

The sanitation notebook: Take note!



The International Federation of Red Cross and Red Crescent Societies (IFRC) is the world's largest volunteer-based humanitarian network, reaching 150 million people each year through our 186 member National Societies. Together, we act before, during and after disasters and health emergencies to meet the needs and improve the lives of vulnerable people. We do so with impartiality as to nationality, race, gender, religious beliefs, class and political opinions.

Guided by Strategy 2020 - our collective plan of action to tackle the major humanitarian and development challenges of this decade - we are committed to 'saving lives and changing minds'.

Our strength lies in our volunteer network, our community-based expertise and our independence and neutrality. We work to improve humanitarian standards, as partners in development and in response to disasters. We persuade decision makers to act at all times in the interests of vulnerable people. The result: we enable healthy and safe communities, reduce vulnerabilities, strengthen resilience and foster a culture of peace around the world.



Cover photo by Jérôme Grimaud/IFRC

This mural along a street in Kathmandu, Nepal is a reminder to all passers-by that our actions now will determine the future – particularly around the issues of sanitation and

This notebook belongs to

Name[.]

Address:

Office phone:

Mobile phone:

Fax:

Email

Sanitation is a United Nations declared human right, and without access to it, many communities are left vulnerable to impacts on health and dignity, negative economic and education effects, extreme climatic events and disasters.

Despite these realities, progress toward meeting the Millennium Development Goal (MDG) of access to basic sanitation for all by 2015 is woefully off-track. More than 2.6 billion people around the world still lack access to sanitation – 1.8 billion of those are in Asia Pacific.

South Asia (including India, Pakistan, Nepal and Bangladesh) is the furthest behind globally in sanitation targets – combined they have over 700 million people still defecting in the open. Eastern Asia (including China and Mongolia) has low usage rates of between 50 - 75% of the population.

Access to improved, appropriate and sustainable sanitation options for communities is an urgent requirement, and efforts to address this "sanitation gap" need to be greatly scaled up if the MDG target is to be met.



Fig 1: Graph showing the huge regional proportions of people without access to improved sanitation in 2008, population (millions)¹

IFRC is committed to contributing toward achieving these MDG targets under their ten year Global Water and Sanitation Initiative (GWSI) initiative. Launched in 2005, and now half way through this initiative, the IFRC through its network of 187 Red Cross and Red Crescent National Societies (NS's) have identified over 160 country based water and sanitation projects worldwide of which 45% are in the Asia Pacific zone.

With the support of major partners (EU, bilateral Government agencies, public donations and the private sector) USD 300 million has already been raised for GWSI projects, and targets for the ten year initiative have been increased from 5 million to a minimum of 10 million direct beneficiaries by 2015.

IFRC intends to further 'scale up' GWSI projects in the Asia Pacific zone by mobilising a minimum 61 million CHF from 2012 – 2015. An estimated 2.3 million additional vulnerable and mostly rural beneficiaries will be targeted, with an emphasis on meeting basic sanitation needs with 'low-cost', 'low-tech' sustainable options, but also including safe water supply and hygiene promotion where appropriate.

Planner 2012

JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
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2I S	21 W	2I T	2I S	21 T	21 F
22 M	22 T	22 World water day F	22 M	22 W	22 S
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25	25	s 25	W 25		25
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19	19	19	19	19 World toilet day	19
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T	S	W	F	M	W
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27	27	27	27	27	27
27 S	Т	F	27 S	W	F
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EcoSan latrine,

Vietnam Red Cross Society



Eco-san (or ecological sanitation) is a term used to describe sanitation approaches where nutrients in human faeces are recycled back into the local environment as fertilisers. The two main types are dehydrating and composting – both ages old natural ways of re-using the nutrients in 'human waste'.

Composting toilets are usually dry – meaning that urine is diverted and faeces decomposes over time, when kept dry. The excrement is normally mixed with sawdust, grass or woodchips to support the aerobic decomposition process. Against popular belief, composting toilets can be odour-free and hygienic and a great way for households to use faeces as a resource, rather than a waste product.

Advantages

- Can be an effective solution in high water table, waterlogged or water scarce areas
- Does not smell or produce flies or mosquito breeding sites – can be constructed inside a house
- Does not pollute ground or surface water
- Safe, non-smelly compost can be used as fertiliser for crops
- Urine evaporation bed can be used to support plants
- Affordable on-site sanitation with no need for sewers/treatment plants

Disadvantages

- Users must be mobilised to consider faeces as a resource, rather than a waste product
- Users must be appropriately trained to ensure correct operation and no health risks
- Not suitable for a wide variety of anal cleansing materials/situations or with high volumes of water
- More expensive and complex than simple types of latrine
- Prohibitive for emergency use
- Difficult to use in very cold climates

Sanitation in Action: Vietnam Red Cross Society



The Vietnam Red Cross has been implementing sanitation, hygiene and water programs since the early 2000s. Together with the support of French Red Cross, German Red Cross, Australian Red Cross and IFRC, they are contributing to the GWSI and toward achieving the MDG goal of access to improved sanitation for all in Vietnam by 2015.

Between 2006 and 2009, over 129 sanitation facilities in 166 schools were constructed by the Vietnam Red Cross. Almost 60,000 Vietnamese students benefited from these improvements in sanitation facilities. Further, over 60,000 women were targeted to improve hygiene and child health.

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VIP latrine, Solomon Islands Red Cross Society



The VIP – or Ventilated Improved Pit – latrine improves on the simple pit by controlling flies and odour. Simple and relatively cheap – the VIP latrine can be constructed with locally available materials.

There are three main components of a VIP latrine – the pit (unlined, or lined with cement rings or blocks), the superstructure (walls, roof and ventilation pipe with fly screen) and the platform (user interface). An important consideration is the need for emptying or relocation to another site once the pit becomes full. This could also include a twin pit system.

Advantages

- Simple and easy to understand design
- Low construction cost with locally available materials
- Controls flies and odour
- Does not require water for operation
- Can be used with a wide variety of anal cleansing materials

Disadvantages

- Possible contamination of ground or surface water if pit not fully lined and located too near to water source
- Not appropriate for high water table, water logged, rocky or unstable areas
- If not maintained properly or inside of latrine is not kept dark, can start to smell
- Ventilation pipe increases cost and is more complicated to construct

Sanitation in Action: Solomon Islands Red Cross Society



The Solomon Islands Red Cross (SIRC) has recognised that water, sanitation and hygiene remain one of the most critical factors in improving health of remote vulnerable communities.

SIRC, with support from the Australian Red Cross, have since 2006 been running a community based public health program called Tugeda Uime Waka for Helti Komuniti (Together we work for healthy communities). The aim of the long term program is to provide communities with knowledge, skills and support to sustainably improve health and hygiene practices – including the appropriate use of VIP latrines constructed from local materials available to households.

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Pour-flush latrine, Myanmar Red Cross Society

Pour-flush latrines have a squat plate with a shaped pan which provides a water seal (sometimes called water trap) – and controls odour and flies. To flush excreta into the pit, between 1 and 3 litres of water is usually required. The water trap or seal needs to be checked regularly for blockages. Pour-flush latrines are most commonly used by communities used to water for anal cleansing.

Pour-flush latrines can be constructed in a variety of different ways depending on the context – and either set over a pit (directly below or offset), or connected to a septic tank, biogas digester or even small diameter sewerage system. If a pit or septic tank is used, an important consideration is the need for emptying or relocation to another site once they become full.

Advantages

- Reduces odours, flies and mosquitoes
- Straightforward maintenance (check for blockages in water trap)
- Easy to clean squat plate and pan
- Depending on context/situation, can be constructed with pit/offset pit/ septic tank
- Less complicated construction compared to a VIP latrine
- Still relatively low cost (however are more expensive than pit or VIP latrines)

Disadvantages

- Sufficient quantities of water is required for operation
- Water seal excludes the use of solid anal cleansing materials
- Plastic/ceramic pan with water seal requires skill to produce
- Possible contamination of ground or surface water if pit/septic tank not lined properly and located too near to water source
- Wastewater requires treating

Sanitation in Action: Myanmar Red Cross Society



The Myanmar Red Cross has been implementing GWSI sanitation, hygiene and water programs since 2008 with support from the Austrian Red Cross, French Red Cross, IFRC and ICRC.

Over 60,000 offset pit pour-flush latrines for households were constructed between 2008 and 2011 in sanitation, hygiene and water programs following the devastation of Cyclone Nargis. Using the Participatory Hygiene and Sanitation Transformation (PHAST) community based approach and other hygiene promotion methods, over 500,000 beneficiaries (or 95,000 households) were provided with knowledge, skills and hardware support aimed at improving hygiene and sanitation practices and reducing the risk of water and sanitation related diseases.

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Biogas latrine,

Democratic Peoples Republic of Korea (DPRK) Red Cross Society





A biogas latrine collets human faeces and excreta, and through a digestion process a methane-rich gas is produced which can be used as a fuel for cooking, lighting and generating electricity.

Digestion occurs in a 'digester' or sealed tank, and during the process, organic matter is broken down by microbiological activity in anaerobic conditions (no oxygen present). The digestion process works best in warm climates and usually takes between several weeks to several months to complete. Animal manure can be added to the digestion process.

A range of digester options are available which range from simple to complex. A standard household anaerobic digestion system generally consists of a simple digester tank (including outlet for removing slurry), covered by a dome shaped concrete gasholder (to capture the gas produced). As more gas is produced, the pressure increases and this pushes the slurry through the outlet to a separate container.

Advantages

- Useful gas produced which can be used for cooking, lighting etc
- Faeces and excreta is 'out of sight' and contained so reduced risk of ground water contamination
- Simple operation and maintenance procedures at household digester level
- Reduces odours, flies and mosquitoes

Disadvantages

- Potential gas safety issues
- Digestion process is sensitive to materials added (for anal cleansing e.g. toilet paper) and temperature
- Slurry/sludge from digester has to be removed and appropriate treatment/ disposal provided
- Relatively high construction skills required
- Relatively high construction cost (although varies greatly depending on system complexity)

Sanitation in Action: Democratic Peoples Republic of Korea (DPRK) Red Cross Society



For over 12 years, the DPRK Red Cross Society, with support from the Swedish Red Cross, Netherlands Red Cross, Spanish Red Cross, Australian Red Cross and the IFRC, has been implementing water, sanitation and hygiene programs in DPRK communities as a contribution toward achieving GWSI and MDG goals of access to improved sanitation for all by 2015.

Almost 7,000 latrines (including biogas) have been constructed for over 34,000 beneficiaries since 2000. A hygiene promotion campaign has reached almost 650,000 people targeting improved personal and household hygiene and sanitation practices.

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Emergency/ rapid latrine, Red Cross Society of China



Adequate and appropriate sanitation for affected populations is one of the most critical (yet often overlooked or left out) interventions in an emergency for disease prevention and control.

Access to and use of latrines, along with handwashing, are more effective in reducing morbidity from diarrhoea than water quality and water quantity (see graph below).

Sanitation is a broad term which includes:

- excreta disposal
- vector control
- solid waste management (including medical waste)
- drainage

Effectiveness of Hardware and Hygiene Interventions in reducing Diarrhea Morbidity



Source: http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTHEALTHNUTRI-TIONANDPOPULATION/EXTPHAAG/0,,contentMDK:20800297~menuPK:1445899~ pagePK:64229817~piPK:64229743~theSitePK:672263,00.html

Sanitation in Action: Red Cross Society of China



Following the Sichuan Earthquake in 2008, a British Red Cross mass sanitation module (MSM) emergency response unit (ERU) was deployed as part of the broader water, sanitation and hygiene response operation. Together with RCSC staff and volunteers, this MSM provided at least 300 latrines immediately to the affected populations in hard-hit Jiulung and Banqiao townships. A strong education component of hygiene promotion was included to reduce the risk of water and sanitation related disease.

Further to emergency response, the Red Cross of China, together with the Spanish Red Cross, Austrian Red Cross and the IFRC, has been developing their Water and Sanitation emergency response team capacity. The Yunnan Branch of RCSC has worked with a local company to produce more cost effective Chinese made 'rapid' latrines, which were deployed in Qinghai earthquake in 2010 to give access to appropriate sanitation to 5000 people.

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The Fundamental Principles of the International Red Cross and Red Crescent Movement

Humanity / The International Red Cross and Red Crescent Movement, born of a desire to bring assistance without discrimination to the wounded on the battlefield, endeavours, in its international and national capacity, to prevent and alleviate human suffering wherever it may be found. Its purpose is to protect life and health and to ensure respect for the human being. It promotes mutual understanding, friendship, cooperation and lasting peace amongst all peoples.

Impartiality / It makes no discrimination as to nationality, race, religious beliefs, class or political opinions. It endeavours to relieve the suffering of individuals, being guided solely by their needs, and to give priority to the most urgent cases of distress.

Neutrality / In order to enjoy the confidence of all, the Movement may not take sides in hostilities or engage at any time in controversies of a political, racial, religious or ideological nature. Independence / The Movement is independent. The National Societies, while auxiliaries in the humanitarian services of their governments and subject to the laws of their respective countries, must always maintain their autonomy so that they may be able at all times to act in accordance with the principles of the Movement.

Voluntary service / It is a voluntary relief movement not prompted in any manner by desire for gain.

Unity / There can be only one Red Cross or Red Crescent Society in any one country. It must be open to all. It must carry on its humanitarian work throughout its territory.

Universality / The International Red Cross and Red Crescent Movement, in which all societies have equal status and share equal responsibilities and duties in helping each other, is worldwide.

International Federation of Red Cross and Red Crescent Societies Asia Pacific zone office

The Ampwalk Suite 10.02 (North Block) 218 Jalan Ampang 50450 Kuala Lumpur Malaysia

Tel: + 60 3 9207 5700 Fax: + 60 3 2161 0670

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