Sustainable sanitation in the Philippine context

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Abstract

During the past several decades, the word sanitation in Philippine context has meant different things to different stakeholders. For sanitation professionals, sanitation refers to any and all measures that protect human health from pathogens be it water borne, air borne or from other sources. To the water supply and sanitation service providers, it refers specifically to septage management. The MDGs and the 2008 International Year of Sanitation inspired all of us to reduce poverty by increasing access to sanitation, interpreted largely as increasing access to safe toilets. Today, the emerging definition of sanitation in the Philippines points to the hygienic and proper management, collection, disposal/reuse of human excreta (feces and urine) and domestic wastewater to safeguard the health of individuals and communities. This new definition resonates well with the new science of sustainable sanitation being promoted by a global expert group called the Sustainable Sanitation Alliance. The SuSanA defines sustainable sanitation as systems that protect and promote human health, do not contribute to environmental degradation and/or depletion of the resource base, and are technically and institutionally appropriate, economically viable and socially acceptable. This paper will trace the evolution and underpinnings of the concept Sustainable Sanitation in the Philippines context.

Key words: ecological sanitation, Philippine ecosan network, sanitation, sustainable sanitation

INTRODUCTION

The global community is faced with an enormous sanitation problem. There's an urgent need to act considering these broad indicators:

- Worldwide some 2.6 billion people without access to any kind of improved sanitation
- 2.2 million deaths caused by sanitation-related diseases and poor hygienic conditions
- Most affected group: children under the age of 5
- Progress towards the MDG in sanitation is much too slow, particularly in Sub-Saharan Africa and Asia
- Sanitation rarely receives the required attention and priority by politicians and civil societies alike despite its key importance on many other sectors and for achieving most of the MDGs
- The political will has been largely lacking when it comes to place sanitation high on the international development agenda

In early 2007, a core group of organizations active in the sanitation sector decided to address these issues head-on and formed a task force to support the International Year of Sanitation 2008. Knowing that sanitation is a multi-faceted concern, the group drafted a 'joint road map' to combine their efforts and promote sustainable sanitation in line with the International Year of Sanitation 2008. In order to have a joint label for the planned activities, and to be able to align with other potential initiatives, the group formed the Sustainable Sanitation Alliance (SuSanA) (http://www.susana.org/lang-en/intro/156-intro/52-urgency-for-action-in-the-sanitation-sector). Among the members are Bremen Overseas
Research and Development Association (BORDA), Center for Advanced Philippine Studies, (CAPS) German Technical Assistance (GTZ), Hamburg University of Technology-Institute of Wastewater Management and Water Protection (TUHH), Netherlands Development Agency (SNV), PLAN International, Swedish International Development Agency (SIDA), Stockholm Environment Institute (SEI), Swiss Federal Institute for Aquatic Science and Technology (EAWAG/SANDEC) WASTE, and University of Technology Sydney-Institute for Sustainable Futures (ISF).

In general terms, SuSanA believes that the road towards solving these sanitation problems requires new strategies, and approaches beyond conventional western models and thinking; in short, a paradigm shift. By conventional models we mean those referring to capital intensive approaches like centralized sewerage systems. These systems also require high operation and maintenance costs which developing countries can hardly afford. These models from the west were developed when water scarcity and water conservation were not yet an issue. The global community, particularly the developing countries and the donor agencies, needs to think ‘out-the-box’. In recent years, the Asian Development Bank (ADB) and the World Bank (WB) Water and Sanitation Program (WSP) have emphasized that ‘business-as-usual’ approaches to sanitation cannot provide proper and sustainable solutions to sanitation problems in both rural and urban settlements.

The general objectives of SuSanA are therefore: (http://www.susana.org/lang-en/intro/156-intro/54-goal-and-objectives)

- To raise awareness around the globe of what sustainable sanitation approaches are and to promote them massively;
- To highlight how important sustainable sanitation systems are as a precondition to achieve a whole series of MDGs (e.g. to reduce child mortality, to promote gender equity and empower women, to ensure environmental sustainability, to improve livelihood, and to reduce poverty);
- To show how sustainable sanitation projects should be planned with the participation of all stakeholders at an early stage, how they should respond to the initiative and preferences of the users, and that this has to go hand in hand with hygiene promotion and capacity building activities for sustainable water and wastewater management.

There is a need to look at sanitation systems in an integrative way to be sustainable whereby social and community values, like gender equity, women empowerment and stakeholder participation; and economic values, like livelihood improvement and poverty reduction are considered. Sustainable sanitation is therefore not a one-solution-fits-all kind of approach but rather an analytical, multi-disciplinary, multi-options approach.

The CAPS is an active member of SuSanA at the local front. This means that CAPS is one among a few organizations leading the promotion of sustainable sanitation in the Philippines. As such, CAPS is contributing significantly to the evolving policies and programs of the national and local governments as well as other development partners.

This paper traces the evolution of the concept of Sustainable Sanitation in the Philippines, its inspiration and origin, definitions and changing paradigms.

**THE ROAD TO SUSTAINABLE SANITATION**

The Philippine sanitation situation needs severe improvement. It is characterized by a high mortality rate due to water borne diseases, poor water quality and polluted water bodies, low sewerage coverage, wide use of septic tank system as sole and default treatment in urban areas without septage treatment program. This has resulted is heavy losses in household and tourism income.

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that protect human health from pathogens be it water borne, air borne or from other sources. To the
water supply and sanitation service providers, it refers specifically to septage management. This lack
of unified understanding of sanitation is symptomatic of the lack of a national policy and sector lea-
dership, accountability and responsibility for sanitation.

The MDGs and the 2008 International Year of Sanitation inspired all of us to reduce poverty by
increasing access to sanitation, interpreted largely as increasing access to safe toilets. Today, the emer-
ging definition of sanitation in the Philippines points to the hygienic and proper management,
collection, disposal/reuse of human excreta (feces and urine) and domestic wastewater to safeguard
the health of individuals and communities. This new definition resonates well with the new science of
sustainable sanitation being promoted by SuSanA.

The road to sustainable sanitation in the Philippines has started at the turn of the 21st century. Here
is a short account.

Ecological sanitation

Prior to the emergence of the concept sustainable sanitation, during the period 2002–2006, Ecological
Sanitation was the new sanitation idea in the country. In 2002, CAPS implemented a small pilot
Ecosan Project in Batangas Province involving 4 households. Given valuable learnings from the
said pilot, CAPS scaled up promotion and implementation of Ecosan projects in 2004–2006 with sup-
port from WASTE, a Dutch NGO known for their expertise in Ecosan and solid waste management.
At around the same time, GTZ also started introducing Ecosan in Central Philippines in cooperation
with the Department of Interior and Local Government (DILG) and some local governments. Like-
wise, Xavier University started implementing Ecosan projects in their Allotment Gardens under the
Peri-Urban Vegetable Project in Cagayan De Oro (Southern Philippines) in 2003. In October 2004,
the GTZ sponsored the First International Symposium on Low Cost Technology Options for Sani-
tation. During the discussions, the participants saw the need to form an advocacy platform for
Sanitation, which resulted in the birth of the Philippine Ecosan Network (PEN) (Dan Lapid,
Sanitation and ECOSAN Development in the Philippines and South East Asia, a Paper presented at
the 2007 International Conference on Sustainable Sanitation: Eco-Cities and Villages, Dongshehg,
China, 26–31 August 2007.). Immediately thereafter, PEN lobbied and became instrumental in the
inclusion of ecological sanitation options in the Implementing Rules and Regulation of the Philippine

Ecological sanitation is based on three fundamental principles: preventing pollution rather than
attempting to control it after we pollute; sanitizing the urine and feces; and using the safe product
for agricultural purposes(Uno Winblad and Mayling Simpson-Herbert, Ecological Sanitation, Stock-
holm Environment Institute, 2004. Page 4.). A large proportion of the population growth will take
place in urban areas resulting in a substantial increase in the volume of urban wastewater and a sig-
nificant increase in urban food demand. Considering the huge number of people to be fed and the
existing natural limitations on earth, it appears reasonable and inevitable to approach the food secu-
rity issue from a perspective of resource preservation and recovery. A paradigm shift in sanitation
towards a recycling-oriented approach is highly advisable to bring the limited nutrient resources
back to the agricultural fields (http://www.susana.org/lang-en/working-groups/wg05).

The main design of Ecosan (short for Ecological Sanitation) is the dry sanitation kind, technically
called the Urine-Diverting Dehydration Toilet (UDDT). As the name suggests, urine, considered a
liquid fertilizer due to its high Nitrogen-Phosphorous-K(Potassium) content, is diverted from the
feces to keep it clean and relatively free from pathogens. The feces is collected through a separate con-
tainer and allowed to dehydrate. In due time and proper handling, the dried feces can also be used as
soil conditioner or enhancer. Other designs of Ecosan are the Fossa Altera and Arbor Loo (Uno

Although very appealing in theory especially from the food security angle, Ecosan has many challenges rendering it not easy to implement, especially in the urban areas where very little or no agriculture is practiced. Collecting and transporting urine, for example, from urban to agricultural areas require logistics planning at the very least. Storage and application in the field demand science, technology and medical considerations. Moreover, social acceptability from the points of view of users-farmers and consumers is also a valid concern. Except probably in China, ready commercial scale demand for urine fertilizer is essentially none existent. Most if not all Ecosan projects in the Philippines have not scaled up beyond the pilot scale. Some projects even experienced defaults and shrinkage in number of users. It is a common assessment that UDDT would be more appropriate in rural water-scarce communities.

Major sustainable sanitation programs and initiatives

The relative success of Ecosan projects in the Philippines (likewise in China, Africa and Latin America), has generated keen interest, both positive and critical from many sectors. Ecosan projects continue to get implemented on the ground in the country. (In China and South Africa the number of toilets constructed run into tens of thousands.) However, considering the huge target of the MDGs, these achievements are still considered not significant. There are doubts from many sanitation experts, academics and researchers whether Ecosan is the correct path.

In 2007, healthy debates and exchanges eventually led SuSanA to believe that the main objective of a sanitation system is to:

1. Protect and promote human health;
2. Minimize environmental degradation and depletion of resource base;
3. Be technically and institutionally appropriate;
4. Maintain social acceptability; and
5. Be economically viable in the long run.

While the idea seems logical and simple enough to appreciate, it is actually hard to design and implement on the ground. SuSanA believes that complying with all sustainability criteria all the time is extremely difficult. In fact, many sanitation systems fail far too often because some of the criteria are not met. There is probably no system which is absolutely sustainable. The concept of sustainability is more of a direction rather than a stage to reach. Nevertheless, it is crucial, that sanitation systems are evaluated carefully with regard to all dimensions of sustainability. Since there is no one-for-all sanitation solution which fulfils the sustainability criteria in different circumstances to the same extent, this system evaluation will depend on the local framework and has to take into consideration existing environmental, technical, socio-cultural and economic conditions (http://www.susana.org/lang-en/sustainable-sanitation).

Sustainable Sanitation in East Asia (SuSEA) program – the Philippine component

In the Philippines, the most visible sanitation program with sustainable sanitation orientation is the Sustainable Sanitation in East Asia (SuSEA) Program (SuSEA is a poverty alleviation programs that aims to improve health, productivity and quality of life of the poor in Indonesia and Philippines through increased access to water and sanitation services. Funded by SIDA and managed by WSP, it supports country initiatives to achieve the MDG targets in sanitation, water and health.) of the World Bank-Water and Sanitation Program. SuSEA Philippines was conceived as a learning program to support the Government of the Philippines update its approaches and interventions in sanitation. It was
designed to increase the access of poor Filipinos to sustainable sanitation services and targeting specific outcomes for specific project sites as shown in Table 1 below.

**Table 1 | SuSEA Philippines project sites and desired outcomes (SuSEA Briefer, TAMS-Coffey International)**

<table>
<thead>
<tr>
<th>Project site</th>
<th>Desired outcome</th>
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<tr>
<td>Bauko, Mt. Province (rural)</td>
<td>Reduction in the contamination of drinking water sources in low-income communities</td>
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<tr>
<td>Dagupan City, Pangasinan (urban)</td>
<td>Reduction in the incidence of acute gastro-enteritis (AGE), soil-transmitted helminthiasis (STH) and other waterborne diseases by 50% by the end of the program in 2010</td>
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<tr>
<td>Guiuan, Eastern Samar (small town and rural)</td>
<td>Reduction in the incidence of AGE by 50% by 2010</td>
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<tr>
<td>General Santos City (urban)</td>
<td>Reduction in the pollution level of Silway River through the establishment of a septage management program in the City</td>
</tr>
<tr>
<td>Polomolok, South Cotabato (small town and rural)</td>
<td>Reduced pollution of Silway River by by 2010.</td>
</tr>
<tr>
<td>Alabel, Sarangani (small town and rural)</td>
<td>Viable septage treatment facility (STF) operations to serve the needs of General Santos City and neighboring municipalities through STF marketing, optimal utilization and other performance improvement activities</td>
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Moreover, SuSEA Philippines would be a platform for (a) testing, learning and developing tools for scaling-up interventions; (b) capacity and institution building of local government units in implementing appropriate sanitation solutions; and (c) improvement of national sanitation policy and programs as exemplified from the best field-based results.

Obviously, SuSEA-Philippines desired to improve on two old and extreme approaches, i.e., (1) toilet-bowl distribution and hygiene education and (2) centralized sewerage systems, towards a more focused, localized, affordable and sustainable sanitation plan with high impact results for the target population. Although, the SuSEA program did not define its concept of sustainable sanitation at its inception in 2007, it eventually formulated a Philippine definition of sustainable sanitation based on the Philippine Sustainable Sanitation Framework and Philippine Sustainable Sanitation Roadmap and expressed it in its milestone product, the National Sustainable Sanitation Plan of 2010. These documents are the subject of discussion in the succeeding sections.

**Philippine sustainable sanitation framework**

Under the SuSEA-Philippine Program was an independent activity entitled, Developing Sustainable Sanitation Education Program in the Philippines or SuSEP for short. It started in 2008 and ended in November 2010. This activity was contracted to CAPS. To meet the objective to develop a Sustainable Sanitation Education Program, CAPS’ first activity was to formulate in 2008 the Philippine Sustainable Sanitation Framework to guide the direction and substance of the curriculum or curricula to be created. This is the first attempt in the Philippines to define what sustainable sanitation is in the Philippine context. The overall Goal of the Framework was ‘Safe and Adequate Sustainable Sanitation for All’. The Framework envisioned four Objectives following 10 guiding principles. The Objectives were:

1. Safe Sanitation for All specially for the poor
2. Formulate a clear National Sustainable Sanitation Policy (NSSP)
3. Prioritize implementation of NSSP
4. Formulate a National Sustainable Sanitation Communication Plan
The Guiding Principles were:

1. Everyone has the right to sanitation
2. Health safety as primordial objective
3. Multi-sectoral & stakeholder involvement
4. Polluters pay principle
5. Financial/economic affordability
6. Environmental sustainability
7. Appropriate technology
8. Resource conservation and reuse
9. Social/Cultural acceptability
10. Gender equity/sensitivity

This Framework got inspiration from the definition of sustainable sanitation systems of SuSanA. However, it also went beyond the SuSanA’s five elements. This Framework incorporated sanitation as a human right as the #1 principle in accordance with the March 2008 UN Human Rights Council Resolution emphasizing access to sanitation as part of international human rights laws on economic, social and cultural rights, children’s and women’s rights (Sanitation: A Human Rights Imperative, 2008, UN Habitat, WATERAID, Swiss Agency for Development Cooperation, Center for Housing Rights and Evictions.). Moreover, this Framework also recognized the importance of stakeholder participation and gender equity and sensitivity. Likewise, it adopted the widely held tenet, i.e., the polluters pay principle.

The Philippine sustainable sanitation roadmap

In the second half of 2009, the Philippine Government, supported by the World Health Organization, called for the formulation of the Philippine Sustainable Sanitation Roadmap to complement the newly published Philippine Water Supply Sector Roadmap.

The timing was perfect because the Philippine Sustainable Sanitation Framework, which was already accepted in principle by many institutional stakeholders including the donor community, had as one of its four major Objectives the formulation of the Philippine sustainable sanitation policy. The purpose of the Roadmap (The Philippine Sustainable Sanitation Roadmap, Department of Health, Philippines, April 2010) is to provide a policy environment to achieve the following:

1. Identify priorities and targets for the 2010–2016 Medium Term Philippine Development Plan;
2. Attainment of the 2015 MDG commitments;
3. Provide basis for adequate institutional arrangements;
4. Create demand and generate financing on sanitation
5. Ensure sustainability of sanitation systems.

This Roadmap adopted an almost identical but more encompassing 10 Guiding Principles, namely:

1. Sanitation is a human right, a social and economic good.
2. Sanitation is essential for basic health and dignity of the person.
3. Sanitation policies, plans and programs must be localized and its management decentralized at the lowest level possible.
4. Sanitation is everybody’s business and different stakeholders must be involved in promoting good sanitation and hygiene practices.
5. Sanitation systems must be financially sustainable, economically affordable, socially and culturally acceptable.
6. Good sanitation contributes to environmental sustainability and penalizes polluters.
7. Sanitation services must be demand responsive. This includes consideration of appropriate technology and management options at various levels.
8. Proper resource conservation, re-use, recycle and recovery of sanitation by-products will be considered.
9. Access to sanitation should be equitable and sensitive to gender differences.
10. Efficient water governance includes sanitation.

Published in April 2010, the Philippine sustainable Sanitation Roadmap is proof that the Philippines has formally adopted the sustainable sanitation as a framework policy to guide future, near-term and medium term sanitation plans. Given these Guiding Principles, it can be said that the Philippine Sustainable Sanitation Roadmap is faithful to the sustainable sanitation definition developed by SuSanA in 2007.

**The national sustainable sanitation plan**

After the Roadmap came the National Sustainable Sanitation Plan (NSSP). The NSSP is officially known as Department of Health (DOH) Administrative Order (AO) 2010-0021. This AO declares sustainable sanitation as a national policy and a national priority program of the DOH when it was signed in May 2010. It defines sustainable sanitation as:

‘the process of empowering families to partner with local governments and other stakeholders to address sanitation issues and problems using affordable, appropriate and dynamic sanitation technologies and supported by enabling legal/regulatory framework, management systems, technical assistance from various sources and access to financing mechanisms with a system of rewards and incentives for the protection of the environment and people’s health.’ (Definition of Sustainable Sanitation, Section 1, The National Sustainable Sanitation Plan of the Department of Health (2010–2016), June 2010.)

This definition highlights the changing paradigm of the government on sanitation from a top-down, supply driven approach to a multi-dimensional approach. The Plan is pro-poor, i.e., it is MDG-oriented towards poverty alleviation and health promotion; demand-oriented, i.e., it has shifted focus from toilet construction to behavior change communication, promotion and reward and incentives; enabling and supportive, i.e., it envisions the creation of systems of regulatory framework, financing and capacity development; and dynamic, i.e., it favors affordable and appropriate sanitation options rather than packaged and rigid sanitation technologies. While the old approach has failed to eradicate open-defecation and achieve universal access to sanitation, this Plan has a vision of sustainable sanitation for all Filipinos especially the poor.

**SYNTHESIS**

The period 2002 to 2010 is the start of the renaissance period of sanitation in the Philippines. Many decades prior to this, sanitation had been a neglected sector receiving less than a tenth of public investment compared to the water supply sector. As many people say, sanitation is the poor cousin of water supply. Experts had always treated sanitation as a sub-sector of water supply, and being a ‘sub’ meant getting a very small slice of the ‘watsan’ pie.

This period hopes to reverse this neglect. How is this so?

First, there is now a network of champions that is advocating the agenda of sanitation and advancing the concept of sustainable sanitation. The Philippine Ecosan Network has championed sanitation since 2006 by holding two national summits in 2006 and 2008 and one national symposium.
in 2009. PEN assisted the Philippine Government in hosting the Second East Asia Ministerial Conference on Sanitation and Hygiene (EASAN2) in January 2010. The EASAN2 produced the sustainable sanitation-oriented Manila Declaration signed by 13 neighboring countries. PEN is now in the process of planning the third Philippine Sanitation Summit to be held soon. PEN members come from various organizations from the government, private, academe, NGO and donor sectors. PEN engages in active knowledge building through researches and knowledge sharing through meetings, lectures, seminars and website postings.

Second, sanitation and sustainable sanitation has been given ample attention in recent years by international agencies. In 2002 to 2006, GTZ from Germany, the Stockholm Environment Institute and WASTE from the Netherlands, among others, introduced Ecological Sanitation to the world. In 2006, the UN, through the Hashimoto Action Plan of the United Nations Secretary-General’s Advisory Board (UNSGAB) on Water And Sanitation, declared 2008 as the International Year of Sanitation and called on all UN agencies to promote sanitation in terms of awareness raising, campaigning for financing and marketing and developing technology options especially eco-sanitation, and research (Hashimoto Plan, Compendium of Actions, United Nations Secretary-General’s Advisory Board on Water And Sanitation, March 2006. Recently, the UNSGAB renewed its call to action for sanitation and laid down its strategies and objectives through 2012 under its Hashimoto Action Plan II. HAP II provides for three objectives, namely, (1) bring pressure and attention to commitments undertaken during the 2008 IYS; (2) improve water and sanitation for schools; and (3) build new impetus towards wastewater collection, treatment and reuse. The PEN has a direct link with UNSGAB through a Filipina Advisory Board member.

Third, there is now a growing acceptance of the concept of sustainable sanitation among the institutional stakeholder, i.e., the government, NGOs and the donor community. From the Philippine Sustainable Sanitation Framework formulated by CAPS to the National Sustainable Sanitation Roadmap and the National Sustainable Sanitation Plan of the Department of Health, the definition of sustainable sanitation was proposed, debated, defined and finally adopted as national policy. Here lie two big challenges in the future. First, more government instrumentalities, other than the DOH, need to formulate their respective sustainable sanitation plans. The Department of Public Works and Highways is finalizing its National Sewerage and Septage Management Program target highly urbanized cities. There needs to be in place sustainable sanitation plans and programs for all local government units, schools, hospitals, public markets, resorts and touristic sites. Sanitation policy in emergency situations is another concern. Second, the government has to allocate money and implement sanitation project once plans are made.

And last but not least, there is now in the market, both in literature and in actual installations, an array of financially and economically affordable, socially acceptable and appropriate sanitation options which local governments and communities can choose from. These are: (1) Ecosan options, i.e., the dry sanitation or Urine Diverting Dehydrating Toilet for water scarce areas, Arbor Loo, and Fossa Alther; and (2) the decentralized wastewater treatment systems which can combine biogas reactors, anaerobic baffled reactors and filter, planted gravel ponds and constructed wetlands.

These four complementary elements will hopefully comprise the winning ingredients necessary to push sustainable sanitation for all Filipinos in the years to come.

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