

DECENTRALISED APPROACH - ECOLOGICAL SANITATION SYSTEMS FOR URBAN DEVELOPMENT

towards individual decentralised solutions with a communal maintenance and control structure – “the chimney sweeper analogy”

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1. Introduction, including a brief description of the theme

Recently a working group of the Water Supply and Sanitation Collaborative Council (WSSCC), under the leadership of SANDEC (Department of Water and Sanitation in Developing Countries at the Swiss Federal Institute for Environmental Science and Technology (EAWAG), developed a vision for a new strategy for „Integrated water supply and waste management for the 21st century.“ The Household Centred Environmental Sanitation (HCES) Planning, which makes the household the focal point of Environmental Sanitation Planning, is reversing the customary order of centralised top-down planning. It is based on the concept that the user of services should have a deciding voice in the design of the service, and that environmental sanitation problems should be solved as close to the site where they occur as possible. This approach should lead to sustainable solutions managed by the users themselves. Only problems not **manageable** at the household level should be “**exported**” to the neighbourhood, town, city and so on up to larger jurisdiction (Schertenleib, 2000).

The paper looks more into the details, which problems or tasks related to the application of Ecological sanitation and the recycling of nutrients are most likely not **manageable** by the majority of the individual households according to first experiences of a pilot project in the South West of Uganda. Furthermore the paper tries to emphasise that hygienic solutions are of such a high communal interest that it needs public control and supervision to ensure these conditions for all users. Hence at least the responsibility to safeguard a healthy environment has to be assumed at the communal level and all the problems causing a communal risk due to improper sanitation have to be solved at this level.

In order to come up with recommendations and practical conclusions how these problems can be solved the “chimney sweeping model” applied in Austria serves as an analogy. Based on this analogy possible legal and institutional arrangements for a communal maintenance and control structure for decentralised eco-san facilities are discussed as well as the potential for private sector participation.

2. Presentation of major findings

2.1 Communal interest in environmental sanitation:

Before analysing which individual problems or tasks should be “exported” to the communal level (due to a very high public interest in **solving** these problems) this high communal interest in environmental sanitation could be described by conditions - whereby:

- people live healthy and productive lives;
- The natural environment and its resources are protected and enhanced.

Safe disposal of urine and faeces and the protection of water sources are therefore in the interest of public health. If an individual does not apply safe sanitation practices

the whole community is exposed to a risk. Thus an originally individual problem causes communal problems.

Furthermore an analysis of common user perceptions about central water borne sanitation leads to the hypothesis that water borne sanitation solutions and water flushing toilets are considered so convenient or attractive for the users because the individual problem to handle human faeces and urine is transferred to a communal problem. It is the “out of sight – out of mind” mentality of the majority of the users which contributes to the fact that water borne sanitation is perceived a superior solution compared to decentralised ecological sanitation.

These theoretical considerations do also comply with practical findings. For example Schattauer et al (2001) in an abstract about the experiences with Ecological Sanitation in South Western Uganda conclude: “For people who don’t want to deal with faeces a communal or private managed system has to be developed and to be put in place. It must be as convenient as a flush system to the user (flush-pay-and forget). Like wise, the authorities have to take their task to protect people from the danger of improper sanitation by a few individuals. Bye-laws must be applied and executed for both water-borne and ecological sanitation.”

Bearing the above mentioned analysis in mind it comes out clearly that even if problems should be solved as close as possible to the site where they occur - “start thinking at household level – HCES Model (Schertenleib, 2000) ” - the public authorities still have an important role to play in decentralised solutions implemented on a larger scale. They cannot be released from the responsibilities to ensure public health and to protect people from exposure to risk caused by improper sanitation. Major duties are as indicated below and in picture 1:

1. Legislation and enacting of by laws to ensure an hygienic and healthy environment
2. Public control and advisory support to the users on how to construct, use and operate decentralised eco-san facilities in a hygienic and environmental friendly way
3. Offer a communal management and collection system for faeces and urine

In the following paragraph possible ways how these duties (with a special focus on the public control and advisory role of local authorities) can practically be implemented and how some of the functions can successfully be delegated to the private sector will be discussed by using the “chimney sweeper analogy”.

2.2 The “chimney sweeper analogy” for a possible institutional and legislative framework for decentralised eco-san systems

First of all the question arises: Why just this analogy? The answer is quite obvious: Protection of inhabitants from fire is in the same vital interest like ensuring public health through proper sanitation. A slight difference between these 2 risk scenarios for the public is just the fact that it might be easier for public authorities to impose sanctions and inspections on individuals for the sake of fire precaution rather than for sanitation. This is because of less “real exposure” to visible threats like a big fire compared to the not so obvious “insidious risk” of improper sanitation..

Nevertheless the “chimney sweeper analogy” offers a lot of good starting points for a discussion of institutional options for practical implementation of public duties (in the communal interest) to ensure proper decentralised eco-san systems at the household level since firing systems are also decentralised individual solutions at household level (exception: few household connected to a central heating station).

The first step for local authorities definitely has to be to revise existing legislation and to come up with coherent laws with the objective to safeguard public health through proper sanitation. Sanitation should rather be dealt with like a cross cutting issue in various laws like fire precaution and protection. There it is a cross cutting issue in building regulations as well as in specific fire precaution laws. The next step will be to think about proper institutions for implementing these new laws and regulations.

In the case of fire fighting and fire precaution these are the building control departments and the local authorities responsible for fire precaution. But they are usually not involved in everyday follow up and inspection activities.

According to Austrian regulations service areas are defined for private firms headed by a master craftsman to take over the implementation of public mandatory regulations.

The process of defining service areas should balance considerations of commercial competition, high qualification of the competing sweeping firms as well as the public interest in this job.

After getting a licence according to the Austrian trade regulations and a licence from the local authorities responsible for fire precautions a chimney sweeper fulfils amongst others the following delegated public duties for a certain service area:

- Advisory and consultancy services in the planning stage of firing systems
- Involvement in commissioning of new fire installations as part of the overall commissioning of new buildings
- Regular cleaning services and follow up inspection visits of all kinds of firing system recorded in a mandatory inspection record book for every household
- Reporting defaulters to the local authorities

Thus a chimney sweeper is both an inspector as well as an advisor to users at household level. In line with this arguments Winblad et al (1998) also conclude: “Incentives **and** sanctions exerted by local governments can be vital assets in promoting and managing eco-san systems.”

The chimney sweeper analogy follows this example. By offering cleaning services as a kind of incentive to customers it is much easier for them to accept to pay also for his/her role to be an inspector who also reports defaulters to higher authorities for sanctions.

3. Conclusions

Decentralised ecological sanitation solutions at household level will be successful if there is a professional maintenance and public advisory and supervision structure based on proper legislation. (refer to picture 1). Public authorities have still the

important function to safeguard and ensure public health even if decentralised technical solutions for sanitation are applied at the individual household level.

The “chimney sweeper analogy” as discussed in the paper offers some interesting food for thought for developing communal maintenance and control structures for decentralised eco- san systems since it:

- adopts a balanced incentive – sanction approach, which has proven to be a practical approach related to behaviour change
- Provides the necessary regular follow up and back up structure for decentralised sanitation systems, which is according to the first project experiences the key to the success of any decentralised solution at household level
- Promotes private sector participation under public control
- Safeguards public health and the environment

4. References

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Picture 1: *Responsibilities “exported” from the individual household level to the communal level*

