Globally

1 billion people without potable water
1 billion people malnutrition

BUT 2.6 billion people lack basic sanitation

The MDGs have to be tackled in an integrated way
All these practices generate environmental degradation, & health risks, which highlights the relevance of the “closed nutrient loop” Ecosan approach.
Closed-loop household-centered approach

- Rainwater collection
- Filtration
- Home
- Nourishment
  - Dry Toilet
  - Urine / Faeces
- Domestic use of water
  - Organic Residues
- Water savings
  - Greywater filters
  - Water reuse
  - Irrigation
- Urban agriculture
- Nutrient recycling and Water savings
- Domestic use of water
- Water savings
Urine diverting Dry Toilet

- Urine container
- Male urinal
- Dehydration mix
- Water sprayer
- Urine diverter
- Dry feces container
Earth Composting Toilets

Fossa Alterna

Use of composted material for agriculture

Arborloo

Movable light superstructure. Planting a tree in full pit.
BENEFITS: Human urine and faeces can be integrated into different practices of ecological UA, thus reducing production costs, providing healthy edibles, and improving soil fertility.
• Strengthening of self-building practices, sense of ownership.
• Affordable, aesthetically pleasing and culturally acceptable.
Household-centered ecological sanitation

System appropriation by the 30 families

Workshops based on participatory methodology
- Family training in ecosan-related issues
- Training in system O&M
- Training in closing the nutrient loop
Household-centered ecological sanitation

- Monitoring of pathogen presence in 5 dehydrating chambers
- Design of a manual for the safe handling and use of feces

Training of 8 masons

Training of 5 young community members in monitoring system O&M as well as closing the nutrient loop
Household-centered ecological sanitation

- Neighbors’ recovery of a sense of trust by working together
- Recovery of a sense of trust towards external support groups
Lessons learned

Sanitation blindness - Sanitation deserves the same status on the national agenda as water. *

Talking toilets - Public awareness, communication and a demand responsive approach are important aspects for starting the discussion.

Holistic approach - It will take several steps for a paradigm shift in the sanitation sector towards resource driven sanitation systems.

Ecosan drivers - Change the perception why people want, and society needs good sanitation.

Sanitation ladder - Water is needed for good hygiene, but not necessarily for good sanitation.

Household centered, closed-loop approach - Strive to make material cycles as short as possible.

Innovate and demonstrate - New approaches & technologies need to be demonstrated now.
THE ROAD AHEAD

• Design and implement regional, national & local policies
• Evolve a functional regulatory & institutional structures
• Support multidisciplinary research & development projects
• Support innovative alternative sanitation pilot programs
• Divert funding
GRACIAS