

Water & Sanitation in Inclusive, Liveable and Climate Resilient Cities





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Water & Sanitation in Inclusive, Liveable and Climate Resilient Cities

The commitment of BORDA in Southeast Asia follows the increasing awareness of decision-makers at the local level and government officials, urban planners, representatives of civil society, private sector, professional associations and academia that their flexible and polycentric models of urban development and water-related municipal services are the adequate response to these challenges.



Introduction

The cities and settlements in Southeast Asia are developing extremely dynamically. Over the past few decades, considerable prosperity gains have been achieved. In many places, economic growth has been accompanied by an improvement in the income situation, in health and in education. However, many municipalities face significant challenges: the rapid growth of settlement areas, demographic and technological change, climate change, new patterns of consumption and social inequalities require new approaches to provide essential public services, to create liveable and inclusive public space and adequately manage natural resources.

It is apparent that “Water” is a cross-cutting topic for the establishment of liveable and inclusive cities. “Water” is key for equitable and affordable access to basic physical and social infrastructure for all, such as health, affordable serviced land, housing, energy, safe drinking water and sanitation, nutritious food, waste management, mobility and public spaces. However, “classic” models of urban development - such as the implementation of comprehensive master plans and the

associated notions of infrastructure that grows consistently over time, are reaching their limits. Particularly poorer sections of the population lack access to water related public services.

The commitment of BORDA in Southeast Asia follows the increasing awareness of decision-makers at the local level and government officials, urban planners, representatives of civil society, private sector, professional associations and academia that their flexible and polycentric models of urban development and water-related municipal services are the adequate response to these challenges.

This brochure presents the profile and work of BORDA in the region of Southeast Asia. Our work here started in 1985 with a collaboration between Bremen and Jakarta to establish liveable housing at the Museum Port in Jakarta, and over the years has supported more than 370 projects in 6 countries.



Frank Fladerer

Regional Director BORDA Southeast Asia

What is BORDA?



With 40 years of experience in international cooperation, we work in 25 countries in Africa, Latin-America and Asia.

Who we are

BORDA is a civil society expert organization founded in 1977 by representatives of the public sector, the business community, civil society and academia with the aim to strengthen development cooperation on municipality level.

The aim of BORDA's activities is to support poor people to establish a life in a healthy and liveable environment.

As an “honest broker” we support decision-making processes on community, local and national levels without preference for either party involved in the process.

Our interdisciplinary team and network of experts include urban planners, landscape designers, water-, process- and agricultural engineers, sociologists, economists, geographers, lawyers and specialists for public administration.

We are a development and implementation partner for



▶ Municipalities, local, provincial and national governments



▶ Expert institutions and sector associations



▶ Bilateral and multilateral agencies of international / development cooperation



▶ Community based groups and civil society organizations



▶ Academic institutions

What we do

With the aim of supporting the development of water sensitive, liveable and inclusive cities and human settlements, we support:

▶ the localisation of 2030 Agenda* and the New Urban Agenda**

▶ the development of comprehensive sanitation, especially for weaker sections of the population, by promoting holistic solutions

▶ the establishment of a cross-sectoral management of urban and peri-urban water resources through an integrated urban development, and

▶ the strengthening of climate resilience of urban and peri-urban spaces.

* adopted by the United Nations General Assembly as part of the “2030 Agenda for Sustainable Development”, New York, September 2015

** adopted by the United Nations Conference on Housing and Sustainable Urban Development in Quito/Ecuador, October 2016

Our Approach

We support:



Our partners in developing and implementing solutions at the **LOCAL LEVEL** that are exemplary in establishing water sensitive, liveable and inclusive cities on the national level and in the region.



Participative **MUNICIPAL DECISION- MAKING** in its technical, urban planning, social and budgetary dimensions.



Through our worldwide network of professional institutions and partner organizations, we make **WORLD-WIDE EXPERTISE** available to processes at local, regional and national levels.



Together with our partners, we contribute to the professional decision-making and agenda setting of **GLOBAL POLITICAL PROCESSES**.

Our Instruments

Development of **TECHNICAL SOLUTION PACKAGES** and **SOLUTION STRATEGIES** and support of their **IMPLEMENTATION** by providing expertise in water management and civil engineering, urban planning and architecture.

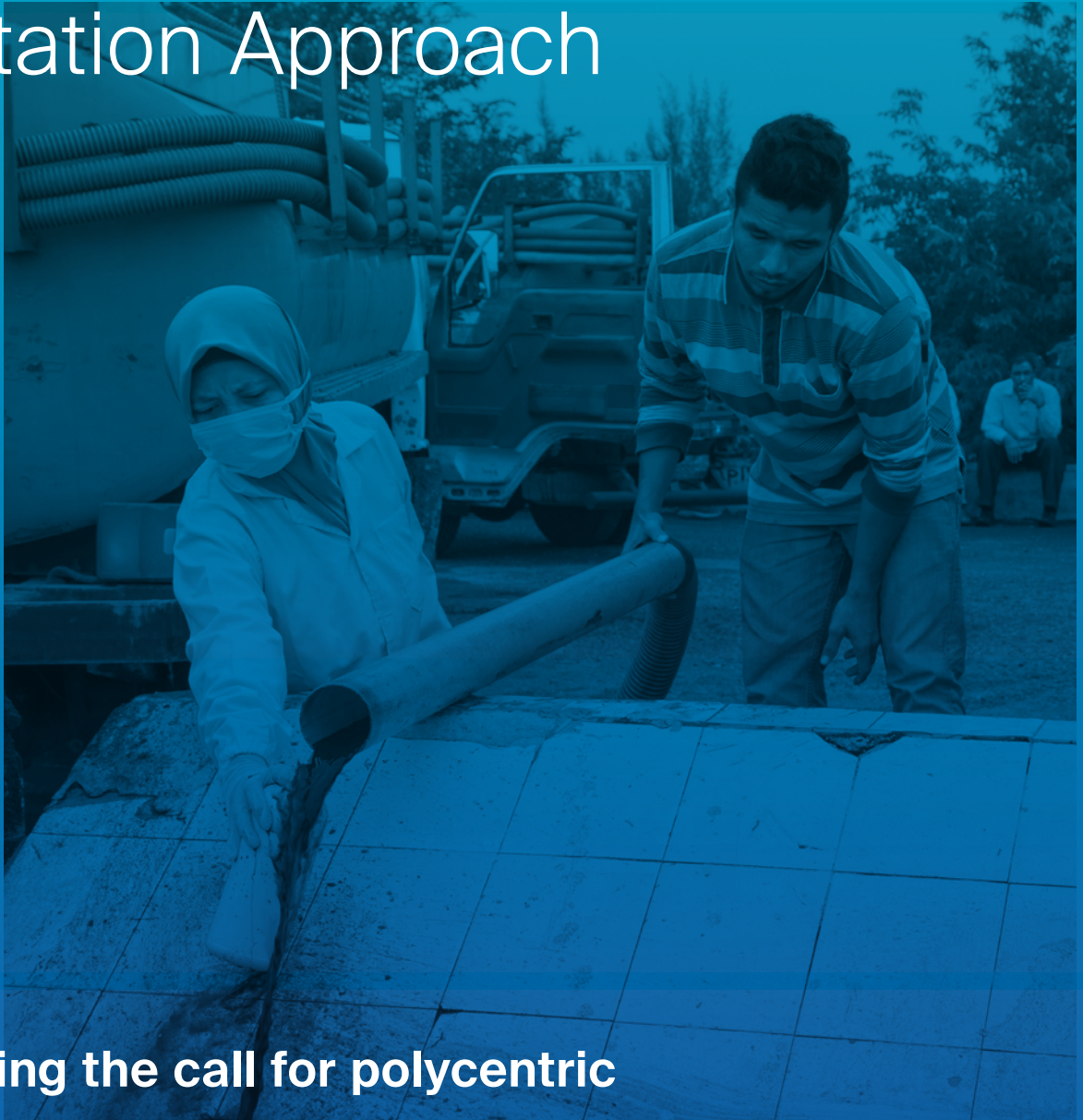
Designing **PARTICIPATORY DECISION-MAKING PROCESSES** between communities, decision-making government entities, utilities, civil society, private sector and academia at the local level.

Support of **DECISION-MAKING PROCESSES** for sector policies, the development of regulatory frameworks (national government, sector associations) and standardisation processes (national standards, ISO, etc.).

By **PRACTICE ORIENTED RESEARCH** to develop tools that allow fast-growing cities in Southeast Asia to implement polycentric approaches to urban development and integrated, cross-sectoral water management.

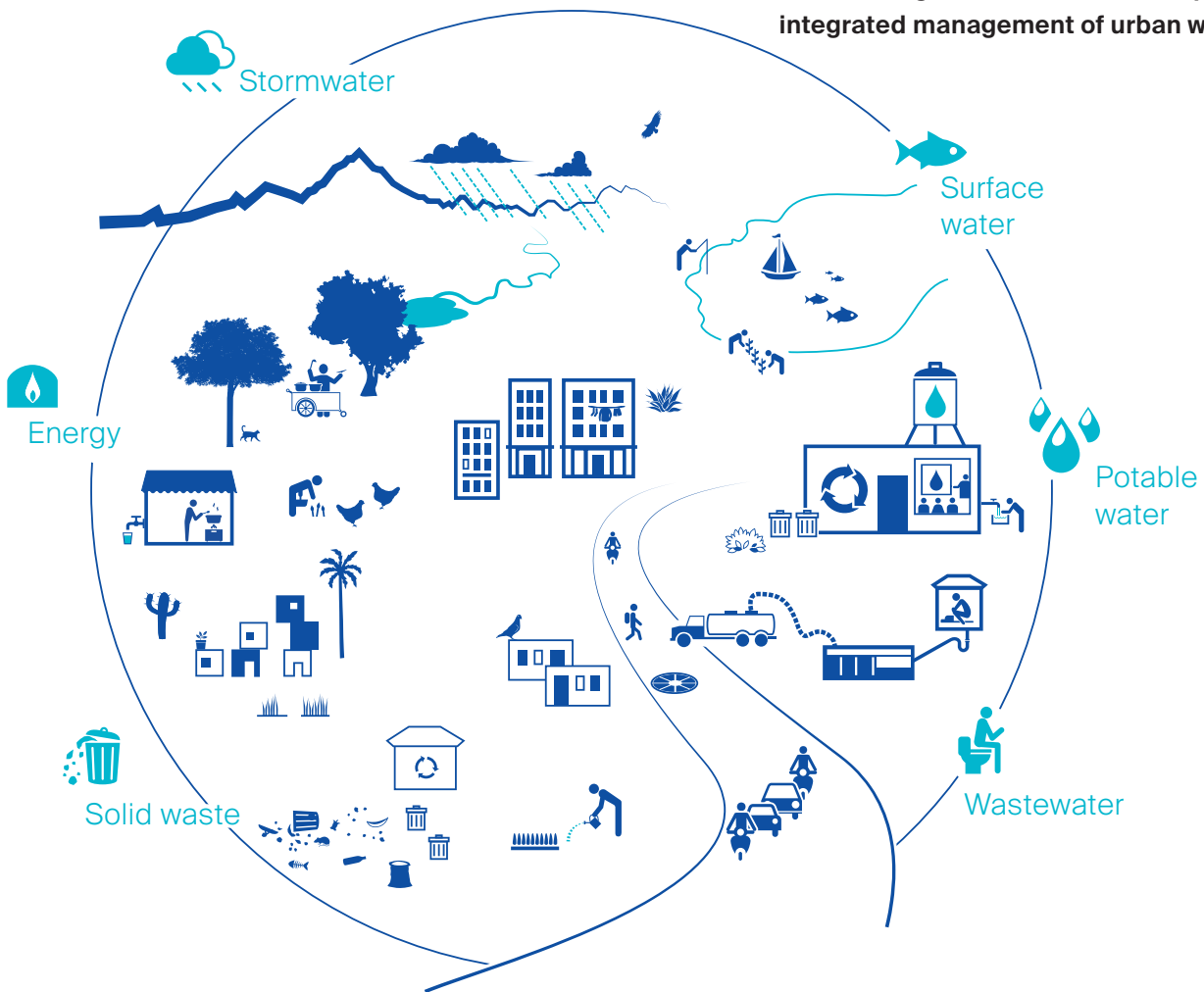


The Integrated Sanitation Approach



Answering the call for polycentric and balanced territorial development policies and plans.

The Integrated Sanitation Approach follows the challenges to establish a comprehensive integrated management of urban waters.



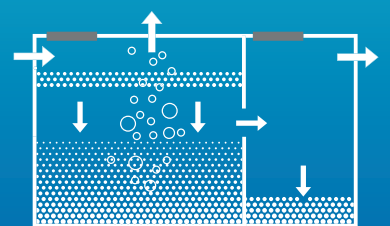
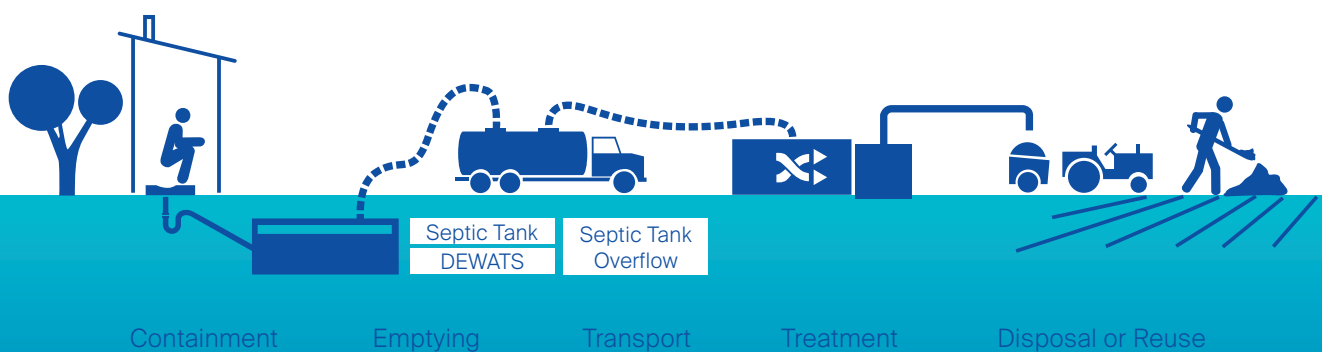
Considering the particularities of local conditions, specific instruments, methods and modules are selected and applied as system solutions.

The Integrated Sanitation Approach is based on the interconnectedness between:

- ▶ comprehensive planning processes addressing the technical, socio-economic and budgetary dimensions of the effective management of urban waters
- ▶ the technical dimension of wastewater-, solid waste- and faecal sludge management
- ▶ the need for strong community involvement, for cross-sectorial cooperation between departments of public administration and for co-management between stakeholders from public and private sectors
- ▶ the economic dimensions of an effective system management for sustainable operation and maintenance, and
- ▶ the need for comprehensive capacity building on local and national levels

The Integrated Sanitation Approach follows the principle of progressive implementation that is promoted by the United Nations. This principle promotes a realistic and pragmatic approach for the management of urban waters. It affirms the state's duty to take deliberate and targeted steps towards realizing the human rights to water and sanitation. It recognizes that full realization is a long-term process that is often constrained by economic, political and technical limitations. The regulatory frameworks should refer to these ground realities.

Decentralized Wastewater Treatment Solutions (DEWATS)	Community Based Sanitation, School Based Sanitation, Small and Medium Enterprises, Hospitals, Markets, Hotspots, Planning, Design, Implementation, Construction
Septic Tank	Household, Grease traps, Planning, Design, Implementation, Construction
Faecal Sludge Management (FSM)	Assessment (technical options, design, finance, legal, O&M etc.) Planning, Design, Implementation, Construction, O&M
Septic Tank Overflow	Polishing pond, Innovative technology
Decentralised Solid Waste Management (DESWAM)	Planning, Design, Implementation, Construction, VER (Voluntary Emission Reduction) / Climate component, Other add-ons
Regulations, Policies	O&M model, Co-management, Co-governance, Input from Lessons Learnt
Operations and Maintenance (O & M)	Manuals, Guidelines, Posters, Trainings, Facilitation (support)
Monitoring & Evaluation (M & E)	Data Collection and Management, Analysis, Evaluation, Recommendations
In-house Management	Water consumption reduction, Wastewater streams separation, Behavior changing, O&M Monitoring
Cross-sectorial Urban Planning	Intersectorial planning processes for the management of urban waters, Water Safety Plan, Sanitation Mapping
Re-Use	Irrigation, Fertilizer, Biogas



Settler

Selected Modules of the Integrated Sanitation Approach

Intersectorial Planning for the management of urban waters:

- ▶ Identify problem areas related to integrated water management and create potential synergies with broader urban development issues
- ▶ Participatory planning processes at district level and city level
- ▶ Support multi-criteria spatial decision-making to develop potential technological and near-natural decentralized solutions in the areas of urban drainage, reuse, rainwater harvesting and sanitation
- ▶ Systemic integration of climate resilience into local planning processes

Septic Tank

The simplest form of anaerobic treatment is the Septic Tank, which is basically a sedimentation tank in which settled sludge is stabilized by anaerobic digestion. It is compact, robust and extremely efficient, when compared to construction cost.

DEWATS | Decentralized Wastewater Treatment System

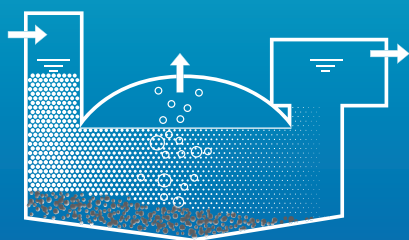
DEWATS is a cost-effective, environmentally sustainable, and reliable treatment option for wastewater that particularly responds to the needs of communities. DEWATS treats domestic wastewater up to 90% by simply using locally available techniques and material. As a modular system DEWATS can be adjusted to local conditions and special needs. It is designed to treat the wastewater from high pollution at hotspot areas such as community, school, market, hotel, SME etc.

FSM | Faecal Sludge Management

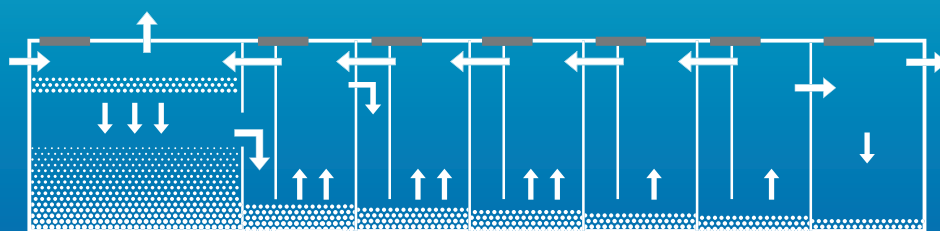
Particularly in urban areas, there is not enough space for new toilets, highly used toilets overflow, and informal service providers who collect faecal sludge often dispose it in the environment, such as the nearest river. Faecal Sludge Management (FSM) is an approach that compromises technical aspects of sludge-treatment and supports the establishment of a solid business case for service providers engaged in transport and treatment.

DESWAM | Decentralized Solid Waste Management

DESWAM aims to improve the living conditions of poor and low-income communities through demand-responsive decentralized solid waste management, deploying the 3R-approach (Reduce-Reuse-Recycle). The main component of each DESWAM project is a Material Recovery Facility (MRF), which is implemented in close collaboration with local governments and is operated by Community Based Organizations.



Biogas Digester



Anaerobic Baffled Reactor (ABR)

Fostering Systemic Innovation from a Viewpoint of Municipalities



– our concept of strategic capacity development

The establishment of inclusive, liveable and water sensitive cities is a result of a systematic development. In order to meet the multi-dimensionality of this innovation process, BORDA pursues an approach of strategic capacity development.



Global level

Up-to-date methods of capacity development allow practical expertise from the South-Eastern region, from Germany / Europe and from global knowledge networks to be fed into the processes at local and national levels. The work outputs at the various program levels, in turn, will and have been fed into agenda setting processes at the global level such as UN-Habitat III in Quito, Ecuador, 2016; the 8th World Water Forum in Brasilia, Brazil, 2018; and the World Urban Forum 9 in Kuala Lumpur, Malaysia, 2018.



National level

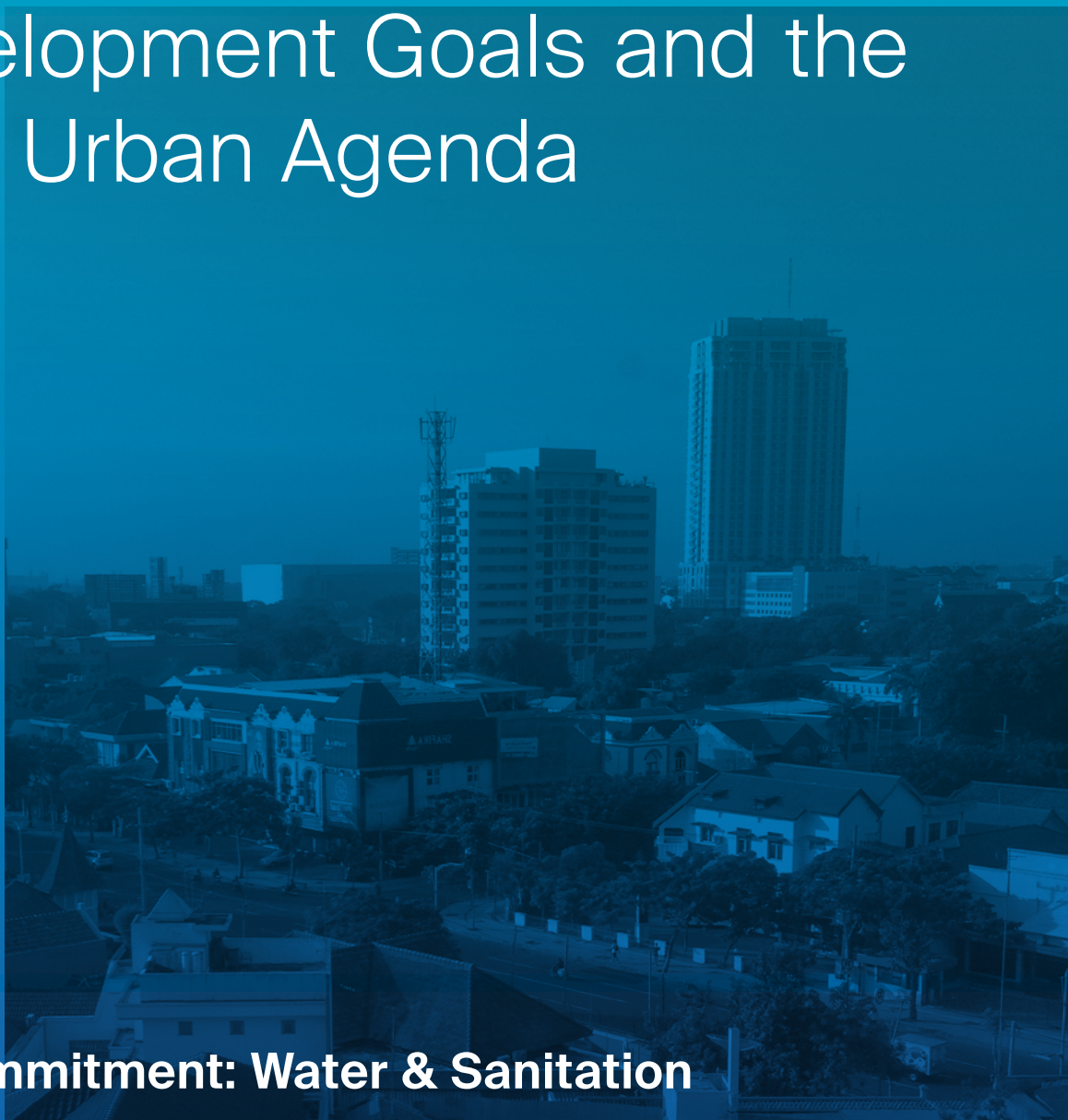
The results of the work processes are incorporated in the sector-political or professional decision-making at the national level. It supports the further development of the regulatory framework and the development of technical standards. The development of practice orientated programs at universities, research institutions and sector associations contribute to systemic capacity development.



Municipal level

Exemplary pilot projects serve as a tool for shaping a participatory process on the local level involving municipal administration and planning authorities, civil society institutions, water and waste utilities, planning and architecture firms. Globally available working experiences and knowledge are made accessible to local processes. In doing so, a cross-sectoral and 'silo-overcoming' approach is pursued – as intended in the 2030 Agenda.

Supporting the Localisation of the Sustainable Development Goals and the New Urban Agenda



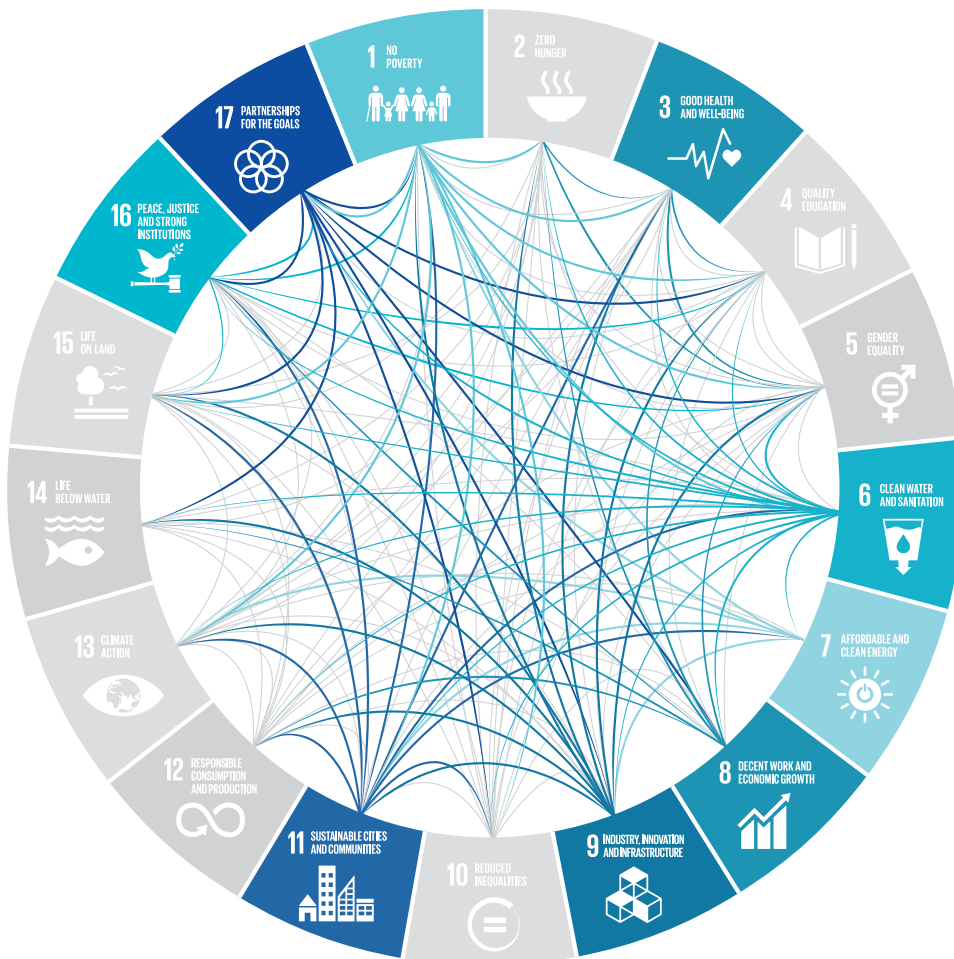
**Our commitment: Water & Sanitation
in inclusive, liveable and climate resilient
cities in the system of the 2030 Agenda
and the Sustainable Development Goals.**

Therefore, BORDA follows a system approach to contribute to achievements of the SDG targets

- ▶ **Target 1.4** By 2030, ensure that all men and women, in particular the poor and the vulnerable, have (...) access to basic services
- ▶ **Target 3.9** By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination
- ▶ **Target 6.1** By 2030, achieve universal and equitable access to safe and affordable drinking water for all
- ▶ **Target 6.2** By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation (...)
- ▶ **Target 6.3** By 2030, improve water quality by reducing pollution, (...), halving the proportion of untreated wastewater and

- substantially increasing recycling and safe reuse globally
- ▶ **Target 6.5** By 2030, implement integrated water resources management at all levels (...)
- ▶ **Target 6.6** By 2020, protect and restore water-related ecosystems, including (...) wetlands, rivers, aquifers and lakes
- ▶ **Target 6.b** Support and strengthen the participation of local communities in improving water and sanitation management
- ▶ **Target 9.1** Develop quality, reliable, sustainable and resilient infrastructure (...) to support economic development and human well-being, with a focus on affordable and equitable access for all

- ▶ **Target 11.b** By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change
- ▶ **Target 16.7** Ensure responsive, inclusive, participatory and representative decision-making at all levels
- ▶ **Target 17.6** Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms



Our projects in Southeast Asia



Myanmar

BORDA has been active in Myanmar since 2012. The registered country office of BORDA has established networks with local and international organisations, professionals and policy makers, and carried out trainings and feasibility studies for wastewater management. Implementations are ongoing in Yangon City. In terms of capacity building for DEWATS, a strong South-South exchange with BORDA and ESC in Cambodia has been established.

Laos

In collaboration with the Ministry of Public Works and Transport, BORDA introduced DEWATS in Laos. A Quality Management System for DEWATS application has been institutionalized at the Ministry and its subordinated provincial offices. Third parties provide funding for DEWATS infrastructure. Currently the Ministry and BORDA are developing and implementing integrated sanitation solutions for municipal wastewater management, also streamlining capacities towards on-going infrastructure projects by ADB.

Vietnam

BORDA established an office in Vietnam in 2001. Starting 2008, in close cooperation with the Center for Training and International Cooperation (CTIC) of the Vietnam Academy for Water Resources (VAWR) BORDA coordinates the project development and design of DEWATS in urban and peri-urban areas. Since 2017, a close cooperation with Bac Ninh Municipality has been pioneering the application of integrated sanitation approaches as part of operationalizing SDGs and the New Urban Agenda at local level.

Indonesia

In Indonesia, BORDA works together with the local partner organizations AKSANSI, LPTP and BEST. The Community Based Sanitation (CBS) approach, developed by BORDA, has been upgraded to be part of the national sanitation improvement program and successfully been replicated nationwide. To ensure sustainability of the project, AKSANSI is facilitating the Co-Management of the CBS project by Community Based Organizations and local governments. The network in Indonesia is also active in supporting Community Based Solid Waste Management projects, including climate change mitigation components. After the success of the CBS approach, a new project involving piloting will support the operationalization of the SDGs and the New Urban Agenda for managing urban waters at local level.





Thailand

In cooperation with the Asian Institute of Technology (AIT), BORDA established a competency center for integrated sanitary solutions in 2017, serving as a hub in linking a community of practitioners in Southeast Asia. A testing and demonstration center for decentralized wastewater treatment options is under development, serving governments, donors and the private sector to achieve appropriate high quality solutions for verified wastewater treatment technologies in the region. The hub also supports capacity building and strengthening of the enabling framework for integrated sanitation approaches in the region.

Philippines

Cambodia

Following the promotion of DEWATS in order to obtain 3rd party funding for infrastructure costs, DEWATS has been introduced for hospitals and schools. Currently BORDA Cambodia and its partner ESC are supporting the setup of the sanitation sector in Cambodia. Their work involves facilitating national and local authorities in applying integrated sanitation solutions as part of operational SDGs at the local level.

Philippines

The not-for profit service provider “BNS” (Basic Needs Services Philippines) is a long-standing partner of BORDA in the country. Since 2006 BNS has been enabled to develop, plan and implement DEWATS projects for markets, schools, SMEs, hospitals and Faecal Sludge Management. Currently BNS cooperates with municipalities for piloting system solutions for Integrated Sanitation Approaches under the umbrella of SDGs and the New Urban Agenda.



Establishing Water Inclusive, Liveable and Climate Resilient Cities



**Examples
of our work**

Sustainable Resource Management in Southeast Asia, Umbrella Program



Overall term: 2009 – ongoing

Funded by:

BMZ – German Federal Ministry for Economic Cooperation and Development

Countries:

Indonesia, Cambodia, Laos, Myanmar, the Philippines and Vietnam

Operating under cooperation agreements with:

Ministry of Public Works, Indonesia

Ministry of Public Works and Transport, Department of Urban Housing and Planning, Laos

Ministry of Construction, Department of Urban and Housing Development, Myanmar

Vietnam Academy for Water Resources, Vietnam

Asian Institute of Technology, Thailand

Objective: The objective of the project is to strengthen peri-urban areas by improving the provision of water related public services and the management of national resources, increasing climate resilience and the creation of liveable urban spaces.

Key features of the program are:

- ▶ Exemplary implementations of water management solutions in its technological, planning, social and process-oriented dimensions
- ▶ Essential public services (especially in sanitation, faecal sludge and waste management) are being established as an integral part of urban modernization strategies
- ▶ Multi-faceted approach of capacity development to overcome the prevailing thinking in sectoral and administrative silos
- ▶ In line with the principle of subsidiarity, new strategic partnerships between citizens, civil society, municipalities, city planners, service providers and community representatives are supported.





Dissemination Program on Community Based Sanitation

Overall term: 2010 - ongoing

Funded by:

BORDA funded by BMZ; infrastructure and local operation costs by Government of Indonesia, international development banks and local governments

Countries:

Indonesia

Partner organisations:

Ministry of Public Works; BEST; LPTP; AKSANSI and 100 Resilient Cities

Objective: Sustainable Access to wastewater management related essential public services for communities in peri-urban areas

As part of the decentralisation process, the Indonesian National Planning Authority initiated a project in 2003 named SANIMAS (Sanitation by Communities) in cooperation with the Ministry of Public Works, the Water and Sanitation Program of the World Bank, as well as BORDA.

Until today, approximately 13,000 decentralised wastewater treatment systems were implemented under the framework of various investment programmes (government funds supplemented by contributions from the World Bank, Asian Development Bank and Islamic Development Bank).

Due to the Indonesian National Medium-Term Development Plan 2015–2019, it is estimated that at least another 2,000 decentralised wastewater treatment systems will be implemented every year by different stakeholders.

To support the National Plan, BORDA Indonesia and its local partner organisations facilitate the implementation of 200 to 300 DEWATS CBS (Community Based Sanitation) projects each year throughout Indonesia, in particular in densely populated, urban and peri-urban, low-income areas.





1 NO POVERTY



6 CLEAN WATER AND SANITATION



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



11 SUSTAINABLE CITIES AND COMMUNITIES



13 CLIMATE ACTION



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



BORDA and its partner put special emphasis on the mitigation of risks and challenges associated with the dissemination of Community Based Sanitation on a nationwide scale by:

- ▶ Facilitating the establishment of user groups (Community Based Organizations) that are in charge of operation and maintenance of the sanitation infrastructure
- ▶ Establishing and applying a Monitoring & Evaluation and steering system for the operation and maintenance of DEWATS CBS

AKSANSI (Association of Community Based Organizations in Indonesia), a BORDA partner in Indonesia, focuses primarily on the 'post-construction' phase to support Quality Management on community level and thus sustainability.

An essential lesson learnt from AKSANSI's work is that Community Based Organizations face particular challenges related to operation and maintenance, especially for major repairs, desludging and similar measures.

To overcome constraints of Community based organisations, AKSANSI is facilitating a Co-Management approach. This approach ensures the shared operation and maintenance of the CBS infrastructures between the Community Based Organizations and local governments.



School Based Sanitation

Overall term: 2010 – ongoing

Funded by:
BMZ and UNICEF

Countries:
Cambodia

Partner Organizations:
Ministry of Education,
Youth and Sports; ESC; schools

Findings from a 2010 National Sanitation and Hygiene Survey show that only 31.8 per cent of Cambodians use latrines, only 16.7 per cent of Cambodians have a fixed hand washing place in their homes and only 62 per cent of respondents reported practising hand washing.

The insufficient WASH (Water, Sanitation & Hygiene) facilities threaten or ignore privacy and security needs of school children and lead to a high risk of infections. This can affect children's health and their ability to attend school, which can have a negative impact on their academic performance.

In order to address these serious problems, since 2009, ESC (Environmental Sanitation Cambodia) and BORDA Cambodia have developed the School Based Sanitation (SBS) project that focuses on:

1. Building School WASH Institutions
2. Promoting Health & Hygiene Education
3. Improving WASH facilities including on-site wastewater treatment (DEWATS) and good O&M (Operation & Maintenance)

So far, the SBS project approach has been implemented in 34 peri-urban and rural primary schools around Phnom Penh, Siem Reap and Kampong Chhnang, with more than 16,000 teachers and students benefitting directly.

All SBS project schools are selected through a competitive and demand-based selection process to ensure that the schools have the willingness and ability to continue key SBS activities in the long run. Selected schools are supported in establishing School WASH Committees (SWC), which are responsible for all WASH interventions at school level.



Community Based Management of Solid Waste for Climate Change Mitigation



Overall term:
2008 – ongoing

Funded by: BMZ

Countries: Indonesia

Partner Organizations:
BEST, LPTP, supported by atmosfair



KIPRAH

In order to support the government program to provide improved solid waste management services to communities in Indonesia, BORDA and its Indonesian partners developed the solid waste management program KIPRAH (kita-pro-sampah = we-pro-waste). KIPRAH aims to improve and develop options for community based solid waste management which in the end will improve hygiene, environment sanitation and living conditions of low-income communities. The main component of each KIPRAH project is a Material Recovery Facility (MRF), which is implemented by Public Works and Settlements Ministry and local government. The MRF is operated by Community Based Organizations (CBO).

Solid waste from participating households is collected at the MRF and then separated into organic and recyclable waste. Organic waste (food and garden waste) is composted; the compost is sold widely to the public or directly used by the community around the MRF as fertilizer to grow crops.

KIPRAH VER (Voluntary Emission Reduction)

Since April 2014, KIPRAH VER is registered under the Gold Standard® scheme as the first emission reducing, community based composting project worldwide.

In 2016, 16 KIPRAH VER projects were certified for a 2-year monitoring period under the Gold Standard® scheme and certificates for the reduction of 2,334 tons CO² equivalents were issued. Through KIPRAH VER projects, low-income urban communities become an active part in the global climate actions.



Overall term:
2019 – 2025

Funded by:
BMBF - German Federal Ministry for Education and Research

Countries:
Cambodia, Indonesia, Laos, Thailand and Vietnam

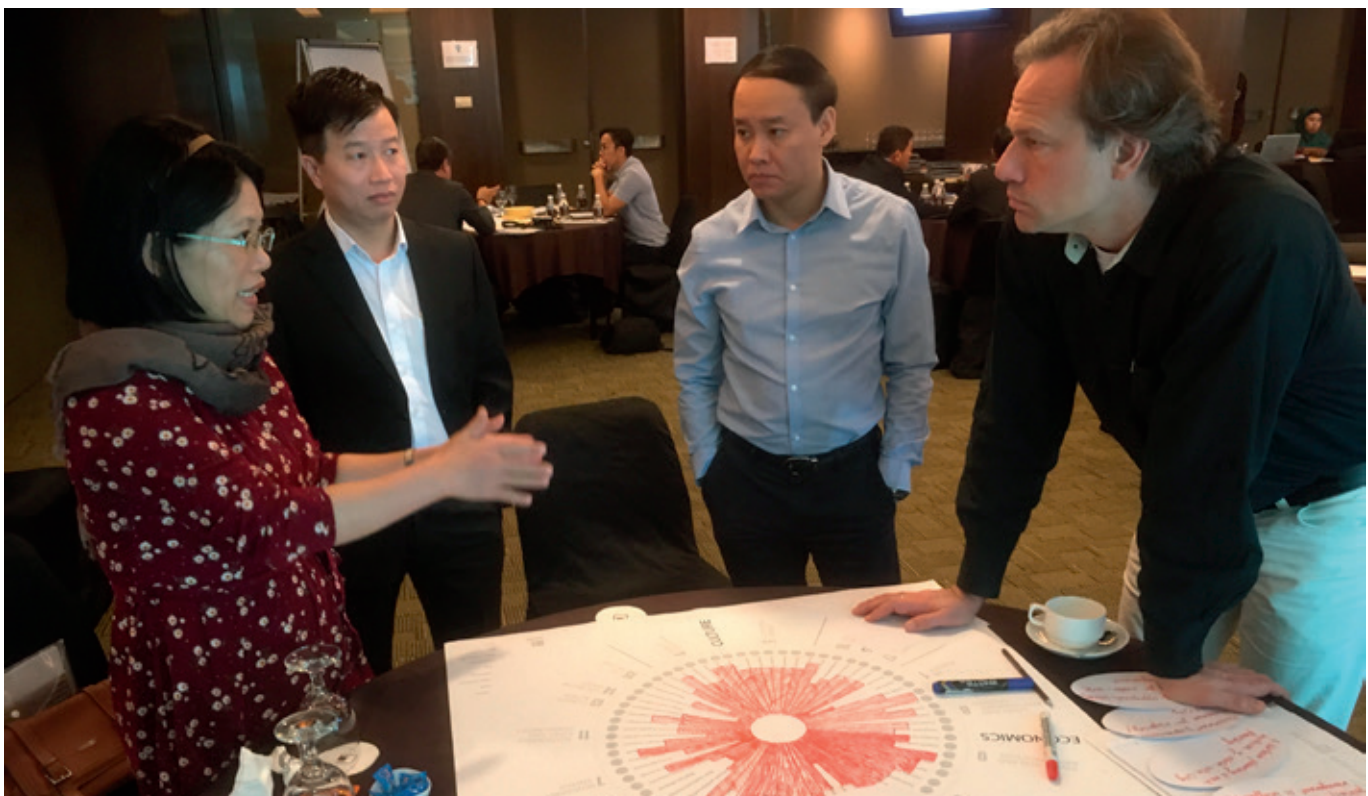
Partner: Partner network SouthEast- Asia and Germany

Localizing the New Urban Agenda and SDGs in Southeast Asia’s fast-growing cities and peri-urban areas. The PolyUrbanWaters project is developing and demonstrating practice-relevant tools that enable municipalities to implement polycentric approaches for urban development and integrated, cross-sectoral water management.

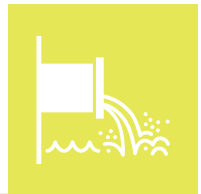
The aim: new models for water-sensitive, sustainable and inclusive development that meet the localized needs and realities of urban areas.

The PolyUrbanWaters Project provides to its partner cities Kratie/Cambodia, Sam Neua/Lao and , Sleman/Cambodia :

- ▶ support for SDG-oriented strategic, cross-sectoral, water-sensitive urban planning and the emergence of corresponding city-level narratives
- ▶ generation of evidence-based knowledge for informed decision making
- ▶ coaching for strategic project management and facilitation of co-production procedures at the local level involving communities, the public and private sectors, civil society and academia



Establishment of a regional 'Regenerative Sanitation Hub' at AIT



Overall term: 2017 - 2022

Funded by:

Funded by: AIT, BMZ, various other funding sources

Countries: Based in Thailand, operating for the Southeast Asia region

Partner Organizations:

Asian Institute of Technology, Prüfinstitut für Abwassertechnik Aachen GmbH

In cooperation with: Aquanishihara, Fibertech Co., Santech, Premier UNESCAP, private sector

The 'Regenerative Sanitation Hub' as collaboration between BORDA and the Asian Institute of Technology (AIT) in Thailand was formally initiated in 2017. Project collaboration involves establishing a training and demonstration centre to introduce certified and proven decentralised wastewater treatment technologies to decision makers, manufacturers and professionals/ practitioners in Southeast Asia.

It also aims to provide training services regarding Quality Management for decentralised wastewater treatment systems and approaches, improve knowledge about establishment, operation and maintenance of decentralised technologies, as well as application of polycentric sanitation service planning in an urban context.

The Regenerative Sanitation Hub engages with organisations for capacity building purposes as well as for achieving a wider impact (Bill & Melinda Gates Foundation, UNESCAP). A cooperation with Prüfinstitut für Abwassertechnik (PIA) is charged to provide technical assistance to the project for establishment and operation of the testing centre. A cooperation with The National Institute for Environmental Studies (NIES), based in Japan, supports the harmonisation of standard development for testing methods for on site treatment systems.



Partner Organisations

Ministry of Public Works
Indonesia, Directorate
of Environment and
Sanitation Development,
Indonesia

Ministry of Public Works
and Transport, Department
of Housing and Urban
Planning, Laos

Ministry of Construction,
Department of Urban and
Housing Development,
Myanmar

Cambodian Institute for
Urban Studies (CIUS),
Cambodia

ESC (Environmental
Sanitation Cambodia),
Cambodia

AKSANSI (Association
of Community Based
Organization on Sanitation
in Indonesia), Indonesia

BEST (Institute for
Integrated Economic and
Social Development),
Indonesia

LPTP (Foundation for the
Development of Rural
Technologies), Indonesia

Yangon City Development
Committee (YCDC), Myanmar

BNS (Basic Needs
Services) Philippines,
Philippines

Asian Institute of
Technology (AIT), Thailand

Vietnam Academy for
Water Resources and
Environment (VAWR),
Institute for Water and
Environment, Vietnam

City Alliance 'People.
Sanitation. Cities'

Technical University Berlin,
Habitat Unit,
Germany

University of Applied
Sciences Institute
for Technology and
Resources Management in
the Tropics and Subtropics
(ITT), Germany

State of Bremen, Senator
of Civil Engineering,
Environment and
Transportation, Germany

Bremen Umweltbetriebe,
Germany

Hamburger
Stadtentwässerung,
Germany

United Nation Economic
and Social Commission
for Asia and the Pacific,
Thailand

Atmosfair, Germany

Prüfinstitut für
Abwassertechnik Aachen
GmbH (PIA), Germany

United Nations Children's
Fund (UNICEF)

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