



TRIANGLE ENVIRONMENTAL

HEALTH INITIATIVE

Triangle Environmental (TE) is an international, HUBZone certified small business specializing in product development and consulting services for non-sewered sanitation and solid waste management (SWM) solutions. We are differentiated by our ability to customize innovative solutions to local contexts. Our passion is engineering sustainable Water, Sanitation and Hygiene (WaSH) products, services and ecosystems in collaboration with the local public and private sectors, non-governmental organizations (NGOs) and academia.

OUR SERVICES



Local Project Management



City-wide Inclusive Sanitation



Professionalizing Private Sector Services

CORE COMPETENCIES

We aid in WaSH and SWM program development, lab testing when required, field-implementation and monitoring, evaluation and learning (MEL) plans. Our network with local WaSH organizations in Asia and Africa streamlines the team building process for efficient program implementation.

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|  Non-Sewered & Fecal Sludge Treatment Process Flows |  Local Partnerships & Regulatory Review |
|  Engineering Designs |  Capacity Building |
|  Iterative Prototype Development |  Global & Country Level Market Analysis |
|  Bench Top Lab Studies |  Competition Research |
|  Daily Monitoring & Routine Maintenance |  Business Model Development |
|  Data Analysis |  Commercialization Strategy |

AT A GLANCE

-  Reach: 14 countries, 3 continents
-  Experience along the entire sanitation value chain
-  Field-tested 25 prototypes, including innovative digital tools & machinery
-  8,000+ field-testing hours

COMPANY DATA

DUNS Number: 080679255
 SAMS Number: X6EJJK2HHMF1
 CAGE: 7VS92
 Federal Certifications: Small Business HUBZone
 NAICS: 541715, 541620, 541330, 541611

CLIENTS & PARTNERS



PAST PERFORMANCE



SOLID WASTE ACCOUNTABILITY PLATFORM (SWAP) – Prime - USAID Funded – 2019-2022, Cambodia

Reference: Socheata Vong, Contracting Officer Representative, USAID, svong@usaid.gov

SWAP is a three-year project to strengthen the SWM system in three Cambodian urban centers. SWAP will increase municipal government and service provider accountability in Cambodia's solid waste sector by developing a digital tool (app) that is accessible to citizens, empowering them to report solid waste management issues to a public platform, and enabling all stakeholders to view the reported concerns. App development is supported by a strong monitoring and evaluation plan to maximize user adoption.

SISTEMA BIOBOLSA – Sub to Opero Services – 2020-2021, Kenya

Reference: Dr. Nicola Greene, Founder, Opero Services, nicola@opero-services.com

Sistema Biobolsa is a global leader in anaerobic digestion for smallholder farmers and agribusinesses. Sistema Biobolsa is expanding their product portfolio to include human waste digesters, and TE was subcontracted in Kenya to help with the technical transition. TE analyzed data from pilot sites in 7 countries, provided process flow diagrams to ensure waste was safely managed, created technical briefs, manuals, digester sizing tools and trained technicians on the intricacies of human waste digesters.

ONSITE BLACKWATER TREATMENT- BMGF* Funded - Sub to Duke University - 2018-2020, India & South Africa

Reference: Dr. Brian Hawkins, Research Scientist, Duke University Center for WaSH-AID, brian.hawkins@duke.edu

Duke's treatment system was installed in a community ablution block in Durban, South Africa. Waste generated onsite was treated and recycled back as flush water to the public toilets. TE supported all field-testing and implementation of the rigorous MEL strategy. All community and stakeholder engagement (including actors from the public and private sector), maintenance activities, sourcing local parts, data analysis and reporting were managed locally by TE.

EXCLUDER – BMGF* Funded– Sub to NC State University - 2017-2022, Asia & Africa

Reference: Dr. Francis de Los Reyes, Professor, NCSU, fdelosr@ncsu.edu

The Excluder is a dynamic pump screen that enables safe, efficient onsite sanitation servicing for pits and septic tanks with high volumes of trash. The Excluder reduces workers exposure to sludge by providing a mechanized means for servicing pits which historically had to be emptied via manual means. TE leads the research on the iterative design process and field-testing of the Excluder, including training local operators on its use in seven countries. TE is investigating leading the commercialization strategy and outreach to get the Excluder to market.

* BMGF = Bill & Melinda Gates Foundation

DIFFERENTIATORS

INTERDISCIPLINARY EXPERTS: Our backgrounds range from civil, environmental & energy engineering, to economics & business, project management & IT. We work from concept through to commercialization. We are motivated, skilled, & passionate. We aren't afraid to get our hands dirty!

TOGETHER IS BETTER: We believe collaboration & engagement with all stakeholders is key to success. Our network, partners, & clients span from local service providers to major funders, the private sector, non-profits & academia. We are connectors & experienced in 14 countries throughout Asia & Africa.

REPEAT CLIENTS: 88% of our customers become repeat clients, because we execute on our deliverables & efficiently evaluate & convert our project experiences into more impactful implementation strategies.

HUBZONE CERTIFIED SMALL BUSINESS: We are nimble & able to quickly adapt to evolving client needs. We have offices in the USA & Cambodia, & field staff in Kenya. We are experienced serving as both a prime & sub. We are members of the Small Business Association for International Companies & a signatory of the Digital Development Principles.

CORPORATE SOCIAL RESPONSIBILITY: Full-time employees receive annual paid time-off for community volunteering & TE donates free consulting hours to sanitation enterprises in low-and-middle income countries. Our employees' commitment to our Environmental Management System reduces TE's negative environmental impact.