

Pushing national implementation of sustainable sanitation one step further through enhanced multilevel capacity and knowledge exchange

Eight knowledge nodes focusing on capacity development for sustainability issues of sanitation, supported by Sida through the EcoSanRes 2 program, were in a short time able to develop capacity and knowledge to bring forward the concept of sustainable sanitation and influence sector policies, program and practices in eight countries/regions.

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Abstract

The Sida-financed Ecological Sanitation Research Program 2 was active between 2006 and 2011. One of its main vehicles to achieve its aim of promoting capacity development on sustainability issues of sanitation was to work through a network of eight knowledge nodes within highly respected host institutions world-wide. Some of the results achieved by the knowledge nodes include national policy influence in e.g. Bolivia and the Philippines, international policy influence through e.g. vital contributions to the EASAN Manila Declaration, signed by 13 ministers in 2010, spearheading knowledge dissemination on menstrual hygiene and faecal sludge management in Southern Africa, contribution to solid waste by-law formulation in a municipality in Southern Burkina Faso, and massive training of professionals in Nepal and Bolivia. Three years after closure most of the knowledge nodes continue with capacity development activities where sustainable sanitation is an important knowledge area within a broader portfolio.

Why knowledge nodes?

After almost a decade of successful demonstration projects, research, conferences and training programs to introduce **ecological sanitation** (definition see box), the Swedish International Development Cooperation Agency (Sida) decided to bring the capacity and knowledge management of ecological and sustainable sanitation to another stage by supporting establishment of a network of ten knowledge nodes world-wide. The Ecological Sanitation Research Program 2 (ESR2) was

designed with the objective to develop and promote pro-poor **sustainable sanitation** (definition see box) *in the developing world through capacity development and knowledge management, as a contribution to health, equity, poverty alleviation and improved environmental quality.* The central mechanism for capacity development within ESR2 was facilitation through the knowledge nodes. The knowledge node program commenced in the latter months of 2006 and ended in July 2011. After 5 years of implementation a global network of eight national and two regional knowledge nodes had been

Definitions:

- **Ecological sanitation:** With ecological sanitation we mean sanitation systems that safely recycle excreta and other organic waste products to crop production in such a way that the use of non-renewable resources is minimized. The statement 'safely recycle' includes hygienic, microbial and chemical aspects. Thus, the recycled human excreta product, in solid and liquid form, shall be of high quality both concerning pathogens and all kind of hazardous chemical components. This means the product should not pose any significant health threat or environmental impact when used.
- **Sustainable sanitation:** Sustainable sanitation systems protect and promote human health, minimise environmental degradation and depletion of the resource base, are technically and institutionally appropriate, socially acceptable and economically viable also in the long term.

established, where each node managed to efficiently bring forward capacity and knowledge on sustainable sanitation into both community of practice and policy levels, each within their own context. The evaluation of the knowledge node program was overall positive. However, it was unanimously felt that time was too short for a consolidation of the activities. Even with a short operational time some of the knowledge node managed, through parallel and related projects with similar learning components, to complement the ESR-facilitated node activities. Some nodes have also been able to attract other sources of finance which have enabled a continuation of the initial efforts to develop and sharing knowledge on sustainable sanitation necessary for successful implementation of sanitation programs.

The sanitation scene in 2006

At the start of the ESR2 program, sanitation backlog discourse was mostly focused on the low coverage of infrastructures for sanitation. However, a key problem was, and continues to be, rooted in the lack of capacity and knowledge found at every level of implementation as well as on policy level and within the educational system. Furthermore sustainable treatment and final reuse/disposal was not high on the agenda at that time. Sustainable sanitation and a system approach to sanitation were mainly recognized, and advocated for, by a few organization primarily based in Europe.

Departing from this context the knowledge node program managed to introduce, promote, document and synthesise knowledge on sustainable sanitation solutions. Within the countries and regions the knowledge nodes provided support and capacity development to sanitation actors, initiatives and programmes and enabled them to increase the sustainability of on-going activities and new initiatives.

The implementation of the node program was guided by following definitions; *“A **sanitation system** encompasses the institutions regulating the system, the organisation and management, the users and technical solutions including collection, transport, treatment and management of end products of human excreta, grey water, solid waste, storm water drainage and industrial and agricultural rest products”* and a *“**Sustainable sanitation** systems protect and promote human health, minimize environmental degradation and depletion of the resource base, are technically and institutionally appropriate, socially acceptable and economically viable also in the long term. For the Ecological Sanitation Research program.”*

Where do you establish a regional knowledge node?

When the program commenced it was important that the choice of cooperating entities, hence the knowledge

nodes, was made in a transparent and participative fashion in each country/region. It was necessary to undertake a node identification process. Regional consultants scoped the regions to obtain a better understanding of the existing knowledge gaps, regional activities, and potential leading organizations. One important output of the scoping study would be possible ToRs for the knowledge node adapted to the regional/national context and challenges. The reports revealed with clarity that an urgent need of capacity development was felt right across the range of actors in the sector. Capacity to conceive, design, install, operate and maintain even simple sanitation systems was /are lacking and the idea of sanitation involving a system of collection, treatment, and safe management of the treated excreta and wastewater was not widely appreciated. It was clear, before the scoping studies started, that a regional approach to capacity development would not be suitable in all regions. Some regions would cover billions of people and some countries were as big as any region e.g. China and India. At operational level this would mean that the node managers would need to become familiar with different national sanitation frameworks and conditions to identify specifically the priority interventions for capacity development. The heterogeneous political and legislative frameworks and degrees of decentralisation were such that the capacities development needs from country to country vary, and any attempt for regional nodes would mean that the resources available would be spread very thinly. Each scoping study gave



Figure 1: Urine fertilization at Universidad San Francisco Xavier de Chuquisaca, Sucre, Bolivia. Photo: Eduardo Quiroz.



Figure 2: The Bolivian president, Evo Morales, inaugurates the Technical Demonstration Centre in Cochabamba

strategic advice in tailoring of suitable programs in the nation/region scoped. Based on the scoping reports it was possible to identify suitable candidates for implementation of capacity development programs. The results from scoping studies were consequently validated within stakeholder forums. The outcome from the scoping and validation exercises made it possible to go ahead with establishment two regional nodes: Central America and Southern Africa and six national nodes, with regional outlooks, were established in Uganda, Burkina Faso, Bolivia, China, Nepal and the Philippines.

Multilevel capacity development efforts

With proposed ToRs and other needs brought forward by stakeholders in the validation process each knowledge node developed a work plan and a contract was established between the knowledge node and Stockholm Environment Institute (SEI), the host of the ESR 2 program. Most of the plans focused on developing capacity and awareness in critical areas, sharing knowledge on sustainable sanitation, and leveraging limited project resources to influence sector policies, programmes and practices. The knowledge nodes implemented the work plan in collaboration with ESR2's knowledge and capacity development team based at SEI. On annual bases it was possible for representatives of the eight knowledge nodes to meet and share experiences at knowledge node workshops organized by SEI in Stockholm in connection with World Water Week. The meetings were organized around generic topics important for facilitating scaling up sustainable sanitation e.g.; gender, institutional frameworks, planning approaches and the methodology used at the workshops aimed at an enhanced learning process between the regions.

All nodes made significant progress in a short period of time and managed to implement planned activities with impressive results. In Bolivia the knowledge node embarked on a massive capacity development program, strategic demonstration projects were constructed in all regions in Bolivia. The accumulated knowledge generated within the node activities resulted policy changes and motivated the government to launch a national program for ecological sanitation in 2011. In Central America the knowledge node was hosted by a regional network, RRASCA, consisting of four national networks in Guatemala, Nicaragua, El Salvador and Honduras. With the knowledge node program it was possible to establish national working groups with focus on sustainable sanitation. The working groups aimed for policy influence at national level; in El Salvador the sanitation working group played an important role to introduce sustainable sanitation into the first Water law, whereas in Guatemala the node focused on curricula development for sustainable sanitation. Inspired by the node activities additional sanitation working groups emerged in Panama, Costa Rica and the Dominican Republic (Sustainable Sanitation knowledge nodes in Latin America http://www.ecosanres.org/pdf_files/ESR-factsheet%2016-LatinAmericaNodes.pdf).

In the Philippines the knowledge node hosted by the Centre for Advanced Philippine Studies (CAPs) that worked within PEN, a multi-sectorial sanitation platform. Through the coordination it was possible to advance the sanitation agenda in the country with an adoption of The Sustainable Sanitation Framework in the Philippine Sustainable Sanitation Roadmap in 2010 as one important milestone. In China the node was established in collaborating platform with the Beijing University for Technology and Science and NGO the



Figure 3: Asian knowledge nodes visit Hoygo village with EcoSan installations 2010; conference on Sustainable Sanitation in China 2010

Clean Water Alliance. Sustainable sanitation was brought in to national television shows reaching millions of spectators and the knowledge node developed technical ecological sanitation solutions suited for urban settings, including high-rise buildings, which were tested in the surroundings of Beijing. In Nepal several training program were implemented in cooperation with Central Human Resource Development Unit (CHRDU) of the Department of Water Supply and Sewerage, and other NGOs. The knowledge node supported the software component when 2000 dry urine-diverting toilets were constructed in an area later declared as open defecation free (Sustainable Sanitation knowledge nodes in Asia http://www.ecosanres.org/pdf_files/ESR-factsheet%2017-AsianNodes.pdf).

In South Africa the knowledge node was hosted at the Water Research Commission. Knowledge generated from various universities about faecal sludge management was packaged and introduced to a wider public through publications and a successful faecal sludge management conference organized in Durban 2011, co-hosted by the knowledge node. The Southern African knowledge node organized the first high level meeting on menstruation management and sanitation in 2011, involving several ministries and stakeholders from the civil society and the private sector. As a regional knowledge node they organized learning journeys with participants from the region as well as from the knowledge node in Uganda.

The knowledge node in Uganda, hosted by NETWAS, commissioned baseline studies to better understand the

advancement and the bottlenecks of implementation of ecological sanitation. Uganda is one of few countries with a national policy on ecological sanitation (1998). To complement the studies the node supported demonstrations projects aiming at introducing several low cost technologies for ecological sanitation. The demonstrations projects, studies and knowledge sharing in the national working group for sanitation resulted in the government defining specific national targets for ecological sanitation by 2015 (**Countrywide Baseline Survey Report on Ecological Sanitation Coverage, Use and Extent of Integration of Sustainability Issues**. Mathias Ofumbi. May 2010).

The Burkinabè knowledge node, hosted by CREPA Burkina focused on local sanitation and waste management planning in municipalities in the Banfora region. The work resulted in local guidelines for mayors in the municipalities and the guideline have been discussed and improved at national level. The node contributed to new bylaws in the municipalities which generated both interest and demand for ecological sanitation in the Banfora region (Sustainable Sanitation Knowledge Nodes in Africa http://www.ecosanres.org/pdf_files/ESR-factsheet%2015-AfricaNodes.pdf).

Consolidate regional capacity development through the Sustainable Sanitation Alliance platform

In parallel with the lengthy establishment of the knowledge nodes, the EcoSanRes 2 program dedicated

time and resources to establish the Sustainable Sanitation Alliance (<http://www.SuSanA.org>). The ESR 2 program assumed the leadership of the SuSanA Capacity Development Working Group (Cap Dev WG) and created a global platform to link knowledge generated within SuSanA to the emerging knowledge nodes. During this period it was possible to organize SuSanA meetings in the regions and at every meeting the Cap Dev WG organized a learning session where the knowledge nodes and other stakeholders showcased on-going capacity development activities with focus on training activities and courses. The frequent participation in the SuSanA meetings made it possible for the knowledge nodes to contribute actively in several of the SuSanA's working groups. Knowledge generated from the participation in SuSanA's activities were also with facilitation applied in the local node context.-The Philippines node applied the SuSanA vision document and definitions in their work with the Sustainable Sanitation Roadmap.

Regional knowledge input to major conferences

The positive development of the node activities and the extensive networking at the various levels made it possible to secure a spaces for presentation of interesting results at major conferences, e.g. World Water Week in Stockholm and at the biannual regional sanitation conferences: the AfricaSan conferences in Kigali, the SacoSan conferences in Sri Lanka and Mumbai, the LatinoSan conferences in Foz de Iguazu and the EastAsianSan conference in Manila .

The presence from the knowledge nodes at the regional conferences made it possible to influence the conference proceedings and statements to incorporate sustainability issues of sanitation. The major example of such an achievement was the Philippines node influence in the preparation of the Manila declaration signed in Jan 2010,

a declaration signed by 13 ministers and encompassing many of the underlying principles for sustainable sanitation. PEN and CAPS assisted the Philippine Government in organizing this major regional event and were instrumental for the incorporation of formulations regarding sustainability into the declaration (see http://www.wsscc.org/sites/default/files/publications/easan_manila_declaration_2010.pdf).

A broad range of publication addressing the demands on information from different stakeholders

The knowledge nodes published a variety of publication, manuals, booklet etc. as one vehicle for knowledge dissemination. The Uganda and in Southern African knowledge nodes developed a Girl's Book for adolescent girls, providing practical advice on how to manage their menstruation while in school. (**Growing up at school: A guide to menstrual management for school girls.** Annie Kanyemba. http://www.ecosanres.org/pdf_files/EcoSanRes-Publication-GrowingUpAtSchool-AnnieKanyemba.pdf). This book is now a model for a similar book for boys and girls reaching puberty in India. The Philippine node published a book on school sanitation for policy makers. (**BOWLS, BUDGETS, AND THE BUREAUCRACY: A Review of Sanitation Policies and Programs in Philippine Public Elementary Schools** CAPS) Technical guidelines both for sanitation software and hardware were developed for the Bolivian Government by the Bolivia node. Guia Tecnica do Banos Ecologicos Ministerio de Medio Ambiente e Aguas, 2011, The Chinese node produced rich research proceedings. Proceedings of 2009 Beijing international environmental technology conference In Southern Africa the knowledge node published ground-breaking publications on faecal sludge management concerning pit contents and the behaviour of the same. **What happens when the pit is full A story of pits, PETs and managed sludges, WRC**



Figure 4: Anna Kanyemba and Brenda Achiro Knowledge node manager in for the Ugandan knowledge node at SuSanA meeting Kigali 2011 photo Mfodge



Figure 5: Southern African knowledge node organizes High Level Dialogue on Menstruation Management, Pretoria 2011

2011 The EcoSanRes publications, produced through the ESR2 office at SEI, were all translated into Portuguese, Spanish and French and the Chinese knowledge node translated some of the publications into Chinese.

堆肥厕所: 应用于非洲并为农作物提供肥料的低成本卫生厕所

(Toilets That Make Compost: Chinese edition. Peter Morgan).

Exit strategy in place when signing a collaboration contract

Each knowledge node had to prepare an exit strategy as a part of their respective project documents this was due to several external organizational changes affecting the implementation of the EcoSanRes2 program. It actually meant that the exit strategy with planned termination of financing from EcoSanRes 2 was in place when SEI signed the knowledge node contracts. Co-financing for implementation of the knowledge node activities was encouraged already from the start. With this practice in place in addition to the high performance and visible outcome from the knowledge node activities made it possible for the knowledge nodes to secure additional funding for knowledge node-related activities. The Bolivian and Central American nodes secured funding from UN-Habitat, the Burkinabè node got support from Prince Albert of Monaco's foundation, and the Chinese and Southern African nodes developed productive relationship with the Gates Foundation. The Philippine node established a fruitful collaboration with UNEP and the Asian Development Bank whereas the Nepalese and the Ugandan nodes, who also were working with knowledge management with IRC, established themselves as knowledge hubs for the Dutch WASH coalition.

Lessons learnt

The implantation period was hectic and there was not much time for reflection and auto evaluation. However through a final evaluation process of the EcoSanRes 2 program it was possible to identify some key features that contributed to a successful implementation of the knowledge nodes.

The time spent on the scoping and validation process to identify suitable host organization was compensated through the established consensus and support to the node among stakeholders which facilitated fast track implementation. At the time of the closing of the program it was notable that the sustainability of the individual knowledge nodes was dependent on the strength of the host institution. The more established and effective host institutions had a number of parallel and related projects with learning components that complement and contributed to node activities, and some have been able to sustain financing for capacity development three years post-program. Good integration and collaboration

with the government resulted in an expressed demand for continued support to the knowledge node from the Bolivian Government to the donor organization Sida. The Bolivian knowledge node, continues to operate with Swedish financial and technical support. For longer lasting results, aiming at full integration of activities into the host organization would require a consolidation period. The exit strategy at the start of the program facilitated for proactive approach to co-funding and reaching out to other interested partners which contributed to sustained activities after program closure. A work program based on identified knowledge gaps within the specific context generated specific outputs aiming at responding to real and existing demands. Being the project manager for the knowledge node program within the host organizations was a good merit for a career. At the program closure most of the node managers in the host organizations moved on to new position within UN organizations and other NGOs. The knowledge node program's experiences and outputs were disseminated to a wider audience through the SuSanA platform.

Websites for the knowledge nodes

Bolivia: <http://www.anesbvi-nssd-bolivia.org/>

China: <http://www.susanchina.cn/newsInfo.aspx?catID=9&CID=292>

Southern Africa: <http://www.win-sa.org.za/>

Nepal: <http://www.enpho.org/appropriate-technology/ecosan.html>

Uganda: <http://www.netwasuganda.org/>

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