

Curriculum Vitae of Jan Spit

1. **Family name:** Spit
2. **First names:** Jan
3. **Date of birth:** 5 September 1956
4. **Nationality:** Netherlands
5. **Civil status:** Married
6. **Education:** MSc. Civil Engineering / Sanitary Eng.

<i>Institution</i>	Technical University Delft
<i>Date</i>	September 1974 - July 1982
<i>Degree(s) or Diploma(s) obtained</i>	BSc. Civil Engineering MSc. Sanitary Engineering

<i>Institution</i>	Stichting Leergang Bedrijfskunde Delft/Den Haag
<i>Date</i>	September 1996 - July 1999
<i>Degree(s) or Diploma(s) obtained</i>	Post-graduate course on business administration.

<i>Institution</i>	NTI-NLP
<i>Date</i>	March 1999 – June 2004
<i>Degree(s) or Diploma(s) obtained</i>	Master Practitioner Neuro Linguistic Programming

<i>Institution</i>	Institute for Eclectic Psychology (IEP) & Robert Dilts
<i>Date</i>	October 2011
<i>Degree(s) or Diploma(s) obtained</i>	Certificate Five keys to authentic success for next generation entrepreneurs

7. **Language skills:** (Mark 1 to 5 for competence, 5 being the highest)

<i>Language</i>	<i>Reading</i>	<i>Speaking</i>	<i>Writing</i>
Netherlands	5 (mother tongue)	5 (mother tongue)	5 (mother tongue)
English	5	5	5
French	4	4	3
German	4	4	3
Bahasa Indonesia	3	3	2
Spanish	2	2	1
Kiswahili	1	1	1

8. **Membership of professional bodies:**

- Member of the Netherlands Association of Drinking Water and Wastewater Experts in The Netherlands (Waternetwerk)
- Member of Waterforce, the Association of Self-employed consultants in the Dutch Water Sector
- Member of Nedworc, the Association of professionals working in the fields of Development Cooperation, International Cooperation and Relief & Rehabilitation

9. **Other skills:**

Computer literacy: Word, Excel, Powerpoint and Mindjet Mindmanager Pro7

Brainstorming and presenting tools: Mindmapping

10. Present position: Self-employed Water and Sanitation Consultant

11. Years within the firm: 12 years

12. Key qualifications:

- Master Sanitary Engineering, post graduate business administration
- Internationally recognized in the field of (waste-) water and faecal sludge management. Worked in over 15 countries for governments, multilateral agencies such as WorldBank, UNICEF and KfW, International NGOs such as WSUP and private companies such as RoyalHaskoningDHV, MottMacDonald and SWECO
- Over 40 years progressively responsible experience in Integrated Water Resources Management, Research on Faecal Sludge Management, Climate Change Resilience and Disaster Risk Reduction
- Able to communicate at all levels in organizations from the pit latrine emptier in the field to the Minister of Water and Environment
- Experience as project manager and team leader and responsible for advice on the €56 million Water Program to Benin (West Africa) of the Netherlands Government
- Initiator of innovative financing mechanisms on water and sanitation programmes and faecal sludge management; a.o. the Bill and Melinda Gates funded program on Service Level Agreements in Blantyre, Malawi
- Experience in valorisation of wastewater and faecal sludge to enhance (urban) agriculture
- Fluency in English, good level German, French and Bahasa Indonesia, basic in Spanish and Kiswahili

13. Specific experience:

<i>East Africa</i>	<i>Date:</i>
Specific activities related to onsite sanitation, wastewater, and faecal sludge management: <ul style="list-style-type: none"> • Promotion and facilitation of improvement of onsite sanitation systems • Developing mechanical desludging methods of onsite systems using the ROM Vacuum option and Practica's PuPu pump and mobile transfer systems • Elaborating and promotion the implementation of FSM Business models, among others the 'Permitting' Model • Preliminary design of faecal sludge treatment and valorisation. 	April 2019 – March 2023

14. Professional Experience Record:

<i>Date:</i>	April 2019 – March 2023
<i>Location:</i>	Nakuru, Kenya
<i>Company:</i>	Jan Spit CS Delft subcontracted by VEI
<i>Position:</i>	Project Manager WaterWorX WOP Nakuru and Kisumu counties, Kenya
<i>Description:</i>	<ul style="list-style-type: none"> • The Water Operator Partnership (WOP), under the umbrella of the WaterWorX program, is executed with the three water service provider in Nakuru County and the water service provider in Kisumu County. The goal of this WOP is to increase the improved water and improved sanitation and faecal sludge management services in line with the

	<p>sustainable development goals. It is crucial to ensure that water resources, infrastructure, water supply and demand match under current and future conditions. Climate change, demographic growth and economic development scenarios are key components to look at within this framework as well as reduction of Non-Revenue Water, reduction of energy and improved management of faecal sludge management.</p> <ul style="list-style-type: none"> • Tasks: <ul style="list-style-type: none"> ○ Daily coordination of VEI’s input in the project ○ Planning and supervision of Kenyan team and short-term expert inputs ○ Financial project management ○ Reporting to WaterWorX coordination unit ○ Communication and visibility actions ○ Stimulation of the involvement of partners such as the cities, municipalities and town leaders and stakeholders, both national and international organizations ○ Liaison with the Embassy of the Kingdom of the Netherlands in Nairobi and the Ministry of Foreign Affairs in the Hague and bi-/multilateral organizations such as KfW, AFD and International Financial Institutions ○ Promoting and testing innovations in the field of water treatment (removal of fluoride, reduction of turbidity) and water management (Sponge City approach) • Specific activities related to Sanitation, Wastewater and Faecal Sludge Management: <ul style="list-style-type: none"> ○ Promotion and facilitation of improvement of onsite sanitation systems through the Finish Mondial approach with AMREF Kenya and WASTE Netherlands ○ Developing and testing mechanical desludging methods using the ROM Vacuum option and Practica’s PuPu pump including mobile transfer stations ○ Elaborating and promotion the implementation of FSM Business models, among others the ‘Permitting’ Model ○ Promotion of safe sanitation at World Toilet Days in Kenya • Specific activities related to reduction of energy costs: <ul style="list-style-type: none"> ○ Assessing the potential reduction in costs ○ Elaborating the impact of more efficient pumps and improved hydraulic designs of networks ○ Elaborating the impact of generation electricity using solar power ○ Hiring and supervision of consultants to detail the measures and assessing the associated costs ○ Finding and securing funds to finance the proposed measures ○ Monitoring the effect of the measures.
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Date:	October 2022 – December 2022
Location:	Lilongwe, Malawi
Company:	Jan Spit CS Delft subcontracted by WASTE
Position:	Sanitary Engineer on preliminary design Faecal Sludge Treatment and advice on valorisation options for WorldBank / UNICEF sponsored FSM Lilongwe
Description:	<ul style="list-style-type: none"> • Review of conditions on the ground • Forecasting volumes of faecal sludge from pits and septage from septic tanks • Preliminary design of treatment and valorisation options • Advice on most appropriate treatment and valorisation methods.

Date:	September 2022
Location:	Mwanza, Tanzania
Company:	Jan Spit CS Delft, subcontracted by WaterWorX
Position:	Sanitary Engineer to advise on removal of accumulated faecal sludge in anaerobic ponds and treatment of removed sludge.
Description:	<ul style="list-style-type: none"> • Assessment of the volume and nature of accumulated sludge in the Anaerobic Lagoons • Advice of methods of removal of sludge • Advice on treatment of removed sludge

Date:	November 2021
Location:	Addis Ababa, Ethiopia
Company:	Jan Spit CS Delft, subcontracted by WaterWorX
Position:	Sanitary Engineer
Description:	<ul style="list-style-type: none"> • Advise on valorisation at Wastewater Treatment Plant; • Advise on Faecal Sludge emptying, transport and treatment from onsite systems • Advise on treatment of faecal sludge and valorisation options

Date:	May 2020
Location:	Siaya, Kenya
Company:	Jan Spit CS Delft, subcontracted by DORCAS
Position:	Phase 1 Evaluation Siaya Water and Sanitation Project 2017 -2022
Description:	<ul style="list-style-type: none"> • Review the pilot phase and provide recommendations on whether or not there is sufficient evidence to enable the partners to proceed to Phase 2 • The project adopted a Public Owned, Privately Managed model. The project receives a 50% subsidy from RVO, while the partners jointly contribute the remaining 50%. The private actor contribution is an investment that is to be recouped in a period of 7 years. This project is anchored on a business case in which (after rehabilitation of the schemes), the private actor is to infuse technology that involves online monitoring information, installation of pre-paid water meters for private and individual connections and on-going monitoring on NRW. It was envisioned that these would translate to a reduction in operation costs, increase in revenue, profits and ultimately provision of a reduction in operation costs, increase in revenue, profits and ultimately provision of clean water 24/7 • Activities: <ul style="list-style-type: none"> ○ Desk review that will include program document review ○ Project site visits ○ Key informant interviews ○ Focus group discussion ○ Reporting

Date:	July 2018 – January 2019
Location:	Solwezi, Zambia
Company:	Jan Spit CS Delft, subcontracted by Royal Haskoning DHV (NL)
Position:	Team Leader Pre-Feasibility Study Sanitation and Sewerage for North Western Water and Sewerage Company Limited (NWWSSCL)
Description:	<ul style="list-style-type: none"> • Assess existing situation in the field • Review previous studies • Elaborate measures to be taken including costing • Proposal for phased implementation and consensus building

Date:	November 2018
Location:	The Hague, Netherlands
Company:	Jan Spit CS Delft
Position:	Review Panel Expert Blue Deal for Dutch Water Authorities
Description:	Screening 21 Blue Deal proposals and advising on points for further improvement to make the proposals more successful.

Date:	November 2017 – March 2019
Location:	Lusaka, Zambia
Company:	Jan Spit CS Delft, subcontracted by WSUP Advisory (GB)
Position:	Team Leader Faecal Sludge Management (FSM) Business Development Support to Lusaka Water and Sewerage Company Limited funded by the WorldBank
Description:	<ul style="list-style-type: none"> • Lead the team of 16 professionals • Assess and analyse the market for faecal sludge management service delivery • Identify and evaluate management and business options • Design of an FSM service model including zoning, financial modelling and marketing plan • Prepare Tender Documents and private operator support

Date:	October 2017 and January 2019
Location:	Kigali, Rwanda
Company:	Jan Spit CS Delft
Position:	Sanitation Marketing, Technological and Business support Isuku Iwacu WASH program. This USAID funded program, executed by SNV and WorldVision, promotes the implementation of sanitation facilities and services in Rwanda.
Description:	<ul style="list-style-type: none"> • Providing a training on sanitation marketing: <ul style="list-style-type: none"> ○ Develop and implement modules on key sanitation marketing and communication strategies and tools, including fund management, tailored to the objectives of Isuku Iwacu ○ Build capacity of local implementing partners for innovative hygiene behavioural change communication • Training of Local Companies on International Sanitation Technologies and Main Toilet Systems in Rwanda National Sanitation Policy • Identification (marketing) need Local Companies

Date:	July 2017 - September 2017
Location:	Kigali and secondary towns Rwanda
Company:	Jan Spit CS Delft
Position:	Faecal sludge, sanitation and wastewater consultant for Global Green Growth Institute (GGGI)
Description:	<ul style="list-style-type: none"> • Assessment of the potential for emptying and treatment and advice on the most appropriate service model for 4 secondary towns. • Development of business cases for bankable faecal sludge projects in 4 secondary towns in Rwanda that address GGGI's strategic objectives of green growth for Global Green Growth Institute • Develop a 3-year capacity strengthening program with WASAC on wastewater and sanitation

Date:	May 2017 – August 2017
Location:	Philippines

Company:	Jan Spit CS Delft
Position:	Adviser Faecal Sludge Management ACTED and UNICEF
Description:	<ul style="list-style-type: none"> • Reconnaissance survey faecal sludge management implemented by UNICEF after Haiyan typhoon in Guiuan and Tacloban • Analysis existing situation through interaction with the local population UNICEF, ACTED and municipality of Guiuan • Development of a strategy to mitigate any environmental pollution to turn faecal sludge management into a local business • Design of collection and faecal sludge treatment and valorisation facility and business model

Date:	May 2017 – January 2019
Location:	Worldwide
Company:	Jan Spit CS Delft
Position:	Adviser Faecal Sludge Management in emergencies for BORDA funded by Humanitarian Innovation Fund
Description:	<ul style="list-style-type: none"> • Identifying shortcomings in transfer of innovation in emergency faecal sludge management from research into practice • Matching supply with demand in terms of information tools, abilities and capabilities

Date:	November 2014 – November 2017
Location:	The Netherlands
Company:	Member of WASTE Cooperative in Collaboration with London School of Hygiene and Tropical Medicine, Austrian Red Cross, Butyl and BoKu University (Vienna)
Position:	Project Manager Humanitarian Innovation Fund projects
Description:	WASTE collaborates with relief organizations and on speedy sanitisation and stabilization of Faecal Sludge in emergencies and the development of a Microbiological Sludge Quality field kit. Responsible for testing in Malawi and reporting.

Date:	November 2016 – March 2019
Location:	The Netherlands
Company:	Member of WASTE Cooperative
Position:	Project Manager Emergency Sanitation Project phase 2 www.emergencysanitationproject.org
Description:	WASTE collaborates with IFRC, NLRC and Oxfam GB in the Emergency Sanitation Project Phase 2. Responsible for developing desludging in difficult areas without trash, upscaling faecal sludge treatment options and testing innovative on-site systems in Malawi.

Date:	November 2016 – January 2017
Location:	Lebanon
Company:	Jan Spit CS Delft, hired through the Disaster Surge Support Facility of the Netherlands Ministry of Foreign Affairs, contracted by RVO (Netherlands Enterprise Agency)
Position:	Wastewater and Sanitation Expert for UNICEF Lebanon on wastewater services Informal Tented Settlements of refugees from Syria
Description:	<ul style="list-style-type: none"> • Reconnaissance survey wastewater and sanitation services Informal Tented Settlements • Analysis existing situation through interaction with refugees, UNICEF, International and Local NGOs, Water Establishments, Municipalities,

	<p>Ministry of Energy and Water, Ministry of Environment, private sector, service providers</p> <ul style="list-style-type: none"> • Development of a technological strategy to mitigate any environmental pollution and to reduce the operating costs by 80% • On the request of the Ministry of Water and Environment: development of an implementation plan including costing together with Daily Business (The Netherlands) and Lebanese partners.
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Date:	September 2015 – March 2019
Location:	Benin and The Netherlands
Company:	Jan Spit CS Delft, seconded at the Netherlands Water Partnership (NWP) and contracted by RVO (Netherlands Enterprise Agency)
Position:	Strategic adviser Water and Sanitation for the Netherlands Embassy in Cotonou (Benin) as part of the Water Development Cooperation Programme of The Netherlands
Description:	<ul style="list-style-type: none"> • Supporting the embassy in the elaboration and implementation of the multi-annual strategic plan in cooperation with the Dutch water sector • Informing and advising the Dutch water sector regarding the (business) opportunities in Benin • Contributing to the positioning of the Dutch water sector in Benin in a sustainable way • Defining strengths and added values of the Dutch water and sanitation sector in fulfilling local needs • Orientation and advising the € 56 million multi annual water and sanitation program OmiDelta • Participation in the formulation of a Develop2Build / DRIVE programme

Date:	December 2015 – November 2016
Location:	Kenya, Tanzania, Rwanda and Uganda
Company:	Jan Spit CS Delft, subcontracted by Grontmij (Sweco), Germany, funded by KfW
Position:	Team Leader Feasibility Studies High Priority Investments Lake Victoria Basin Integrated Water Resources Management Project
Description:	The Lake Victoria Basin Integrated Water Resource Management Programme with High Priority Investments is to contribute to the improvement of the water quality and to a sustainable management of the Lake Victoria Basin. Responsible for Work Package 2: Shortlisting of High Priority Investments (€ 30 mln.) and the preparation of 4 Feasibility Studies in line with the KfW project appraisal guidelines: wastewater collection and treatment in Mwanza (Tanzania), Faecal Sludge Management in Kigali (Rwanda), treatment of an open sewer (Nakivubo channel) by means of Constructed Wetlands in Kampala (Uganda) and sanitation improvement in informal settlements through a delegated management model in Kisumu (Kenya).

Date:	April 2016 – June 2016
Location:	The Netherlands
Company:	Jan Spit CS Delft, as member of the Waste Cooperative
Position:	Sanitation expert for The Toilet Board Coalition (TBC)
Description:	The TBC wants to scale up sanitation initiatives. Together with Africa Funded: assessing aspirations and needs of selected start up sanitation entrepreneurs in Africa; assessing their potential to grow and expand; identifying what could be the added value of partnering with multinational companies and identify the opportunities to scale up.

Date:	November 2015 – March 2019
Location:	The Netherlands
Company:	Jan Spit CS Delft
Position:	Wastewater and Faecal Sludge Management Specialist at ViaWater Program
Description:	<ul style="list-style-type: none"> • Supporting organizations that hand in proposals for ViaWater for funding • Feeding the ViaWater community with news, updates, relevant innovations, dilemmas, etc. • Delivering webinars on faecal sludge management.

Date:	January 2015 – March 2019
Location:	Flores, Indonesia and The Netherlands
Company:	Jan Spit CS Delft
Position:	Initiator, facilitator and coordinator of the support of Saint Lazarus in The Netherlands of the improvement of Water, Sanitation and Hygiene in Ende Region, Flores, East Indonesia
Description:	<ul style="list-style-type: none"> • Guiding Saint Lazarus in submitting a proposal to prospective donors • Organizing and executing scoping mission to Flores • Supporting Saint-Lazarus in drafting a detailed plan and costing • Support and Monitoring missions to Flores

Date:	November 2015 – February 2016
Location:	The Netherlands, Benin and Kenya
Company:	Jan Spit CS Delft, in cooperation with Empower People
Position:	Team Leader Mid-Term Review (MTR) Young Expert Programme (YEP) Water for the Ministry of Foreign Affairs (MoFA) in the Hague, The Netherlands
Description:	<p>The YEP Water aims to support the continued availability of international professionalism and expertise in the Netherlands water sector. YEP Water is a public private partnership of the Netherlands Water Partnership (NWP) and MoFA and started in 2013 for a 5-year period. The MTR provides conclusions and lessons learned halfway to help the programme to reach its full potential. Basic questions are (1) to what extent addresses YEP Water the human capital challenge of the Dutch Water sector and (2) how is the YEP Water performing? Tasks are:</p> <ul style="list-style-type: none"> • Prepare questionnaire based on Terms of Reference • Collection of data: face-to-face interviews and web-based questionnaire • Analysis and Reporting

Date:	June 2015 – July 2015
Location:	Busia, Kenya
Company:	WASTE Advisers, in cooperation with AMREF Kenya, SNS Asset Management Company, Family Bank, K-Rep bank, Social Equity Foundation, Goodwell Investments, Ministry of Health & United Nations University of Maastricht (UNU-MERIT)
Position:	Sanitation Marketing Expert in FINISH INK project: Financial Inclusion Improves Sanitation and Health IN Kenya. The project expands access to and demand for sanitation facilities through financial inclusion in a sustainable way.
Description:	<p>Providing a training on sanitation marketing:</p> <ul style="list-style-type: none"> • Develop and implement orientation modules on key sanitation marketing and communication strategies and tools tailored to the objects of FINISH INK

	<ul style="list-style-type: none"> • Support development of a comprehensive sanitation marketing strategy as well as a capacity building plan aimed at strengthening the demand for and supply of improved sanitation • Build capacity of local implementing partners for innovative hygiene behavioural change communication (BCC) • Facilitate the development of promotion materials including flyers, pamphlets among others • Support the development of monitoring and evaluation tools and protocols to monitor the effectiveness of each marketing strategy for modification if necessary, based on feedback and input during implementation.
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<i>Date:</i>	April 2015 – June 2015
<i>Location:</i>	Bonaire, Netherlands Antilles
<i>Company:</i>	Jan Spit CS Delft, subcontracted by PPM: Project Planning & Management Ltd. And A.R.S. Progetti
<i>Position:</i>	Sanitary Engineering Expert for Final Evaluation of the Bonaire Sewerage and Sanitation Project on behalf of EuropeAid / European Commission Delegation
<i>Description:</i>	Independent assessment of the performance of the Bonaire Sewerage and Sanitation Project implemented to safeguard Bonaire's marine environment (coral reefs). Data collection on the vacuum sewerage system, wastewater treatment by means of Sequential Batch Reactor and irrigation with treated effluent. Analysis and judgement of the system. Presenting the findings and recommendations for the present system. Recommendation of an appropriate sanitation approach for isolated islands in the future.

<i>Date:</i>	September 2014 – March 2015
<i>Location:</i>	Lampung and West Sumatra, Indonesia
<i>Company:</i>	Jan Spit CS Delft
<i>Position:</i>	Sanitation consultant for Water Authority Zuiderzeeland (Lelystad, The Netherlands) and SNV Indonesia
<i>Description:</i>	Preparing and shaping the contours of support of the SNV led sanitation improvement program in Lampung and West Sumatra by the Water Authority Zuiderzeeland

<i>Date:</i>	October 2014 – May 2015
<i>Location:</i>	Benin
<i>Company:</i>	Jan Spit CS Delft
<i>Position:</i>	Chef de Mission for Evaluation Multiannual Programme on Water and Sanitation (PPEA2) for the Netherlands Embassy in Cotonou, Benin in cooperation with Water Sanitation Program (WSP) of the World Bank in Benin and the European Union
<i>Description:</i>	Mid-term evaluation of the progress of the PPEA2 program (2013-2015) and preparing the Program Document for the prolongation up to 2020. Leading the mission of 4 expatriate staff and 4 Beninese experts. Identification of an improved approach including Terms of References for Technical Assistance and costs estimates.

<i>Date:</i>	July 2014 – December 2015
<i>Location:</i>	Malawi
<i>Company:</i>	WASTE Advisers on Urban Environment and Development, in cooperation with Welthungerhilfe
<i>Position:</i>	Project Manager and Urban Infrastructure Expert 10 th European Development Fund/ Europe Aid/135-226/L/ACT/MW (EDF) Achieving

	Millennium Development Goal 7c: Water and Sanitation Programme: Water and sanitation project in peri-urban areas in Malawi
<i>Description:</i>	The project's scope is to develop wastewater and faecal sludge collection and treatment services in Liwonde, Mangochi and Zomba in cooperation with local governments and the Southern Region Water Board (SWRB)

<i>Date:</i>	February 2014 – December 2015
<i>Location:</i>	Malawi
<i>Company:</i>	WASTE Advisers on Urban Environment and Development
<i>Position:</i>	Project Manager and Urban Infrastructure Expert, developing and testing models to engage the private sector in Sanitation Service Delivery with Blantyre City Council (Malawi) for The Bill & Melinda Gates Foundation (BMGF) and the UK Department for International Development (DFID)
<i>Description:</i>	The project's scope is threefold: (1) profitable Service Level Agreements (SLAs), (2) city wide coverage and (3) covering the full sanitation chain: from toilet to beneficial reuse of treated faecal sludge. Study of successes and failures of existing SLAs, identification of the 'sticks' and 'carrots' to increase the motivation of the population to use SLAs including local rules and regulations / building code and the 'six principles of persuasion' (Cialdini). Increase motivation of the service providers. Assessment to increase the technical and financial capacity of service providers: more efficient equipment and meso-financing with guarantee funds. Implementing Sanitation SLAs for 100 Public Toilets, 10 Desludging Service Providers and 5 Faecal Sludge Treatment units.

<i>Date:</i>	November 2013 – March 2015
<i>Location:</i>	Malawi
<i>Company:</i>	WASTE Advisers on Urban Environment and Development
<i>Position:</i>	Project Manager Emergency Sanitation Project, a project executed by WASTE, International Federation of Red Cross and Oxfam GB
<i>Description:</i>	Testing innovative equipment to fluidize faecal sludge in existing pit latrines, fishing and emptying 'difficult' faecal sludge in 'difficult' high-density urban areas. Testing 3 types of faecal desludging equipment and transfer in bladders. Testing methods of sanitizing faecal sludge suitable for emergency situations. In cooperation with the Polytechnic of the University of Malawi in Blantyre, Delft University of Technology and UN-IHE Delft.

<i>Date:</i>	November 2013, May 2014 – May 2015
<i>Location:</i>	Tanzania, India and Kenya
<i>Company:</i>	WASTE Advisers in cooperation with SimGas
<i>Position:</i>	Sanitary Engineer
<i>Description:</i>	<ul style="list-style-type: none"> Assessment Anaerobic digesters (SimGas) at dairy farms in Northern Tanzania Adaption SimGas digester to human waste: design, BoQ, supervision construction and monitoring performance as part of DHK SimGas project

<i>Date:</i>	April 2013 – November 2014
<i>Location:</i>	Bangladesh
<i>Company:</i>	WASTE Advisers in cooperation with TAUW, BRAC, IRC, Practical Action
<i>Position:</i>	Sanitary Engineer in Sanitation Technologies for Enterprises (SANTE) project
<i>Description:</i>	Prepare overview and details of sanitation technologies applicable in flood prone areas to be used as basis for design contest Bangladesh enterprises

<i>Date:</i>	July 2013, July 2014, July 2015
<i>Location:</i>	UNESCO-IHE, Delft, The Netherlands
<i>Company:</i>	WASTE Advisers
<i>Position:</i>	Lecturer Sanitary Engineering UN-IHE graduates and Examining committee MSc work UN-IHE graduates
<i>Description:</i>	<ul style="list-style-type: none"> • Classes on technical and non-technical aspects faecal sludge management • Assessing MSc theses of UN-IHE students on emergency sanitation and member examination committee

<i>Date:</i>	October 2012 – April 2016
<i>Location:</i>	The Netherlands, Benin
<i>Company:</i>	Jan Spit CS Delft
<i>Position:</i>	Project coordinator initiating Water Operator Partnership between Brabant Water (The Netherlands) and La Société Nationale des Eaux (SONEB) Cotonou, Benin / Coordinator securing ORIO grant Drinking Water Supply Parakou
<i>Description:</i>	Support both companies in setting up a Water Operator Partnership: identification of needs and priorities, developing mutual understanding, facilitating execution of projects: set-up water meter repair shop, improving water meter reading practices (hand held terminals). Initiating and coordinating the support of Brabant Water in securing a € 8.5 mln. ORIO grant (Facility for Infrastructure Development) and € 13.5 mln. loan for drinking water in Parakou: rehabilitation of Barrage d'Okpara, rehabilitation of water treatment works and extension of drinking water distribution system. Coordination includes mentoring two young experts (YEP Water) in Cotonou and quality control of the preparatory works by RoyalHaskoningDHV.

<i>Date:</i>	June 2013
<i>Location:</i>	Cairo, Egypt
<i>Company:</i>	Jan Spit CS Delft
<i>Position:</i>	Sanitation consultant for the Ministry of Foreign Affairs, Netherlands Water Partnership and Egyptian/Dutch High-Level Water Panel
<i>Description:</i>	<p>Reconnaissance study on the feasibility of promoting the application of innovative sanitation facilities and treated effluent reuse for rural areas in Egypt:</p> <ul style="list-style-type: none"> • Review existing proposal • Field visits and quick scan of potential project areas • Identification of innovative sanitation and wastewater reuse approaches applicable in Egypt • Assessment potential added value Dutch Water Sector • Assessment potential funding sources for setting up a business case • Outline feasibility studies

<i>Date:</i>	June 2013
<i>Location:</i>	Flores, East Indonesia
<i>Company:</i>	Jan Spit CS Delft
<i>Position:</i>	Sanitation consultant for Water Board Zuiderzeeland (Lelystad) and Yayasan Dian Desa (Yogyakarta)
<i>Description:</i>	Preparing and delivering a one-week low cost wastewater and sanitation course for Indonesian Professionals in the framework of the Sanitation, Hygiene, And Water (SHAW) East Indonesia project.

<i>Date:</i>	March 2013
<i>Location:</i>	The Netherlands
<i>Company:</i>	Jan Spit CS Delft
<i>Position:</i>	Review Research Proposals for Water Research Commission South Africa
<i>Description:</i>	Reviewing proposals for the Sanitation Research Fund for Africa project, established by the Bill & Melinda Gates Foundation and the Water Research Commission in Pretoria. The research contracts were for Characterization of pit contents and Developing innovative techniques for desludging and sludge management in low-income urban settlements.

<i>Date:</i>	January 2013 – August 2014
<i>Location:</i>	The Netherlands
<i>Company:</i>	WASTE Advisers on Urban Environment and Development
<i>Position:</i>	Project Manager Emergency Sanitation Project www.emergencysanitationproject.org
<i>Description:</i>	WASTE collaborates with IFRC and Oxfam GB in the Emergency Sanitation Project. The Emergency Sanitation Project aims to increase the global understanding of current and future emergency sanitation and to propose new concepts and modular technologies for safe excreta disposal in emergency settings that are applicable in a variety of situations. A menu of options has been made available through the development of specialized emergency sanitation modules, which are rapid to deploy and are cost-effective when compared with traditional solutions. Responsible for desludging in difficult areas, alternative faecal sludge treatment options, urinals, anti-stick material, local production of latrine slabs and biodegradable plastic utilization.

<i>Date:</i>	September 2012 – March 2016
<i>Location:</i>	The Netherlands
<i>Company:</i>	WASTE Advisers
<i>Position:</i>	Project Manager Work Package 3 S(p)eedkits www.speedkits.eu
<i>Description:</i>	S(p)eedkits is an EU Seventh Framework Programme project on the rapid deployment of shelters, facilities and medical care following a major disaster. WASTE is task leader for the development of flexible sanitation systems. Responsible for specifications, definition of water and sanitation kits, conceptual and actual design, research and development, testing.

<i>Date:</i>	August 2012 – October 2012
<i>Location:</i>	The Netherlands
<i>Company:</i>	Jan Spit CS Delft
<i>Position:</i>	WASH sector consultant Emergency Relief for Netherlands Ministry of Foreign Affairs
<i>Description:</i>	Feasibility Study on structural/organizational modalities in the Netherlands for (1) coordination of surge support to international emergency structures such as Global WASH Cluster and for (2) the national coordination of emergency response by the Dutch Water Sector.

<i>Date:</i>	August 2012 - Feb 2013
<i>Location:</i>	Lombok East Indonesia
<i>Company:</i>	Jan Spit CS Delft in cooperation with Atelier Dreiseitl (Ueberlingen, Germany) and Joachim Elbe Architektur (Germany)
<i>Position:</i>	Water and wastewater consultant in Eco-Region Pemongkong / Masterplan Tanjung Ringgit project
<i>Description:</i>	Field survey, concept development, Preparing water and wastewater guidelines and input masterplan for a 400ha Eco-region

<i>Date:</i>	March 2011, Nov/Dec 2012, June/July 2012, Jan/Feb 2012
<i>Location:</i>	Flores, East Indonesia
<i>Company:</i>	Jan Spit CS Delft partially subcontracted by WASTE Advisers, Gouda in cooperation with CAPS (Center for Advanced Philippines Studies)
<i>Position:</i>	Sanitation consultant
<i>Description:</i>	Support on behalf of Water Board Zuiderzeeland and WASTE for the Sanitation, Hygiene, And Water (SHAW) East Indonesia project: hospital sanitation improvement and service delivery by the private sector; technical assistance on broadening the scope of technological and financial options and service delivery by the private sector. The Embassy of the Kingdom of The Netherlands in Jakarta sponsors the SHAW project. It is executed by Simavi in collaboration with UNICEF, PLAN, Bappenas, IRC and Yayasan Dian Desa.

<i>Date:</i>	March 2012 and April 2012
<i>Location:</i>	Occupied Palestine Territory: West Bank and Gaza
<i>Company:</i>	Jan Spit CS Delft
<i>Position:</i>	Consultant and Trainer on Household Sanitation and Waste-water Reuse Facilities for UNICEF
<i>Description:</i>	<p>Develop and execute a training in the field of household sanitation and wastewater reuse in the Occupied Palestine Territory:</p> <ul style="list-style-type: none"> • Assessment sanitation conditions in the field • Develop an appropriate sustainable sanitation technology mix • Develop and deliver 3-day training course for WASH Cluster Partners in Ramallah and Gaza • Prepare training manual with elaborate description and design approach for selected dry, wet, community-based sanitation and septage management <p>Focus on immediate improvements in the field and grey water reuse</p>

<i>Date:</i>	October 2011
<i>Location:</i>	The Netherlands
<i>Company:</i>	Jan Spit CS Delft subcontracted by WASTE Advisers
<i>Position:</i>	Consultant
<i>Description:</i>	Formulation policy paper on Public Private Partnerships for Dutch WASH Alliance

<i>Date:</i>	August 2011 – October 2011
<i>Location:</i>	The Netherlands
<i>Company:</i>	Jan Spit CS Delft
<i>Position:</i>	Infrastructure expert on policy development of supply/allocation and demand of sand and gravel in the Netherlands 1960-2011 for the Netherlands Ministry of Infrastructure and Environment
<i>Description:</i>	Update of 2005 draft inter ministry transfer document on the Netherlands Policy on raw building materials (gravel and sand for concrete and masonry) from 1960 to date. Interviews, study of reports and policy documents and reporting.

<i>Date:</i>	November 2010 – August 2011
<i>Location:</i>	Indonesia
<i>Company:</i>	Jan Spit CS Delft, subcontracted by PT Mott Mac Donald Indonesia
<i>Position:</i>	Sanitation Consultant in the Indonesia Infrastructure Initiative, IndII, funded by AusAID

<i>Description:</i>	Preparation of master plans for the development of wastewater infrastructure for Bogor, Surabaya and Makassar including supporting feasibility studies in the framework of IndII. The Government of Australia through the Australian Agency for International Development (AusAID) funds IndII. IndII aims to assist national and sub-national agencies improve infrastructure in Indonesia. A key requirement is balancing investment needs with the capacity of local government to share in the financing of the investment within the overall framework of Indonesia's policy for assistance for development of wastewater infrastructure. Responsible for the assessment of the existing sanitary conditions in the field, prioritization and phasing of improvements, preparation of technical proposals for short-, medium- and long-term wastewater improvement for off-site, on-site and intermediate systems. Followed by a technical feasibility study including the pre-design and costing of wastewater collection and treatment systems: city-wide off-site wastewater treatment in facultative aerated lagoons and decentralized wastewater treatment in Upflow Anaerobic Sludge Blanket reactors, Rotating Biological Contactors and Anaerobic Baffle Reactors. A special assignment was to come up with alternative long-term wastewater treatment solutions for Makassar.
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<i>Date:</i>	February 2010 to July 2010
<i>Location:</i>	Netherlands
<i>Company:</i>	Dutch WASH Alliance (DWA) Simavi, AMREF, ICCO, WASTE, RAIN and Akvo with subcontracting partners: IRC, ETC-UA, Both ENDS, Practica Foundation, WaterAid and Wetlands International
<i>Position:</i>	Process Manager
<i>Description:</i>	<ul style="list-style-type: none"> • Process management of the preparation of a €68 million WASH programme to be financed by the Netherlands Government • Guiding and steering DWA in strategic choices • Elaborating and focussing Contextual Analyses and Country specific WASH programmes • Guiding and steering organizational set up

<i>Date:</i>	March 2008 to February 2010
<i>Location:</i>	Flores (Indonesia)
<i>Company:</i>	MWH (Previously: Syncera Water)
<i>Position:</i>	Team leader in short missions Total Sanitation
<i>Description:</i>	Formulating a business minded total sanitation project on Flores Island using an island-wide Community Led Total Sanitation Plus approach sponsored by Netherlands 'Partners for Water' and Water Board Zuiderzeeland together with WASTE (Gouda Netherlands), Yayasan Dian Desa (Yogyakarta, Indonesia), Simavi, UNICEF, Plan, WSP.

<i>Date:</i>	March 2007 to February 2010
<i>Location:</i>	Pemana-Flores (Indonesia), Rajasthan (India)
<i>Company:</i>	MWH (Previously: Syncera Water)
<i>Position:</i>	Project Manager in short missions WaterPyramid
<i>Description:</i>	Assessing the need, studying the feasibility, identifying the most suitable location in India (Rajasthan) Indonesia (Lombok and Flores), planning of implementation, supervising the construction, training personnel and financial and institutional development, monitoring and evaluation of a sustainable desalination plant using the WaterPyramid technology. Promotion of the technology at Royal Netherlands Embassy in Jakarta,

	UNICEF, USAID, AusAID, WSP, WorldBank etc. Sponsored by 'Partners for Water'. Together with Aqua Aero Water Systems (AAWS), Delft.
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<i>Date:</i>	March 2005 to February 2010
<i>Location:</i>	Delft (The Netherlands) Surinam (short missions)
<i>Company:</i>	MWH (Previously Syncera Water) now Stantec
<i>Position:</i>	Technical Leader
<i>Description:</i>	<ul style="list-style-type: none"> Developing innovative urban water management concepts: community involvement and new technologies (Waterkader Haaglanden: Laakkwartier), developing policies on climate change resilience, advising water boards and municipalities on improvement of urban sewerage and storm water drainage given the climate changes, developing management decision support tool for the Netherlands Foundation for Applied Water Research (STOWA), feasibility study on division at source of urine and faeces, managing urban water management projects for municipalities and water boards. Assessing the feasibility of export of surface water from Surinam to the Caribbean to replace desalination of seawater thus reducing CO₂ emissions and reducing deterioration of coral reef with brine from desalination plants. Study sponsored by Ministry of Economic Affairs. Together with Ecorys, IMSA, Amsterdam.

<i>Date:</i>	January 2001 to March 2005
<i>Location:</i>	Utrecht (The Netherlands) Egypt (short mission)
<i>Company:</i>	SenterNovem, Netherlands Agency for Innovation, Energy and Environment
<i>Position:</i>	Programme Adviser / Water Supply and Sanitary Engineer
<i>Description:</i>	<ul style="list-style-type: none"> Managing programmes to promote sustainable development at municipality level and reuse of dredging sludge materials, sustainable water management for water boards and municipalities, reclamation of polluted sediments, implementation water policy 21st Century (National Administrative Agreement on Water), dredging, water innovations. Identifying the Contours of Netherlands assistance to Egypt in the field of water and sanitation 2005-2009. Sponsored by Royal Netherlands Embassy in Cairo.

<i>Date:</i>	May 1996 – December 2000:
<i>Location:</i>	Breda (The Netherlands) Semarang (Indonesia) short missions India: Review and Planning Mission (Netherlands Embassy)
<i>Company:</i>	Water Supply Company "Noord-West-Brabant" (WNWB)
<i>Position:</i>	Head Planning Department / Senior Adviser Water Supply
<i>Description:</i>	<ul style="list-style-type: none"> Managing the Planning Department: preparation and support of the Company's policy regarding drinking water supply and industrial water supply, analysing developments and trends in water use and preparation of forecasts, advising in the field of future developments of production and transportation means and analysing reliability of supply, preparation of long-term water supply plan, monitoring of progress of crucial works. Study on privatisation of Semarang (Indonesia) water supply in a co-operation between WNWB en Witteveen + Bos Consulting Engineers. In charge of: initiating feasibility study, assessing field conditions and establishing relations with counterpart organisations, set-up

	<p>demonstration project on reduction of Unaccounted for Water, initiating Due Diligence Study.</p> <ul style="list-style-type: none"> Review and Planning Mission for Netherlands Assisted projects in Andhra Pradesh (India). In charge of: assessing operational responsiveness and participation of village communities in projects in the field of water supply and sanitation, evaluation of project support to the Engineering Department, appraisal of project proposal and provision of programme scenario, investment plan and Technical Assistance for long term Netherlands' involvement in AP rural water supply sector.
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<i>Date:</i>	February 1987 – May 1996
<i>Location:</i>	Rotterdam (The Netherlands) India and Indonesia (short term assignments) Indonesia (long-term assignment)
<i>Company:</i>	IWACO BV, Consultants for Water and Environment
<i>Position:</i>	Consulting Engineer / Resident Sanitary Engineer / Mission Leader
<i>Description:</i>	<ul style="list-style-type: none"> Support Missions for Netherlands Assisted projects in Andhra Pradesh (India). In charge of: review of projects under construction in the field of water supply and sanitation, support to executing agencies on the planning, design and preparation of a plan of operation for the implementation of an integrated water supply programme for 226 villages affected by scarcity and fluoride in Nalgonda district, support to executing agencies on (master) planning, feasibility studies and execution of water supply and sanitation projects. Urban Sanitation Strategy and Project Development Project in Medan Metropolitan Area (Indonesia). This Asian Development Bank funded programs aims at developing a comprehensive long-term plan to solve the urban sanitation problems. In charge of development study methodology, identification of suitable sanitation technologies for different areas. Integrated Kabupaten and Kotamadya Infrastructure Development Project (IKIDP) in Aceh, Sumatra. Medium-term infrastructure planning for medium and small towns. In charge of development of a project approach on the transfer of knowledge to the lower level governmental agencies, recommendations on appropriate standards and levels of services for water supply and sanitation. Integrated Urban Infrastructure Development Programme of the Metropolitan Yogyakarta (YUDP) (Indonesia). The project focuses on water resources management, master planning, feasibility studies and preparation of the implementation for integrated urban infrastructure development. In charge of: inventory of existing water supply, sanitation and solid waste disposal facilities, assessment of real demands for infrastructure in co-operation with the local NGO Yayasan Dian Desa, preparation of master plans for water supply, sanitation, solid waste disposal and storm water drainage, preparation of feasibility studies for a waste water treatment plant and a solid waste disposal site, co-ordination of the activities of the field team, on-the-job training, enhancement of organisation, staffing and operational activities of the local government, development of training programmes, preparation of planning and implementation documents in co-operation with the local government, preparation of planning and implementation documents for funding agencies Swiss Government, JICA and ADB. Small Towns Sanitation (STS) Project West Java (Indonesia). This project covers 18 towns in West Java in 8 districts with a total population of 1.3 million. The project is implementing the Integrated

	<p>Urban Infrastructure Development Programme (UIDP) approach. It aims at integration of infrastructure, decentralisation of responsibilities and strengthening of executing lower level governmental agencies. In charge of: co-ordination of the activities of five field teams, assisting the local government, technical support to the activities in the implementation of community led sanitation and solid waste disposal improvements, participation in further development of an approach concerning improvements in sanitary infrastructure, development of appropriate technological alternatives concerning solid waste management, drainage and human waste management, transfer of knowledge and training of governmental agencies, technical assistance to executing governmental agencies.</p> <ul style="list-style-type: none"> • Rural Water Supply and Sanitation Project West Java (OTA-33). This project of the Ministry of Health aims at improving the sanitary infrastructure of the rural population in 8 districts through improved planning mechanisms, technological development, stronger community involvement, upgrading existing infrastructure and implementation of improved facilities. In charge of: preparation of manuals on solid waste and human waste management, participation in water supply and sanitation sector planning in the districts Indramayu and Karawang, design, supervision and organisation of demonstration sanitation facilities at schools.
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<i>Date:</i>	September 1982 – December 1986
<i>Location:</i>	Moroni (Comoro Islands) Dar es Salaam (Tanzania)
<i>Company:</i>	United Nations Centre for Human Settlements (HABITAT)
<i>Position:</i>	Public Health Engineer Ardhi Institute Dar es Salaam Civil Engineer Ministry of Public Works Comoro Islands
<i>Description:</i>	<ul style="list-style-type: none"> • The Habitat at the Comoro Islands project aims at fulfilling the future housing needs of the urban population by the establishment of a "Société Immobilière". The project designed housing schemes for 800 low cost houses and demonstrated appropriate houses in the context of the 'Year of the Homeless, 1987'. In charge of preparation of technical documents concerning the execution of infrastructure works, supervision of the construction of infrastructure works, organisation and supervision of the construction of low cost houses, supervision and training of local technical staff (8 persons), preparation of a masterplan for sanitation and solid waste disposal for the capital (30,000 capita) and major towns. • The Ardhi Institute (Dar es Salaam) serves as the major education centre for governmental technical staff. Within the Department of Public Health Engineering, responsible for: conducting lectures and seminars, development of teaching documentation, supervising diploma projects, organising and supervising studio work in public health engineering, water supply and sanitation, solid waste management, hydrology, drainage systems, unplanned settlement upgrading, urban renewal schemes and environmental pollution, design and construction of low cost sanitation demonstration facilities.

15. Others:

Study tours to water supply and sanitation projects in Kenya, Zambia, Malawi, Zimbabwe, Mozambique, Uganda and Rwanda and faecal sludge management projects in Kenya and Uganda.

16. Recent publications:

2009: Articles/ interviews on WaterPyramid Project (Indonesia) in: Aquarama (Belgium), Business News Radio (BNR), Business Trends Asia, De Betere Wereld (De Pers), Engineers Only, H2O, Milieumagazine, NWP Nieuwsbrief, Trouw, Volkskrant.

2015: International Journal of Environmental Research and Public Health ISSN 1660-4601 www.mdpi.com/journal/ijerph Article “Lactic Acid Fermentation, Urea and Lime Addition: Promising Faecal Sludge Sanitizing Methods for Emergency Sanitation”

2016: Article: Journal of Waste Management, Volume 2016 (2016), Article ID 2717304, 8 pages <http://dx.doi.org/10.1155/2016/2717304> “Off-Site Lime Stabilization as an Option to Treat Pit Latrine Faecal Sludge for Emergency and Existing On-Site Sanitation Systems”

2017: Presentations at FSM4, Chennai on Innovations in Emergency Sanitation Sector.