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Reuse.  
Reduce.  
Recycle.

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- Uganda: a short country profile
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# Uganda: a short country profile

- Relatively small country, about the size of UK
- Population of 24 million
- Uganda is the 23<sup>rd</sup> poorest country in the world
- Infant mortality rate: 81 per 1.000 live births
- Life expectancy: 42 years
- Total fertility rate/per woman: 7,1 children



Source: UNDP, 2002

# Uganda: a short country profile

- Population using adequate sanitation facilities: 48%
- Population using improved water sources: 50%



Source: DWD, 2002

# Kisoro District: the project area

- Located in south-western Uganda
- One of the most densely populated areas in Uganda
- Located in a mountainous region (average altitude: 1981 m a.s.l.)
- The economy is one of the least developed in the country, basing on subsistence agriculture



# Kisoro Town's EcoSan Programme

Starting situation:

- Fast growing town with ~13.000 inhabitants
- Complex hydro-geological conditions
- Absence of surface water
- The town is located in the catchment area of Chuho spring
- Rocky volcanic ground





# Kisoro Town's EcoSan Programme

Main purpose:

To promote types of toilets for dry sanitation in order to minimise possible contamination of ground water sources

over 250 units have been built:

1999: starting with an information campaign

140 compost toilets on household level

2000: 107 dehydration toilets on household level

4 public units

3 on institutional level

# Method of field work

- Field study: August - October 2001
- Research Team:
  - 2 Ugandan students (Makerere University, Kampala)
  - 1 Austrian student (BOKU, Vienna)
- Research Tools:
  - RRA/PRA
  - semi-structured questionnaire
  - checklist
  - qualitative interviews





# Evaluation of field findings

2 different questionnaires for 2 groups of respondents:

- **who use (48)**
- **who do not have or have but do not use (8)**

composting or dehydration toilets



# 1. General results

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- Nearly 90% used pit latrines before

## Advantages:

- prevents from bad smell and flies
- easier to clean
- Permanent/better structure
- sanitised products can be reused

## Problems/suggestions:

- size of the substructure
- owners of public facilities: improper use of various guests (lack of information)
- blockage of the urine-diverting pipe

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## 2. Potential of reuse



Is there a difference between  
public and household units?



Have agricultural activities  
(gardens and fields) an influence?

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## Household EcoSan units:

	with gardens	without gardens
reuse as manure	8	
hire somebody/ depending on the price	4	1
bury	1	
do not know yet/no idea	6	2
KITOWASO	6	

Table 1: Reuse of sanitised excrements - household units

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## Public EcoSan units:

	with gardens	without gardens
reuse as manure	2	
hire somebody/ depending on the price	4	4
bury		
do not know yet/no idea		4
KITOWASO	1	5

Table 2: Reuse of sanitised excrements - public units

# Results & conclusions

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- The users of private facilities are more interested in a proper use and in recycling the sanitised faeces.
- The interest in reusing depends on agricultural activities.
- The possibility to hire somebody to remove the products is required in any case (especially owners of public units)
- ➔ the charged rates are important.
- In view of the high amount of “do not know yet/no idea” or “KITOWASO” answers, a further information campaign is still necessary.



# Possible recycling strategies

Based on:

- the users perceptions and demands
- local conditions
- decentralised approach

Valid for sanitised faeces (composted urine + faeces) and omits separated urine. The separated liquid from dehydration units, flow via a pipe directly into the soil. The concept of reusing urine has to be kept in mind for the future.

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1. The owners of dehydration or composting units are responsible for reusing the products. How to handle the material is everyone's own decision.
  2. Reuse of the material is the responsibility of the Town Council. A public company has to collect the sanitised products, has to guarantee a sufficient secondary treatment and has to recycle the material.
  3. Emptying the chambers becomes a private business, which should be self-sustaining.
  4. Farmers, who are interested in reusing sanitised human faeces as manure, are collecting the material from the units.
  5. The owners of a toilet are selling the products to farmers.

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The 5 strategies are based on the “Household-centre approach for environmental sanitation” and the Bellagio-Principles:

- People at the centre stakeholder involvement
- Closing cycles decentralised solutions

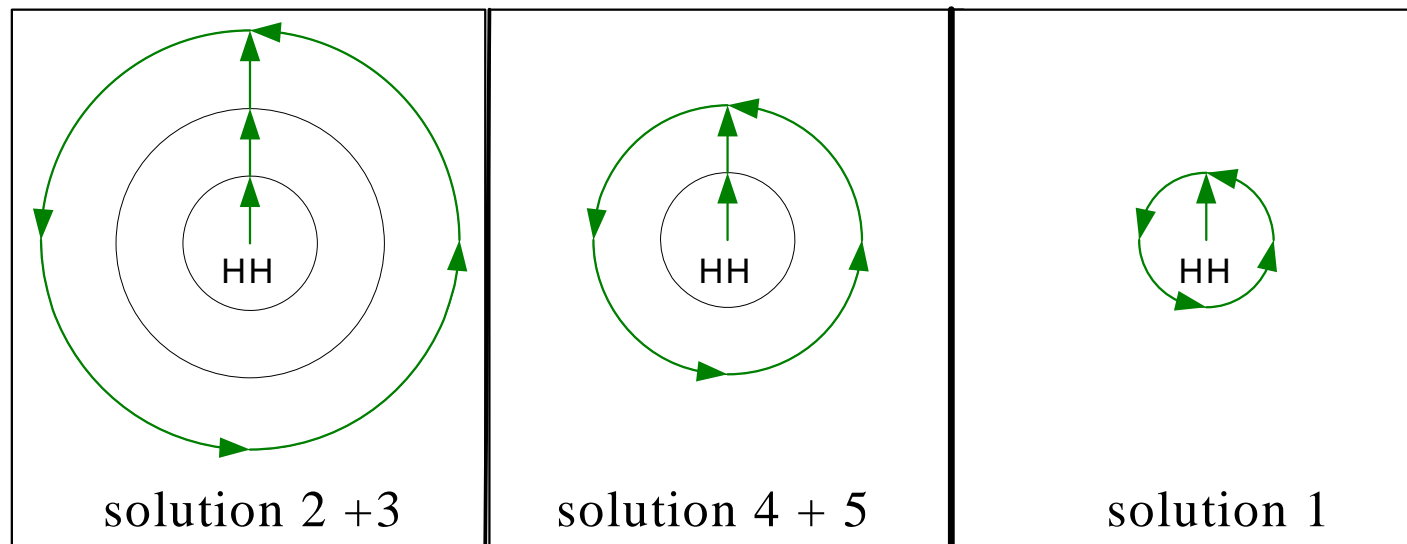


Figure 1: 5 solutions based on the Household-centre Approach

# The most appropriate concept



option 4

Farmers are responsible for collection, pre-treatment and recycling the material

# Steps forward

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- Education and information: especially for children (in schools) and women
- Participation of stakeholders/community involvement
- Adequate sanitation for everybody
- Demonstration plots



# General conclusions

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- EcoSan facilities are an appropriate technology to improve the poor sanitation situation in Kisoro Town.
- Recycling of sanitised human excreta can help to prevent agricultural fields from soil erosion as well as from a decrease of soil fertility, by improving the soil structure and increasing the water holding capacity. Concepts for a sustainable recycling system depend primarily on the willingness of the toilet owners to handle the material and their knowledge about EcoSan systems. The users are more interested in a proper use of the facility and in recycling the dry material, if the units are private property. Furthermore, agricultural activities influence the interest of recycling.



# General conclusions

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- Hiring somebody to empty the toilet chambers is the most likely solution for recycling the sanitised material. Currently two farmers are interested to fertilise their fields with the sanitised human excrements.
- The HCA should guarantee a sustainable decentralised sanitation project in Kisoro Town. Based on the principle “people at the centre”, the household is first responsible for operation, maintenance and the reuse of the sanitised urine and faeces.
- A further information and promotion campaign about the use of EcoSan facilities and the possibility of reusing the sanitised material is still necessary. Demonstration plots can be a helpful and additional step.

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