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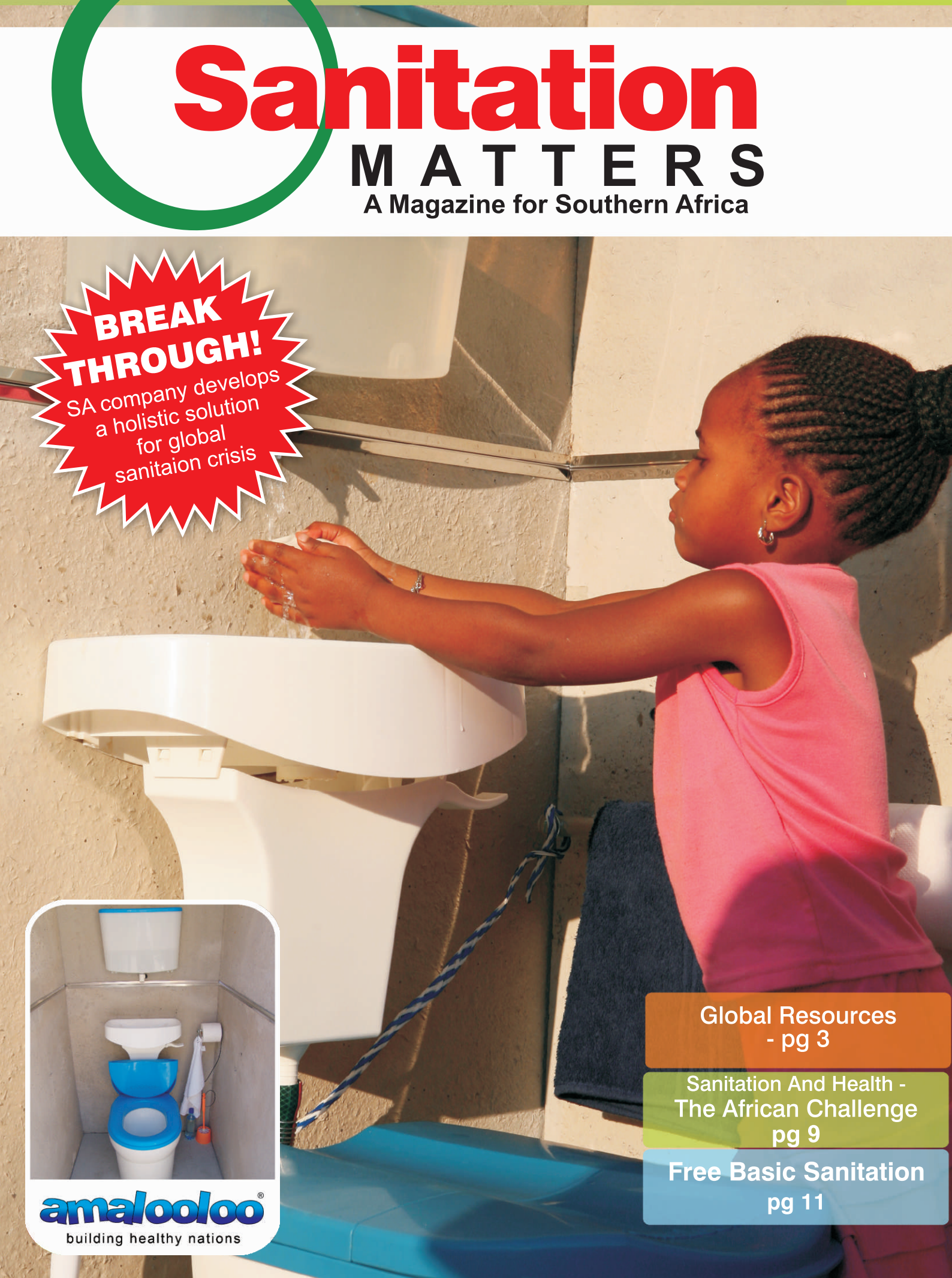
Sanitation MATTERS

A Magazine for Southern Africa



BREAK THROUGH!

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Dear **reader**

You are reading the first issue of *Sanitation Matters*, a magazine of the Southern Africa knowledge node on sustainable sanitation.

Sanitation Matters is like a village green or town square where we meet to pack and unpack sanitation matters. Sanitation matters to us because it is the basis of healthy living. We enjoy life and food from the soil. At some stage what we have consumed goes back to the soil, therefore sanitation matters.

Sanitation matters to all of us, the developing and developed world. As Anna Tibaijuka, the Executive Director of the UN-HABITAT puts it, "Sanitation is a particularly important matter because people who live in remote villages, wealthy suburbs, urban slums and glittering cities share a need to avoid exposure to the disease, vermin and other hazards entailed with proximity to dealing with sewage. We share a planet with finite space and resources, and a common interest in turning this unavoidable product of our existence into something useful that can be recycled instead of just dumped into our backyards, rivers or oceans".

Sanitation Matters will not only carry Southern African sanitation challenges and best practices, but also its about sharing best practices and other issues that will contibute to the acceleration of meeting sanitation MDG targets. Sanitation challenges, scarce resources and protecting our environment are all inter-laced, therefore this publication will cover a wide range of issues on sanitation and sustainable development.

The article on the re-use of nutrients and excreta is of relevance to all of us, so is the urine diversion toilet in Sweden. We also have articles on ROSA, which involves Ethiopia, Kenya, Tanzania and Uganda. Sanitation is therefore everybody's business not just for the developing world.

Have you ever wondered about the effects of underdeveloped sanitation to the economy? The long distances people travel for proper sanitation takes away from the economy precious time and human resources.

We know sanitation matters to you and your country so please tell us about sanitation issues you want to see in your publication *Sanitation Matters.* We are running out of time. The Millennium Development Goals are around the corner therefore, let's share success stories. One planet, many sanitation strategies!

Are you interested in sharing your products or services with the sustainable sanitation community? Contact us for advertising rates.

Editor
Ditshego Magoro
Manager: *Southern Africa knowledge node*
ditshegom@win-sa.org.za

WIN-SA
WATER INFORMATION NETWORK - SOUTH AFRICA -

WATER RESEARCH COMMISSION

Southern Africa knowledge node on sustainable sanitation

Southern Africa knowledge node on sustainable sanitation. An initiative of the Stockholm Environment Institute EcoSanRes programme

about us

Sanitation Matters is a knowledge sharing publication of the Southern Africa knowledge node on sustainable sanitation (SAKNSS). The purpose of the publication is to share information and knowledge on sustainable sanitation within the Southern Africa region.

Subscription is free. Material in this publication does not necessarily reflect the considered opinions of the members of the Water Research Commission, Stockholm Environment Institute and Water Information Network South Africa.

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Editorial team
Dr. Nozi Mjoli, Dr. Valerie Naidoo, Mrs. Bloodless Dzwairo, Mr. Victor Moila, Miss Juliet Mwale, Miss Unathi Hani and Miss Ditshego Magoro.

Design and layout:
Woema Graphic & Web Design
012-667 3103

Editorial offices:
Water Information Network South Africa
Private Bag X03
Gezina
0031
Republic of South Africa

Tel: (+27) 12 330- 9062
Fax: (+27 12 330- 2565)
Editor: Ditshego Magoro
Email: ditshegom@win-sa.org.za

Rethinking **sanitation**

> Sustainable sanitation requires the move from provision of sanitation latrines and toilets to the planning that considers the assessment of the sustainability of sanitation systems and services from a broader perspective (SEI 2009)

New solutions and a new mindset to sanitation is a must if we are to provide safe sanitation to more than 589 million people in Africa. Governments are aware of the challenge.

That is why during the International Year of Sanitation in 2008,ministers responsible for sanitation and hygiene from 32 African countries and other stakeholders agreed that more than 60% of Africa's population currently do not have access to safe sanitation. They were also mindful that an estimated one million Africans die every year from sanitation, hygiene and drinking water-related diseases, and that improving sanitation reduces disease burden and improves household and national economic development.

The solution seems to revolve around one word, sustainability. Effective and sustainable approaches are the key in order for Africa to meet the MDG targets and provide long-term sanitation solution. Currently solutions are there but they do not seem to be sustainable.

This requires a paradigm shift by moving from a conventional to a unified approach. It requires the application of an integrated approach to the planning, designing, operation and maintenance of sanitation systems and also creating the interface between sanitation and water resources management.

The use of effective and sustainable approaches, such as the involvement of household and community led initiatives, marketing for behavior change, educational programs, and caring for the environment, which make a specific impact upon the poor, women, children, youth and the un-served is one of the pledges made in the Ethekwini declaration that will enable African countries to address the sanitation challenges in the continent.

Sustainable sanitation requires the move from provision of sanitation latrines and toilets to the planning that considers the assessment of the sustainability of sanitation systems and services from a broader perspective (SEI 2009). A lot of factors must be taken into consideration in the assessment.

The application of the sustainable sanitation aspects are context based depending on the socio-economic and political factors. There is no one size fits all.

We must find answers to the following questions:

1. How will the specific system impact on the environment, health of the community, the operations and maintenance of the system. (ensuring that the girl child or women are not burdened by the proposed sanitation)
2. What will be the cost to the household and government (long-term and short- term), social and cultural aspects?
3. In cases where waterborne systems are recommended, the assessment will address the impact on the availability of the water resources, the relationship between the ecosystem and the proposed sanitation facility.

Ecological sanitation

One aspect of sustainable sanitation is ecological sanitation, which provides alternative solutions with or without water, while providing containment, treatment and recycling of excreta.

It can involve soil-based composting toilets in shallow reinforced pits, dry urine-diverting toilets with storage vaults, urine-diverting mini-flush toilets and even high-tech vacuum systems. Cost-effective eco-san can be adapted for developing and developed countries. In arid zones, water resources can be saved for more important needs like personal hygiene and growing food.

In humid areas with high water tables, above ground and shallow eco-san systems can remain functional during seasonal floods. Eco-san provides human health and environmental protection using affordable and appropriate technologies to match the needs of the entire world (Source: EcoSanRes Factsheet 1,2008).

The application of the sustainable sanitation aspects are context based depending on the socio-economic and political factors. There is no one size fits all or blueprint. . It requires an assessment of the context within the specific locality in relation to the principles of sustainable development and sustainable livelihoods.

Excreta AND wastewater sludge–
Global Resources

The water sector plays a critical role in the production waste which is beneficial for agricultural and commercial sector.

What we eat comes from the soil, therefore our excreta can be re-cycled back into the soil and assist in food production, job creation and sustainable communities. All it needs is a positive mindset. Excreta and wastewater sludge should be regarded as resources that could be used to develop sustainable human communities, instead of something that smells bad.

This is according to Global Atlas, a publication that monitors sludge usage globally and is produced by Greater Moncton Sewerage Commission and UN-HABITAT. Global Atlas also warns that, excreta and wastewater sludge if not managed properly can be dangerous to human health and the environment.

The correct attitude is to regard it as a waste that can be re-cycled just like any other waste, for example, IT equipment (such as mobile phones and computers) , paper, plastic, bottle , oil etc. Such re-cycling is a key driver in reducing emissions leading to global warming and climate change.

"The water sector plays a critical role in the production of waste which is beneficial for agricultural and commercial sector."

The Global Atlas of excreta, wastewater sludge, and bio-solids management 2009, position sludge as a global resource. Instead of treating them as waste, the idea is to use them to improve food security and job creation, while impacting positively on the environment.

Burkino Faso and Sweden are just two examples of how urine can re-vitalize the soil, when it is properly managed, collected and transported back to the soil. This shows that the promotion of nutrients and wastewater sludge play a positive role in building sustainable communities. Sludge reuse also has the potential for poverty eradication, job creation and entrepreneurship.

In South Africa commercial companies such as brick makers, fertiliser manufactures, agriculture and local government use of wastewater sludge has shown

Photo 1, 2 & 4 - Urine storage and application in Burkino Faso - Creta project

Photo 3 - Householder applying urine to garden, Sweden

Photo 4 - Urine transportation

the potential and the significance contribution to economic activities and entrepreneurship.

According to the study undertaken by the Water Reasearch Commision, sludge can be used for different economic activities such as land application, fertilisers, thermal, construction and landfill cover (Frost & Sullivan WW Sludge management 2007).

However the use is subject to proper management as guided by the legislations in different countries and complying with the World Health Organisation (WHO) guidelines.

Economic benefits case studies

Source: Water Research Commission Guidelines for the Utilisation and Disposal of Wastewater Sludge, Volume 1 – 5: Impact Assessment.

The South African guidelines on utilization and disposal of wastewater sludge are aimed at guiding the user to ensure that options for managing and utilization does not harm the environment and result in health risks.

The utilisation of wastewater sludge in the brick manufacturing process has resulted in significant cost savings for brick manufacturers. Bricks are manufactured from incinerator ash as well as dewatered wastewater sludge. The brick manufacturer researched during this project manufactures 130 million bricks per annum, of which 50 million are manufactured with wastewater sludge as a component of the raw material.

Wastewater sludge has good combustion properties and when used as a raw material brick companies are able to make significant cost savings.

Depending on the quality of the bricks, the wastewater sludge content may range from 10% in high quality bricks up to 30% in poorer quality bricks. When clay bricks are manufactured furnace oil is added as a raw material to ensure that the bricks burn internally, which ensures that they harden throughout and maintain their structural integrity.

With the inclusion of wastewater sludge as a raw material, brick manufacturers now do not have to add furnace oil as a raw material to the bricks because the solids within the wastewater sludge are combustible, which ensures that the brick is heated throughout and hardened effectively. This results in a significant cost saving for the manufacturer because less furnace oil is required, which lowers the total energy costs.

An analysis of brick manufacturing companies that utilise wastewater sludge as a raw material revealed that cost savings of as much as 30% have been recorded. An additional advantage is that the wastewater sludge that is utilised is delivered as wet sludge (not dewatered) so less water is required when manufacturing the bricks.

Cost Savings

The brick company analysed during this assessment manufactures 1000 clay bricks for approximately R750, but when wastewater sludge is included as a raw material the cost per 1000 bricks is reduced to R637-50. Based on the total number of bricks produced by this company on an annual basis, the utilisation of wastewater sludge as raw material results in a cost saving of approximately R5.6 million per annum.

Brick Manufacturing Costs

Brick Type	Cost per 1000 bricks
Clay bricks	R750
Sludge bricks	R637-50
Volume of sludge utilised / annum	40, 000 tons

CASE STUDY 1

COEGA BRICKS

Coega Bricks were the pioneers for utilising wastewater sludge for the manufacture of bricks in South Africa. Historically, Coega Bricks only utilised clay as a raw material for brick manufacture, but when it was evident that wastewater sludge could be a potential source of raw material, Coega Bricks decided to explore the opportunity of supplementing their clay with dewatered wastewater sludge. Experiments were conducted to assess the combustion properties of wastewater sludge as it was suspected that it may be a good material to mix in with the standard clay raw material. The experiments were a success and Coega Bricks started sourcing wastewater sludge from the local wastewater treatment works.

CASE STUDY 2

AGRIMAN FERTILISER MANUFACTURER

Agriman (Pty) Ltd (Agriman) utilises wastewater sludge as a raw material for their fertiliser products. The wastewater sludge fertiliser market is relatively small in comparison to the chemical fertiliser market, but it possesses much potential. Agriman are of the opinion that the chemical fertiliser industry producers approximately 2.1 million tons of product per annum, but Agriman, as one of the only wastewater sludge fertiliser manufacturers in South Africa produces only about 3000 tons of product. Interestingly, Agriman are of the opinion that farmers are moving away from chemical fertilisers because of the global move towards organic and biological fertilising processes, with which the wastewater sludge fertilisers are aligned, which bodes well for this industry. Discussions with Agriman have revealed that the utilisation of wastewater sludge as a raw material has had a significant impact on their business.

CASE STUDY 3

CITY OF CAPE TOWN LAND APPLICATION

The City of Cape Town wastewater treatment works processes approximately 200, 000 megalitres of wastewater on an annual basis, which equates to approximately 5 million m3 of wastewater sludge per annum. Through dewatering processes this volume of sludge is further reduced to approximately 333, 000 m3, which is enough sludge to fill a soccer field to a depth of 66 meters!

Historically, with the stringent metal content standards for sludge, the majority of this sludge was disposed of at hazardous landfill sites, which was expensive and it took up valuable landfill space that should have been utilised for hazardous materials. With the allowances included in the 2006 Sludge Guidelines the City of Cape Town was able to consider alternative disposal methods other than landfill disposal. As per the guidelines, the sludge was deemed suitable for the following applications:

- Land application for cereal culture
- Grazing for animals

There were however some restrictions:

- Sludge has to be applied prior to planting
- The sludge has to be covered with soil

The agricultural region of the Swartland was deemed the best area for land application owing to its predominantly sandy soils with low organic and metal content levels.

The application of wastewater sludge to arable land is an effective method for municipal wastewater treatment works to dispose of their wastewater sludge. The disposal of sludge to landfill sites is both expensive and it is a waste of valuable landfill space.

When applied correctly, farmers welcome the application of wastewater sludge to areas with poor soils. The high organic content of wastewater sludge improves the nutrient levels within poor soils and sludge-treated sandy soils are able to trap and retain more water.

To get a copy of South African Guidelines for the Utilisation and Disposal of Wastewater Sludge, Volume 1 – 5 contact Mr Judas Sindane or Mr. Patrick Kgoale- **orders@wrc.org.za**

Facts

on sanitation and economic benefits?

- Improved sanitation in developing countries yields about US$9 worth of benefits for every US$1 spent.
- Conservative estimates from the World Health Organization suggest that alone the time saved by people using a toilet close to home would have an annual economic value in excess of US$114 billion.
- Toilets save lives and enhance productivity; investments in sanitation and hygiene are investments in a nation's economy.
- Twelve percent of the total health budget in Sub-Saharan Africa is spent treating preventable infectious diarrhoea. Progress in sanitation and hygiene would enable that money to be spent on other critical needs.
- Improving sanitation would have a profound impact on education. Currently, almost 200 million days of school attendance are lost due to the lack of sanitation each year, and up to two-thirds of children in some African schools are infested with worms and unable to concentrate and learn effectively. School enrolment and retention rates for girls will rise when there are appropriate toilets and bathrooms for them to use, particularly after menstruation starts.
- Investments in sanitation protect scarce water resources and enhance the value of water supply. They also protect tourism revenues, which in some countries account for upwards of 10 percent of GDP.
- Hygiene promotion is often the single most cost-effective public health intervention.
- Basic sanitation and hygiene are essential drivers of economic development.

Source: Http://esa.un.org/iys/docs/IYS%20Advocacy%20kit%20ENGLISH/Talking%20points.pdf

TANZANIA

Home-Grown Solutions

Tanzania has made some progress in its effort to meet the Millenium Development Goals (MDG'S) for water and sanitation but it is far from actually achieving those goals (Goal 7 of the eight United Nations Millenium Development Goals is to reduce by half the proportion of people without sustainable access to safe water and basic sanitation) . Progress is also threatened by the capacity to sustain existing projects. The Resource-Oriented Sanitation concepts for peri-urban areas in Africa (ROSA) should be seen in that light (Dr. Esther W. Dungumaro and Dr. Tumaini Kimaro from the University of Dar es Salaam).

"Sustainability is the key word in ROSA. Resource-Oriented Sanitation concepts for peri-urban areas in Africa (ROSA) promote resource-oriented sanitation concepts as a route to sustainable and ecologically sound sanitation in order to meet the MDGs," continues Dungumaro and Kimaro.

Tanzania is part of a four-country programme to promote resource-oriented sanitation concepts. Tanzania, Ethiopia, Kenya, and Uganda have identified pilot projects in four cities in their respective countries to implement ROSA.

Tanzania is part of a four-country programme to promote resource-oriented sanitation concepts. Tanzania, Ethiopia, Kenya, and Uganda have identified pilot projects in four cities in their respective countries to implement ROSA.

Tanzania's pilot project is in Arusha, Kenya's in Nakuru. Ethiopia's pilot project is in Arbaminch and Uganda's in Kitgum. "Strategic sanitation and waste plans (SSWPs) have been developed in the four pilot cities," writes Dungumaro and Kimaro.

"The aim is to come up with several combined techniques in the context of the local requirement. ROSA also considers the WHO guidelines for use of waste and excreta, such as the improvement and adaptation of resource-oriented sanitation technologies and the development of community based operation and management strategies. Strategies should be innovative, affordable, adaptable and replicable to sustainable sanitation."

ROSA's twin pillars are local resource-oriented sanitation and community involvement. Communities are encouraged to work with project managers, and participate in decision making. It is communities themselves that identify affordable concepts which fit their budgets, resources available locally and institutional frameworks. ROSA believes that community involvement increases the chances of sustainability.

Dungumaro and Kimaro maintain that added benefits to public participation include but are not limited to the following.

(I) Building public trust: lack of trust may lead to protest and antagonism between project managers and the local people;

(ii) Demonstrating the importance of local communities consent in taking part in public decision making processes, especially in issues that directly affect their welfare. Furthermore, participation of the local community could provide an important database, experience and ideas that could lead to practical, relevant, achievable and acceptable solutions to water related problems (Dungumaro and Madulu, 2003).

ROSA re-uses human excreta and all household wastewater, which it regards as resources, not waste. ROSA groups them into four categories. Black water is the wastewater from toilets, a combination of urine and faeces. Grey water has no excreta and comes from the kitchen, bathroom and laundry. Yellow water is urine only. Brown water or faecal matter is separately collected faeces.

"A study to find out acceptability of the techniques revealed that respondents are willing to re-use human excreta as fertilizers. The finding suggests the sustainability of the project," says Dungumaro and Kimaro.

Reducing by half the proportion of people without sustainable access to safe water and basic sanitation, might be a challenge for Tanzania but, "The ROSA project is a window for hope in ensuring sustainable sanitation in the country, "concludes Dungumaro and Kimaro.

Source: Domestic Water And Sanitation In Tanzania, Coverage And Sustainability Issues, by Dr. Esther W. Dungumaro University of Dar-es-Salaam, Institute of Developmental studies, Dar es Salaam Tanzania, e-mail **edungumaro@udsm.ac.tz**. and Dr. Tumaini Kimaro, University of Dar es Salaam, Department of Water Resources Engineering, Dar es Salaam, Tanzania.
Email: kimaro@wrep.udsm.ac.tz

Dungumaro and Kimaro would like to acknowledge information from ROSA Resource-Oriented Sanitation concepts for peri-urban areas in Africa Arusha City Project WP-6.

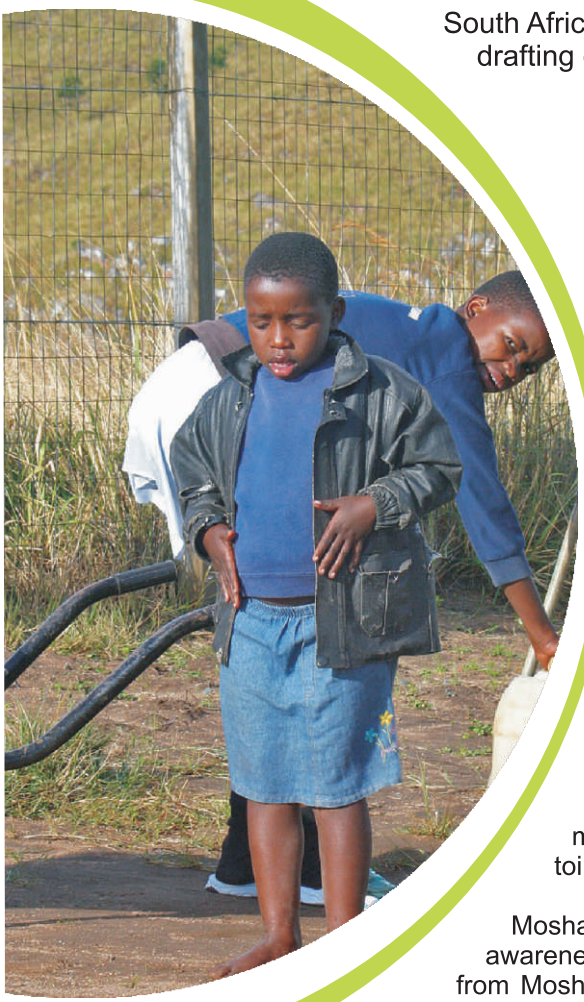
Namibia – SA Learning Journey

Rural communities such as Moshaweng Local Municipality in the Northern Cape, South Africa rely on underground water for water supply. Therefore, sanitation technologies are designed in such a way that they do not pollute it.

This is one of the experiences South Africa shared with delegates from Namibia's Directorate: Rural Water Supply, when they visited four South African provinces, Gauteng, North West, Northern Cape and Western Cape in May 2009. Namibia had hosted South Africa the previous year to showcase Namibia's stock watering policy.

Purpose of the Sanitation Learning Journey

The Namibian cabinet took a decision to improve sanitation, aimed at meeting Millennium development Goals and has therefore instructed the DRWS to draft a strategy to implement sanitation. In order for this strategy to be effective and successful, it is important that it is informed by other countries' implementation of sanitation strategies.



South Africa was thus chosen as one of the countries which can inform the drafting of the strategy and some of the issues shared included:

- South African Sanitation policy
- A broad spectrum of relevant municipal sanitation implementation practice.
- As a follow up to the 2008 learning journey, track progres regarding the provision of stock watering in the Dr. Ruth Mompati District Municipality.

Field visits

Sanitation technologies at Moshaweng Local Municipality are determined by the depth of the water table."Where the water table is shallow, the municipality provides the Urine Diversion System (UDS) toilets which require shallow pits and in which only the urine penetrates the ground whilst the solid waste is dried up and can be used as compost or be discarded. Where the water table is deep then the municipality provides Ventilated Improved Pit (VIP) toilets which can have deeper pits and only fill up after a number of years," says Unathi Hani, the Free Basic Water SIP communications coordinator: Department of Cooperative Governance and Traditional Affairs.

The visitors spoke to users of the different technologies at Moshaweng local municipality. Users demonstrated how they operate and maintain their UDS toilets.

Moshaweng residents had initially rejected the UDS toilets due to lack of awareness and information on how to operate and maintain the toilets. A key lesson from Moshaweng is that ongoing user education and awareness raising results in acceptance of the provided sanitation technologies by the municipality.

In the city of Cape Town, in the Western Cape, the delegate were exposed to various sanitation technologies implemented in the informal settlements.

The Namibian visit was made possible by the Department of Cooperative Governance and Traditional Affairs and the Department of Water Affairs with support from the participating municipalities.

Unathi Hani, the Free Basic Water SIP communications coordinator: Department of Cooperative Governance and Traditional Affairs

"A key lesson from Moshaweng is that ongoing user education and awareness raising results in acceptance of the provided sanitation technologies by the municipality."

Photos:
Namibia delegation: Northern Cape field visit

Photos:
Namibia delegation: Northern Cape field visit

Sanitation And Health - The African Challenge

> First South African company to introduce a hand wash facility inside the toilet for washing of hands under running water with soap thus preventing contamination and the spreading of diseases, bringing forth highly improved Health and Hygiene benefits.

Africa is facing a sanitation and health crisis that will not be resolved without dramatic, researched-based technological interventions. The UN Millennium Development Goals Report 2009 which has recently been released in Geneva by the UN Secretary-General, Ban Ki-Moon, draws an alarming picture with regards to the backlog of sanitation services, especially in sub-Saharan Africa. The report, which presents the yearly assessment of global progress towards the realisation of the Millennium Development Goals, warns that despite many successes, overall progress in fields like sanitation has been far too slow for the targets to be met by 2015. "Considering the current rate of progress in sub-Saharan Africa, the global target will not be met until 2076. This will result in the death of an additional 133 million African children due to diseases related to poor sanitation. Despite health risks to families and communities, 1.2 billion people still practice open defecation and 1.4 billion people will require sanitation facilities immediately if the 2015 Millennium goals are to be met" says the report.

Turning the sanitation crisis around will require a Herculean effort, backed by the best global sanitation technology. This is the opinion of Lukas Fourie, leading sanitation expert and managing director of Betram, a specialist developer and manufacturer of holistic sanitation systems in South Africa. "Within this scenario outlined by the UN Millennium Development Goals Report, a Holistic, Sustainable and Ecologically Friendly Sanitation Solution with Extensive Health and Hygiene benefits is imperative for the improvement of dignity and quality of life for our people that they so rightfully deserve" says Fourie. "Amalooloo provides such a solution that represents a world breakthrough in sanitation, and has therefore put a programme in place to assist national and local governments and communities to achieve the Millennium Goals on time and within budget. The product is a world leader and play a major role in reducing sanitation backlogs and improve drastically health and hygiene living in Africa. The technology is currently being exported to a number of African countries .

> Amalooloo has put a programme in place to assist national and local governments and communities to achieve the Millennium Goals on time and within budget

"The durable concrete structure with functional, aesthetically pleasing finishes is much cheaper than that of conventional brick and mortar systems. It is quick and easy to assemble by unskilled community members without any special tools, which means more toilets for more people in a shorter time" says Fourie.

He points out that in South Africa, for example, Amalooloo is able to provide proper sanitation to 10 million rural and urban informal settlement dwellers (2 million toilets) within five years for less than a billion US$. To put this investment in perspective – South Africa is currently negotiating the possible purchase of eight A400 military aircraft with a total price tag of US$ 6 billion. The construction of the 2 million toilets will create 45 000 employment opportunities for the people needing them the most. The transfer of skills such as concrete work and building will ensure a sustainable livelihood for thousands of members of the country's poorer communities. Communities will furthermore also benefit from joint ventures and black economic empowerment programmes providing for the construction of Amalooloo plants in the service areas.

“Another major advantage of the Amalooloo system” says Fourie “is its effective dry aerobic composting sanitation system which offers a life span four times that of conventional wet pit systems. The dry system runs no risk of polluting underground water sources. Amalooloo eliminates sanitation related problems such as diseases, bad odours and flies and provides people with the dignity and quality of life that they rightfully deserve”.

Amalooloo is also a great promoter of healthy sanitation practices. In addition to a hand washing system inside the toilet for enhanced health and hygiene, the door of the toilet has been designed as an educational billboard which addresses issues like hygiene and HIV/AIDS. Amaloolo’s basic health education can prevent millions of deaths caused by diarrhoeal and other sanitation related illnesses every year.
Another unique benefit of the Amalooloo is an ecological manifold system that provides healthy food gardens and food security to poorer families. The system also offers optional extras such as a rain water harvesting system for domestic use, a solar light for night time use and many more. The toilet is designed to give easy access to the handicapped, old and obese and is equipped with a child safety seat to prevent children from falling into the pit. Special add-ons for schools and clinics are also available.

The technologically advanced Amalooloo solution is backed by 23 years of research and development and is highly recommended by the Department of Water Affairs and Forestry in South Africa. The company has already implemented more than 140,000,000 structures country wide.

Can technology provide the solution for the global Health and Hygiene Sanitation crisis in Africa? “The answer is an emphatic yes,” says Fourie “provided that they use proven sanitation technologies that are of high quality, sustainable and provide the people with health and hygiene benefits that will eliminate and or drastically reduce sanitation related diseases like cholera, diarrhoea, dysentery, pneumonia, etc. A worthy sanitation system must especially improve the life of school children so that they can experience safety, privacy and dignity which will result in higher school attendance and less sickness.

Governments and all roll players in the decision making chain of sanitation technologies must be wary of inferior systems that do not fulfil the basic needs of people .This will lead to short term solutions, will not improve the dignity and quality of life of people and will continuously cause a backlog, will require more financial resources, and the Millennium Development Goals will never be met.

Contact Person:
Mr. Lukas Fourie
Betram (Pty)Ltd
9 Steenbok Street, Koedoespoort, Pretoria
South Africa, 0186

Tel: +27(12)333 8326
Fax: +27(12)333 8418
E-mail: lukas@betram.co.za
www.amalooloo.com

Ecological sanitation

Rural household sanitation

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School sanitation

South Africa – Free Basic Sanitation

> “It is the firm belief of the South African government that sustainable development can be achieve through a focus on poverty eradication and economic development. Water, sanitation and hygiene are regarded as key issues for the achievement of these objectives. To this end, the government’s sanitation programme is targeted towards the poorest of the poor thus ensuring that the benefits of the programme are delivered to those persons that are most in need Mrs Lindiwe Hendricks (Former Minister of Water Affairs)”

The 2001 White Paper on Basic Household Sanitation estimated that 18 million in South Africans, mostly in rural areas, lacked access to basic sanitation facilities and health and hygiene knowledge. Of these, approximately two-thirds had access to some kind of sanitation below the basic level, leaving approximately 6 million people with no sanitation service at all. In 2003, Cabinet approved the Strategic Framework for Water Services (SFWS) which set 2010 as a target for the South African government to implement free basic sanitation policy. The Department of Water Affairs has acknowledged that given the challenges faced by the WSAs the sanitation targets of the SFWS may not be met by 2010.

The new target is 2014, which is in line with the Department of Housing target that all South Africans should have access to a house by 2014. South Africa’s Free Basic Sanitation Strategy is aimed at bridging the gap between those who have access to basic sanitation and those who do not. Its primary objective is to guide the Water Service Authorities (WSAs) in providing all citizens with free basic sanitation by 2014.

The Free Basic Sanitation Implementation Strategy is informed by the vision of ‘sanitation for all’. For the purposes of the strategy, a ‘basic sanitation service’ is defined as the provision of a basic sanitation facility which is easily accessible to a household; the sustainable operation of the facility, including the safe removal of human waste and wastewater from the premises where this is appropriate and necessary; and the communication of good sanitation, hygiene and related practices. Although there is a broader policy commitment by government to extend the free basic services to all households, the policy is largely aimed at poor households for whom free basic services represent a significant poverty alleviation measure.

The implementation of the strategy is guided by principles such as :

- Health for all rather than all for some
- Financial sustainability
- Demand driven
- Community participation
- Equitable allocation of resources
- Integrated planning and development
- Economic value of water (Water conservation and demand management)
- Gender mainstreaming
- Environmental integrity

The definition of a basic sanitation service does not stipulate the technology to be used in providing such a service. This decision, which should be made by the WSA, is the key to success in providing free basic sanitation services in a sustainable manner. The selection of technology is strongly dependent on settlement conditions. In the core of urban areas, where many businesses are located and where residential densities are high, waterborne sanitation is generally the most appropriate technological solution and may be regarded as a basic level of service for the purposes of the free basic sanitation policy. However, in rural areas, where housing densities are low and few businesses are located, on-site technological solutions such as VIP or Urine Diversion toilet or other technology options recommended by DWA might be considered by the municipality.

Knowledge sharing emerged as one of the key elements that will contribute to the effective and efficient implementation of the free basic sanitation strategy. WIN-SA in its capacity as a knowledge network has been identified as a key stakeholder in making sure that horizontal learning takes place. This will be achieved by facilitation of learning journeys, learning workshops, capacity building, and documentation of practices within the context of sustainable sanitation.

"The Department of Water Affairs has acknowledged that given the challenges faced by the WSAs the sanitation targets of the SFWS may not be met by 2010."

For more information contact:
Mirriam Ngoatje 012 336 6587
E-mail: ngoatjem@dwaf.gov.za

Mr. Mazubane Cyprian sharing sanitation technology options

Mapping the way forward: Ms Mangqalaza Mandisa

Mr. Matukane Ronald (PTG)presenting on District Management perspective
Photos: Kamoho Mosoeunyane

SWEDEN – Common Goal

Additional sources:
http://www.ecosanres.org/pdf_files/Urine_Diversion_2006-1.pdf

People choose residential areas for a lot of reasons. What binds residents of Kullön, a residential area in Sweden, located on an island in the municipality of Vaxholm outside Stockholm, is the dream of living an environmentally friendly life style. One resident describes staying in Kullön as having a positive impact on the environment. One way of having this positive impact on the environment was that residents should use a urine diversion system, this was prerequisite in order for the area to be developed. The toilet used is unique as it uses a double flush system and uses a combination of urine diversion and tertiary treatment for the remaining wastewater fractions. Two different types of urine diverting pedestals have been installed and there are collecting tanks for urine in each block of houses.

Photo 1:A former collection container for manure, now equipped with a floating cover, is used for storage of urine.

Photo 2: Urine collection tank.
Photos by Diana Betancourt

The tanks are emptied by tanker truck through a contractor. The remaining wastewater (faeces, flush water and grey water) is treated tertiary in a local wastewater treatment plant.

The collected urine from the households is transported to a farm in Hakunge Säteri. The urine is used as a fertilizer by a local farmer, instead of using chemical fertilizers. It is applied by the farmer on arable land after storage of at least six months.

A former collection container for manure, now equipped with a floating cover, is used for storage of urine.

Type of toilet used

Lessons from Kullön

Key lessons to be drawn from Kullön are that urine diversion is not a sanitation technology for the poor. It is well suited for modern, attractive residential areas and compatible with tertiary treatment of the other wastewater fractions.

"It also highlights that when stakeholders share a common goal with clear roles and responsibilities projects stand a good chance of sustainability."

In the case of Kullön the municipality has a role for transporting, storing and contracting the farmer for the use of urine from the households.

On the other hand the households have a responsibility to the maintenance of the sanitation system. Another lesson that can be drawn from the case study is that the sanitation system does not place any burden on the households. The design of the toilet also takes children into consideration.

Climate change & sludge management

Source: Global Atlas of excreta, wastewater sludge, and biosolids management: moving forward the sustainable and welcome uses of a global resource 2009:41

DID YOU KNOW?

- **Methane (CH_4)** and **nitrous oxide (N_2O)** are green house gases (GHG) that have a stronger global warming effect in the atmosphere than **carbon dioxide**.
- **Methane** and **nitrous oxide** are formed when organic materials such as excreta, wastewater, wastewater sludge and biosolids decompose in anaerobic (or almost anaerobic) conditions.
- **Methane** accounts for approximately **14%** of all anthropogenic emissions of greenhouses gases worldwide (based on carbon dioxide equivalent); most of thus CH_4 comes from agriculture (manures) and energy supply.
- **Nitrous oxide** accounts for **8%**, most of this N_2O comes from agriculture (use of N-rich fertilizers).
- Excreta, wastewater, wastewater sludge, and biosolids are all possible sources of these greenhouses gases, depending on how they are managed.
- Management of **municipal solid waste and wastewater** account for **2.8%** of global emissions of greenhouse gases (carbon dioxide equivalents).

What you can do to control methane and nitrous oxide?

- Proper management of excreta and wastewater sludge in ways that minimize the release of methan and nitrous oxide to the atmosphere while maximizing the extraction of renewable energy.
- Do not leave excreta, septage, wastewater and wastewater sludge unmanaged and leave it to be anaerobic.

Provide access to sanitation and do proper management of the collected excreta, wastewater and wastewater sludge.

- Compost the collected material.
- Promote use of biosolids on soil to replace use of chemical N fertilizer (note that use of biosolids may lead to some generation of nitrous oxide).
- Anaerobic digestion is a powerful answer to the problem of methane release from excreta and wastewater sludge. In addition to reducing methane release to the atmosphere and creating alternative fuel, anaerobic digestion has other benefits: it reduces the volume of excreta or wastewater sludge dramatically by as much as 50% and reduces pathogens.

GAUTENG CELEBRATES
GLOBAL HANDWASHING DAY 2009

Gauteng joined the rest of South Africa and the world to Celebrate Global Hand washing Day on 15 October 2009.

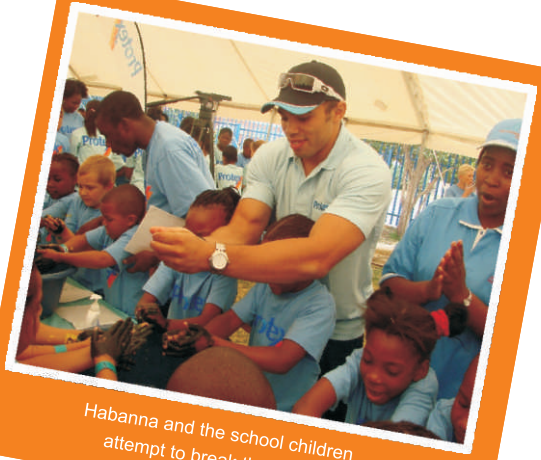
The day is observed globally as a campaign to raise awareness on the critical importance of hand washing with soap as the most effective way to prevent communicable diseases among both children and adults. The campaign therefore serves to motivate and mobilize people around the world to wash their hands with soap.

The Department of Water Affairs partnered with Colgate Palmolive and Edenglen and Eastleigh Primary Schools in Gauteng to mark the day, while its regional offices also led various handwashing events with schoolchildren in other provinces in the country.

The Gauteng celebration was graced by the presence of South African rugby star Bryan Habana, who with over 1,800 school children from Edenglen and Eastleigh Primary Schools set a new world record of the most people washing their hands at the same time, in the same place. The school children first got their hands dirty by creating a giant mural of multi-coloured handprints to create a South African flag.

Habana and the children then got ready at their washing stations to break the record of the most people washing their hands at a single location, following strict Guinness World Records guidelines. The record attempt was adjudicated by Carl Saville from Guinness World Records in London.

The previous Guinness World Record was set by 1 213 participants at the Banani Bhiddwa School Niketon of Dhaka, Bangladesh, on 22 October 2008.



Habanna and the school children attempt to break the record.

Carl Saville from Guinness World Records in London makes his calculations after the attempt

A new world record is set!

What is Southern Africa knowledge node on sustainable sanitation (SAKNSS)?

Southern Africa knowledge node on sustainable sanitation

The Southern Africa knowledge node on sustainable sanitation aims to fast track and accelerate the delivery of sanitation through sustainable solutions. The node aims to facilitate and coordinate capacity and skills development, knowledge sharing and collaboration.

Benefits for members

- Link and exchange information with peers;
- Access to new information and experience;
- Practical support and capacity building;
- Lessons learned;
- Analysis of policies and sector trends;
- Documentation and sharing of best practice;
- Facilitating platforms for sustainable sanitation dialogue; and
- Awareness raising and Networking.

Participation in the SAKNSS is open to anyone with interest on sustainable sanitation. Complete form and start networking and sharing knowledge for improved sustainable sanitation

Name:.....

First name.....Title.....

Function/job title.....

Organisation/ company.....

Email address.....

Postal address.....

ZIP-Code.....City.....Country.....

Phone number.....

Website.....

Organisation type:

- ☐ Government
- ☐ Academic and research
- ☐ Student
- ☐ Other
- ☐ Private -sector
- ☐ Training institute
- ☐ Consultant

Areas of expertise:

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Areas of interest:

- ☐ Sanitation policies
- ☐ Sanitation, Health and Hygeine
- ☐ Education strategies
- ☐ Ecological sanitation
- ☐ On-site sanitation technology options
- ☐ Waterborne sewerage systems
- ☐ Health and Hygiene Education
- ☐ Institutional and Social Development
- ☐ Free basic sanitation services
- ☐ Financing sanitation and cost recovery
- ☐ Participatory approaches
- ☐ Community management
- ☐ Sanitation and hygiene promotion
- ☐ Monitoring and evaluaItion of sanitation projects
- ☐ Reuse of wastewater
- ☐ School sanitation
- ☐ Gender and sanitation
- ☐ Wastewater treatment technologies
- ☐ Solid waste management
- ☐ O&M
- ☐ WATSAN- HIV/AIDS
- ☐ Other

Speak to us:

- Submit articles, letters to the editor and opinion and analysis for the Sanitation Matters magazine and WIN-SA quarterly newsletter
- Register a lesson for documentation
- Learning journey facilitation
- Register sustainable sanitation projects/case studies implemented in your country

SANITATION TRIVIA

Rural floor polish

By: Nonqaba waka Msimang, freelance journalist.

There are still traditional huts in remote rural areas of KwaZulu-Natal, one of the South African provinces. Their distinguishing feature is the grass roof. What is not seen from the outside is the floor, which is just hard earth.

That floor is kept spotlessly clean by applying ubulongwe, which is cow dung. The process is called ukusinda, where women take the green fresh waste, preferably still warm and spread it on the floor with their hands.

There is even an idiom that is used to express a successful celebration which had a lot of food and drink.

Locals say:

"Bekusindwe ngobethole"

Literal translation is that the cow dung of a calf was used to polish the floor.

http://malisa.viawias.com/les36-cow-dung-floor.jpg

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Southern Africa knowledge node on sustainable sanitation


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