
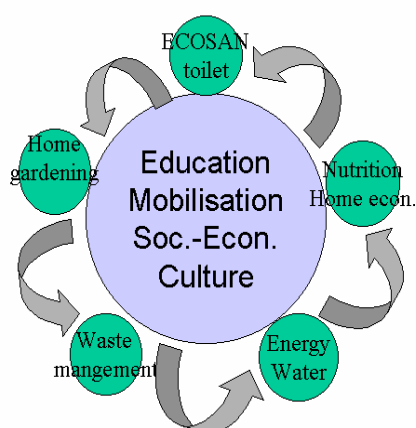


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Short CV for Introduction Purposes (100 words max)	Almaz Terrefe, Social Science degree from Stockholm University. Twenty years of working experience at the Stockholm University in Sweden and ten years of working experience on Ecological Sanitation in Ethiopia. Has travelled in many countries to learn and share the experience of Ethiopia on the ECOSAN project. (presenter of the joint paper)
Photograph attached (jpg)	



ECOSAN – (Economy, Ecology and Sanitation) The recycling sanitation and agricultural system.

Empowerment of women and combat poverty through recycling. (A case study from Ethiopia).

The purpose of this paper is to highlight some gender-related and food security issues of an integrated home gardening, sanitation and water project where

different parts of the household refuse from kitchen, toilet and garden is recycled to produce food, mainly by the women at home. The result of a seven-year pilot project in Ethiopia has made us believe that recycling of household refuse may be one of the decisive factors to management and structural training as an action in general and of the family in particular.

Women who are systematically trained on basic knowledge of the economical and ecological

value of household refuse have in this project shown their potential in natural resource management. Hopefully their children, even the female ones who have grown in this productive home will be the future decision makers on natural resource management at a higher level.

The Ethiopian ECOSAN system is structured on the principles of recycling all the organic substances of household refuse along with human excreta. Those include biodegradable substances such as urine, faeces, kitchen refuse, garden and agricultural refuse - all of which are mainly handled by women of the households. Instead of disposing those substances, they can be sorted, composted and recycled and will become an immediately available resource to be used in *Home Gardening* or *Urban Agriculture*.

Through this integrated approach, we believe that three important problems can be managed even at a household level. Those are – sanitation, environmental degradation and food shortage.

The questions we raise here are

- How specifically does basic knowledge of recycling of household refuse including human excreta contribute to the empowerment of men and women in the household?
- How does ecological sanitation contribute to new understanding of women's and men's roles in the household as an **entry to management of natural resources** and how does ECOSAN introduce a domestic food production for the household?
- Is culture a hindrance to promote Ecological Sanitation?

Background

One of the main human problems in Ethiopia like in many other developing countries today is shortage of water and food. As a result of the drought in 2002 it was estimated that approximately 13 million Ethiopians were threatened by famine. In many cases during such a disaster men leave their home and migrate to search for job. What they earn is often enough only for their daily food and shelter. The women and children who remain in the drought area are the most vulnerable group. But also “Among others the mainstream approach to modernizing agriculture has led to dependency on external inputs, such as seeds, fertilizer, pesticides etc.” (J. Kotschi, et.al 1990). Thus to train the whole family in general and the women in particular on how to produce food with what is available in their immediate environment is important.

Cultural Sensitivity and ECOSAN

An immediate and usual reaction is the question of cultural sensitivity and acceptability of human excreta used for edibles.

The base-line study started in Ethiopia already in 1992, and was submitted to Disop in Belgium and Sida in Sweden 1994. The debate of the ‘cultural hindrance’ started already while drafting the project proposal in 1993. No one who read the proposal escaped to comment on the cultural aspect where many saw a ‘hindrance’ of using human excreta as fertilizer. Many of the comments were relevant and constructive while some were stereotype and destructive.

Thus we would genuinely like to share our experience in SUDEA, to inspire all of those who would like to promote Ecological Sanitation. In short, ***culture should not be taken as a hindrance to promote re-cycling of human excreta as fertilizer even though cultural sensitivity is important.***

Ten years ago, though we repeatedly heard that re-cycling of human excreta is an old culture particularly in China and in some Latin American countries, it was very difficult to find

literature that could be used with confidence. The literature and practices we found were fragmented. Unlike today the internet references were not available. Thus our confidence on the continuation of the ECOSAN system was built from our scientific advisory group from Sweden, Kenya and Ethiopia.

Already in 1993, before submitting the project proposal to any donor the cultural aspect had been discussed with Dr. Eva Poluha an Anthropologist with many years of experience of the Ethiopian culture. Dr. Years Work Admassie, an Ethiopian sociologist and Dr. Beth Main Ahlberg a Kenyan origin from Uppsala University. All of them encouraged us to start the project but also mentioned that even if the urine diverting toilet is accepted as a toilet, it might take time to accept recycling of human excreta as fertilizer for edibles.

Through out the pilot project it is repeatedly observed that some people have preconceived and decisive ideas about the grass root people. They believe that grass root people will not accept the urine diverting toilet, sitting instead of squatting and above all to use human excreta as fertilizer.

The first five years the most difficult group to convince were the autocrats and some medical personnel. In one of the workshops a medical doctor who had never before heard of using human excreta as fertilizer argued aggressively against the idea of re-cycling human excreta. Fortunately, the convincing argument came from another participant who said '*if it is applied cleanly as explained by the presenters it is even cleaner than the vegetables we buy and eat today*'. Like any other issue some people accept the idea after further explanation and very few remain in disapproval. We have found it easier to convince Agronomists. This group have the experience of using animal excreta as fertilizer and can easily see the usefulness of human excreta in comparison to medical doctors. Most important method of convincing is to show how cleanly it is applied.

The art of convincing

As Ecological Sanitation needs a multi-disciplinary approach one of the most important entries is to read, practice, discuss and learn from different experts. In the case of Ethiopia we had nine advisors from five different disciplines. Our main supporter in ideology, Dr Torsten Modig, from Umea University is an invaluable person. Without his confirmation and continuous advice to improve different methods the pilot project in Ethiopia would never have been successful.

To convince anybody especially on using human excreta as fertilizer the promoter her- or himself must be very convinced and knowledgeable. All answers to relevant questions must be answered with confidence. Tolerance and respect to the audience is the most important key of the 'convincing system'. A well organized and studied introduction to the ECOSAN-system as a whole helps.

One convincing method we found was the use of an Eco-cycle as above page 1. Some convincing bullets are:

ECOSAN UD toilet

- Wo(hu)man friendly technique (Comfortable)
- Very little or no bad odour
- No fly breeding
- Water saving
- Natural fertilizer
- Affordability

Urban agriculture – Home Gardening

- Human excreta are rich in N, P K, clean and safe to handle. But one of the convincing methods is to show how cleanly it is deposited under the top soil without getting in contact neither with the food nor with the users hand
- The usefulness of the compost in retaining water and no garbage problem
- Availability of food at home
- Clean and green environment
- Very little space with intensive production
- Active training of natural resource management at home thus empowering women and children.

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Composting and re-cycling

- A well organized composting system is important to convince the user. To show a clean compost pile helps a lot
- To demonstrate composting together with the audience
- To secure that nothing gets in contact with the body
- To secure cleanness in the surrounding
- No leaching from the compost pile
- No smell in the surrounding etc.

Energy and water

- Solar energy for food production
- Wind Energy for grinding and pumping
- Water saving production technique

Nutritional Value training

- Diversification of nutrients adjusted to culture
- New cookbook

ECONOMY

It is significant that the ECOSAN system results in a product - fertiliser - which families can use to increase their income and/or to enrich their household gardens and at the same time protect the environment. Both the sanitation and the agricultural aspect can be thought to increase women's power to control several aspects of their own lives. Instead of a producer of waste, she becomes a producer of resources, which can benefit herself and her family.

We believe widespread poverty is a part of a cumulative effect of individual activities and can hopefully be solved to some extent by reducing the negative activities and increasing the positive activities in the household. Awareness creation at the same time is essential. To do that, the existing force of human capacity should be equally encouraged, trained and stimulated. Our findings have also proven that the training of the women in the family has been very important. The children at home have learned by seeing their mother producing food throughout the years and they also participate independently of sex.

Finally, it is usual to over-emphasise culture as the main constraint to get ECOSAN to be implemented in big scale. Since 2002, after the WSSD meeting in Johannesburg, we have noticed that much effort is put to reach the quantity promised for the Millennium Development Goals (MDG). Most implementers are concerned more on reaching the number of toilets and forgetting about the appropriateness and sustainability which was also promised for the MDG.

Sri Lanka and other countries affected are now, after the tsunami, an example where most implementers are rushing to build many latrines even when they are aware of contaminating the ground water. In the coastal areas fresh water is scarce but the latrines and toilets constructed are known to contaminate water resources.