

GENDER PERSPECTIVES ON ECOLOGICAL SANITATIONⁱ

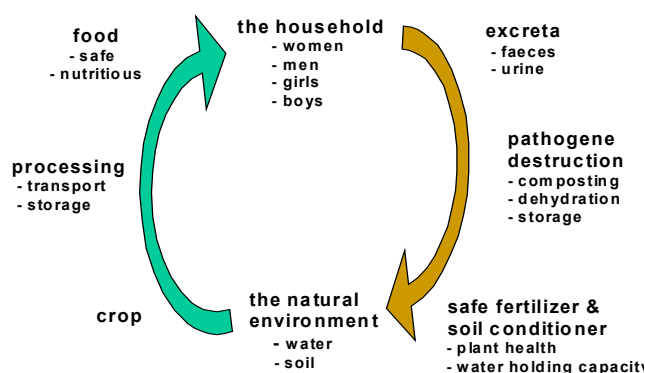
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Ecological sanitation: an alternative route to sustainable livelihoods

Over 90 percent of the sewerage in the South is discharged untreated, polluting rivers, lakes and coastal areas and thus causing the spread of waterborne diseases (Esrey et. al. 2001). The dumping of human excreta into the sea destroys marine life and greatly reduces the potential of the sea and coastal areas to support food security. Conventional linear approaches to sanitation - the "flush-and-discharge" model and the "drop-and-store" model - can cause both environmental and health problems. The "flush-and-discharge" model wastes scarce resources of freshwater and can contaminate water sources, causing serious health risks (Esrey and Andersson, 1999). Even the very simple "drop-and-store" models, such as the pit latrines used in many parts of Africa, have their limitations and risks. They cannot be used in areas with impenetrable ground and high water-tables or where flooding is a problem. There is a risk that groundwater will be contaminated with pathogens from pit latrines, threatening the water supply. Furthermore, certain disease vectors breed in humid pits causing diseases such as filariasis, yellow fever and arboviruses (Esrey et. al. 2001). Pit latrines can also be rejected by potential users because of smells and flies. In addition, a limitation in both models is the failure to return natural fertilizers contained in human excreta to the land which means that a valuable resource (human excreta) which could restore depleted soils is wasted. Chemical fertilizers are then required which, in turn, deplete other valuable, finite resources, such as fossil fuels and phosphate. Such an approach is not sustainable and will ultimately diminish food supplies (Esrey and Andersson, 2000a).

Ecological sanitation is an ecosystem approach to waste disposal based on three key principles - that sanitation should be safe from a health perspective; "green" or non-polluting; and be based on principles of reuse and recycling of the valuable nutrients in human excreta (Esrey and Andersson, 2000b). There are two basic techniques in ecological sanitation. One is urine-diversion, in which urine and faeces are kept separate. In the second technique urine and faeces are combined and transformed into humus through a composting process. In each type of ecological sanitation it is possible to manage the system with little or no water, and it is also possible to keep the end products out of ground and surface waters (ibid).

Ecological sanitation is an attempt to move away from linear solutions of waste disposal towards systems based on a circular flow of nutrients. It considers human excreta a resource and not a waste to be disposed of as far away as possible. Ecological sanitation is environmentally sound - when excreta are recovered, rendered safe, and recycled into soil, no pollution occurs and the environment is protected (ibid).ⁱⁱⁱ "Not only is drinking water preserved for drinking, rather than flushing, receiving bodies of water are protected from nutrients and organic matter. The environmental and human health risks are minimized and eliminated. Fish populations, coral reefs, and biodiversity are protected. Nitrogen pollution, with adverse human health effects, is reduced: (Esrey and Andersson, 2000b:2).^{iv} (See figure).



The nutrient loop: Recovering, rendering safe and recycling nutrients in human excreta

Ecological sanitation systems can make an invaluable contribution to sustainable livelihoods and poverty reduction, including in urban areas, by increasing food security through the return of nutrients from excreta to the soil to increase soil fertility and by reducing pollution and health risks. Such systems also impact positively on food security through better management of scarce water resources and contribute to health through reducing transmission of disease and increasing nutritional intake (ibid). The compost produced can be sold or used for household food production. The establishment of home gardens and sale of produce can be facilitated and the resulting increased income can lead to greater nutritional well-being for families. The establishment of an ecological sanitation system can create opportunities for local entrepreneurs to design and build toilets as well as provide training on the building of the toilets and the use of the end product, creating further income generation potential.

Ecological sanitation approaches are thus far more feasible than conventional sanitation systems both financially and environmentally (ibid) and offer more from a sustainable livelihood and poverty reduction perspective. In addition, these systems can foster decentralized management systems, with potential for empowering people, providing for local livelihoods and enhancing community cohesion. This paper contends, however, that the contribution of ecological sanitation will be significantly enhanced if gender perspectives are an integral part of future developments.

Identifying gender perspectives

The gender perspectives on conventional sanitation systems have not been well established. It is difficult to generalise on gender perspectives in sanitation, given that women and men are not homogenous groups and gender relations are context-specific. At a general level, however, there are a number of gender aspects which influence how women, compared with men, are involved in and benefit from improvements to sanitation. In many parts of the South women have less access to education and other resources such as extension services and credit; have heavier work burdens; are more constrained by poor health; have a lower social status; and are poorly represented in decision-making at both household and community levels. There are often considerable differences and inequalities between women and men in terms of

the potential for having their voices heard and making viable choices on important issues in their lives.

While men in most areas in the South do the construction of latrines, women are usually responsible for keeping them clean and useable. Women assist children, the aged and the sick with their hygiene and sanitation needs. Women also take the main responsibility for socializing children into the use of latrines and for providing health/hygiene education for children. Women's perceptions, needs and priorities in relation to sanitation can be quite different from men's. Research in East Africa indicated that safety (particularly for children) and privacy were the main concerns of women. Women wanted to be sure that their children would not fall into the holes and they wanted doors which could be closed to prevent passers-by from looking in (Hannan-Andersson, 1984). What men want in relation to sanitation has never been specifically assessed. Sanitation programmes, as with many other development programmes, have been built around assumptions on some sort of "gender-neutral" person who does not exist in reality. Men's interests, needs and priorities in relation to sanitation may well be as neglected as women's.

The rights of the girl-child, which have been in focus since the Beijing Conference in 1995,^v should include access to appropriate and adequate sanitation. It has long been established that lack of adequate sanitation facilities, in particular from a privacy perspective, has implications for the education of girls. Parents are reluctant to send their girls to school in some parts of the world where school-level sanitation is inadequate. Experience from Tanzania in the 1980s revealed that parents sometimes took their girls out of primary school altogether because of poor sanitation facilities. In other cases girls' schooling was irregular because they could not go to school during menstruation, due to inadequate facilities.^{vi} It is against human dignity and wellbeing that girls in some parts of the world have to face a lifetime of the discomfort, lack of privacy, indignity, ill-health and other risks associated with systems where they are forced to urinate and defecate in open sites away from the community and only at specific limited times.^{vii}

Attention to gender perspectives in sanitation programmes has often been limited to analysis of women's contributions relative to men's, and the impacts on women in terms of anticipated benefits, within the framework of the existing division of responsibilities. The status quo in relation to roles, resources and power has been accepted as given. The strategy to increase women's involvement in sanitation improvements has also focused on increasing women's participation at the project level. Often the type of participation encouraged has been determined by the perception of women as only having "domestic" consumer roles. Despite the role of women in hygiene and sanitation at household level, latrine construction programmes which provide income-generation opportunities in communities often presume that only men will be interested in, or suited to, involvement in training programmes and credit schemes established to develop entrepreneurship in this area. The management roles of women have been ignored, as well as the possibilities and need for bringing women into more political discussions of sanitation. It has also been presumed that participation in sanitation programmes is automatically positive for women. The possible socio-economic costs involved, given the multitude of other responsibilities women have, are normally not considered.

The gender perspectives on ecological sanitation have not yet been specifically explored. Women are actively involved in food crop production and concerned about food security in many parts of the South and would be directly affected by increased access to soil nutrients provided through ecological sanitation and potential for increasing food production, including

through small vegetable gardens and fruit trees close to the homes. Given women's overall prime responsibility for the health and wellbeing of families in many areas, it could also be assumed that women would support ecological sanitation on the basis of health gains. Women's support would also be critical because of the need to pour ashes into the toilets after use, to dry out the faeces, increase the pH level and contribute to elimination of pathogens. Since women have the responsibility for tending the cooking fires, their involvement could be needed to ensure a supply of ashes to be used in the latrines. Men, on the other hand, do the digging of the pits and construction of the latrine structure and it could be assumed that men would appreciate not having to construct a new latrine and pit each time the old pit is filled. The possibility of simply emptying the pit and continuing to use it must be positive from a labour expenditure point of view. Both women and men need access to cash incomes and would be assumed to welcome the potential economic benefits of ecological sanitation, if the opportunities for small-scale entrepreneurship in construction of latrines and starting small market gardens are made available to both women and men.

There are also important gender perspectives on the urban agriculture linked to ecological sanitation. Women are responsible for food security in urban areas in many countries in the South. With urban agriculture based on ecological sanitation, families could save money by growing their own fruit and vegetables and/or selling some of the produce. Women often have a great need for increased sources of income but are constrained by their lesser access to formal education and training, relative to men, and are often confined to the informal sector. Urban agriculture, as a means of ensuring greater food security and potential supplementary income, is particularly attractive to women as it allows them to work close to their homes and facilitates the carrying out of other important roles, such as care of children, elderly and sick. The importance of ensuring that women as well as men are involved in planning and decision-making on urban agriculture initiatives, and have equitable access to training and extension services needs, however, to be emphasized.

Some concrete experiences on the importance of gender perspectives in relation to ecological sanitation are beginning to emerge from the project level in different parts of the world. Evidence from ecological sanitation systems in South India reveals that in areas with high water-tables where other forms of sanitation are not feasible, ecological sanitation provides huge benefits to women and girls.^{viii} Without access to ecological sanitation the alternative for poor households is that all members of the households - women and men and girls and boys - have to walk to open defecation sites (separate sites for women and men), sometimes up to a distance of 0.5 km from the household. The health risks at the defecation sites are enormous because the human wastes are left lying around in the open. There are additional problems for women and girls as they are only able to use these sites to urinate and defecate at dawn and dusk. This leads to considerable discomfort and risk for urinary and other infections, particularly during menstruation. Having ecological toilets near or in the households also reduces the risks involved for women in the walk to the defecation sites - including the risks of physical and psychological harassment by men. The ecological toilet in use in South India requires much less water than the more expensive alternative favoured by more well-off families, the water flush toilets, which reduces the work burden for women in drawing and carrying water for the toilets. Experiments are also being carried out to show that women can benefit from the reuse of the urine for productive enterprises.^{ix}

Experience from Zimbabwe indicates that women in rural areas prefer the ecological sanitation alternative - the arbor loos^x - to the conventional pit latrines as they can be built closer to the house. Women expressed appreciation of the gains in terms of privacy and safety, particularly for children, in night use. The use of the filled pits for planting fruit trees was also considered beneficial by women. Having the fruit trees close to the house enhances the potential for tending them properly, particularly in terms of being able to use the grey water from bathing and dish washing for watering. Men expressed appreciation of the arbor loos because the pits are smaller than conventional pit latrines and building them requires less labour. These findings are, however, not based on well-documented empirical data but on the observation of practitioners working in the communities.^{xi} More well-substantiated data on the gender perspectives of ecological sanitation needs to be provided.

Conclusions

Ecological sanitation improvements should be developed within a framework that links poverty reduction, human rights and democratic development, gender equality and maintenance of the natural resource base. The framework must be people-centred, recognizing the poor - women and men - as actors and change agents rather than victims. The contributions, needs, priorities of all stakeholders, women as well as men, should be taken into account. Agarwall and Narain (undated) highlighted the importance of institutions and governance issues for natural resource management, calling for frameworks which build on traditional knowledge, technology and regulatory mechanisms rather than on systems imposed from outside. The success of the local institutions in the examples presented in their research was clearly related to the creation of forums which were based on participatory democracy, and allowed for all household members to discuss problems, identify solutions and establish sustainable management systems.

The claims that ecological sanitation approaches will lead to decentralized management systems which foster social cohesion and empowerment will only be realized if the questions of socio-economic equity are addressed. In particular, there is need to give greater attention to the gender perspectives in management and governance issues linked to ecological sanitation. Ecological sanitation approaches can only be empowering if both women and men have the possibility to influence the direction of, participate actively in the implementation of, and benefit from, these approaches

To bring about constructive change more efforts need to be made to better understand the gender implications of ecological sanitation. Ways of reaching and involving both women and men have to be developed, particularly in terms of mobilizing women and men as agents of change and providing equitable access to economic benefits and opportunities, such the training, entrepreneurial development support and credit made available in the context of ecological sanitation programmes. Men need to be sensitized on the important contributions of women in the area of sanitation and encouraged to provide more support to their equitable involvement.

An important starting point must be the understanding that the basis for women's more equitable involvement in ecological sanitation initiatives should not be the perception of women as vulnerable, marginal and victims, but rather recognition of women as well as men as major stakeholders, actors and change-agents in both households and communities. Both women and men have a stake in the achievement of sustainable livelihoods and eradication of poverty and have important contributions to make in this process.

Integrating gender perspectives, or giving attention to both women and men, in ecological sanitation programmes is important for securing human rights and social justice. It is also critical for ensuring that the goals and objectives of ecological sanitation, particularly in relation to sustainable livelihoods and poverty reduction, are effectively achieved.

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Footnotes

ⁱ This is based on a paper prepared for the 97th Annual Meeting of the Association of American Geographers, February 27-March 3, 2001, New York. Session 4.1.28. Gendered Livelihoods 1: Gender Space, Work and Development, sponsored by Geographic Perspectives on Women, Economic Geography, Asian Geography and Qualitative Methods Specialty Groups and IGU Gender Commission

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ⁱⁱⁱ There are different ways to make human excreta safe for reuse and the options are partly dependent on cultural preferences and whether or not urine is diverted away from faeces. See Esrey, S. 1998.

^{iv} There is some opposition to ecological sanitation based on fears of health risks involved.

^v See: United Nations, 1995. *The Beijing Declaration and Platform for Action*, New York.

^{vi} Based on the experience from field work in Kilimanjaro, Singida and Shinyanga regions carried out by Ingvar Andersson and Carolyn Hannan.

^{vii} Based on communication with Paul Calvert, South India.

^{viii} Based on communication with Paul Calvert, South India.

^{ix} Ibid.

^x An "arbor loo" is a simple form of latrine with a shallow pit, a very light, moveable slab (and in some cases moveable toilet superstructure). It does not involve urine separation but uses a compost approach. When the pit is three-quarters full a new pit is dug and the slab and superstructure is moved to the new site. The old pit is filled with

topsoil in which a fruit-tree is planted. Bananas, papaya and guava grow rapidly and produce high quality fruit in large quantities. This method is developed by Peter Morgan, Zimbabwe

^{xi} Based on communication with Peter Morgan and Jim Latham, Zimbabwe.