# Saneamiento sostenible en Escuelas

## PORQUÉ - QUÉ – COMO

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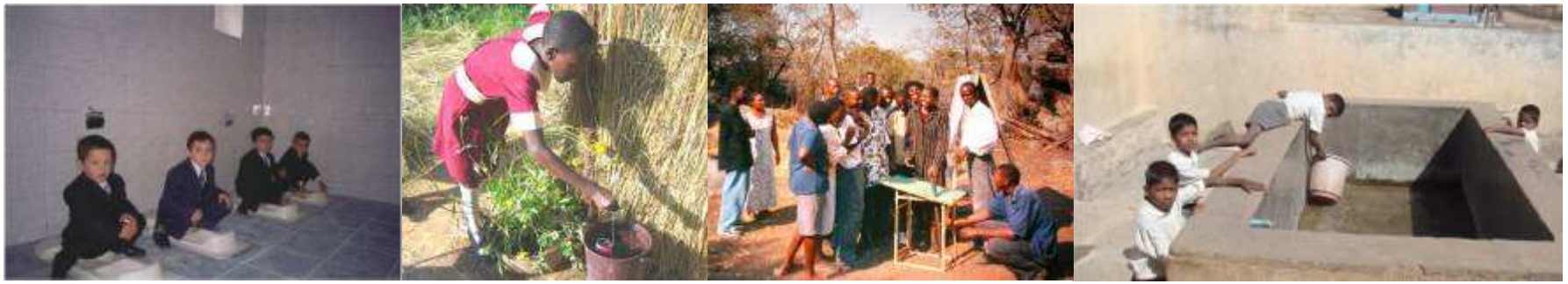
Peter Morgan , Ron Sawyer, Maria Ines Matiz

Rio de Jaineiro

21 March 2010



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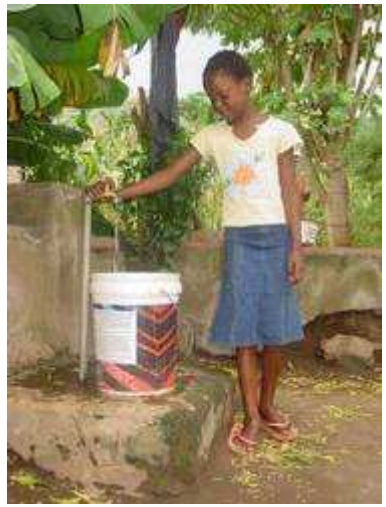
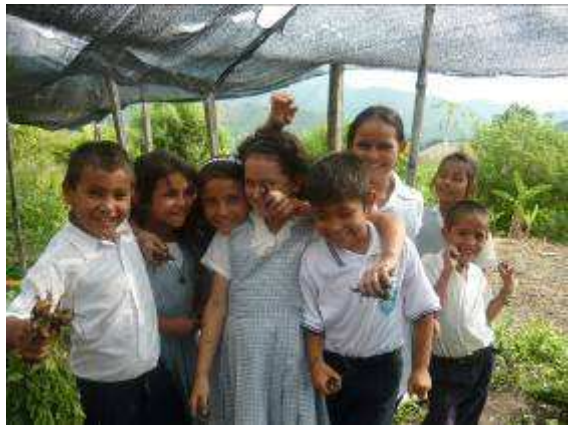
Saneamiento Sostenible en Escuelas

# PORQUÉ – QUE – CÓMO

- Mejora la salud de los niños y niñas y genera la apropiación estudiantil de su escuela
- Aumenta la asistencia escolar y la capacidad de aprenidzaje
- Aumenta la asistencia de las niñas
- La escuela como centro demostrativo de sistemas
- Una manera efectiva para difundir y lograr un impacto en familias y comunidades





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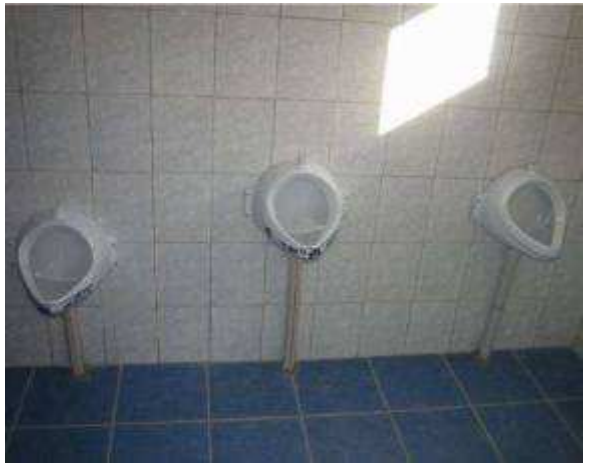
# Saneamiento Sostenible en Escuelas

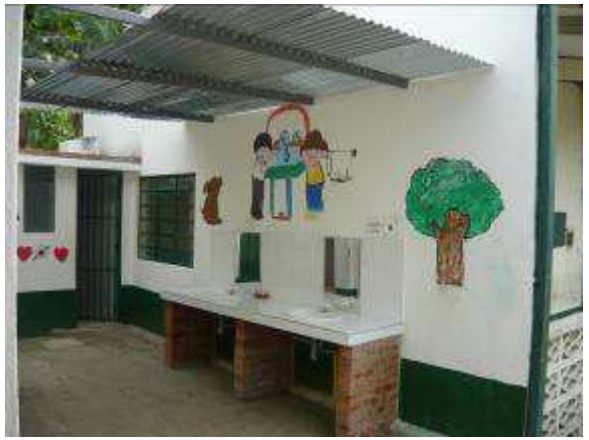
## PORQUÉ- QUÉ - CÓMO

- Sostenible
- Infraestructura

  Suficientes sanitarios robustos y unidades para lavado de manos y manejo de residuos
- Social

  Teórico y práctico, educación para el cambio de comportamiento y participación estudiantil y comunitaria





# Saneamiento Sostenible en Escuelas

## PORQUÉ- QUÉ - CÓMO

- **Participación**

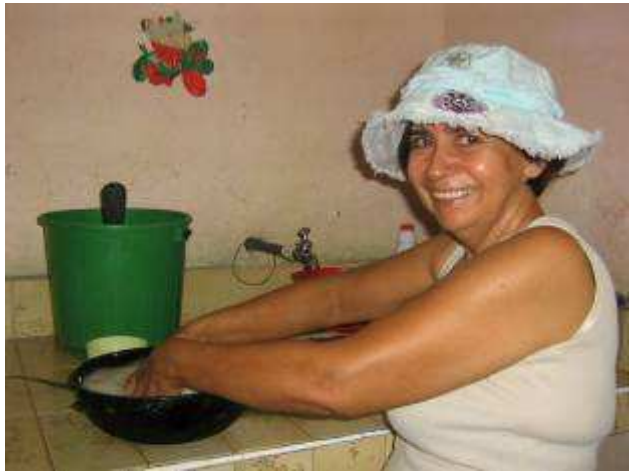
  Estudiantes

  Maestros

  Personal de apoyo

  Comites de Madre/Padres

  Comunidad



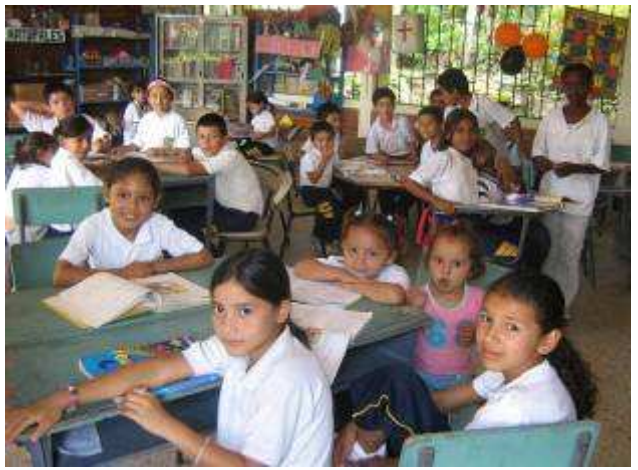
- **Educación**

  Teoría y práctica

  Demostraciones

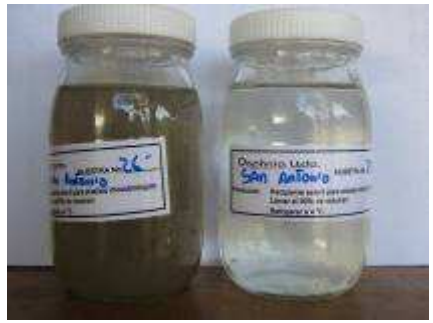
  Material amigable

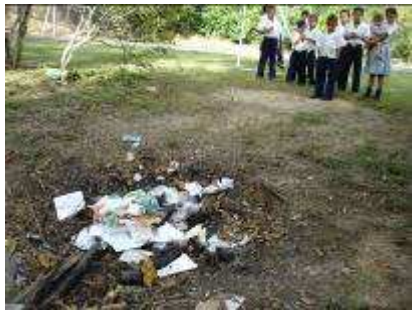
  Desarrollo curricular y capacitación de docentes



# Saneamiento escolar en áreas rurales de Colombia

- Relación entre salud y medioambiente
- Y riesgos a la salud
  - Mejoramiento de infraestructura sanitarias
  - Calidad de agua
  - Manejo de residuos sólidos





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# Mejoramiento de infraestructura sanitaria

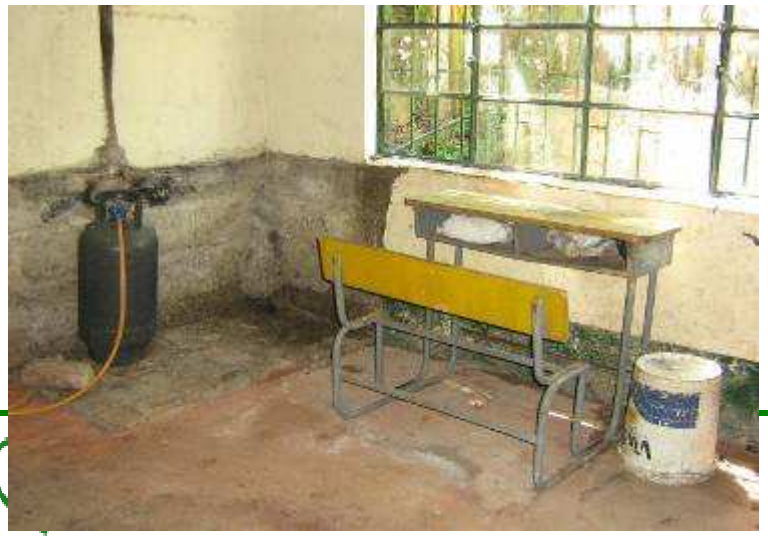
1. **Upgrading existing systems:** renovating or replacing leaking taps, piping, water-saving devices, or providing necessary maintenance for a septic tank, for example.

2. **Retrofitting:** refers to the addition of new technologies or features to older systems; construction or renovation projects on previously built sites. For example, introducing urine diverting toilets or waterless urinals.

3. **Building new systems:** if there is insufficient or inadequate sanitation facilities, then building new sustainable water and sanitation systems would be a priority for the school. In such cases, greater funds must be allocated for construction of new infrastructure.

# Cocinas

Antes



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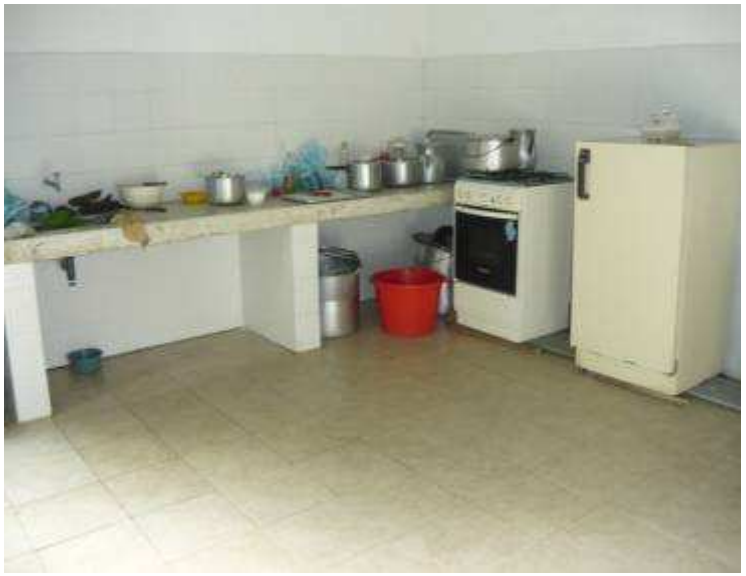
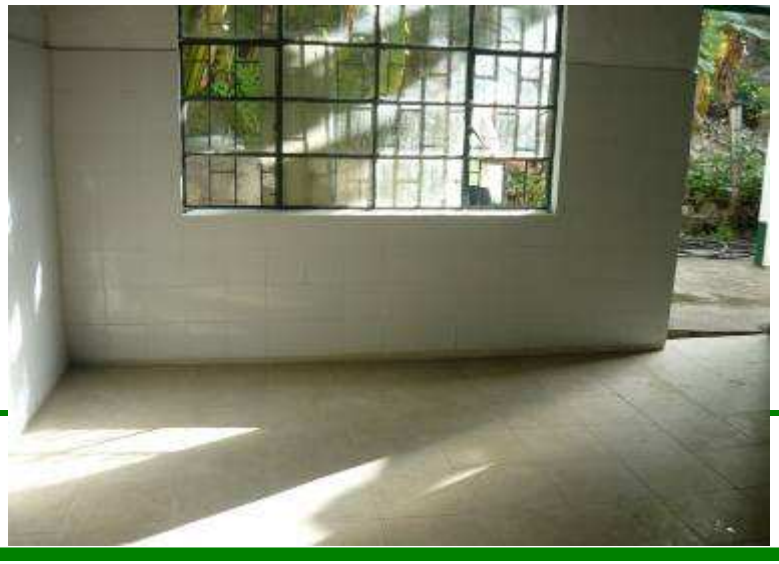
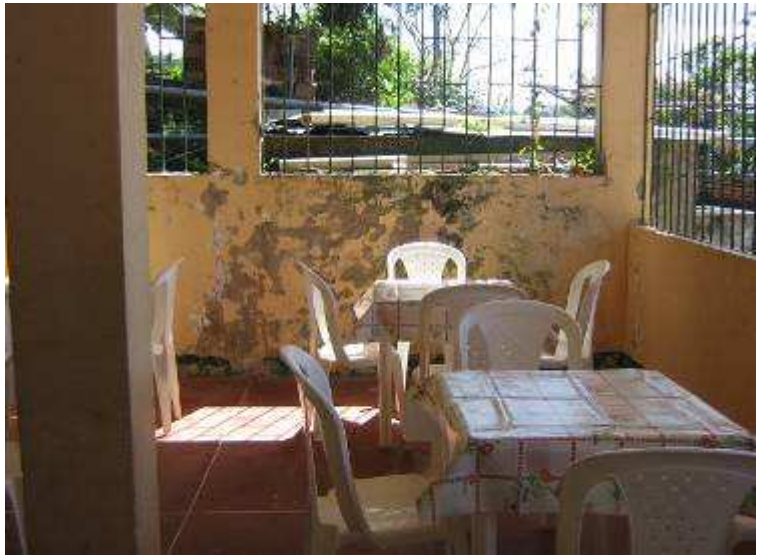




# Comedor

Antes



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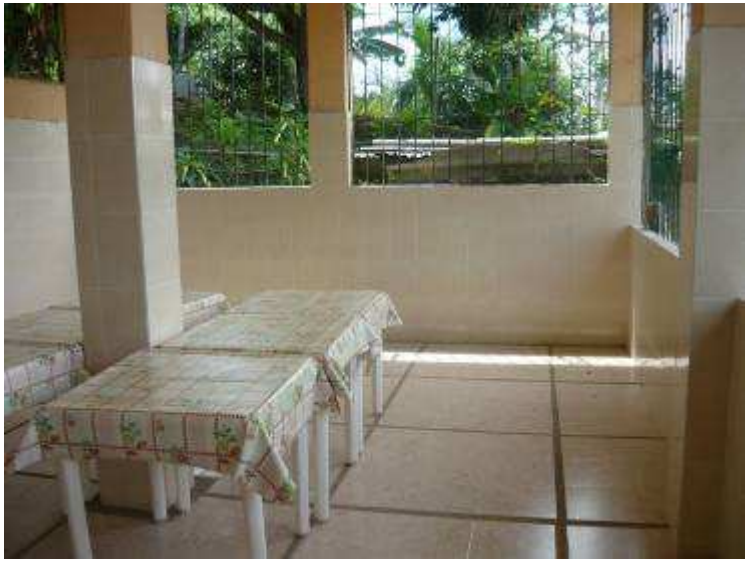
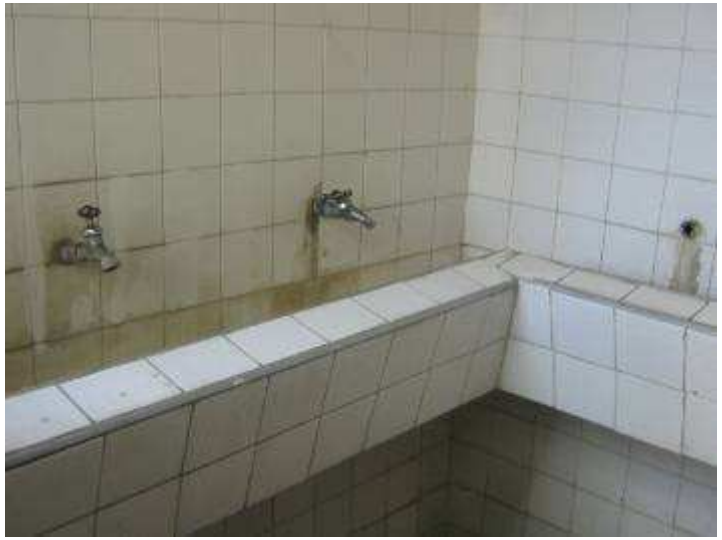
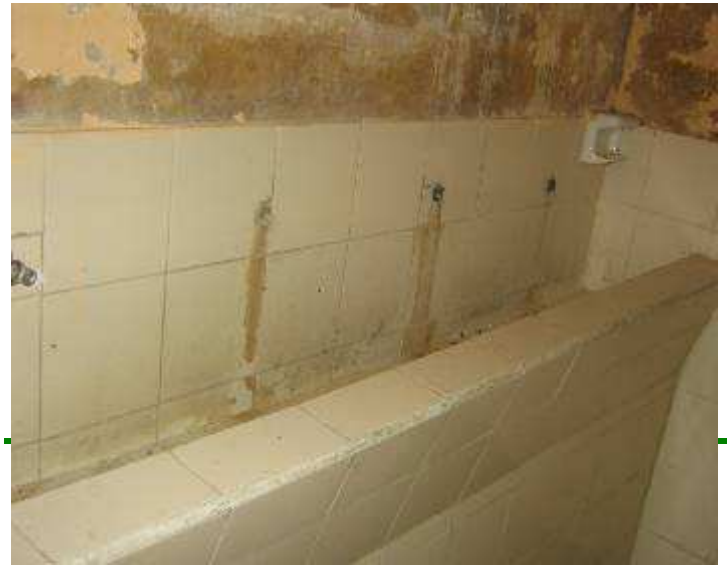


# Lavamanos

Antes





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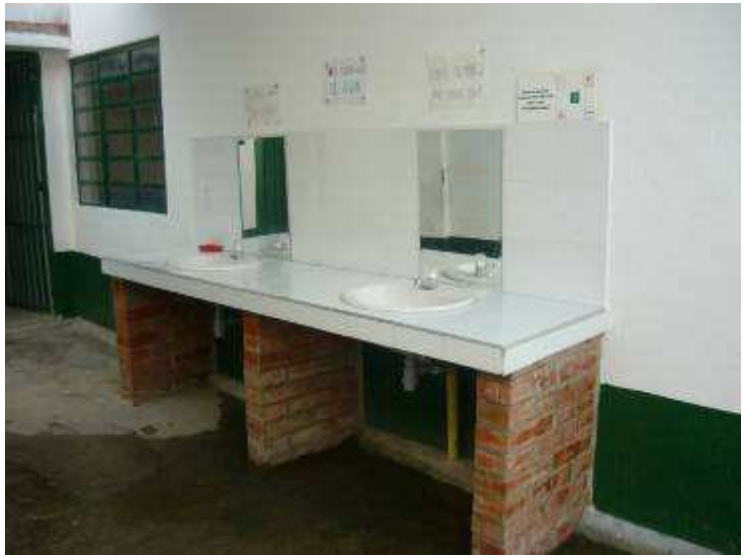
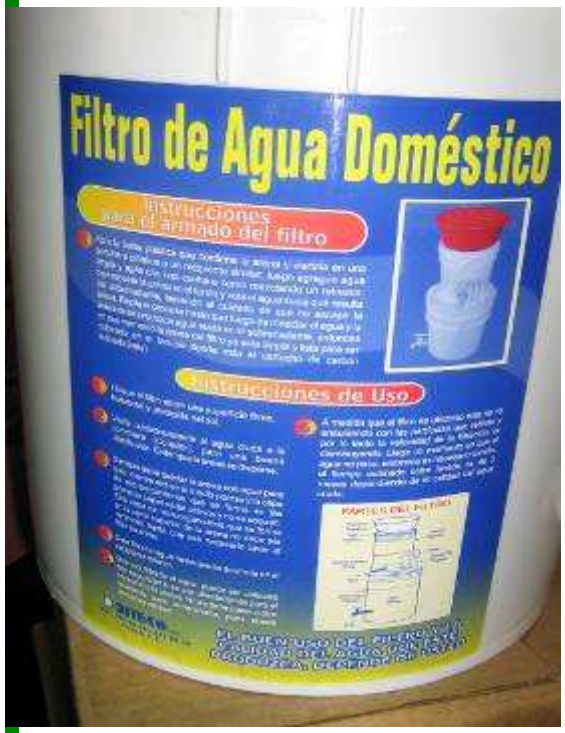
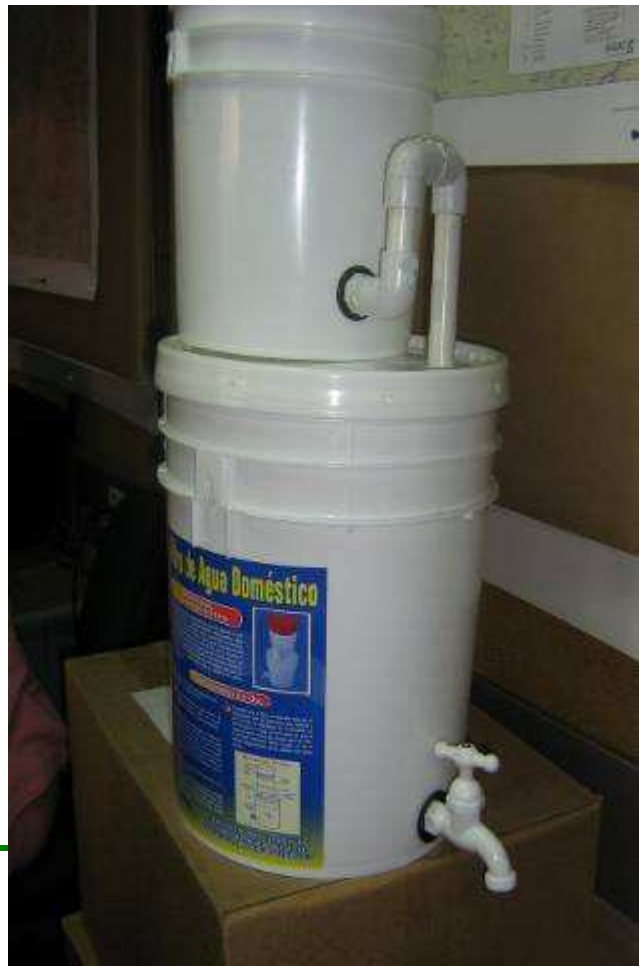


# Equipamiento de escuelas rurales de Apulo con filtros de agua





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# Introducción de hortalizas en escuelas rurales de Apulo

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# Sneamiento escolar en Epworth,  Zimbabwe

Enseñando a niños en cómo construir sanitarios sencillos , accesorios para lavado de manos y el uso de orina para la siembra de hortalizas, representa una nueva dimensión en la promoción del saneamiento.

Photo P Morgan

Photo P Morgan

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# Higiene

Una plática introductoria utilizando un rotafolio y modelos tambien incluye una instrucción de cómo construir accesorios sencillos para el lavado de manos. Los accesorios para el lavado de manos en cada sanitario, son esenciales para asegurar una mejora en la salud.

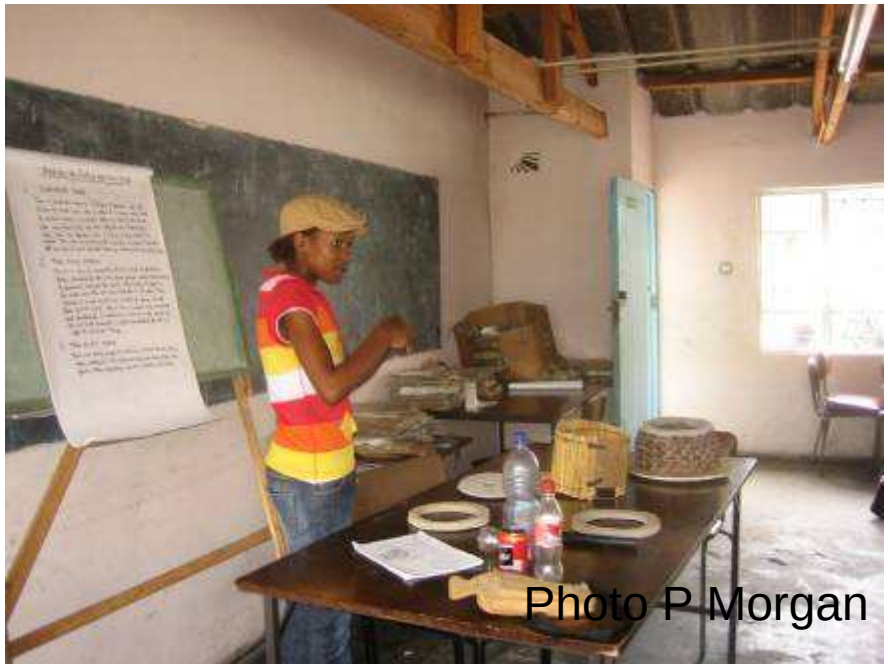

Photo P Morgan

Photo P Morgan

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# Construcción de Sanihuerto

Se puede enseñar a los estudiantes para que construyan los anillos, las losas y casetas con materiales tradicionales y ladrillos


# Experimentos con hortalizas

- Los estudiantes tomando medidas.
- Registrando los resultados.
- Pruebas en Maíz

  -algunas hileras se riegan con orina –otras no

  -se registraron enormes diferencias


Photo P Morgan

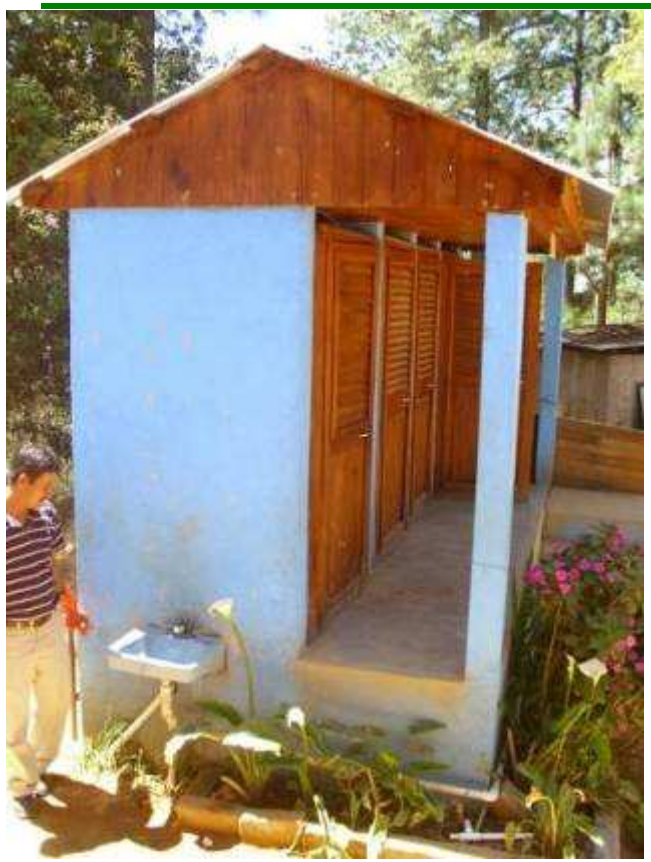

Photo P Morgan

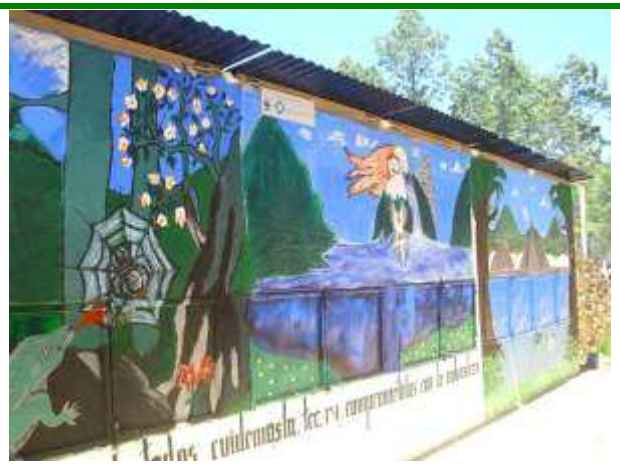

Photo P Morgan


Photo P Morgan


Photo P Morgan

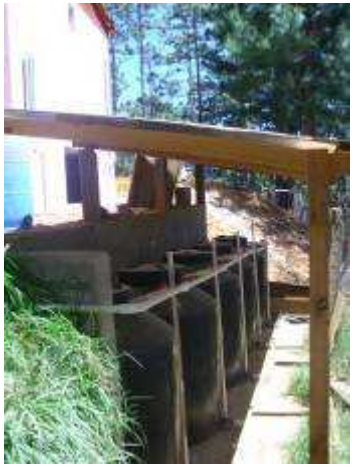
# San Miguel Suchixtepec, Oaxaca, México





Módulo de sanitarios secos – Interior de cabina sanitaria con taza desviadora de orina

Acopio de orina en batería de tinacos – *Poposteros*



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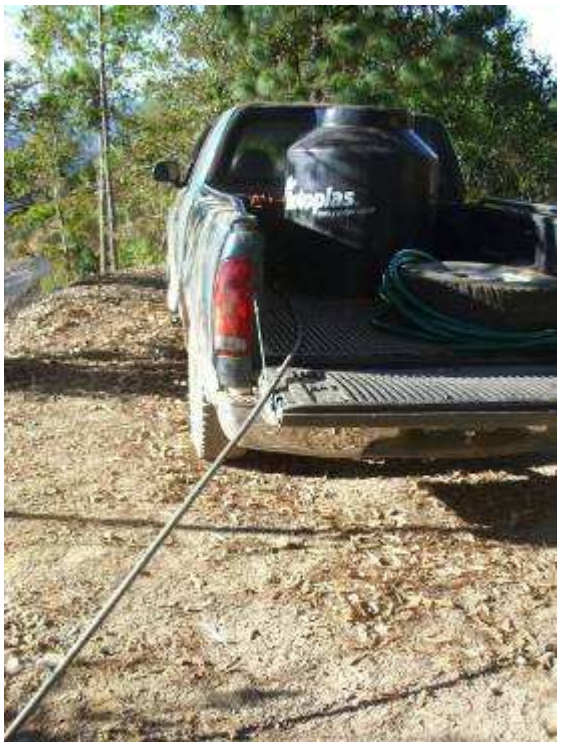
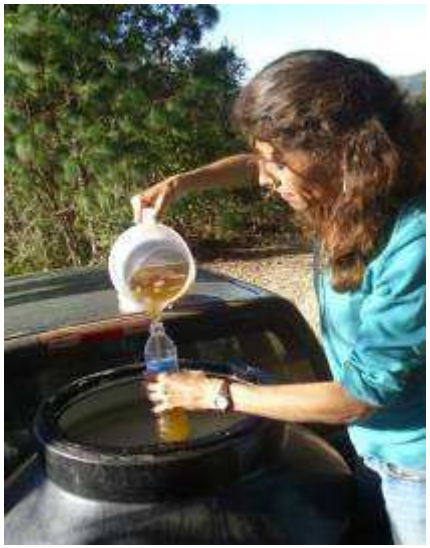
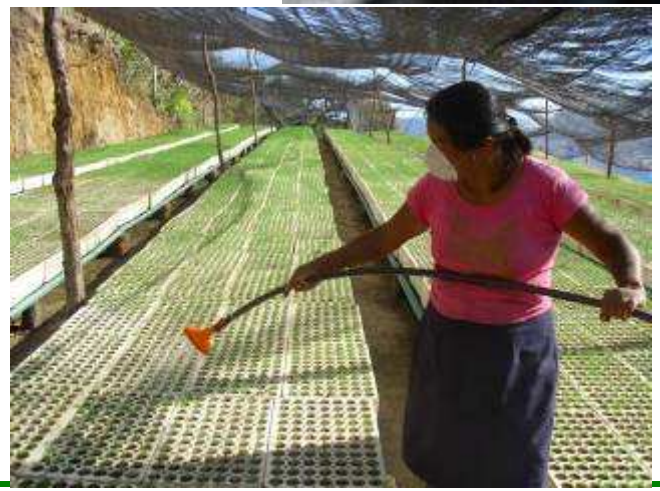
# INVESTIGACIÓN APLICADA: APLICACIÓN DE ORINA EN VIVERO FORESTAL (PINO)







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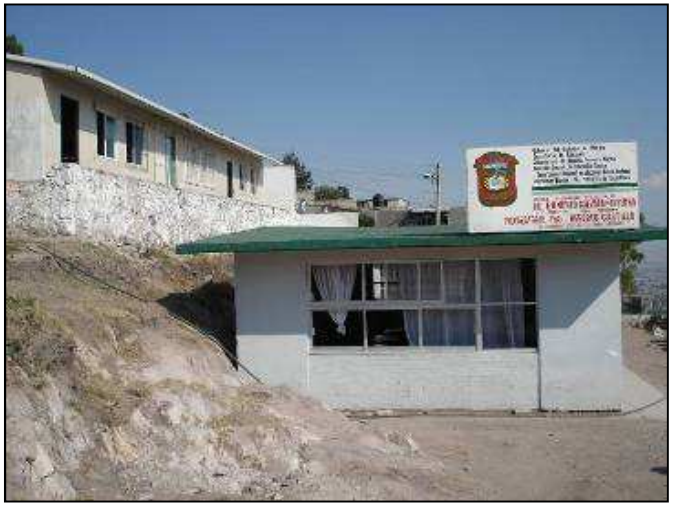
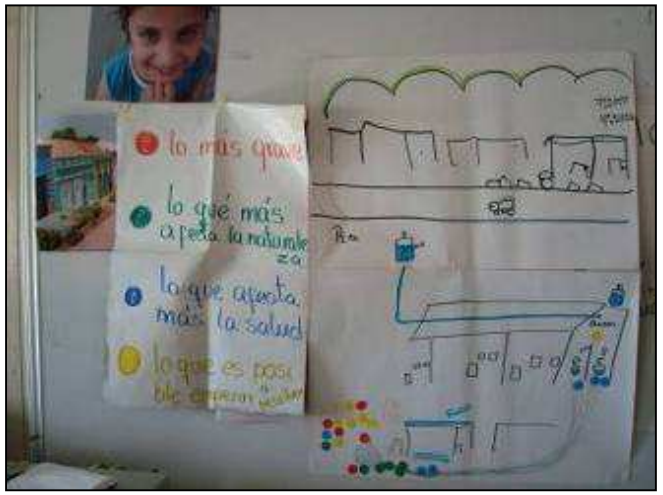
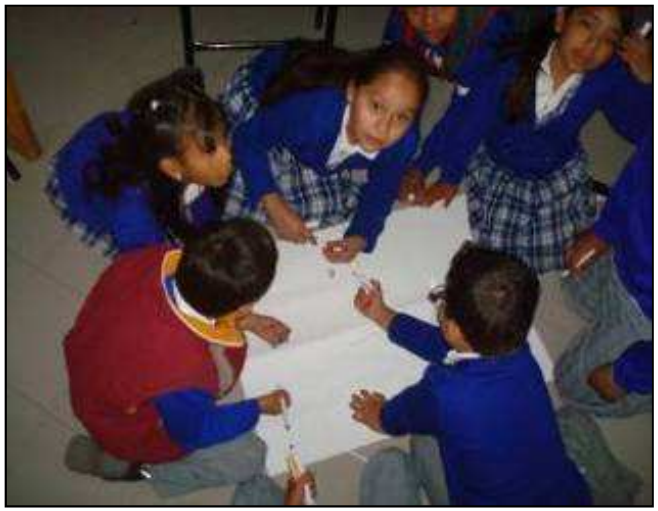
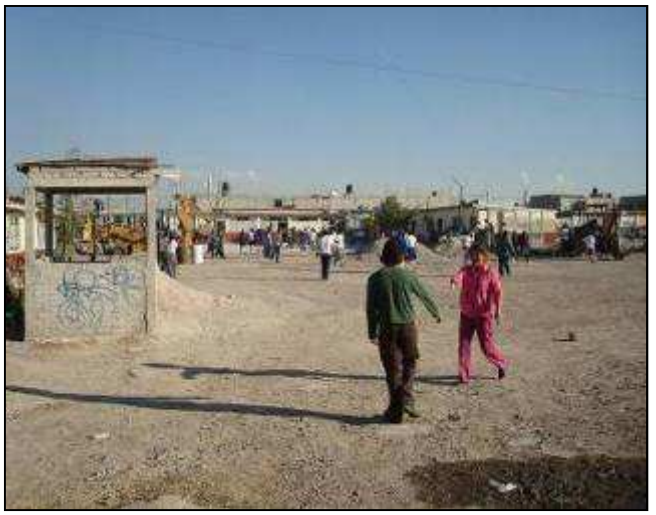
# PROYECTO DE 7 ESCUELAS DE AGUA, SANEAMIENTO E HIGIENE- ECATEPEC, MEXICO







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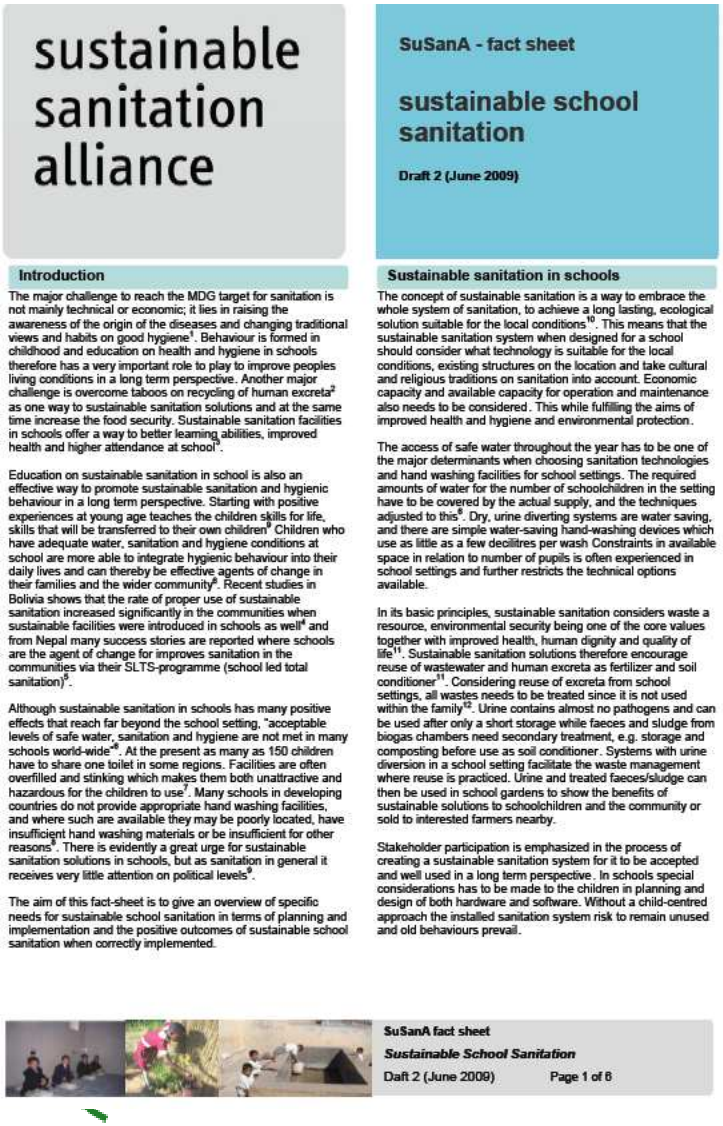
# Todos podemos aprender!



sustainable sanitation alliance

SuSanA - fact sheet

sustainable school sanitation

Draft 2 (June 2009)

**Introduction**

The major challenge to reach the MDG target for sanitation is not mainly technical or economic; it lies in raising the awareness of the origin of the diseases and changing traditional views and habits on good hygiene[1]. Behaviour is formed in childhood and education on health and hygiene in schools therefore has a very important role to play to improve peoples living conditions in a long term perspective. Another major challenge is overcome taboos on recycling of human excreta[2] as one way to sustainable sanitation solutions and at the same time increase the food security. Sustainable sanitation facilities in schools offer a way to better learning abilities, improved health and higher attendance at school[3].

Education on sustainable sanitation in school is also an effective way to promote sustainable sanitation and hygienic behaviour in a long term perspective. Starting with positive experiences at young age teaches the children skills for life, skills that will be transferred to their own children[4] Children who have adequate water, sanitation and hygiene conditions at school are more able to integrate hygienic behaviour into their daily lives and can thereby be effective agents of change in their families and the wider community[5]. Recent studies in Bolivia shows that the rate of proper use of sustainable sanitation increased significantly in the communities when sustainable facilities were introduced in schools as well[6] and from Nepal many success stories are reported where schools are the agent of change for improves sanitation in the communities via their SLTS-programme (school led total sanitation)[5].

Although sustainable sanitation in schools has many positive effects that reach far beyond the school setting, "acceptable levels of safe water, sanitation and hygiene are not met in many schools world-wide"[6]. At the present as many as 150 children have to share one toilet in some regions. Facilities are often overfilled and stinking which makes them both unattractive and hazardous for the children to use[7]. Many schools in developing countries do not provide appropriate hand washing facilities, and where such are available they may be poorly located, have insufficient hand washing materials or be insufficient for other reasons[8]. There is evidently a great urge for sustainable sanitation solutions in schools, but as sanitation in general it receives very little attention on political levels[9].

The aim of this fact-sheet is to give an overview of specific needs for sustainable school sanitation in terms of planning and implementation and the positive outcomes of sustainable school sanitation when correctly implemented.

**Sustainable sanitation in schools**

The concept of sustainable sanitation is a way to embrace the whole system of sanitation, to achieve a long lasting, ecological solution suitable for the local conditions[10]. This means that the sustainable sanitation system when designed for a school should consider what technology is suitable for the local conditions, existing structures on the location and take cultural and religious traditions on sanitation into account. Economic capacity and available capacity for operation and maintenance also needs to be considered. This while fulfilling the aims of improved health and hygiene and environmental protection.

The access of safe water throughout the year has to be one of the major determinants when choosing sanitation technologies and hand washing facilities for school settings. The required amounts of water for the number of schoolchildren in the setting have to be covered by the actual supply, and the techniques adjusted to this[8]. Dry, urine diverting systems are water saving, and there are simple water-saving hand-washing devices which use as little as a few decilitres per wash Constraints in available space in relation to number of pupils is often experienced in school settings and further restricts the technical options available.

In its basic principles, sustainable sanitation considers waste a resource, environmental security being one of the core values together with improved health, human dignity and quality of life[11]. Sustainable sanitation solutions therefore encourage reuse of wastewater and human excreta as fertilizer and soil conditioner[11]. Considering reuse of excreta from school settings, all wastes needs to be treated since it is not used within the family[12]. Urine contains almost no pathogens and can be used after only a short storage while faeces and sludge from biogas chambers need secondary treatment, e.g. storage and composting before use as soil conditioner. Systems with urine diversion in a school setting facilitate the waste management where reuse is practiced. Urine and treated faeces/sludge can then be used in school gardens to show the benefits of sustainable solutions to schoolchildren and the community or sold to interested farmers nearby.

Stakeholder participation is emphasized in the process of creating a sustainable sanitation system for it to be accepted and well used in a long term perspective. In schools special considerations has to be made to the children in planning and design of both hardware and software. Without a child-centred approach the installed sanitation system risk to remain unused and old behaviours prevail.

SuSanA fact sheet
*Sustainable School Sanitation*
Daft 2 (June 2009) Page 1 of 6

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