The Ecological Sanitation Alternative

First Orientation Workshop

Gardenville Hotel, Butuan City, Agusan del Norte, Philippines
January 31 - February 4, 2000

Philippine Center for Water and Sanitation -

The International Training Network Foundation

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This report summarizes the results of the First Orientation Workshop on the Ecological Sanitation Alternative conducted by the Philippine Center for Water and Sanitation - The International Training Network Foundation held at the Gardenville Hotel, Butuan City, Agusan del Norte, Philippines from January 31 to February 4, 2000.

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The Editor
ITN Foundation - Philippines
Penthouse 3, Minnesota Mansion
267 Ermin Garcia Street
Cubao, Quezon City, Philippines
Telefax: (632) 912-0531 and
(632) 911-5783
E-mail:
itnphil@compass.com.ph.
Website: www.itnphil.org.ph

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Manila
2000

Introduction

The Philippine Center for Water and Sanitation - The International Training Network (ITN) Foundation conducted an orientation workshop on Ecological Alternatives to Sanitation in Butuan City, Agusan del Norte, Philippines on January 31 to February 3, 2000. Two renowned authors in the field of ecological sanitation served as resource persons: Uno Winblad of Sweden and Jean Gough of Honduras.

Uno Winblad is author of a large number of books and articles on environmental sanitation, including the books ***Sanitation Without Water*** *and* ***Ecological Sanitation****. He studied architecture and urban planning in Sweden and tropical architecture in London. Since 1963 he has been working in third world countries on projects related to environment and health. He is currently involved in research and development on innovative sanitation systems for urban areas. Uno has conducted training courses in China, Vietnam, South Africa, Uganda, Bolivia and Central America.*

Jean Gough was trained as a sanitary engineer in the United States. She was in charge of a participatory peri-urban upgrading program in Tegucigalpa, Honduras. Jean is one of the co-authors of the book ***Ecological Sanitation*** *and has conducted training courses in Central America, Bolivia and Angola. She worked as a water and sanitation program officer at UNICEF El Salvador and is at present senior program officer at UNICEF India.*

The workshop was attended by Filipino engineers, writers, researchers, agriculturists, community development workers, planners, environmentalists and those who want a healthy world to live in. Two engineers from ITN Bangladesh were among the participants.

The reference manual used throughout the orientation workshop was the book ***Ecological Sanitation*** *by Steven Esrey, Jean Gough, Dave Rapaport, Ron Sawyer, Mayling Simpson-Hebert, Jorge Vargas and Uno Winblad published by the Swedish International Development Cooperation Agency (Sida) in 1998. Most of the contents of the lectures came from this book.*

The participants' discussions led to two vital questions: Where do we go from here? How can we introduce ecological sanitation systems in the Philippines? Some recommendations focused on the creation of an effective political will and a legal environment for improved access to sanitation. Most focused on promoting ecological alternatives to sanitation in the Philippines.

Ecological Sanitation

The ecological sanitation alternative is based on three fundamental aspects: rendering human excreta safe, preventing pollution rather than attempting to control it after we pollute, and using the safe products of sanitized human excreta for agricultural purposes.

The ecological approach to sanitation is a cycle -- a sustainable closed loop system -- that treats human excreta not as waste but a resource. Human excreta are processed on site and then, if necessary, further processed off site until they are completely free of disease organisms. The nutrients contained in the excreta are then recycled by using them in agriculture.

About 3 billion people representing half of the world's population currently lack access to adequate sanitation. Ecological sanitation or ECOSAN is a response to this challenge. It is an alternative to the conventional flush and discharge sanitation system where a relatively small amount of human feces is allowed to pollute a huge amount of water. In most cases, the resulting sewage is discharged completely untreated into surface waters.

Such is not the case with ECOSAN. It considers the reality that there is widespread shortage of water, that most wastewater is not treated, and that the environment can no longer cope with pollution.

In ECOSAN, the relatively harmless urine is separated from feces which requires dehydration or sanitization before it can be safely handled and used as fertilizer. This recycling system of sanitation prevents pollution, fights infection, and promotes zero-waste management. It also encourages food production through household level organic farming or gardening in containers.

ECOSAN options are available for a whole range of socio-economic conditions. The vision of ECOSAN is a safe, affordable, non-polluting sanitation for every household. Sanitation is a key determinant of both equity in society and society's ability to sustain itself. If we cannot meet the sanitation challenge, we will not be able to provide for the needs of the present generation without hindering that of future generations.

Advantages and Disadvantages of Sanitation Systems in the Philippines

The participants were divided into small groups and asked to discuss the advantages and disadvantages of existing sanitation systems in the Philippines. The following represents the consolidated outputs of the various group discussions.

SANITATION SYSTEM	ADVANTAGES	DISADVANTAGES
Flush and discharge/ Water sealed toilets	Sanitary, odorless can be treated, free from vectors	Needs much water, expensive, contaminates ground water
Ventilated improved latrine	Cheap, no need for water, insects are trapped	Not totally sanitary, smells a bit, contaminates ground water
Double vent improved latrine	Cheap, no need for water. compost can be used	Smells a bit, insects can enter, contaminates ground water
Antipolo pit latrine	Cheap, no need for water	Smelly, unsanitary, attracts insects, contaminates ground water
Flush and store	No odor, free from vectors, convenient, safe, presentable	High cost of collection, no proper dumping site for collected waste
Drop and store	Low cost, easy to construct, needs only a small area, requires no water	Pit could collapse, risk of overflow during heavy rains, smells
Chamber pot Bed pan	Convenient, affordable, portable, convenient for old people and those with no access to comfort rooms.	Odorous, risky

Destruction of Pathogenic Organisms

Human excreta contain bacteria, viruses, protozoa and helminths or parasites which can result in a wide variety of illnesses. The first and most important criterion of ecological sanitation, and all sanitation approaches, is that the system forms a barrier against the spread of diseases caused by pathogens or harmful living things in human excreta.

When a person excretes a pathogen which is not contained or destroyed, the environment becomes contaminated. Once human excreta gain access to the larger environment, they can contaminate hands, water, foods, fields, flies, etc. and there is a repeated cycle of infection, contamination and infection.

Barriers to the spread of pathogens include washing hands, cooking food, and a dry system of sanitation based on ECOSAN principles. A combination of low moisture, low amount of organic matter or nutrients, and high pH can rapidly destroy pathogens.

Dehydration is an effective method of pathogen destruction. Wet methods of excreta disposal, like flush and discharge toilets, are not efficient at pathogen destruction. Wastewater is an ideal environment for pathogen survival because it mimics the intestines in many ways: moist, anaerobic, rich in organic matter and nutrients. Wastewater also increase disease rates of people when spread on crops or discharged on waterways prior to effective treatment.

This recommended four-step process renders excreta safe for handling and recycling.

1. **Keep the volume of dangerous material small** by diverting the urine and not adding (flushing) water.
2. **Prevent the dispersal of material containing pathogens** by storing it in some kind of secure device until safe for recycling.
3. **Reduce the volume and weight of pathogenic material** by dehydration and/ or decomposition to facilitate storage, transport and further treatment.
4. **Reduce pathogens to a harmless state by sanitization**: primary treatment on site (dehydration/ decomposition, retention), secondary treatment on/off site (further dehydration, high temperature composting, changes in pH by the addition of lime), and, if necessary, tertiary treatment (incineration).

Discussions in Relation to Sanitation Systems in the Philippines

Group discussions and the resulting plenary session revealed the following information.

* Undertake creative strategies to make people understand and accept ECOSAN as a system, especially in cultures with aversion to feces handling. ECOSAN technology needs promotion, awareness and community participation.

* Adding dry material like ash, lime, etc. dehydrates feces. In sanitizing feces, retention time is needed before returning it to the soil.

* Composting toilets can be made like a piece of furniture which people can carry wherever they move. A dry system of sanitation can work in the humid tropics where people use water for anal cleaning.

* Separate urine from feces. An enzyme in feces produces bad odor when combined with urine. Dehydrating feces prevents the spread of pathogens.

* In terms of smell, ECOSAN toilets are less offensive than water sealed toilets because the air goes down and out through the air vents.

* Design, build and popularize the use of urinals for girls.

* The Building Permit Law in the Philippines needs to be amended in order for ECOSAN to really take root. Sanitary engineers need to be oriented on ECOSAN.

* To improve sanitation in areas where ground water level is very high, it is recommended to adopt the "double vault" system or to use culvert to prevent cave-in and seepage.

* Make people understand ecology. Point out to them that after flushing the toilet, we usually forget what happens next. Ground water gets contaminated. Waste water reach rivers without undergoing treatment.

* There are existing designs of composting toilets that utilize kitchen wastes. There are also floating dry toilets suited for flood prone areas.

Recycling Human Urine and Sanitized Feces

Urine can be directly used as fertilizer. Feces still need to be sanitized through a combination of safe storage and quick destruction of pathogens in order to break the vicious cycle of infection and reinfection. Sanitized feces can then be used as fertilizer to improve the soil for agriculture.

Environmental conditions which speed up the death of pathogens in feces include:

- increase in temperatures
- decrease in moisture
- decrease in nutrients
- decrease in organisms
- increase in sunlight
- increase in pH

Decreasing moisture and increasing temperature work together to produce a faster die-off than if only one factor is altered. Ash can increase the pH.

Urine

An adult may produce about 400 liters of urine a year containing 4 kg of nitrogen, 0.4 kg of phosphorous and and 0.9 kg of potassium. These nutrients are in ideal forms for uptake by plants, more appropriate compared with the quantities of nutrients in chemical fertilizers. An added advantage is the heavy metal concentrations in human urine which are much lower than those of most chemical fertilizers.

When urine is collected for use as fertilizer, store it in a covered container to prevent odors and loss of nitrogen to the air. Urine can be directly applied on open soil. If used on plants it must be diluted one part to 2-5 parts water to prevent scorching.

Feces

Feces consist mainly of undigested organic matter such as fibers made up of carbon. The total amount per person per year is 25-50 kg containing up to 0.55 kg of nitrogen, 0.18 kg of phosphorous and 0.37 kg of potassium. Although feces contain fewer nutrients than urine, they are a valuable soil conditioner.

After pathogen destruction through dehydration and/or decomposition, the resulting inoffensive material may be applied to the soil to increase the organic matter content, improve water holding capacity and increase the availability of nutrients. Humus from the decomposition process also helps to maintain a healthy population of beneficial soil organisms that protects plants from soil-borne diseases.

Ecological Sanitation based on Dehydration

There are various examples of ECOSAN toilets, both ancient and modern. These toilets promote disease prevention, water conservation, environment protection, return of nutrients, acceptability, affordability and simplicity. An ECOSAN toilet can be adapted according to situations and cultural practices.

In dehydrating toilets, the contents of the processing vault are dried with the help of heat, ventilation, and the addition of dry material. The moisture content should as quickly as possible be brought down to below 25%. At this level, there is rapid pathogen destruction, no smell and no fly breeding. The use of specialized collection devices such as squatting pans or seat risers which divert urine for storage in a separate container, allows the feces to be dehydrated fairly easily.

Vietnamese double-vault dehydrating toilet

The classic example of an ecological sanitation system based on dehydration is the Vietnamese double-vault toilet. It is widely used in northern Vietnam and over the past 20 years the concept has also been used in Central America, Mexico and Sweden.

In Northern Vietnam it used to be common practice to fertilize rice fields with fresh excreta. As this was a dangerous practice the health authorities in 1956 started campaigns to construct double-vault dry toilets. The campaigns were followed by long and persistent health education programs. The objective of the new toilet design was to kill pathogens before the feces were spread on the fields.

The Vietnamese toilet consists of two processing chambers each with a volume of about 0.3 cubic meters. The toilet is built entirely above ground with the processing chambers placed on a solid floor of concrete, bricks or clay. The floor is built up to at least 10 cm. above ground so that heavy rains do not flood it. The toilet is often placed at the back of the garden, sometimes next to a pigpen.

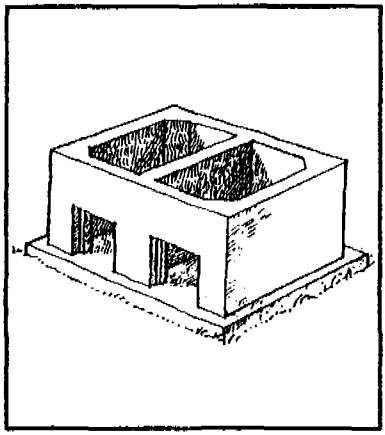
The processing chambers are covered with a squatting slab that has two drop holes, footrests and a groove for urine. Both holes have tight fitting lids. At the back there are two openings, 30 x 30 cm., for the removal of the dehydrated material. These openings are kept sealed until it

is time to empty one of the chambers.

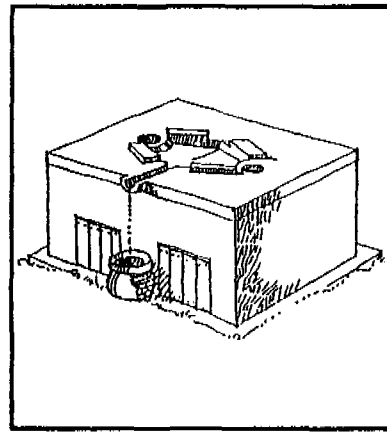
People excrete in one of the chambers. Before the vault is used for the first time, the household members cover the floor with a layer of powdered earth. This is to absorb moisture from the feces and to prevent them from sticking to the floor. After each use people sprinkle two bowls of ashes over the feces. The ashes absorb moisture, neutralize bad odors and make the feces less attractive to flies.

are fairly dry and compact. The jar for collection of urine can be placed in position either empty or partly filled with water, lime or ashes. The urine or the urine-soaked ashes are used as fertilizer.

The first vault can be used after about two months by a household of 5-10 persons . When it is two-thirds full, someone in the household levels the content with a stick. He or she then fills the vault to the brim with dried, powdered earth, and seals the vault. All



The processing chambers of the Vietnamese double-vault toilet. Each vault is 0.8 x 0.8 x 0.5 meter. There are two 0.3 x 0.3 meter openings for removal of sanitized feces.



The processing chambers with a squatting slab for urine diversion, a pot for collecting urine and lids for the two openings for removal of dehydrated feces. The drop hole not in use is closed with a stone and sealed with mud or mortar.

Urine drains away through the groove in the slab and collects in a jar behind the toilet. Paper used for anal cleaning is dropped in a box or jar and burnt. Thus, in the vaults or chambers there are only feces, ashes and soil. The contents

openings are tightly closed with lime mortar or clay. The other vault now comes into use. When after another two months the second vault is nearly full, the first vault is emptied. The dehydrated feces, now odorless, are used as fertilizer.

Ecological Sanitation based on Composting

In a composting toilet, feces, along with additional bulking agents such as vegetable scraps, straw, peat moss, wood shavings, coconut husks are deposited into a processing chamber where soil-based micro-organisms decompose the solids. A composting toilet tries to achieve optimal conditions for biological decomposition. Sufficient oxygen should be able to penetrate the compost heap to maintain aerobic conditions. The material in the composting vault should have a moisture content of 50-60%. The carbon-nitrogen ratio should be within the range of 15:1 to 30:1. The temperature of the composting vault should be above 15 degrees Centigrade.

A variety of organisms contribute to the breakdown of the material in a composting toilet. They range in size from viruses, bacteria, fungi and algae to earthworms and insects. They all play a major role in mixing, aerating, tearing apart and breaking down the contents of the pile in the toilet's processing vault. As long as they remain inside the vault their activities are good and should be encouraged. It might even be a good idea to place earthworms in the toilet. If the environment is favorable for them they will multiply, burrowing holes through the compost heap, eating odorous organic matter and thereby converting it into rich organic soil.

Double Vault Composting Toilet

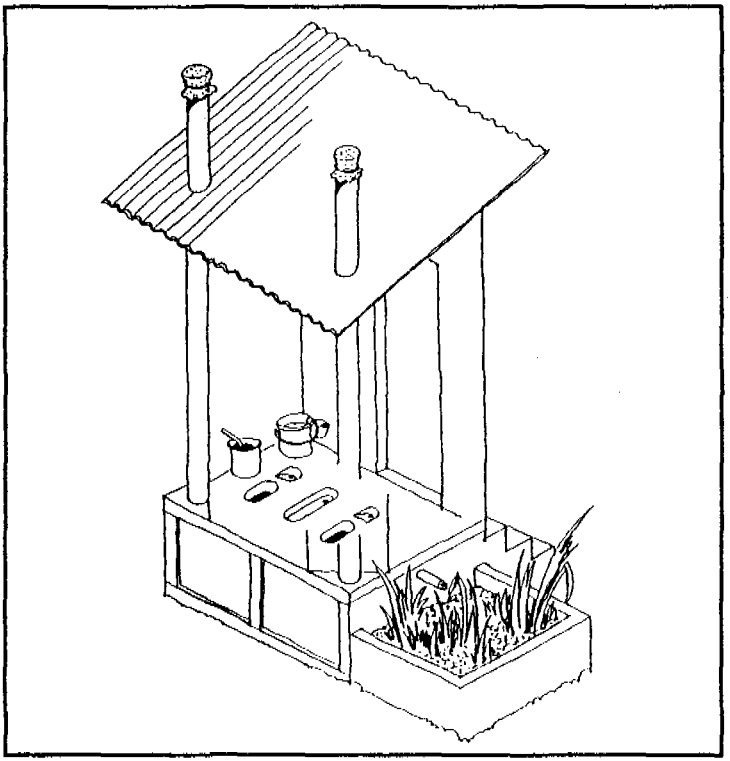
In Kerala, India, the Vietnamese sanitation system has been adapted. Urine and water used for anal cleaning are diverted into an evapo-transpiration box or bed next to the toilet which is planted with flowers or vegetables. The vault is lined with straw before use. This provides a carbon-rich bed to receive the feces and to absorb the moisture. A handful of ashes are sprinkled over the feces after every defecation. Straw, leafy material and paper scraps are added to hasten decomposition. A reduction in the volume of the vault's contents confirms that decomposition is taking place. The first vault is opened after a year.

The evapo-transpiration bed requires very little maintenance. Excessive growth is cut back, chopped into small pieces and added to the processing vault.

This dry, above ground toilet is appropriate. The area has a high water table and the wells have been contaminated by seepage

from pit and pour-flush toilets. As there is very little space available, many of the composting toilets were built close to the house. In a few cases, they were built right against the house wall. The toilets are promising: well maintained and free of flies and smells.

This example shows that a dry system of sanitation is appropriate in a humid climate. It also shows that the device (a double-vault toilet with urine diversion) that works in Vietnam by using a dehydration process, can, with different operation (the addition of carbon-rich material), work by using a decomposition process instead. The success is due to: good mobilization of the local population - especially the women, effective hygiene education and regular follow-up.



The Kerala double-vault toilet. Over each vault there is a drop hole for feces and a funnel for urine. Between the two vaults is a through over which anal cleaning is performed. The water used for anal cleaning and the urine flow into the evapo-transpiration bed planted with vegetables or flowers.

Which is more Appropriate – Dehydration or Composting?

Participants engaged in small group discussions on whether dehydration or composting is more approapriate in their area.

The first group discussed that the community or the household members should be the one to decide which ECOSAN toilet is best for them. However, before this happens, people should be informed of all aspects of the technology, the ecological concerns associated with it, and the various options available to them.

The second group explained that composting cannot be hurried in cold, mountainous areas. In such a case, dehydration can be resorted to.

The third group enumerated location, climate, social acceptability, attitudes, usefulness of the end product, health aspects, financial capability, culture, availability of resources, and convenience as among the factors to consider on which method to use. These will determine which method is replicable, realistic, ecologically friendly, healthy, acceptable and appropriate. Let the learning process continue through experimentation and adaptation.

One group explained that composting is more appropriate in relatively cold upland areas with high humidity while dehydration is appropriate in hot coastal areas with low humidity. Try dehydration in urban areas and composting in rural areas.

Another group suggested promoting dehydration first then try composting later on.

The two engineers from ITN-Bangladesh discussed that ECOSAN toilets based on dehydration would be difficult to promote in their area because the rainy season lasts from three to four months.

The resource person, Uno WInblad, reported that in other countries, composting is more demanding to the user. Dehydration is more simple as it is just a matter of getting rid of the liquid. Climate is a major consideration. In very dry conditions, it is impossible to compost. He also discussed that ECOSAN is a system and that both methods of dehydration and composting are actually needed.

Cautionary Tales

Unfamiliar Aspects

ECOSAN options require handling, at the household level, of the products. When people see for themselves how a well managed ECOSAN system works, their reservatios disappear. Once ECOSAN has gone to scale and hundreds of thousands of units are in use in towns and cities, individual households no longer need to handle the products at all. At that scale the output from ECOSAN toilets can be collected, further processed and sold by centralized collection centers with trained personnel.

Urine diversion toilet seat-risers and squatting slabs are a unique innovation intended to keep vault contents dry and to allow the urine to be used as fertilizer. Those unfamiliar with the system find it hard to believe that they work. These designs work equally well for both sexes as long as they squat or seat.

Skeptics claim that ECOSAN is an inferior alternative: smelly, attracts flies and incompatible with modern living. However, if ECOSAN toilets are aesthetically designed, built and managed properly, they can be a high-standard, modern option. ECOSAN toilets should be viewed as superior: they protect the environment as no other existing toilet option can.

It is possible to find or develop an ECOSAN option that fits the budget. ECOSAN systems need not be expensive to build because:

* the entire device is built above ground - there is thus no need for expensive digging and lining of pits.
* urine is diverted, no water is used for flushing and the volume of the processing vault(s) is fairly small (as they are emptied periodically).
* the contents of the processing vault(s) are dry which means that there is no need for expensive water-tight constructions.

ECOSAN toilets can also be used in multistorey buildings as has been achieved in Sweden.

Sensitivity

In a new concept, there is the risk that those who plan, design and build do not fully understand the basic principles involved and how they can relate to the local condition.

Lack of Participation

ECOSAN programs will fail if they are put in place without the participation of the intended users and the proper instructions on their use and maintenance. Promote the ECOSAN system

and technology on a personal and family basis to provide advice on the spot. Emphasize the need for behavioral changes and the proper use and maintenance of ECOSAN toilets.

Lack of Understanding

Sanitation is a complex matter. Sanitation is also a topic not openly discussed in many cultures. An ECOSAN system will fail if the contents of the processing vault become too wet. The decomposition process will slow down, the compost pile will smell, flies and other insects will breed in the pile and pathogenic organisms will survive longer. Pathogen destruction is a key issue in ECOSAN.

Defective Materials and Workmanship

Common faults include seepage of water into the processing vault, leaking urine conduits and blocked ventpipes.

Improper Maintenance

Many ECOSAN systems have failed because they received improper maintenance. Usually this has been because they were viewed simply as new types of devices rather than as whole systems that also include interacting elements of nature, society, process and device. Education and ongoing technical assistance are necessary to ensure that users understand and accept what they are required to do in terms of maintenance.

All sanitation technologies require maintenance to function properly. Large water-borne sewerage systems with centralized treatment plants must be constantly maintained by professional staff. In ECOSAN systems, processing occurs on-site. Sanitizing and recycling human excreta is more complex than simply disposing of them as wastes. Thus, ECOSAN toilets generally require a higher level of maintenance by users than convenional flush toilets or pit latrines.

The amount of maintenance required by users of ECOSAN toilets varies a great deal, depending upon the design strategy, climate and other local conditions. Good system design can minimize the need for intensive maintenance. Composting toilets often require the regular addition of bulking agents and periodic checking to ensure that ventilation pipes are not blocked.

Non-use

Reasons include: ECOSAN is unacceptable to users, poorly understood, difficult to use, malfunctioning. Important factors in acceptance are traditional attitudes, habits and taboos related to defecation and human excreta.

Design and Management of Ecological Sanitation Systems

* After a basic orientation on ECOSAN as a system, people can already design their own ECOSAN toilets based on their preferences and resources. Improvements, adaptations, and experimentations are part of a dynamic learning process.

* Avoid situations where ECOSAN toilets are built by contractors without community participation and little or no community training.

* Technical knowledge should be added to the community knowledge.

* Make ECOSAN toilets appealing, comfortable, pleasant and hygienic to encourage people to use them.

* ECOSAN is more of a concept, a system that takes consideration of various factors and the resources available. The design comes later. Aesthetics is important in ECOSAN. So is pathogen destruction through dehydration and composting. Remember that as temperatures are increased, pathogens will begin to die at a faster rate.

* A solar heater can be added to ECOSAN toilets in the Philippines for added evaporation. A GI sheet painted black and slanted 45 degrees in position hastens the decomposition process.

* In urban areas, ECOSAN toilets must be designed as small as possible so that it is easy to use and maintain.

* ECOSAN toilets need proper maintenance by its users. Skills training for the maintenance of ECOSAN toilets should be offered.

* The presence of ECOSAN advocates and resource support such as a network of workshops can help promote ECOSAN as a system and a way of life.

* There is a range of design of ECOSAN toilets to choose from. Consider the various options of dealing with liquids (urine diversion, liquid separation and combined processing) and sanitizing feces.

Recommendations

* Promote ECOSAN to local government officials, schools, households, civic leaders, heads of government agencies, GOs and NGOs through continuing trainings, orientations, advocacy efforts, publications, information, education, and communication campaigns

* Demonstrate and pilot test ECOSAN options at the household and community levels in urban, peri-urban, and rural areas of different geographical, social and cultural conditions.

* Promulgate codes and laws that will advance the use of ECOSAN systems in the Philippines. Lobby for the amendment of the Sanitation Code so that the ECOSAN concept is included.

* Establish the Philippine ECOSAN Society or a multi-sectoral task force that will actively lead in the promotion, advocacy efforts and the holding of symposia.

* As ECOSAN systems do not require expensive materials, corrupt governments are not likely to support the ECOSAN Movement. Initiatives must start from the people and should therefore be supported with the necessary information, skills training, linkages, research, development and other inputs.

* Include ECOSAN in the school health curriculum.

* Analyze the broader policy issues in the Philippines and address policies that relate to ECOSAN.

* Do further research on ECOSAN and encourage discussions of the results.

* Promote ECOSAN as a safe method, a way of life that encourages a redirection of values.

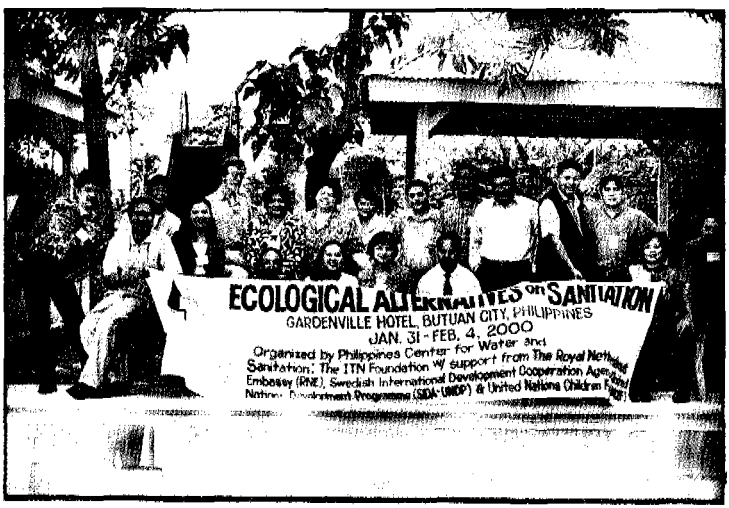
* Build prototypes of ECOSAN toilets for use in strategic areas.

* Integrate ECOSAN programs with environmental and zero-waste programs.

* Network with environmental groups and interest groups for continuing education, promotion, implementation and massive information dissemination.

List of Participants

Dr. Michael Bengwayan, ITAG
Rofel Cabaltera, PPDO-Agusan del Norte
Lyn Capistrano, PCWS-ITN
Fe Tan-Cebrian, PCWS-ITN
Giovanna Linda Canizares, TNFI
Ernie Demaisip, DILG
Joseph Esguerra, PAO-Butuan
Engr. Muhammad Abu Eusuf Shah Jalal, ITN Bangladesh
Lorna V. Ferrer, PPDO Davao del Sur
Engr. Carmelo Gendrano, PCWS-ITN
Millet Lansangan, LWUA
Mario Limocon, PROCESS-Bohol
Gil Madronero, Jr., SWC Foundation
Engr. Dexter More, PPDO Davao del Sur
Dr. Md. Showkat Osman, ITN Bangladesh
Danilo Pabelonia, MPDC San Luis, Agusan del Sur
Engr. Marieto Perez, UNICEF
Eseng Quintos, PCWS-ITN
Nestor Reganon, PPDO Agusan del Sur
Rodolfo Renario, PPDO Agusan del Sur
Arnel Reyes, Geo-Surveys
Dr. Ariel Carlito Salem, CARE-Philippines
Joe V. Samar, SB Parpatpatan, Camarines Sur
Dr. Apol Soriano, CARE-Philippines
Purita Tabanao. CEVIFEWASSCO
Rory Villaluna, PCWS-ITN
Engr. Edgar I. Viterbo, PCWS-ITN



Philippine Center for Water and Sanitation - International Training Network Foundation

The Philippine Center for Water and Sanitation - The International Training Network (ITN) Foundation is a non-government organization doing public information, research, community organizing, advocacy and training for the awareness, appreciation, protection and conservation of Philippine water resources. It heightens awareness among public and private institutions on development issues affecting water and sanitation policy reforms and water resource management.

ITN Foundation's development approach is integrated water resources management (IWRM) with people's participation. ITN believes that community development and organizing are often the missing factors in most water and sanitation projects which are often viewed mainly as infra-structural and not as social concerns. Thus, ITN actively promotes community participation and encourages local initiatives for sanitation efforts and the protection and conservation of water resources. ITN works with government organizations (GOs) and non-government organizations (NGOs) in promoting a positive water culture that will effectively communicate, advocate and implement integrated water resources development and management among the major stakeholders.

At the community level, ITN helps establish appropriate local water supply and sanitation structures. It also facilitates the organization of water and sanitation centers, river basin task forces, water conservation volunteer groups, rural water and sanitation associations, etc. to help develop and implement community-based water resource management projects. With its work at the grassroots level, ITN Foundation has the advantage of articulating and facilitating the people's participation in the water and sanitation sector's development concerns. Engineers of ITN Foundation develop and test locally-suited technology on water supply and sanitation. These are then shared with local communities through trainings and publications.

Experiences and learnings from the implementation of ITN's projects are shared through publications, trainings, consultancies, learning centers and research-based advocacy efforts. Executive summaries with policy recommendations are presented to concerned groups and organizations for their action and for the improvement of the water and sanitation sector. ITN currently works with research centers, media groups, people's organizations, academic institutions, voluntary agencies, and various development organizations in the Philippines and abroad for the sustainability of water resources. The quarterly Water & Sanitation Forum newsmagazine published by ITN is the only widely circulated news magazine in the Philippine water and sanitation sector.

At the international level, ITN serves as the Country Coordinator and National Focal Point of the Water Supply and Sanitation Collaborative Council (WSSCC) which is based in Geneva, Switzerland and operates with a mandate from the United Nations General Assembly. ITN is also the Regional Coordinator of the Alliance of Asian Resource Centers in Water and Sanitation (AARC) having been chosen by the participants of the First Consultation Workshop of Asian Water and Sanitation Resource Centers held in Bangkok in 1999. ITN heads the Interim Steering Committee of the Gender and Water Alliance. The Alliance, established during the 2nd World Water Forum in The Hague, continues to grow and is now composed of NGOs, regional, national and local institutions, resource centers, research institutions, grassroots organizations and various stakeholders.