

M4: Management: Planning, Implementation and Operation

M 4-2: Socio-Cultural Aspects



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We thank all individuals and institutions that have provided information for this CD, especially the German Agency for Technical Cooperation GTZ, Ecosanres, Ecosan Norway, the International Water and Sanitation Centre IRC, the Stockholm Environment Institute SEI, the World Health Organisation WHO, the Hesperian Foundation, the Swedish International Development Cooperation Agency SIDA, the Department of Water and Sanitation in Developing Countries SANDEC of the Swiss Federal Institute of Aquatic Science and Technology EAWAG, Sanitation by Communities SANIMAS, the Stockholm International Water Institute SIWI, the Water Supply & Sanitation Collaborative Council WSSCC, the World Water Assessment Programme of the UNESCO, the Tear Fund, WaterAid, and all others that have contributed in some way to this curriculum.

We apologize in advance if references are missing or incorrect, and welcome feedback if errors are detected.

We encourage all feedback on the composition and content of this curriculum. Please direct it either to johannes.heeb@seecon.eu or petter.jenssen@umb.no, or use the [feedback form](#).



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- ACTS (Agriculture, Crafts, Trades and Studies), a Bangalore based NGO
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- SDC, the Swiss Agency for Development and Cooperation
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- SANDEC, Department for Water and Sanitation in Developing Countries of the Swiss Federal Institute of Aquatic Science and Technology <http://www.sandec.ch>
- GTZ, the German Agency for Technical Cooperation
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- IEES, the International Ecological Engineering Society
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This version of the **ecosan curriculum 2.3 India** was part of the *Asia Pro Eco Programme*:

The "ECOSAN-CAPACITY: Developing capacity for Sustainable sanitation in India" project is an initiative co-funded by the European Union's Asia Pro Eco Programme"

Contract No: ASIE/2006/122410
Starting date: 1st of January 2007
Community contribution: 190 442.88 Euros (75% co-funding)
Duration time: 18 months

Asia Pro Eco Programme...

...a European Community initiative to promote cleaner, more resource efficient and sustainable solutions to environmental problems in Asia



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Compiling of information:	Katharina Conradin
Layout:	Katharina Conradin
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Financial support:	Asia Pro Eco Programme of the European Union

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Release:	2.3 India, August 2008
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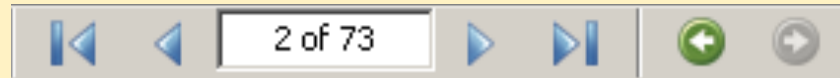


How to Use the Tutorial



click [here](#)

When you come across these links, click directly on them. They will lead you either to additional documents, to the glossary of terms, or to definition pages. To go back, use the Adobe Acrobat Navigation Toolbar (shown below).



Read more

Buttons that link directly to pages with more detailed information

Links

Indicates Internet links and resources

Further reading

Indicates specific texts, files, or documents for further reading

Case Study

Shows a link to a case study that shows the connection between an abstract topic and the “real life situation” more closely.

(99)

Sources are indicated in (99) brackets. You will find the full list of references at the very end of the modules.

Glossary

This button, located at the beginning of each module, opens up the glossary in separate window. It is recommended that you keep the glossary open all the time, so you can easily look up unknown terms.

Abbreviations

With this button, located at the beginning of each module, you can open up a file with the most frequently used abbreviations and acronyms.

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K. Conradin

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- Ecological Sanitation in Mozambique

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Glossary

Abbreviations

Note



Note: This is an adapted version of a PowerPoint-presentation by **William S. Warner**, Ph.D.

ecosan - closing the loop in wastewater management and sanitation

Cultural Aspect of ecosan

The slides that were taken over are recognized by the "Source: Slide copied from (1)" at the right side of the slide.

Executive Summary



J. Heeb

Choices and behaviours related to sanitation are usually deeply rooted in a cultural understanding; sanitation and related topics are often taboos. These fundamental aspects have to be considered when planning a sanitation system. Aspects are different again when planning an ecological sanitation system, since the approach tries to close the loop, and products which are regarded as waste are reused again. When planning an ecosan system, three cultural considerations must be addressed: First, psychological deterrents associated with the handling human waste tend to be universal. Second, gender issues need to be considered – from both universal and local perspectives. Third, religion can be a significant influence (1).

Cultural beliefs vary so widely in different parts of the world that it is not possible to assume that any of the practices that have evolved in relation to excreta and wastewater use can be readily transferred elsewhere: a thorough assessment of the local socio-cultural context is always necessary.

A fundamental difference can be found between faecophilic and faecophobic societies. While the former have few if any taboos against handling and talking about human faeces (e.g, typically Asian countries) the latter is a term associated with taboos against handling and talking about human faeces (e.g. typically African countries).

Executive Summary



J. Heeb

An in-depth understanding of the social fabric concerning people's views towards ecosan will enlighten authorities about motivational factors behind people's acceptance or rejection (2).

The traditional mindset of people does not need to be a barrier to ecological sanitation. If the necessary care is taken and cultural concerns and fears are considered, it is possible to implement loop-based ecological sanitation systems also in faecophobic societies. Once the benefits of sustainable solutions is understood by people, and if there is a mutual confidence and security that the treated and recycled excreta are something useful and safe, barriers can often be overcome. This holds true especially if there are further benefits resulting from ecological sanitation, such as an improved health and security (especially for women), higher yields in agriculture or improved social status (e.g., due to the installation of a toilet in the household).

In order to successfully plan and implement an ecological sanitation system, it is crucial to consider these aspects.

Introduction



J. Heeb

“When planning an ecosan system, three cultural considerations must be addressed:

- **psychological deterrents** associated with the handling human waste, which tend to be universal,
- **gender issues**, which are both universal and local
- **the influence of religion**, which varies regionally despite universal doctrines associated with a particular faith.” (1)

“Cultural beliefs vary so widely in different parts of the world that it is not possible to assume that any of the practices that have evolved in relation to excreta and wastewater use can be readily transferred elsewhere: a thorough assessment of the local socio-cultural context is always necessary.

An in-depth understanding of the social and mental fabric concerning people’s views towards ecosan arrangements and recirculation of nutrients will enlighten authorities about motivational factors behind people’s acceptance or rejection.” (2)

Toilet Psychology



“When developing an alternative toilet system, formulating a psychological contract with the potential users is just as important as designing the system itself. A system often fails, not because of technical reasons; rather, because it simply is not used. Therefore, it is vital to understand the psychological processes of waste treatment as much as the biological, chemical and physical processes of the system.

We can better understand the psychology of waste treatment by examining three basic elements.“(1)

***Attitudes* toward excrement are universal.**

But *behavior* regarding the handling of excreta varies from cultural to culture.

And *motivations* for using an ecosan system are many:

- hygiene
- soil improvement
- financial
- aesthetics
- comfort
- status

Universal Attitude

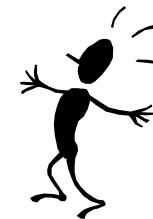


“People are naturally repelled by excreta. *Natural* in the sense that it is an involuntary reaction. The reason is as much evolutionary as cultural. In the course of human evolution, those unfortunate to come in contact with excreta were exposed to a plethora of pathogens, and consequently less likely to survive than those who did not come into contact with excreta. Therefore, some assume that this instinctive repulsion is almost genetic in nature.

So, what is this universal attitude? An attitude consists of three basic components:”

What is attitude?

- **Perception** = emotional impression
- **Cognition** = thought
- **Behavioural Tendency**



Perception



“To begin with, let’s examine *perception*. Essentially it is our emotional response(s). If you like, it is the way we feel – as opposed to think – about something. Logic and rational thought have little if anything to do with perception.

Consider some common perceptions about excreta. The emotionally charged associations vary from culture to culture, but are essentially negative. Now, consider some universal perceptions about water, which also vary with culture; however, they tend to be positive in nature.

The development of water-based toilet systems might – and probably do – have a deep-seated psychological link, with water providing a mental barrier of protection as much as a physical one.” (1)



Perception
image



- Excreta
- dark
- defiled
- Evil - dangerous
- bad
- repulsion

- Water
- clear - reflecting light
- pure
- God/heavenly - safe
- good
- attraction

Cognition



“The second element of attitude is *cognition*, which deals with our rational thoughts. Similar to perceptions, generally speaking, universal notions about excreta are threatening and harmful, whereas attributes about water are healthy and helpful.

The apparent polarization between the qualities associated with excreta and water does not necessarily imply conflict. A rational mind might logically combine the two to neutralize the polarity. In the same way that primitive man realized that fire can make one warm and thus survive hostile environments, early man might have reasoned that water can cleanse remnants of excreta and further enhance survival.“(1)



Cognition
what we know



- | | |
|--|---|
| <ul style="list-style-type: none">• Excreta cast away• earthly• decay - death• soiling• harmful<ul style="list-style-type: none">- disease- death | <ul style="list-style-type: none">• Water received• heavenly• growth - life• cleansing• healthful<ul style="list-style-type: none">- recovery- necessary or life |
|--|---|

Behavioral Tendency



“The third and last element of attitude is *behavioral tendency*. Although there is a link between how one feels and thinks about a subject, there is no direct cause-effect relationship between these elements and specific behavior. Rather, there is a tendency, and merely a tendency, to behave in a specific manner, which explains why some cultures are more disposed to handling excreta than others.

Our behavioral tendencies toward excreta are instinctive. No one tells us that excreta smells bad, any more than others tell us that food with a savory aroma smells good. We intuitively trust our instinctive senses and behave accordingly.

Likewise, when threatened, we naturally react according to the degree of danger. One of the most instinctive reactions to an instinctive threat is to remove oneself from the situation. Any other tendency would jeopardize survival.“(1)

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Behavioural Tendency

Natural Reaction to Senses:

- sight, sound, smell, touch, taste



Threat response

- Fear ... flight
- Anger ... flight (insult)
- Disgust ... face, but back away
- Evolution: any other reaction leads to death



Attitude towards Excreta



“A fundamental point to understand is that our attitude towards excreta is influenced by experience, and that attitudes evolve and change over time.

We all eliminate wastes: that is a basic fact of life. How we actually perform the elimination act, and what we do with the waste, is partly dependent upon one’s sex, religion, age, health, diet..., and most importantly what facilities, if any, we are accustomed to.

Although little research has been devoted to these issues, studies do exist. For example, Prof. Alexander Kira, Cornell University (USA), conducted a study to determine peoples’ tolerance towards offensive body waste. Not surprising, those who are exposed to excreta – such as mothers of infants and health care professionals had a higher tolerance. The implications for ecological engineers are far-reaching. Don’t assume your level of tolerance, based upon conditioned experience, is the same as potential users of your ecosan system.”(1)

Source: Slide copied from (1)

Disgusting research:

- Rank: dandruff, ear wax... to faeces
- Tolerance:
 - Women
 - Health professionals



Attitude Development



“There is no right or wrong behavior or attitude, except within a given cultural context. But even within the same culture, our behavior can be influenced by a number of factors – and these develop over time.

Consider the development of Western attitudes towards toilet behavior and disposal of waste (generalized of course). Infant behavior is cute and amusing, which might explain why many don't take the threat of fecal contamination serious. In fact, many actually believe that infant feces are harmless. As we mature and become more social, attitudes and behavior change. Often our first social-excretal experience is the horrid school toilet, which is often associated with deviant behavior, shame, disgust, bullying and abuse. This might explain why, as adults, privacy become a primary concern, and public conveniences are rarely convenient. It is not surprising that one of our most natural functions becomes unmentionable, and consequently becomes masked in aphorisms.“(1)

Source: Slide copied from (1)

Negation evolves with age:

- Infant: misleading if not cute
- Children: the horrid school toilet
 - Ridiculed
 - Phase of shame
- Adult: Privacy is mandatory
 - Natural functions become unmentionable
 - Euphemisms: using the toilet, going to the bathroom, taking care of necessities, relieving oneself, answering the call of nature, taking care of business ... see a man about a horse?



Gender Aspects



“Another consideration is *gender*. Gender plays a universal role in privacy, but equally important are the physical differences between men and women. Women urinate more frequently (especially when pregnant), and use more time to eliminate wastes and get (un)dressed, than men do.

For public toilets, there are even greater concerns. Women use public facilities for more reasons, such as breast feeding, changing diapers and, yes, escaping men. And they use public facilities more often than men, because they’re in public places more often, such as doing groceries.

But studies have shown, that in many regions of the world there are far fewer facilities for women than men. In the U.K, for instance, until recently men had *twice* as many public facilities as women.“(1)

Source: Slide copied from (1)



Physical differences: women

- urinate more frequently - especially when pregnant
- more time - (un)dressing and physically
- use public facilities for more reasons
- breast feeding
- changing diapers
- escape men...
- use public facilities more often
- care of relatives

Further reading

Gender Aspects



“Ecological engineers should be acutely aware of gender issues associated with public toilets, because many ecosan systems are public facilities. The success or failure of an alternative treatment system might well hinge not on system performance, but on system use – or lack of.

System design should not necessarily be based upon existing cultural conditions, because, in fact, the current cultural context might well be flawed from the point of hygiene. This is especially critical if the number of public facilities are (unjustifiably) disproportional. Keep in mind, most toilet systems have been designed by men, who often are not aware of female needs, much less desires.

Lastly, note that times are changing – for the better. Until recently corrected, there were no women’s toilets in the U.S. Senate or the British House of Parliament simply because there were no female legislators to use them.“ (1)



Public Toilets



- Fewer facilities for women (sports & offices)
- Fewer units (female urinals?)
- Designed by men (too small)
- Cultural variation
 - Japan unisex (sound conscious)
 - Islamic (expose feet)
 - Nepal (meeting place)

Gender Aspects – Toilet Management



“Gross generalizations are dangerous, and too often misleading. However, for an economy of time and space, they are necessary. Having said that, we have noted that women tend to have a greater tolerance towards handling waste; use public toilets more often, longer and for more purposes, yet have fewer facilities than men.

Another generalization is that women tend to manage the home toilet more than men. In cultures where women stay at home, the toilet becomes a primary management issue, because their primary responsibilities of cooking, housekeeping, family hygiene, and care giving to infants and the elderly are toilet dependent.

For ecosan projects involving compost or dehydration toilets, this is a vital concern, because these systems require at some time – and usually often – the handling of excreta.” (1)

Source: Slide copied from (1)

Toilet Management



- Women are at home
- cooking - disposal of food waste
- housekeeping - toilet maintenance
- family hygiene - cleaning
 - Who decides to get a compost toilet?
 - Who takes care of it?



Cleanliness



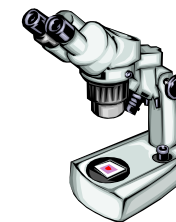
“Before we begin with the final cultural concern, the influence of religion, let us note that until the 19th century, cleanliness was not a scientific concern. Our understanding of water and excreta was not associated with molecules but myths, and the terms *hygiene* and *sanitation* were not part of the popular vocabulary. Nevertheless, many cultures did – and some still do – make a distinction between *clean* water and *cleansed* water. (The former being perceived as pure and potable, the latter being neither.)

Also, let’s dispel the common assumption that science and religion are always in conflict. Both share a common concern about human excreta – namely, human health. Science’s interests in wastewater treatment stems from two issues: the transmission of faecal related diseases and the conservation of water and nutrients in the waste. Religion’s interest in wastewater is also two-fold: the promotion of health (although most religious doctrines lack medical explanation for disease), and the observation of rituals associated with purification (in the broadest sense of the word).” (1)

Source: Slide copied from (1)

Cleanliness

- myth not molecule
- clean vs. cleansed
- Science
 - Transmission of faecal related disease
 - Conservation of water and nutrients
- religion
 - promotion of health
 - observation of rituals



Cleanliness



- Attitudes toward **urine** are not well documented, but it appears that many people have a less negative disposition towards urine than faeces. In some countries urine has been used as a disinfectant for wounds, and as an insecticide for banana weevils. However, urine's richness in nutrients is documented and well known (3). For example, many people know about the scourging effect urine can have if urinating in the same spot several times. This perception may discourage its use in agriculture as a fertiliser, but increase its use as a herbicide.
- As already mentioned, fresh **faeces** are perceived as abhorrent by most people, but dried and composted faecal material has a distinctly different appearance similar to ordinary soil and is therefore not related to its fresh origin. It is odourless and has a soil-brown colour that reminds of soil conditioner. However, some cultures may still be very reluctant to the reuse of dried faeces.
- **Greywater** is produced by households with no sewerage connection or septic tank i.e. by most people in the world. The greywater is thrown in gutters, on a lawn or yard, or piped further away. Generally, the view of greywater disposal is relaxed and little thought is devoted to its management. The interpretation is that the user has been in touch with it in the shower, sink or washbasin before it is discharged, and therefore it might be dirty but not harmful. However, it is well documented that several cultures prohibit the use of greywater.

Religion



“The interests of science and religion are neither incompatible nor contradictory. The heart of the conflict is that science and religion deal with human *behavior* differently. Science tends to introduce new concepts and modifies behavior, whereas religion generally preserves old beliefs and maintains traditions. Thus, conflict arises when science tries to alter religious behavior, including behavior that is related to health and hygiene. ecosan mitigates potential conflict by integrating science and religion into a system that is as sensitive to social concerns as the physical environment .

The heart of ecosan is a *holistic* approach towards treating human waste, which implies sustaining the human ecology as well as the biota. Consequently, the key to a successful ecosan system is its adoption to specific cultural requirements. In the same way that local geographical issues must be taken into account (e.g. weather, soil, vegetation, etc.), so must cultural considerations, not the least being religion.” (1)

Source: Slide copied from (1)

Religion

- 80% of world - substandard housing
- 70% non-Christian
- major religions
 - Judeo/Christian
 - Islam
 - Hindu
 - Buddhism



Further reading

Judeo-Christian



“Water has always had a special significance in religious purification rituals. But the use of water for sanitation – in the broadest sense of the word – generally has less to do with physical hygiene than spiritual cleaning, i.e. ablution. Spiritual cleansing is not limited to the Judeo-Christian heritage. One has only to see and smell the Ganges to know that the mass immersions in that holy river have no connection with hygiene.

Although Judeo-Christian rituals frequently require water for purification purposes, it 's apparently absent in reference to toilet behavior. Deuteronomy 23:12-13: *Thou shalt have a place also without camp and it shall be when thou wilt ease thyself, thou shalt dig therewith, and thou shalt turn back and cover that which cometh from thee.* Nowhere does it say to wash after easing thyself.

Cleanliness did not become a Christian virtue until the 19th cholera epidemic of London. It was at this time that Rev. Moule invented the Earth Closet, which is claimed by some to be the first (indoor) compost toilet.” (1)

Source: Slide copied from (1)

Judeo-Christian

- Water used for purification
 - Baptism, kosher, Pilate ...
- Bible: Deuteronomy 23:12-13: “And thou shalt have a paddle upon thy weapon; and it shall be, when thou wilt ease thyself abroad, thou shalt dig therewith, and shalt turn back and cover that which cometh from thee.”
- Monasteries (middle ages)
- Hygiene virtue (1800)s
 - Cholera claims ten thousands of lives
- Rev. Henry Moule’s Earth Closet



[Read more about H. Moule's earth closet](#)

Islam



“Moslem doctrine, however, prescribes strict procedures to limit contact with faecal material, because – by Koran edict – it is considered impure (*najassa*). A Muslim must use water to cleanse parts of the body through which *najassa* pass.

The hygiene behaviour of Muslims varies because the Koranic edicts are interpreted differently among different movements. In Iran’s Shiite society, for example, the use of excreta in agriculture and aquaculture is not condoned. In West Java, however, direct application of excrement for aquaculture is an ancient practice that has altered little under Islamic rule.

Theocratic rule may have implications for non-believers as well. For example, the Malaysian Cabinet has directed local authorities to incorporate the water requirements of Muslims in the design of public toilets.

Also note, although Islamic law requires the use of water for anal cleansing, waterless toilets are a tradition in Yemen and Zanzibar.” (1)

Source: Slide copied from (1)



Islam

- *Koran*
 - faeces are *najassa* - impure
 - anal cleaning
 - no use of blackwater, except...
 - different interpretations
- Malaysian public toilets
- Yemen’s waterless toilets
- Afghans kneel

Read more about the attitude towards excreta in Islamic societies

Hindu



“Waterless ecosan systems (i.e. dehydration toilets) have been successfully introduced in water-based Hindu cultures.

The principal Hindu text that details the code of conduct for rituals, the Artha Veda (500-200 BC), clearly specifies the use of water for sanitation. The feet are to be washed before elimination and the anal region is cleansed with water afterwards. The end of the ritual is symbolized by rinsing the mouth eight times with water. But note: there is no obligation to wash one’s hands after defecation.

Although it is difficult to imagine entire urban populations following these rituals, one can see the impact of religion on water usages and waste treatment – as well as class distinction. Followers of the Artha Veda are primarily upper- caste Brahmins; those who carry the *nightsoil*, are lower-caste Untouchables, who do not have prevalent religious attitudes about handling excrement.” (1)

Source: Slide copied from (1)

Hinduism

- *Artha Veda* (500-200 BC)
 - ritual washing (hands?)
- Caste away the problem?
 - Brahmins
 - observe hygiene rituals
 - more suited to alternative
 - Untouchables
 - handle the night soil
 - less like to afford alternatives

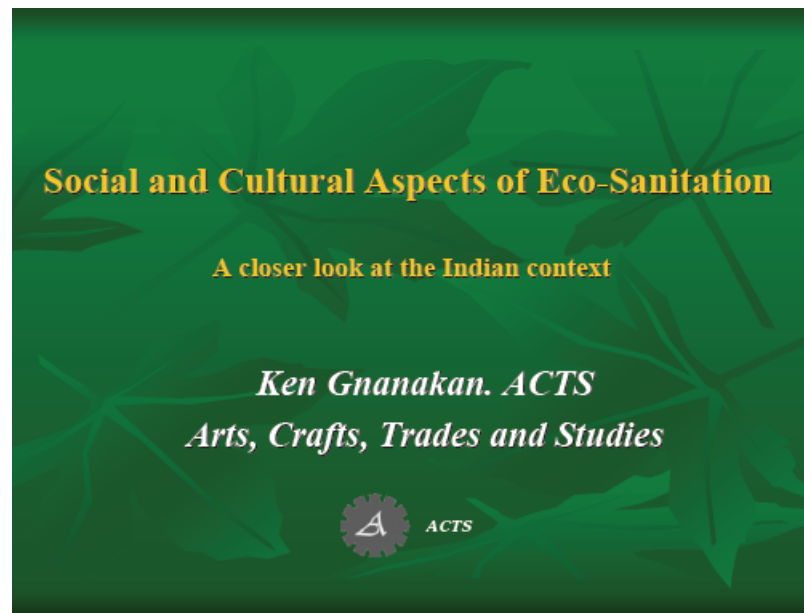


Hindu



Click on the thumbnail below to access another PowerPoint Presentation on the Social and Cultural Aspects of Eco-Sanitation. Though it looks more closely at the Indian context, the concepts can – apart of the Caste System – mostly be translated into other contexts.

It gives a short but comprehensive overview of the social and cultural problems which have to be considered when implementing an ecosan project in the Indian context.



Buddhism



“Unlike the West, the Far East evolved cultures predisposed towards using excreta. Unlike the rich Mediterranean landscape that cultivated the principal religions of the West, the food baskets of the Far East were never envisaged as lands of “milk and honey”. Intensive cultivation practices evolved to feed large populations, and this necessitated the careful use of all resources – including excreta.

Nowhere do we find excrement included more in a social context than in Buddhist cultures. An integral dimension of Buddhism is reincarnation, which preaches the natural process of recycling human energy – birth, growth, decay, death, and re-birth. Since reincarnation promotes the harmonious concept of recycling life’s treasures, it is not surprising that Buddhist cultures treat earthly resources similarly. But bear in mind that the unenlightened had been applying excreta to crops 3000 years before Buddha first began preaching about spiritual composting.” (1)

Source: Slide copied from (1)

Buddhism

- 2/3 fish farms use excreta
- Asia
 - Ecologically minded
 - Food scarcity
 - Frugal economy
- Reincarnation
- composting excreta 3000 yrs before Buddha
- Philosophy
 - absence of religious doctrine
 - not good or bad, but *how* it is used



Read more about the attitude towards excreta in societies the Far East

...and others



“Aside from the noted major religions, there are many others that address the treatment and use of excrement. Some cultures practice the burial of feces to ward off evil spirits. Other cultures use urine for purification and healing. Others still, like the Maoris, forbid the practice of allowing human waste to enter rivers: do not defile that which is pure.

Taboos and superstitions are so varied worldwide that is misleading to make generalizations. For example, in sub-Saharan Africa, there is no tradition at all of using human excreta in agriculture. But it is difficult, if not impossible, to determine if this behavior is the cause or the result of religious beliefs.

The one thing we can say with certainty is that some (perhaps much) of faithful behavior is contrary to logic. This has direct implications to ecosan engineers who prescribe recycling excreta for logical reasons.” (1)

Source: Slide copied from (1)



Other Societies

- Japan - toilet design leader
- Vietnam - compost & eco-eng
- Americas/Australia/Pacific
 - superstitions not salvation
 - taboos



Read more about norms and attitudes towards ecosan

Conclusion



“Psychology - There is a universal negative attitude towards excreta. But behavioral acts of elimination and treatment, including handling and use, vary worldwide. Motivations for use are as diverse as the systems that treat the waste, which might explain a logical link between *why* and *how* we handle excreta

Gender – The physical and social demands for toilet uses varies not only between men and women, but also between women themselves, from culture to culture. This is especially true when it comes to public toilet provision and private toilet management. Generally speaking, women use public toilets more often for more purposes than men, however they have fewer facilities, which tend to be inadequately designed.

Religion – Religion tends to influence toilet behavior and wastewater treatment more in Eastern cultures and developing countries than Western industrialized lands. The reverence for water, and its spiritual association with purification, appears more universal than the varied doctrines associated with elimination and disposal (or use) of excreta.

A final comment for “ecosan engineers”: Cultural norms about waste treatment are universally similar to those on diet. The norms toward both are both inherent and learned, and deeply rooted in psychology, gender and religion, which might explain why modifying a tradition of waste treatment is often as difficult as modifying a traditional diet. But to modify another's diet is one thing; to replace it is quite another.“ (1)

Lessons Learned – Case study



Case Study

Though many cultures have constraints or negative attitudes concerning the reuse of human excreta, these obstacles can mostly be overcome. Preconditions are, of course, community participation in the decision process as well as an open information policy and schooling.

The following case study (Heeb & Gnanakan) presents a project in the Rajendra Nagar Slum in Bangalore, India. Though Indians are in general very faecophobic, the implementation of a closed-loop system was successful: “Even working in a cultural context where handling feces is considered to be very problematic, the project proved to be feasible. But referring communication is a key prerequisite to success.”

Click directly on the thumbnail to access it.

Source Separation - New Toilets for Indian Slums

Dr. Johannes Heeb (j.heeb@gnph.ch), Gnanakan G. Gnanakan (g.gnanakan@gnph.ch)
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Keywords
source separation toilets, slum toilets, urine utilization, fecal composting, closed loop concept

Abstract
A new toilet cover has been constructed in a slum in Bangalore/India, which allows separated collection of urine and feces. Urine is used directly as a fertilizer or as agricultural substrate; compost. The feces are professionally composted. The compost is used to grow medical plants on the campus as well as for banana production. A new sustainable development concept is being tested here, one which tackles the problems of sewage water and feces and creates an opportunity for cost aspects of slum development. The success generated by the project (users 90%, compost, bacteria) can cover 50% and more of the running cost of the toilet centers.

New Toilets for Indian Slums

Context
Rajendra Nagar is a large slum with inhabitants belonging to different castes, religion and race. The majority of households in the Rajendra Nagar Slum do not have their own toilet, and have access to only one faecophobic communal toilet. The establishment of numerous compost toilet centers is considered to be of a rather great urgency. The lack of toilets is only one indication of the appalling living conditions for many thousands of slum residents, particularly women. They have to be forced to defecate in the open field before dawn or after dusk. Sewage treatment and reuse has been an associated endeavor. These toilets are aimed to bring about considerable improvement in local conditions for women and children.

Aside from addressing the plight of women, the project also deals with the cultural and religious context of India in which the handling of feces is a stigma. People who handle feces, in particular those who are "untouchable" and earn their low income through sewage disposal are considered to be the lowest tier of social ranking. The project aims to initiate a process of changing attitudes. Specially designed toilets, a carefully devised logistical system for the transport of the feces, as well as thorough composting (which minimizes handling of feces) serves to demonstrate that the handling of feces can be conducted professionally and timely and cost effectively and need not be a social stigma. On the other hand, it can become an attractive income potential for the slum residents. The project involves continues to fight caste-discrimination.



J. Heeb
Composting Beds

Implementing ecosan – Lessons Learned



- People are motivated by reasons other than health to improve their sanitation such as no smell, safety, security, comfort, privacy, convenience, minimum handling of excreta and the quality of pedestals and structures (4).
- It is often stated that the acceptance is significantly increased if householders are given a choice of technologies. A further factor which increases acceptance is long term support to ensure the cycle (of storing and treating/composting) is completed before households are left to their own devices (4).
- The acceptance of ecosan systems is easier when people understand their problems and identify solutions by themselves.
- Interest in ecosan and a closed-loop approach generally grow as people see the contents of the pit and fears about excavating „unprocessed“ faeces have diminished. People understand the concepts behind ecological sanitation, as they are simple, especially with demonstration models in place. (Learning by Seeing) (5)
- Awareness raising and outreach programmes play an important role when introducing ecosan (combination of participatory work and social marketing principles). (5).
- The desire to build a “new”, aesthetically pleasant and permanent latrine that eliminates problems of smell, flies and mosquito habitats while protecting groundwater is proving to be powerful enough to overcome cost considerations (5).
- Even working in a cultural context where handling faeces is considered to be very problematic, projects proved to be feasible. But referring communication is a key prerequisite to success (6).

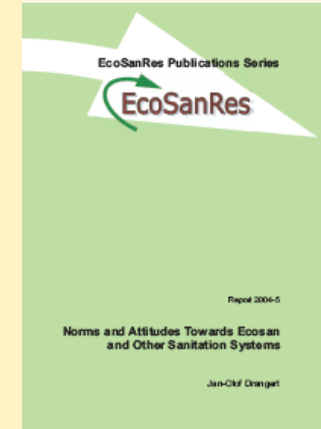
++ Further Reading: Norms and Attitudes towards Sanitation Systems



Further reading

Now **click directly on the thumbnail** to the right to read (recommended) an Ecosanres paper on norms and attitudes towards ecosan and other sanitation systems. This publication is the result of a cooperation between six experts working with ecosan, each analysing the norms and attitudes in his or her respective country (Ethiopia, Mexico, Kenya, Tanzania, Uganda, and Sweden). Topics covered include: Norms about sanitation systems, Aesthetic aspects of urine and faeces (individual attitudes), Management at household level: habits and routines in the bathroom/toilet, treatment and reuse of products, Sanitation, ecosan and gender; each of these topics is looked at from a country or even region-specific perspective.

Click on the thumbnail to the right to access the summary of the same publication. Still, it is recommended that you read, or at least skim through, the full publication.



++ Further Reading: Psychology and Sanitation



Further reading

On the following few pages, you will find a collection of articles, each 5 to 8 pages long, which discuss the implementation of ecosan projects in different parts of the world, including cultural differences and difficulties as well as marketing strategies to successfully implement ecosan. Most of these papers were presented at various international symposia concerning ecosan or ecosan related approaches. The abstracts of the individual papers are presented here, so that you can estimate which publication interests you most.

Further reading

Psychology and sanitation – a personal perspective (by Isabelle Wilke)

Abstract: “Promoting ecological sanitation involves confronting potential users on a psychological level. I illustrate this through my personal experience as a user of a dry urine diversion system. However, everyone’s experience will be different. George Kelly’s concept of ‘personal construct’ is a useful concept towards describing the multitude of attitudes, preferences and taboos people may have surrounding sanitation.

Asking people to change the sanitation system they’re accustomed to, is asking a lot. It amounts to asking potential users to change their particular and ingrained personal construct regarding sanitation. How does one convert potential users to accept ecosan? From my experience I have crystallised four key concepts which played a major role in successfully changing my ‘flush-loo’ personal construct to incorporate ecosan. These are motivation, choice, supportive environment and experience.”

Click directly on the thumbnail to view this document.



++ Further Reading: Acceptance of ecosan in South Africa



Further reading

Factors which have influenced the acceptance of ecosan in South Africa and development of a marketing strategy (by Richard Holden, Riana Terreblanche and Mary Muller)

Abstract: “This paper contends that the marketing of ecological sanitation is no different for any other sanitation technology. People are motivated by reasons other than health to improve their sanitation such as no smell, safety, security, comfort, privacy, convenience, minimum handling of excreta and the quality of pedestals and structures. At present many promoters of ecological sanitation focus on re-use, as the primary motivating factor for people to adopt the technology. The results of the ‘South African Sanitation Programme’, however, have shown that by marketing the product to people’s aspirations ecological sanitation can be successfully introduced at a wide scale in a sustainable manner, whilst at the same time satisfying the Governments desire to provide access to sanitation to all. This paper sets out how ecological sanitation was introduced as an alternative technology into the Sanitation Programme in the Northern Cape Province, political support gained, and introduced subsequently into other Provinces.”

Click directly on the thumbnail to view this document.



++ Further Reading: Lessons Learnt on ecosan in Southern Africa



Further reading

Lessons Learnt on ecosan in Southern Africa – Towards Closed-loop Sanitation? (by Cathrine Wirbelauer, Edward D. Breslin and Edward Guzha)

Abstract: “Lessons learnt on ecosan in Southern Africa – towards closed-loop sanitation?” is a short analysis of experiences gained in Ecological Sanitation with an emphasis on closed-loop systems. In Southern African countries, the poorer segments amongst a rapidly growing population cannot afford conventional sewage systems and existing approaches to wastewater management and sanitation have become largely non-viable. In response to this, following the example of some ecosan projects around the world the first compost latrines and Urine Diverting systems were introduced in the Region in the late nineties. Since then households are slowly starting to see the advantages of ecosan and the systems are becoming more and more accepted despite users having to manipulate urine and faecal matter (often considered a taboo and dirty). However, the response to the different systems available in these countries has not been the same but was depending on household expectations, availability of space, living conditions etc.. Even though ecosan is still very young in the Region it seems to be a suitable option to address sanitation and environmental concerns, but there is still a long way to go before the loops will be closing in Southern Africa.

Click directly on the thumbnail to view this document.



++ Further Reading: Ecosan Experiences in Uganda



Further reading

Experiences in setting up ecosan toilets in shoreline settlements in Uganda (by R. Kagawa, S. Kiwanuka, T. Okurut Okia, F. Bagambe and Ch. Kanyesigye)

Abstract: “Lake Victoria Environmental Management Project, Uganda, identified the use of Ecological Sanitation as the most appropriate sanitation method in pollution control for high density, low income fisher communities along the northern shoreline of Lake Victoria. In 2000, three pilot ecosan toilets of four stances, one urinal and one shower each were setup in two districts. The type of the ecosan employed was the separate and dehydrate technique where urine was considered for direct use in farming and the dehydrated faecal matter composted and reused. Operation and maintenance by the end users proved a nightmare since sustainability, multicultural and religious – conflict of faith – issues were some of the aspects initially not considered. This led to the failure of the system to separate faeces and urine and be able to dehydrate the former. Further sensitisation of the population was repeated and after three months the operation and maintenance of the system improved. The ecosan technology has picked up in Uganda and it is expected to assist in sanitation and pollution control within the Lake Victoria catchment. In the long-run the health of the population and the environment is expected to improve.”

Click directly on the thumbnail to view this document.



++ Further Reading: Ecological Sanitation in Mozambique



Further reading

Ecological sanitation in Mozambique: baseline data on acceptability, use and performance

Abstract: “76 households using ecological sanitation (“ecosan”) latrines in Niassa province, Mozambique, were surveyed regarding the factors contributing to the adoption, acceptability, use, and maintenance of these latrines. Neighbours without ecological sanitation latrines were also surveyed, for comparison. Biosolid samples taken from in-use latrine pits had a mean temperature of 23°C, pH of 8.3 and moisture content of 48%. Most users learned of ecological sanitation through the non-governmental organization WaterAid and its partner organizations. Households chose ecological sanitation for a variety of reasons, including the design, construction, maintenance, and health benefit of the latrines. Users found ecosan latrines very satisfactory, and were following maintenance directions.”

Click directly on the thumbnail to view this document.



++ Main Links to ecosan



Links

ecosan services foundation: Ecosan Services Foundation is a Non-Profit Organisation Ecosan Services Foundation that runs face-to-face and e-learning training courses on ecological sanitation in cooperation with seecon international gmbh and other partners. with the objective to provide full ecological sanitation project packages including consulting, project planning, implementation, operation & maintenance and project financing.

<http://www.ecosanservices.org/>



Links

seecon international gmbh: seecon international gmbh is a Switzerland based environmental consulting agency working in the fields of closed loop recycling management, innovation research, development cooperation and consulting. For more than a decade, its main focus has been the promotion and spreading of sustainable sanitation approaches.

www.seecon.ch



Links

Asia Pro Eco II Ecosan Capacity Programme: ECOSAN-CAPACITY is a project funded by the European Commission as part of the component B "Capacity Building" of the AsiaProEco Programme. The main objective of this venture is to build capacity for future implementation of ecological sanitation projects in India, thus increasing the number of ecosan experts capable of planning, designing and realising sustainable sanitation projects in the region. The project, which started on the 1st of January of 2007 is carried out by six civil society, research and education organisations from each corner of the Indian nation, as well as two European institutions.

<http://www.ecosan-capacity.org/>



++ Main Links to ecosan



Links

GTZ ecosan website: The special website of the GTZ concerning ecological sanitation is a mine of information – conference proceedings, the latest research reports, links, graphs, and fact sheet explain almost all topics related to ecosan.

Click on the following link to access this website:

<http://www.gtz.de/en/themen/umwelt-infrastruktur/wasser/8524.htm> or visit www.gtz.de/ecosan



Links

EcoSanRes (Ecological Sanitation Research) is an international environment and development programme on ecological sanitation. The website contains a vast amount of PDF-files and other documents on ecosan, which can all be downloaded. As well, there is an ecosan-relevant link-list.

Click on the following link to access this website: www.ecosanres.org



Links

ecosan Norway: Link to the Norwegian University of Life Sciences. On this site, you can for instance download PowerPoint-presentations from the “Appropriate Sanitation for the Developing World” Course, which was held each year in August. As well, there is an extensive list with literary references concerning ecosan, of which some are available online.

Click on the following link to access this website:

<http://www.nlh.no/research/ecosan/> or <http://www.ecosan.no>



Links

IRC International Water and Sanitation Centre: This website contains an enormous amount of news and information, practical advice as well research and training, on low-cost water supply and sanitation in developing countries, in English, French, Spanish and Portuguese. Many of the publications can be downloaded as PDF-files – the website is updated very frequently.

Click on the following link to access this website: <http://www.irc.nl/>



++ Main Links to ecosan



Links

SANICON: Sanitation Connection is an internet-based resource that gives you access to accurate, reliable and up-to-date information on technologies, institutions and financing of sanitation systems around the world. Institutions of international standing contribute to the information base by providing and maintaining a topic of their specialization.

Click on the following link to access this website: www.sanicon.net



Links

WASH: The “Water, Sanitation and Hygiene for All”-campaign ('WASH') is a concerted advocacy and communications campaign to mobilize political awareness, support and action to end the suffering of the 1.1 billion people without access to safe water, and the 2.4 billion without adequate sanitation.

The website provides detailed information about the aims, objectives, methodology and activities behind the campaign, both internationally and locally.

Click on the following link to access this website:

<http://www.wsscc.org/dataweb.cfm?code=26>



Links

The world toilet organisation WTO is a non-profit organization, established in Singapore in 2001. The organization communicates the need for better toilet standards in both the developed and developing economies of the world and provides a service platform for all toilet associations, related organizations and committed individuals to facilitate an exchange of ideas, health and cultural issues. Activities include:

- Research & development, Conferences
- Training academy (i.e. World Toilet College)
- Emergency disaster projects (i.e. tsunami affected areas)

Click on the following link to access this website:

http://www.worldtoilet.org/hp/wto_hp.htm



++ Main Links to ecosan



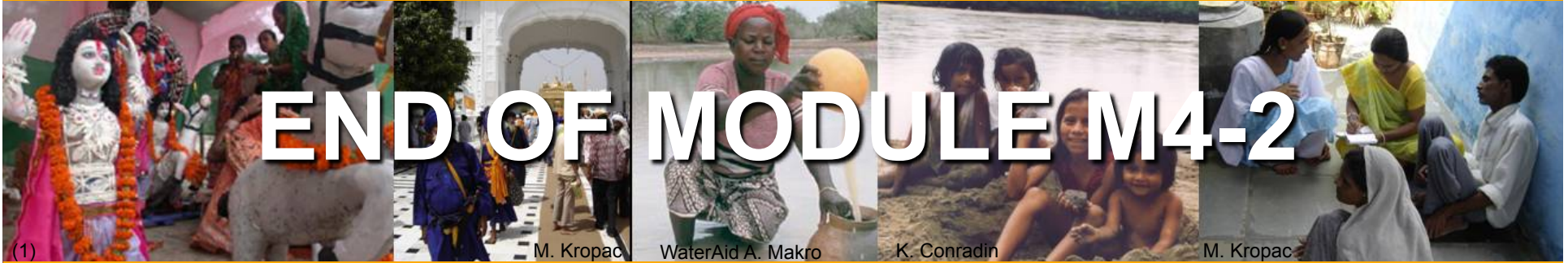
Links

International Ecological Engineering Society **IEES**: The IEES provides a common forum for diverse persons and groups involved in ecological engineering projects, including engineers, biologists, ecological economists, development workers, and many others.

The IEES is a non-profit organisation which seeks to: Promote contacts between scientists and eco-engineers from different countries and coordinate their activities; improve the cooperation between ecologists and engineers; exchange information in the field of ecological engineering among scientific and educational organizations, private enterprises, non-governmental organizations and governmental bodies.

Click on the following link to access this website: <http://www.iees.ch/>





END OF MODULE M4-2

(1)

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[BACK TO THE MAIN MENU](#)



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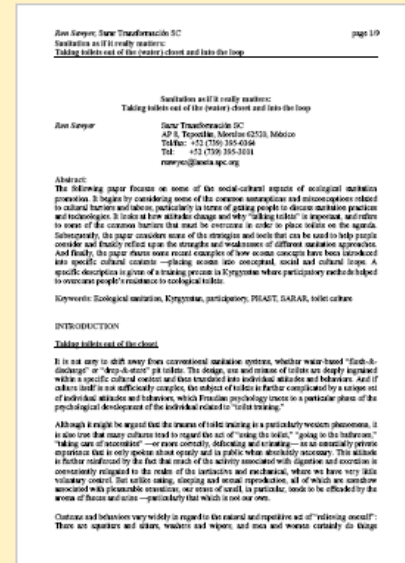
++ Further Reading: Social Aspects of Sanitation



Further reading

Click directly on the thumbnail to read (recommended) the following publication by R. Sawyer: **Sanitation as if it really matters: Taking toilets out of the (water) closet and into the loop.**

This nine-page publication focuses on some of the social-cultural aspects of ecological sanitation promotion, such as the common assumptions and misconceptions related to cultural barriers and taboos, particularly in terms of talking about sanitation practices. It looks at how attitudes change and why “talking toilets” is important. Subsequently, the paper considers some of the strategies and tools that can be used to help people consider and frankly reflect upon the strengths and weaknesses of different sanitation approaches. And finally, the paper shares some recent examples of how ecosan concepts have been introduced into specific cultural contexts. A specific description is given of a training process in Kyrgyzstan where participatory methods helped to overcome people’s resistance to ecological toilets.



++ Henry Moule's Earth Closet



Further reading

Click directly on the thumbnail to the right to read a short essay on how the British Reverent Henry Moule invented the earth closet, in the middle of the 19th century. Interestingly, there was a long time a strong discussion between the defendants of earth closets, and those who favoured water-closets. Though the water-closet "is in the lead" until now, the arguments present in the discussion today were already used 150 years ago!



[http://www.jldr.com/crapperoo2.jpg](#)

Rev Henry Moule and the Earth Closet

An earth-closet is a lavatory in which dry earth is used to cover excreta. Until a hundred years ago, the principal cause of epidemics for people living in the vicinity was either a privy with a cess-pool, or an earth-closet. The earliest book on the subject is CHAMBERLAIN'S "The Specialist."

In Britain, Queen Victoria used an earth-closet at Windsor Castle, although many types of water-closets were available. For many years, the earth- and water-closets were rival systems with champions and detractors on both sides.

Henry Moule, champion of the earth-closet, was born in Hestonham, Wiltshire, on 27 January 1801, the sixth son of a squire. He went to Cambridge, and in 1820 became vicar of Fordington in Dorset, where he remained for the rest of his life. In 1831 he purchased a 20-acre farmstead which included fields and woods. Instead of the common, unimproved, and waste, caused by cess-pools and water-charges, "The cess-pool had only had six days an unusual abundance," he remarked, "the water-closet ... has only increased those evils." And he went on to describe his own sanitary discovery.

In the summer of 1835, he decided his cess-pool was intolerable, and a nuisance to his neighbours, so he filled it in, and instructed all his tenants to use buckets. At first he found the change in practices in his yard, one that does, but he discovered by accident that in three or four weeks "not a trace of the matter could be discovered." So he put up a shed, called the dry earth house, and moved the contents of the bucket with the dry earth every morning. "The whole operation does not take a day more than a quarter of an hour. And within the minute after its completion neither the eye nor nose can perceive anything offensive."

Then he discovered that he could recycle the earth, and use the same stuff several times, and he began to grow fruit. "Fruit is not a vehicle for conveying it out of sight and of the premises. It neither absorbs nor effectively decolors it. The grass ... aged ... is dried surface earth, used to manure and for decoloring offensive matters." And he said, he no longer knew any valuable manure, but obtained a "luxuriant growth of vegetables in my garden."

He backed up this last point with a scientific experiment, consisting of a barrow to receive one bush of a field with earth used five years in his closet, and another with an equal weight of superphosphate. Seeds were planted in both barrows, and those nurtured with earth manure grew one fourth bigger than those given only superphosphate.

Moule quoted a biblical precedent for his efforts, from a set of instructions about cleanliness: "And thou shalt have a paddle upon thy vessel, and it shall be, when thou wilt ease thyself abroad, thou shalt dig therewith, and shalt turn back and cover that which cometh from thee." (Lev. 15:12) The New English Bible is even clearer: "With your equipment you will have a trowel, and when you quit yourself, you shall scrape a hole with it and then turn and cover your excrement."

According to Moule, doctors said that if this scheme could be generally adopted, "much more would be effected by it for the prevention and check of disease and epidemics, and for the improvement of health, than can ever be effected by the discovery of vaccination."

About 1850, some people in England brought the earth-closet inside the house, and various patent revolutionaries appeared. The first by Thomas Subbance in 1839 (No. 7013). In 1850 Henry Moule produced a sort of concrete with a bucket below seat, and a wiper behind it.

++ Further Reading: Ecosan & Hygienic Considerations for Women



Further
reading

Click directly on the thumbnail to the right to access the publicationon “Ecological Sanitation and Hygienic Considerations for Women” by ‘Women in Europe for a Common Future’. It highlights the specific needs of women when using dry urine separating toilets, and contains a checklist of what should be available in such a toilet so that also women and girls feel comfortable to use it at all times.



++ Regional Context: Islamic Societies



- “In Islamic societies, direct contact with excreta is abhorred; according to Koranic edict excreta are regarded as containing impurities (najassa). Excreta use is permitted only when the najassa have been removed (7). Thus, the agricultural use of untreated excreta would not be tolerated, and any attempt to modify this view would be futile.
- On the other hand, excreta use after treatment would be acceptable if the treatment is such that the najassa are removed - for example, after thermophilic composting, which produces a humus-like substance that has no visual or odorous connection with the original material.
- Wastewater may be used for irrigation provided that the impurities (najassa) present in the raw wastewater are removed. Untreated wastewater is in fact used in some Islamic countries, principally in areas where there is an extreme water shortage, and then generally from a local wadi (ephemeral desert stream), but this is clearly a result of economic need and not of cultural preference.”

Source: (6)

++ Regional Context: Far East



“In contrast, fresh human excreta have been used in agriculture and aquaculture in Asian countries for thousands of years. This practice is in social accord with the Japanese and Chinese traditions of frugality and reflects an economic appreciation of soil fertility. This has evolved in response to the need to feed large populations with limited land availability, which makes it a necessity to use all fertilizing resources available. However, access to cheap chemical fertilizers has changed the practices in Japan (8). The use of fresh excreta as fertilizer is often combined with the practice to always cook the food and avoid eating raw vegetables, thus reducing potential disease transmission.”

Source: (6)

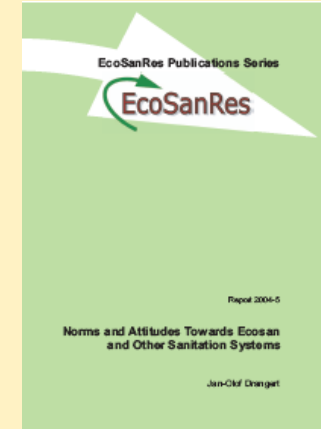
++ Norms and Attitudes towards ecosan and Other Sanitation Systems



Further reading

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Click on the thumbnail to the right to access the summary of the same publication. Still, it is recommended that you read, or at least skim through, the full publication.



++ Glossary and Abbreviations



ACTS	Agriculture, Crafts, Trades, Studies
Ecosanres	EcoSanRes (ecological sanitation research) is an international environment and development programme on ecological sanitation, based in Sweden.
GTZ	German Agency for Technical Cooperation
WHO	World Health Organisation



See glossary or abbreviations for unknown terms & definitions!

Glossary

Abbreviations