

Introduction of Ecological Sanitation for Large Scale Housing Programs in Ethiopia

Public Private Partnership (PPP) between **GTZ** and

- OtterWasser GmbH
- TuTech Innovation GmbH
- Planungsgruppe Prof. Krusche

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Background and problem analysis

The majority of the population of Ethiopia, urban and rural alike does not have access to safe and adequate sanitation facilities. A study carried out indicates that three-fourth of the health problems of children in Ethiopia are communicable diseases attributed to unsafe and inadequate provision of water and unhygienic waste management, particularly sewage. Other studies revealed that only 11.5 % of the population has access to sanitation facilities while 88.5 % are without proper sanitation facilities.¹ The existing capacity in the wastewater sector in Ethiopia is currently relatively low, in particular in regard to alternative concepts and technologies aiming at more decentralised and environmentally friendly, energy and resource saving solutions.

Decentralized wastewater systems recycling the water (grey water) and dry sanitation have to be introduced in order to demonstrate cost-efficient and environmentally friendly sanitation moreover reducing the wastage of precious and scarce drinking water.

As the ecological sanitation system to be introduced is new and the knowledge on sanitation concepts in general is rather low in Ethiopia, the development of a functioning market of ecological sanitation solutions and devices requires a long-term engagement of some years.

The presence of GTZ in Ethiopia in the sector of housing provides easy access to respective consulting firms, contractors, small and medium enterprises. It also facilitates the implementation of ecological sanitation solutions as pilot devices within the housing schemes under construction and future housing programs.

Short description of the project

Since this technology of dry toilets is relatively new to Ethiopia it will be necessary to adapt the sanitation facility to the local conditions. Local producers of dry toilets, users as well as small & medium size enterprises (SMEs), consultants and Regional and Federal Authorities will participate in this process.

The project consists of the following main elements:

1. Introduction of ecological sanitation as sanitary system for large scale housing programs
2. To enable local companies (SME) to use the new technology to enforce or built up their business

¹ See "Government, World Bank Draft Strategy for 100 percent adoption of improved sanitation programme", in: The Report, 8.12.2004 page 9.

3. To establish the relevant know-how in Universities and consultancy companies
4. Training of users and awareness creation

At the beginning of the project the new ecological sanitation will be adapted to the local condition. Selected private enterprises will be qualified in the production of dry toilets and a close cooperation will be established with these enterprises. A demonstration facility will also be built in the housing area for the training of the working staff for building of the toilets and installation of the technical equipment. The users will also be trained on this demonstration facility and an awareness campaigns will take place concerning the benefits of the system.

Parallel to this small and medium enterprise will be selected and trained in the installation and operation of the sanitation facilities (toilet system and treatment plant). The enterprises will be trained in the collection, treatment, distribution and utilization of the residuals (nutrients as well as water). To increase the acceptance from the users (farmers etc.), a test and demonstration field for the use of the secondary resources from the sanitation system will be built up.

There will be a close collaboration with local Universities. The Universities will be advised to include training on decentralized ecological sanitation in their study courses for engineering and architects. Regional and federal authorities and institutions will be trained to promote decentralized ecological sanitations system with special emphasis on the dry toilets and will be integrated in the awareness campaign.

Workshops on sanitation and resource management for all stakeholders will take place in order to create awareness and build up new markets.

The project will pro-actively promote private small and medium enterprises within a new market for ecological sanitation (installation, maintenance and operating as well as commercialising the urine and the faeces for agricultural usages) to be developed.

The target groups of the intended measures are:

- Local authorities like Water and Sewer Authorities of Regional towns
- Universities and consultancies
- SME's
- Inhabitants of the new housing units

National as well as International NGOs are very interested in the technology and would adapt it in their projects if it proves to be successful.

Impacts and Effects of the PPP-Program on Developing Politics

The outcome of the project will be that ecological sanitation becomes part & parcel of the large-scale housing projects in urban Ethiopia. Small and medium enterprises will be able to install, maintain and repair as well as empty and commercialise the faeces and the urine as natural fertilizer and night soil to the agricultural sector. A new market will be created promoting income and job generation. Medium size local enterprises will provide the toilets in different shapes and sell them to SME for installation purposes. The construction sector will become more professionalized through new products in sanitation. Universities will introduce the topic of ecological sanitation as relevant study course for engineers & architects.

In the long run the project will strengthen the private sector in the field of wastewater management in Ethiopia. Furthermore the low water consumption of the new sanitation system will reduce drinking water resources consumption and facilitate the use of natural organic fertilizers in agriculture. It is expected that the activities will act as an example, thus demonstrating "best practices" as impulse to the dissemination of the results to other urban areas in Ethiopia and the neighbouring countries.

The PPP-Project will have a substantial contribution to the internationally agreed upon Millennium Development Goals (MDG 7) which aims to reduce by half the proportion of people without sustainable access to safe drinking water and achieve significant improvement in lives of at least 100 million slum dwellers, by 2020.

Ethiopia will make a new environmentally friendly technology available, which could also be exported to the neighbouring countries within COMESA.