

Dear Readers,



The theme of this 33rd edition of our ecosan newsletter is the issue of “peak phosphorus” or high grade phosphate rock reserves running out.

When that happens, we will finally be forced to recycle phosphorus from human and animal excreta, and urine will then be seen as a valuable resource – which the ecosan community has done all along.

Apart from this theme, this edition also contains the usual mixture of project updates, new publications, website links, tips, as well as news from the Sustainable Sanitation Alliance for which the GTZ ecosan team currently carries out the secretariat and website functions.

I would like to thank Dr. Abdoulaye Fall, who has done a great job in reliably translating the last 24 editions of this newsletter into French (during a period of six years!).

If you wish to subscribe to our newsletter in French [click here](#).

Feedback to this newsletter is always welcome (send to: ecosan@gtz.de). If you see this newsletter in a messy-looking text-only format or the links don't seem to work, please adjust your e-mail programme to display e-mails in HTML-format.

Best wishes from Germany,

Dr. Elisabeth von Münch (ecosan@gtz.de)

News

Australia, Sweden

Peak phosphorus estimated by 2030

It has been estimated that global production of phosphate rock will peak in 2033 while demand for it will continue to increase. While the exact timeline may be disputed, it is widely acknowledged that cheap fertilisers will be a thing of the past and that the quality of remaining reserves is declining. Further, while all farmers need access to phosphorus fertilisers, just five countries control around 90% of the world's remaining high-grade reserves. Global flows of phosphorus through the food production and consumption system have been calculated in the PhD research of [Dana Cordell](#) and co-workers (e.g. 3 million tonnes of phosphorus in human excreta generated each year worldwide).

- [Website of the Global Phosphorus Research Initiative \(GPRI\)](#)
- [Paper on Peak Phosphorus \(PDF; 0.2 MB\)](#)
- [Paper on Sustainability implications of global fertiliser scarcity for Australia \(PDF; 3.0 MB\)](#)
- [Paper on Preferred future phosphorus scenarios \(PDF; 0.7 MB\)](#)
- [Working paper by Jörg Lange on Phosphorus the limited resource \(in German with English summary\)](#)
- [Paper on Story of phosphorus – Global food security and food for thought](#)

Breaking News

The Global Phosphorus Research Initiative (GPRI) launches [Declaration on Global Phosphorus Security](#) at World Resources Forum in Switzerland (14 Sept. 2009).

Links

Tutorial for sustainable sanitation planning

The NETSSAF Participatory Planning Approach includes a [tutorial for sustainable sanitation planning in English and French](#) with a focus on West Africa.

Dry Toilet Conference

The papers and presentations of the Dry Toilet Conference in Finland are now [available online](#), for example on ecosan for schools ([paper](#) and [presentation](#)) and [mobile UDDTs](#) in Burkina Faso.

Updated list of ecosan projects worldwide

We have improved our [worldwide ecosan project list \(PDF; 0.1 MB\)](#) further (please [e-mail us](#) with your updates).

List of ecosan courses worldwide

We have compiled a list of [ecosan courses worldwide](#) (stand-alone courses or as part of degrees). Please [e-mail us](#) with your updates.

Ecosan in Nepal

The NGO ENPHO in Nepal has ecosan projects since 2002 and publishes an informative [monthly bulletin](#) about its work.

Australia, Sweden

Meeting future phosphorus demand for food security will require high recovery rate of excreta

According to a global scenarios analysis, meeting future global phosphorus demand for food production will require i) a substantial reduction in the demand for phosphorus (through changing diets, reducing food waste and efficiency in agriculture) and ii) a high recovery rate of all sources of phosphorus – including human excreta – and also food waste, crop residues, manure, and other forms such as algae and ash.

- [Video of public lecture on global phosphorus security filmed by ABC](#)
- [Powerpoint slides of public lecture \(PDF: 0.9 MB\)](#)

Africa

AMCOW AfricaSan Awards 2009: Recognising sanitation and hygiene achievements in Africa – Oct. 2009

We hope there will be many entries to recognise people who work on sustainable sanitation within the maiden AfricaSan Awards competition set up by the African Ministers' Council on Water (AMCOW).

[Description of award criteria on SuSanA website](#)

Bangladesh

GTZ-Bangladesh finds encouraging results with biodegradable, self-sanitising Peepoo bags in urban slums – Sept. 2009



Toilet bags were tested in poor urban settlements of the City of Mymensingh and their usefulness verified. GTZ Bangladesh provided these biodegradable, self-sanitising Peepoo bags from Peepoople in Sweden and interviewed 100 users before and after a 10-day trial. Key findings from the study include a high acceptance and usage rate by participants, and the perception of important benefits by users, including cleanliness and the ability to go to the toilet more often. Socio-cultural factors proved to be less of an obstacle than anticipated, and the participants used and stored the bags in their homes, and adhered to anal washing practices.

- [Report: Results of a medium-scale trial of single-use, self-sanitising toilet bags in poor urban settlements in Bangladesh \(PDF: 1.7 MB\)](#)
- [Paper on trials with Peepoo bags in Mymensingh \(Bangladesh\) and Kibera \(Kenya\) \(PDF: 0.2 MB\)](#)
- [Presentation on trials with Peepoo bags in Mymensingh \(Bangladesh\) and Kibera \(Kenya\) \(PDF: 3.1 MB\)](#)
- [Fotos from medium-scale trial with Peepoo bags in Mymensingh](#)
- [Video clip on use of Peepoo bags in Kibera](#)

USA

UN Human Rights Council: Sanitation should become a distinct human right – Sept. 2009

The UN Independent Expert on human rights obligations and water and sanitation, Ms Catarina de Albuquerque, concludes in her report on sanitation that "only looking at sanitation through the lens of other human rights does not do justice to its special nature, and its importance for living a dignified life. [...] The] independent expert supports the current trend of recognising sanitation as a distinct right." She will present the report to the UN Human Rights Council in its 12th session during 7-25 September 2009.

[Website United Nations High Commissioner for Human Rights \(independent](#)

New ecosan photos on Flickr

New photos on the following topics: [mobile party urinal](#) and [Peepoo bags in Bangladesh](#).

The [entire collection](#) contains now 1600 photos.

TIPS

Video showing celebration of [public opening of UDD toilet vaults](#) in India (Nagasandra village, by Vishwanath Srikantaiah).

Listen to [20-minutes radio podcast](#) (MP3; 4.5 MB) about ECOSAN_UE project in Ouagadougou, Burkina Faso (in French).

Do you want to advocate the importance of sanitation on World Toilet Day? [Sanitation Advocacy materials](#) are now on the Sanitation is Dignity website.

[Beautifully designed presentation](#) (PDF; 1.3 MB) to teach children how to make the "cob loo" (UDDT), from Sourabh Phadke in India.

Short lists of [recommended literature for ecosan novices](#) now available on our website (in English and in [German](#)). Includes, for example, position of the German parliament towards sanitation crisis.

[Sanitation Updates](#) works as a blog and sends bi-weekly e-mails with sanitation news; it is organised by IRC and USAID.

Upcoming events

15 – 16 Oct. 2009
[Philippine Sustainable Sanitation Symposium](#)
Manila, Philippines

17 – 18 Oct. 2009
[2009 Beijing International Environmental Technology Symposium](#)
Beijing, China

25 – 28 Oct. 2009
[Efficient2009: 5th IWA specialist conference on efficient use and management of urban water](#)
Sydney, Australia

28 – 30 Oct. 2009

[10th WaterNet/WARFSA/GWP-SA Symposium](#)

Entebbe, Uganda

Kenya

Update on EU-SIDA-GTZ Ecosan Promotion Project – Sept. 2009



The EU-SIDA-GTZ ecological sanitation promotion project aims to put sanitation higher on the political agenda in Kenya by fast tracking and upscaling sanitation. The project focuses on piloting public, institutional and household sanitation projects. It is also preparing large scale implementation of institutional sanitation in boarding schools. Documented operational results are now becoming available.

- [Implementation of UDDTs by Community Based Organisations, Ugunja, Kenya \(PDF; 0.4 MB\)](#)
- [Ecological sanitation promotion project brochure \(PDF; 1.6 MB\)](#)
- [1-Page summary on Sanitation in public places \(PDF; 0.2 MB\)](#)
- [1-Page summary on rural sanitation at household level and primary schools in Western and Nyanza Provinces \(PDF; 0.2 MB\)](#)

3 – 5 Nov. 2009

[West Africa Regional Sanitation and Hygiene Symposium](#)

Accra, Ghana

(IRC and others; in French and English)

3 – 13 Nov. 2009

[Regional course on sustainable sanitation \(in Spanish\), IV Curso Regional de Saneamiento Sostenible](#)

Tepoztlán, México

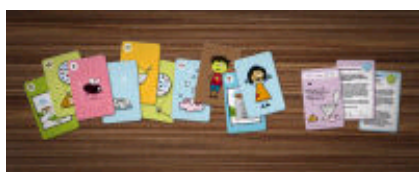
6 – 9 Nov. 2009

[Sustainable Water Infrastructure for Cities and Villages of the Future \(SWIF 2009\)](#)

Beijing, China

Germany, worldwide

"My School Loo" – available for worldwide use – Sept. 2009



Have you ever organised an educational programme on sanitation and hygiene at your school?

"My School Loo" supports you

with all necessary materials and even with tools for sanitation advocacy.

Initiated by the German Toilet Organization, the project seeks partners who want to bring the programme to their schools.

[German Toilet Organisation "My School Loo" Website](#)

9 – 13 Nov. 2009

Second African Water Week: 'Carrying Forward the Commitments of Sharm El Sheikh AU Summit on Water and Sanitation'
Midrand, South Africa
Contact: [Bheka Zondi](#)

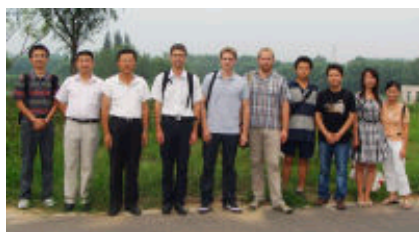
10 – 12 Nov. 2009

[International Workshop on Domestic Biogas \(SNV\)](#)

Kathmandu, Nepal

China

China Node for Sustainable Sanitation (CNSS) Workshop: Urine Treatment and Utilisation – Aug. 2009



A Workshop on Urine Treatment and Utilisation was held on 6 August 2009, organised by the University of Science and Technology (USTB), Centre for Sustainable Environmental Sanitation (CES) in Beijing. The main aim of the CNSS workshop,

which was attended by more than 20 high ranking Chinese experts and young professionals from China, Hungary and Germany, was an exchange of knowledge and practical experiences between China and Germany.

[Report of the CNSS workshop Urine Treatment and Utilization \(PDF; 1.3 MB\)](#)

10 – 13 Nov. 2009

[3rd Decentralised Conference on Water and Wastewater International Network](#)

Kathmandu, Nepal

13 – 15 Nov. 2009

[Second Networking Event of African Sanitation Knowledge Network \(ASKNet\)](#)

Nakuru, Kenya

15 – 19 Nov. 2009

[Emerging solutions to water and sanitation challenges](#)

(International Water Association, IWA)
Mexico City, Mexico

Contact for SuSanA side event:

Sweden

10th meeting of the Sustainable Sanitation Alliance (SuSanA) and side event at Stockholm World Water Week – Aug. 2009



The 10th SuSanA meeting was held in Stockholm, Sweden from 16 – 18 August, 2009. It included a side event at the Stockholm World Water Week (convened by GTZ, SEI-EcoSanRes, Eawag-Sandec, WB-WSP and UN-Habitat with the title "Sanitation systems and their links to climate change, food security, and urban development"), various working

group meetings, a core group meeting, and a plenary session. On behalf of the SuSanA, Arno Rosemarin presented a gift to the Stockholm Water Prize winner, Dr. Bindeshwar Pathak from Sulabh International. The gift was a certificate of a donation to build one UDDT family toilet in Burkina Faso.

- [Minutes of SuSanA side event and meeting \(including all presentations\)](#)
- [Photos of the SuSanA meeting and high-level talk with Dr. Pathak](#)

Austria

New Sustainable Sanitation Practice Journal – Aug. 2009

EcoSan Club Austria is proud to announce a new journal. With Sustainable Sanitation Practice (SSP), high quality information on practical experiences with existing sustainable sanitation systems will be made available. SSP should fill a gap in which sustainable sanitation has become an important issue that is discussed among many disciplines. SSP will be published quarterly, and it will be available online free of charge. Issue 1 is dedicated to "Greywater". The topic of Issue 2 will be "Successful models for operation and maintenance of sanitation systems".

[Ecosan club website with SSP journal information](#)

South Africa, Uganda, Nepal

A network of eight knowledge nodes on sustainability issues of sanitation established by SEI – Aug. 2009

The EcoSanRes knowledge-node network consisting of 8 regional or national nodes has been completed by the signing of three further contracts: with the Water Research Commission in South Africa for the Southern Africa node, NETWAS (The Network for Water and Sanitation) in Uganda, and ENPHO (Environment and Public Health Organization) in Nepal.

[EcoSanRes Knowledge Nodes](#)

South Africa

Urine Separation Workshop by CSIR, WRC and Universities of Stellenbosch and Cape Town – July 2009

The effect of urine separation on wastewater effluent quality was the theme of a one-day workshop hosted by CSIR (Council for Scientific and Industrial Research), the Water Research Commission, and the Universities of Stellenbosch and Cape Town in July 2009.

[Website of CSIR with workshop presentations](#)

India

National Indian Water Award 2009 honours ecosan project by ESF and others near Mumbai – July 2009

[Elisabeth Kvarnström](#)

17 – 19 Nov. 2009

[The 5th International water technologies & Environmental Control Exhibition & the 2nd International Conference](#)

Tel Aviv, Israel

19 – 21 Nov. 2009

[ORBIT Special Conference Biomass and Organic Waste as Sustainable Resources](#)

Beijing, China

2 – 4 Dec. 2009

[World Toilet Summit and Exhibition - 'Creating the Blueprint for a Sustainable Sanitation Marketplace'](#)

Singapore

27 – 29 Jan. 2010

[EASAN II \(East Asia Ministerial Conference on Sanitation 2\)](#)

Philippines

Contact person: [Engr. Lito Riego De Dios](#) (Department of Health)

24 – 25 Feb. 2010

[International Symposium: Progress in treatment of manure and digestate](#)

Heiden, Germany

23 – 25 Mar. 2010

[Decentralized wastewater treatment solutions in developing countries \(IWA and BORDA\)](#)

Surabaya, Indonesia

14 – 16 Apr. 2010

[The Sustainable City 2010 - Sixth International Conference on Urban Regeneration and Sustainability](#)

La Coruña, Spain

19 – 22 Apr. 2010

[IWA conference on Sustainable Solutions for Small Water and Wastewater Treatment Systems](#)

Girona, Spain

19 – 24 Sept. 2010

[IWA World Water Congress](#)

Montreal, Canada

2 – 5 Feb. 2011

[International Conference on Integrated Water Management](#)



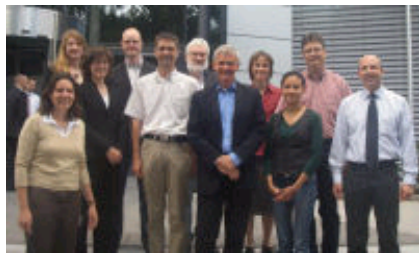
A project installed at a college for 2,000 students in Badlapur near Mumbai has received the National Urban Water Award 2009 for being an outstanding sustainable sanitation system. In 2007 the board of "Adarsh Vidyaprasarak Sanstha's College of Arts & Commerce" decided to build an eco-friendly sanitation centre

which consists of anaerobic treatment of brownwater; collection, storage and reuse of urine from urinals; treatment and reuse of greywater. Planning and design of the system was carried out by the [Ecosan Services Foundation \(ESF\)](#) in collaboration with Seecon international and GTZ.

- [One page summary on the project from the Ecosan Service Foundation](#)
- [Article on the project in the Indian "Down-to-earth" Magazine](#)

Germany

Ecosan demonstration and research project in GTZ headquarters picks up momentum! – July 2009



The demo and research project called SANIRESCH officially started 1 July 2009 and focuses on the urine-diverting system in the GTZ building House 1 in Eschborn, including the required treatment and reuse of urine, brownwater and greywater. SANIRESCH is funded by the

German Federal Ministry of Education and Research, and includes the universities RWTH Aachen, University of Bonn, and Gießen University of Applied Sciences, as well as the companies Roediger Vacuum and Huber SE.

- [SuSanA case study on GTZ ecosan project in House 1 \(PDF; 0.4 MB\)](#)
- [Powerpoint presentation about SANIRESCH in English \(PDF; 1.5 MB\) and German \(PDF; 1.5 MB\)](#)

Burkina Faso

Project update: Sanitised urine now sold in EU-funded ecosan project in Ouagadougou – June 2009

The large-scale 3-year urban ecosan project in Ouagadougou (June 2006 –June 2009) has now been extended for six months to ensure a better transfer to local authorities, who will be in charge of managing and running main project activities and infrastructures in the future. A remarkable project outcome is that urine is being traded (sold at about EUR 0.15 per 20-L jerrican) and dried faeces are sold, too (see Section 3.3.1 (page 58) of the project report below).

- [Report of main achievements and success/failure factors of the project \(in French\) \(PDF; 4.7 MB\)](#)
- [Workshop on ecosan promotion strategies in June 2009 \(in French\) \(PDF; 1.7 MB\)](#)
- [Video clip \(10 minutes\) about ECOSAN UE project \(July 2009, in French\)](#)

Kenya

Ecotact receives the African Entrepreneur Award 2009 during the World Economic Forum in South Africa – June 2009

Ecotact's CEO David Kuria is the winner of the Africa Regional Social Entrepreneur of the Year 2009. He received this award for his work on public toilets and urine collection. Whether urine from these toilets is reused or not, is so far not known (we are investigating).

- [Website of ecotact company](#)
- [Newspaper article in South Africa The Good News](#)

& [Flyer \(PDF; 0.4 MB\)](#)
Perth, Australia

Jobs

GTZ uses e-recruiting and offers an [e-recruiting system](#).

[Senior Researcher](#) – Sanitation in Low- and Middle-Income Countries at Sandec/Eawag, Switzerland.

Morocco

Ecosan now in Morocco, too - thanks to GTZ, UNESCO and Christine Werner – May 2009

Together with several partners, the former leader of the GTZ ecosan program (Christine Werner), who now is in charge of the GTZ IWRM Program in Morocco, started an ecosan pilot project in Dayet Ifrah in the Middle Atlas Mountains in May 2009. In order to protect the water resources and to ensure healthier living conditions, the pilot project includes urine-diversion dehydration toilets (UDDTs), biogas plants and greywater gardens. In a participatory approach with the community, 16 pilot sites were selected, including two schools without any sanitation facilities so far.

- [Presentation on ecosan technologies and gender aspects \(in French\) \(PDF: 4.3 MB\)](#)
- [Presentation held for the sensitization of the villagers \(in French\) \(PDF: 3.4 MB\)](#)
- [1-page project summary, June 2009 \(in French\) \(PDF: 0.2 MB\)](#)
- [Presentation held to inform villagers about survey results and proposed pilot project sites \(in French and Arabic\) \(PDF: 1.1 MB\)](#)
- [Master thesis by Y. Abarghaz on ecosan and the pilot project in Dayet Ifrah \(in French\) \(PDF: 3.7 MB\)](#)

USA

Astronauts drink recycled urine

The crew of the international space station has celebrated a new on-board water system by raising a toast of their own recycled urine!

[Video showing astronauts drinking recycled urine in space](#)

Publications

WAND foundation, Philippines

Update: WAND Foundation ecosan project in Misamis Oriental – Sept. 2009

With funding from the German Embassy's small-scale development projects, the Water, Agroforestry, Nutrition and Development Foundation (WAND) expands ecosan initiatives in the municipality of Manticao in Misamis Oriental. These projects focus on ecosan and mobilising local stakeholders to solve the problem of poor sanitation, disposal of human waste, and malnutrition.

- [Project details in newsletter of German development cooperation in the Philippines on water and solid waste](#)
- [SuSanA case study for related ecosan project by WAND in the Philippines \(PDF: 0.7 MB\)](#)

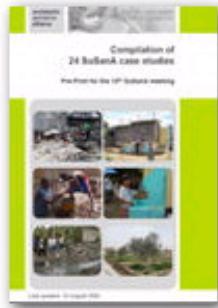
Sustainable Sanitation Alliance

New SuSanA fact sheets and language versions of Vision Document 1 – Sept. 2009

The SuSanA has published three new fact sheets of working groups. Also, the Vision Document 1 of the SuSanA has kindly been translated into two African languages, Kiswahili and Amharic, by members of the ROSA team in Nakuru and Arba Minch.

- [Fact sheet of working group 3a "Groundwater Protection" and 3b "Climate Change and Renewable Energies"](#)
- [Fact sheet on "Sustainable sanitation in schools" – Draft version](#)
- [SuSanA Vision Document 1 in Kiswahili and Amharic](#)

24 case studies on sustainable sanitation now available as one book – Aug 2009



SuSanA members continue to produce new case studies: There are now 24 case studies uploaded to the SuSanA website and these have been grouped in several categories: by country, by rural or urban, by technology type, by reuse type, and by school sanitation. We have begun to also document "failed projects" so that we can learn from our own and other people's mistakes. Please support this work by writing up your own case studies using the case study template provided.

- [Case study compilation of 24 case studies in one book](#)
- [Constructed wetland for a peri-urban housing area, Bayawan city, Philippines \(PDF: 0.8 MB\)](#)
- [Peri-urban urine diversion dehydration toilets \(abandoned\), Koulikoro, Mali \(PDF: 0.3 MB\)](#)

Women in Europe for a Common Future (WECF)

A new WECF publication on Sustainable and Safe School Sanitation – Aug. 2009



This publication provides information on how to make school sanitation sustainable and successful. The focus is on urine diverting dry school toilet (UDDT) systems which were successfully implemented by WECF together with local partners in different countries of the EECCA region. UDD toilets offer high quality and comfort, without needing water for flushing. Water is however needed for the hand washing facilities which are always included in the projects.

[Sustainable and Safe School Sanitation](#)

KfW (German development bank)

Discussion paper: "Clean water is not enough - Success factors for sustainable sanitation" – June 2009

The Competence Centre for Water Resources and Solid Waste of the German KfW Entwicklungsbank (development bank) has published a discussion paper on success factors for sustainable sanitation. It encompasses aspects ranging from hygiene practices, affordability of infrastructure and services, effectiveness of institutions, up to ecological sustainability. It also includes benefits and difficulties of several ecosan projects.

- [English version of discussion paper on success factors \(PDF: 3.2 MB\)](#)
- [German version of discussion paper on success factors \(PDF: 3.2 MB\)](#)

University of British Columbia and IWA Publishing

Selected papers and presentations from the Nutrient Removal Conference in Vancouver, Canada – May 2009

An international conference on nutrient recovery took place in May in Vancouver, organised by the University of British Columbia. Interesting for the ecosan scene were in particular those papers which dealt with "peak phosphorus", the price of phosphorus, making struvite from urine, and using urine as a P-rich fertiliser. Four selected papers and presentations had their copyright released from IWA Publishing and are now available online.

- [Table of contents of the proceedings \(IWA Publishing\) \(PDF: 0.1 MB\)](#)
- [Presentation \(PDF: 5.2 MB\) and paper \(PDF: 0.7 MB\): Preferred phosphorus futures for meeting long-term global food demand, by D. Cordell](#)
- [Presentation \(PDF: 1.6 MB\) and paper \(PDF: 0.4 MB\): Struvite from urine in Nepal, by E. Tilley](#)

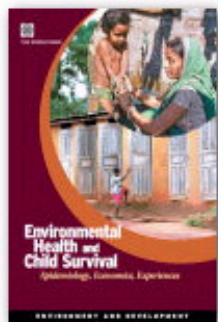
- [Presentation \(PDF: 3.7 MB\)](#) and [paper \(PDF: 0.4 MB\)](#): [Urine reuse as fertiliser in bamboo plantations](#), by E. Ndzana
- [Paper \(PDF: 0.3 MB\)](#): [Impact of supply and demand on the price development of phosphate](#), by J. von Horn

Water Supply and Sanitation Collaborative Council (WSSCC) The Politics of Water and Sanitation in Developing Countries – April 2009

A symposium in honour of Ueli Bundi and Roland Schertenleib was held at Eawag, Switzerland, in April 2009. Jon Lane – the Executive Director of the Water Supply and Sanitation Collaborative Council, WSSCC – gave a keynote speech on the politics of water and sanitation in developing countries with a focus on sanitation. While looking into the future, he remarked: "I suspect that we must capture and reuse the phosphorus content of human excreta and we must explain this to everybody else alongside the much more publicised issues of peak oil and water and food shortages".

[Speeches at EAWAG symposium](#)

The World Bank Environmental Health and Child Survival – Dec. 2008



A very useful and relevant resource is the book by The World Bank from 2008, "Environmental Health and Child Survival - Epidemiology, Economics and Experiences". Poor environmental management and bad sanitation expose pregnant women to both malaria and hookworm infections. Left untreated, these infections lead to permanent growth faltering, lowered immunity, and increased mortality for these women's children.

[Worldbank Environmental Health website for download or purchase of book](#)

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