Towards improved sanitation in Mongolian „ger areas“ –

results of a case study on participatory sanitation planning in the city of Darkhan

Dr. Katja Sigel

Department of Economics

MoMo Integrated Water Resources Management Mongolia

WWC XV, Edinburgh, 25-29 May 2015

HELMHOLTZ CENTRE FOR ENVIRONMENTAL RESEARCH – UFZ

Contents

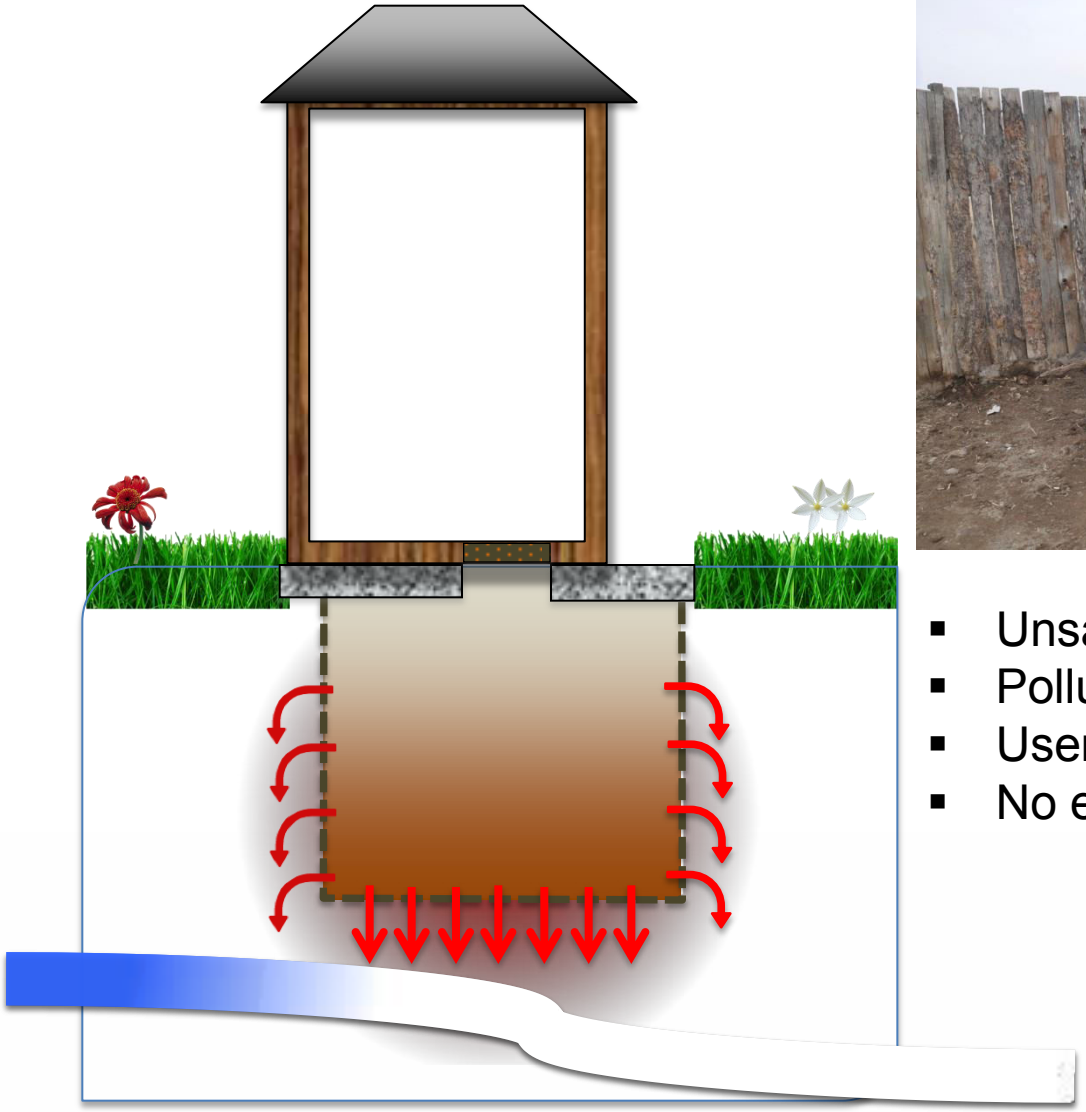
- The problem: Unimproved sanitation
- Objectives and questions of research
- Method: Participatory sanitation planning (CLUES approach)
- The Darkhan case study
- Results and conclusion

HELMHOLTZ CENTRE FOR ENVIRONMENTAL RESEARCH – UFZ

HELMHOLTZ
CENTRE FOR
ENVIRONMENTAL
RESEARCH – UFZ

Peri-urban “ger areas” in Darkhan, Mongolia

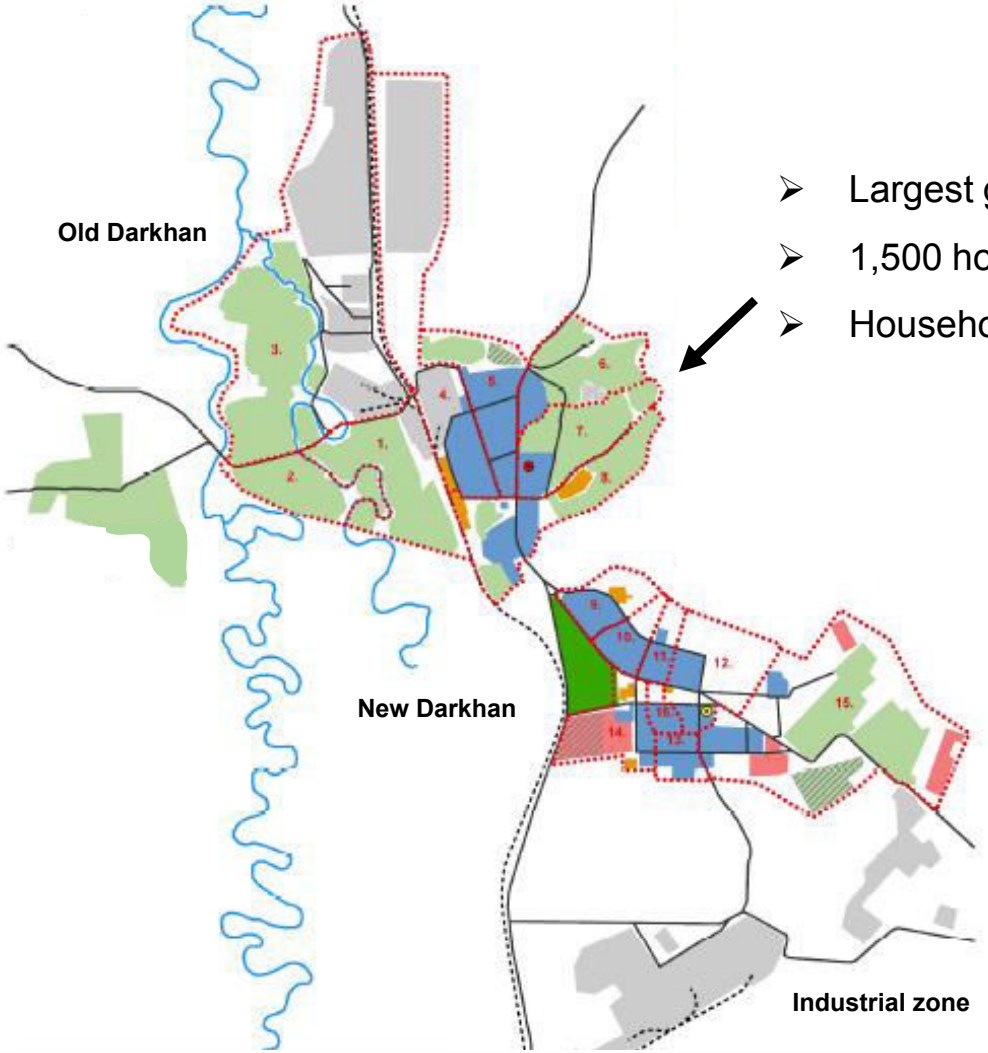
The problem: Unimproved sanitation



- Unsafe and unhygienic conditions
- Pollution of soil and groundwater
- User-unfriendly (smell, flies…)
- No emptying possible

HELMHOLTZ CENTRE FOR ENVIRONMENTAL RESEARCH – UFZ

Study area: Darkhan, Bag 7



- Largest ger area district in Darkhan
- 1,500 households, 5,700 inhabitants
- Household size: 4.5 people

Map: Römer 2006

HELMHOLTZ CENTRE FOR ENVIRONMENTAL RESEARCH – UFZ

Research objective

- To contribute to improve sanitation in Mongolian „ger areas“:
  - To apply and test the „CLUES“ approach on participatory sanitation planning
  - …

Research question

- To what extent was it possible to conduct stakeholder involvement effectively in the Darkhan case study?
- What are the lessons that can be learnt?

HELMHOLTZ CENTRE FOR ENVIRONMENTAL RESEARCH – UFZ

CLUES: Community-led urban environmental sanitation planning

Main characteristics

- A multi-stakeholder planning approach that supports community-based developments
- Specifically designed for low-income countries and informal, unplanned urban or peri-urban settlements (slums)

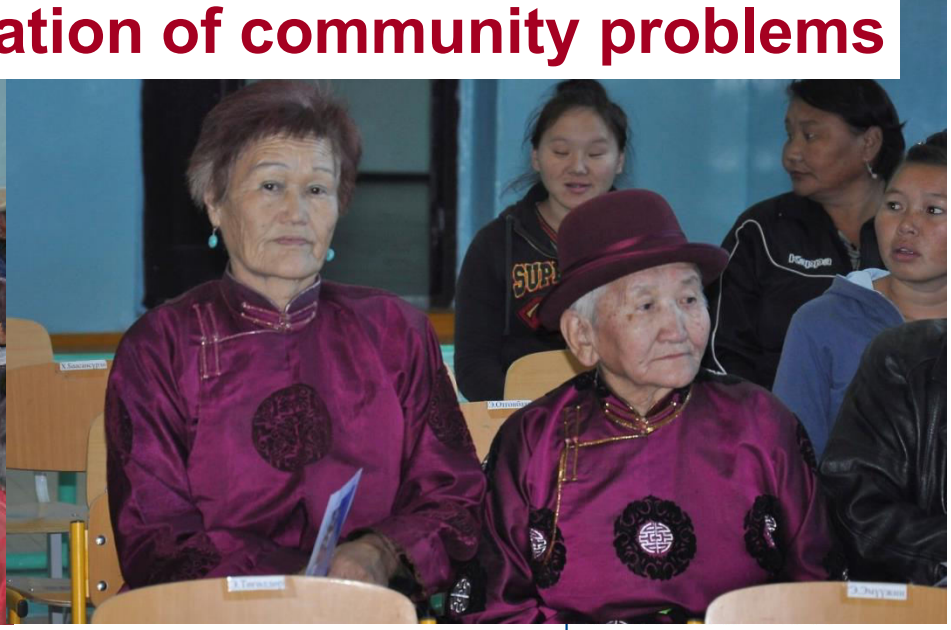
Key stakeholder groups in Darkhan case study

- Residents of Bag 7
- Mongolian experts from different sectors and levels

Step	Action		Timeline	Cross-Cutting Tasks
STEP 1	**Detailed Assessment** of the current situation	 report	**2009/2010**	
STEP 2	**Project ignition** Start MoMo-2 Project		**8-2010**	
STEP 3	**Launch** of the planning process **+** **Identification & Prioritisation** of the community problems	 workshop	**10-2010**	
STEP 4	**Identification of Service Options**	 workshop	**4-2011**	PILOTS building and testing of pilot facilities
STEP 5	**Results and Outlook**	 workshop	**4-2013**	
	Follow-up implementation project			

First stakeholder workshop (October 2010)

Launch of the planning process and identification & prioritisation of community problems



Second stakeholder workshop (April 2011)

Identification of service options

Third stakeholder workshop (April 2013)

Results and outlook

Results and conclusion (1)

- The level of interest of the stakeholders increased from the national to the local level and also during the course of the process.

  Barrier: To bring together experts from the national and the local level.

- The building and testing of pilot facilities inspired a high degree of motivation at the local level.
- The division into experts‘ workshops and residents‘ workshops made it possible to respond effectively to the different target groups.

  Disadvantage: Little exchange between experts and residents.

HELMHOLTZ CENTRE FOR ENVIRONMENTAL RESEARCH – UFZ

Results and conclusion (2)

\+
- SI enabled a very fruitful collaborative learning process (not only among Mongolian stakeholders!).
- SI catalysed change in how the problems were perceived and valued.
- SI enhanced users‘ acceptance, receptivity and ownership of the pilot facilities.
- SI helped to respond directly to users‘ needs and demand.
- Intangible outcomes: new relationships, improved behaviours, the experience of trustworthy collaboration…

\–
- SI is very demanding, time-consuming
- All people involved (also the researchers!) need to possess the necessary skills and willigness

SI is a challenging and complex task which should be applied wisely

Publications

www.ipit.eu

Reports:

Sigel, K. (2012): Urban water supply and sanitation in Mongolia: A description of the political, legal, and institutional framework. UFZ Discussion Papers 01/2012, Leipzig.

Gawel, Erik, **Sigel, K.**, Bretschneider, W. (2011): Affordability of Water Supply in Mongolia. Empirical Lessons for Measuring Affordability. UFZ Discussion Papers, 09/2011, Leipzig.

Sigel, K. (2010): Environmental sanitation in peri-urban ger areas in the city of Darkhan (Mongolia): A description of current status, practices, and perceptions. UFZ-Bericht 02/2010, Leipzig.

Journal articles:

Sigel, K., Stäudel, J. and Londong, J. (2014): Experiences with stakeholder involvement in strategic sanitation planning: a case study of the city of Darkhan, Mongolia. *Water Science & Technology: Water Supply* 14 (3), 504-512.

Sigel, K., Hagemann N., Leidel, M., Niemann, S. and Weigelt, C. (2014): Insights regarding transdisciplinarity and knowledge transfer gained from two case studies on integrated water resources management in Ukraine and Mongolia. *Interdisciplinary Science Reviews* 39 (4), 343-361.

Gawel, Erik, **Sigel, K.**, Bretschneider, W. (2013): Affordability of Water Supply in Mongolia –Empirical Lessons for Measuring Affordability. In: *Water Policy* 15 pp 19-42.

Karthe, D., **Sigel, K.** et al. (2012): Towards an integrated concept for monitoring and improvements in water supply, sanitation and hygiene (WASH) in urban Mongolia, *WHOCC Newsletter Water & Risk* No.20 July 2012.

Sigel, K. , Altantuul, K., Basandorj, J. (2012): Household needs and demand for improved water supply and sanitation in peri-urban ger areas: The case of Darkhan, Mongolia. In: *Environmental Earth Sciences* 65 pp 1561-1566.

Bayarlalaa!

Contact: katja.sigel@ufz.de

HELMHOLTZ CENTRE FOR ENVIRONMENTAL RESEARCH – UFZ

German team

Lead: Katja Sigel (social scientific water research)

Jürgen Stäudel, Jörg Londong (engineering)

Bauhaus-Universität Weimar

Gisela Lamkowsky, Claudia Grambow (facilitators)

see consult

With support from: Lukas Ulrich, Christoph Lüthi, Mingma Sherpa

eawag aquatic research

SPONSORED BY THE

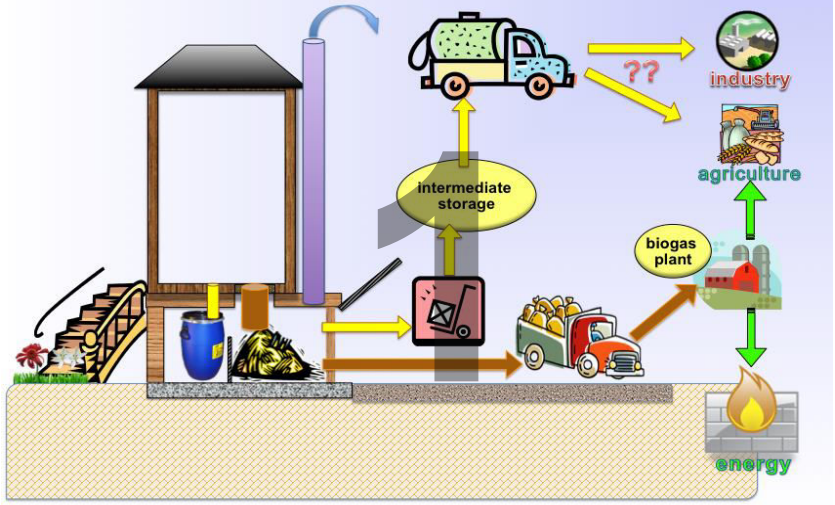
Federal Ministry of Education and Research

Photos: Lena Horlemann, Katja Sigel, Jürgen Stäudel, Gisela Lamkowsky, Lukas Ulrich

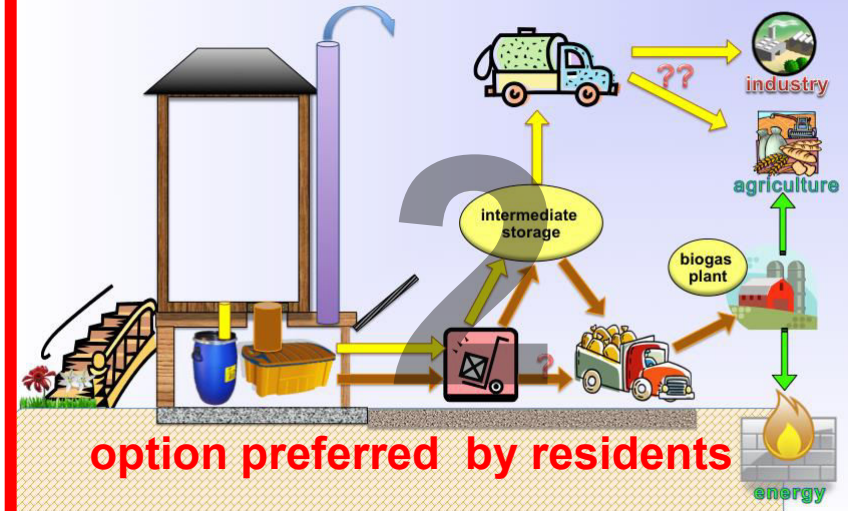
HELMHOLTZ CENTRE FOR ENVIRONMENTAL RESEARCH – UFZ

4 proposed options

option 1 : above ground – no mix „dehydration toilet UDDT“

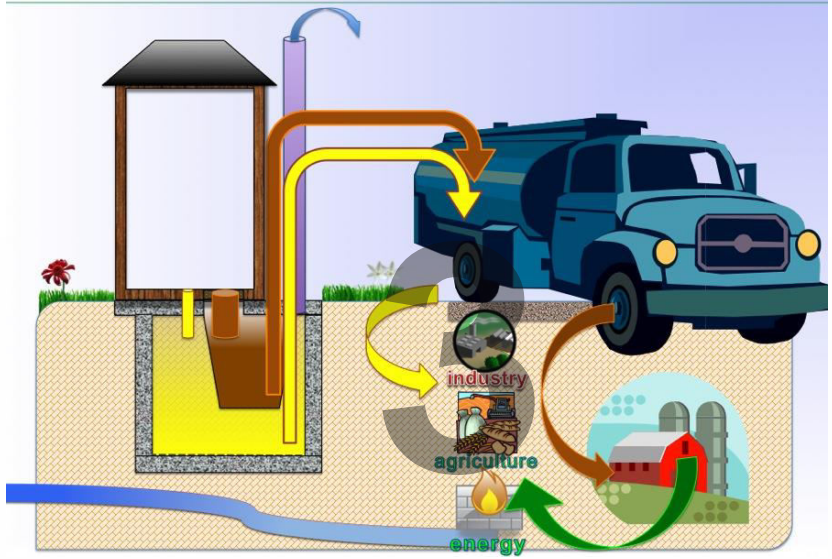


option 2 : above ground – no mix – Mongolian „eco toilet“

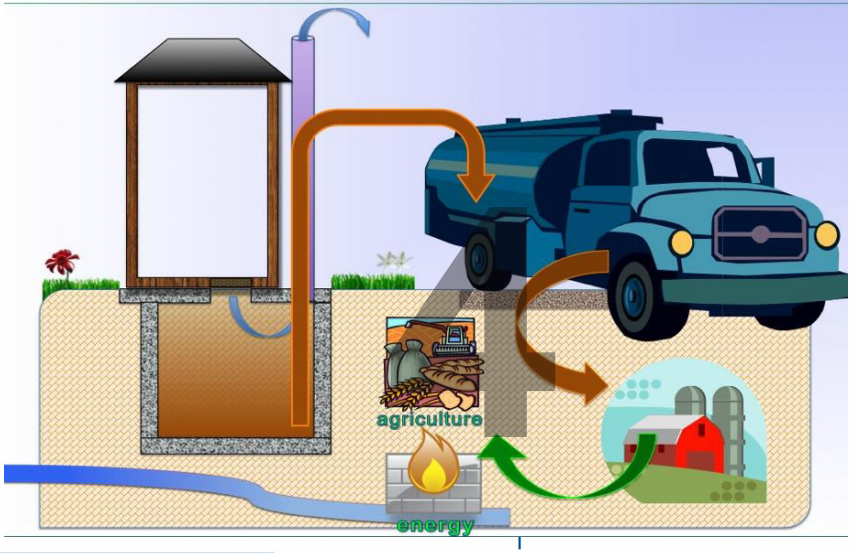


option preferred by residents

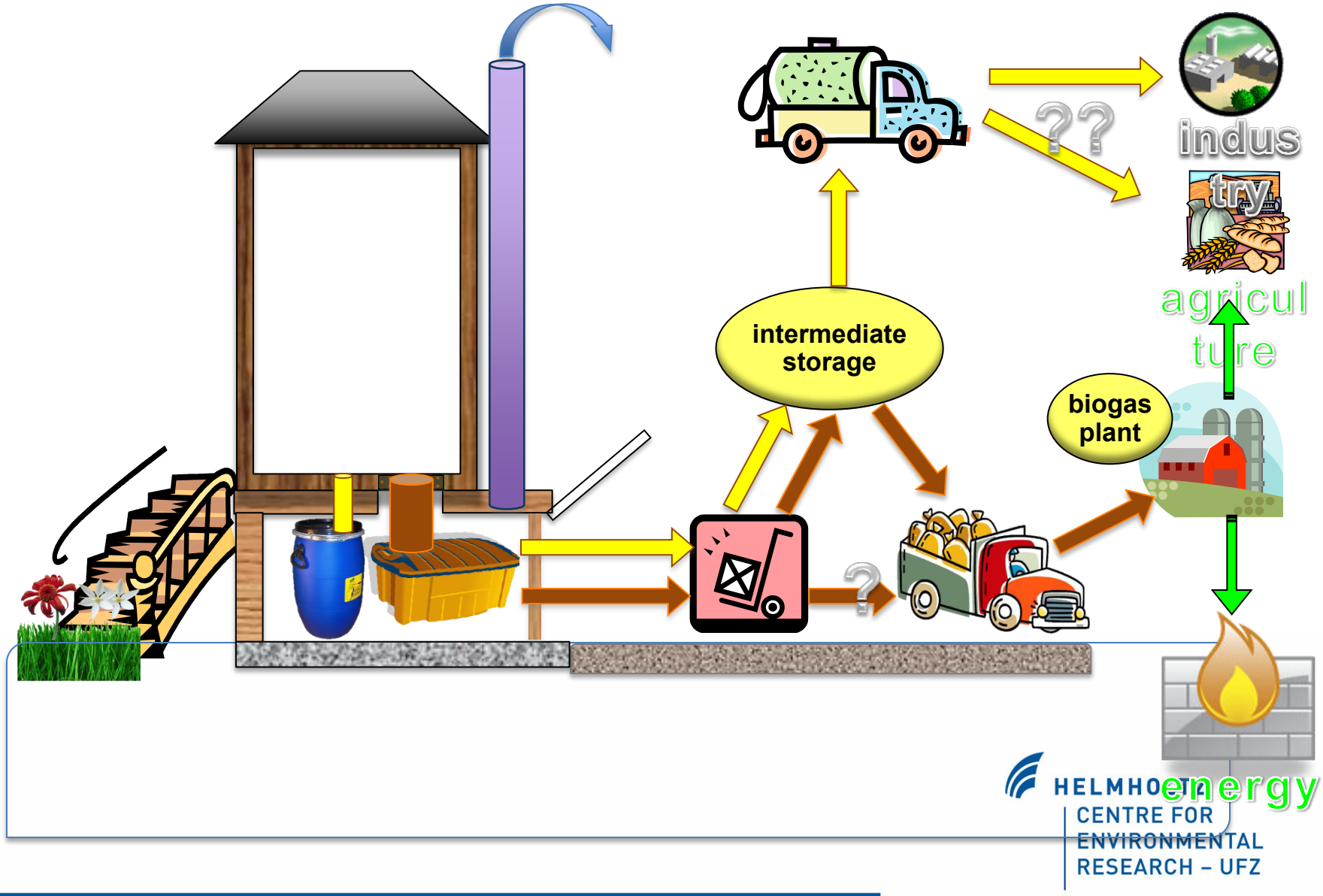
option 3 – under ground – no mix toilet „Goldmine“



option 4 – under ground – mix toilet
„sealed pit latrine (VIP)“ and emptying by pumping truck



option 2 : above ground – no mix – Mongolian „eco toilet“



HELMHOLTZ CENTRE FOR ENVIRONMENTAL RESEARCH – UFZ