

sustainable sanitation alliance

Pathways for Sustainable Sanitation

Version 1.2 (January 2011)

Introduction

Recognition of the urgency of the global sanitation situation is growing. In 2002, sanitation targets were added to the list of Millennium Development Goals (MDG), originally set by the UN in 2000. The UNDP featured water and sanitation in the Human Development report of 2006 and the UN declared 2008 as the International Year of Sanitation (IYS). However, the challenge of meeting the MDG for improved sanitation, let alone sanitation that prevents environmental contamination remains huge. There are 2.5 billion people in the world without access to proper sanitation, making the sanitation target the largest of all MDGs in terms of population; double that of targets like water supply and malnutrition, and dwarfing any of the health targets like malaria, HIV/AIDS and TB (Rosemarin et al., 2008). Yet, these numbers are based on a definition of improved sanitation that does not strictly take into account the downstream environmental and health consequences of dysfunctional or incomplete treatment schemes. The real impacts of poor sanitation may be even larger. Over 700 million people in 50 countries are consuming foodstuffs that have been irrigated with untreated sewage, and half of the world population is infected with parasites linked to poor sanitation conditions affecting food, water and the living environment. Moreover, the situation is being exacerbated by the increasing urbanization trends that concentrate people and their waste products in increasing dense areas (SuSanA, 2008c).

The situation is urgent and requires action. However, the question is often where to start. The sheer number of sanitation systems and infrastructure investments needed to meet the MDG target is overwhelming. In addition, experience in the sector has shown that strictly building toilets facilities is insufficient and ineffective to control the situation. The principles of sustainable sanitation that have been laid out by the Sustainable Sanitation Alliance (SuSanA, 2008a), are inclusive and based on years of experience in the field.

“The main objective of a sanitation system is to protect and promote human health by providing a clean environment and breaking the cycle of disease. In order to be sustainable a

Box 1: Thematic working groups from SuSanA Joint Road Map:

These groups represent intervention points for sustainable sanitation. Outputs from groups can be seen at <http://www.susana.org/lang-en/working-groups>

- 01 - Capacity development
- 02 - Costs & economics
- 03 - Renewable energies, climate change and groundwater protection
- 04 - Sanitation systems, technology options, hygiene and health
- 05 - Food security and productive sanitation systems
- 06 - Sustainable sanitation for cities
- 07 - Community and rural sanitation
- 08 - Sustainable sanitation in emergency and reconstruction situations
- 09 - Sanitation as a business
- 10 - Public awareness and sanitation marketing
- 11 - Operation and maintenance of sustainable sanitation
- 12 - Gender aspects of sustainable sanitation

sanitation system has to be not only economically viable, socially acceptable, and technically and institutionally appropriate, it should also protect the environment and natural resources.”

However, especially this holistic approach can also feel overwhelming and too vast to tackle. In order to improve the situation, the sanitation sector needs to start looking beyond itself, linking to other sectors and driving issues that can leapfrog not only sanitation, but whole societies into a more sustainable future.

Sanitation is closely linked to issues of public health, bio-resources, and the environment. Poor sanitation practices negatively impact the health and productivity of the population and deteriorate the natural resource base needed for economic growth. From this perspective, it should be clear that improving sanitation should be part of economic development. The cost to meet the MDG for water and sanitation using low-cost watsan services is estimated to be around US\$18 billion per year to 2015 (Hutton & Bartram, 2008), while the economic gains of providing the sanitation target may be on the order of US\$63



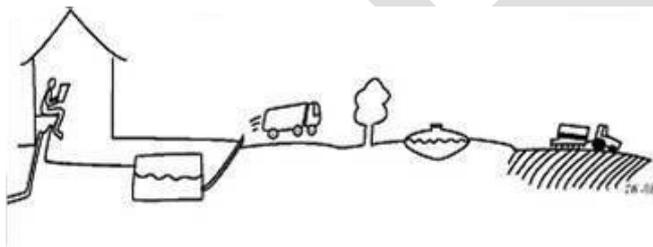


billion (Evans et al., 2004). In addition, excreta contain valuable plant nutrients, such as phosphorus, or bio-fuel potential that could be captured and used to improve food security and energy sustainability. Even incremental steps towards more sustainable management of our waste products can lead to improved health and other economic pay-backs.

In line with the overall SuSanA objectives, this document should contribute to the work surrounding the MDGs by outlining a number of pathways, or stepping-stones, towards more sustainable practices in sanitation. It draws on the work of SuSanA's thematic working groups and attempts to act as a bridge between the principles and theory of sustainable sanitation (Vision Document) and eventual recommendations for concrete action plans.

Steps towards sustainable sanitation

One of the key principles of SuSanA is that achieving sustainable sanitation needs to go beyond definitions of "improved" sanitation at a technical level and start seeing how individual pieces of the sanitation system, including social components, fit with each other and the larger contextual environment. The Joint Road Map that laid the initial action programme for the SuSanA network (SuSanA, 2008b), identified twelve thematic working groups that represent key interest areas and opportunities for developing knowledge or taking action (Box 1). Through the effort of these working groups, SuSanA has identified the following stepping stones towards sustainable sanitation, keeping in mind that these are generalized recommendations and that sanitation solutions must always be embedded in the local context.



Sanitation systems approach

First of all, it has to be recognized that sanitation goes beyond technology and includes issues of institutional management, community and individual behaviour change. Further more, it is important to recognize that sanitation in a community can rarely be achieved with a single technology. In fact, sustainable sanitation needs to provide for the entire chain, from collection, transport, and treatment, to disposal of a variety of waste products (Tilley et al., 2008). Progress and innovation in the

sanitation sector will require that the sector considers a wider range of technical options that take into account the health/hygiene, environmental, technological, economic, and socio-cultural criteria (Kalbermatten, 1982; SuSanA, 2008a). More appropriate, affordable and resilient sanitation systems are available than those currently being chosen and implemented around the world. A first step down this path would be to improve the flow of information and training on these systems to sector professionals.

Public dialogue and advocacy

The concept of sustainability is really more of a direction than a final stage to be reached. It is a uniting vision to guide harmonised action. However, as such it also requires advocacy to spread the message and dialogue to make sure that the various stakeholders are on the same page. It is important to have local leadership and institutions involved as they are key forces in initiating action, as well as a legal environment that encourages sustainable action without creating roadblocks for innovation. Advocacy at the institutional level can lead to sanitation policy that is more realistic, adapted to local targets, and creates an enabling legal and regulatory framework for those seeking to improve the situation. Key messages that can be tailored to drive this process are linkages to health and environmental improvements, related economic gains, food security and climate change. For example, sanitation is not only a prerequisite to economic development from the health and environmental perspective; it can also be a good business opportunity. In addition, sanitation offers opportunities in reuse for crop fertilization, soil conditioning, and renewable energy sources.

Social Change

Although politician and institutional support is critical, it is also important that advocacy messages target consumers so that demand for more sustainable solutions comes from both the top and the bottom. Awareness raising campaigns for behavior change can be necessary in areas with low levels of hygiene and sanitation practices. However, it has also been shown that issues of food security and environmental protection can also be drivers of demand for sanitation. Sanitation is also strongly linked to issues of social empowerment, equity and gender.

Capacity Development and knowledge exchange

Driving home the messages of sustainable sanitation requires the continuous exchange of knowledge and capacity development. This calls for networks and learning platforms at a variety of levels, as well as coordination mechanisms for exchanging the information. Capacity development and knowledge exchange help lead to a better informed decision-





making process today and a brighter future in the hands of an educated younger generations. Stakeholders will have more knowledge of technical options and be able to base decisions on informed cost-benefit analyses, risk assessments, and opportunities for equal access. The SuSanA organization can play a key role here in the coordination of actors around an accepted vision and the development of knowledge within its working groups.

Participatory planning process

Planning is an opportunity to identify constraints and apply criteria for sustainability in a rational way. In addition, participatory and holistic approaches to sanitation planning can increase the potential for a sustainable system through better management of the numerous risk-factors and capacity development within the local domains for successful operation and maintenance of the systems. The participatory process makes sure that all stakeholders are identified, informed and involved when necessary. Such a process also makes planning more dynamic, allowing for gender pro-active approaches and the incorporation of other ideas presented in this paper.

Sanitation as a productive sector

A key innovative concept in the drive for sustainable sanitation is that the sector can pay for itself several times over in benefits. Sanitation systems can be designed so that their valuable by-products can be captured and used as resources; as fertiliser for agriculture and forestry, renewable energy, or water reuse (irrigation, construction, recreation, etc). By designing for reuse, sanitation can have significant impacts on nutrition, food and energy security. Shifting to productive sanitation requires a global mind-shift from considering sanitation as waste to that of a resource. It requires advocacy and building capacity at the individual and institutional levels, as well as integrating and collaborating with other sectors.



Urban Agriculture in Havana, Cuba

New management systems

Achieving sustainable sanitation is about both new techniques and new attitudes, which requires new approaches to management. Management practices should borrow ideas developed from the Integrated Water Resources Management (IWRM) perspective and explore solutions that take advantage of both the formal and informal sectors of society. These approaches will be different depending on the urban or rural context. Urban solutions may be centralised and/or decentralised depending on the context including population density. They will benefit most from a service-based approach that addresses the supply side and user needs. Rural solutions on the other hand, will require on-site household-based systems and will benefit from strong linkage to rural development, land tenure, agriculture extension and health services.

Innovative financing

New solutions and new management in sanitation should of course go hand in hand with innovative financing mechanism. Just as the technical systems need to use a systems approach, financing mechanisms should also consider the long-term maintenance (O&M) costs in addition to capital investments (WSP, 2009). Although financing schemes should continue to be socially responsible, there is also a need to explore options for public-private partnerships, and borrow ideas from the service delivery perspective and business models. Financing schemes can be partial based on public spending as an investment in health and disease prevention, but they should also consider local financing, local ability to pay, and potential returns from productive sanitation. Similar to management structures, financing opportunities will also vary depending on the urban or rural context. For example, urban sanitation can consider combining loans and user tariffs, while rural innovations may include links to micro-financing.

Conclusions

The principles laid out in this document are key stepping stones that will help pave the road towards more sustainable sanitation. The next step will be to incorporate these elements into local action plans and national policy development that can guide the scaling-up process. This will require coordinated consultation within the sector, as well as motivated local leadership. The mission of SuSanA is to aid in this exchange and continue to consolidate and develop knowledge that can bring sanitation further down the path towards sustainability.





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