

Loowatt

Flush with Happiness

Loowatt Company Overview & Introduction

September 2019



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AGENDA:

1. Sanitation Overview
2. Container Based Sanitation (CBS)
3. Loowatt
4. Madagascar Project
5. Laguna Water Project
6. Key Messages & Questions

Loowatt

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A global challenge

Most people today will never
have access to a sewered toilet



35% of people today have access to sewers, and that number is declining¹



80% of sewage today is dumped without treatment²



Disease from untreated human waste causes over 4,500 deaths a day³



Water scarcity already affects nearly half the human population, and is increasing⁴

1 <http://www.un.org/sustainabledevelopment/water-and-sanitation/>

2 <http://www.unesco.org/new/en/natural-sciences/environment/water/wwap/wwdr/>

3 <https://unesdoc.unesco.org/ark:/48223/pf0000261424>

4 <http://blogs.worldbank.org/water/addressing-urban-sanitation-crisis-time-radical-shift>

The Sanitation Need Is Growing

SDG sanitation target:

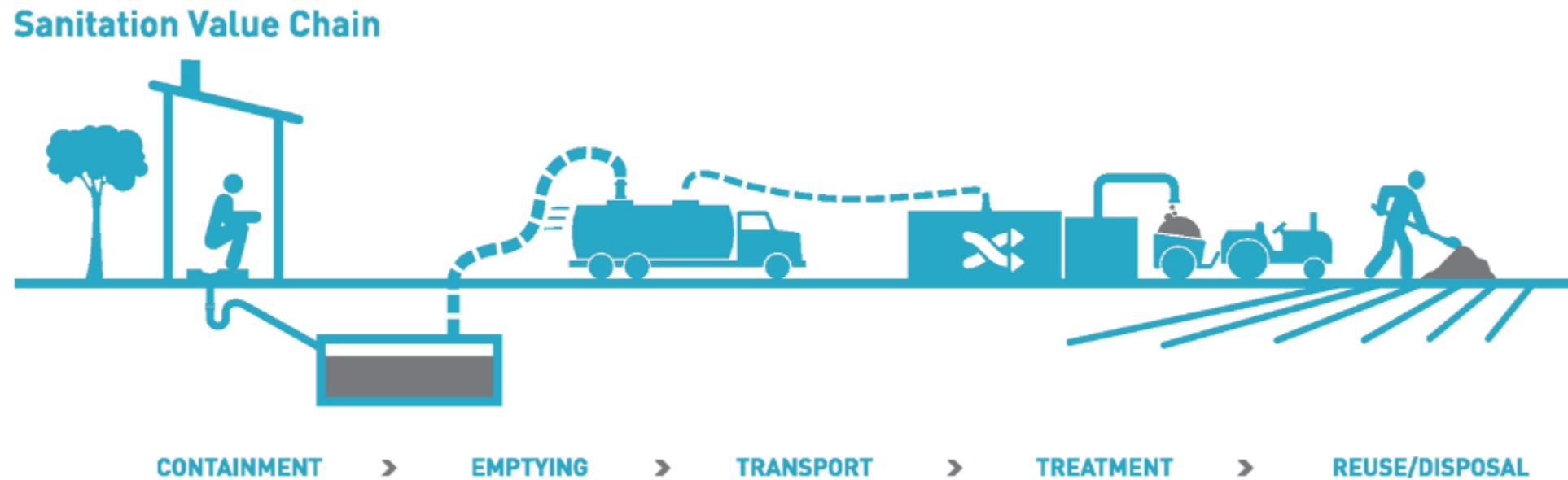
- Everyone should have 'safely-managed' sanitation facilities by 2030
- Eliminate open defecation by 2030

The scale of this target is unprecedentedly huge:

- **~5.6 billion people** will require safely managed sanitation by 2030 (~1 million per day)
- **~1.3 billion people** will need to switch from open to fixed-defecation in a sanitation facility by 2030 (240,000 per day).



The sanitation value chain



How Has Sanitation Been Provided?

On-site

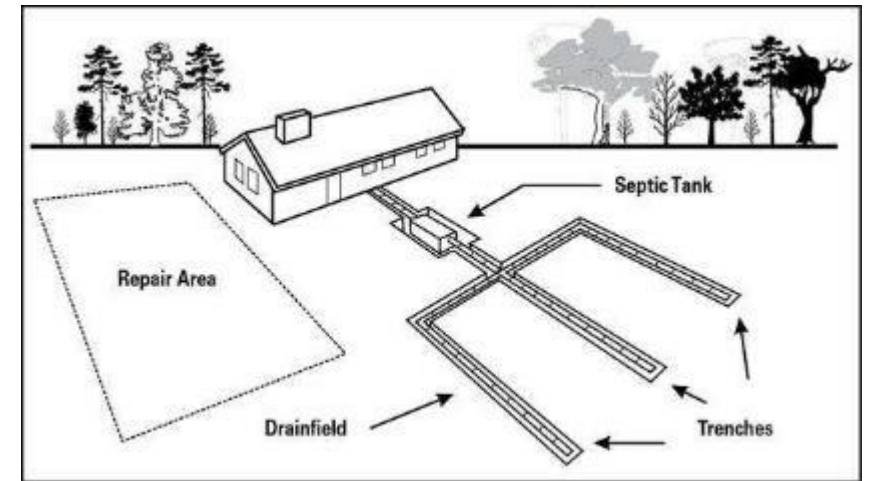
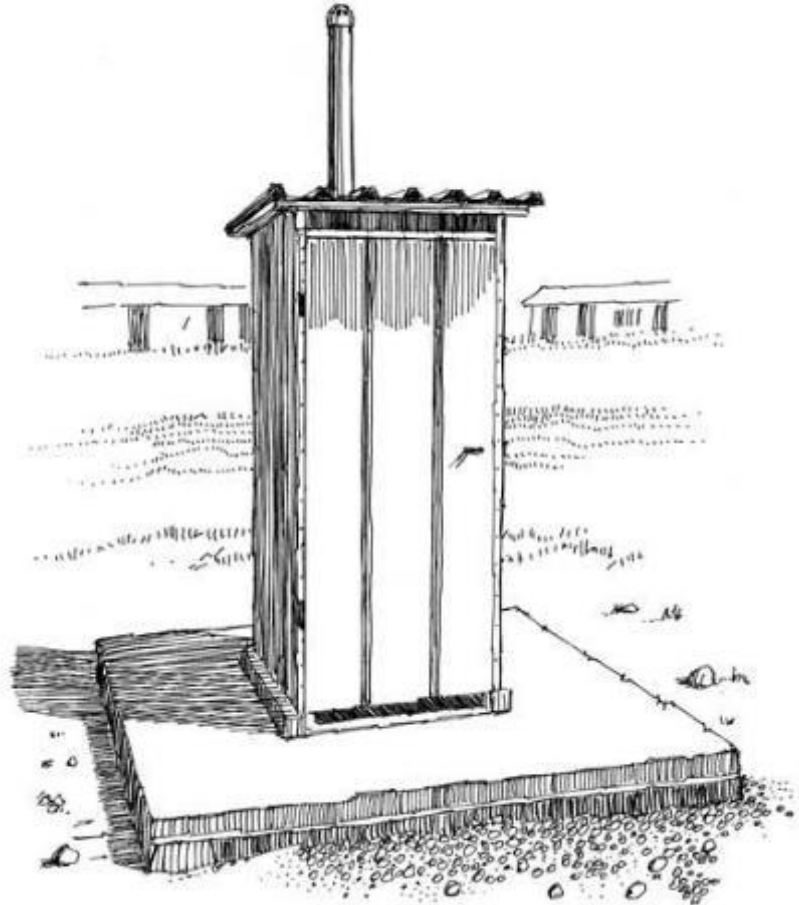
- Pit Latrines
- Septic Tanks

Sewers

- Flush toilets

New Innovative solutions:

- The reinvented toilet
- Container based sanitation





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What is Container-Based Sanitation?



CBS consists of an end-to-end service that collects waste hygienically from waterless toilets built around sealable, removable containers.

Why Container-Based Sanitation?

01 Rapid Urbanization

02 Space limitations

**03 High water tables
and flooding**

**04 Unsafe emptying
practices**

**05 Unreliable water
access**

**06 Renters lack of invest in
infrastructure and lack of
gov. recognition**



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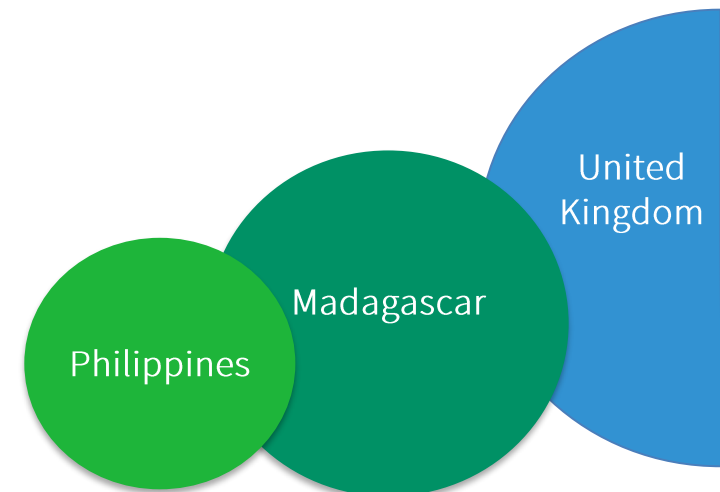
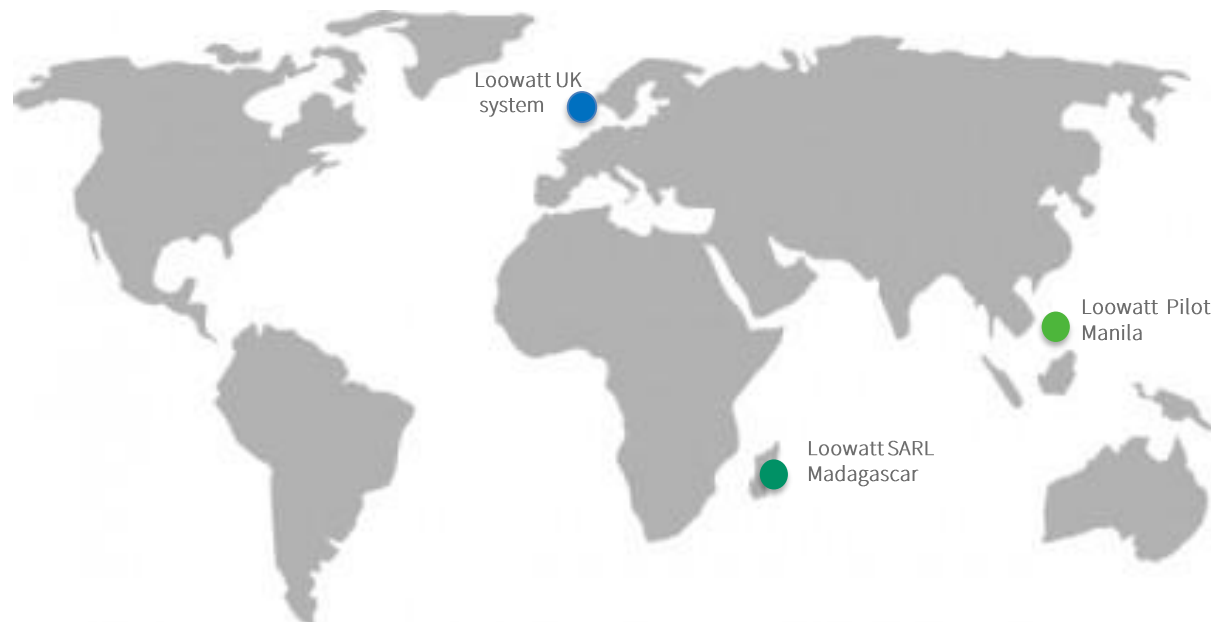
Loowatt Global Footprint

Presence in Europe, Africa & Asia

The Loowatt System creates a paradigm shift in sanitation in which waterless toilets generate value.

The toilet is supported by simple servicing models which respond to their local contexts. Loowatt waste-to-value toilet systems are now operating commercially in the UK and Madagascar, as well as being rolled out by Laguna Water in the Philippines.

LOOWATT CURRENT OPERATIONS



Flush with happiness

Providing off-grid flush toilets and sanitation solutions for everyone, everywhere

Portable Toilets



Portable toilets serving UK customers

Non-Sewered Urban Toilets



Private home toilets in Madagascar & the Philippines

Container Based Sanitation & Loowatt



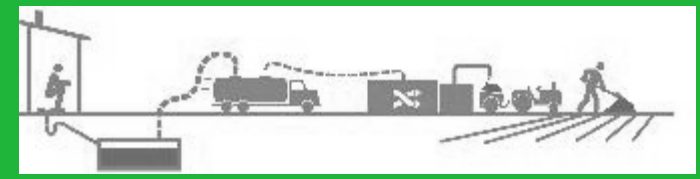
We believe **value** begins with a great toilet experience.

Waterless Flush locks in odour and disease without water or chemicals, and ensures a **clean bowl** for every use.

Waste is packaged and contained so that **servicing** is **safe, simple and quick**.



The container-based sanitation value chain



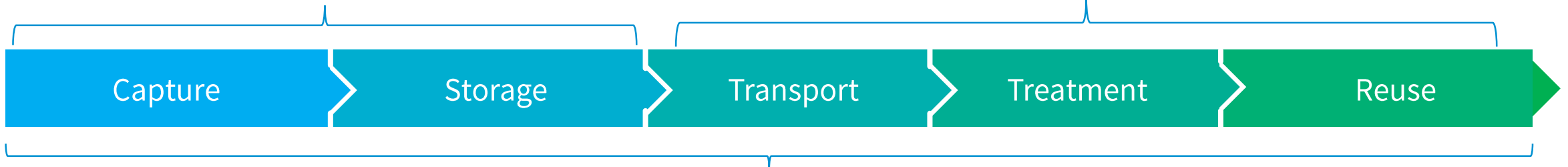
Toilets, Refills and Containers



Waste pre-processing equipment



Mobile app & web platform



Expertise and Standard Operating Procedures Across Value Chain, from Toilets to Energy-Generating Treatment



Areas of use of Loowatt Toilets *(Photo copyright Bernhard Lang)*



Tight urban environment, densely populated, with minimal access by road.
No space to put in a septic tank, or to service/empty a septic tank, due to inaccessibility for the vacuum truck.



Flood prone areas, or areas with high water table.
A septic tank would not work in these areas (risk of leakage/overflow). Vacuum trucks cannot access these houses for emptying services.



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Antananarivo, Madagascar

Population 2 million and growing:

- Madagascar world's 3rd worst for WASH
- 78% use unimproved sanitation
- Flood-prone areas, high water table
- Access and space is a challenge
- Loowatt SARL partners with SAMVA (waste utility) for access to recently developed network of decentralised anaerobic digestion facilities in city



Madagascar Household Service

Loowatt Roso Toilets in Andraisoro, Antananarivo



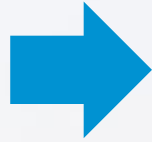
Madagascar Household Service

Deposit: \$ 15

Monthly fee: \$ 4.33



**Ro-so
Toilets**



**Household
Customers**



**Weekly
Service**



**A.D. +
Pasteurisation
Completes
SDG 6.2**

Additional Revenue:
Fertiliser Sales



ICT:
Data,
Tracking

Loowatt Madagascar: lessons learnt & next steps

- Reaching density is essential
- Increasing service efficiency: transfer stations, trial different modes of transport
- Increasing presence of treatment sites within the city and space for transfer station





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Laguna Water Pilot: Lixil vs Loowatt

In 2017-2018, Laguna Water conducted a pilot of serviced home toilets for non-sewered urban areas. As part of the pilot, they evaluated Loowatt's technology against that of Lixil.

The 29 households who participated in the trial were given the opportunity to test both toilet solutions.

A Multi-Criteria Analysis (MCA) was completed as part of the pilot to determine the winning solution



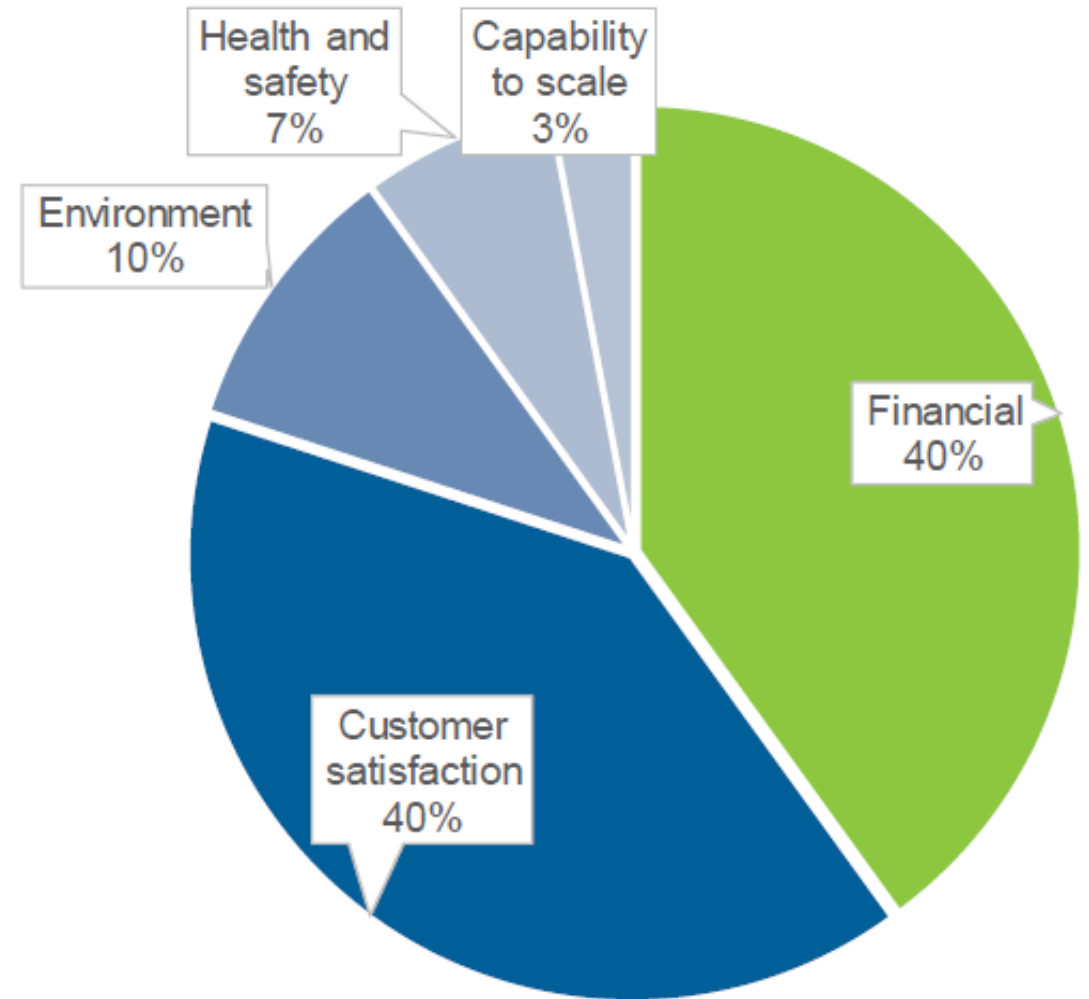
Results & Feedback

Overall, Loowatt's system is the recommended PTS with a total MCA score of 87.48% as compared to LIXIL's system with a MCA score of 54.18%.

Loowatt's system is preferred in terms of the following criteria:

- Financial,
- Environmental
- Customer satisfaction

22 of 26 households preferred Loowatt



Next steps with Laguna Water- The mini scale up



Loowatt toilet design upgrade:

- New and improved design
- Specifically calibrated to the Laguna situation
- Easier to use & smaller



Laguna mini scale up:

- 400 Household toilets
- Donor support (2/3 cover of the toilet cost)
- 1/3 toilet cost to be covered by the household.



Key points to address:

- Who should finance the CAPEX of the toilet cost? And how?
- What is the OPEX viability gap?
- What is a household willing to pay?



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Key Messages

1. Off-grid toilets don't have to be a bad experience
2. Septic tanks aren't effective everywhere, other sanitation solutions need to exist alongside traditional options
3. The investment required to achieve safely managed sanitation is so large that we risk ignoring issues of equity in decision making, leaving the urban poor further behind.
4. Reaching the urban poor will require creative financing solutions

Questions for discussion

1. How do we enable the organisations with the mandate to deliver sanitation services to reach the BOP more quickly than they would otherwise
2. How do we leverage existing investment into sanitation service delivery and provide smart subsidies to reach more people, sooner.

Thank you!