



sustainable  
sanitation  
design



Karsten Gjefle

# **Sustainable Sanitation Design (SuSan Design) is a business minded foundation. Our mission is to:**

- **Develop and deliver innovative service concepts and products to form a sustainable sanitation value chain assuring schools, high density cities and refugee camps with quality sanitation systems.**
- **Create incentives and turnover by enabling return of the nutrients from human excreta as safe agricultural inputs for farmers and flower exporters**



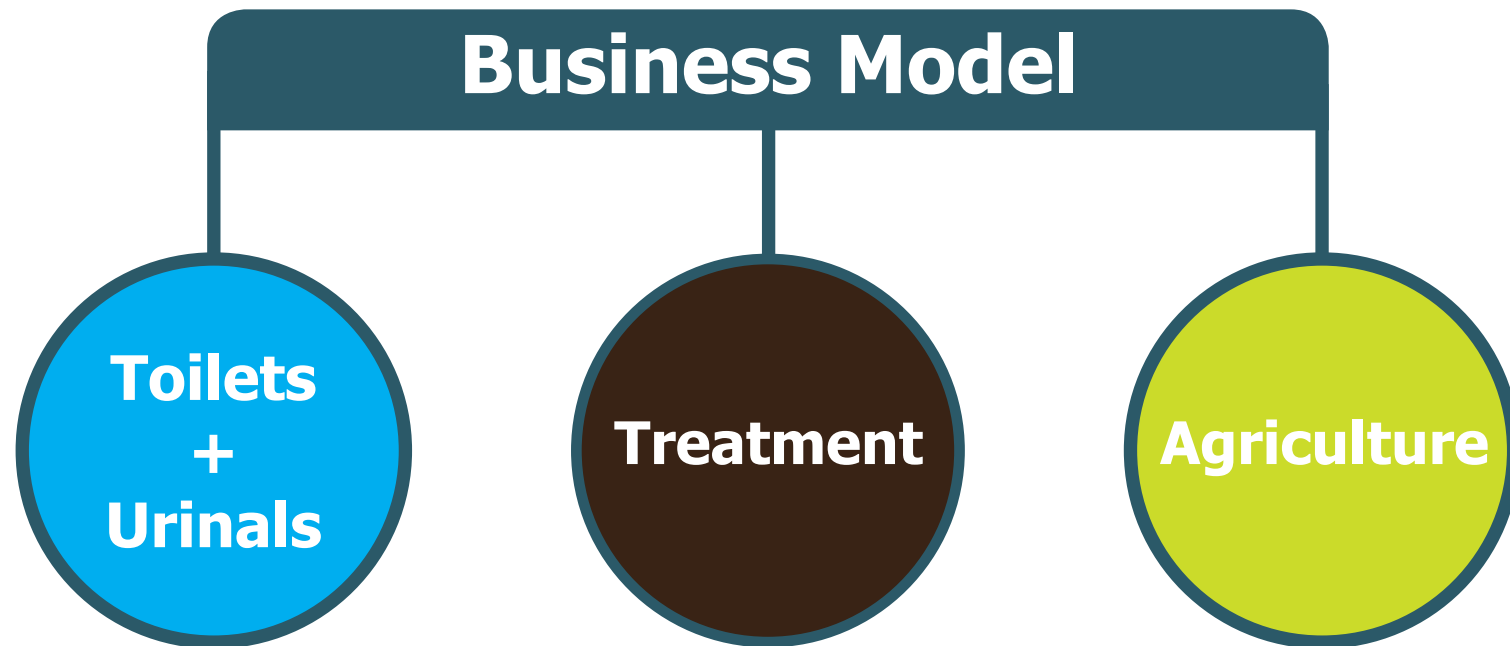
# What have we done?

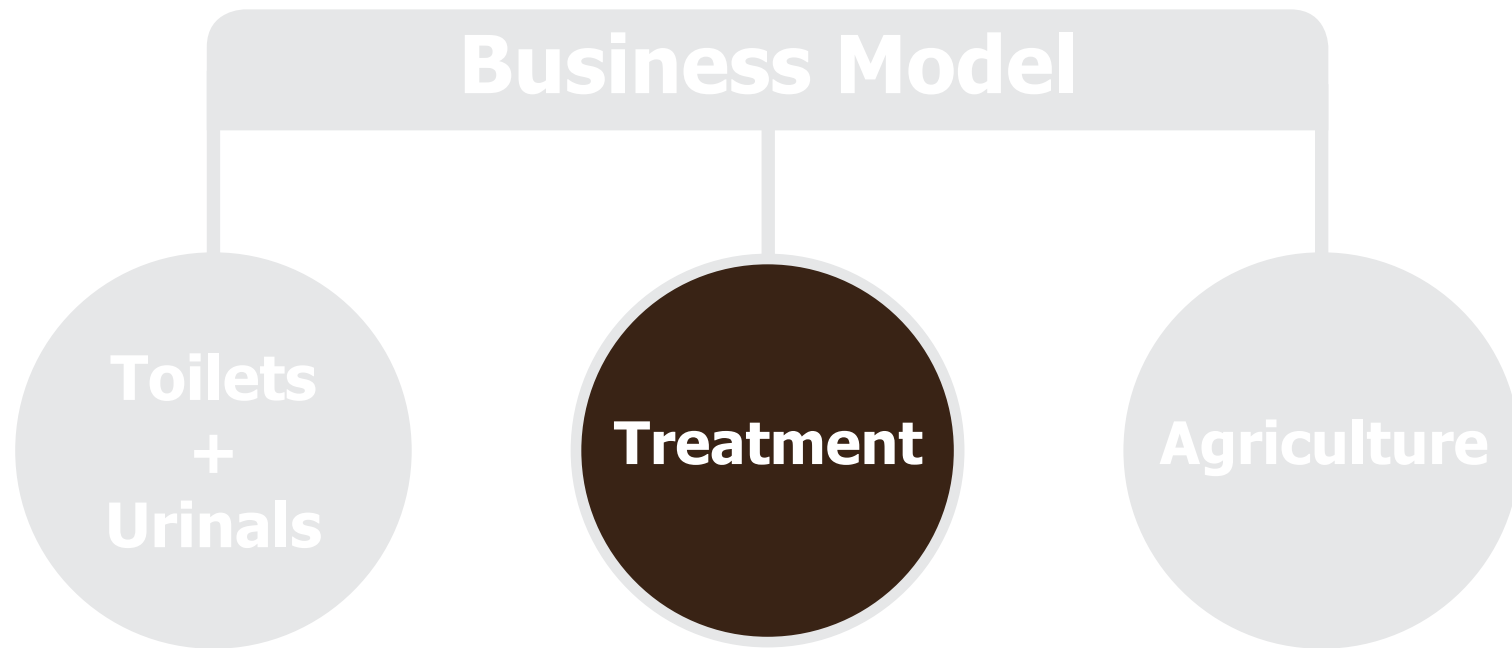
- ✓ **Established network**
- ✓ **Tested and validated technological platform with funding from BMGF**
- ✓ **Designed affordable low tech off-grid upcycling of human excreta from pollution to value creation**
- ✓ **Tested end agri-product for impact in field**
- ✓ **Developed and tested unisex urinal**
- ✓ **Mapped urine market in Uganda GIZ**
- ✓ **Developed scheme for urban public sanitation facilities**
- ✓ **Scheme for incentive driven holistic user centered value chain development**
- ✓ **Published Sanitation - Engine of Economic Growth**

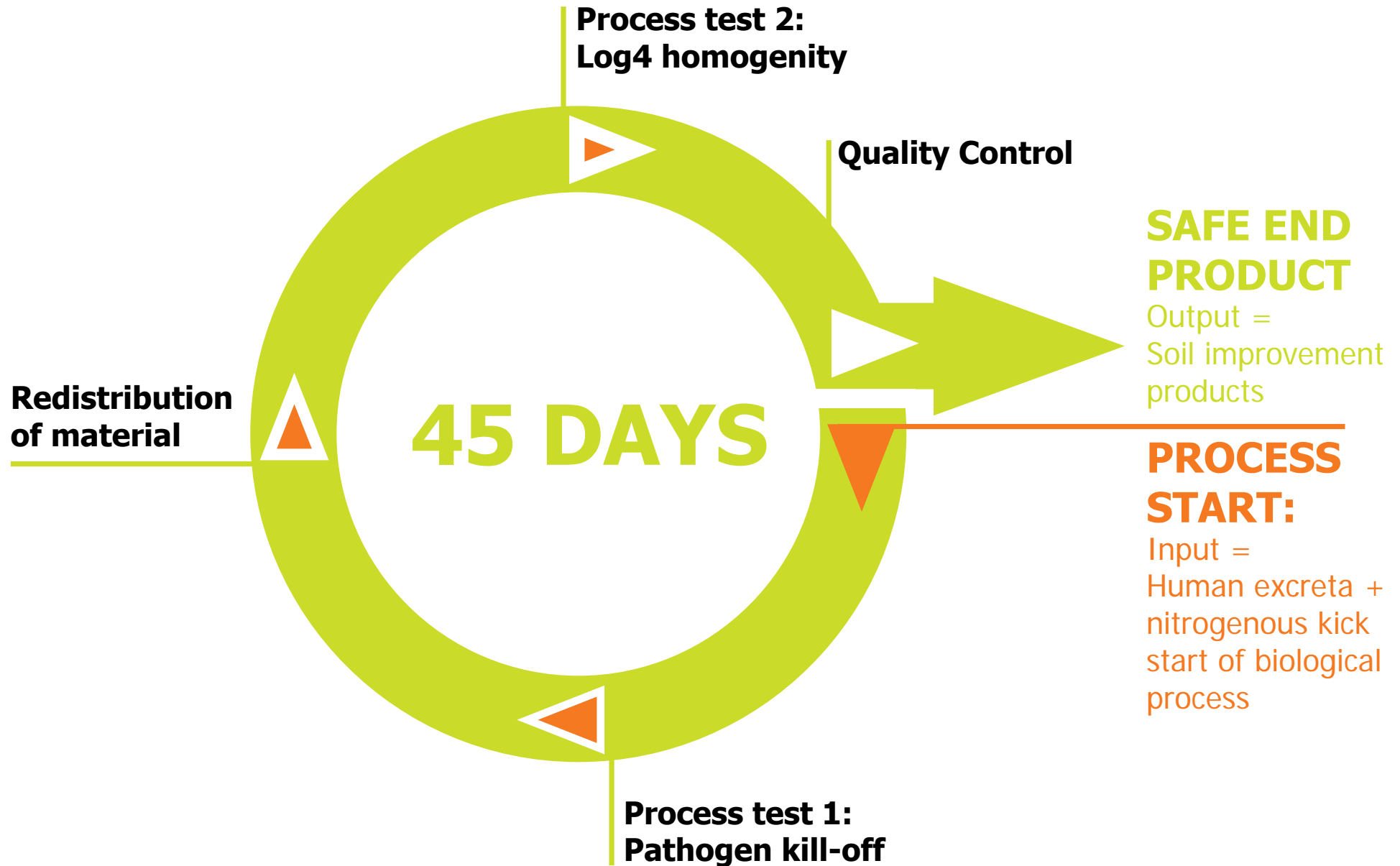
# Our Network

- **SSWARS - Sustainable Sanitation and Water Renewal Systems**
- **Swedish University of Agricultural Sciences**
- **SuSanA – Sustainable Sanitation Alliance**
- **Bill & Melinda Gates Foundation**
- **Makerere University**
- **GIZ**







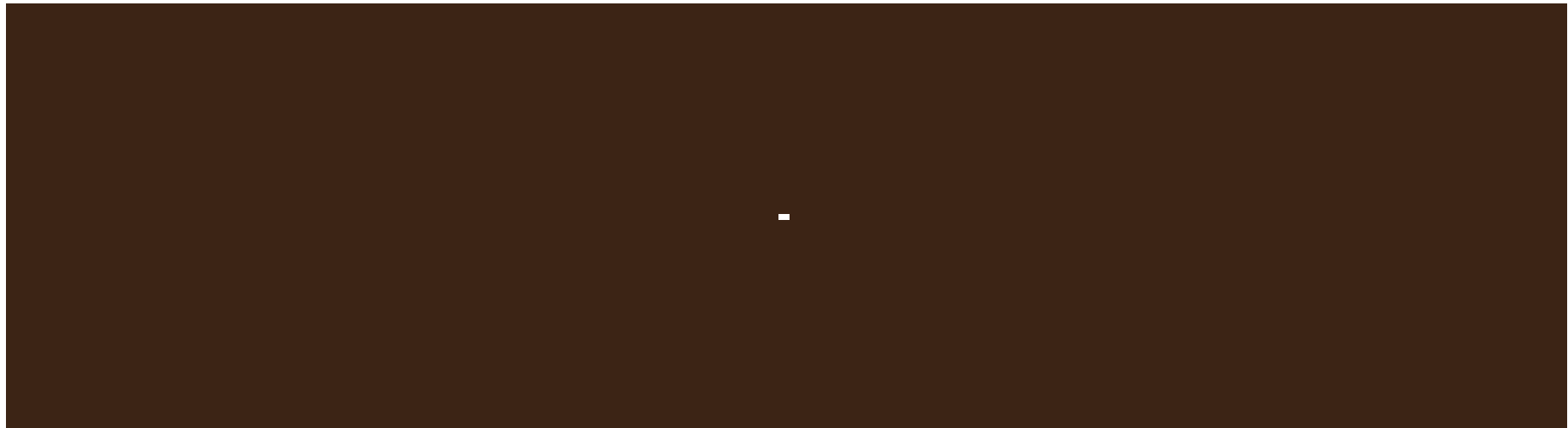






**What about safety?**

**Pathogen Log<sub>4</sub> reduction  
(99,99%) in 45 days**



# Treatment Efficiency

The treatment robustness from our treatment unit in Uganda has been verified by SLU and NARO in separate testing on pathogen and heavy metal levels.

For more details on the science: Please note presentation today 14.25

Swedish University of Agricultural Sciences  
Björn Vinnerås - Jørgen Fidjeland

Sanitation of faecal sludge by ammonia



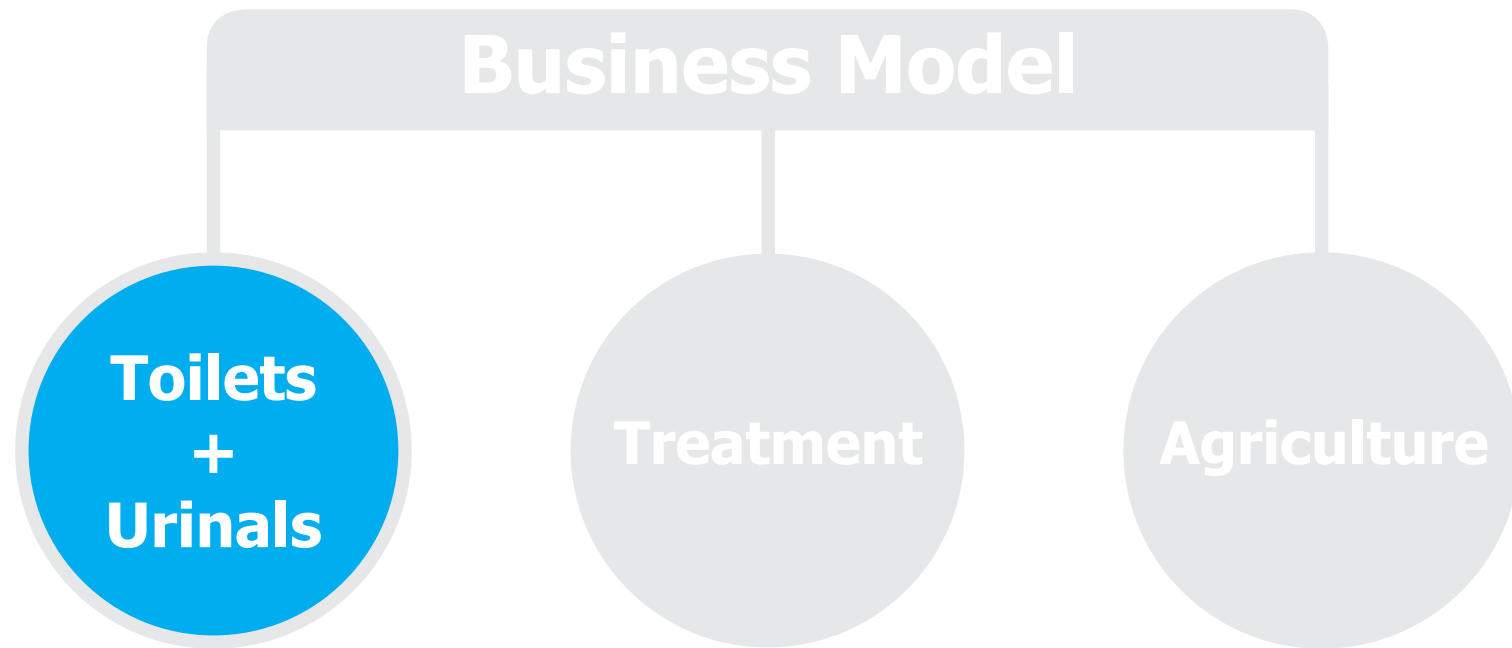




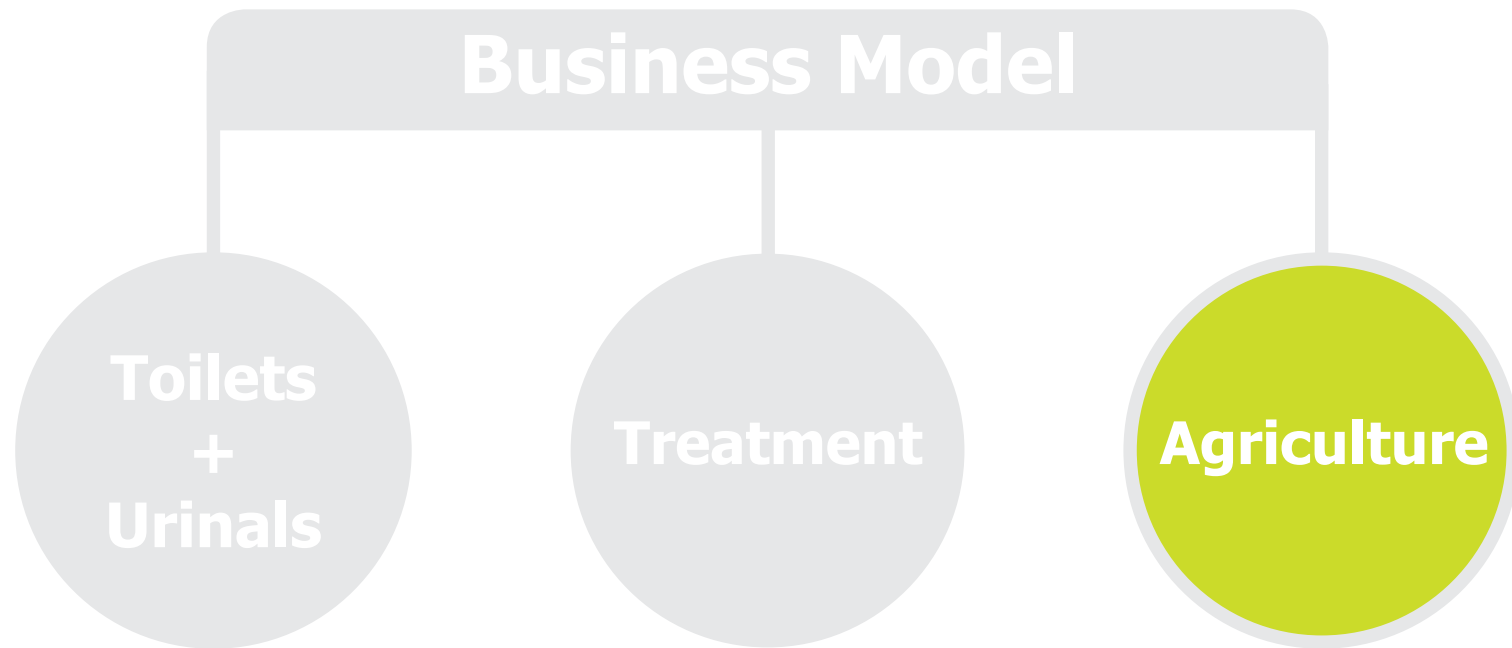














# What about acceptance?

- **Forestry**
- **Flower production**
- **Fodder production**
- **Coffee production**
- **Tea production**
- **Cocoa production**
- **Production of tree nuts (e.g. Cashew-, Macadamia-, Coconut)**
- **Agri production of “remote growing” fruits (e.g. Banana, Jackfruit)**
- **Vast future potential: Algae for fuel production**

# **SuSan Design value chain scale up: From home to farm**

- **Test our concept for rational Above Ground UDDT's (Urine Diverting Dry Toilets)**
- **Build sanitation facilities in peri-urban schools with collaboration with local farmers and cooperatives**
- **Build sanitation facilities in refugee camps with local utilization of fertilizers**
- **Build public sanitation facilities in urban slums with logistic chain to farmers**
- **Scale up of treatment unit (from 2 000 to 100 000 daily users)**
- **Develop agriculture application tools / services**
- **Develop full value chain from home to farm within a franchise structure pulling human excreta out of densely populated areas**



*Sanitation for prosperity!*



*2.6 billion people are waiting.  
Does anybody want to scale up with us?*





*Thank you very much for your attention!*

**[www.susan-design.org](http://www.susan-design.org)**