

The 14th Stockholm Water Symposium and World Water Week

Report regarding the issue “ECOLOGICAL SANITATION”

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The World Water Week in Stockholm is since 14 years a yearly returning international event on water and sanitation issues, organized and hosted by the Stockholm International Water Institute, SIWI (www.siwi.org). The aim of the world water week is to serve as a link between practice, science policy and decision-making in the search for sustainable water resource management.

In addition the world water week gives to individuals, Institutions and organization the occasion to nominate for the “Stockholm Water Prize”. Juniors maximal 20 years old can nominate for the “Stockholm Junior Water Prize”.

The main themes of this year were Drainage Basin Management and Regional approaches for Food and Urban Security. Many presentation, workshops and seminars by scientists, organizations and individuals, supported with poster presentation and exhibition were the base of the Stockholm Water Week and the Stockholm Water Symposium. Abstracts of the symposium were published.

This report includes only the topic ecological sanitation as an approach or strategy for sustainable water and wastewater management and food security. A short report about the pre-seminar workshop “Sustainable Sanitation”, and the key issues of eco sanitation during the seminar and conference is given. The given notices don't describe the issues completely. On the end publications on ecosanitation and several websites are noticed.

Workshop “The Challenge of providing Sustainable Sanitation”.

- ✓ Global sanitation outlook and MDG's in year 2004, Albert Wright, Task Force on Water and Sanitation for the United nations MDG:

The actually situation:

One Billion of the people have flush toilets (flushsan)

2,8 billion with pit latrines (pitsan)

2,5 billion without sanitation (nosan), of which 79 percent are living in Asia, 12 percent in Africa.

To reach the millennium development goals (MDG's) there must be:

- **A common understanding what it means access to sanitation.** It could mean basic sanitation with lowest cost option, by securing sustainable access to safe, hygienic and conventional facilities and services for excreta and wastewater disposals, to produce a clean and healthfully living environment.
- **An implementation** of the basic sanitation definition.
- A focus on the rural and poor areas on the short term

- ✓ Sumita Ganguly from UNICEF-new Dehli

In India 90 million rural households without access to sanitation

400.000 preventable cases of diarrhoea

To meet the MDG an investment of > 800 US \$ p.c. is needed, and an initiative of partnerships with national diary's: development board for “clean homes”, with ESA support for resource deficient states.

The question how clean is my country? Are we going to decide the important issue by asking: How fashionable and glamorous they are or by asking how seriously hazardous affected they are.

Remark of a participant: sanitation in S-Africa got an issue after some cases of cholera and not by the yearly several thousands cases of diarrhoea.

Most infections happens in households (no hands washing and infected food)

- ✓ Patric Bracken/Elisabeth Kvarnström, GTZ/EcosanRes: Criteria for sustainability in relation to sanitation:

Suggestions for criteria for sanitation concerning Health-Environment-Economics:

- Environmental criteria: For example use of natural resources for construction and O&M
Discharge to water bodies and air emission

Resource recovering (nutrient, energy)

-Social cultural criteria: user requirements- society requirements

-Economical criteria: Total costs, capacity to pay (ability- willingness), contribution to local development

-Technical functional criteria: Robustness, competence requirements, capability, monitoring, lifetime, flexibility

Ecological sanitation to day: On-going activities, research, problems, successes, and opportunities with some examples from:

- ✓ Ron Sawyer, **SARAR Mexico**

One person with flush toilet use yearly 15,000 litre clean water for flushing 400 – 500 litre urine and 50 litre faeces.

What is ecosan?

- Disease prevention
- Environment protection
- Nutrient recycling
- Acceptable
- Assessable

A lot of experience is done in S-America e.g. Mexico, Ecuador

They have often municipal composting and a central public regulation for ecosan and they promote ecosan to women and children.

- ✓ **Ms. Xiao Jun** (Resident consultant, Stockholm Environmental institute) China-Sweden Erdos **Eco-town project in Inner Mongolia.**

A project for a city with 260.000 inhabitants is planned and already started.

Actually situation the half of the toilets are deep pit latrine, the other half flush toilet.

From 1998 to 2003 are 685.000 units of ecosan toilets built in Mongolia.

Main reasons to implement ecosan is scarcity of water and area, and expensively of sewage treatment.

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 as treatment. Storm water will not be mixed with any household water. An eco station will be built to collect the various household products, that will be recycled i.e. urine (encompasses 80% of the nutrients leaving the human body and is an excellent fertiliser supplement), sterilised faeces (soil conditioner) and organic kitchen wastes, which will be composted and solid wastes which will be source-separated

The first multi-store houses with ecosan for 2000 citizens are under construction. In year 2007 an International Ecosan Conference with exhibition is planned in the Inner Mongolia.

- ✓ **Shirley Fergus, Buffalo City in S-Africa**

City with one million inhabitants, water scarcity, 30% of full level of services

30% pit latrines, 2% buckets, 39% backlog

Existing system deteriorated, delayed implementation, lack of knowledge

Objective:

Demonstrate viable ecosan system

Increase of understanding

Promote of “close the loop” idea

Location: 2 informal settlements, 850 households

Implementation start autumn 2004: construction of houses, 2005 infrastructure

✓ **Peter Kolsky/Ousseyou Diop (WSP-Africa)**

Framework for scaling up and financial sanitation services in connection to the MDG's. The framework is a way of understanding the reality and has 3 key terms:

1. A vision of the way things ought to be (e.g. MDG)
2. Sustainable: environmental/ economic/developmental/ practical
3. Sustainable sanitation should satisfy both.

Current sanitation challenges:

- Little commercial demand of those, who need most
- Lack of political interest
- Administrative ownership not clear

Some principles of sanitation:

It is a behaviour and hygiene

It is a household decision

It is a children matter: 90 % of health benefits are among children

A market framework for sanitation is needed: demands of the public!

The questions are

Why is demand important?

Why is water supply better off than sanitation?

Sanitation is not wanted or it won't to be used.

But no toilet should be unwanted, like no child should be unwanted

Why people want sanitation:

1. Lack of smell and flies
2. Cleaner surroundings
3. Privacy
4. Less gastro intestinal diseases

Potential of social marketing

Applying commercial marketing approaches and strategy-systematic, data-effective communication is needed.

4P's of marketing

- Product (needs)
- Place (purchases, consumers)
- Promotion
- Price

Framework of marketing of sanitation

- Agree on approach
- Understanding of the market and learning by doing
- Development of the right product
- Development of sanitary industry
- Regulation of final use and disposal

Notices from the symposium

Several speakers of the seminar focussed on the principles of ecological sanitation: recycle and resource efficiency and the approach to technical design, the validity of human excrement's as fertilizer and soil conditioner, the potential of water saving sanitation, avoiding of environmental pollution by excrements and inefficient sewage systems. Ecological sanitation, closing the loop concept was seen, especially for poor areas as a real

opportunity to achieve health, sustainability and increased autonomy. Guidelines on use of human urine and faeces in crop cultivation were presented.

During a session organized by WSP (water and sanitation program) was the question “if sanitation is so good, why don’t people buy it?” and the pro and contra’s of latrines, which are promoted by WSP in Africa, were discussed. Critical points of latrines were, that they are potential groundwater polluters, they often attract flies, smell, and the nutrients of excrements are mostly not recycled.

WSP presented papers concerning two studies done in Benin and Uganda: “Who buys latrines, where and why” and “What drives choice of sanitation technologies”.

The papers summarize the findings of case studies about factors that drive households to use different sanitation technologies, including ecosan, and how these factors can be used to stimulate large-scale adoption of such technologies. What stimulates demand among new adopters? The research of the papers reported that e.g. latrines are rarely motivated by messages about health benefits. More important are the immediate and direct benefits of increased convenience, comfort, cleanliness, privacy, safety, and prestige offered by home sanitation.

Difficulties to reach the MDG’s

The difficulties to reach the MDG’s to serve half of the 1,2 billion people lacking safe drinking water within the next 10 years were clear, because to reach the goals it means, that every day for at least 200,000 people water systems have to be built and waste water treatment plants with a capacity for more than 900,000 population equivalents have to be brought into service every day, then only 10 percent of world’s population is connected to sewage works. To be able to reach the MDG’s novel technical approaches are required (Peter A. Wilderer, Germany). Various possibilities are to be taken in account and evaluated. To be selected and applied is the method, which fits the best in the infrastructural concept.

In 2000, 4,9 billion people lived in urban areas, comprising 47 per cent of world population. By 2030, 4,9 billion are expected to live in urban areas, or 60 per cent of the population and the growth will be concentrated in the urban areas of the less developed areas, some 3 billion people will be living in water stressed areas.

At present 2,5 billion people lack sanitation, 1,3 billion people remain parasitized, 650 million people in India defecate in the open, creating some 100.00 tons of faecal material and ten times that in urine every day.

Conclusion: MDG’s is a mission impossible unless we replace the traditional concept. The new concept should be:

Innovative, reliable, affordable and technical solutions should be available.

Solutions, which should be implemented simultaneously and step-by-step:

In rural areas; keep people from migration, which means development of economy and infrastructure

In big cities; houses and water technology

Conventional sanitation has failed to provide the necessary services and thus innovative alternatives are drastically needed (Arno Rosemarin, SEI Sweden)

Following elements are needed to achieve sustainable sanitation (Rosemarin):

- Essential feature: containment, sanitation and recycling – thing that conventional sanitation fails to do.
- Require of change in attitude about human excrete and use of water
- Source separation of urine, faeces and grey water
- Closing the nutrient loop
- Ecosystem approach
- Polluter Pays principle
- Protection of downstream health and environment
- Local Management and financing

- Decentralisation of infrastructure
- Equitable service for all

SIDA launched a new Strategy for water supply and sanitation, which should be regarded as a general framework within which adjustments to specify conditions must be made. The strategy discusses and specifies a large number of principles and approaches that should be applied in order to make investment in water supply, sanitation, hygiene and industrial water more sustainable from socio-economic, environmental, financial and institutional point of view. A checklist supports these aspects. E.g.

- Does the proposed intervention provide indirect or direct benefits to the poor?
- Is the intervention coherent with national poverty reduction strategies and other specific strategies in the country/region?
- To what extent is recycling of nutrients included in the sanitation concept?
- Is the proposed intervention guided by expressed user demand?
- Are management structures appropriate in terms of efficiency, account-ability, transparency and anti-corruption?
- Have sufficient measures been taken to enhance capacity building of relevant actors?

ECOSAN-Literature from World water week:

- Abstract Volume, The 14.th Stockholm water symposium, August 16-20. 2004. Drainage Basin Management – Regional Approaches for food and Urban security.
- EcoSanRes Publication Series::
 - a. Report 2004-1. Guidelines for the safe use of Urine and Faeces in ecological Sanitation Systems
 - b. Report 2004-2, Guidelines in the Use of Urine and Faeces in the Crop Production
 - c. Report 2004-3, Open Planning of Sanitation Systems
 - d. Report 2004-4, Introduction of Grey water Management
 - e. Report 2004-4, Norms and Attitudes Towards ecosan and other sanitation Systems
- Pure Water, Strategy for Water Supply and Sanitation, January 2004, Sida publication
- Who Buys latrines, where and Why?“, Insights from a study of household latrine adoption in rural Benin, August 2004, WSP(Water and Sanitation Program)
- What drives choice of Sanitation technologies: Case Study from Uganda, August 2004, WSP(Water and Sanitation Program)
- Ecological sanitation and Associated Hygienic Risk, An overview of existing policy making guidelines and research, 2004, WECF publication
- Reducing effects of polluted drinking water on children’s health in rural Romania, 2003, WECF publication

Websites on ecological sanitation:

www.ecosanres.org
www.sida.org
www.gtz.de/ecosan
www.otterwasser.de
www.sanicon.net/themes
www.worldwatercouncil.org