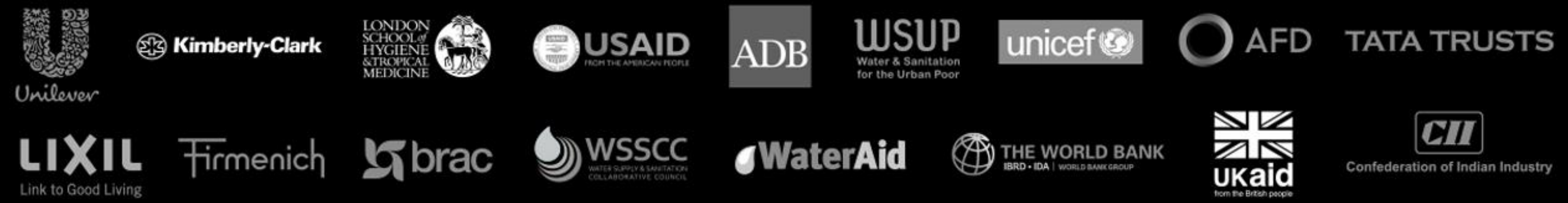


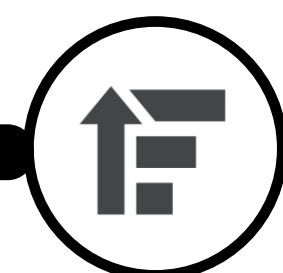
TOILET BOARD COALITION

Cheryl Hicks
Executive Director



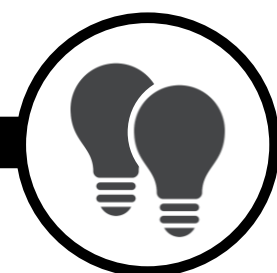
We are facilitating business to business partnerships to win!

TOILET
ACCELERATOR



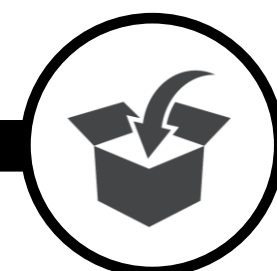
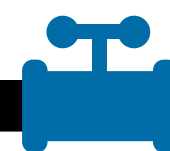
Accelerating

supporting sanitation
business needs for scale &
accessing business experts



Co-innovating

partnerships between large & small
businesses with mutual business
interest to create new value



Bundling

cross sector partnerships for access &
distribution between businesses
targeting the same customers in the BoP



2016 Cohort Results

TOILET
ACCELERATOR



Last mile distribution of sanitation via bespoke toilet design and innovative financing mechanism to achieve 100% coverage



SVADHA

Business operations efficiencies, sales & marketing expertise yield 200% increase in toilet sales

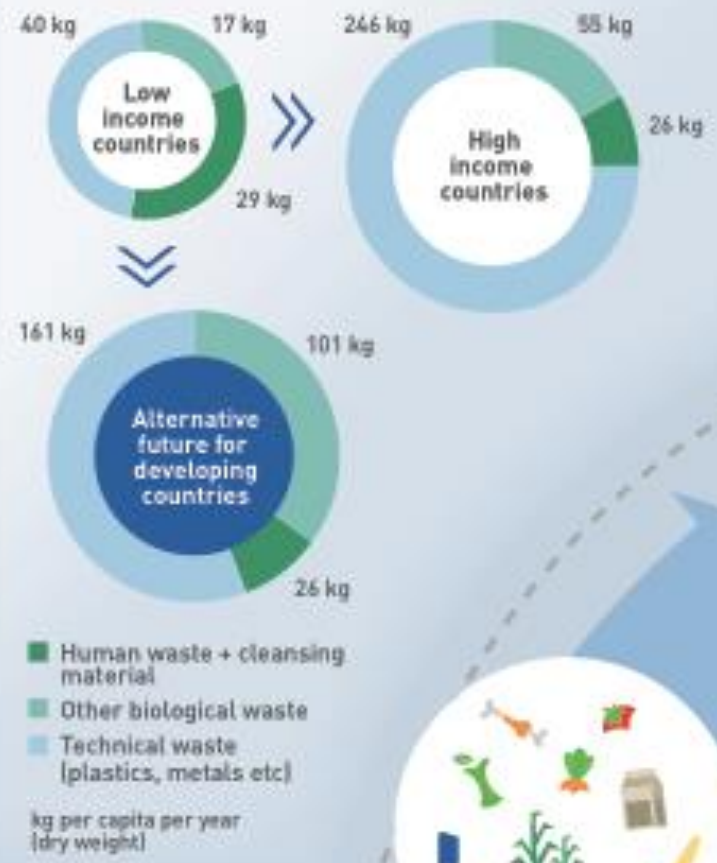


Collaboration with mobile money experts & PAYG Solar Sector yields 1st mobile money implementation in sanitation



Collaborative innovation process yields new aspirational container toilet design to address malodour, water use, and enable “no touch” cleaning & collection





Leapfrog opportunity: A holistic biocycle enables biological substitutes for technical materials (i.e. plastic and paper), reducing waste as the system and economies grow.



Collection of biological waste
 • human waste
 • food waste
 • agricultural waste
 • farm waste

SME WASTE RECOVERY PLANT IN EMERGING MARKETS

SUPPLIER: Currently small waste recovery plants in emerging markets run by innovative entrepreneurs using different technologies and producing different products from the waste



• Non-food crops: forest free fibre crops, flower crops etc
 • Food crops

PRODUCT 1

Agricultural products
Compost, organic fertilisers, nutrients such as nitrogen and phosphorus

PRODUCT 2

Water
Water recovery and purification of wastewater

• Local agricultural irrigation
 • Water intensive factory processes
 • Further treatment to produce drinking water

PRODUCT 3

Energy products
Fuel, electricity, heat

• Biogas for local factories & electricity to the grid
 • Bio diesel for transport
 • Bio Charcoal to replace wood/ coal

PRODUCT 4

Materials for innovative products

• Faecal matter for pharmaceutical (biome) regenerative health products and procedures
 • Bio-plastics

PRODUCT 5

Protein rich materials
such as oils and protein meal

• Protein oils for consumer toiletry goods and potentially cosmetics
 • Protein "meal" for pet and farm animal feed

PRODUCT 6

Health data & information
Sampling and monitoring human waste can produce valuable basic health data

• Public health: early warnings for disease outbreaks or health deficiencies
 • Private health: basic health diagnostics for individuals and basic health products/ pharmaceuticals

Reuse helps companies meet SDG Targets

SANITATION & THE CIRCULAR ECONOMY



Consumer biological waste
 • toilet waste
 • kitchen waste
 • animal waste
 • compostable packaging

Industrial biological waste
 • toilet waste,
 • food / market waste,
 • agricultural & food waste
 • farm waste
 • compostable packaging



New products from up-cycled waste

REFINER/MANUFACTURER: Produces new products from up-cycled waste to sell back to consumers and industry - thus completing the loop!

INDUSTRIAL PLANT / CROPS / TRANSPORT UP-CYCLED WASTE
PRODUCT REUSE



BUYER: Industrial plant, agriculture, transport as re-user of up-cycled waste products & raw materials

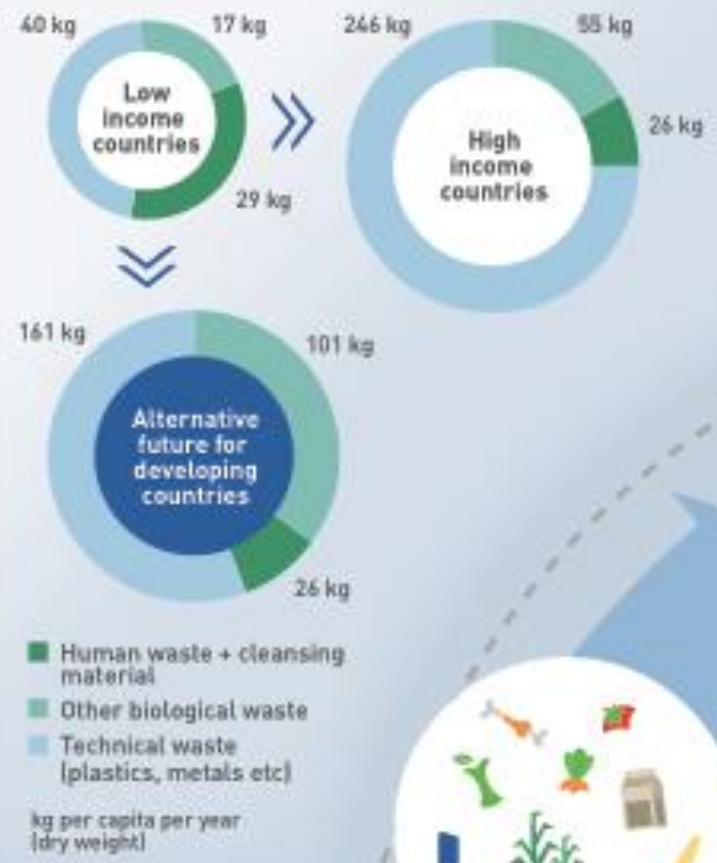


SANITATION IN THE CIRCULAR ECONOMY

Transformation to a commercially valuable, self-sustaining, biological system

A thought piece from the Toilet Board Coalition
November 2016





Leapfrog opportunity: A holistic biocycle enables biological substitutes for technical materials (i.e. plastic and paper), reducing waste as the system and economies grow.



- Collection of biological waste
- human waste
 - food waste
 - agricultural waste
 - farm waste

SME WASTE RECOVERY PLANT IN EMERGING MARKETS

SUPPLIER: Currently small waste recovery plants in emerging markets run by innovative entrepreneurs using different technologies and producing different products from the waste



SANITATION & THE CIRCULAR ECONOMY
TOILET BOARD COALITION



REFINER/MANUFACTURER: Produces new products from up-cycled waste to sell back to consumers and industry - thus completing the loop!



BUYER: Industrial plant, agriculture, transport as re-user of up-cycled waste products & raw materials

TOILET ACCELERATOR 2017





Estimating Environmental Impacts of Scaling Up Sanitation

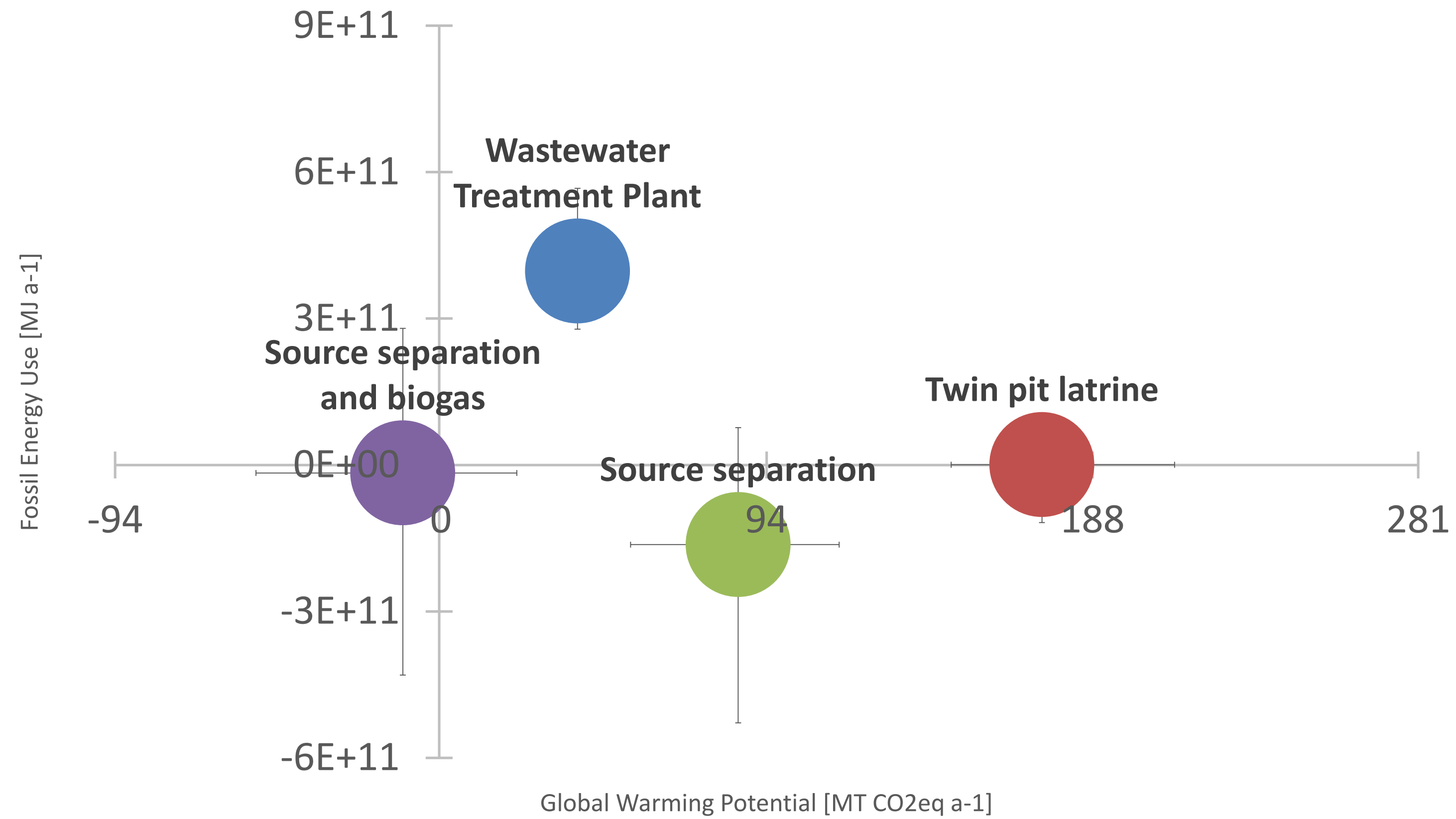
Nimish Shah

Michal Kulak, Niteen Sawant, Henry King

**Safety and Environmental Assurance Centre,
Unilever R&D**



Results – country level



Key Messages

- Technology choices in scaling up sanitation will have important environmental sustainability implications
- If all new toilets are pit latrines this can significantly increase India's annual GHG emissions
- Source separating biogas toilets can lead to net reductions of impacts
- Closing the sanitation gap with circular sanitation systems can potentially offset greenhouse gas emissions while satisfying significant portion of fertiliser & fuel requirements of India





“Toilet” will change the future!
LIXIL’s sanitation solutions

Kensuke Tomita
Managing Director, External Affairs
Senior Manager, Social Toilet Department
LIXIL Corporation

February 21, 2017

LIXIL Link to
Good Living

Global housing and building industry leader

LIXIL
Link to Good Living

\$16.8 bn
Sales

80,000
Headcount

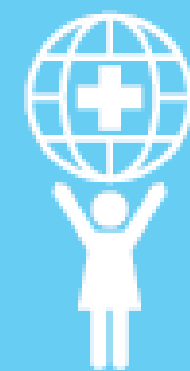


Our Corporate Responsibility Mission

By 2020, improve the livelihood of 100 million people through sanitation and hygiene solutions.

Global Sanitation & Hygiene

Promote and enable access to safe and hygienic sanitation practices, especially for women and girls, while preventing the harmful transmission of diseases for children



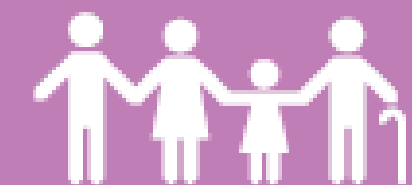
Water Conservation & Environmental Sustainability

Conserve water, energy, and other natural resources utilized in and by LIXIL products and services, including in the supply chain, production, distribution and during end use



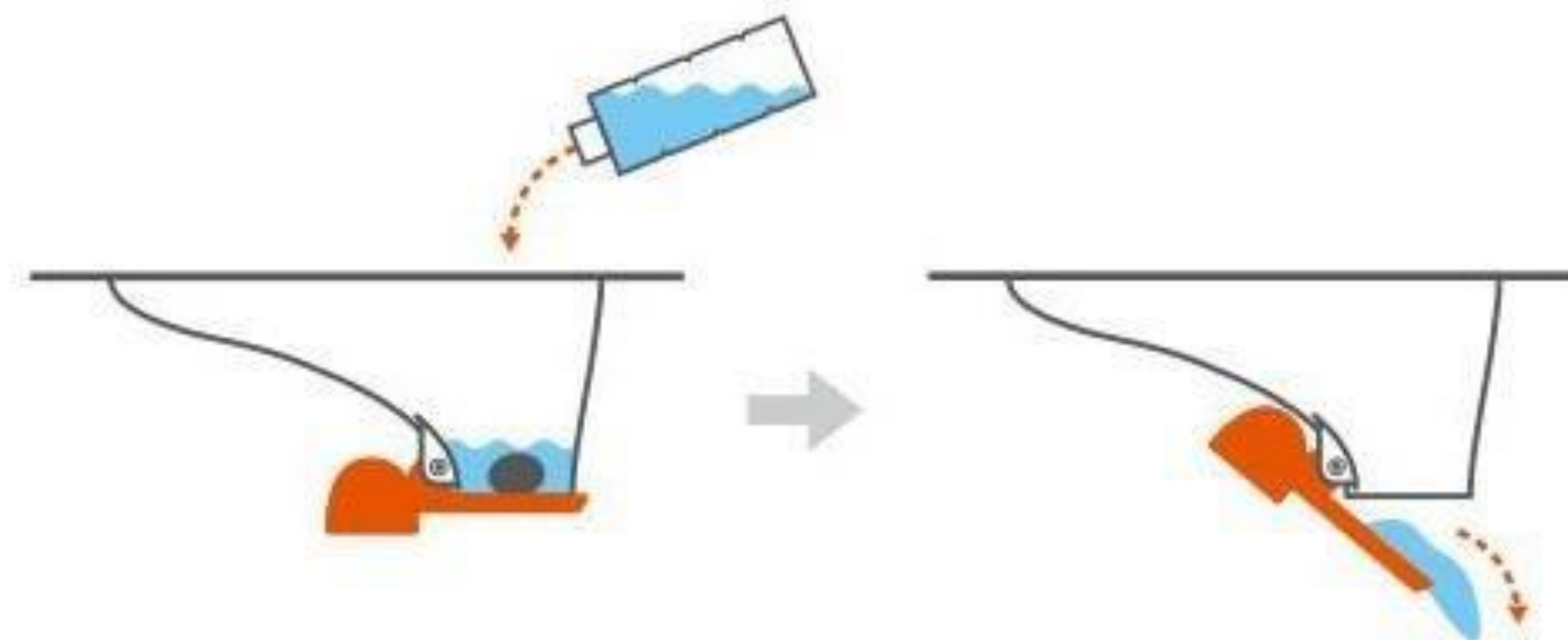
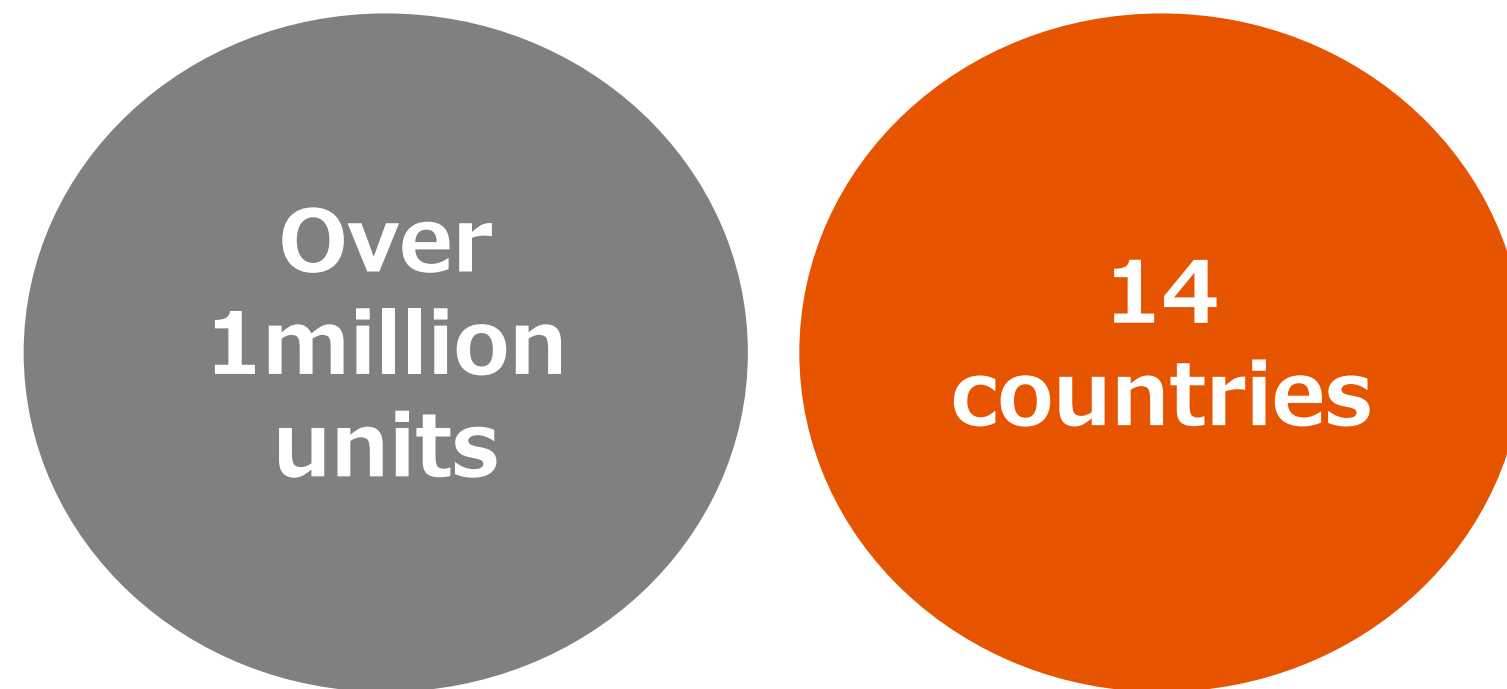
Diversity & Inclusion

- Enhance quality of life and wellbeing for the elderly and the physically disabled through LIXIL products and services
- Harness the intelligence and perspectives of our diverse workforce as an engine for growth and innovation



SaTo: Affordable sanitation solution for the developing countries

- > Over one million units have been sold to and installed mainly in Africa and Asia, contributing to reducing the need to defecate out in the open.

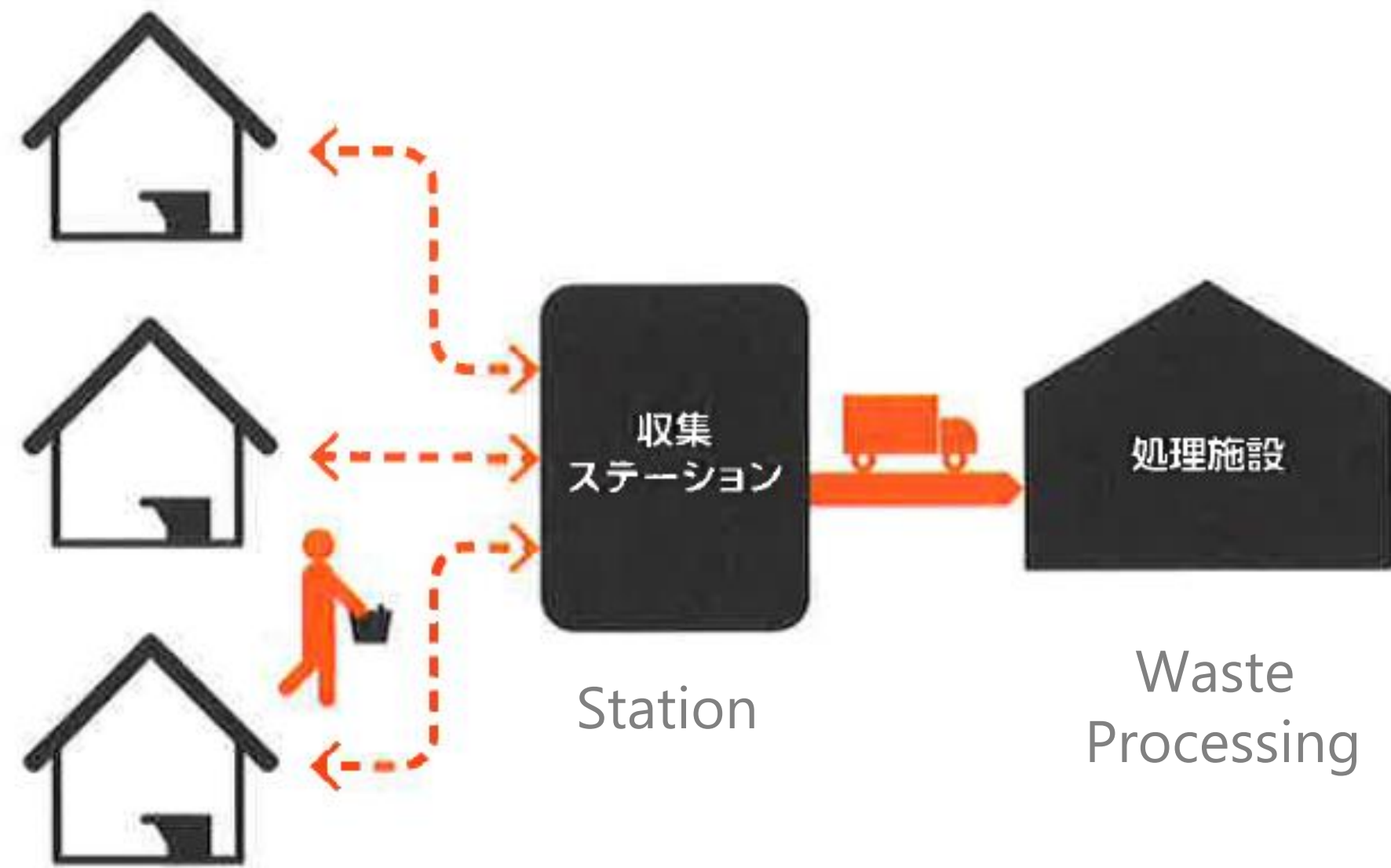


Building value chains locally
Deploying models meeting local needs



“Portable Toilet System” for urban slums

- > A radical innovation in the field of in-home sanitation
- > Collaborate with a service provider for transportation and treatment



In development

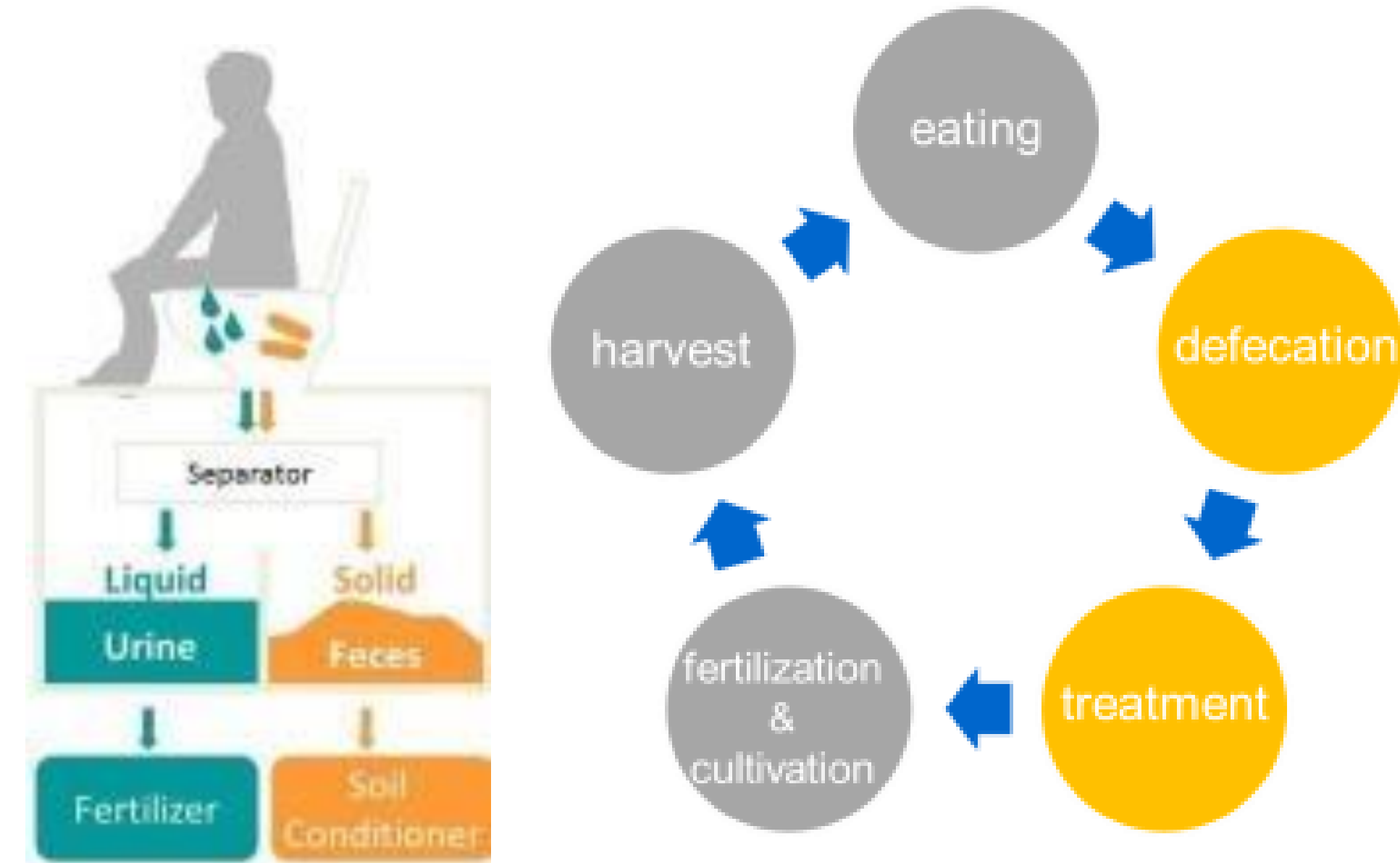


“Micro Flush Toilet” for urban and “Green Toilet System” for peri urban areas

- > Less than 1L to flush toilet for communities that are facing water scarcity or high frequency of water failure.

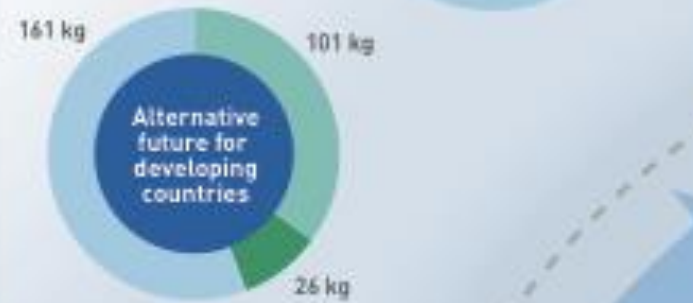


- > Environmentally friendly waste management system that converts human waste to fertilizer.





Leapfrog opportunity: A holistic biocycle enables biological substitutes for technical materials (i.e. plastic and paper), reducing waste as the system and economies grow.



■ Human waste + cleansing material
■ Other biological waste
■ Technical waste (plastics, metals etc)
kg per capita per year (dry weight)



Collection of biological waste
• human waste
• food waste
• agricultural waste
• farm waste

Reuse helps companies meet SDG Targets

Consumer biological waste
• toilet waste
• kitchen waste
• animal waste
• compostable packaging



Industrial biological waste
• toilet waste,
• food / market waste,
• agricultural & food waste
• farm waste
• compostable packaging

New products from up-cycled waste



SANITATION & THE CIRCULAR ECONOMY



SME WASTE RECOVERY PLANT IN EMERGING MARKETS

SUPPLIER:
Currently small waste recovery plants in emerging markets run by innovative entrepreneurs using different technologies and producing different products from the waste



• Non-food crops: forest free fibre crops, flower crops etc
• Food crops

PRODUCT 1
Agricultural products
Compost, organic fertilisers, nutrients such as nitrogen and phosphorus

PRODUCT 2
H₂O
Water recovery and purification of wastewater

• Local agricultural irrigation
• Water intensive factory processes
• Further treatment to produce drinking water

PRODUCT 3
Energy products
Fuel, electricity, heat

• Biogas for local factories & electricity to the grid
• Bio diesel for transport
• Bio Charcoal to replace wood/ coal

PRODUCT 4
Materials for innovative products

• Faecal matter for pharmaceutical (biome) regenerative health products and procedures
• Bio-plastics

PRODUCT 5
Protein rich materials
such as oils and protein meal

• Protein oils for consumer toiletry goods and potentially cosmetics
• Protein "meal" for pet and farm animal feed

PRODUCT 6
Health data & information
Sampling and monitoring human waste can produce valuable basic health data

• Public health: early warnings for disease outbreaks or health deficiencies
• Private health: basic health diagnostics for individuals and basic health products/ pharmaceuticals

REFINER/MANUFACTURER:
Produces new products from up-cycled waste to sell back to consumers and industry - thus completing the loop!

INDUSTRIAL PLANT / CROPS / TRANSPORT UP-CYCLED WASTE
PRODUCT REUSE

BUYER: Industrial plant, agriculture, transport as re-user of up-cycled waste products & raw materials

TOILET BOARD COALITION

SANITATION IN THE CIRCULAR ECONOMY

Transformation to a commercially valuable, self-sustaining, biological system

A thought piece from the Toilet Board Coalition
November 2016