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Global Water Partnership
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Report of the World Water Week Seminar

Europe's Sanitation Problem

20 million Europeans need access to Safe and Affordable Sanitation
Stockholm, 19 August 2008



Water and Sanitation



WECEF | Women in Europe for a Common Future

November 2008

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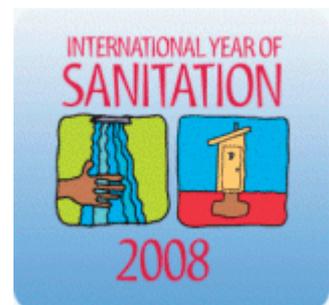
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More about WECF

Women in Europe for a Common Future is a network of organisations and individuals working for sustainable development, protection of human health and environment and poverty reduction. Our international network consists of members and partners in Western and Eastern Europe, the Caucasus and Central Asia.

WECF supports partners in 12 countries with demonstrations of dry urine diverting toilets for private and public (school) use, in:

- Afghanistan
- Armenia
- Belarus
- Bulgaria
- Georgia
- Kazakhstan
- Kyrgyzstan
- Moldova
- Romania
- Tajikistan
- Ukraine
- Uzbekistan

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Summary

As follow up of the high level European conference on January 29 in Brussels, the seminar "Europe's Sanitation Problem" in the Stockholm World Water Week addressed the problem of more than 20 million European citizens who do not have access to safe sanitation. The women's network "Women in Europe for a Common Future" organised this seminar in cooperation with Global Water Partnership Central and Eastern Europe, Coalition Clean Baltic, Hamburg University of Technology, Creative, Earth Forever and Euro Teleorman. The seminar drew attention to the fact that in European member states children are at risk of blue baby disease, hepatitis-A and gastrointestinal diseases due to unsafe sanitation. Around 150 participants from national and local authorities, finance, business, civil society, mainly from Europe but also from all over the world attended the seminar, including the Dutch Prince Willem-Alexander, chair of UNSGAB. After the seminar, participants attended a study visit to two settlements with sustainable onsite sanitation.

The bad sanitation situation of more than 20 million citizens in rural areas in the European Union was explained and illustrated. The common system of pit latrines especially in rural Eastern Europe are a cause of groundwater pollution in many villages which depend on wells for drinking water. The unsafe water and sanitation situation adversely affects public health and thus hinders the economic development in the region. A participant argued that the number of people with unsafe sanitation and insufficient waste water treatment is probably two to three times higher than the estimated 20 million.

Current EU directives do not give enough incentives to member states to make rural sanitation a priority. The EU directive on urban wastewater treatment focuses on larger agglomerations with more than 2,000 inhabitants. Smaller agglomerations are covered by the general quality requirements of the Water Framework Directive (WFD), but sanitation improvement as



Participants at the session „Europe's Sanitation Problem“ in Stockholm

such is not obliged. Stakeholders could bring this to the attention of the responsible authorities who are currently implementing the WFD.

New member states focus on achieving the "acquis communautaire". Since rural sanitation is not specifically identified in the EU directives, often new Member States do not allocate resources to this issue. The European Commission sees this as a problem which needs to be solved at national level. The new EU member states have large sums of money available and can choose their own priorities, such as new roads. When funds are spent on sanitation, the focus is too much on costly traditional sewerage solutions mainly for larger towns. Several speakers mentioned the lack of capacity and local knowledge as bottle necks for solving the rural sanitation problems.

Experts presented various alternative systems and showed there is a large potential market for sustainable smaller or larger scale systems for both rich and poor regions. For example in Sweden two third of the 850,000 onsite waste water systems has insufficient treatment. The new national environmental code requires the recycling of nutrients from waste water. Most onsite waste water systems in Sweden need therefore significant upgrading

which can be realised with innovative source control waste water concepts. Technologies like urine diverting toilets and separate greywater treatment present a large market potential and are cheaper for the user compared to conventional solutions. Also larger centralised systems can be designed differently, saving nutrients, energy, water and money.

Project examples from Romania and Bulgaria showed that the introduction of dry urine diverting toilets, hand washing facilities and greywater treatment in villages without central water supply improves the health conditions at once. Participants gave examples of barriers in national and local legislation and codes hindering the implementation of innovative decentralised systems. For example in Germany households are forced to get connected to the central sewerage system although they can provide an adequate onsite treatment at lower costs.

The representative of the European Commission mentioned the importance of good governance. The Commission plans an upgrade of the EU guide on small scale (extensive wastewater treatment processes) sanitation including best practices for solving Europe's sanitation problem. Furthermore the Commission would like to support stakeholder dialogues inclu-

ding authorities, funding agencies and NGOs in Bulgaria and Romania to find solutions for the urgent sanitation problems, to take place in 2009.

WECF calculated that based on sustainable dry sanitation systems demonstrated in Romania and Bulgaria, comfortable indoor bathrooms with toilets for households would cost 600 Euro per household. Therefore, if all households without access to safe sanitation obtained such systems, less than 480 million Euro would be needed for an immediate solution. Compared to the total budget of more than 300 billion Euro of EU structural funds, the financial aspect should and can not be a barrier.

The conference identified 2 key barriers, namely, that on the one hand the European Commission underlines that countries set their own national priorities how they will provide safe water and sanitation, but that on the other hand, the member states first want to comply with binding regulations, and there is no binding EU regulation to provide safe sanitation. Nor is there an explicit obligation to provide safe drinking water for all. There is only a basic principle in the EU charter of fundamental rights: a high level health protection for the EU citizens.

The questions which will need follow-up in the European Parliament, European Commission and the Council are: Do we need a clean water supply obligation in an EU directive? Do we need waste water legislation for settlements with less than 2000 inhabitants?

WECF called on all participants to come with concrete proposals to make sure all women, children and men get access to safe and affordable sanitation in the European Union by 2015.



Introducing the organisers

WECF – Women in Europe for a Common Future, Sascha Gabizon, director:

We welcome all of you to this seminar, I am one of the two co chairs of this session.

WECF stands for Women in Europe for a common future. We are a network of 100 women's, environmental and health organisations in 40 countries in the EU, the Caucasus, Eastern Europe and Central Asia. We have initiated this conference as we work in local projects with poor communities in the central and eastern European EU member states on improving sanitation and waste water treatment.

We work in with our local partners on hygiene and health education, we do independent water quality testing, we propose better policies and we work with our local partners to provide sanitation for currently 30,000 people, using safe and affordable ecological sanitation systems. So we come with hands on experience in the field.

And in the field, we see that too little is done within the European Union to address the issue of safe sanitation, it is a key issue of peoples dignity, of public health, and in some cases of life and death.

We will first introduce all the organisations organising this seminar. First of all my co-chair for this session, Björn Guterstam.

Global Water Partnership, Björn Guterstam, network coordinator:

We aim to promote a strong partnership among all those involved in water management. GWP promotes integrated water resources management. Many problems are connected to poor sanitation. Reusing waste water is an important topic. In arid regions like the Mediterranean, city such as Athens lose large amounts of highly treated wastewater to the Sea. This water needs to be brought back to



WECF Executive Director presenting in Stockholm (Photos by Bogdan Macarol)

the river basin from where it was taken from in order to sustain its hydrology.

Global Water Partnership CEE, Milan Matuska, regional coordinator:

As a first step to solve these problems we published a book which highlights possible solutions.

The second step is to discuss these at this seminar here. Further steps include the implementation of Sustainable Sanitation in real practice together with our partners.

Earth Forever, Diana Iskрева, director:

We work in Bulgaria especially in rural areas, with schools and public facilities to improve the sanitation situation.

Creative, Robert Zvara:

As a small NGO in Slovakia we are implementing small sanitation projects for villages, applying different kinds of solutions in different projects.

We started to work with the Association of Towns and Municipalities of Slovakia (ATMS) which is able to directly influence government, but also with 95% of the mayors of villages who can choose to implement sanitation technologies in their village and reach local people.

Coalition Clean Baltic, Gunnar Noren:

We represent 27 environmental NGOs from all the countries of the Baltic Sea Region, committed to the protection of the Baltic Sea environment. We produce information and education materials on sustainable sanitation, organise trainings for stakeholders and give support for construction of demonstration facilities in small municipalities and individual family homes. But at the same time we carry out policy work for sustainable wastewater management, e.g. within the HELCOM cooperation and towards the EU.

Hamburg University of Technology, Ralf Otterpohl, Professor and director of the Institute of Wastewater Manage- ment and Water protection:

We support the practical work of WECF with our knowledge. This cooperation is very useful for us and I am impressed by the work WECF is doing.

Sascha Gabizon: Thank you. I also thank the European Commission for its financial support of the WECF work programme, which has enabled us to organise this day.

Europe's problem: more than 20 million people need safe and affordable sanitation: an Action Plan is needed

Sascha Gabizon,
Executive Director, WECF

I would like to welcome those who came in a bit later, with a special welcome to His Royal Highness the Prince of Orange, as our special guest.

Health problems from lack of sanitation are often considered to be a thing of the past in the European Union, where most people have a toilet indoors and flush their waste into a sewer. According to the EU Urban Waste Water directive, a municipality with more than 2000 inhabitants is obliged to treat the waste water, for which an average household pays 1 or 2 Euro per cubic meter of wastewater. However, with the last 2 rounds of enlargement of the EU, things have changed. Today, some 20 million people in the Eastern European Member States are reliant on undignified and unhealthy means of sanitation.

The video produced by WECF shows the dramatic sanitation situation in some rural communities. (Shown at this seminar, download available at www.wecf.eu).

But I have seen worse than what was shown in this video. The kids of Garla Mare school in Romania defecate in the open, behind the latrine, because in the latrine puddles of urine make it impossible to reach the pit. Would you send your kids to such a school? I wouldn't.

Accidents are reported of small children dying from falling into a pit and drowning in the faeces.

Even in the 21st century, children are still at risk of dying from waste water related diseases in the European Union!

When I visited villages in our project regions in Romania and Bulgaria these last months, I still hear from the Romanian doctors that babies fall ill with blue baby disease from too high nitrates in the drinking water. When we test nitrates, far too often we find such excessive levels in drinking water, 10 times more than the maximum allowed. These nitrates are not caused by excessive fertilizer usage, but by infiltration of faeces into drinking water wells, both animal dung as well as human faeces from unsealed latrines, latrines which are often close to wells.

Bulgaria has regular outbreaks of hepatitis-A, up to 300 cases a week in the summer peak, which are probably caused by exposure to raw sewage. Often poor rural populations are the victims.

In many of the rural areas in Bulgaria, households do have a drinking water connection, and have installed a flush toilet. But the toilets flush into septic pits which often leak, overflowing in the garden, or in the neighbour's garden, or onto the street.

Sanitation, is first and foremost an issue of basic dignity and human rights.

Human dignity?



www.wecf.org

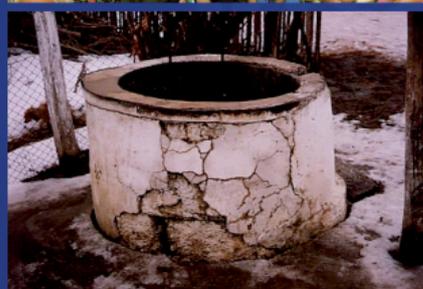
GWP has published a report on sanitation in the Eastern European Member states and estimate that more than 20 million people lack this basic human dignity. They are forced to resort to open defecation, or basic latrines with no facilities for hand washing, cold in winter, with flies and bad smell.

The figure of 20 million is a minimum estimation, based on the ideal situation in which all countries have completely complied with the EU urban waste water directive which states that all settlements with more than 2000 inhabitants should have sewerage and wastewater treatment. Currently, the number of people with no access to safe sanitation is probably many millions more.

We think this situation is unacceptable! Safe sanitation should be a basic right for all Europeans. That is why we have joined our efforts in this International Year of Sanitation, to mobilize support at all levels to find solutions.

We therefore already started in January, and hosted the European Opening of the International Year of Sanitation in Brussels. Let me give you a few conclusions from the debates. The report of this Brussels event is available in paper and from our website. In Brussels we discussed what we meant by „safe sanitation“:

School toilet and water well....



- hygienic toilet facilities, including hand washing facilities;
- the wastewater from the toilet should not pollute the direct environment,
- nor contaminate the water source or the neighbours' garden.

But in Eastern Europe, we see many pit latrines, school latrines and soak-away pits. Even septic tanks in many villages are not safe. If we include unsafe soak away and septic tank systems we are probably talking of many more millions of people in the EU.

The WHO figures presented in Brussels indicated that 150 million Europeans use some sort of decentralised sanitation system, often without any treatment of the faeces. A large part of the EU population thus might have clean toilets at home, but by flushing the excreta down the pipe they pollute their downstream environment and water sources.

But is central sewerage the solution? Central sewage systems are expensive for low income rural areas, as very long pipes are necessary and treatment plants are expensive. In many EU countries, waste water costs 1-2 Euro per cubic meter if the price includes treatment. Also, we see in many of the new EU Member States oversized and inefficient new treatment plants, which unnecessarily increase the waste water price, without assuring efficient treatment of the excreta and wastewater. Furthermore, in the central sewage systems, there is a loss of valuable nutrients, as these systems mix everything together, with heavy metal in sewage sludge, and the useful nutrients can no longer be separated for reuse in agriculture. And finally, the centralized sewage systems are based on flushing waste with large quantities of costly drinking water through long pipe systems, thus they create large volumes of waste which are expensive to treat.

In order to bring the costs of excreta and waste water treatment down, especially in rural areas, it is far more efficient to prevent pollution at the source. This can be achieved by separate collection, containing the waste, sanitizing the waste and

full re-use of nutrients – thus also keeping the volume of waste water small. Source separated waste water treatment limits costs, saves energy and saves space. It allows the reuse of phosphorus (P) while urine can be used as a fertilizer. A barrier is that urine is not explicitly allowed as fertilizer in EU legislation for organic agriculture. Urine is only 1% of the waste water volume, but it contains 85% of the Nitrogen and 47% of the Phosphorus of the waste water flow.

Many low cost solutions are available. There is a large variety of options and solutions. Not one solution fits all, and innovative technologies are still being developed: high tech fully automated; low tech, low cost, reliable; on site individual

solutions; small community solutions; with energy recovery; with nutrient recovery and with water saving. Houses employing this technology are not connected to the city's central sewerage, apply separation at source, reuse urine, and produce energy with the faeces via a biogas system. The users are happy with it and the costs are lower than if they had connected to the sewage system.

These systems, which save costs, are not only interesting for poorer regions of Europe, but also for the more affluent, who want to use natural resources more efficiently. Another approach presented in Brussels is that of waste stabilisation ponds, here we see a nice example from a hotel in Scotland.

Picture: courtesy of Stowa-Grontmij Netherlands



Picture: courtesy of Wetsus, Wageningen University



Picture: courtesy of Prof. D. Mara, University of Leeds

As we heard from the Finnish Environment Minister, Finland obliges each household to treat its waste water by law. People can chose low cost or high tech solution, the cost varies in general between 1000 and 10000 euro per house.

This has led to quite a debate, but also has created an innovative market for decentral sustainable waste water treatment systems. Can these innovative technologies be used for the poorest 20 million people in Europe?

A representative from the European Commission, DG Regional Policy, told us that there is a lot of money available for

Cohesion Policy: 336 billion Euro until 2013. So far, just 13% of these Funds go to the categories of drinking water, waste water and risk prevention.

Analysing how these funds are spent in for example the two member states of Romania and Bulgaria, it seemed that for improving the worst examples of poor sanitation no funds are being reserved. Funds typically go to wastewater treatment plants for larger cities (>10.000 pe) and to connect central sewage and treatment plants. They are not targeted at those deprived of safe sanitation, nor for innovative decentralized safe systems.

To provide all 20 million people with safe sanitation and wastewater treatment, assuming 600 euro for a safe toilet, washbasin and wastewater treatment, we need 428 million Euro per year till 2015. This is not much compared to the overall 336 billion available.

But there are some dilemmas which we can discuss today: the European Commission underlines that countries set their own national priorities. The member states first want to comply with binding regulations, and there is no binding regulation to provide safe sanitation. Nor is there an explicit obligation to provide safe drinking water for all. There is only a basic principle in the EU charter of fundamental rights: a high level of health protection for the EU citizens.

Do we need a clean water supply obligation in an EU directive? Do we need waste water legislation for settlements with less than 2000 inhabitants?

Let's come forward with concrete proposals to make sure all women, children and men get access to safe and affordable sanitation in the European Union by 2015.

EU policy and operational programmes in new member states: can the EU help to solve sanitation problems?

Helmut Bloech,

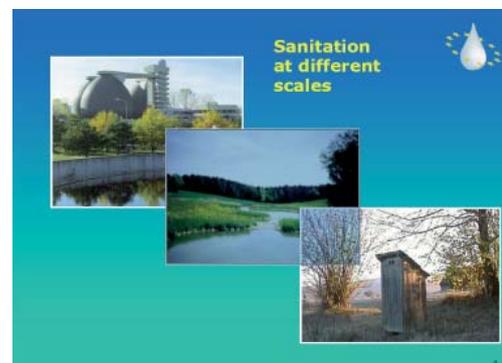
Deputy Head of Unit Water and Marine Protection, DG Environment, European Commission

I work for DG Environment, but this topic is not just an environmental problem: it is a major health problem, affecting human dignity as well as economic performance. Sick people cannot contribute to economic development, and better sanitation can make people healthier and more productive. Also in most cases the problems are found in the least economically favoured areas.

The EU has a high degree of diversity of regions and their waters. We also have a multitude of uses, aspirations, pressures and impacts – such as from fertilisers and pesticides - on our groundwater and surface waters.

We have sanitation at different levels, the slide gives you three examples: a large urban waste water treatment, a small plant for a village, and an individual solution; the smallest is from Austria, my home country. We should have a tailor-made solution for different situations. The needs and framework for achieving safe sanitation are:

- Policy objectives and orientations for protection of health of citizens and the environment
- Financial support tools, from data collection to involvement of citizens to planning and operational measures
- Further research and exchange of knowledge and experience



- Good governance and encouragement of action at local and regional level

This last point, good governance, is the most crucial one.

Relevant EU policies and legislation are:

- Water Framework Directive
- Drinking Water Directive
- Urban Waste Water Treatment Directive
- Directive on Nitrates Pollution from Agriculture

Available EU funding tools are in particular:

- Cohesion Fund
- European Regional Development Fund
- European Agricultural Fund for Rural Development
- EU research programmes

The Water Framework Directive aims at the protection of all waters: rivers, lakes, coastal waters and groundwater. Member states have the obligation

to achieve good water quality as a rule by 2015; the maximum values on nitrate in groundwater are the same as the drinking water value. Plans and programmes for achieving this good water quality are due by Dec 2009, the drafts are due by Dec 2008. It is a must to inform and consult citizens, local municipalities and NGOs, for the development of the plans and programs.

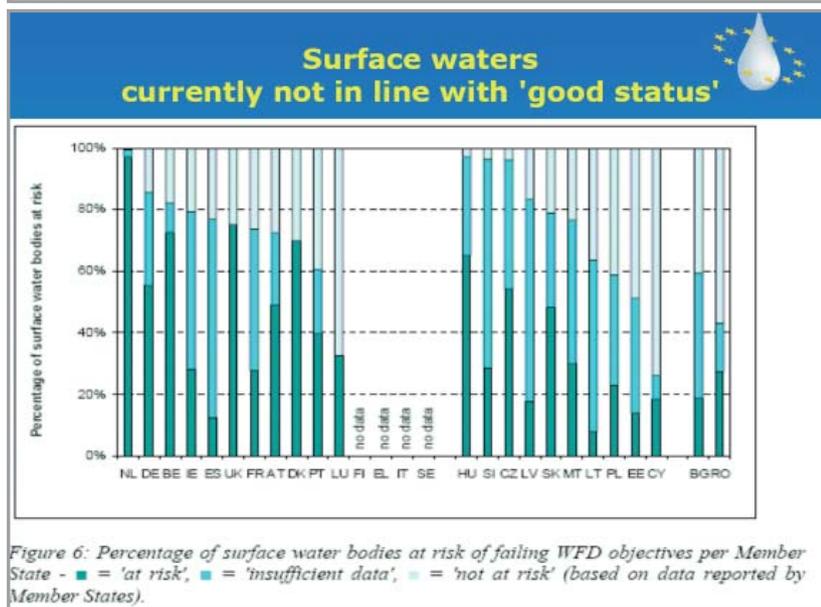
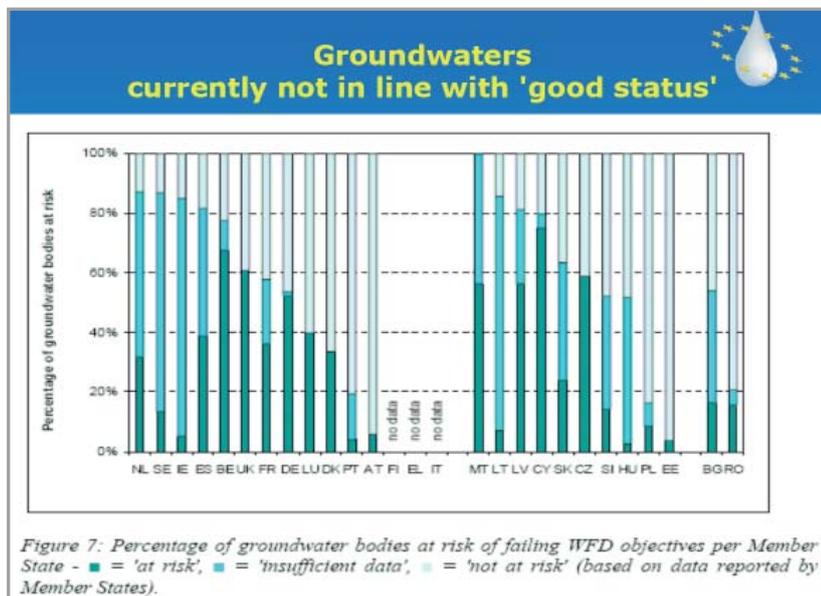
As the graphs show, many ground waters and surface waters in the EU do not meet the required standards. When they improve, the various sources of drinking water should also improve.

The Urban Waste Water Treatment Directive applies to settlement areas of >2000 inhabitants, while smaller settlement areas are covered by the objective of the Water Framework Directive (good quality for all waters, as a rule by 2015').

The Urban Waste Water Treatment Directive contains minimum standards for waste water treatment, but is fully flexible on the means used to achieve the objective, thus open to - and encouraging - innovation and alternative solutions. Alternative solutions to centralised sewerage systems are permitted even in urban areas, if the same level of environmental protection is achieved.

Thus all sorts of solutions can be applied, as long as the results meet the objectives of the Urban Waste water Directive. Consequently, the legislation is open to, and encourages, alternative solutions and innovation as well.

The Drinking Water Directive applies to drinking water supply systems for >50 people or supplying >10 m³ per day. It has health-oriented quality standards: microbiological and chemical parameters. It sets the obligation to regularly monitor drinking water quality and to inform citizens about the quality of their drinking water. But there is no obligation to construct drinking water supply systems. As WECF showed, public fountains providing safe water can be sufficient and prevent a lot of investments in pipes.



There are several EU funding tools, in particular:

- **the Cohesion Fund (for a range of countries including all new Member States)**
- **the European Regional Development Fund (for all countries).**

All measures, from data collection and assessment to involvement of the civil society, planning and construction are eligible. However, it is the responsibility of the countries to choose amongst the eligible measures their priorities and projects. Initiatives have to come from the regions and their capitals: the EU provides a menu, what you order from the EU menu you have to choose yourself.

Also the European Agricultural Fund for Rural Development can be used. Regulation (EC) 1698/2005, article 30 mentions: „Infrastructure related to the development and adaptation of agriculture and forestry. Support provided for in Article 20(b)(v) (= improving and developing infrastructure related to the development and adaptation of agriculture and forestry) may cover notably operations related to access to farm and forest land, land consolidation

and improvement, energy supply and water management.“ There already examples where this fund has been used to improve sanitation in rural areas.

Good governance is not only important, but indispensable for making available instruments work, for the benefit of the people involved and affected; not just from above, but with them.

If more and earlier efforts are to be made to address the challenge of safe sanitation, then better common understanding, changing attitudes by all, and reconsidering priorities and hearts and minds in the countries will be required.

We need to promote good governance by projects like WCEF's „Sustainable Development for All“, as well as this World Water Week seminar. Your involvement and your experience are needed!

Q & A

One participant asked how the European Commission checks the results of projects. Helmut Bloech: Results are controlled, for example waste water treatment plants. If they do not perform, the consequence

can go as far as paying back money to the EU. Gunnar Noren: How to force the treatment of agglomerations of less than 2,000 persons? And how can contributions for waste water treatment for more than 10,000 persons be applied, can this money be used for smaller projects?

Helmut Bloech: The EU Urban Waste Water Directive sets obligations only for settlement areas above 2000 persons, but even there alternative systems can be applied when the same results are achieved.

Of course the financial support systems are limited, it's like sharing a cake – making the choice between having a fifth motorway or upgrading sanitation depends on the amount of capital available. The system is flexible enough. Also, bundling a multitude of smaller project would make project management easier; and allow achieving the minimum threshold for one project to be met. However, the initiative needs to be from the ground up.

Sanitation and government policy – A local, national and European problem

Charles Berkow,

Green Party, Swedish Parliament

The Norwegian writer Henrik Ibsen in 1882 wrote a play on water pollution and public health: “A Public Enemy”.

One line is famous: “You should never wear your best trousers when you go out to fight for truth and freedom.”

This is an area in which work has gone on for a long time. Nowadays dignity and health are hardly a problem of sanitation in Sweden, but the environment still is. Research, development and experiments are going on, for example on the crystallisation of urine for reuse.

Despite the long period of work on sanitation, there are still problems.

For at least 10 years, property owners have been responsible to ensure that their sanitation systems do not cause undue damage to health or the environment. But the Swedish EPA recently estimated that more than 50% of the homes not connected to municipal systems have substandard solutions.

On what level should the authorities deal with this problem – local, national or EU?

Whoever does it, we need:

- **Clear requirements**
- **Measures**

- **Timetables**
- **Competent authority appointed**
- **Adequate funding**
- **System for monitoring**
- **Adequate sanctions**

The Swedish system has these elements in theory, but as 50% of homes not connected to municipal systems have substandard solutions, it is not delivering.

There is a practical aspect, a financial aspect, and a political aspect.

The practical aspect is that each solution needs to be tailored to the construction and location of the building. As property

owners are responsible, how can they find the best solutions and who will encourage them to do so?

Then there are the costs: according to the rules, it is the responsibility of the property owner. But as many are private families and as costs can be high, there is reluctance on the part of the authorities oblige them to get adequate solutions. It is more popular to be able to give grants, but someone has to pay for them too. Who – the local government, the national government or the EU?

Then there is the political problem. Local authorities are responsible for inspections and enforcement, but lack the people to work on it. At the same time, they are allowed to finance inspections by charging property owners a fee, but they don't do it. You don't get popular by making people deal with their sanitation problems. The local authorities could be forced by the regional branches of national government to implement local enforcement, but this does not happen either. Again, there is a lack of political will. Also the regional branches of the national government do not want to do something unpopular.

For local and national politicians, the easiest way out of the dilemma is for the EU to force the national or local authorities to act.

The EU has instruments such as the Nitrate directive, the Water Framework directive, the Marine directive and then monitor national compliance. The EU funding can be used such as with the Structural and Cohesion funds and Rural Development. Should we introduce a cross compliance rule here as well, just as with agriculture?

But there is also reluctance to implement some EU environmental legislation and actions. There is a risk that the Commission will have to force compliance, for example of the Nitrate directive, there have also been problems with compliance on rules regulating issues such as fisheries and air quality.

But it is also dangerous to rely on Brussels. Must Brussels be the "bad guy" so local, and

national politicians can avoid blame? Must Brussels pay, so property owners, national politicians don't have to? Brussels as Bully or Benefactor..

To make Brussels take the hot potato, is an irresponsible abdication of responsibility and contributes to "Brussels disdain". Thus, we should save Brussels for when we need them.

Brussels should not have to take responsibility for local health or environmental impacts of local activities. It does have a role with cross-boundary impacts of local activities.

On a more positive note, there is also opportunity to make something good out of the reuse aspect. We need a holistic perspective on sanitation and use it as a source of nutrients for agriculture. (Do EU regulations promote or prevent this?) Connected problems are solvable, such as the spread of contagious diseases, medicines (break down better in soil?) and other toxins. Waste water systems can be a source of raw materials for energy, and of fermentation for biogas. They could contribute to solutions to climate change. If no one wants to take the hot potato, perhaps someone can seize the opportunity?

Catalysts and obstacles in implementing the right to sanitation in Romania

Adina Florea,

*Head of Water Quality Office,
Directorate for Water Resources Management,
Ministry of Environment and Sustainable
Development, Romania.
Presentation prepared in cooperation with*

Mihaela Vasilescu,

NGO M&S, Romania.

The strengths of the water sector in Romania are:

- an existing national policy for capacity building programme;
- relevant steps are being taken for the reorganisation of water services;
- the experience gained by water operators/local authorities in developing investments projects financed from PHARE, ISPA, SAPARD.

The weaknesses are:

- insufficient waste water treatment and sewerage network compared with other EU countries;

- low access of the population to centralized water and waste water systems;
- low quality of drinking water supply;
- inadequate facilities for sludge treatment;
- inefficient water management structures, especially in smaller towns.

The Romanian legislation is in favour of classical sanitation solutions, not alternative ones:

for example the MoH Order no.536/1997 - Norms of Hygiene, states in Art. 34 "the households that are not connected at the public sewage shall be endowed with pre-treatment facilities or septic tanks ..."
Art. 36 refer at the quality of irrigation water especially for vegetable... "the use of waste water for irrigation purposes is forbidden".

The Art. 39 h refers to the manure: ... "Solid waste coming from the animal husbandry shall be composted".

Household eco-san toilets



Town Hall eco-san toilets 2006



Romania is committed to the Protocol on Water and Health to the 1992 Convention on the Protection and Use of Trans-boundary Watercourses and International Lakes, done in London, on 17 June 1999. General provisions and targets of this Protocol are:

- protection of water resources used as sources of drinking water, treatment of water;
- access to drinking water for everyone;
- provision of sanitation for everyone.

The Sectorial Operational Program for the Environment 2007 – 2013 contains the framework for the projects which are financed by the Structural Fund with 3.27 billion Euro (2,78 of which is an EU grant) allocated to Romania under Priority Axis 1 of the SOP Environment for 2007-2013, approved by the Commission in July 2007.

Under the SAPARD Programme falls Rural Infrastructure Development and Rehabilitation (measure 2.1 in NARDP) with a total value of 512 million Euro. 854 projects have been selected, mainly drinking water systems construction and modernisation, sewerage systems and construction of waste water treatment plants.

Additional investments in the Water sector from other sources are the National Rural Development Programme co financed by the EU, in the period 2007-2013 and the Governmental Programme for development of infrastructure in the rural area in the period 2006-2009. Foreign loans or various forms of PPP are also solutions in some of the urban agglomerations. Important investments in water sector infrastructure are planned beyond 2013, aiming to achieve full compliance with the EU acquis.

The provision of drinking water is affecting quality of life in rural areas where only 33% of the rural inhabitants have access to the public water network. The public sewerage network is still incipient in rural areas: at the end of 2005, 373 communes (10% of the rural population) had a sewerage network.

Global Water Partnership has initiated the Project SUSTAINABLE SANITATION 2005 – 2007, applying the Concept of “Sustainable Sanitation” defined as: “sanitation that protects and promotes human health, does not contribute to environmental degradation or depletion of the resource

base, is technically and institutionally appropriate, economically viable and socially acceptable”. (This definition has been agreed by the German agency for development aid GTZ and EcoSanRes.) NGO initiatives started in 2003 with projects on decentralized solutions. Now “eco-sanitation” projects are developing in 3 regions in Romania: Mehedinti, Teleorman and Ialomitia, by WECF in cooperation with local NGO partners. They built toilets at schools, at the town hall and at individual homes. The slides show some examples.

Aspects that need to be further discussed and promoted are:

- The development of the legal framework for alternative sanitation solutions, both at the European and national level;
- Strengthening the cooperation between governmental institutions and civil society (local communities and NGO's targeting environmental and health protection), in order to implement sustainable solutions for water and sanitation in rural areas.

Q & A

Friedrich Barth: I see a lot of money, where is the real problem, what is blocking progress?

Adina Florea: The Cohesion money is for large locations, not for small areas. Perhaps rural development money could be used for small rural areas. But I do not work in the office for structural funds.

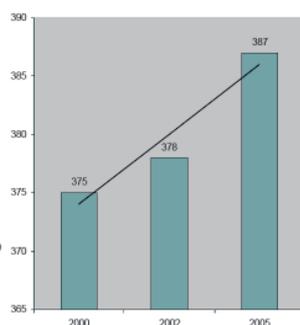
Sascha Gabizon: I understand thousands of communities still need proper sanitation. But in the period 2000 – 2005 12 communities were connected. Will this be speeded up?

Adina Florea: This depends on capacity building and project management.

Access to sanitation

- **Rural Population**
 - with water connection: 15.1%
 - with sewage connection: 12.9%
- **Romania: 2,686 Commune and 15,700 rural localities**
 - **Rural localities with public sewage: see the graph**
- **Rural areas - no organized services to transport solid waste to the 2,686 dump sites.**

Source: Statistical year Book 2006



Demonstrating affordable decentralized sanitation, waste water and nutrient re-use in rural Bulgaria

Diana Iskрева,
*Director, Earth Forever Foundation,
Bulgaria*

Our organisation has been working on sanitation since 1998. We have centralized water supply in 96% of the villages in Bulgaria. There is no sewer, or other working mechanism for adequate wastewater management in 98% of the villages. With the introduction of more high-tech household facilities, such as dishwashers, more waste water is produced. 50% of the villages have no solid waste collection, which causes a problem as the volume of non-degradable household waste is constantly increasing, for example with the large increase in packaging.

A significant part of the population lives in rural areas, with pit latrines that are never emptied. But even in the centre of Sofia bad sanitation situations can be observed. Since January 2000 a Water Act was enforced in Bulgaria which forbids the operation of soakaways. But septic tanks that function according to the rules are very rare. Emptying a septic tank costs the equivalent of a pensioner's monthly income. People discharge it into their garden or their neighbour's garden, on the street or in a nearby gully. In 2.1% of the villages, there is a sewer, but none of them have any treatment facility. Solid waste from households or construction waste is often dumped into the nearby river.

Often water from wells in the rural yards is too polluted to drink, because of high nitrate levels; luckily people are centrally supplied with tap water of reasonable drinking quality. Raw wastewater is often discharged in the river and used downstream for irrigation or swimming.

The traditional reuse of organic waste was hindered by a lack of knowledge about effective and safe composting.

This background motivated our organisation to start working on sanitising human and organic waste, wastewater treatment, and reuse of the products in the garden.

We introduced sustainable sanitation in rural areas in Bulgaria. We built Ecosan Systems consisting of UDD toilets with faeces and urine collected in plastic containers for easier and safer treatment, as well as waterless urinals. We built soil filters for wastewater treatment and subterranean irrigation to reuse the reclaimed and treated wastewater.

Treating and reusing greywater in the garden is easy and not expensive with a vertical flow soil filter. The Ecosan toilet products are sanitised by composting and vermicomposting. The products are re-used in the garden and also in vineyards. The tomatoes grow faster on urine and ripen earlier, which is an advantage as the growing season is short. Soil fertility improves, enabling more efficient agriculture. It is very important to educate and involve the children as they have not yet formed their habits.

Q&A

Dumitru Drumea: We did a feasibility study with GWP for Ecosan in Moldavia.

How can you reduce the urban pollution?

Diana Iskрева: Local governments need to enforce the regulation, talk to the local population and train people to make compost.

Participant: Is your work supported and appreciated by your government?

Diana Iskрева: It is appreciated but not



supported. Ministries participated in meetings but do not contribute financially for implementation projects. They do not yet understand that they have to support their own civil society, rather than foreign donors.

Roy Edwards, UK: Is the government involved in community education?

Diana Iskрева: We try to work with the majors. But we had a project where a public toilet was constructed, and the major did not want to ask money for using it, so there was no money for cleaning it.

The market for onsite sustainable sanitation technologies – an example from Sweden

Mats Johansson,
VERNA Ecology Consultancy, Sweden

Swedish people move into old houses in the countryside, or build new houses outside the urban area, and most people want a water closet. Up until now, they just tolerate a dry toilet in their summer house.

There are approximately 850 000 onsite systems in Sweden, 50% in permanent houses and 50% in summer houses. 1/3 has no treatment or only septic tanks: 250-300 000 systems. 1/3 has poor treatment and needs improvement. Only 1/3 is probably okay, working with traditional techniques as soil filters or soil infiltration.

The consequences of poor onsite sanitation are pollution of groundwater, eutrophication – for example algal bloom in the Baltic Sea more or less every summer – and no reuse of nutrients. Sweden has an Environmental Code which says that we should recycle nutrients, and there is a National Environmental Target to

recycle 60% of the Phosphorus in waste water. There are New Swedish EPA guidelines (2006) and an onsite sanitation manual (2008) which present a range of technologies to satisfy demands on levels of reduction of nutrients and BOD from wastewater systems.

The New Swedish EPA guidelines require in normal situations 70 % reduction of P and reuse if possible. In high risk areas they require 90% reduction of P, 50% reduction of N and reuse if possible. Most onsite systems need improvement to meet these requirements and traditional techniques will not be sufficient.

There is a large potential market for:

- **Manufacturing / selling products – toilets, pipes, treatment plants etc.**
- **Consultants/experts**
- **Installation and construction**
- **Operation & Maintenance**
- **Monitoring**
- **Handling of wastewater fractions and reuse**

The potential market for installation and construction to improve 250 000 systems according to high standards in 20 years, is approximately €100 million per year. The market for the other niches - O&M, Monitoring, Consulting and Reuse of wastewater fractions is approximately € 25-75 million per year. Waste water smells of money!

Key questions are:

- **How do we transform national environmental policy to measures at the local level?**
- **What kind of systems do we want to promote?**

A manual might help to answer these questions. Do we promote hi-tech solutions such as package treatment plants, where the sludge goes to the municipal treatment plant without reuse? Or do we promote a closed loop with urine-diverting toilets or similar, reusing the urine in agriculture?

Key points are:

- **Close the nutrient loop as a way to reduce water pollution and achieve sustainable nutrient management;**
- **Make a national strategy to open the market, which includes:**



- **Legislation; Sweden has enabling legislation but needs compliance.**
- **Communication; Sweden has a website for the public and a network for municipalities.**
- **Competence / capacity building; support local infrastructure and organisational capacity, organise courses for entrepreneurs.**
- **“Carrots” – for households AND for decision makers.**

Q&A

Margriet Samwel: How is the 60% reuse of Phosphorus specified in the new environmental code?

Mats Johansson: It is not specified. It is a national target, and it is up to the regions and municipalities to set local targets that will fulfil this target. A few municipalities have taken up the idea of reusing nutrients on farmland, but very few have assimilated this goal in local targets or guidelines.

Milan Matuska: Is the Swedish guideline for onsite sanitation in line with EU legislation? Mats Johansson: according to the European Commission it is okay.

Mr Jonas Christensen, environmental legal expert, Sweden: the Swedish environmental goals are not in contradiction with the EU law. On reuse they are better than the EU legislation, but they are not in contradiction with EU law.

Consequences of poor onsite sanitation

- **Pollution of groundwater**
- **Eutrophication**
- **No reuse of nutrients**



Panel discussion

Sascha Gabizon: I'd like to hear from our panel which concrete steps we can take.

Helmut Bloech: This afternoon confirmed that we do have a problem. Just a short comment on the presentation about Sweden - If the figures about 300.000 households in Sweden with untreated waste water are correct, it is almost a scandal. On a wider scale across Europe, it seems that there is frequently a lack of capacity to absorb funding. We should do something to address the governance issue. The current guide on small scale sanitation produced by the European Commission deserves an upgrade, addressing individual sanitation solutions as addressed in the successful WCEF project.

We should connect the knowledge we have here to the people in the field, in their own language. With local officers, involving funding agencies and trying to multiply the use of the funds for these problems. Such an event, by the middle of next year, could also well complement the ongoing development of the plans and programmes under the Water Framework Directive. At the same time, such an event should promote the broader use of funding instruments (What can be funded?) whilst involving the national environmental and health authorities and the local people.

Stanislav Doktor, Assistant Director of Local Development Division, Association of Towns and Municipalities of Slovakia (ATMS): in Slovakia we have a problem with the sanitation for communities smaller than 2000 inhabitants. 57% of the inhabitants of Slovakia have access to central sanitation systems. This number represents citizens of all 138 towns and plus up to a hundred and fifty communities with more than 2000 inhabitants mainly. For the rest of the Slovak citizens, the big majority of settlements do not have access to some form of sustainable

sanitation systems. They use sink-holes and catch drains which are not in good technical conditions and associated with this is the issue of surface- and groundwater pollution.

Thus today, the EU priorities for sanitation actually preclude the successful solution of the sanitation needs of 86 % of settlements in Slovakia at least till 2015! In numbers, 2338 communities (villages) out of 2929 (towns and communities) will not have access to safe sanitation far beyond 2015, if today's policies will be applied. This 86% of settlements represents almost 90% of the total territory of Slovakia.

It is as if our government and ministry are behind a big wall, but we cannot solve this problem completely without them. So we have to try to find some door in that wall and negotiate. Our advantage is that our association represents 95% of the municipalities, and the government cannot ignore our opinions. On the other hand we try to solve this problem also in our own way. We work with several partners (for example GWP) to solve this problem.

We do national research on water resources management at the local level via questionnaires, development and application of a new methodology and theoretical – expert approach. We organise expert group meetings and stakeholders meetings, and created the new policy document of our association "Principles of Integrated Water Resources Management in Municipalities and their River Basins". We are also organizing special seminars for mayors mostly from villages with less than 2000 inhabitants to tell them how to solve this problem with sanitation and show them sustainable solutions. In the near future we want to create pilot projects in several appropriate municipalities, together with our partners (GWP and another experts). We need a bottom up approach to convince the government.

Galia Bardarska, Assistant Professor, Bulgarian Academy of Sciences, Sofia:

First, the European Commission should establish an innovative programme, thinking from the source till the end. For example, Chlorine with Nitrite together create a toxic compound of Chlorine picrine which has even been used as a war gas. Second, we need a European water innovation program, comparable to the programs on energy.

Third, experts for waste water treatment plants should from the beginning be involved in the planning and also in the management. Figures presented by French students for the first WWTP, done by ISPA Fund in Gorna Oryahovitz town in Bulgaria, showed that real management and amortization expenses wouldn't be covered by customers without any subsidies. The plant is oversized and inefficient at the moment. At national level, already 6 % of a poor person's income goes to the cost of drinking water; paying for waste water treatment would cost even more and thus be impossible. Most likely some wastewater treatment plants will have problems as the operating, maintenance and amortization costs cannot be paid, and they will be monuments of how EU funds have been wasted. For EU Member States with a relatively low GDP, there is a need to investigate options for efficient, low-cost wastewater technologies.

Friedrich Barth, Chair, European Water Partnership:

20 million people without safe sanitation is a big scandal. The political class in Brussels should acknowledge this – and not merely by halving it by 2015, but by completely solving it. There is not enough political will, especially at the local and regional level. Our organisation is ready to help and I congratulate WCEF on their concrete projects. The role of the EU: a lot of approaches in these matters were developed by the EU 15, for the EU 15 – let's see if they are really

appropriate. There is a need for help from Brussels, and I am happy that Helmut Bloech wants to do something. We also have a problem of mindset talking about "waste"-water: in fact it is very valuable with water and nutrients in it. There is a market, for example looking at farmers who have to buy fertilisers. The EU guide from 2000 should be reworked including several local decentralised solutions – it does help especially as this has a stamp from the EU. Helmut's proposal for local seminars in Bulgaria and Romania and bringing all open loops together is excellent. The EU needs to support the NGO's much better in their excellent work.

Ralf Otterpohl, Professor, Hamburg University of Technology, Germany:

These issues should be included in university education. Now they learn mainly about big treatment plants. Even a few hours about innovative dry sanitation would be very helpful and simple to do. The "20 million" is an open wound, there should be first aid. This can be done very simple: a pit latrine used without urine and water is already a big improvement, reusing the urine. This is a self promoting system. Promotion would mainly require a well done and very simple leaflet with facts and instructions. More solid solutions can come afterwards. There are also opportunities for the local economy, applying complementary currencies for exchanging services between people who have little hard currency.

For even faster progress in innovation we need to develop a very good dry urine-diverting toilet, and the EU should provide some funding to help initiating this development.

In all cases good cost-benefit analysis should be done, with dynamic cost comparison, including investments as well as management costs.

We should be aware that construction companies sometimes like big constructions, for example connecting just 200 houses with many kilometres of pipelines, even if they are absolutely not economically justifiable. Corruption can also play a role here.

Duncan Mara, Professor, University of Leeds, UK: To improve rural sanitation in Eastern European member states there may be very good reasons to apply Eco-san, but not only one solution should be promoted. The current application of conventional sewerage in towns is also worrying as large costs are involved. Often either simplified sewerage or settled (solids free) sewerage can be advantageously used as the costs are much lower but the level of service provision is the same. Settled sewerage is especially appropriate (and costs are even lower) in areas served by septic tanks as the sewer just takes away the liquid effluent from the septic tanks. However, local technical knowledge is usually very limited and we should get the knowledge on these low-cost sewerage systems to the local people in their own language.

Arno Rosemarin, Stockholm Environment Institute, Sweden: I would like to turn up the heat a bit in this debate. The 20 million are probably 2 or 3 times more, as in many cases in Western Europe there is inadequate treatment or no treatment at all.

Margot Wallström some 10 years ago tried to expose this issue within the EU when she was Environment Commissioner at a "name-and-shame" seminar in Brussels. But the lack of proper sewage treatment in southern European cities and aging cities in the north has never become a major issue. Cities have been reprimanded in EU courts to make amends but little action has occurred. The media, the public and our politicians have not made this an issue, and useful data on the sanitation sector is impossible to find in the EC. Of the major cities in Western Europe only about 80 have advanced treatment facilities - mainly in the north. Many countries in Europe lag behind in wastewater treatment with coverage in Belgium and Portugal at 40%, and Greece, Italy and Poland running at 60%.

Brussels only began treating all its sewage in 2006 while Athens got its first modern STP when they held the Olympics in 2004 after having built an offshore island (not well known in Greece). Milan, after 40 years of discussion, got their plants in 2006.

London's sewage collector system, built in the mid-1800s for 3 to 4 million people, is grossly under-dimensioned, so raw sewage is bypassed into the Thames River every time there are heavy rains. This only became an issue when the UK Olympic rowing team all became sick paddling on the Thames. A 2.5 billion (Euros) pipe system is now being planned for London. This should be one of many loud alarm clocks for our aging cities. Finally, we should stop buying bottled water and ask for water from the water services. We should also begin reusing the nutrients from our sanitation systems to reduce the price of food.

Mr Spivakovsky from Ukraine: how do you ensure compliance?

Duncan Mara: The quality of the effluent required under the Urban Waste water Directive can easily be achieved with a single facultative pond. Why would we want to do more than this for small communities?

Helmut Bloech: Referring to Mr Rosemarin's comments that little action has occurred, let's look at the European Commission report published last year: A lot has been achieved, with a compliance rate of more than 80%, but there are also deplorable delays. It is one of the priorities of the European Commission to enforce environmental obligations taken, and a range of judgments by the European Court of Justice speak a clear language. As for smaller settlements, there is no emission-oriented legislation, just the water needs to be clean, a clear and binding objective under the Water Framework Directive. This is also striking a reasonable balance in terms of regulation. There is enough expertise, there are enough experts in all countries; what we need to do is to better mobilise this potential.

Sascha Gabizon: What is the compliance in Romania, is a septic tank obligatory ?

Mihaela Vasilescu, NGO M&S, Romania: After 18 years of work, we are still in a pilot phase as up scaling is very difficult. Of the 15,700 locations, 375 were connected in 2000 and in 5 years 12 more were added.

Thus there will be no significant improvement at the end of my life. The new member states are still in a transition phase. They adopt the 'acquis' but various ministries are involved. The interpretation of the legislation at the local level is a problem: people are afraid to do something when they say that using waste water is dangerous. We need more cooperation and coaching from more experienced countries and the European Commission.

Sascha Gabizon: So it sounds like Helmut Bloech's proposal is very useful.

Milan Matuska: The methodology should be close to the people. You can find this in our book. We organised a seminar with mayors who replied positively to our offer for help, also with an expert group.

Yuyun Yunia Ismawati, Bali Fokus, Indonesia: We want to learn from the EU. We are amazed about the 20 million. We have 100 million in Indonesia. We work hard with the government, with ups and downs. In 2003 we started a project with BORDA, Bremen, Germany, on community based sanitation for the poor. Now we have 250 community projects. Funding comes from the local and the national government as well as from the community itself. We have several options such as on site and decentralised. The consultants coming to Indonesia usually offer traditional solutions.

Sascha Gabizon: This is very interesting, we can probably publish your experiences on our website.

Duncan Mara: Your point that we need a range of solutions is very true, as well as so-called experts coming with traditional solutions. Low-cost sewerage and low-cost wastewater treatment solutions are likely to be more appropriate. We need a two level strategy: to cope with the dinosaur ministries NGO's need support from the EU, with high level representatives from the Commission and the Parliament to talk to the national governments; and at the local level we need to transfer knowledge.

Helmut Bloech: We should not strive for 12 projects in 5 years, but how can we get 500 villages in the next 5 years as described by WECF and will we have chance of success? For the foreseeable future there will not be more EU money, so how to make the best use of the available money? At the meetings e.g. in Romania and Bulgaria we can discuss possible solutions. In updating the current publication on small-scale wastewater solutions, we should not produce another booklet on constructed wetlands but focus on on-site sanitation for which we have seen remarkable solutions this afternoon.

Anja Bruell, Germany: We are working on alternative onsite wastewater solutions, e.g. to produce energy, but Berlin has the obligation for households to get connected to the central sewerage system. The EU should ask the member states to provide more flexibility.

Elisabeth Kvarnström, Sweden: EU legislation is not allowing the use of urine for organic farming. What can be done to promote urine application in agriculture?

Participant from Canada: The university courses are an important point. The flushing systems cause 80% of the volume to be treated in waste water treatment plants. We need alternative waste water collection.

Dumitru Drumea: Moldavia is on the border of the EU. We need to work closely with the EU on sustainable sanitation practices.

Maurice Blumen: In Serbia and Bosnia there are Roma minorities who live in terrible sanitation conditions, these communities should also not be forgotten.

Helmut Bloech: From 1-1-2009 on we will have new legislation on organic farming in the EU. On the use of urine, there are of course conflicting interests: organic farming aims at minimising external inputs, and letting soil and crop provide the basis.

At the same time, using collected urine in agriculture can be a sustainable use of nutrients. Sharing knowledge and financial support for neighbouring countries outside the EU is possible. When the events in Romania and Bulgaria deliver results, we can share this with our neighbouring countries.

Concluding remarks by the chairs:

Björn Guterstamm: The organisation of Stanislav Doktor, Slovak Association of Towns and Municipalities, is a key stakeholder to become involved. The mindset for the reuse of urine has to be addressed. The resource aspect of waste water is very important.

Sascha Gabizon: Everyone's input into this seminar was very valuable, thank you very much. We are very happy with the proposals for follow-up from Helmut Bloech. Please help us and join an expert group which can give input for the updating and broadening of the EU guide.



His Royal Highness the Prince of Orange, joined the session „Europe's Sanitation Problem“

Excursion: two projects on sustainable sanitation in Stockholm

After the seminar, a group consisting of 46 persons including the organizers was invited by WECF to participate in a study visit to two sites in the Stockholm area.

The first stop was Understenshöjden, where Mr Nils Söderlund who lives in the area hosted us. Understenshöjden is an ecovillage in a suburb of Stockholm where inhabitants participated in the planning and construction of 44 houses. The sanitation system is modern, with double flush urine diverting toilets. Urine is collected in two 40 m² tanks that are emptied twice yearly on call by the housing organization.

Faeces and grey water are currently not treated locally; however, the system was designed for this. Instead, by a connection to the municipal wastewater treatment, these fractions are treated in Stockholm's large scale wastewater treatment. Nils told us that the inhabitants of Understenshöjden have invested a lot of time and energy in the development of this system, they are pioneers and very few such systems existed in Sweden at the time of construction (1994-1996). The urine from Understenshöjden is taken to a farm south of Stockholm, where it is used for production of grain, replacing mineral fertilizer.

Participants at Understenshöjden.



Questions raised by the group at the visit were related to the cost for the inhabitants, how they perceived the system, and if there were any problems with smell. Nils told us that they pay for the collection of urine, but that they also get a small reduction in their water tariff.

However, this reduction does not equal the costs, and especially if you count the work involved, the inhabitants are paying more than their next door neighbors to have a system that is more environmentally friendly. Smell has been a problem in the beginning but could be successfully solved by improving the installations.



The double flushing urine diverting toilet Dubletten at Understenshöjden. This model has largely been replaced with the more modern Gustafsberg toilet.

Stefan Deegener inspecting the faecal compost at Gebers, hygienised according to WHO guidelines for more than two years.

The second stop was Gebers, where Mr. Nicholas Hort and Mrs Onya Dowling received us. Gebers is a two-story apartment building that was rebuilt in 1994-1996. It used to be a nursing home and relocation house, and when the current team took over, the house was retrofitted with new infrastructure such as walls, heating system, water and wastewater system. This has been a major challenge. The sanitation system is dry faecal collection with separate urine collection.

The urine is flushed with a minimal amount of water. See pictures below. Faeces drop down in a chute to individual containers for each apartment in the basement. A faecal compost site ensures safe treatment according to WHO guidelines on site. This involves some work for the inhabitants since they carry the faecal containers to the compost site ranging from once a month to twice a year. The urine from Gebers is taken to the same farm as the urine from Understenshöjden.

Questions raised at the visit were related to flies, smell and how the inhabitants perceived the system. There were numerous other direct questions also. Flies have been a problem. The system is ventilated, but when too much liquid enters the faecal container, flies are inevitable. The measure taken by the inhabitants is to immediately take out the faecal container to the compost, clean it and replace the empty container.

This has proved efficient, there is no use of ash, sawdust or other desiccants. The inhabitants are very committed to this system and are prepared to carry out the extra work that it entails. This is an ecovillage, with a high environmental profile, quite special in the Swedish context.

Dinner was offered in the dining hall of Gebers, a welcome treat to hungry participants. Discussions continued during dinner, and in the bus on the way home.

All in all, it was a successful trip with interesting examples of urine diverting systems in a modern setting.



WECF

Europe's Sanitation Problem

Sustainable, Affordable and Safe Sanitation for citizens in the European Union – impossible?

Discussion Paper WECF

Women in Europe for a Common Future

The following document has been elaborated by a group of experts, based on a seminar on sustainable sanitation in the EU in Brussels on 29th January 2008. The purpose of the document is to point out problems relating to sustainable, safe and affordable sanitation in Europe, as well as posing a number of questions for debate. The document will be spread in preparation for, and used at a seminar during the World Water Week in Stockholm August 19, 2008 entitled "Europe's Sanitation Problem" organised by WECF in collaboration with *Global Water Partnership CEE, Coalition Clean Baltic, Earth Forever Bulgaria, Euroteleorman Romania, Creative Slovakia* and *TUHH Germany*.



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1. Lack of data on access to safe sanitation

According to an assessment carried out by the organisers of the seminar, 20-30 million European citizens lack access to safe sanitation. Many people have only access to pit latrines, soak-ways or non-functioning flush toilets and sewage systems, sometimes the only option is open defecation. If the EU would aim to reach the Millennium Development Goal on Environment (MDG-7) within its own borders, – namely halving the amount of persons who do not have access to safe sanitation by 2015 compared to 2000 –, then it would need to install circa 1000 toilets per day. Rural areas in some of the 12 new European Member states show worrying examples of methemaglobinemia (blue baby disease), hepatitis-A and other diseases caused by a lack of hygiene as well as pollution of groundwater and surfacewater by animal dung and human excreta. However, knowledge and data about this precarious health and hygiene situation is not widely available.

Q: How can we collect and present data on households, schools, medical points and other public institutions in the EU that do currently not have access to safe hygienic sanitation?

Q: Are Water Safety Plans a methodology to be applied?

2. Closing the loop as a way towards sustainable sanitation

The principles of sustainable sanitation include the key aspect of closing the loop. One way to achieve the recycling of nutrients from sanitation systems

to agricultural land is to use sewage sludge and treated effluents from wastewater treatment plants as fertilisers, which is common practice in many EU countries. However, in conventional wastewater treatment, all wastewater sources are mixed i.e. recyclable fertilisers together with toxic chemicals. In countries such as Sweden, Germany and the Netherlands water agencies are testing source separating toilets as a way of improving quality of the sewage sludge and surface water.

Whereas some member states are testing these new wastewater and sanitation systems, a large share of EU funds goes to construction of conventional waste water treatment plants. Examples of oversized, inefficient and costly waste-water plants in Latvia, Poland, Bulgaria and Romania are worrying, not only because of their inefficiency, but also because they do not address improved sanitation for rural areas and for those populations who are currently most in need. In particular, settlements with a population lower than 2000 are not covered by the EC Urban Wastewater Treatment Directive 91/271/. Another method for closing the loop is to construct decentralised systems for single households or small settlements designed to collect separated wastewater fractions such as urine, faeces, blackwater and greywater. These products are valuable resources in agriculture as fertiliser and for irrigation. The nutrients from 30 persons are sufficient to fertilise one hectare of agricultural land. If all 20 million Europeans who lack adequate sanitation today, were provided with source separating systems collecting urine and faeces, more

than 600 000 hectares could be fertilised. With rising prices for agricultural products, fertilisers of this type will be more and more in demand. Of particular significance is the recovery and reuse of phosphorous (P), a non-renewable resource. Sweden has a national goal to recycle 60% of P in wastewater, and half of this to arable land. This is a good example of a national policy on reuse of nutrients.

In addition to nutrient recovery, sustainable sanitation technologies support water-saving by applying low-flush or even zero-flush toilets and reuse of greywater. Separation systems which prevent pollution at source, thus allowing low-cost treatment for reuse in agriculture, and are of special interest to Member States affected by water scarcity and/or high nutrient loads in surface waters.

Sustainable sanitation technologies exist in a wide range, from low to high tech. The low tech solutions are available at low cost, and therefore affordable also in low-income rural areas of new Member States. The WHO has issued guidelines for the safe reuse of human excreta in agriculture that are applicable on a global level, and should be the basis for European wide guidelines.

Q: How can targets, policies and guidelines be developed for planning and implementation of sustainable and affordable wastewater and sanitation infrastructure in the European Union?

Q: How can existing European funds such as rural development funds and cohesion funds be used to promote safe, affordable and sustainable sanitation methods in the EU?

Q: Can the WHO guidelines on safe reuse of excreta and waste water be transposed into EU regulation?

3. Policy framework for sustainable sanitation systems

There is a lack of policy and regulation supporting the development of decentralised, sustainable, affordable and safe sanitation systems. Two

examples are presented below: Solid research and implementation has shown that urine is a quick-acting fertiliser. Research in Sweden shows that compared to mineral fertiliser, urine is the superior option.

The cadmium levels in urine are up to ten times lower than in mineral fertilisers. The first step required towards reuse of wastewater nutrients is to promote its use in conventional farming. Unfortunately in Germany and other EU member states, urine is not certified as fertiliser, and thus not applicable in agriculture other than with exceptional approval. Safe reuse of urine in agriculture and gardening could contribute to poverty reduction and increased food production within the EU.

Many organic farmers are interested in access to nutrient rich fertilisers from source separating toilet systems. This is not allowed according to EU Council regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products.

Another example from Romania shows that dry sanitation systems need to be located at least 10 metres from the a private home or a public building. At the same time modern affordable decentralised sanitation systems exist which can be safely used near home or even indoors. Toilets located far from home are a burden for women, children and elderly persons in climates with cold winters.

Q: To what extent are present EC directives a barrier to the reuse of nutrients from wastewater and source separated excreta in agriculture?

Q: How can national legislation be adjusted to allow for the development of new technologies decentralised, sustainable sanitation systems?

4. Market potential for entrepreneurs and construction in the sanitation sector

There is a large market potential for entrepreneurs in the sanitation sector, which would stimulate business opportunities and rural development. 1000 toilets per day until 2015 constitutes a substantial economic volume. Entrepreneurship includes construction, handling of excreta, recirculation and reuse. Agricultural companies are potential entrepreneurs in this sector, as well as sanitation experts, installation and construction experts. Innovative, sustainable sanitation systems need to be promoted and incentives need to be created in the same way as is being done for renewable energy systems.

Q: How can market introduction of innovative, resource-efficient sanitation and wastewater technologies be promoted?

Q: What steps need to be taken to ensure high quality implementation of sustainable sanitation systems, independent evaluation of technologies and support to consumers?



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Invitation to WECF Seminar, World Water Week, Stockholm, 19 August 2008

Europe's Sanitation Problem

20 million Europeans need access to Safe and Affordable Sanitation

The seminar focuses on the question if with current policies and practices providing safe sanitation for all citizens of the European Union is impossible, and if so, what should be done.



Seminar World Water Week

Date: 19 August 2008
Time: 13:30 – 17:00
Followed by an excursion till 20:30
Address: World Water Week
Mässvägen 1, 125 80 Älvsjö/Stockholm
Location: Room T6, Stockholmsmässan
Stockholm International Fairs and Congress Center

International Year of Sanitation 2008

2008 was proclaimed the International Year of Sanitation by the United Nations UNSGAB. At the Johannesburg Sustainable Development Summit in 2002, heads of States committed to reduce the number of people without access to sanitation by half till 2015, adding this target to the existing water target of the Millennium Development Goal number 7. Many EU governments see this as a focus for their international cooperation agreements. However, even within the European Union an estimated 20 to 30 million people do not have access to safe sanitation, and little action has so far been undertaken to address this problem.

Debate about Europe's Sanitation Challenge

The seminar will include a number of key presentations by representatives from the European Commission, the European Parliament, Member State Governments of Romania and Bulgaria, and representatives of Export Agencies, Science and Local and Regional Authorities, followed by a debate focussing on 6 key questions, which have been formulated in a "discussion paper", see www.wecf.eu/calendar/2008/stockholm_calendar.php

The debate will look at questions such as:

- Do we have reliable data on households, schools, medical points and other public institutions in the EU that do currently not have access to safe hygienic sanitation? If not, how should this be obtained?
- How can targets, policies and guidelines be developed for planning and implementation of sustainable and affordable wastewater and sanitation infrastructure?
- How can existing European funds such as rural development funds and cohesion funds be used to promote safe, affordable and sustainable sanitation methods in the EU?
- To what extent are present EC directives a barrier to the reuse of nutrients from wastewater and source separated excreta in agriculture?
- How can national legislation be adjusted to allow for the development of new technologies decentralised, sustainable sanitation systems?
- How can market introduction of innovative, resource-efficient sanitation and wastewater technologies be promoted?
- What steps need to be taken to insure high quality implementation of sustainable sanitation systems, independent evaluation of technologies and support to consumers?

Organised by

- Women in Europe for a Common Future, WECF
- Global Water Partnership Central and Eastern Europe, GWP
- Earth Forever Foundation, Bulgaria
- EuroTeleorman, Romania
- Clean Coalition Baltic, Sweden
- Creative NGO, Slovakia
- Hamburg University of Technology

WECF receives support from the Dutch Ministry of Foreign Affairs, the European Commission and Fondation Ensemble, France



Website Stockholm World Water Week
www.worldwaterweek.org/Downloads/Overview.pdf

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Invitation to WECF Seminar 19 August 2008

Europe's Sanitation Problem

20 million Europeans need access to Safe and Affordable Sanitation

Seminar, World Water Week, Stockholm, 19 August 2008

Programme

- 13:30 – 13:45 The International Year of Sanitation
Opening by the organisers
- 13:45 – 13:50 Film on sanitation conditions in Eastern Europe (5 min)
"Access to Safe Sanitation, a Right for All"
- 13:50 – 14:00 Europe's problem: more than 20 million people need safe and affordable sanitation:
an Action Plan is needed.
Sascha Gabizon, Executive Director, WECF
- 14:00 – 14:15 EU policy and operational programmes in new member states:
can the EU help to solve sanitation problems?
Helmut Bloech, Deputy Head of Unit Water and Marine Protection, DG Environment, European Commission
- 14:15 – 14:30 Sanitation and Government policy – A local, national and european problem
Charles Berkow, Political Secretary of the Swedish Parliament/Riksdag, the Green Party, Sweden
- 14:30 – 14:45 Catalysts and obstacles in implementing the right to sanitation in Romania
*Adina Florea, Head of Water Quality Office, Directorate for Water Resources Management,
Ministry of Environment and Sustainable Development, Romania*
- 14:45 – 15:00 Demonstrating affordable decentralized sanitation, waste water and nutrient re-use in rural Bulgaria.
Diana Iskreva, Director, Earth Forever Foundation, Bulgaria
- 15:00 – 15:15 Coffee Break
- 15:15 – 15:30 The market for sustainable sanitation technologies
Mats Johansson, Consultant, VERNA, Sweden
- 15:30 – 16:45 Panel discussion, with comments and questions from the participants
Including MEP, representatives of authorities, universities, business and civil society:

• *Stanislav Doctor, Assistant Director of Local Development Division,
Association of Towns and Municipalities of Slovakia (ATMS)*
• *Helmut Bloech, Deputy Head of Unit Water and Marine, DG Environment, European Commission*
• *Friedrich Barth, Chair, European Water Partnership*
• *Duncan Mara, Professor, University of Leeds, UK*
• *Ralf Otterpohl, Professor, Hamburg University of Technology, Germany*
• *Arno Rosmarin, Stockholm Environment Institute, Sweden*
• *Galia Bardarska, Ass. Professor, Bulgarian Academy of Sciences, Sofia*
- 16:45 – 17:00 Conclusions and the way forward
- 17:00 – 20:00 Excursion for seminar participants to two projects on sustainable sanitation in Stockholm (optional)
- 20:00 – open end Dinner and drinks (optional)



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