Chapter 4

Workshop resolution and summary of group work

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Summary of the outcome of the group-work sessions

Six working groups were formed with delegates having work experience from the same continent in order to strengthen future regional cooperation and networking, as well as to facilitate a focused discussion. All six groups were given the task of identifying 5 favourable features and five obstacles to the introduction of dry systems. After presentations of their findings in plenum, the groups resumed work on ways to overcome the obstacles.

Positive aspects of the no-mix option

The group presentations of favourable features brought up similar aspects. The concept of urine diversion seems to work in both rural and urban areas. The environment, including receiving waters, is cleaner or less polluted. There is no leachate from the system and less or no odour in the house. Water is saved. The conversion of a waste problem into a potential resource as fertilizer is much appreciated. By fertilizing the land one may help to reclaim degraded areas. The perceptions of using excreta in agriculture are very favourable in countries like China, Vietnam and Japan. The no-mix units cost much less than sewerage systems and there is a range of costs for different no-mix alternatives. Another property of the no-mix unit is that the ownership and control lies with the owner of the toilet. This involvement of the people makes the no-mix system robust in social terms also.

Experienced or anticipated obstacles

Interesting differences were found in the presentations of obstacles to introducing dry systems. The Latin America group brought up problems of finance and participation, and also the need for more research on the health impact. The group noted that no-mix systems do not take care of grey water. The two Africa groups pointed to the problem caused by attitudes to excreta in some countries (waterborne being the ultimate solution), but also a supposed lack of discipline among users. One group had doubts whether the dry system would be cheap enough and whether necessary skills are available. The other group also brought up that no-mix units may be dangerous if not well operated. The two groups dealing with Asia stressed that taboos about the use of excreta apply only in some countries (Burma, Thailand, Laos, Indonesia and Cambodia). In Vietnam the opposite problem has arisen: farmers are so eager to collect the compost that they do it too early. The groups worried about the cost for poor areas, and that environmental advantages may not be relevant to the poor. They expected problems in educating people. One group also mentioned the problems with regulations involving many sectors which were anticipated when the no-mix systems are scaled up.

Suggestions to overcome obstacles

The groups came up with suggestions about how to overcome the stated obstacles. One overriding aspect seemed to be that many obstacles could be solved by simultaneous measures in various fields.

Making the option of no-mix toilets known: Promotion and marketing should take place at several levels. The idea should be implemented under Agenda 21, and be part of government promotion generally as well as on a project basis. Cooperation among various sectors, such as health, agriculture, water resources, education, mass media etc. will be necessary. A task group

may be instrumental in organising such cooperation. Numerous training activities geared towards specific groups (ranging from policy makers to children) were suggested by the working groups.

Taboos: Taboos may fade away as a consequence of training activities, credits made available, media and government promotion etc. Another suggestion is that quality control (collective control in collection and distribution of the products) will help overcome taboos by reducing the risk of disease transmission. Another suggestion was that scavangers (dogs etc.) take care of the products. Also pilot projects are important to show user costs and benefits as well as to provide a chance to judge the system's appropriateness and hygienic qualities in practice. Also, initiatives from the private sector should be stimulated to make the no-mix units a commodity like food and bicycles.

Affordability and financial constraints: A no-mix unit can be upgraded step by step and the initial cost can therefore be kept low and affordable. One economic rationale behind the no-mix system is that it provides a cheap fertilizer which can generate an income, and localised reuse will lower transport cost and demands on institutions. Still there is a need for further research into cost reduction and appropriate and applicable methods. These may include group arrangements in terms of work and finance. If more sophisticated solutions are selected, neighbours can push for credit arrangements. If there is a commitment there is always a way out, according to one group.

Further development and research: The number of units already operating gives ample possibilities to do research on various aspects of the operation of toilets and reuse of nutrients. Microbiological and behavioural studies are needed to assess health aspects, agricultural and institutional/economic studies are called for to assess the potentials of the system. The participants also agreed to network regionally and between regions to keep informed about experiences and results coming out.

Preparation of a Statement from the Sanitation Workshop to be presented at the Stockholm Water Symposium

The participants discussed at some length what is the common basis and understanding emerging from the workshop. The fact that urine contains the major part of the nutrients makes the no-mix system an interesting option. The studies so far about the success of sanitizing urine and faeces by storing them for half a year or more show positive results. Thus, there is no reason to wait for more studies before starting up new trials in different countries. In the meantime one should look into the standards for urine-diversion systems in the USA.

The possibility of turning a serious waste problem (eutrophication of lakes etc.) into a resource and input in agricultural production is appreciated and should be explored further.

The participants stressed that the no-mix option is as much dependent on user perceptions and institutional arrangements as on technology. Therefore, the mode of approaching communities and users may vary according to the local conditions. The wide range of no-mix alternatives also provides for a choice by the users according to their priorities and views. Also, cost and equity issues were brought forward as points to look into further.

The participants also pointed out the need for networking among those involved in projects and programmes. The areas which need more research are outlined in the statement itself.

4.2. Workshop Resolution
as presented at the Stockholm Water Symposium August 11-15 1997

Introduction
In line with Agenda 21, which promotes a holistic view on water and the vital importance of sanitation, the 1997 Sida Sanitation Workshop was held on:

◊ the prevention of sanitation-related diseases;

◊ the separation of the components of human excreta (urine and faeces) and its use in agricultural production, based on the don't mix approach; and

◊ the conservation and protection of water sources.

The crisis in sanitation
The health of the world's population is increasingly threatened by inadequate sanitation, caused by:

◊ continued increase in population densities;

◊ lack of access to basic sanitation for the majority of the world's population; and

◊ overpromotion of unaffordable and un-sustainable sanitation technologies (on site as well as waterborne), which often result in uncontrolled distribution of nutrients and pathogens into the environment.

Waterborne sewage systems in particular focus on reducing risks to public health and, lately, the environment, but should also produce resources which can be used in food production.

Sanitation technologies primarily need to focus on:

◊ the prevention of sanitation-related diseases;

◊ the need to remove and recycle nutrients to prevent contamination of water supplies, which has become increasingly costly; and

◊ the institutional and financial capability to adequately operate and maintain such systems for the entire population. This does not exist in many cases.

A proposed approach
Proven, effective ways to avoid the above problems are:

◊ containing urine and faeces at source, thereby reducing the risk of pathogens being spread from one area to another;

◊ avoiding mixing urine and faeces; and

◊ avoiding mixing excreta and water.

This can reduce treatment costs and provide useful agricultural resources.

Improved sanitation, and especially the don't mix approach, provides the following benefits:

Water
More than one billion people have insufficient water to meet their basic needs. Water supplies are becoming increasingly scarce and the don't mix approach can be used to conserve and protect water resources.

Food
Sustainable food production can benefit from the appropriate use of human urine and faeces, for the following reasons:

◊ urine contains a balanced mix of essential minerals, principally nitrogen, phosphorus and potassium, and can be used as a fertiliser; and

◊ faeces can be used as a soil conditioner after the destruction of pathogens.

Both have very low levels of heavy metals and are locally available for agricultural purposes.

Health and a healthy environment
Urine contains most of the nutrients and faeces most of the pathogens found in human excreta. By keeping them apart rather than mixing them in a common container or pipe, the handling of each can be simplified.

By avoiding or reducing the water to flush faeces the volume of dangerous material can be further reduced, water conserved and pollution prevented.

Use of urine as a fertiliser has the potential to contribute to the reduction of greenhouse effects.

Implementation
The don't mix approach has been successfully implemented in rural and periurban areas in several parts of the world.

The effective implementation of the don't mix approach, like all other sustainable systems, is enhanced by:

◊ the creation of effective political will and legal environments;

◊ promotion of decentralised decision-making, planning and implementation;

◊ a multidisciplinary partnership of communities, government institutions, research, teaching and training organisations and the private sector;

◊ demand-driven, community-based empowerment approaches;

◊ mobilisation of lo
activities (private s

◊ appropriate choic
technical, cultural
considerations.

Research
In order to enhance our und
the don't mix approach, researc
on:

◊ applications of the approach whic
appropriate to various environmental
socioeconomic conditions;

◊ people's attitudes and beliefs with regard to the handling of human urine and faeces;

◊ viral transmission;

◊ faecal pollution of urine;

◊ agricultural production; and

◊ applications in areas of high population density.

The way forward
People can join hands to improve access to sanitation and optimise the use of water and nutrients, thereby improving the quality of life.

We recommend that the don't mix approach be further researched, adopted and adapted to other regions of the world and areas of high population density, which requires:

◊ the inclusion of a concept within a range of sanitation options;

◊ a network of practitioners;

◊ further research on agricultural use;

◊ pilot projects to test its application in areas of high population density; and

◊ participatory research to overcome restrictive attitudes and perceptions with regard to the handling of human urine and faeces.

We invite participants in the Stockholm Water Symposium to engage with other stakeholders in their countries to consider sanitation with regard to sustainability, and to investigate the feasibility of the don't mix approach.