KEY RESOURCE PERSONS

Dr. Thammarat Koottatep
(Project Investigator)
Overall project administration and management

Dr. Atitaya Panuvatvanich
(Project Manager)
Project planning, administration and monitoring

Prof. Chongrak Polprasert
(Senior Sanitation Specialist)
Overall project supervision on technology development

Prof. Siddharth Jabade
(Intellectual Property Specialist)
Strategy on intellectual properties

Dr. Nawatch Surinkul
(Decentralized Wastewater Management Specialist)
Field investigations on DEWAT technology and performance testing

Dr. Yuttachai Sarathai
(Fecal Sludge Management Specialist)
Field investigations on FSM practices and treatment technology

Mr. Jirasak Rojanawong
(Business Development Specialist)
Developing business plan and strategy

Dr. Peerapat Pukkeeree
(Business & Marketing Development Expert)
Field research on business development study

CONTACT US

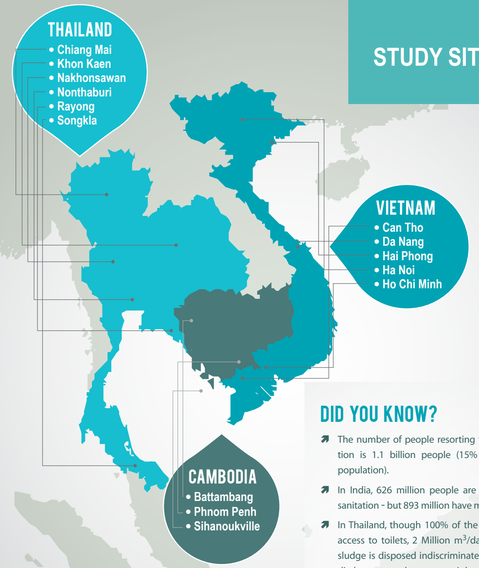
Dr. Thammarat Koottatep
Email: thamarat@ait.asia Telephone: +66 2524 6188
Environmental Engineering and Management
School of Environment, Resources and Development
Asian Institute of Technology
P.O. Box 4, Klong Luang, Pathumthani 12120 Thailand
www.natstoilet.com

AIT

Produced and designed by:
Media and Communications Unit (MCU)
Asian Institute of Technology

Printed on recyclable paper.

STUDY SITES



DID YOU KNOW?

- The number of people resorting to open defecation is 1.1 billion people (15% of the world's population).
- In India, 626 million people are without proper sanitation - but 893 million have mobile phones.
- In Thailand, though 100% of the population has access to toilets, 2 Million m^3/day or 85% of all sludge is disposed indiscriminately into drainage ditches, open urban spaces, inland waters, estuaries, the sea or directly onto famlands.
- In Ho Chi Minh City, Vietnam, only 20% of trucks dump their collected sludge at the treatment facilities.
- Only 31% of the Cambodian population has access to toilets or improved sanitation.

TARGETS

Targets for 2013/ Ongoing developments

- Identification of key market driving factors
- Compilation of market landscape of three countries
- Overall technology landscape analysis
- Identification of target buyers
- Analysis of unmet needs
- Dataset compilation of performance of existing systems
- Peer reviewed publications

Targets for 2014

- Identification of technologies that enable odor-free pathogen-free effluent, 50% reduction of fecal sludge production and production of ready-to-reuse products with assessment of their market potential.
- Develop technologies: Thermal septic tank, Microwave, Microbial fuel cell, Nano-disinfection and Solid-liquid separation devices.

NATS
Naturally Acceptable and Technically Sustainable

AIT
Asian Institute of Technology

REINVENTING THE TOILET

SUSTAINABLE DECENTRALIZED WASTEWATER MANAGEMENT IN DEVELOPING COUNTRIES

GRANT INFORMATION

Project Name

Sustainable Decentralized Wastewater Management in Developing Countries

Organization Name: Asian Institute of Technology

Grant ID#: OPP 1029022

Date Awarded: September 2011

Grant Amount: US$ 4,999,722

Foundation Program Officer: Dr. Doulaye Kone

Project End Date: October 31, 2016

Principle Investigator: Dr. Thammarat Koottatep

WHY NATS?

By applying an innovative market-driven approach, the project will reinvent technologies for decentralized wastewater management that are **N**aturally **A**cceptable and **T**echnological **S**ustainable.

GOALS AND OBJECTIVES

The ultimate goal is to use a market-driven research approach to catalyze commercialization of a novel and innovative decentralized system to radically improve sanitation for the urban poor. The goals are anchored by scientific, technical and market evidence.

To create sustainable and scalable social impact, the developed system is envisaged to be:

(i) Novel

(ii) Decentralized

(iii) Viable

(iv) Sustainable

(v) Superior

Objective # 1

Invention and prototyping of Decentralized Wastewater Treatment Systems (DEWATS) technology that treats and discharges a pathogen-free domestic effluent, and ready-for-reuse products.

Objective # 2

Prototype technologies are successfully field tested for single families and apartment blocks or for community wastewater management.

Objective # 3

Commercial ventures with industries are secured for mass production and commercialization.

Objective # 4

Regional academic expertise in innovative DEWATS technologies is increased.

MARKET-DRIVEN RESEARCH APPROACH

PHASE I

Creating a platform for innovation

1. Idea Generation
2. Idea Screening
3. Concept Development & Testing

PHASE II

Designing and developing lead options for commercialization

4. Marketing Strategy Development
5. Business Analysis
6. Product Development

PHASE III

Catalyzing commercialization of lead options

7. Market Testing
8. Commercialization

KEY MILESTONES

- Identification of key factors for user needs and desired improvements of DEWAT systems focusing on urban poor.
- Key factors for improvement of Fecal Sludge Management (FSM) practices.
- Key market driving factors and technology landscape.
- DEWAT technologies that enable odor-free and pathogen-free effluent, 50% reduction in fecal sludge production, and manufacturing of ready-to-reuse products with assessment of their market potential.
- Strategic plan for market and business models of FSM practices.
- Lead options of DEWAT prototypes with business and production plans are licensed and ready for mass production for the local market.

BILL & MELINDA GATES FOUNDATION STRATEGY AS IMPLEMENTED BY AIT

Innovative solutions that work for the world's bottom billion poor.

Two fundamental sanitation challenges:

- Expanding and improving sanitation without central sewers, because this is by far the most common type of sanitation service used by the poor.
- Making sanitation services safe and sustainable by addressing the failure to effectively transport, treat and reuse waste captured in on-site facilities.

Improving the "Sanitation Value Chain"

Impact on the health, economic and social well-being of the poor

- Not just counting new taps and toilets

Sustainable in terms of long-term operations and funding

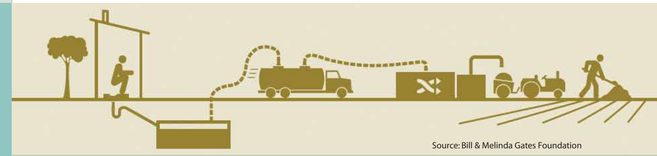
- "Service delivery" instead of "access"

Scalable to reach tens to hundreds of millions of people

- But not at the expense of sustainability and impact

Expectations:

- Identify, select and/or design potential promising technologies for collecting and treating the excreta of the bottom billion world population, based on market analysis and business opportunities.
- Develop scientific evidence on technology performance and validate business model for impact, sustainability and scalability.
- Develop a communication and dissemination / distribution strategy.



Source: Bill & Melinda Gates Foundation

CAPTURE > STORAGE > TRANSPORT > TREATMENT > REUSE