2012 Pilot Project in Madagascar
Early Results
What Loowatt Do

Integrated Approach

Toilet Technology
Waterless / odourless / aspirational / affordable

Modeling
Economic / cultural / market research

Value Generation
Smart FSM choices / FSM research / Maximising commodity value

Also…. marketing / branding / communications
Madagascar Pilot Project Objectives

- Understand local culture, preferences, and need
- Feedback on the Loowatt toilet, system, and human waste derived commodity products
- Validate and modify financial model
- Measure the value potential commodities
Pilot Location
Energy Unit Model

Users
- Biodegradable Liner
- Feces and Urine
- Organic Waste
- Toilet Paper

Users connect to:
- Biogas
  - Fertiliser
  - Compost Factory
    - Vermicomposting
    - Pasteurisation
    - Thermophilic Composting

Biogas connects to:
- Energy Unit
  - Toilet
  - Digester
  - Gas Storage

Energy Unit connects to:
- Digestate
- Dry Organic Matter

Loowatt
Constructing the Toilet
Constructing the Digester
The Facilities – Energy Unit
The Facilities – Compost Factory
Surveying Culture and Economics

- Households

  Background data:
  - Socio-economic
  - Sanitation status quo
  - Energy and technology use

  Focused questions:
  - Response to human-waste-derived products
  - Sanitation aspirations and desires
Surveying Culture and Economics

- Community waste collectors:
  
  Organic waste availability
  
  - Salaries of collectors
  - Composition of collected waste
  - Ability and desire to sort waste
  - Time estimates for sorting

Loowatt
Surveying Culture and Economics

- Farmers

  *Farm statistics*
  - Size
  - Crop type
  - Location

  *Fertiliser usage and demand*
  - Preferences
  - Suggested prices
  - Response to Loowatt fertiliser

Loowatt
Key Findings

Toilet Preference:

- Sit: 65%
- Squat: 5%
- Undecided: 30%
Key Findings

Response to Human-waste-derived products:

**Biogas**
- Cooking: 53%
- Heating water: 60%
- Electricity: 85%

**Fertilizer**
- Vegetables: 50%
- Fruit trees: 68%
- Flowers: 93%
Key Findings

Commodity product values:

- Toilet use (poo): US 4.4 cents
- Toilet use (pee): US 2.2 cents
- Mobile charges: US 9.1 cents
- Hot water (10 litres): US 5.5 cents
- Fertiliser: US 83 cents / kg
Implications for Scaling

- Loowatt toilet aligned with cultural aspirations
- Response to HWD products very promising
- Price points and demand support economic case
With Thanks To...

Bill & Melinda Gates Foundation

WSUP Water & Sanitation for the Urban Poor

innovationrca

USAID

Loowatt