

# Innovative practices to enhance implementation of WSSD targets – Swedish initiative for ecological sanitation

## 1. Description of initiative

### Water and sanitation policy in Tanum Municipality, Sweden

Tanum Municipality has initiated a progressive water and sanitation policy which was chosen as one of six Swedish examples of how Agenda 21 has been implemented in connection with the World Summit on Sustainable Development in Johannesburg 2002. In the traditional water closet, urine and faeces are flushed into sewage systems with insufficient reduction of nutrients. To deal with this problem the local government council in Tanum has decided that, whenever possible, urine separation toilets are to be installed in new houses. The urine is channelled into sealed tanks and is collected by farmers who spread the nutrient-rich solution on farmlands. An ecocycle of nutrients is thus recreated.

By these actions Tanum Municipality is working towards several objectives, such as:

- Reducing marine eutrophication so as to preserve biodiversity and fishing values
- Reducing the consumption of household water
- Reducing the need for industrial fertilisers on farmlands.

While the initiative has been taken solely by Tanum Municipality, the implementation of the policy has involved several stakeholders at local level, such as farmers, private entrepreneurs and the general public. Due to the policy taken on water and sanitation, 426 urine separation permits have now been granted in the municipality. Most of them concern private properties, although seven larger structures, such as the local public library and high school, also have urine separating systems.

## 2. Mainstreaming/ sustainability

From the beginning, the water and sanitation policy in Tanum Municipality has been linked to the Swedish Parliament's 15 environmental quality objectives (EQO), four of which relate to the quality of the water supply and treatment of wastewater:

- Flourishing lakes and watercourses
- High-quality groundwater
- A balanced marine environment, flourishing coastal areas and archipelagos
- Zero eutrophication.

The initiative also promotes the goals set out in Sweden's national strategy for sustainable development concerning marine eutrophication and protection of marine ecosystems.

This initiative by Tanum Municipality has received national and international media recognition and has served as a model and inspiration for other municipalities that have now begun similar projects within the framework of the Local Investment Programmes (LIP). The Swedish International Development Cooperation Agency (Sida) has also arranged a course in Tanum called *Groundwater Development and Management in Hard Rock Areas*, which gave

several participants from developing countries in Africa, Asia and Latin America an opportunity to learn from experiences in Tanum Municipality.

Lessons learned from Tanum Municipality include the following:

- The implementation of urine-separating toilets has been a long process which was stimulated by several external events, such as marine eutrophication, seal deaths and regional water scarcity.
- It is important to have a vision and set tangible goals.
- Reliable techniques must be developed so that the project can be adapted. Otherwise there is a risk that the project will peter out.
- Farmers play a central role by collecting and spreading the nutrient-rich solution on farmlands. It is therefore important to make sure that the logistical chain functions properly.

### **3. Replicating the initiative**

Sweden is currently supporting other countries in implementing similar urine-separating technology. EcoSanRes (ecological sanitation research) is an international environment and development programme on ecological sanitation that is sponsored by Sida, managed by Stockholm Environment Institute along with Akkadia Environment, SwedEnviro and Vatema, and has a worldwide network of 20 organisations. Over the past nine years the EcoSanRes Programme has supported ecological sanitation projects in El Salvador, Mexico, Bolivia, South Africa, Uganda, Vietnam and China. (Ecological sanitation is defined as 'sanitation systems based on preventing pollution, destroying pathogenic organisms and recycling human excreta'.)

On 23 September 2003 an agreement was signed in Dong Sheng between Stockholm Environment Institute (EcoSanRes) and the City of Dong Sheng (Erdos Municipality) to build an eco-town using the principles of ecological sanitation, the first of its kind in China.

The Erdos eco-town is a pilot project sponsored by the Dong Sheng District and the Swedish International Development Cooperation Agency and will be built over the next three years with completion expected in 2007. It will comprise 1500 dwellings in 4-, 2- and 1-storey buildings in the Hei Zao Kui area of Dong Sheng in Inner Mongolia (Northern China). The eco-town will be set up with modern urine-diverting toilets (one in each dwelling) and grey water from the kitchen and bath will be collected and treated separately using soil filtration and a constructed wetland. Storm water will not be allowed to mix with any household water.

An ecostation will be built to collect the various household products that will be recycled, i.e. urine (contains 80% of the nutrients leaving the human body and an excellent fertiliser supplement), sterilised faeces (soil conditioner) and organic kitchen wastes, which will be composted, and solid wastes, which will be source-separated.

To begin with, the eco-town will be a large R&D effort to further develop and standardise various urban ecosan applications. Rural ecosan has already taken off in a big way in China with some 100 000 urine-diverting dry toilets installed over the last few years. Urban ecosan has been tested in a few housing complexes in Sweden over the past 5-10 years. This collaboration with China represents a breakthrough from which many urban centres around the world will be able to learn.

It is important to acknowledge the gender dimension in these projects. Women are generally most affected by investments in sanitation since they often tend to take the main responsibility for activities in the domestic domain. The general lesson is that it is easier to involve women in ecological sanitation projects since there is less emphasis on high technology solutions.

In the Erdos eco-town the majority of team members are women and it is the women who have the deciding power. In all ecosan projects there are built-in advantages for women, which the project in Erdos illustrates very well. The current sanitation system in Erdos offers public toilets at a considerable distance from dwellings. As a result, every time women have to go to the lavatory they must leave their homes and stand in line (in winter, in the cold). When a child or an elderly or sick person needs assistance to the lavatory the same woman has to go through the same procedure again.

Women are also forced to leave children, cooking and perhaps sick people when they have to leave their dwellings for up to half-an-hour for every visit to the lavatory. What the ecological sanitation solution offers in the new multi-storey buildings is the opportunity for all toilet activities to take place within the residence. The toilets are also designed to physically suit both women and men.

EcoSanRes also has activities in South Africa in Kimberley and Buffalo City, where Sida is currently funding urban support projects. The support is defined by the priorities in each municipality. Sanitation, or rather the problem of sanitation delivery, has been a prioritised issue. The need for alternatives to conventional waterborne sanitation as the only acceptable solution is becoming more and more urgent. It is therefore proposed to initiate pilot ecosan activities in cooperation with these ongoing urban projects. The reason for channeling EcoSanRes activities to these two different locations is that sanitation developments over the next few years will be extremely rapid. If we want ecosan technology to make a significant impact on South African sanitation delivery, prove that the technology works, and participate in the process of finding more sustainable sanitation systems, the opportunity should be taken to collaborate on major components with these urban municipalities.

The two locations will provide widely differing experience, with Kimberly targeting middle-class groups and Buffalo City poor communities in urban upgrading and renewal areas. Experiences from these areas will provide a good base for large-scale implementation in many different areas in the near future. Further, the two municipalities will learn from each other and exchange experiences and knowledge for their own future developments in different areas.