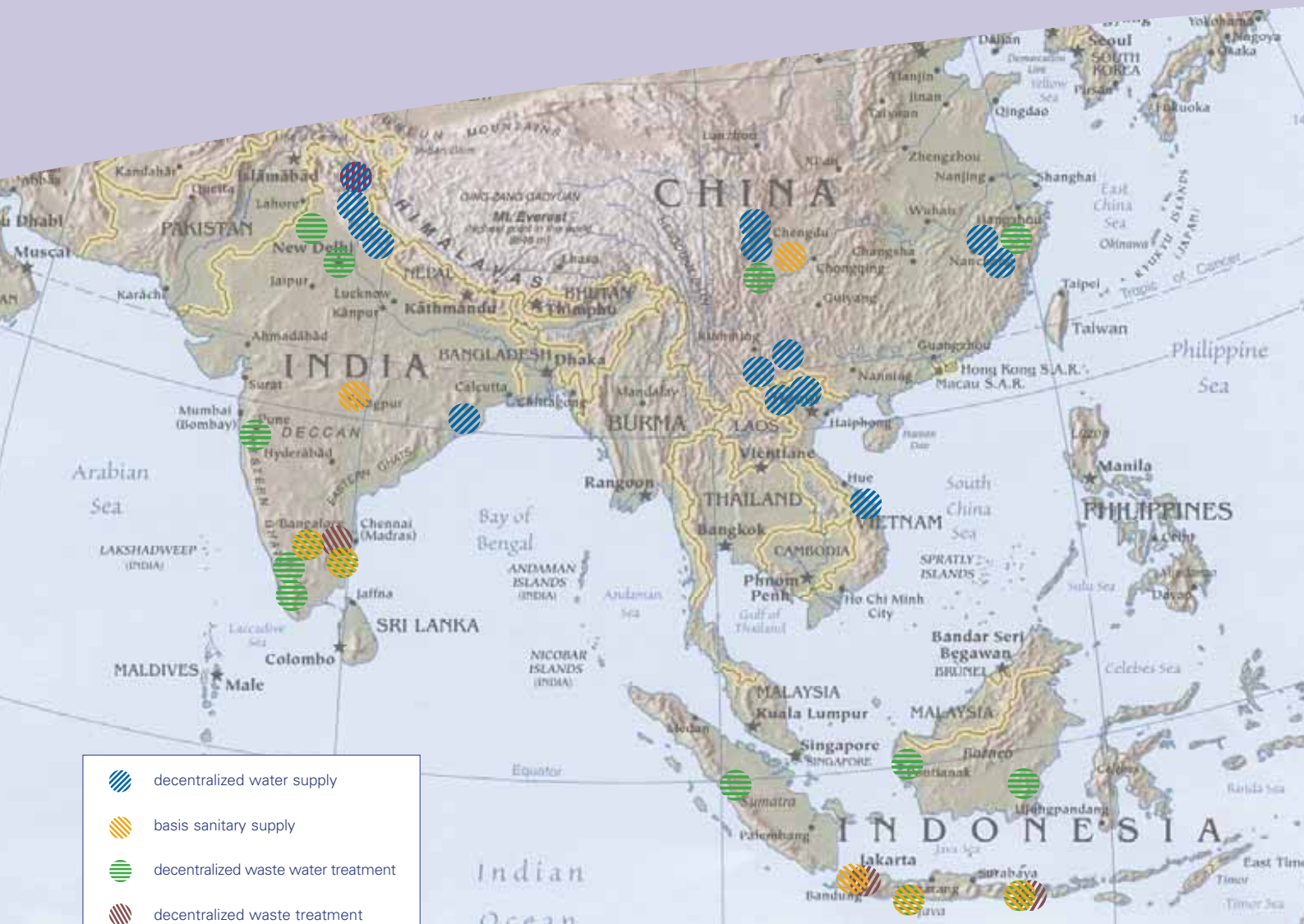
Annual Report 2004 | 2005



Overview 2004/2005

Sectors and Regions in Asia

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For more than 25 years BORDA has fostered cooperation on non-profit infrastructure development projects in partner countries in Africa and Asia. BORDA's developmental and political activities seek to bring together the complete spectrum of possible methods of intervention and actors.

The mission of BORDA is to improve the living conditions of disadvantaged societal groups and to keep the environment intact through the expansion of basic-needs services in the areas of decentralized sanitation, water, and energy availability as well as sewage and waste disposal.

Facilitating Basic Needs Services
"Thinking long-term, acting now!"

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1. Background

Intensification of the Scope of Operations

BORDA's effective scope of operations was intensified through the alignment of basic-needs services in the areas of "decentralized water supply," "decentralized energy supply," "decentralized waste water disposal," "basic availability of sanitation," and "decentralized waste management," thereby fulfilling some global developmental and political demands.

The Mission of BORDA

has therefore ultimately become "to ensure universal standards of living for especially disadvantaged societal groups as well as sustainable protection of the environment through the needs-based expansion of decentralized services for the fulfillment of basic needs." This new mission statement illustrates that BORDA understands the role that appropriate technologies have to play as a means of fulfilling the developmental and political goals of the fight against poverty.

Local Monitoring and Coordination of Supervising

Since 2005, three long-term specialists have been active in monitoring on-site projects from BORDA's project offices in Bangalore (India), Hanoi (Vietnam), and Yogyakarta (Indonesia). The supervisory coordination of all developmental and political measures takes place through BORDA's administrative office and is reinforced by the appointment of an additional consultant.

BORDA's new website

is an exemplary illustration of the spirit of partnership inherent in BORDA's developmental and political collaborations.

Tsunami

Thanks to the spontaneous readiness of Indian, Indonesian, and German staffers to work on ad hoc operations, BORDA was successful in responding to the effects of the tsunami catastrophe in India and Indonesia with a quick response of aid and reconstruction measures. Donations to BORDA were spent on the financing of initial aid measures. In the framework of the "Bremen helps!" drive, BORDA and its partner organizations have supported the rebuilding of sanitary facilities in the Acehese district of Bireuen. By the end of October 2005, three "community sanitation centers" were completed; they now ensure the availability of sanitation for more than 1,000 families.

At this point we would like to express our sincere thanks to all those who took part in our struggle for everything we have already achieved. Donors included the Bremen State Office for Development Cooperation, the national Ministry for Economic Cooperation and Development, the European Commission, the World Bank Water and Sanitation Program, the United Nations Development Program (UNDP), the more than 2,500 employees of Bremen who donated to the Rest-Cent-Aktion initiative, the Bremen Savings Bank (Sparkasse Bremen), the district of Verden, and the Drinking Water Association of Verden. We must also thank the "Bremen Helps!" drive and our private donations, which were able to put BORDA in a position to support and implement emergency aid and reconstruction measures in India and Indonesia as a parent organization.

Thanks

We would like to express our sincere gratitude to all the participants and coworkers for all the common achievements.

Thanks to the donors of the Bremen City Council for Development Co-operation, the German Ministry of Economic Co-operation and Development, the European Commission, the World Bank Water & Sanitation Programme, the United Nations Development Programme (UNDP), the over 2500 Bremen employees and officials, who donated via the Odd-Cent-Action, the Savings Bank of Bremen, the District of Verden, the Drinking Water Association Verden.

Thanks to the initiative "Bremen hilft" and further private donors, BORDA has been enabled to contribute to emergency relieve and reconstruction for Tsunami victims in India and Indonesia.

2. Overview of Regional Programs | 2.1. South Asia

Networking Existing Operations, Unified Approach, Standardization

Focus on Urban Regions

The boom in growth in South Indian cities, along with rising migration and urbanization, is causing an increasingly deteriorated quality of life for the majority of the urban population. The otherwise completely inadequate sanitary accommodations are deteriorating rapidly due to the increasing pollution of the immediate surroundings and the lack of access to clean water. At the communal level, efficient and basic concepts of decentralized community-oriented solutions in the areas of settlement health, sewage treatment, and waste disposal are lacking.

Focus on Rural Regions

The district of Ladakh lies in an isolated and extremely underdeveloped mountain region. A large portion of the region is wilderness, with very little precipitation seen in high-altitude arid zones. This suffices merely for production based on subsistence, one which is always threatened by the winter. The lack of transportation and technical development or electricity in the region hinder in a dramatic way the improvement of agricultural production, access to markets, as well as the production of crafts.

Most of the settled project regions of Dalits and Adivasi in Maharashtra and Madhya Pradesh are similarly weak in infrastructure. Here too, owing to the lack of access to water and irrigation, agriculture takes place merely at the lowest level, even if the climactic conditions are considerably more favorable.

Basic Approach to our Program

In cooperation with its partners, BORDA promotes local integration of development proposals in the areas of decentralized water management, decentralized energy management, decentralized sewage treatment, and basic availability of sanitation (CBS-DEWATS).

Objective

Our objective is the creation of sustainable needs-based service infrastructure in the areas of decentralized water and energy supply (Ladakh, Madhya Pradesh, Maharashtra). Improvement in the hygiene of the settlements and especially of sewage and compact waste management (Maharashtra, Tamil Nadu, Karnataka), as well as reduction of the contamination of surface water through decentralized waste water management and the introduction of small-scale treatment plants (Gujarat, Delhi, Karnataka, Orissa, Maharashtra, Kerala, Pondicherry) in ten selected regions of India are intended to satisfy the basic needs of the disadvantaged population.

Target Groups

The target groups of the decentralized water and energy supply area are disadvantaged populations of structurally underdeveloped regions. The target groups in the framework of the DEWATS operation are the communal and social institutions, from small and middle-sized companies to decision-makers and people with potential know-how, as recipients and disseminators of technology transfers at the meso and macro levels. The neighbors and residents of the businesses, now armed with sanitation technologies, are beneficiaries of the DEWATS measures. The target groups of CBS are the residents of densely settled, poor residential areas, especially women and children.



2.1. South Asia

1. Decentralized Water and Energy Supply

BORDA's concept of decentralized water supply is based on the use of the cost-efficient and low-maintenance "hydraulic ram" pumping system for water pumping and supply in rural areas and thereby for an increase in agricultural production and home availability.

The expansion of adaptable technologies for village energy availability occurs through the introduction of small hydroelectric power plants. These allow for energy availability in homes the low-lying valleys as well as the use of electrical tools and implements for small-scale industry and handicraft.

Cooperating Partners

Ladakh Ecological Development Group (LEDeG), Jammu & Kashmir, India

Since 1983, the work of LEDeG has been targeted at the conversion of programs for the use of renewable energies and income-oriented measures. LEDeG works with extensive experience in the implementation of myriad measures in the mountain wilderness region of Ladakh, with its challenging climate and infrastructure. LEDeG has been BORDA's partner organization since 1991.

Matru Mandir, Maharashtra, India

Matru Mandir is involved with various aspects of social work and the integration of rural development in the state of Maharashtra. The organization maintains a girls' residence with a school and hospital in Devrukh. In cooperation with international organizations, Matru Mandir has for many years implemented projects for rural development, especially with the disadvantaged populations of Adivasi and Dalits.

National Institute for Women Child & Youth Development, Maharashtra, India

NIWCYD works as an NGO in the areas of social, agricultural, and economic development.

Example Project

Decentralized Water Supply – Decentralized Energy Supply

BORDA is executing this partial project in cooperation with its longtime partner LEDeG and its experienced team of technical personnel, social workers and community organizers in the region of Ladakh, in the northern state of Jammu & Kashmir. A central component of this integrated project concept is the expansion of adaptable technologies, such as the use of the hydraulic ram to increase agricultural production and small-scale hydroelectric power plants to make electricity available to villages. These also enable the use of electric equipment for small-scale industry and handiwork in low-lying valleys.



In addition, this project offers a parallel training program, for example, in the production of handicrafts. Through selection criteria worked out in close cooperation with the partner organization, 22 potential sites and villages were investigated using a technical and socioeconomic approach. In order to prepare for the task of installation, financial and material requirements, as well as other logical measures, were met in all identified locations.



2.1. South Asia

2. Decentralized Waste Water Purification (DEWATS)

DEWATS facilities are efficient, low-cost, and low-maintenance treatment plants. The main areas of operations are the improvement of treatment technologies for small and medium-scale businesses, educational establishments, and hospitals.

Cooperating Partners

Consortium of DEWATS Dissemination (CDD), India

This network, which was established in 2002 on the initiative of BORDA in the framework of a project financed by the Commission of the European Union, today oversees 24 governmental and non-governmental, national and international professional organizations as well as private builders in eight states (Gujarat, Delhi, Orissa, Maharashtra, Kerala, Pondychnery, Tamil Nadu, and Karnataka). CDD was founded as the umbrella organization for the expansion of decentralized waste water management (DEWATS), and plays a crucial role in strategic development, lobbying and marketing, and further technological development in India, along with the planning and construction of DEWATS facilities.

Maharashtra Arogya Mandal (MAM), Maharashtra, India

MAM is involved in various areas of social work and integrated rural development in the state of Maharashtra. The organization operates a children's home for girls in Narodi, a school and a hospital in Hadapsar, and has carried out rural development projects (especially in the area of watershed development) for years in cooperation with international organizations. The focal point here is cooperation with the disadvantaged population groups of Adivasi and Dalits.

Matru Mandir, Maharashtra, India
(See above.)

Office Agenda 21 and Pune Municipal Corporation, both of Pune, India.

Further partners



Example Project

Decentralized Waste Water Purification (DEWATS)

The need for waste water treatment systems in the urban and semi-urban regions of India is rising considerably. Most small and medium-scale businesses, institutions, and organizations are not yet in a position to operate high-tech waste water systems. For most users, neither the high cost of investment nor the high cost of personnel for upkeep makes this a possibility. The DEWATS project is developing and establishing a reliable option for the handling of decentralized waste water and expanding the DEWATS concept to include various preventative measures. These preventative measures include decentralized waste water management for residential districts, hospitals, and small and medium-scale companies, among others.

This project, financed by the Commission of the European Union and implemented in cooperation with our partner, the CDD Network, could be completed successfully in 2004.

A definitive foundation stone on the way to our long-term goal of reducing the contamination of surface and ground water caused by decentralized waste water was achieved through the construction of more than 70 DEWATS facilities during the project implementation period. Project partners continue to plan and construct further facilities on their own after the completion of the project.

Today, more than 130 DEWATS facilities operate in 12 cities divided among eight states of India. All in all, more than 2,000 workers from 24 organizations have been introduced and trained in the area of DEWATS technology transfers.

One of the project's highlights was the opening of the DEWATS facility at the Aravind Eye Clinic, a complex of clinics Pondychnery. Approximately 360 cubic meters of waste water are purified here every day. The purified water is then used mainly for the irrigation of adjacent greenhouses.

In total, users were able to contribute to a higher proportion of construction costs than expected. Therefore, the further expansion of the DEWATS concept was implemented with a stronger market focus, such that only those with direct demand or interest in the project were involved and the number of facilities implemented during the project period grew noticeably.

The expansion of DEWATS is not close to reaching its limit and presents a great opportunity to BORDA and its partners. Similar adaptable solutions should be developed in the long term for the industrial sector. Nevertheless, DEWATS already enjoys a "brand-name status" and is likewise a recognized option for waste water purification among governmental offices, private businesses and NGOs.



2.1. South Asia

3. Basic Provisions for Sanitation (CBS-DEWATS)

The modular concept of decentralized waste water handling (DEWATS), designed for regions recognized for poverty, has been implemented successfully in conjunction with the participative approach of Community Based Sanitation (CBS) – for instance, through “community sanitation centers.”

Cooperating Partners

Excellent Novel and Radical (EXNORA), Tamil Nadu, India

EXNORA is an organization, founded in 1989, whose involvement depends mostly on volunteers. For 10 years, EXNORA has supported local self-help initiatives in the area of environmental management and solid waste disposal. At the same time, it has implemented measures to build awareness as well as promote income and employment.

Foundation for Educational Innovation (FEDINA), Karnataka, India

FEDINA was founded in 1983 as a non-profit association. The focal point of their work is to improve the quality of life of poor population groups. To this end, FEDINA carries out projects in the areas of property rights, land development, strengthening the economy, equality for women, education, basic infrastructure, and environmental protection.

Grama Swaraj Samithi (GSS), Karnataka, India

GSS was founded in 1996 and has been active for years in the work of integrated slum development. In addition, the organization also enacts measures for the building of awareness and practical training in the promotion of income and employment.

Indian Institute of Youth Welfare (IIYW), Maharashtra, India

The IIYW was founded as an association in 1973 with support from the Konrad Adenauer Foundation. It is the objective of the organization to give sustainable support to especially disadvantaged groups from urban slums and rural regions through awareness-building measures, training, as well as technical and personal advancement.

Rural Literacy and Health Programme (RLHP), Karnataka, India

RLHP was founded in 1984 and supports disadvantaged groups. These take place through measures in the areas of community housing construction, consultation, advocacy, as well as savings and credit organizations.



Example Project

Basic Provisions for Sanitation

A huge number of migrant families live on the fringes of south Indian cities among inhumane conditions. Access to basic sanitation provisions and clean drinking water presents a crucial problem. The modular concept for waste water treatment (DEWATS), developed by BORDA for regions recognized for poverty, contributes to a substantial improvement, especially in conjunction with the participative approach of Community Based Sanitation (CBS) – for instance, through “community sanitation centers.” This undertaking is carried out through BORDA’s coordinating office in Bangalore, which aims to expand the concepts of CBS-DEWATS and DEWATS in India.



On the basis of pioneering and guiding social work, this project aims at the participation of the target group in the planning, construction, and operation of CBS-DEWATS facilities. At the same time, BORDA’s successful approach from Nagpur, the long-term organization of women’s savings and credit groups, has been transferred to this new network. Both of these project components together render a substantial contribution to the reduction of poverty and the promotion of sustainability.

Two definitive procedural methods were used during the execution of the project: In the location Ullalu, a new facility was conceived, planned, and transferred into actual construction in cooperation with local self-help groups, governmental institutions, and BORDA partner GSS. The users have taken responsibility for the operation of the facility and other, smaller maintenance tasks. The financing of the operation of the facility is met through user fees.

In the location Trichy an existing community sanitation facility could be renovated and fitted with purification technology in cooperation with local officials and self-help groups. Here too, the users have taken over personal responsibility for the operation of the facility and the execution of smaller maintenance tasks. The financing for the operation of the facility is covered through user fees.

2.1. South Asia

4. Projects Funded in Part by Donations

Project Example

Setup of Women's Savings and Credit Groups

The slum Hazrat Nizamuddin in New Delhi is overflowing with more and more migrants. New migrants especially are people with religious-conservative views and without any primary school education. They meet their daily needs through begging, garbage collection, drug dealing, and prostitution. Many families are dominated by lack of basic needs and malnourishment among children. Women must lead withdrawn lives, allowed to leave the residence only under the supervision of a man, and therefore hardly have the opportunity to earn money themselves.

With the assistance of the District of Verden, this project aims to improve the basic needs of women and children in case of a crisis (illness, death) in cooperation with our partner Hope Project Charitable Trust in New Delhi. With the conclusion of the third year of operation, the project was able to establish 44 women's groups with 624 members in total, and to stabilize their development. Most groups save INR 100 every month, while each member receives 12 percent interest yearly on their savings investment. In the reporting period, the invested capital of the women's association grew from INR 539,210 to INR 995,046.

Project Example

Drinking Water Availability in the Slum Settlement Yelavarbeedhi

Through a donation by the Verden Drinking Water Association, and in conjunction with BORDA's partner organization RLHP, we were able to successfully improve the availability of drinking water in the slum settlement Yelavarbeedhi. The conversion took place in 2004 and consisted of (among other measures) the repair of a hand pump, the re-digging of a well, the planning of a water tank that can hold 5,000 liters, as well as the construction of a place to wash. The local city administration had already expressed its readiness to enact waste water disposal measures for the settlement. After the completion of the program, we were able to supply more than 300 people with water and secure an adequate water supply. In addition, the health status of the population, especially of women and children, was improved. We were also able to reduce the time women spent on obtaining water for domestic use, which can now be spent on earning income; girls can now also concentrate more on school.



Further Donation Projects

Various donations, including those from the elementary school in Bierden as well as from private individuals, were spent on a day care center in Indian Nagpur, supervised through BORDA's partner IIWY, and on supporting a girls' residence in Mysore, supervised by BORDA partner RLHP. The donations of the East Asian Society in excess of €12,000 were sent along in 2005 to our project partner, the Centre for Science and Research (CSR) in Pondyicherry. Measures designed to improve the quality of ground water were transformed to assist in the cleaning up of contamination caused by the tsunami of December 2004.



2.1. South Asia

Results in the Region of South Asia (2004–2005)

Decentralized Water and Energy Supply

In 2004 and 2005, 13 hydraulic rams and three small-scale hydroelectric power plants (up to 15 kW) were installed. Two hydroelectric plants remain under construction. Five hydroelectric plants (pico- to 1 kW) were installed, one of which is used for demonstration purposes. Furthermore, six warm-water heaters were installed. All in all, the target group of our decentralized water and energy supply project could be increased to 7,500 individuals. Under the framework of a project for energy supply in rural areas, carried out with the Commission of the European Union and in cooperation with the French organization GERES, we were able to identify seven more potential locations for the installation of hydroelectric turbines.

Under the framework of cooperation with AWO International and two of its partner organizations in India, nine hydraulic rams were installed. These facilities supply 65 farmers and 120 families with water. Under the framework of an irrigation program, an additional six hectares (2.5 acres) of land could be irrigated, and a new goal of a yearly increase of approximately €300 in farmers' income could be set.



Decentralized Waste Water Disposal (DEWATS)

In 2004 and 2005 the architectural planning and construction of three DEWATS facilities took place; these purify 105.85 cubic meters of waste water daily for 640 users. Three facilities for 650 users with a purified waste water volume of 55 cubic meters daily are currently in the works. Furthermore, the BORDA office in India was responsible for the technical planning of three further DEWATS facilities for 7,089 users and a purified water volume of 693 cubic meters daily.

BORDA was able to realize the construction of four additional DEWATS facilities (two in Pune, one in Narodi, and one in Devrukh) with a total volume of purified waste water of 81.7 cubic meters daily in cooperation with AWO international as well as its partner organizations MAM and Matru Mandir. These facilities dispose of waste water from two schools, two hospitals, as well as a girls' residence.

Basic Availability of Sanitation (CBS-DEWATS)

In the second and third years of the project, six community sanitation facilities were put into operation as demonstration facilities. They supply 9,330 residents with basic sanitation and dispose of 677 cubic meters of waste water daily. Two facilities are currently under construction and, upon completion, will enable access to basic sanitation for 3,407 residents by disposing of 50 cubic meters of waste water daily. Six more CBS-DEWATS facilities are currently in the planning stages. As a result of our pilot facilities, we were able to awaken an interest in further CBS facilities among state officials in Nagpur, Chennai, Trichy, and Bangalore, as well as private investors in Mysore and Chennai.

Training Measures

During the reporting period, we were able to implement approximately 143 training sessions, including 86 for target groups, 35 for project workers, and 22 for technical personnel and management staff from private businesses and governmental organizations. A target group of approximately 5,670 people could be reached under the framework of these training measures.

Further Results

CDD partners regularly publish the electronic newsletter "e-disha" with information and updates on DEWATS.

Cooperation between BORDA and its partners the Pollution Control Board, the Rajiv Gandhi Housing Foundation, and other local and regional government agencies was intensified.

In 2004, project partners under the framework of a BMZ project were able to solicit personal contributions and third-party donations in the amount of €213,572.

Beginning in November 2005 and for an initial period of two years, the Center for International Migration and Development began sponsoring an expert in decentralized waste water disposal, who began work at the International Office of Agenda 21 in Pune.

BORDA made itself available for questions last year at the international ECOSAN conference from 25-27 November 2005 in Mumbai.

BORDA's cooperation office in Bangalore held a seminar on "Basic Needs Services" in Chennai from 12-14 December 2005 with the help of Indian partners.



2.2. Southeast Asia

Developing co-operation with ministries and municipal administrations, beginning with ensuring quality protection.

Project Regio

In the densely populated Java and Bali regions (Indonesia), as well as in the Philippines, the decreasing living conditions of the increasing populations are intensified by insufficient basic sanitation in poor areas, increasing water contamination due to polluted household and industrial waste water, and the lack of solid waste disposal systems. As in other regions of Asia, there is a lack of efficient and appropriate methods of decentralized, community-oriented solutions for community sanitation, waste water treatment and waste disposal.

Program Objectives

BORDA promotes integrated development projects of decentralized waste water treatment (DEWATS), community based sanitation (CBS), as well as decentralized solid waste management, in co-operation with its local partners.

Objective

The aim is to spread demand-based decentralized service structures in order to meet the basic needs of disadvantaged populations in the regions, providing community based sanitation, decentralized waste water treatment and solid waste disposal. By training policy-makers and engineers over the Internet (e-learning), as well as by systematically informing potential users about financial involvement through Indonesian authorities, technical options and by endorsing the CBS and DEWATS "products", the distribution of the decentralized systems is to be expanded over the BORDA partner network.

Target Groups

The target groups for CBS/DEWATS distribution are local institutions, small and medium enterprises, as well as policy-makers and potential expert sponsors. Implementation of CBS and decentralized waste disposal is intended for inhabitants of poor, densely populated areas, and is particularly targeted at women and children. DEWATS is aimed at local residents and neighbors of purification-technology equipped enterprises.



2.2. Southeast Asia

1. Decentralized Waste Water Treatment (DEWATS) / Community Based Sanitation (CBS-DEWATS)

DEWATS (Decentralized Waste Water Treatment System)

plants are decentralized, efficient, economical and low-maintenance small sewage treatment plants. The main areas of application are purification technology upgrades for small and medium enterprises, the agricultural industry and hospital workers. Likewise, DEWATS systems are an integral part of community sanitation centers (CSC).

CBS (Community Based Sanitation)

the modular system for decentralized waste water treatment (DEWATS), developed for poverty-stricken areas is used here in conjunction with community-based sanitation (CBS). Different options are adapted depending on the needs of the target group. These are essentially the connection of private households to a decentralized waste water treatment system (DEWATS) plant, or the establishment of a community sanitation center (CSC) for the use of up to 300 residents, consisting of both toilets and washing facilities, and of an underground DEWATS plant for waste water treatment.

Co-operating Partners

BEST (Institute for Integrated Economic & Social Development)

BEST is a NGO established in 1995 with 12 staff members. From its offices in Tangerang and Surabaya, Indonesia, BEST works together with BORDA on the implementation of DEWATS, CBS and decentralized waste disposal.

BALIFOKUS (Bali Fokus Foundation)

BALIFOKUS, a NGO based in Kuta, Bali, was founded in 2000 and has eight staff members. In co-operation with BORDA, BALIFOKUS works on DEWATS, CBS and decentralized waste disposal projects. BALIFOKUS worked with BORDA to establish a recycling center for the separation and recycling of domestic waste.

LPTP (Lembaga Pengembangan Teknologi Pedesaan)

LPTP, a NGO, was established in 1998, has nine staff members and is based in Surakarta, Indonesia. In co-operation with BORDA, LPTP carries out CBS and DEWATS projects, particularly for small and medium enterprises.

All partners are involved in the reconstruction work of the Aceh region after the Boxing Day Tsunami.

Implementation of CBS/DEWATS Plants

Since 1999 BORDA, in co-operation with local partners and residents, has been implementing projects based on the needs of target groups, adapting systems for the improvement of sanitation in poor areas (Community Based Sanitation, CBS) and for decentralized waste water treatment (DEWATS). In the course of more than 75 implementations, this system has been successfully implemented and works in co-operation with local administrations, the Indonesian planning and development authorities and international organizations, based on cooperative partnerships with the target groups when planning and implementing the systems. Efficient co-operation of the partners within the network make a well-structured exchange of experience and information possible, as well as co-operation of partners on a supra-regional level.

Both Indonesian policy-makers in the environment and development sectors and small and medium enterprises (SME) have accepted the CBS-DEWATS standard system. As a result of the large need for this system, it has the potential to be used throughout all of Indonesia.

The ability of the project systems to meet the demand is ensured by the use of carefully selected sites. Target groups and/or local institutions are directly involved in planning and also partly in the adaptation of the systems. Operation, maintenance and management of CBS and DEWATS systems are financed exclusively by target groups and/or local institutions. This integration of the target groups also means long lasting waste water management. The measures are more long lasting and effective because the wants and needs of the target groups and local stakeholders are represented.

The implementation of CBS DEWATS plants reduces the run-off of waste water into the soil, and thus reduces the presence of E-coli bacteria in the borewell water. Stomach and intestinal diseases in local residents are thereby reduced. In addition, the occurrence of diarrhea was considerably decreased where CBS plants were installed. The high treatment efficiency of the DEWATS plants reduces the concentration of organic and micro-biological pollutants in surface and ground water, and the environmental impact on surrounding residential areas is thus reduced. In addition, these methods increase the environmental awareness of local residents and their interest in further environmental protection activities.



2.2. Southeast Asia

Information on Policy-makers and Use of Public Resources

SANIMAS Project

As an integrated component of the WASPOLA (Water and Sanitation, Policy, Learning and Action) project, the SANIMAS (Sanitation by Neighborhoods) project, as of 2004, had supported the planning, implementation and management of CBS (community based sanitation) systems in six communities close to large, populated cities such as East Java and Bali.

The directing of the project and co-ordination took place via WSP-EAP (Water and Sanitation Program) in co-operation with the inter-ministerial WASPOLA workgroup. BORDA and its Indonesian partner network formed the "SANIMAS Implementation Agency", which is responsible for working with the local communities, city administrators and local project managers for the implementation of all components of the project. Based on demand, eight urban areas in the densely populated East Java and Bali provinces were selected. The successful implementation of the systems in co-operation with Indonesian city administrators and policy-makers demonstrates that decentralized local waste water disposal can be seen as a serious option for the improvement of environmental sanitation. Even before the implementation of sanitation systems, all cities expressed a willingness to continue to develop and implement future demonstration projects. The SANIMAS project could be successfully completed in 2004.

Financial Support from Indonesian Authorities

Due to intensive information distribution and co-operation with numerous policy-makers in previous years, the Indonesian planning authorities/Ministry for housing development have agreed to partial financing for local communities to implement CBS/DEWATS plants. This is done through the placement of an order with the city administrators in the BORDA partner network.

For example, a request could be made for the building of a central anaerobic sludge waste disposal facility. Putrid sludge that occurs in household septic tanks, as well as in small sewage treatment plants, can be treated in a DEWATS plant specially configured to meet these treatment requirements.



Information Sessions on Kreditanstalt für Wiederaufbau (KfW) Subsidies

In information sessions for small and medium enterprises (SME), the BORDA partner network policy-makers clarified current possibilities for financial support in the building of DEWATS plants for the treatment of waste water. BORDA informs and supports businesses in the making of an application. Part of a request to the KfW is a feasibility study on the possibility of a development that enterprises have to submit. The BMZ offers the opportunity to interested enterprises for the study to be carried out by the BORDA network and financed by BMZ.

Information Sessions and Pilot Project in the Philippines

Since 2005 BORDA has had a project office in the Philippines where information sessions for industrial enterprises and city administrators have been held. In co-operation with the AWO and its Philippine partner organization HealthDev, the first pilot project in the slum area of Malinas will be undertaken.



2.2. Southeast Asia

Standards and Certification

Due to extensive public relations work, numerous successful demonstration units, as well as co-operation with authorities, the demand by users and city administrators has risen constantly for CBS/DEWATS plants. It is felt that the BORDA partner network alone will soon no longer be able to meet this demand, and will increasingly outsource the construction to external enterprises. However, in order to maintain the quality of the plants, standards must first be defined. Construction supervisors from external enterprises participate in the network's seminars to familiarize themselves with these quality requirements, and upon successful participation in the seminars they are issued with an appropriate certificate, enabling them to develop CBS/DEWATS plants to BORDA's required standards. The CBS and DEWATS plants will, after development, also require certification to ensure they meet strict criteria. BORDA partners' specialists will thereby take over the roles of teachers and certifiers. This process, in which high quality standards are maintained yet distribution levels are increased, is promoted with the support of BMZ.

Training over the Internet – E-learning

As a means of further spreading BORDA's system of decentralized waste water treatment, as well as for the development of a network of competent policy-makers, the internet-based "Decentralized Waste Water Treatment in Developing Countries" training courses were developed and run in collaboration with InWEnt gGmbH in 2004/2005. The training project is targeted at national, regional and local policy makers, as well as NGO's and enterprises that are involved in the development and implementation of waste water solutions in South and Southeast Asia. The aim of the courses is to improve the practical and theoretical knowledge of participants and introduce them to the "Good Practices" of BORDA developments. Approximately 60 participants were trained in the technical, political, economic and institutional aspects of DEWATS implementation. Policy-makers from Indonesia, the Philippines and India, and also Vietnam and China, participated.



2.2. Southeast Asia

2. Decentralized Waste Management

Background

The Indonesian islands of Java and Bali have an average population density of 950 inhabitants/km², with a total of 130 million inhabitants in one of the most densely populated regions of the world. Regulated waste disposal is not available. This is particularly true of smaller communities that are not near major roads. The removal is limited in some large Indonesian cities to approximately 30% of household refuse. National disposal enterprises often work inefficiently. The separation of recycling from waste is only done unsystematically by private garbage collectors. The current unsatisfactory garbage disposal system also means that private households burn garbage on the street, thus significantly contributing to increasing air pollution levels in densely populated areas. Feasibility studies for a decentralized waste disposal system conducted by BORDA's Indonesian partner organizations in urban areas in 2003 in Bali and Jakarta have shown the official disposal system is not sufficient.



Co-operating Partners

BEST and BALIFOKUS (see above).

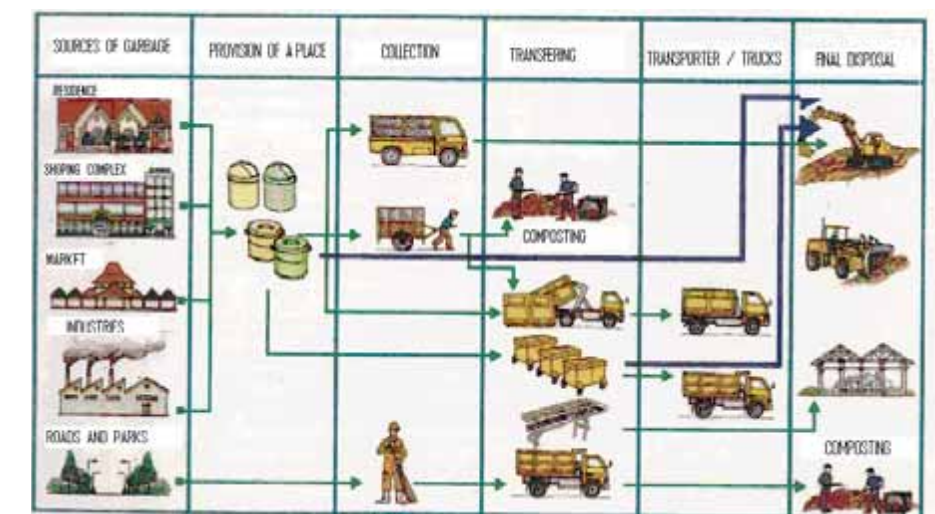
In 2004 and 2005, the partners, with the support of city administrators, began to implement demonstration projects in decentralized waste management. Under the BORDA-InWent exchange program (ASA) in 2005, two BEST and BALIFOKUS specialists were brought in, and, together with two Bremen ASA scholars, documented the "Good Practices" conversions.

Example Recycling Project

In the district of Giyanyar, Bali, BALIFOKUS was responsible for the development of a recycling center enterprise, to which 50 tons of domestic refuse is delivered daily by local garbage collectors. The waste volume is decreased by 75% from the separation and subsequent repatriation of valuable materials. Besides plastics and metals, organic material is also taken and composted, then later sold as a nutrient-rich surface soil. The center currently employs 50 workers internally and in the local area, and is financially independent. Besides the center, the NGO also trains interested women in the independent composting of organic domestic refuse, also helping in the reduction of waste.

Example Waste Disposal Project

BEST organizes waste disposal in poor communities that are not included in the local waste disposal system. BEST engages garbage collectors, with the assistance of motorcycle pulled carts, to remove household waste. The garbage collectors then take the waste to the local waste disposal center. The households pay a fee for the service, thereby covering the costs of the enterprise.



2.2. Southeast Asia

3. Donation Project for Reconstruction after the Boxing Day Tsunami

In the Aceh district of Bireuen, Indonesia, approximately 95% of all houses, as well as sanitation devices such as wells and toilets in coastal areas were destroyed by the tsunami. The fresh water supply can only be maintained by tankers due to the over-salination of the groundwater. Because of its long presence in the area, BORDA and its partner organizations were, through "Bremen Helps", the Bremen donation aid program for reconstruction, one of three organizations to quickly plan and begin reconstruction activities. Besides donations through "Bremen Helps", specialists for the project were also financed by BMZ.

Objective

The objective was, and is, the reconstruction of sanitation infrastructure at selected locations through the establishment of community sanitation centers (CSC). The plants have an underground decentralized waste water treatment plant which prevents the contamination of the groundwater and its surroundings. The established plants are used by local residents and also as demonstration units, providing working examples to expand distribution of the system throughout the areas of Aceh destroyed by the tsunami.

Target Group

The target group is residents of destroyed areas inhabiting selected localities in the Bireuen district.

Co-operating Partners

The entire BORDA network is involved in the reconstruction: BEST, BALIFOKUS and LPTP (see above).

2005 Activities Chronology

12 th Jan	Completion of investigation mission in Aceh
13 th Jan	"Bremen Helps" established
20 th Jan	BORDA partner network outline planning
12 th Feb	Completion of feasibility studies for CSC
14 th Feb	Co-operation contract with the local government
1 st Apr	Begin strategy implementation
25 th Sep	Three community sanitation centers are in business and ensure the sanitary requirements for over 1000 families are met

Rheum Baroh Example Project

Based on feasibility studies and discussions between Indonesian BORDA partner organization BEST, local administrators and leaders of the Islamic religious community, it was decided that "Bremen Helps" would finance a community sanitation center in the village of Rheum Baroh. Residents from nearby areas were also involved in the planning. The facility was to be used by all 250 inhabitants of the village, with one deep well for the water supply, toilets, bathroom and wash facilities. Remarkably, the local mosque, besides donating the building site, accepted responsibility for the cost of the power supply and repairs to the facility. The administration and cleaning are to be done by members of the local citizens' initiative.



Current Conditions

Further communities urgently needing sanitation facilities have been identified. BORDA advises that Indonesian, German and international organizations are currently investigating the provision of community based sanitation and decentralized waste water treatment. BORDA was assigned to the planning and building of an anaerobic sludge waste disposal facility in Banda Aceh.



Results in the Southeast Asian Region (2004/2005)

Decentralized Waste Water Treatment (DEWATS) / Community Based Sanitation (CBS-DEWATS)

- Expansion of co-operation with Ministries and city administrators, national donors and technical organizations
- Significant increase of project implementation outside the main island of Java
- Beginning distribution in the Philippines
- Close collaboration with German development co-operations (KfW, InWEnt and GTZ)
- Commencement of a standardized quality management structure and certification for construction supervisors and DEWATS and CBS "products".

Decentralized Waste Management

- First implementation of decentralized waste management (waste collection and recycling).

Training and Information Sessions

- Introduction of innovative training measures (e-learning)
- Systematic implementation of information sessions for policy-makers at almost all political levels, and for small and medium enterprises

Further Results

- Internal evaluation of completed activities
- Fast planning and execution of demand-based reconstruction after the Boxing Day Tsunami

Financial Partners in 2004:

BMZ 930 000€ InWEnt 53 000€

2.3. Mekong/China

Access to Basic Services – Using Renewable Energy

This regional program was developed based on similar programs in China and Vietnam and is also designed to meet the needs of neighboring Cambodia and Laos. It has been managed since 2004 by an experienced expert based in Hanoi/Vietnam.

Program Objectives

Access to basic services such as water, energy and sanitation must be assured in order to break the vicious cycle of disease, poverty and environmental degradation. BORDA is working in the Mekong/China region to supply decentralized water and power as well as decentralized waste water treatment. Similar regional programs in South and Southeast Asia mean that there is cross-sectional knowledge and quality management.

In conjunction with consultation and training, the preservation of basic services contributes to the improvement of social situation, life outlook and productive potential of the poorest social classes, thus creating the basis for economic development.

In co-operation with non-government and private organizations, personal and organizational development measures contribute to the sustainability of the project. In addition, only proven renewable energy systems are used.

Objective

Improvement of the social situation, life outlook and productive potential of the target group.

Target Group

Target groups are poor, rural and co-operative groups living in the remote rural mountain regions of Vietnam, Laos and Cambodia, as well as those in the Chinese provinces of Zhejiang, Sichuan, Kunming and Guizhou. A substantial indicator for the success of the project is the wish of these groups to help themselves. Other than that, the groups are selected according to socio-economic criteria.

1. Decentralized Water Supply

Underprivileged remote areas often have sufficient water resources; however, these generally cannot be used economically. Valuable agricultural surfaces above usable running waters, in the absence of affordable production equipment and reliable enterprise structures, are used only to collect rainwater. Many hours are spent collecting water for domestic use.

Hydraulic rams are used to propel flowing water from running waters, working as a water-driven cyclical pump. Energy obtained from the flowing water is used to lift water to heights of over 100m. No energy other than that of the falling water is required to run the system. The configuration of the system is based on usage and existing infrastructure. However, as a rule, the target groups make the final technical decisions.

Specialists ensure that training on the enterprise, maintenance and management of the water supply is given.

Hydro Power Center (HPC), Hanoi, Vietnam

HPC has 140 staff members and is registered by the Vietnam Institute for Water Resources Research (VIWRR) to advise the Ministry for Agriculture and Rural Development (MARD). Its areas of expertise include research, development, production and also structural conversion of pumps or power supply mechanisms, and also the implementation of necessary training. HPC has good contacts in regional areas, and is one of the Vietnamese agencies responsible for decentralized water and power supply projects.

Zhejiang University of Technology (ZUT), Hangzhou, Zhejiang, P.R. China

ZUT has over 20 000 students and 20 courses (science, engineering and economics), including postgraduate programs in the Zhejiang province and beyond. Based on experience in conversion projects since 1987, in 2002 a shared project office was established for the co-ordination of regional activities. ZUT offers decentralized water and power supply as well as decentralized waste water treatment to the Zhejiang Provincial Science and Technology Department, as well as the Rural Energy Office.

Co-operating Partners



2.3. Mekong / China

Hanns Seidel Foundation, in Conjunction with the Vocational Training Center, Shanghai, P.R. China

In order to improve service quality at a district level, in co-operation with Hanns Seidel Foundation, two three week courses at the vocational training center in Shanghai with a local service technician are offered. Theoretical and practical knowledge such as metal working/welding and electrical installation not only provide the necessary skills for building, enterprise and maintenance on a local level, but also strengthen the production potential for economic development locally.

Rural Energy Office, Chengdu, Sichuan, P.R. China

Based on previous co-operative conversion activities with the European Union and Bremen, the Rural Energy Office actively strove for the resumption of co-operation in 2004. Apart from the repair of existing plants (some of which, for example, had been flood damaged in recent years), in 2005 new water supply plants were also developed.

Example Project

Decentralized Water Supply in the Hoa Binh Province, Vietnam

Location Chi Dao, Chi Lac, Lac Son, Hoa Binh.

Before No domestic water supply available. Domestic drinking and washing water were retrieved from the river (600 – 1200m away). No drinking water purification. The building of fields depended exclusively on precipitation. In the dry season, no cultivation of rice was possible (only one harvest). Numerous diseases from polluted water

After Water turbine for agricultural use. 2m head, hoisting depth of 8m, irrigation of 22.6 hectares for rice cultivation, 2 harvests in the dry season.

Equipped a HydRam for domestic water supply. 2.8m head, hoisting depth of 25m, sand filter, distribution of water to 200 household (1000 inhabitants). Additional irrigation of a pineapple plantation (5 hectares) possible. Yield increase of approximately 30%. Revenue increase of approximately 20%. Training of village committee and municipality for enterprise and maintenance of the plants.



2. Decentralized Power Supply

As with decentralized water supply, existing water resources are used for decentralized power supply. Here, waterpower is not used for lifting the water, but rather for the generation of current. As with the water supply, it is supplied for more than just domestic purposes (light and television give an opening to education and up-to-date information), especially for the processing of agricultural and forestry products.

Based on the use of small hydro-turbines with pico- and micro-generators the capacity range will be from 200W to about 25kW. Co-ordinated advanced training measures ensure that enterprise, maintenance and management of the power supply are taken care of by native experts.

Co-operating Partners

HPC in Hanoi/Vietnam and ZUT in Hangzhou/P.R. China (see above)

Example Project

Decentralized Power Supply in the Zhejiang Province, P.R. China

Location Shanbian, Songyang, Zhejiang

Before 1. Average yearly income in 2003 was 520 yuan RMB/person (approx. 52€)

2. The village was not connected by roads.

There was a footpath leading to the nearest road approximately 50 minutes away.

3. Due to a lack of infrastructure, there was no connection to the public power supply.

After 1. Network of four small hydro-turbines at 1.5kW, and 7km of power lines servicing all the local farmers.

2. Use of energy for mushroom production, word working as well as lighting and television connection (sharing public information, harvests).

3. Usage fees for maintenance and enterprise agreed upon.

4. A farmer was trained in the enterprise and the maintenance of the plants.



2.3. Mekong / China

3. Decentralized Waste Water Treatment

Since 2003, the project has promoted the DEWATS concept in Vietnam. From these efforts, not only were numerous contacts formed with specialist organizations, but also a set of drafts and detailed designs for DEWATS plants have been provided by specialists from the BORDA network.

At present, no implementations have been made in Vietnam. The current political stance in Vietnam prescribes strict waste water limits, however these are not enforced. Fines, and also bribes, for exceeding the waste water limit are not high enough, meaning that the capital outlay for a waste water purification plant is not worthwhile. As such, small and medium enterprises, as well as public services such as hospitals, expect full foreign financing, which BORDA, naturally, cannot and will not provide. It is hoped that there will be a favorable change on the political stance by national and international organizations in the near future.

A partnership program between the Vietnamese government and donors and organizations to be implemented by the end of 2005 designates "Sanitation" as the central interest. Also, in the National Target Program (NTP) 2006-2010, Rural Sanitation has been emphasized. Persistent advertisement of the BORDA office has led to the first success: an inquiry directed by BORDA in the 4th quarter aimed at the rehabilitation or implementation of the waste water treatment facilities in four hospitals. The designs for DEWATS plants compiled by BORDA include a hospital, a cassava processing factory, an abattoir and a cattle farm.

Co-operating Partners

Institute for Environmental Science and Technology,
Hanoi University of Technology

Other institutions such as the Hanoi University of Civil Engineering and the National Steering Committee for Safe Water Supply and Environmental Sanitation are also involved in the program.

Yunnan Environmental Protection Bureau (YEPB), Kunming, Yunnan, P.R. China

YEPB is responsible for the supervision and authorization of waste water plants on a province level, with branches in all districts. In Spring 2005, the final stage of a research project in Chengdu in co-operation with MoU on decentralized waste water treatment was completed. After initial training courses in 2006, the implementation of the first demonstration unit is planned.

Yunnan Environmental Development Institute (YEDI),
Kunming, Yunnan, P.R. China

YEDI is still a young NGO, active in the environmental field. YEDI is part of the above-mentioned MoU. As a small, flexible, internationally aligned NGO, YEDI will implement training as well as the production of small feasibility studies.



Biogas Research and Training Institute (BRTC), Chengdu, Sichuan, P.R. China

After beginning co-operation in the methane gas sector at the end of the 1970's, BRTC has been one of BORDA's co-operating partners in waste water treatment since 1994. In 2004/2005, together with GTZ, a research project was begun to look into the reduction of construction costs. This work is to be continued and completed in 2006.

Example Project

Decentralized Waste Water Treatment in Changxi, Sichuan, P.R. China

Together with the BRTC and the Rural Energy Office in Changxi, initial inquiries amongst the village inhabitants were completed. After confirming the readiness for the co-operation with the support of the BRTC, an analysis of the waste water values and alternative solutions for waste water solutions were examined. Particular attention was paid to the different waste waters from bathrooms and kitchens (gray water as well as sewage). The aim was to reduce the volumes of the anaerobic containers and thereby reduce costs. After collecting the initial data, five alternative models were produced. Despite interesting partial results, the lack of sampling meant that no final conclusion could be reached. In 2006, more extensive testing of the waste water will be necessary.

Results in the Mekong / China Region (2004/2005)

- Numerous specialty seminars for planners and policy makers on central and local levels, as well as training more than 60 service technicians on the building and maintenance of infrastructure.
- Participation in national and international workshops, conferences and fairs.
- Investigation of potential projects, production of structural feasibility studies and implementation planning.
- Building and Commissioning 210 hydraulic ram plants (China 130, Vietnam 71)
 - Thereby providing water supply infrastructure to an additional 620 hectares (China 440, Vietnam 180)
 - 40 000 people will be helped (China 30 000, Vietnam 10 000)
 - Approximately 4 million kWh per river saved annually
 - Corresponds to an annual emission reduction of 5500 tons of CO₂ as well as 40 tons of SO₂
 - An average increase of 20% of agricultural returns
 - Annual income of farmers rose 7 – 12%
- Installation of small hydro-turbines and methane gas facilities
- Thermal solar heat collectors and low-smoke furnaces installed.

Financial Partner in 2004

BMZ: 1 074 000 Euro



2.4. Southern Africa

Systematic Information on Decision Makers and the Building of a Partnership

Region of the Project

As is the case with the larger states in Asia, the growing migration and urbanization in the region of southern Africa is leading to a critical worsening in the living conditions for the majority of the urban populace. The already wholly-inadequate basic utilities are in decline due to increased pollution in surface and ground waters. Most conventional sewage treatment facilities are too cost-intensive and require specially-trained management. On a community level, there is a dearth of ideas for efficient and suitable solutions that are community-oriented and decentralized, both in the realm of general hygiene, and in that of sewage treatment.

Background

In the past, BORDA has had a positive impact in Durba and Windhoek in the areas of planning and converting decentralized sewage-treatment facilities for impoverished, immigrant communities, as well as for small and medium-sized businesses (KMU). Because of this, at a January 2005 inWEnt-organized conference in Sambia, the environmental network, Southern African Network for Training and Research on the Environment (SANTREN), expressed great interest in working with the BORDA informative [educational?] workshops, which target decision makers in the SADC region, in terms of organizing and seeing these through. At this point, a specific, inquiry-oriented preparation of the CBS-DEWATS demonstration project in the region should be possible. Because of the sponsorship of the state of Bremen, Borda is able to accept SANTREN's offer of cooperation.

Program Methodology

In addition to Borda's ongoing efforts in South Africa and Namibia, the organization is beginning a systematic expansion of integrated development projects in the areas of decentralized sewage treatment (DEWATS) and basic sanitation in the countries of the SADC region through the establishment of educational workshops for decision makers. With this in mind, Borda intends to participate constructively in the conversion of MDGs in southern Africa, as well as accomplishing the practical aspects of job training in the fight against poverty in Africa in the medium term.

Goal of the Workshops

Inquiry-oriented workshops completed in July and October of 2005 sought to inform participants, in a comprehensive manner, about the workings, effects, and advantages of the practical measures developed by [?] BORDA and its partner networks in the area of CBS-DEWATS. This was done in an effort to determine the preparedness of decision makers in terms of establishing future demonstration projects under the EU-financed "water facility" line of programs.

Target Groups of the Workshops

The workshops are directed at local decision-makers from the SADC countries of South Africa, Namibia, Botswana, Lesotho, Tanzania, Malawi, Zimbabwe, and Zambia, who are responsible for the areas of waste management and for the sanitation infrastructure.

Completion of the Workshops

The workshops were completed with the cooperation and partnership of SANTREN. Participants were given instruction concerning the background, principles, and implementation strategies of the CBS projects in Asia. In addition, options for the CBS-DEWATS fields of operation were presented and discussed. These included housing development, agro-industry, hospitals, hotels, and public institutions.

Results

- Participation of more than 200 decision makers from relevant sectors in eight workshops in the above mentioned SADC countries
- Representatives from different sectors expressed great interest to support BORDA in disseminating CBS-DEWATS systems. Among them the Lusaka Water and Sewerage Company, small and medium sized enterprises as well as hotels and urban NGOs, one of whom already being experienced in the field of domestic wastewater treatment using biogas technology
- Based on the recorded demand BORDA, in cooperation with the Free Hanseatic City of Bremen, the German Federal Ministry for Economic Cooperation and Development (BMZ) and the Commission of the European Union, is initiating a project building up a partner network consisting of NGOs, local governments and environmental institutions.



2.5. Public Works

Providing clear and up-to-date information, BORDA brings people from North and South together.

1. Reconstruction Efforts Following the Tsunami Catastrophe

Information Sessions in Bremen

In January 2005, Bremen's information center for human rights and development (Biz) invited BORDA to a public meeting in the Uebersee Museum. BORDA is one of three organizations from Bremen active in reconstruction efforts in Indonesia within the framework of the charitable initiative "Bremen Helps." As such, it was possible to introduce measures conceived by BORDA for the building of public sanitation facilities (CSC) publicly in the Aceh district of Bireuen, in Indonesia. (*See also section 2.2 re. Southeast Asia.) A follow up session concerning the current status of the project was held in June 2005, to which BORDA's donor base in Bremen was invited.

The Berlin Exhibition

In September 2005, at the request of the BMZ, BORDA took part in an exhibition held at the Red Townhall in Berlin under the theme: "After the Tsunami Catastrophe- The Question of Rebuilding." Institutions and organizations working in the field of sustainable reconstruction shared their strategies, methods, and activities. BORDA, at numerous discussions at its own exhibition, as well as in the context of a presentation, was able to report on measures implemented and to announce that the third community sanitation facility, established under the aegis of BORDA in its project region, was completed and running.



2. International Workshop "Anaerobic Technology and Biogas"

In the context of the "Waste to Energy" trade fair, held at the Bremen convention center in September 2004, Borda, in conjunction with IBBK, held a day-long international workshop entitled "Anaerobic Technology and Biogas."

Background

The development of biogas in German agriculture and in German cooperative development (EZ), has overlapping roots reaching back over a quarter of a century. With continued development in the realm of inter-regional cooperation and the expansion of development programs, the agricultural system has been brought up to industry standards and professionalized; in the case of Germany, particularly through initiatives like the energy consumption and the renewable energy laws guaranteeing reimbursements.

In the framework of the "Renewables 2004," the Bonner World Conference for Renewable Energy, the following political objective, shared by all, was declared; namely, that by 2015, renewable energy sources would reach one billion people. Without a doubt, biogas technology is approaching this global reach. Worldwide, the markets most interested in technology transfer are found in China, Japan, India, Canada, and the USA. The utilization of arable lands as biogas energy plants opens up a huge potential for growth in both agriculture and industry.



The Workshop

The workshop was closing the loop of 25 years of biogas development. Following greetings from Christine Kramer, state advisor to the Minister of Building, Environment, and Transportation, as well as an opening talk from Gunther Hilliges, head of Bremen's national office for cooperative development and acting head and organizer of all four of BORDA's international biogas workshops since 1979, special attention was given to the contributions of BORDA's cooperative partners in China and India. The morning portion of the presentation gave an overview of developments with respect to the state of the technology, as well as the economic viability of biogas production in the context of cooperative efforts in the international fight against poverty. An introductory, scientific lecture, concerning the state of, and perspectives on, anaerobic technology, was developed by our long-time partners at the University of Wageningen, Netherlands. BORDA's own contribution focused on practical developments in the area of decentralized sewage treatment, in particular for impoverished communities in Southeast Asia, where biogas stands to improve standards of living at a low cost for staffing and construction. Over the course of the afternoon, German initiatives geared toward local and international markets were presented. These presentations were delivered by well-known representatives in the fields of research planning and production. At this juncture, new trends and products were introduced, including those culled from business experiences and mass screenings for the optimization of technical procedures and scientific results. In conclusion, changes in the field affected through legal amendments were discussed in detail.

2.5. Öffentlichkeitsarbeit

On the whole, the program inspired a great deal of interest among the 175 national and international participants. The trade fair, in which BORDA participated through its exhibition stand, was further complemented by a poster exhibition, an evening reception in Bremen's town hall, wherein Professor Klaus Toepfer received the Bremen environmental award, and also an excursion to an actual biogas facility in the area.

3. Internet Presence

Since September 2005, access to information on Borda is available through four new and linked homepage sites. From the Bremen central site (www.borda_net.org), which replaced our former address (www.borda.de), the sites of our three regional bureaus are directly accessible. These include the sites for Bangalore, India (www.borda.sa.org); Jakarta, Indonesia (www.borda-sea.org); and Hanoi, Vietnam (www.borda-mc.org).



In addition to our organizational profile, an up-to-date monthly bulletin containing information on our international operations, including illustrated project descriptions, as well as accounts of our full range of operations, available under "Basic Needs Services." Through this site, visitors are also able to download current publications. On the sites belonging to our regional bureaus, BORDA's partner organizations are represented alongside accounts of our region-specific undertakings. By representing them, the new incarnation of our website has, since 2004, served to bolster these organizations, which had heretofore not been equipped with an internet presence. These sites are being completed in stages, and will ultimately be linked with BORDA in a shared network. The creation of this network linking the central and regional bureaus with its partners should, in time, serve to intensify the intellectual exchange between them. To these ends, the capacity for an internal forum is being prepared. Ultimately, the interested public will also be invited to participate in various, open fora. The enhancement of our regional and partner sites proceeds with the support of the BMZ within the framework of the ongoing regional programs.

4. Promoting Scholarship Holders, Student Trainees and Junior Staff

ASA South-North Project, Indonesia

In 2005 BORDA organised an ASA North-South project in collaboration with InWEnt Ltd., Berlin. Under the title "Good Practices zum dezentralen Müllmanagement" (Good Practices: Decentralized Waste Management), it involved 2 Indonesian scholarship holders, both skilled employees from BORDA partner organisations, spending 3 months in Bremen during the spring. This was then followed in autumn 2005 by two Bremen students visiting Indonesia.

During the North phase of the project, by analysing urban waste disposal systems in Bremen, the Indonesian participants observed similarities between an effective but expensive disposal system of a northern city and that of a southern city, with its ecological and operational demands. For this purpose, BORDA sent the participants on 17 visits to businesses and institutions within the waste sector in Bremen.

The North phase concluded with a public presentation at the Übersee Museum, Bremen, giving the Indonesian scholarship holders a chance to showcase the results of their work.

During the South phase Bremen students, together with two people in charge from the host country, set out to compile a set of "Good Practices" for decentralized waste management of both partner organisations and to also prepare for a subsequent public project.

As a result of such ASA programmes, arranged and supervised from Bremen, alongside the participant's learning experiences and input, contact could be strengthened with Bremen universities, and established with local institutions in the waste sector.



2.5. Öffentlichkeitsarbeit

Student Trainees

During 2004-2005, as already in the past, BORDA gave Bremen university students the opportunity to experience development work in practice and to take part in various tasks by participating in 4-10 week placements. A total of eight trainees were supervised in 2004 and 2005. In addition to this, two students undertook 2-week placements.

Training Junior Staff

On behalf of InWEnt Ltd. Berlin, BORDA participated in a junior staff training session called "Lokale Agenda 21 in der Praxis: Zukunftsfähige Stadt- und Unternehmensentwicklung" (Local Agenda 21 in Practice: sustainable urban and company development). 20 engineers and planning specialists from Africa and South America took part, all of whom were to become experts in urban development.

The aim of BORDA's involvement was to inform participants of the advantages and disadvantages of the DEWATS approach (Decentralized Wastewater Treatment Systems), to evaluate it within terms of cost and environmental/social implications, as well as take it into account as a possible treatment option when making future decisions in their field of activity.

Workshops for African and Asian Graduates

In line with a seminar concerning African and Asian academics, aiming to enable the reintegration of African and Asian graduates from German universities, BORDA took part in a workshop in November 2004. The theme was "Zugang zu lebensnotwendigen Ressourcen sichern - eine intakte Umwelt fördern: Bremer Beiträge zur Armutsbekämpfung" (Ensuring access to vital resources – encouraging a sound environment: Bremen's contribution to fighting poverty).

5. Bremen Water Forum



In 2002 BORDA founded the Bremen Water Forum, together with Robin Wood from biz and BUND. As a combination of environmental and development organisations, the common aim was to promote sustainable contact with water both regionally and globally, and to inform Bremen's public with various water-related events.

In November 2004, BORDA participated in a 4-hour long teacher's advanced training session, organised by the Bremen water forum under the title "Wasser - Möglichkeiten für den Unterricht kennen lernen" (Water – teaching opportunities). 25 members of the teachers' research group Agenda 21 took part. Besides the general presentation of BORDA's water-related activities, participants were shown a compilation of available teaching materials. Further presentations took place with the Bremen water forum in November 2004 (Photo: "Energie- und Wasserversorgung in Ladakh, Indien" [Energy and Water Supply in Ladakh, India]) and March 2005 on World Water Day at the Übersee Museum, Bremen, with the title "Wo Wasser fehlt" (Where water is scarce)

6. Print media

BORDA's informative material is continuously expanded and updated. Examples include the two newsletters "Anaerobic Technology & Biogas" and "Tsunami-Katastrophe in Aceh Indonesien" (Tsunami Disaster in Aceh, Indonesia). Furthermore, BORDA has started to publish as a brochure the only BNS hospitality information besides its homepage presentation. Brochures are available on DEWATS (Decentralized Wastewater Treatment Systems) and CBS (Community Based Sanitation).

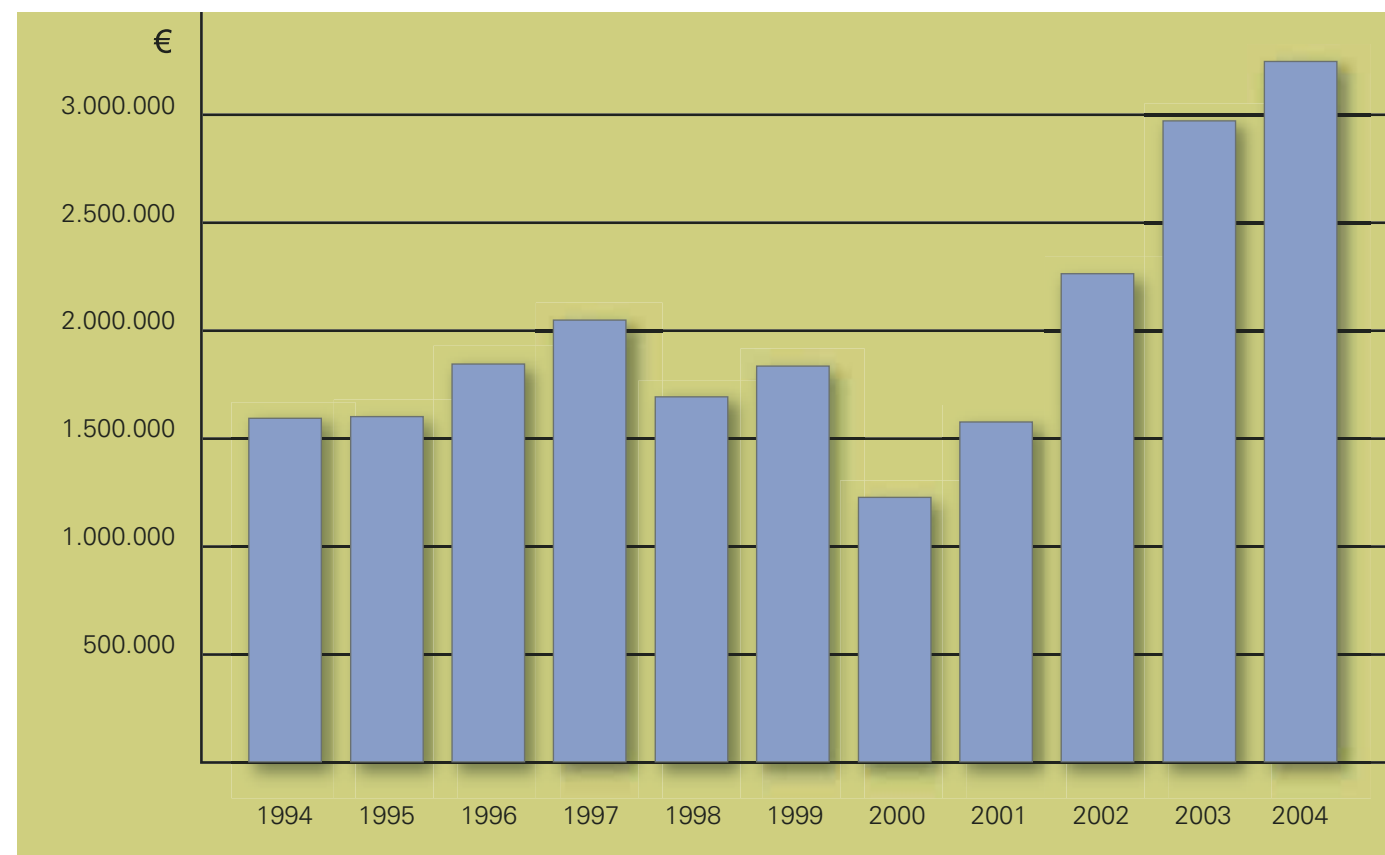


2004 financial partners

Bremen state: 41,000 Euro
PFAU-Mittel, BIA: 11,000 Euro
Bremer Energiekonsens: 10,000 Euro
Bremen Savings Bank: 1,000 Euro

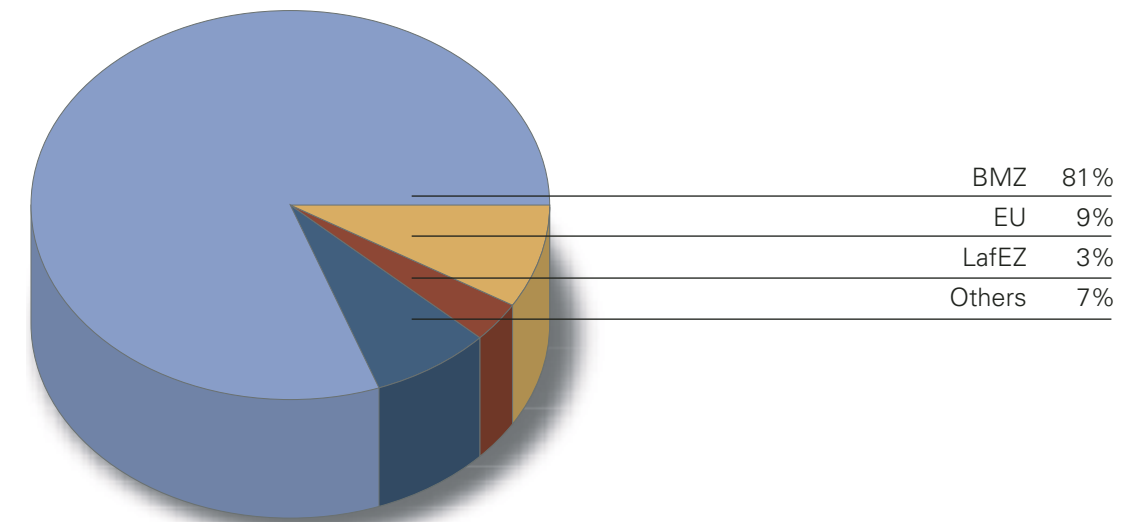
3. Facts and Figures

Change in Turnover 1994 to 2004

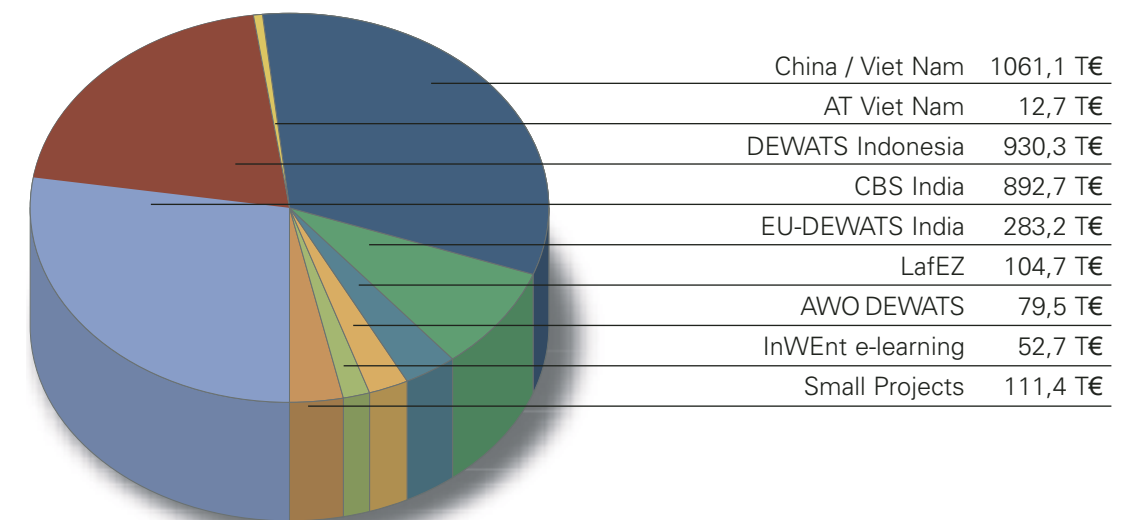


Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
in €	1.588.550	1.596.403	1.839.585	2.042.785	1.687.851	1.830.062	1.222.899	1.571.565	2.257.300	2.964.113	3.253.789

Turnover by Donors, 2004

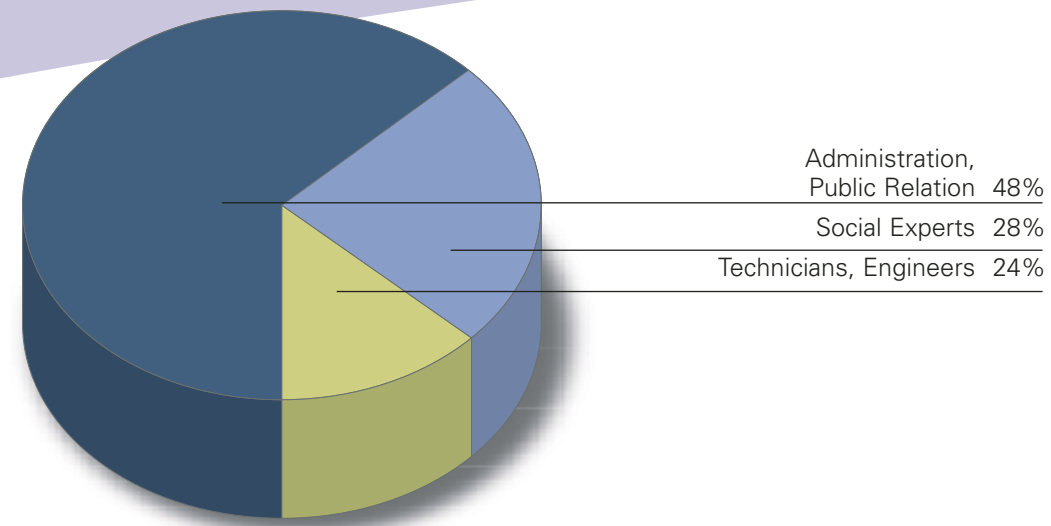


Turnover by Projects, 2004
(€ figures in thousands)



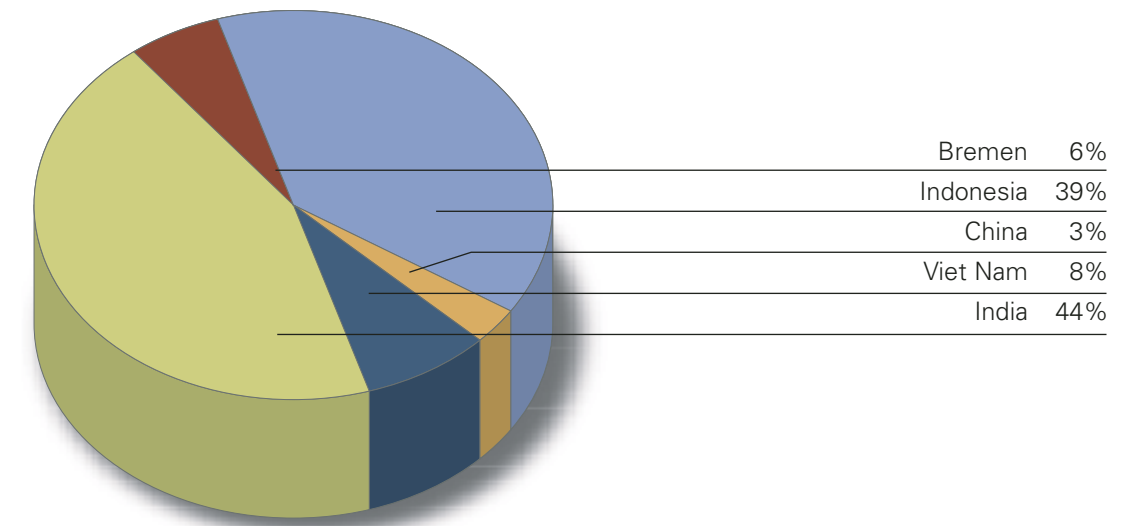
3. Facts and Figures

Personal in the BORDA Headoffice Bremen and in the partner countries



Number	Location	Administration/ Public Relations	Knowledge Management	Technicians/ Engineers	Social Workers/ Sociologists	Full-time	Part-time
8	Bremen	4	2	1	5	5	3
128	Partnerländer	82	31	17	106	106	17
136	Gesamt	86	33	18	111	111	20

Personal by Locations



Number	Location	Administration/ Public Relations	Technicians/ Engineers	Social Workers/ Sociologists	Full-time	Part-time
53	Indonesien	37	14	4	50	3
4	China	2	2	0	2	2
11	Vietnam	7	4	0	5	1
60	Indien	36	11	13	49	11
8	Bremen	5	2	1	5	3
136	Gesamt	87	33	18	111	20

4. Outlook

BORDA will conclude and consolidate the restructuring of administrative and regional offices and partner networks in Asia, which was begun in 2003 and organised by effective networking and activity.

In addition to this, it aims to digest experience gained in Asia and solution methods for target groups in southern Africa (the SADC region) and to carry out initial demonstration projects in lines with current demand.

In all target regions it aims to significantly increase the general effectiveness of all development policy arrangements through mobilising additional financial means from national and international donor organisations.

In the Asian target regions, BORDA will strengthen the already established networking with other German development cooperation institutions and thus accomplish a sort of Bremen contribution to the great national effort in development cooperation.

In Bremen BORDA will continue the established cooperation in lines with project measures promoted by European departments, in twin towns Pune (India) and Durban (South Africa). With Bremen's universities, as already in the past, suitable research projects within the project regions will be carried out.

Cooperation within the PPP measures (Public Private Partnership) will be strengthened with the help of businesses resident in Bremen and in the area of environmental technology.

Table of Abbreviations

Agenda-Transfer	Agentur für Nachhaltigkeit GmbH	HPC	Hydro Power Centre, Hanoi/Vietnam
AusAid	Australian Government Overseas Aid Program, (offizielle staatliche EZ-Organisation), Canberra/Australien	HydRam	Hydraulic Ram, Hydraulischer Widder
AWO	Arbeiterwohlfahrt Bundesverband e. V., Bonn Bengo Beratungsstelle für private Träger in der Entwicklungszusammenarbeit	IYW	Indian Institute of Youth Welfare (NGO), Nagpur/Indien
BEST	Bina Ekonomi Sosial Terpadu (NGO), Tangerang u. Surabaya, Indonesien	InWEnt	Internationale Weiterbildung und Entwicklung, gGmbH
Biz	Bremer Informationszentrum für Menschenrechte und Entwicklung	IUV	Institut für Umwelt und Verfahrenstechnik, Universität Bremen
BMZ	Bundesministerium für Wirtschaftliche Zusammenarbeit und Entwicklung	LEDeG	Ladakh Ecological Development Group. (NGO) Ladakh, India
Bremen	LafEZ – Landesamt für Entwicklungszusammenarbeit (Der Bevollmächtigte beim Bund, für Europa und Entwicklungszusammenarbeit)/Senator für Wirtschaft und Häfen/Senator für Arbeit, Frauen, Gesundheit, Jugend und Soziales/Arbeitsamt Bremen	LPTP	Lembaga Pengembangan Teknologi Pedesaan, (NGO), Indonesien
CBS	Community Based Sanitation	MARD	Ministry of Agriculture and Rural Development, Hanoi, Vietnam
CDD	Consortium for Dissemination of DEWATS	NISWASS	National Institute of Social Work & Social Sciences (NGO), Orissa, Indien
CES	Centre for Environmental Studies, Anna University, Chennai/Indien	NIWCYD	National Institute for Woman, Child, & NRO/NGO Nicht-Regierungs-Organisation/Non-Governmental-Organisation
CIM	Centrum für Internationale Migration, Frankfurt	RLHP	Rural Literacy and Health Programme, (NGO), Mysore, Indien
CSR	Centre for Scientific Research (NGO for appropriate tech), Auroville/India	SANIMAS	Sanitation by Neighbourhoods
DEWATS	Decentralised Wastewater Treatment Systems	SPK	Die Sparkasse Bremen
EU / KEU	Europäische Union/Kommission der Europäischen Gemeinschaft	SIITRAT	Sulabh International Institute of Technical Research and Training (NGO), Delhi, Indien
EXNORA	EXelent NOvel and RAdical Ideas, (NGO), Indien	UNAM	University of Namibia
FEDINA	Foundation for Educational Innovation in Asia (NGO)/Indien	UNDP	United Nations Development Programme
GERES	Group Energies Renouvelables et Environment, Frankreich	VENRO	Verband Entwicklungspolitik Deutscher Entwicklungsorganisationen e.V.
GSS	Grama Swaraj Samithi, (NGO) Bangalore, Indien	VIWRR	Vietnam Institute For Water Resources Research, Hanoi/Vietnam
		WASPOLA	Water Supply & Sanitation Policy and Action Planning
		ZERI	Zero Emission Research Initiative, China
		ZPSTD	Zhejiang Provincial Science and Technology Department/China
		ZUT	Zhejiang University of Technology, Hangzhou/China

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