



LeAF Letter

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With this newsletter Lettinga Associates Foundation aims at informing the reader on its projects, courses and other activities performed in the field of implementation of environmental protection and resource conservation technologies

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Dear readers,

Since we like to keep you well informed we present to you some of our recent activities. The focus of this LeAF Letter is on capacity building: specific projects in specific countries, but also our recently developed Internet Course for which we are looking for participants from all over the world. We inform you on the third Lettinga Award that has its deadline on April 1st 2007 and on the Laboratory services LeAF has on offer. You can read about it all in the pages to come.

In our previous LeAF Letter (Dec. 2005) an overview was given of the LeAF group. It is a pleasure to announce a few more changes within our group: Tony Sijm has started as the new secretary. Adrie Veeken has joined our group as part time project leader. He will, in close cooperation with Grietje Zeeman, focus his activities on solid waste digestion. And recently Darja Kragic started as researcher on several anaerobic projects.

Marjo Lexmond
Managing Director

Dissemination activities in Salta, Argentina

In August 2005, LeAF performed a series of dissemination activities in Salta, Argentina, through a grant awarded to Lucas Seghezzo by the Netherlands Foundation for the Advancement of Tropical Research (WOTRO). During his Ph.D., also partially funded by WOTRO, Lucas Seghezzo concluded that anaerobic technology was more sustainable than other sewage treatment systems used in Salta. He also argued that, before the adoption of any particular technology is decided, policy-makers, companies, and stakeholders need

to be thoroughly informed about the benefits and drawbacks of all available systems.



Workshop held in Salta, Argentina

Salta lies in one of Argentina's poorest regions. Many cities in the province suffer from drinking water supply shortages and inadequate sewage treatment. Urban water systems and sanitation infrastructure are obsolete and insufficient and the quality of sanitation services cannot always be guaranteed. Technologies currently in use for sewage treatment include waste stabilization ponds and trickling filters. There are no anaerobic sewage treatment systems in the region despite the fact that a large proportion of the province has tropical or subtropical climates. One of the reasons for this is that established sanitation companies, local engineers, and policy-makers are not yet aware of the potentials of anaerobic technology. The objectives of this dissemination grant were: (a) to disseminate results obtained during past research on anaerobic sewage treatment; (b) to promote the use of "sustainability" as a criterion to assess (environmental) technologies; (c) to promote the use of participatory and integrated methods for the assessment of environmental technology; and (d) to promote the use of sustainable systems for the treatment of domestic wastewater. Activities performed included an open conference on sustainability and sanitation, diffusion activities in the media, a postgraduate course on anaerobic treatment of domestic wastewater, meetings with relevant stakeholders (institutions and persons with direct or indirect influence on water management and sanitation), and two participatory workshops held on different cities. Activities were highly successful both in terms of attendance and local impact.

Contact Lucas Seghezzo for more information,
lucas.seghezzo@wur.nl



LeAF in search for people to participate in trial version of e-course on Urban Wastewater Treatment and Agricultural Reuse

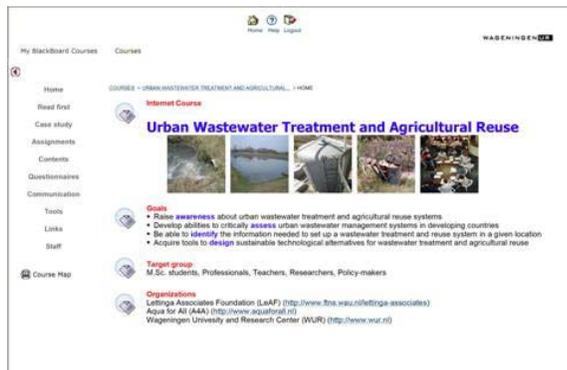
LeAF has, in close collaboration with Wageningen University, developed a new e-course that is currently launched in a trial version. The course deals with urban wastewater treatment and use of the treated wastewater for agricultural irrigation. The development of the course was financially supported by Aqua for All. The course is in a 'piloting stage'. We are currently looking for participants that would like to follow the course at a reduced rate.

The course is designed as a hands-on experience. It starts as in a real job: you are contacted by the Mayor of a middle-size city in a developing country. The Mayor asks you to study the severe sanitation and sewage problems of his city and to come up with a 'sustainable' solution. In addition the Mayor provides you with a series of pre-requisites and with some (limited) information about the city and the tender.

In order to solve this 'problem' the course participant is taken through a series of learning steps and assignments to finally come up with a proposal to the Mayor. In the process, he / she will acquire new information, learn new abilities, consult other experts and organize (virtual) meetings.

Content-wise the course provides participants with knowledge on

- Sewage treatment in general;
- The design of Waste Stabilization Ponds and Anaerobic treatment reactors;
- The potential, constraints and technical design options for using treated wastewater for agricultural irrigation;
- A methodology for making a 'sustainability assessment' based on multi criteria analysis. This analysis takes into aspects like financial affordability, stakeholder opinions, environmental effects, etc.



The course is feasible for a broad target group of MSc Students, mid-career professionals, teachers, researchers and policy-makers that have affinity with water pollution problems and environmental issues.

The time investment to do the course is 1-2 weeks. If you are interested to participate in the trial version of this course, please contact Lucas Seghezzeo, lucas.seghezzeo@wur.nl.

The (reduced) rate for the first 10 participants will be € 225 (participation in the final version will cost approximately € 425). The rates cover the costs for supervision and support while you are doing the course.

Waste and Wastewater Management Courses in Uganda

LeAF participates in a Nuffic project aimed at improving and extending environmental management services in Uganda. We assist the National Environmental Management Agency (NEMA) to organize 6 courses on Urban Waste and Wastewater Management.

In January the first course on Urban Waste Management took off. The course was held in Kampala, the capital city of Uganda. About 20 employees of the municipalities of Kampala, Jinja, Masaka and Mbale participated in this course.

During the first day of the course, representatives of the four cities that participated presented the waste management situation in their cities. They discussed a.o. the current degree of collection, the recovery rate of reusable materials and the means of final disposal. In many cities in Uganda waste collection is still poor and wastes often are incinerated in the streets or disposed off outside the city. With increasing welfare and improved public health services, waste collection and management is becoming higher on the agenda.

In presentations during continuing days various topics were presented on final disposal methods (land filling), biogas capturing, separate collection of organic wastes, metals, paper and cardboard and the management of hazardous wastes. Also the involvement of the private sector in waste collection and was discussed. The city of Kampala is currently experimenting with private collection which appears to be rather successful in this case.

More information on the project can be found at: <http://www.emcabu.org>

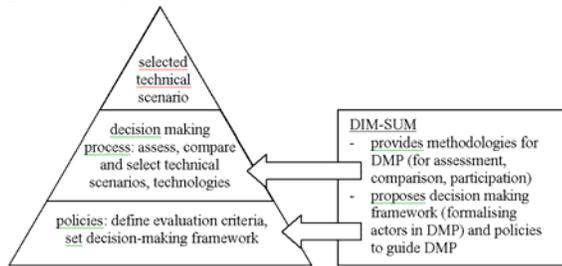
Innovative decision making for sustainable management of water (DIM-SUM)



Since the beginning of 2005 LeAF works on the EU project "DIM-SUM" short for Innovative decision making for sustainable management of water. The project aims at providing tools for the integrated and participatory management of water. Management refers in this context to its core element, the decision making process (DMP). Focusing on water supply and sanitation (as there the need is paramount), DIM-SUM will carry out case studies in river basins in each participating partner country, Indonesia, Maharashtra-India, Malaysia and Nepal, in order to evaluate and develop these tools. They will on the one hand encompass tools to generate, assess and compare technical scenarios, ranging



from argumentative to computational, and fragmented to integrated methods, and on the other, tools to enhance a participatory decision making, including information & communication technologies and hybrid methods.



The overall project goal is to develop recommendations for a sustainable DMP, encompassing an adaptive toolbox (comprised of several tools, of which users can select those fitting their needs), guidelines and policy recommendations. This shall enable local decision makers in developing countries to carry out an assessment of technical scenarios at an appropriate level of integration and participation, and hence contribute to a sustainable management of water. LeAF is mainly involved in work package 6 (WP6) "Case study part 1: Development of technical scenarios", which will develop technical scenarios in the case study sites at river basin scale and at catchment scale. LeAF's main task within this WP is making an inventory of unit processes, guidelines for safe (waste)water treatment, reuse, and monitoring procedures. This task will summarize and compile state of the art information on water supply and sanitation technologies and serve as a basis for the scenario development as well as an element of the previously mentioned toolbox.

Contact Henri Spanjers for more information, henri.spanjers@wur.nl and take a look at the project's website <http://www.project-dimsum.net/>

Support for improving integrated water resources management in Matagalpa, Nicaragua

Matagalpa, a middle-sized mountain city in Nicaragua, is situated in a vulnerable water shed in which two big rivers have their origin, the Moline Norte and the San Francisco. Matagalpa draws approximately 40% of its water from these rivers. The water situation in the area is under stress because of water pollution, erosion caused by deforestation and an increasing need for water due to a rapidly growing urban population. Occasionally the treatment of drinking water is stopped because of a too low water quality. The water pollution is especially caused by coffee plantations that are located high in the mountains and that form an important economic activity in this area.

Projecto Cuencas Matagalpa (PCM) is a local organisation that is active in protection of the water shed. Various local water stakeholders participate in PCM, such as the municipality, local farmers, citizen groups and the Ministry of the Environment.

PCM, in cooperation with coffee farmers, has been successful in reducing to wastewater pollution. At some large coffee farms anaerobic wastewater treatment systems have been installed and coffee pulp is no longer dumped into the rivers. Despite of that, there are still pollution problems during the coffee season.

Aqua for All, Waterschap De Dommel, Hoogheemraadschap Hollands Noorderkwartier and LeAF want to provide their support to PCM and other local parties to continue improving the water situation in the area. Within this project LeAF is responsible for project coordination and for providing advice with respect to the problems with coffee wastewater. The work is done in close collaboration with PCM.

Treatment of coffee wastewater

The area around Matagalpa is known for its high quality Arabica coffee. During the processing of the Arabic coffee beans, wastewater is produced during depulping, fermentation and the washing of the coffee beans. In the period December 2005 to February 2006 two Dutch MSc students and a group of Nicaraguan students conducted research on how the effluent of the existing anaerobic treatment reactors could be further improved. Although these anaerobic reactors remove 80-90% of the BOD, the effluent values of the system are still too high for discharge into the rivers. For increasing the quality of the water, the students used a 'waterharmonica' system consisting of various ponds with duckweed and water hyacinth.



Depulping of Coffee Beans



Experimental system for treating effluent of anaerobic reactors



Integrated Water Measurement Plan

A study is currently carried out to work on an Integrated Water Measurement Plan (IWMP) to support water resources management in the region by filling the gap between desired and available data. Based on the IWMP a network of measurement locations and a schedule of what and how to measure can be developed.

Stakeholder workshop to formulate a long-term program

Another goal of the project is to formulate a program for long-term involvement of the Dutch water boards with the water stakeholders in Matagalpa. In September 2006 a stakeholder workshop will be organised. The objective of the workshop is formulate a priority list which will form the base of a new program proposal. This proposal will be worked out further together with various local stakeholders.



Preparations for the stakeholder workshop in January 2006

For more information contact
Joost Jacobi, joost.jacobi@wur.nl or
Adriaan Mels, Adriaan.mels@wur.nl

Laboratory services

LeAF offers laboratory services for a wide variety of tests, such as anaerobic biodegradability tests, activity tests, toxicity tests, etc. As no test is the same and there are many factors that should be taken into account when considering a possible test, together with our clients we discuss their

specific needs and come to a tailor-made test set-up. Please contact us to hear more about what we can do for you.



Experimental set up in LeAF's Laboratory

For more information contact Marjo Lexmond,
marjo.lexmond@wur.nl

Lettinga Award 2007 Focus on the chemical industry



The chemical industry is faced with an ever-pressing need to find cost effective and sustainable solutions for wastewater treatment. Anaerobic technologies offer important potentials for removing organic pollutants from high strength industrial effluents. However, as effluents from the chemical industry may contain compounds that are recalcitrant or affect the treatment process, many challenges remain as to the application of anaerobic treatment technology. This is the first announcement. You can send in your proposal until April 1st 2007. In our next LeAF Letter we will remind you on this. More details are already available on our website: www.leaf-water.org.

For more information contact Marjo Lexmond,
marjo.lexmond@wur.nl.

Colophon

Lettinga Associates Foundation is a non-governmental, not for profit organisation that does not receive donor funding. The foundation earns its income from projects related to applied research, consultancy tasks, course organisations, etc.

Twice a year Lettinga Associates Foundation will distribute this LeAF Letter amongst its clients, relations, and others interested in environmental technologies for waste and wastewater treatment.

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