

# Factsheet



## Ecological sanitation

### Scenario

The water and sanitation sector poses a particular organizational challenge in the Philippines, a country with more than 7,000 islands. Fresh water supply is limited throughout the country and water shortages are frequent and severe in densely populated areas. Although water authorities have made good progress in recent years, the supply of water and, in particular, wastewater treatment facilities are inadequate.

Some 25 % of the population still has no access to any sanitation services. On-site solutions for wastewater are common in the Philippines, but due to poor operation and maintenance, they are also the main source of groundwater pollution and waterborne diseases. In general, more than 90 % of sewage is not disposed of correctly or treated in an environmentally sound manner. Municipalities are now confronted with the challenge of providing new wastewater treatment facilities, with little or no funds available to prevent further pollution. Low-cost options are therefore a welcome alternative to common and frequently more costly sanitation solutions, especially in rural areas. At the national level, new laws and regulations are required to meet the demand for environmentally friendly and sustainable wastewater facilities.

### Description

Ecological sanitation (Ecosan) had become a main component within the GTZ Water, Sanitation and Solid Waste Program. Provincial governments, municipalities and local non-government organizations (NGOs) consider ecosan to be a sustainable alternative to common sanitation facilities, especially in view of its affordability.

It is important to note that ecosan is not a new technology but a new philosophy, utilizing a participatory approach and aiming at closing the loop between sanitation and the nutrient cycle.

Ecosan focuses on family needs and habits and, thus, sanitation systems are designed with participation of the households. Domestic waste is composed of different fractions (i.e. faeces, urine, grey water from bathroom and kitchen and solid waste) that can be separated into flow streams that are separately collected and treated, thus offering new possibilities for more specific, re-use-oriented and cost-efficient sanitation systems.

**Partners:** Municipality of Bayawan, Negros Oriental; Xavier University, Cagayan de Oro, Northern Mindanao.

**Target Groups:** Local non-government organizations (NGOs); provincial and municipal local government units (LGUs); local populations in program target areas.

**Duration:** October 2006 - June 2009

The choice of ecosan technique depends on the specific circumstances of the household. At the community level, urine diversion toilets are a solution for rural areas, whereas decentralized treatment and reuse, i.e. through a constructed wetland, are an option for peri urban and urban areas.

Following treatment, ecosan products can be re-used in agriculture as fertilizer, soil conditioner or simply for irrigation. The main objectives of ecosan are: to improve sanitation facilities and people's health; and to close the loop between sanitation and the nutrient cycle. Groundwater resources will be protected from pollution by coliform bacteria and too much nutrients.

Ecosan products can generate additional income if sold to local farmers and used in organic farming for the production of healthy and nutritious food. Ecosan is, therefore, practiced as a holistic interdisciplinary concept that meets Millennium Development Goals in many ways.



*Construction of the first vertical flow treatment wetland for domestic waste in Bayawan City, Negros Oriental.*



Following intensive ecosan promotion to program partners, the GTZ Water Program together with the local partner NGO, Feed the Children Philippines, began implementing the first ecosan facilities in the Visayas region located in the south of the country. Before the actual construction of urine diversion toilet facilities, several stakeholder workshops were conducted. Local partners were trained in techniques, implementation strategies and re-use practices for ecosan products.

Another pilot project of the GTZ Water Program was the constructed wetland in Bayawan, Province of Oriental Negros in the Visayas. In collaboration with the University of the Philippines and the Bayawan city engineers, the technology was developed to treat domestic wastewater from more than 700 households. Bayawan has also commenced the implementation of ecosan toilets. The city is now known as an example of sustainable planning.

## Impact

In sites where the ecosan concept has been introduced, decision makers are increasingly convinced of its sustainable advantages and benefits; both for users and the environment.

The local pilot sites are now a main point of interest for other LGUs. A lot of representatives of municipalities, barangays, NGOs and others visit them and discuss with the users. The first toilet facilities have been already replicated, several plans for construction are under development.

Feed The Children Philippines is testing a monitoring system to evaluate the impact on people's health. Future activities will focus on further hygiene and sanitation education and promotion of the ecosan concept to neighbors. In addition, a backyard garden on the family lot will be established to promote the use of ecosan products and to demonstrate its benefits.

Ecosan is comprised of a wide range of technologies and can therefore be easily adopted in different municipalities to address a variety of needs.

Since the technology itself is new in the Philippines, the local economy will also benefit from the concept through its uses in agriculture and through the production of toilet bowls.



*Ecosan toilets promote the separation, collection and reuse of feces and urine for agricultural production.*

Workshops and trainings have focused not only on ecosan but also on networking and knowledge sharing between the different ecosan pilot projects within the water program and projects of other organizations that promote ecosan.

The Philippine Ecosan Network (PEN) was founded during the 1st symposium on low-cost technology in October 2004. All members are connected, in some way, to the water sector. PEN was instrumental in ensuring that alternative low-cost technologies were featured in the 'Implementation Rules and Regulations of the Clean Water Act Philippines'. Ecosan is especially mentioned within the Act. Other international donor organizations have already shown an interest in the ecosan concept.

Finally, ecosan is a low-cost sanitation solution that municipalities can provide to people, especially those who still lack sanitation services.

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