



ecosan – newsletter - no. 17 - 8/2005 - english

This regular electronic news bulletin from the ecosan project of GTZ, Germany, addresses a network of friends and professionals involved in initiatives and projects in the field of closed-loop wastewater management and sanitation.

Dear friends and colleagues!

Welcome to GTZ's ecosan newsletter issue no. 17!

The latest editions of the English version are distributed directly via e-mail in the globally readable, text-only format. You can also download German, French, Spanish, English and Chinese versions as easy-to-read pdf files from our web-site.

!!! Downloads:

German: <http://www.gtz.de/de/dokumente/de-ecosan-nl17-2005.pdf>

Spanish: <http://www.gtz.de/de/dokumente/es-ecosan-nl17-2005.pdf>

French: <http://www.gtz.de/de/dokumente/fr-ecosan-nl17-2005.pdf>

English: <http://www.gtz.de/de/dokumente/en-ecosan-nl17-2005.pdf>

Chinese*: <http://www.gtz.de/de/dokumente/cn-ecosan-nl17-2005.pdf>

[from September 2005]

* For organisational reasons, the Chinese version is published later than the others.

Your ecosan team hopes you enjoy the current issue!

Your contributions

This medium lives through interaction. So please keep sending your suggestions, requests and information to be published via this newsletter to the addresses at the end of this issue. Thank you in advance for any contribution!

ecosan sector project

Deutsche Gesellschaft für
Technische Zusammenarbeit (GTZ)
GmbH
P.O. Box 5180
65726 Eschborn, Germany
fon: +49 6196 794220
fax: +49 6196 797458
e-mail: ecosan@gtz.de
internet: <http://www.gtz.de/ecosan>



Deutsche Gesellschaft für
Technische Zusammenarbeit (GTZ) GmbH

commissioned by:



Federal Ministry
for Economic Cooperation
and Development

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- 25-29/09/05 7th World Congress on Recovery, Recycling and Re-integration, Beijing, China
- 18-20/10/05 International Biogas Workshop, Beijing, 18-20 October 2005
- 31/10-04/11/05 31st WEDC International Conference – Maximizing the Benefits from Water and Environmental Sanitation, Kampala, Uganda
- 22-25/11/05 12th World Water Congress and Water 2005 Exposition, New Delhi, India
- 25-26/11/05 9th IWWA International Conference on ecological sanitation, Mumbai (Bombay), India
- 06-09/03/06 Water China 2006 - Exhibition/ trade-fair
- 07-10/03/06 7th Specialised Conference on Small Water and Wastewater Systems, Mérida, Yucatan, Mexico
- 24-26/05/06 Researchers Conference for young water professionals, Nanyang, Singapore

Events reminder

- 18–21/09/05 Nutrient Management in Wastewater Treatment Processes and Recycle Streams, Krakow, Poland
- 21–22/09/05 Federal and State Conference of ATV-DVWK, Potsdam, Germany
- 26–29/09/05 World Toilet Summit 2005, Belfast, Ireland
- 11–13/10/05 Deutscher Tropentag 2005, Stuttgart-Hohenheim, Germany
- 12–14/10/05 Wastewater treatment in rural area, Kassel, Germany
- 11/05 2nd South Asian Conference Sanitation (SACOSAN-2), Islamabad, Pakistan
- 08–11/11/05 5th IWA Wastewater Reclamation and Reuse, Jeju, Korea
- 16–22/03/06 4th World Water Forum, Mexico
- 02–07/04/06 7th Int. Conference on Urban Drainage Modelling & 4th International Conference on Water Sensitive Urban Design, Melbourne, Australia
- 23–25/05/06 Integrated Water Resources Management and Challenges of the Sustainable Development, Marrakech, Morocco
- 10–14/09/06 5th IWA World Water Congress and Exhibition – Sustainable Water Management Practises, Beijing, China

In house news

On-line: new GTZ ecosan website!

The website <http://www.gtz.de/ecosan> has been relaunched! As hitherto, the website offers abundant information on the topic of ecosan and the work of the GTZ ecosan project. However, now the information is presented in a more user-friendly structure and in the new GTZ Layout.

An extensive download section is available below the heading “further information”. It contains:

- all publications of the GTZ ecosan project, including the ecosan source book, technical data sheets, project data sheets, posters, papers, etc.
- all editions of the GTZ ecosan newsletter
- an ecosan database. This database will be available soon and provide access to more than 400 ecosan publications through a search engine. Meanwhile you may refer to the old download section on <http://www2.gtz.de/ecosan/english/publications.htm>
- links to all relevant institutions with ecosan activities, including ecosan programs, projects, networks, international organisations, NGOs, universities, consulting firms, suppliers, etc.
- a list of important ecosan events.

Your contributions are very welcome! We happily publish your ecosan documents, project reports, papers, etc with the ecosan database. We are also happy to receive indications for important ecosan events and interesting internet-links.

Contact: for questions and contributions related to the ecosan website florian.klingel@gtz.de or ecosan@gtz.de.

New member of the GTZ ecosan team

We are pleased to welcome the following new interns to the GTZ ecosan team:

- **Aileen Huelgas** from the Philippines, is 1st year master’s student from Hokaido University (Laboratory: Engineering for Sustainable Sanitation), and will do an internship with the ecosan team in Eschborn from August 2nd till September 1st, 2005.
- **Maria Eugenia de la Pena**, from Mexico, is in her final year of her Masters degree in Environmental Engineering at the Technical University of Hamburg-Harburg. She will be carrying out her internship in the GTZ ecosan office from the 1st September to the 31st October.

**International
ecosan
conference
in India**

**International ecosan conference in Mumbai (Bombay), India, 25th - 26th
November 2005**

An international conference on ecosan will take place in Mumbai (Bombay), India, on the 25th and 26th November 2005, organised by the Indian Water Works Association (IWWA), in collaboration with the Government of Maharashtra (GoM), the International Water Association (IWA), GTZ Germany and All India Institute of Local Self Government (AIIILSG).

The web-site of the conference provides all necessary information. Online-registration is possible and a small brochure on the conference can be downloaded.

This promises to be an interesting and important conference and we hope to see you all in Mumbai!

!!! Further information: <http://www.iwwainternational.com/default.asp>

!!! Contact: Dr. S.V. Dahasahasra: daha2005@vsnl.net

News - general

Discussion on ecosan in WATER 21

Prof. Duncan Mara, a respected expert on wastewater reuse and wastewater treatment ponds in warm climates, recently questioned the economic sanity of ecosan systems for the poor in an article in the April issue of Water21 (p29), the magazine of the International Water Association (IWA), leading to a lively debate on the economics of ecosan.

Whilst recognising that ecosan systems are to be appreciated from an ecological sustainability point of view and may indeed have a role to play in sanitary provision, the article raised questions about the affordability of the toilet installation for the poor, and the economic benefits of the fertiliser produced. The extra-cost to install the system, said Mara, would not be paid back through the gains even if calculated over a period of 10 years.

The article was initially read with dismay by many people promoting ecological sanitation. On closer reading it became clear that it was based on a limited understanding of ecological sanitation being simply a type of urine diversion dry toilet, used outdated costs, contained several contradictions, overlooked important benefits, and miscalculated the fertiliser value of treated excreta.

These were all quickly picked up by readers who's reactions were collected by Bill McCann and published in another article in the April issue of Water21 (p 28ff). Whilst many agreed with Prof. Mara's call for good economic data on ecosan systems, they criticised the uninformed nature of the piece and its narrow definition of ecological sanitation.

In the June issue of Water21 (p15) Prof. Hakan Jönsson and others carried out a second analysis of the system presented by Prof. Mara, using the exact same basic assumptions, but eliminated the miscalculation of the fertilizer equivalent which occurred in the Article of Prof. Mara. They found that despite the high construction costs and using the given costs for chemical fertiliser, the use of treated urine and faeces of the products would, over a ten year period, not only pay for the extra investment but for the whole system. They summarize that, when it is corrected, Professor Mara's "example convincingly shows that ecosan is economical, and thus eco-sane."

In his reply to the article of Bill McCann (in the June Water21 issue on p16) Prof. Mara quoted one of the reactions he received which stated: "any sanitation system that reused water and nutrients in human excreta or domestic wastewater was ecological sanitation". Seemingly surprised by this Prof. Mara quipped "so I've unknowingly been an ecosanologist all these years". No surprise to us - from his work on wastewater reuse we knew it all along. Welcome to the club!

All WATER 21 articles referred to in the text, can be downloaded from the below given address.

!!! Download: Discussion on ecosan in Water 21 from
http://www.tuhh.de/susan/downloads/water21ecosan_discussion.pdf

!!! Contact: Christine Werner, Christine.Werner@gtz.de or
Ralf Otterpohl, Otterpohl@tuhh.de

WHO and UNICEF: Investment in sanitation yields high dividends

It is now well known and has been broadly publicised that money put into sanitation provides a huge return on investment. This point has been stressed again in a joint monitoring report from the WHO / UNICEF MDG Joint Monitoring Programme, where they stress that “access to safe drinking water and basic sanitation will bring dividend many times larger than the investment required.”

Meeting this Millennium Development Goal (MDG) target [to halve the proportion of people living without safe water and basic sanitation] would cost US\$ 11.3 billion (EUR 9.3 billion) per year, but the payback would be an injection of an extra US\$ 84 billion (EUR 69.4 billion) per year into developing economies – money saved by averted deaths, lower health care costs and productivity gains. Improved water supplies and basic toilets generate returns ranging from 3 to 34 times the original investment, depending on the type of investment and the country.”

!!! Download: WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (2005). Water for life: making it happen. Geneva, Switzerland, World Health Org. 38 p.
http://www.who.int/water_sanitation_health/monitoring/jmp2005/en/

From: Source Weekly, No 23-24, 2005 <http://www.irc.nl/source>

Writers fund for journalistic articles on ecosan

The International Ecological Engineering Society (IEES) has recently opened a support fund for young technical writers in developing countries who want to write journalistic articles on Ecological Engineering issues, including ecosan topics. Abstracts in English (not longer than 1 A4 page) can be sent to the editorial team (Carl Etnier and Andreas Schoenborn-Schaller) of Eco-Eng Newsletter. IEES welcomes donations to stock the Writers' Fund.

!!! Further information: http://www.iees.ch/EcoEng042/EcoEng042_Fund.html

Grants to strengthen ecosan research capacity in developing countries

Up to US\$ 12,000 (EUR 9,600) are being offered in research support for projects on Sustainable Sanitation and Grey-Water Reuse in Developing Countries lasting 1-3 years, and will be awarded to individuals or teams. Grant-providing Organisations in this programme are the Swedish International Development Cooperation Agency (Sida), the Stockholm Environment Institute (SEI) and the International Foundation for Science (IFS).

Grants are intended for citizens of developing countries, carrying out research in a developing country, with a minimum academic degree of an MSc/MA or the equivalent. Candidates are expected to be attached to a university or non-profit making research institution in a developing country. Age limit is 40 (for Chinese applicants 30, for applicants from Sub-Saharan Africa 45).

The topics funded are:

Ecological Sanitation:

- monitoring the reduction of environmental impact;
- pathogen destruction;
- secondary treatment of excreta and organic waste;
- safe agricultural reuse;
- identification of pollutants (e.g. pharmaceuticals);
- perceptions/attitudes related to excreta reuse in food production;
- economic value of nutrients and humus.

Other forms of sustainable sanitation:

- development of other sustainable sanitation methods;
- monitoring the reduction of environmental impact.

Reuse of grey-water for irrigation:

- monitoring improved availability of water for agriculture;
- identification of geographical areas where re-use of grey-water is feasible;
- development of treatment systems;
- identification and reduction of pollutants (e.g. detergents, pesticides, pharmaceuticals);
- public acceptance and management of systems.

Application deadline: 31. Dec. 2005

!!! Further information: http://www.ifs.se/Programme/ifs_sida_specialcall.asp

Job vacancies

Germany Internship in the Biogas Competence Centre

The International Biogas and Bio energy Competence Centre (Internationales Biogas und Bioenergie Kompetenzzentrum, IBBK) is offering motivated students the opportunity to carry out an internship with them. The IBBK brings together and networks experts, operators and companies, as well as organisations, associations and educational institutions in the field of biogas and bio energy. The IBBK's work includes regional, supra-regional and international activities on the main issues of producing biogas from biomass (including wood), plant fuels and ecological anaerobic wastewater purification. Emphasis is placed on educational and project work. The IBBK is supported by an association.

!!! Download: internship description

<http://www2.gtz.de/ecosan/download/de-ibbk-internship-0508.pdf>

!!! Contact: info@biogas-zentrum.de

Vietnam Project manager water supply and sanitation

The Environmental Engineering and Ecology Faculty of Civil Engineering at the Ruhr-University Bochum, Germany, invites applications for the position of a project manager water supply and sanitation (Dipl.-Ing. or MSc.) in a construction and research project on Integrated Water Resources Management in a rural area of Vietnam.

The project manager will be appointed for up to 3 years. The salary is according to the German BAT IIa. The position offers the possibility for a Ph.D. thesis.

A Job description with information on tasks and requirements can be downloaded from our web-site. The deadline for applications has been extended up to September 15th.

!!! Download: job description

<http://www.ruhr-uni-bochum.de/ecology/aktuelles/ausschreibungwssmitiworm.pdf>

News from the projects ...

... German co-operation

Eritrea Ecological sanitation workshops carried out with support of the GTZ "Renovation of Rural Water Supplies" project

The GTZ project "Renovation of Rural Water Supplies" recently supported two workshops for project partners and other stakeholders in Asmara, Eritrea. These workshops were designed as a first introduction to the concept of ecological sanitation.

The first 5 day workshop looked at a broad range of issues and was attended by citizens and officials from the 4 towns in which the project works (i.e. Agordat, Barentu, Haikkota and Tesseney). One and a half days of this workshop were devoted to ecological sanitation and looked at different aspects including how it could be incorporated into sanitary plans for the towns. As a result an initial suggestion for pilot facilities was made by the participants from Agordat which will be followed up and supported by the project and staff from the national Water Resources Department (WRD).

The second workshop was an intensive 2 day ecosan introduction for staff of the Water Resources Department (WRD), covering the conceptual background as well as agricultural, health, planning and economic aspects. Ecosan specific presentations were supported by presentations from the Ministry of Public Health and the Ministry of Agriculture, serving to highlight how the responsibilities for wastewater management need a multi-sector approach, particularly with regard to ecosan projects.

Staff of the WRD have now been selected to work directly with the GTZ-RWSS to support local communities in the project zone to identify and design their own ecological sanitation systems, with backstopping being provided by the GTZ ecosan project.

!!! Contact: Esther Geiss esther.geiss@gtz.de or
Patrick Bracken patrick.bracken@gtz.de

India Ecological Sanitation Modules for Agricultural Reuse in India

An overview presentation of ecosan modules in the pilot projects of the „Innovative Ecological Sanitation Network India (IESNI)“ is now available for download. The presentation shows the IESNI project’s status in Gujarat, Maharashtra and Karnaka and provides layouts for the modules for grey water/black water treatment, vermicomposting, biogas production, urine diversion and grey water use. A design for community toilets is also proposed. The modules are currently being tested in pilot projects, where further developments and optimisation is taking place in discussion with the project partners.

!!! Download (5 MB!):
<http://www2.gtz.de/ecosan/download/en-ecosanmodules-agrireuse-India.pdf>

!!! Contact: Hinnerk Bartels, Hinnerk.Bartels@gtz.de or
Martin Wafler, Martin.Wafler@gmx.de

Syria Agricultural demand for treated wastewater from an innovative treatment plant

To protect the scarce, overused and polluted water resources Syria has a high demand for wastewater treatment plants - not only for larger towns but also for middle and small sized municipalities and villages. At the same time treated wastewater, sewage sludge and - if needed - other fertilisers should be produced in sufficient quality for agricultural use. A first pilot project has resulted in a considerable demand for constructed wetlands which can fulfil all these criteria. In June 2005 Christine Werner and Abir Mohamed together with Syrian partners have identified several further sites for this type of treatment plants. The construction of more facilities is planned within the framework of the GTZ supported Syrian Water Programme. An ecosan conference is planned for November/December of this year and will include a field trip to visit the pilot plant.

!!! Contact: Christine Werner, Christine.Werner@gtz.de and
Abir Mohamed, abirgh@scs-net.org

Zambia School ecological sanitation project wins international research and co-operation award

Among the winners of this years "Mondialogo World-Wide Engineering Award" offered by UNESCO and DaimlerChrysler was a team of Zambian and German students with their proposed ecosan project for a school in the suburbs of Lusaka.

The team members on the Zambian side were Chibesa Pensulo and Kasenga Hara, supervised by Dr. Mundia Muya (of the University of Zambia, Lusaka) and on the German side were Barbara Wagner and Thilo Panzerbieter (a former intern with GTZ ecosan) under the supervision of Reinhard Marth (Technische Universität Berlin).

The team now intend to use the prize money to construct a pilot project in which different ecosan technologies are open for display to the public.

!!! **Download:** abstract

<http://www2.gtz.de/ecosan/download/en-abstract-zambiaschool-ecosanaward-05.pdf>

!!! **Contact:** Thilo Panzerbieter, tpan@uni.de

News from the
projects ...
... other
organisations

Burkina Faso ecosan dissemination at large

From 2002 to 2004, CREPA (Centre Regionale pour l'Approvisionnement de l'Eau Potable et Assainissement à faible cout), supported by the Swedish International Development Cooperation Agency (SIDA) and the Environmental Institute of Stockholm (EIS), carried out a regional research programme into ecological sanitation in various contexts throughout west and central Africa. A range of factors were considered, including sociological, technical, hygiene and health related and agricultural aspects. This process has led to CREPA becoming the major champion for ecological sanitation in West Africa, promoting the hygienic reuse of faeces in agriculture as a positive experience.

The process has now reached the vital up-scaling stage. The first steps have already been taken with the creation of the eco-village in Tougan (a city in Burkina Faso) in collaboration with Foundation Nature et Vie. Ecological sanitation has been included in this development, backed by information and training sessions for various important groups, such as high schools, members of women's associations, municipal authorities and workers.

One of the major issues to be addressed by CREPA now is that having proven ecosan to be suitable and acceptable in west Africa, how can they now make it affordable, and what financing mechanisms are appropriate to support poorer households in providing themselves with sanitation.

!!! **Contact:** Marie K. Quenum, communication consultant and Karim Savadogo, hydraulic technical officer, CREPA, crepa@fasonet.bf

From: Source Weekly, Special Features Edition 41, August 2005
<http://www.irc.nl/source>

Uganda Rubaga Girls Secondary School – Multi-storey dry toilet in design phase

Rubaga Girls Secondary School is a boarding school accommodating approximately 600 students and around 50 staff. Currently the only sanitary facilities are pit latrines and wash rooms for the girls, and some flush toilets for the staff. Major problems described by the school management are caused by the lack of space for the construction of new pit latrines, which means that they existing latrines must be regularly emptied, and a lack of water and sewage treatment for waterborne sanitation. As a result of the awareness raising activities of the DWD (Directorate for Water Development), the school has taken ecosan solutions into consideration.

A new building is planned to provide washing facilities attached to a five story classroom/dormitory building. The construction will start in September. It is planned to equip this building with dry urine diversion toilets, both squatting and sitting types (for demonstration). In addition the installation of dry urine diversion toilets for the teachers is being considered. Collected human excreta will be stored for safety and further treated (composted) before recycling. Grey water will be pre-treated in filters (the remaining matter will be co-composted with human excreta from dry toilets) and further treated in a constructed wetland systems in the form of a living/green wall.

!!! **Contact and further information:** markus.lechner@ecosan.at

USA EPA announces research into "Phosphorus recovery from sewage"

The US Environment Protection Agency (EPA) has announced a research project at the University of Cincinnati, into "Phosphorus recovery from sewage". The EPA's National Centre for Environmental Research points out that the future sustainable use of phosphorus must include recovery from municipal sewage, and that global research is addressing this issue but research in the USA is lagging.

The project will look at bioprocess engineering for biological nutrient removal from sewage, phosphorus precipitation as struvite, and assess the bioavailability of struvite phosphorus for use as a fertiliser.

!!! Further Information:

<http://cfpub.epa.gov/ncer/abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/7345/report/0>

From: SCOPE NL 58 <http://www.ceep-phosphates.org>

China ecosan Project launched in Shaanxi province

Plan International, an international NGO, working in the field of poverty alleviation especially for children and their families, will focus on ecosan toilet provision in Shaanxi province. This will be a first implementation in the colder northern climate of China. A first workshop and training was held in May 2005 with the support of experts from Guanxi province.

The first 100 demonstration units have now been finished, with the toilets installed inside the house. The project will cover totally 5 counties and complete 2000 units this year. The program will also include school toilets, integrating urine-diverting toilets and biogas agriculture and organic waste treatment.

!!! Further Information and Contact:

Mrs. Gao Xijuan xijuan.gao@plan-international.org

Products and links

Waterless urinals without sealing liquid and electricity

An overview of the numerous technologies and types of waterless urinals currently available can be found in the draft version of the GTZ ecosan technical data sheets. This can be downloaded from the GTZ ecosan website.

Urimat Company has recently begun to promote a waterless urinal which requires neither a sealing liquid nor electricity to operate the stench trap operational current (e.g. for magnetic catch). Therefore the costs of operation are very low.

!!! Download: GTZ-ecosan data sheet on waterless urinals (draft)

<http://www.gtz.de/de/dokumente/en-ecosan-tds-01-b2-urine-diversion-waterless-urinals-2005.pdf>

!!! Download further information on Urimat-eco:

<http://www2.gtz.de/de/downloads/de-Urimat-prospect-p1-05.pdf>

<http://www2.gtz.de/de/downloads/de-Urimat-prospect-p2-05.pdf>

Grey water treatment for households

Bracsystems are offering a new grey water purification module. The grey water from the shower, bath tub and washing machine is treated to be reused to flush the toilet. The module is available in different sizes.

!!! Further information: <http://www.bracsystems.com>

Publications

... books

Comprehensive handbook on dry toilets in French

“Un petit coin pour soulager la planète - toilettes sèche et histoires d’eau” is the title of Christophe Elaine’s comprehensive handbook on dry toilets. The book clearly fills an information gap, as there is currently relatively little literature on this theme in French. Christophe Elaine mainly presents European examples, but also discusses the advantages dry toilets have to offer countries in the south. The book is extremely well illustrated by Jef Vivant. At 288 pages, the book is available at cost price (plus postage expenses) of 10 Euro.

Christophe Elaine (2005) “Un petit coin pour soulager la planète - toilettes sèche et histoires d’eau.” - Éditions Goutte Sable, La Roussière, 53400 Athée, France, 288 S. - ISBN 2-9523714-0-7

!!! Order per e-mail: gouttedesable@wanadoo.fr

UNICEF’s 35 years of experiences with water and sanitation projects in India

The book from Maggie Black and Rupert Talbot (2005) “Water: a matter of life and health: water supply and sanitation in village India” critically examines what has and needs to be done to fulfil the promise of drinking water and sanitation for all at a time when India faces serious problems of freshwater scarcity, groundwater depletion and environmental pollution. The central theme is UNICEF’s 35-year programme of support to rural water supplies in India which has helped provide millions of villagers with clean water and better sanitation. Sunita Narain (Director of the Centre for Science and Environment, New Delhi, winner of this year Stockholm Water Prize) says “Maggie Black and Rupert Talbot have produced a wonderfully readable account of what India has faced, and now faces, in terms of rural drinking water crises. Their book will help us to chart our future missions.”

Maggie Black and Rupert Talbot (2005) “Water: a matter of life and health: water supply and sanitation in village India.” - New York, NY, USA, Oxford University Press. - 288 p. – ISBN 0195669312

!!! Further information: <http://www.unicef.org/wes/files/BlackTalbot.pdf>

Publications

... on the web

Securing Sanitation the compelling case to address the crisis

This report, commissioned by the Government of Norway, is the synthesis of two previously released papers. It lays out the economic case for investing in sanitation: 1.47 billion people, 20% of the world’s population, stand to benefit if the Millennium Development target is met, and the economic benefits could be as high as USD 65 billion annually. The greatest proportion of these benefits will accrue in the poorest regions of the world, particularly in Sub-Saharan Africa, but the benefit-cost ratio is consistently high across all regions. The report goes on to explore ways and means to accelerate progress. Using a historical analysis of the public health movement in Europe in the late 19th century, it argues that institutions should be reshaped to address the urgent need to increase access to basic services. An increased focus on the household and emphasis on creating and responding to demand for appropriate services are needed along with better and more efficient investments in public elements of sanitation, including sanitation in schools and health centres.

Evans, B. (2005) “Securing sanitation: the compelling case to address the crisis“ - Stockholm, Sweden, Stockholm International Water Institute. - 39 p., 10 boxes, 4 fig., 13 tab. - includes references

!!! Download: http://www.who.int/water_sanitation_health/hygiene/securing sanitation.pdf

Development of a nature oriented wastewater concept for arid climates

Awarded with the Huber-Technology-Price 2004, the master thesis of Thoralf Schlüter on ecosan solutions for arid climates is now available as a download of his Master thesis presentation.

In the thesis a combination of existing technologies and the authors own ideas are used to develop a system with drying modules and filters for the separation of flush water and faeces. Further components of the system include small-bore sewers and constructed wetlands.

To download the full text thesis a fee should be paid. On the GTZ ecosan website you will find a PowerPoint presentation file summarising its contents.

Thoralf Schlüter (2004) „Entwicklung eines naturnahen Abwasserkonzeptes für aride Klimate.“ - Technische Universität Hamburg-Harburg (TUHH), Arbeitsbereich 1-02, Kommunale und industrielle Abwasserwirtschaft. Diplomarbeit. 79 p. (German).

!!! Order: full text master thesis <http://www.diplom.de/db/diplomarbeiten8759.html>

!!! Download: ppt of master thesis

<http://www2.gtzt.de/ecosan/download/en-wastewater-arid-climates-04.pdf>

!!! Further information about the Huber price 2004: <http://www.huber.de>

Also by Thoralf Schlüter is a paper providing an international comparison of drinking water supply. The comprehensively illustrated paper highlights the urgent need to move towards reuse oriented low cost solutions.

Thoralf Schlüter (2003) „Trinkwasserversorgung im internationalen Vergleich.“ - TUHH. Studienarbeit. 136 p. (German).

!!! Order: full text paper <http://www.diplom.de/db/diplomarbeiten8757.html>

!!! Download: ppt of paper

<http://www2.gtzt.de/ecosan/download/en-drinking-water-supply-03.pdf>

Reuse of liquid and solid organic household waste in the urban agriculture of Havana, Cuba

The master thesis M.V. Avendano “Propuesta para la implementación de sanemiento ecológico en ciudad de la Habana” is now available for download. This work was supervised by Prof. H. Gaese (Institut für Technologie in den Tropen der Universität Köln) and Prof. Orestes (Universidad Técnica de la Habana CUJAE, Cuba). The work describes implementation opportunities for decentralised recycling oriented wastewater treatment systems, as well as the treatment and reuse methods for liquid and solid organic waste from households in urban agriculture in Havana.

M.V. Avendano (2004) Propuesta para la implementación de sanemiento ecológico en ciudad de la Habana - Con énfasis en el reuso de los subproductos en la agricultura urbana” - Institut für Technologie in den Tropen der Universität Köln. Masterarbeit. 105 p. (Spanish)

!!! Download:

<http://www2.gtzt.de/ecosan/download/es-reuso-subproductos-agricultura-04.pdf>

Batch humification of sewage sludge in grass beds

The doctoral thesis of Holger Pabsch „Batch humification of sewage sludge in grass beds“ from the Technical University Hamburg Harburg, comprehensively discusses the possibilities, processes and determining factors in the humification of sewage sludge. Cost aspects and influence of different nutrient concentrations are highlighted as well as questions of hygiene and toxic compounds.

Holger Pabsch states in his abstract: „The batch humification of sewage sludge in grass beds has proven to be an economical and well-working alternative to mechanical dewatering and the humification in reed beds. A major obstacle to larger distribution is the uncertainty about future regulations that may limit or suppress the agricultural reuse of sewage sludge.

Holger Pabsch (2004) „Batch Humification of Sewage Sludge in Grass Beds“ - doctoral thesis, Technischen Universität Hamburg-Harburg, 151 p. - ISBN 3-86537-291-0

!!! Download: <http://www2.gtz.de/ecosan/download/en-batch-humification-04.pdf>

Readers opinion

Do ecological toilets exist? Sven Ingvar-Nilson criticises an eco-labelled toilet which consumes large amounts of electricity for the dehydration process

Sven Ingvar-Nilson criticizes an eco-labelled toilet which uses electrical heating to evaporate the liquid phase. With the title „Do ecological toilets exist?“ he raises the basic question for the criteria of eco toilets. You can follow a short discussion on this theme in the forum of “mynetworks”.

!!! Visit: <http://www.mynetworks.org/tcb/page.php?id=2332&threadid=430>

!!! Contact: info@wost-man-ecology.se

E-course

On-line Web based training on “Efficient Management of Wastewater its Treatment and Reuse in the Mediterranean Countries”

05.09. - 30.10.2005

Organiser: Institute of Municipal and Industrial Wastewater Management, Hamburg University of Technology

This Web-based Training offers an advanced course for professionals in wastewater management, treatment and reuse from the Mediterranean.

Objectives:

- to inform about new appropriate technologies focussed on sustainability and water reuse in rural areas of the Mediterranean countries;
- to improve know-how transfer between the Mediterranean countries.

!!! Further information: http://www.emwater.org/Training_courses/training1.htm

!!! Contact: Claudia Wendland c.wendland@tuhh.de

New upcoming events

Germany 17. Kolloquium und Fortbildungskurs zur Abwasserwirtschaft.

06. - 08. September 2005, Hamburg

Organiser: Technische Universität Hamburg-Harburg (TUHH) Arbeitsbereich Abwasserwirtschaft und Gesellschaft zur Förderung der Forschung und Entwicklung der Umwelttechnologien an der TUHH, GFEU e.V.

This “Wastewater course” consists of a conference on prevailing wastewater management topics and laboratory training. Main issues of the first and second day are “rainwater” and “sewage sludge”.

Contributions during the colloquium on September 8th include an overview on “the international status quo of innovative wastewater concepts” by Ralf Otterpohl and several presentations dealing with the production of commercial fertilisers from organic waste and wastewater.

!!! **Download:** programme

<http://www.tu-harburg.de/aww/veranstaltungen/ak05prokompl.pdf>

!!! **Registration:** <http://www.tu-harburg.de/aww/veranstaltungen/Anmeldeform.pdf>

!!! **Further information and contact:**

Mrs. Becker, Mrs. Petersen, ++49-40-42 878-32307 awawi@tuhh.de

China **7th World Congress on Recovery, Recycling and Re-integration R'05**

25.-29. September 2005, Beijing

Organiser: Chinese Academy of Sciences (CAS), China State Environmental Protection Administration (SEPA), China, Swiss Academy of Engineering Sciences (SATW), Switzerland

Findings in the field of resource management, recovery, recycling, and re-integration will be presented in this conference. Emphasis will be given to financing mechanisms and processes for development projects in the field of resource management.

Other interesting topics covered are: composting and ecosan, recovery of valuable components from wastewater, Integrated Waste Management systems, sewage sludge and wastewater reuse.

!!! **Further information:** <http://www.R05.org/>

!!! **Contact:** r05@home.ipe.ac.cn

China **International Biogas Workshop**

18.-20. October 2005, Beijing,

Organized by the Chinese Ministry of Agriculture with support from UNESCAP, a 3 day workshop on promotion of biogas technology will be held in Beijing, PR China.

The objective is to increase national, bilateral and multilateral networking for sustainable development in rural areas of Asia, through integrated biogas technology. Country papers as well Case studies from of Nepal, India, and China will be presented.

A one-day field visit is included. A main focus will be on the possibilities and chances of CDM financing for biogas. The working language will be English.

!!! **Further information and contact:** Conference secretary ceepstd@china.com

Uganda **31st WEDC International Conference
Maximizing the Benefits from Water and Environmental Sanitation**

31. Oktober-04. November 2005, Kampala

Organiser: Water, Engineering and Development Centre (WEDC) at Loughborough University, UK and the Ministry of Water, Lands and Environment of the Republic of Uganda

This Conference will focus on best practise and lessons learnt on **maximizing the contribution of water and environmental sanitation to the improvement of the quality of people's lives** as well as on specific strategies to sustain the current gains.

Conference themes cover: Water resources, Water supply, Environmental sanitation, Institutional issues, and Cross-cutting issues.

There is particular interest in the following subjects:

- Reforms in the water and environmental sanitation sectors
- Good practices in environmental sanitation services
- Water resource management and water quality
- Water for production
- Small towns water supply systems
- Performance monitoring and evaluation in the water and environmental sanitation sectors
- Emergency water supply systems

Early registration until: **31. Aug. 2005**

Late payment charge from: **07. Oct. 2005**

!!! Further information: <http://wedc.lboro.ac.uk/conferences/conference1.php?ID=6>

!!! Contact: wedc.conf@Lboro.ac.uk

India **12th World water Congress and Water 2005 Exposition**
22.-25. November 2005, New Delhi

Organiser: Geographical Committee of IWRA (International Water Resource Association) India, in association with Central Board of Irrigation and Power

The 12th World Water Congress in New Delhi has the main theme "Water for Sustainable Development towards innovative Solutions". The Water 2005 Exposition is planned as a technology showcase at the venue of the Congress.

Themes of the Congress include: Integrated Water Resources Management, Water Infrastructure Development, Water Governance, Urban Water Management, Rural Water Management, Water Security and Risk Management, Economics and Financing of Water, Capacity Building for Water Resources Management

!!! Further information: <http://www.worldwatercongress.org>

!!! Contact: info@worldwatercongress.org

India **9th IWWA International Conference on ecological sanitation**
25.-26. November 2005, Mumbai (Bombay)

Organiser: Indian Water Works Association (IWWA); International Water Association (IWA); GTZ; Gov. of Maharashtra; All India Institute of Self Government

An international conference on ecosan will take place in Mumbai (Bombay), India on the 25th and 26th November 2005. "All those who care for this earth and are interested in sustainable management of sanitation are cordially invited to participate in the conference to help crystallize a model of ecosan in the sanitation sector in India and abroad."

The conference covers the various aspects on this theme, such as

- Ecosan- systems- preferred solutions in rural and peri-urban areas
- Decentralised Wastewater Treatment System (DEWATS)
- Application of ecosan principles in urban areas and case studies
- Promoting agricultural use
- Raising awareness and create demand
- Participation of stakeholders in planning, design, implementation and monitoring processes
- Decisions on an informed basis

- Education and training for ecosan
- Regulatory framework
- Finance ecosan
- Ecosan- progress, policies and legislation
- Social and economic aspects
- Hygiene and environmental assessments
- New technological developments
- Hygienic agro-reuse
- Feasibility studies
- Decision making tools

The website of the conference provides all necessary information. Online-registration is possible and a small brochure on the conference can be downloaded.

We believe that this will be a very interesting and important conference and we hope to see you all in Mumbai!

!!! **Further information:** <http://www.iwwainternational.com/default.asp>

!!! **Contact:** Dr. S. V. Dahasahasra: daha2005@vsnl.net

China **Water China 2006- Exhibition/Trade-fair**
06.-09. March 2006, Guanzhou International Exhibition & Convention Centre

'Water China' has established itself as the biggest Chinese trade-fair in the field of environment with international and Chinese Exhibitors. Being held for the 7th time. The fair comprises the International Water, Wastewater & Water Treatment Trade Show (Water China) and the International Air & Waste Treatment Trade Show (AW China).

!!! **Further information:** <http://www.waterchina.merebo.com/>

Mexico **7th Specialised Conference on Small Water and Wastewater Systems**
07.-10. March 2006, Mérida, Yucatan

Organiser: Institute of Engineering, Universidad Nacional Autonoma de Mexico (UNAM), International Water Association IWA

The conferences series "Small Water and Wastewater Systems" is focussing on decentralised systems for water supply and wastewater treatment and their association with receiving bodies and industrial wastewater systems.

Themes:

- Decentralised wastewater collection and treatment systems
- Industrial wastewater treatment
- Anaerobic treatment systems
- Upgrading wastewater treatment systems
- Environmental management systems
- Environmental microbiology and population dynamics
- Operation and monitoring wastewater treatment systems
- Wastewater reclamation and reuse
- Low tech/appropriate systems
- Sludge management
- Bio film reactors
- Sequencing batch reactors
- Nutrient removal and recovery
- Wetland systems and stabilisation ponds

Early registration until: **15. December 2005**

!!! Further information: <http://pumas.iingen.unam.mx/small2006/>

!!! Contact: small2006@pumas.iingen.unam.mx

Singapore **Researchers Conference for Young Water Professionals**
24.-26. Mai 2006, Nanyang Technological University

Organiser: International Water Association IWA

The **IWA Young Water Professionals Programme** provides professional development and networking opportunities to young professionals and students in the water and wastewater sector under the age of 35. As part of the programme, international events exclusively for young researchers are hosted every two years.

For this years conference submissions on all aspects of water, wastewater technology, engineering and management are invited. Only authors who are invited to present their work will be able to register for the conference.

Deadline for submissions: 30. Sept. 2005

!!! Further information:

<http://www.ywp.iwahq.com/templates/dynamic/Conferences/Conference.aspx?ObjectId=310706>

!!! Contact: YRC2006@iwahq.org.uk

Events reminder

Poland **Nutrient Management in Wastewater Treatment Processes and Recycle Streams**
18. – 21. September 2005, Krakow

Organiser: LEMTECH Consulting

Auspices: International Water Association (IWA)

There is strong need for transfer of appropriate technology to the European Union (EU) accession countries and other locations where the attempt to rapidly adjust to the advanced wastewater regulations brought about a frantic search for know-how, technology, equipment and financial instruments. Faced with pressures to privatize or to accept financing-technology packages, municipalities want to make the right technical decisions and are looking for state-of-the-art technology guidance.

The aim of the IWA Specialist Conference "Nutrient Management in Wastewater Treatment Processes and Recycle Streams" (Krakow, Poland, 18-21 September 2005) is to gather the best practitioners in the field and to present the current state of knowledge in municipal wastewater treatment and discuss design and operational upgrades to biological nutrient removal (BNR) plants, to present pre-design studies, operational control strategies, modelling, kinetics and remedial measures to offset the operational and design deficiencies. Insight into the financing of the treatment plant infrastructure and available financial aid; into operator training and plant management will also be covered.

Registration starts on 15 May 2005

!!! Information: <http://www.bnr2005.krakow.pl/>

!!! Contact: Adam Kalucki adamk@lemtech.krakow.pl

Germany **Federal and State Conference of ATV-DVWK**
21. – 22. September 2005, Potsdam

Organiser: DWA

The annual conference of DWA in Potsdam will discuss the following themes:

- Small Wastewater Treatment Plant – lasting solutions, but how?
- The Practice of Sewer Renovation
- Water Balance in the Landscape and the use of surface waters

!!! **Information:** <http://www.dwa.de>

!!! **Contact:** Rita Bergmann bergmann@dwa.de

Ireland **World Toilet Summit 2005**
26. – 29. September 2005, Belfast

Organiser: World Toilet Organization (WTO), Northern Ireland Toilet Association, Happening

Auspices: British Toilet Association (BTA), World Toilet Organization (WTO)

This will be the first major world conference devoted to toilet provision and standards ever held in the West. The conference objectives are to introduce a global 'away from home' toilet grading scheme which can be acknowledged / recognised by travellers / providers all over the world or to discuss and agree standards and management of hospital and school toilets.

In addition to the main plenary at the Waterfront Hall, manufacturers, suppliers and service companies from the washroom sector will be invited to exhibit at the concurrent 2005 World Toilet Summit Exhibition.

!!! **Further information** <http://www.2005worldtoiletsummit.com/>

!!! **Contact:** information@2005worldtoiletsummit.com

Germany **Deutscher Tropentag 2005**
10. – 13. Oktober 2005, Stuttgart-Hohenheim

Organiser: Universities of Berlin, Göttingen, Hohenheim, Bonn and Kassel, as well as the Council for Tropical and Subtropical Research (ATSAF e.V.) in cooperation with BEAF/ GTZ.

The annual Conference on Tropical and Subtropical Agricultural and Natural Resource Management (DEUTSCHER TROPENTAG, DTT) is jointly organized by the universities of Berlin, Göttingen, Hohenheim, Bonn and Kassel-Witzenhausen as well as by the Council for Tropical and Subtropical Research (ATSAF e.V.) in cooperation with BEAF/ GTZ. It invites all students, Ph. D. students, scientists, extensionists, decision makers, politicians and practical farmers, interested and engaged in Agricultural Research and Rural Development in the Tropics and Subtropics to participate and to contribute.

The theme of this year's Tropentag is "The Global Food & Product Chain– Dynamics, Innovations, Conflicts, Strategies and will be held on October 11 - 13, 2005, at the University of Hohenheim, Stuttgart.

Interdisciplinary presentations and discussions will focus on global challenges - to balance the production of sufficient, high quality food for an ever increasing world population and to improve livelihood, health and education of the rural population as well as reduced pressure on the environment caused by agricultural production.

This meeting held in English.

!!! **Further information:** <http://www.tropentaq.de>

!!! **Contact:** Prof. Dr. Klaus Becker kbecker@uni-hohenheim.de

Germany Wastewater disposal in rural area
12. – 14. October 2005, Kassel

Organiser: DWA

At the conference - listed under the title "*Rural Area from the WaWi Serial Course, Course Part L/6*" - the following aspects of wastewater disposal in rural area will be discussed:

Legal aspect conditions, Planning and Concept, Cases and Practical Examples, Wastewater Treatment Plant (SBR, Bio film, Membrane technologies) and alternative concepts.

!!! **Information:** <http://www.dwa.de>

!!! **Contact:** Rita Bergmann <mailto:bergmann@dwa.de>

Pakistan 2nd South Asian Conference on Sanitation (SACOSAN-2)
November 2005, Islamabad

Organiser: Water Supply and Sanitation Collaborative Council (WSSCC) and Pakistan Institute for Environment-Development Action Research (PIEDAR).

The meeting, on sanitation, health and hygiene in South Asia, aims to:

- generate political commitments that prioritize sanitation and hygiene,
- strengthen leadership/advocacy for improved sanitation and hygiene in South Asia
- assess the state of sanitation and hygiene in South Asia.

Civil society in Pakistan is invited to actively participate in the conference event, and in pre and post SACOSAN activities.

!!! **Contact:** Ali Junaid, WASH Campaign Manager, PIEDAR, a.j.ahmad@piedar.org

Korea: **5th IWA International Symposium on Wastewater Reclamation and Reuse for Sustainability (WRRS)**
8 - 11 November 2005, Jeju

Organiser: Water Reuse Technology Centre (WRTC), Kwangju Inst. of Science & Technology (K-JIST), IWA

This conference aims to bring together international experts in the field of water reclamation and sustainable reuse (...). Conference Themes include:

Sustainable Technologies for Water Reuse - Advancement in wastewater Reclamation - Agricultural, Industrial and Indirect Portable Reuse - Biotechnology for Water reuse - Microbiology, Health and Risk Assessment - (...).

!!! **Further information:** <http://wrrs2005.org/>

!!! **Contact:** Prof. In S. Kim iskim@gist.ac.kr and Prof. Heechul Choi hcchoi@gist.ac.kr

Mexico: 4th World Water Forum
16 - 22 March 2006, Mexico

Organiser: World Water Council

The 4th World Water Forum will take place on March 16-22, 2006, in Mexico, following the decision that was made by the Board of Governors of the Council in September 2003.

The objective of the 4th Forum is to come up with concrete measures and indicators that will create the enabling environment to boost progress on the achievement of the Millennium Development Goals.

Over the years, the Forum has led the movement from the World Water Vision, a product of the 2nd Forum, to the establishment of concrete actions and commitments derived from the 3rd Forum. Now, the challenge is to establish mechanisms of cooperation and coordination to transform a global vision into local concrete actions that integrate local knowledge.

!!! Further Information: <http://www.worldwaterforum4.org>

Australia: Incorporation of 7th International Conference on Urban Drainage Modelling & 4th International Conference on Water Sensitive Urban Design
2 - 7 April 2006, Melbourne

Organiser: Institute for Sustainable Water Resources, Monash University, Melbourne, Australia

This conference will deal with two highly topical issues in management of Urban Water; modelling of urban drainage systems and the interfaces to other parts of urban water cycle. Current achievements and problems in Water Sensitive Urban Design (WSUD), also known as Low Impact Development Design.

It will follow on the six past international gatherings on Urban Drainage Modelling (UDM), and highly successful international WSUD conferences traditionally held in Australia.

Notification of acceptance: 14. Oct. 2005

Edited papers for publication and presentation: 23. Dec. 2005

!!! Further information: <http://www.icms.com.au/UDMandWSUD/>

!!! Contact: UDMandWSUD@icms.com.au

Marocco: Integrated Water Resources Management and Challenges of the Sustainable Development
23 - 25 Mai 2006, Marrakech

Organiser: The Moroccan Committee of the International Association of Hydrogeologists (IAH)

This congress will be a unique occasion for the different specialists in the field of water resources management (researchers, decision makers, planners, laboratorians, contractors, engineers and designers, etc.) to present and exchange information about the last developments in their works regarding integrated water resources management.

Topics of the conference:

- Tools and technologies applied to the integrated management of water resources
- Impact of climatic changes, new hydraulic structures and socio-economic development on water resources

- Quantitative and qualitative aspects of the integrated and sustainable water resources management

!!! Further Information:

http://webserver.lih.rwth-aachen.de/lih/content/e1864/e1865/index_ger.html

!!! Contact: gire3d@ucam.ac.ma

**China: World Water Congress and Exhibition
10. – 14. September 2006, Beijing**

Organiser: IWA China

Auspices: Ministry of Construction, P.R. China

Over four thousand delegates are expected to gather in Beijing to address water issues from a holistic point of view. The congress themes cover most areas of the global water industry, such as water resource utilisation and protection, water treatment technology and facility operation and management, water safety and health, water recycling, and sustainable utilisation, with an emphasis on the needs of developing countries.

The delegates will discuss and communicate with thousands of Chinese colleagues from the academia, industry, and government. Leading researchers and professionals will present the latest innovations in water technologies and management in the Congress, and promote their transfer to China and other countries interested.

Meanwhile, the international exhibition area will demonstrate the state-of-the-art water treatment technologies, equipments and services.

!!! Further information: <http://www.iwa2006beijing.com>

!!! Contact: The Ministry of Construction, Secretary <mailto:iwa2006@mail.cin.gov.cn>

Links and Tips

Links on the GTZ ecosan-Homepage

You'll find an extensive list of interesting links on our homepage at:

<http://www.gtz.de/en/themen/umwelt-infrastruktur/wasser/9837.htm> and

<http://www2.gtz.de/ecosan/english/links.htm>

We would greatly appreciate your calling our attention to additional links of interest:

ecosan@gtz.de

Virus information

Sometimes viruses steal our addresses from other computers and use them to distribute themselves. We know, that this problem is common for e-mail addresses that have been saved by many people, but unfortunately, we cannot prevent this from happening.

We would therefore recommend that you ensure all your mails are scanned by an up-to-date virus scanner and that you do not open any obscure attachments.

Our newsletter is sent simply as text, with no attachments of any sort, instead, documents are always offered as download-links from our website. **If you do receive a mail from us with an attachment claiming to be related to the newsletter, do not open the attachment.**

Homepage

Would you like to know more about GTZ's sectoral project ecosan or about the subject in general?

If so, visit our homepage (expansion and update in progress):

<http://www.gtz.de/ecosan> (new)

<http://www2.gtz.de/ecosan>

Newsletter

If you would like to contact the administrators of this newsletter please send an e-mail to:

owner-ecosan@mailserv.gtz.de

Your proposals for contributions to the newsletter, and any inquiries and comments you may have are always welcome.

Contact

The GTZ ecosan team:

Christine Werner, Florian Klingel, Patrick Bracken, Carola Israel

GTZ, Division 44: Infrastructure and Environment
ecosan project – ecologically and economically sustainable wastewater management and sanitation systems

Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH
p.o. box 5180
D-65726 Eschborn, Germany
Phone: ++49-6196-79-4220
Fax: ++49-6196-79-7458

christine.werner@gtz.de

florian.klingel@gtz.de

patrick.bracken@gtz.de

carola.israel@gtz.de

Mailing list / Newsletter

- user
information

How to use the ecosan mailing list

You can interact with the Majordomo software of our mailing list server by e-mailing commands to:

majordomo@mailserv.gtz.de

Commands must be the only text in the e-mail, and not as part of the subject line! You can send several commands in one and the same e-mail message. Just be sure to start a new line for each command.

If you attach a signature block to the end of your e-mailed messages, the Majordomo software could perhaps mistake it for another command, so please enter the word "end" by itself in the line below the last command.

Useful mailing-list commands:

subscribe ecosan

Use this command to subscribe to the ecosan mailing list

subscribe ecosan [your.name@xy.org](#)

Use this command to receive the newsletter at an address other than that listed in your registration (e.g., if you send the e-mail from your workplace account, but wish to have the newsletter sent to your private e-mail address).

unsubscribe ecosan

Use this command to cancel your subscription.

unsubscribe ecosan your.name@xy.org

Use this command to de-register your receiving address, if this differs from the one from which you are currently using to send the request.

info ecosan

Use this command to request general introductory information about the ecosan mailing list.

index ecosan

Use this command to obtain a list of files sent so far via the mailing list.

get ecosan <filename>

Use this command to obtain a specific file sent via the mailing list (e.g., an archived newsletter).

help

Use this command to obtain information on how to use the Majordomo software.

end

Use this command to terminate a list of commands, e.g., especially if your mailer attaches an automatic signature.

ecosan sector project



Deutsche Gesellschaft für
Technische Zusammenarbeit (GTZ) GmbH

Dag-Hammarskjöld-Weg 1-5
P.O. Box 5180
65726 Eschborn, Germany

fon: +49 6196 79 4220
fax: +49 6196 79 7458
email: ecosan@gtz.de
internet : <http://www.gtz.de/eccosan>

