



TECHNEAU

Workshop

“Decentralised Water Supply: International Networks and Techneau Activities”

*Minutes from the 2nd Workshop of
Techneau 3S Task Force
“Small Scale Systems”
Tabor (CZ) June 5th, 2008*

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*Report within WP2.5: Compact Units
for Decentralised Water Supply.*



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Title

Workshop on “Decentralised water supply: International networks and Techneau activities”
Minutes from the 2nd Workshop of Techneau 3S Task Force “Small Scale Systems”

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1 Introduction

In order to enhance an effective integration and planning of the activities related to small-scale systems and decentralised water supply and to foster the positioning of Techneau within the global picture, the Berlin Centre of Competence for Water (KWB) funded the “Small-scale system” Task Force in 2007. It has since grown to a 80 member – network, including, among others, representatives from Techneau, WHO and the IWA group “Small-scale water and wastewater treatment”.

The 3S Task Force plans to meet on a yearly basis. Hence, a 1st workshop was organised in September 2007 in Berlin (DE), setting the global picture and assessing the relevance of the membrane technology for small water supply (for more information, read the TECHNEAU report D2.5.4, 2007, available on www.techneau.eu). The follow-up event took place in Tabor (CZ) on 5 June 2008, as a pre-workshop of the Techneau Regional Technology Platform meeting. Around 25 scientists and water professionals from Europe attended the workshop dedicated to international networks, monitoring and risk assessment issues with regard to decentralised water supply.

Workshop program

The workshop was composed of two successive presentation sessions:

1. Presentation Session 1: “Context, Perspective and International Networks on Small Water Supply”
2. Presentation Session 2: “Risk assessment and monitoring of water supply for small communities”

This report sets off the minutes of the workshop. Full presentations can also be found in the annexes.

2 Participants

Name	Institute	Country
Lenka Cerovska	Ministry of Environment	Czech Republic
Petr Dolejs	Water & Env.Tech Team	Czech Republic
Daniel Weyessa Gari	National Institute of Public Health	Czech Republic
Frantisek Kozicek	National Institute of Public Health	Czech Republic
Frantisek Nemecek	SOVAK CR	Czech Republic
Jan Runstuk	National Institute of Public Health	Czech Republic
Marie-Renée de Roubin	Anjou Recherche	France
Karin Boeckle	TZW	Germany
Eric Hoa	KWB	Germany
Christian Kazner	RWTH Aachen University	Germany
Boris Lesjean	KWB	Germany
Oliver Schmoll	Federal Environment Agency (UBA)	Germany
Eddo Hoekstra	Joint Reseach Centre of the European Commission	Italy
Bistra Mihaylova	WECF - Women in Europe for a Common Future	Netherlands, the
Ronald Wielinga	KIWA	Netherlands, the
Stein Wold Osterhus	NTNU	Norway
Sveinung Saegrov	SINTEF	Norway
Epsica Chiru	Apa Nova Bucuresti	Romania
Chris Swartz (via Skype)	Swartz Engineering	South Africa
Thomas Petterson	Chalmers University	Sweden
Maryna Peter	Eawag	Switzerland
Wouter Pronk	Eawag	Switzerland
Glenn Dillon	WRc	UK
Ian Walker	WRc	UK

3 Minutes

B. Lesjean (KWB) opened the workshop with a quick update on the mission and status of the Techneau 3S Task Force and introduced the first session on the context, perspectives and international networks on small water supply.

3.1 Presentation Session 1: “Context, Perspectives and International Networks on Small Water Supply”

W. Pronk (Eawag, w.pronk@eawag.ch): “Adaptive Strategies: Implications for Small Scale Systems”

Within the TECHNEAU activities, different trends were identified as key aspects regarding the capability of present water systems to cope with future challenges, in respect to small water supply. Once those trends are established, it is important to consider their impacts and to define required actions and adaptive strategies.

Hence, the use of decentralised water systems, such as gravity-driven membrane units developed in Techneau, could lead to the reduction of energy consumption. Decentralised supply is a way to be less dependant on ageing infrastructure and it enhances consumer involvement. Moreover, new promising treatment technologies are emerging for small-scale water systems. Adaptive strategies should then be developed following guiding principles with regards to three criteria: integration, flexibility and local conditions. For decentralised water supply, the local water quality, the possibility to use different water resources and the flexibility in capacity are particularly relevant aspects.

In a more general view, TECHNEAU aims to apply this systematic approach in the different planned case studies.

O. Schmoll (Federal Environment Agency of Germany, oliver.schmoll@uba.de) “The International WHO Network on Small Community Water Supply Network: Promoting Action for Better Safety”

While access to clean water supply and sanitation is perceived as the most important medical milestone for the developed countries, strong improvements still need to be achieved in order to prevent the 1.6 million deaths per year that are attributed to diarrhoea. Hence, a clear call for intelligent time and money capacities is highlighted. A WHO platform dedicated to small community water supply (SCWS) was therefore set up to promote and accelerate improvements to the safety of SCWS via advocacy, the identification of research needs and the development of communication tools. Its objective is to provide strategic advice and recommendations to WHO, from a practitioner perspective and prior to and after implementation of guidelines and guidance on good practices. Thus, it aims at a better framework for safe drinking water with defined health-based targets, an appropriate water safety plan and independent surveillance.

More info or registration at scwsm@who.int
and <http://ezcollab.who.int/ruralwater/>

M. Peter (Eawag, Maryna.Peter@eawag.ch): "WHO Network on Household Water Treatment and Safe Storage"

WHO also funded another Network which focuses on household water treatment and safe storage (HWTS). It has more than 120 member institutions - including NGOs (45%). Similarly to the SCWS network, its activities are based on advocacy, communication, research and implementation. It also collaborates with UNICEF in order to organize meetings and develop HWTS programs in priority countries. In 2007, a public report on "combating waterborne disease at the household level" was published (available at http://www.who.int/household_water/advocacy/combating_disease/en/index.html) Future activities of the network are notably structured towards 7 topics: *education/school setting, maternal/child health, HIV/AIDS, health care facilities, faith-based organisation, child nutrition and emergency.*

More info or registration at hwater@who.int

E. Hoekstra (EC-JRC, eddo.hoekstra@jrc.it): "Status of the revision process of the drinking water directive and focus on sampling and monitoring for decentralized supply"

The implementation of a water risk management strategy which includes operational monitoring is a real challenge for the EU. In these regards, an overview of the revision of the drinking water directive showed the changes that are expected in the European regulations for decentralised supplies. The new drinking water directives will probably include consideration of quality target and monitoring for the small supplies. The risk of release of metals due to materials in the domestic distribution system and the necessity to flush the tap in case of stagnant water were especially identified as key issues for small systems.

The harmonisation of the sampling programmes for all water supplies is being discussed. It defines sampling points (point of exit, point of supply, consumer tap), protocols and frequencies for compliance monitoring. Heavy metals (Cu, Ni and Lead) and microbial contamination should then be particularly monitored.

3.2 Presentation Session 2: "Risk Assessment and Monitoring of Water Supply for Small Communities"

T. Petterson (Chalmers Uni., thomas.petterson@chalmers.se): "Risk assessment in drinking water systems – Framework and tools developed for Water Safety Plans"

Techneau promotes the development of the WHO Water Safety Plan (WSP) with the integration of risk assessment and risk management (RA/RM) tools that are not only based on water technologies but also water utilities. Key components of a WSP consist in the identification of hazards, control

measures and actions to be taken in normal operation and incident conditions. Thus, Techneau set up a toolbox where a hazard database, a risk reduction option database and a decision support tool are combined. Training seminars as well as case studies are now being organised in these regards.

C. Swartz (Swartz Engineering, cswartz@mweb.co.za): "A Techneau Case Study: Risk Assessment of water supplies in small South African communities"

Within Techneau, a risk assessment on water supplies in small communities was performed in Upper Mnyameni in South Africa. The water facilities deal with raw water with high turbidity after rain events and often face hydraulic overloads. The distribution system was also carefully inspected. In addition to the South African Risk Evaluation Guidelines, RA/RM tools that were developed in Techneau were implemented and showed that the contamination due to animal leaning on the pipes and the poor storage of water were identified as the major risks. Both methods were uncomplicated to apply when enough data is available, although Techneau risk matrices were found to be most useful.

F. Kozisek (SZU, water@szu.cz): "Small water supplies in the Czech Republic: numbers, water quality and first case studies in risk assessment"

Another case study on risk assessment for small supplies took place in Czech Republic within Techneau. It was showed that water-borne outbreaks in the Czech Republic during the 1995-2005 period were mainly linked to the use of commercial or private wells. Besides, the site of Březnice (3700 inhabitants) was notably inspected in regards to the water sources, the reservoirs and the treatment plan. The implementation of RA/RM tools revealed that the main hazards in this supply were related to the maintenance of the water infrastructure (i.e. defected valves and pipe materials, degradation of the upper collection gallery). It seems that the municipalities are willing to invest in maintenance and repair only when outbreaks or accidents occur. Investigations on another site - Bohutice – Našiměřice – exposed a high risk with the uranium content of the water.

R. Wielinga on behalf of M. Mons (Kiwa, ronald.wielinga@kiwa.nl): "Monitoring of water quality in small supplies"

Regarding water quality monitoring activities, R. Wielinga (Kiwa) mentioned that Techneau performed the evaluation of existing techniques in respect to technical, operational and economical specifications in order to set up recommendation for 3S schemes. Cheap and easy instrumentation for group parameters is indeed more suitable for such systems. A first report on locations and purposes for monitoring which includes the identification of key-parameters was published in February 2007. A follow-up report on the evaluation of monitoring techniques with recommendation for use in SSS should be available after the Summer 2008.

B. Mihaylova on behalf of M. Samwel (WECF, bistra.mihaylova@wecf.eu): "The role of the civil society in monitoring drinking water quality in the rural areas of the EECCA countries"

Generally, there is a lack of monitoring data as B. Mihaylova (Women in Europe for Common Future, WECF) reported from the WECF projects in the rural areas of 12 countries of EECCA (Eastern Europe, Caucasus and Central Asia). This is due to a lack of public awareness and a low interest of local/national authorities in this region. Regarding the monitoring of drinking water, WECF helps communities by identifying regional/local laboratories to test microbial contamination whereas harmful chemical pesticides and heavy metals are to be measured by German labs. Moreover, this NGO decided to perform specific investigations on the nitrate pollution of drinking water in the rural EECCA in order to raise awareness and address the need of the implementation of an adequate water policy.

3.3 Conclusion and Next Steps

Decentralised water supply is a major issue on a worldwide scale and Europe can make significant contributions to its good management. Indeed, the workshop showed that there is a clear need to develop a suitable framework in order to manage and operate decentralised schemes and the Techneau toolbox is one step further to a better management practice.

Minutes from this workshop will be available on the Techneau website, along with the ones from the 1st workshop. The 3rd workshop of the Task Force will be held in 2009 (date and location to be précised) with the expected topic "Operation and maintenance and customer acceptance for decentralized water supply". Also, it could be interesting to have some feedback from epidemiological studies and discuss R&D gaps and needs for future projects on small scale systems.

Persons interested by the activities of the Task Force are welcome to contact Boris Lesjean or Eric Hoa of the Berlin Centre of Competence for Water.

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4 Annexes

Handouts of the workshop presentations

B. Lesjean (Berlin Centre of Competence for Water, boris.lesjean@kompetenz-wasser.de) "Welcome and Workshop Introduction"

W. Pronk (Eawag, w.pronk@eawag.ch): "Adaptive Strategies: Implications for Small Scale Systems"

O. Schmoll (Federal Environmental Agency of Germany, oliver.schmoll@uba.de) "The International WHO Network on Small Community Water Supply Network: Promoting Action for Better Safety"

M. Peter (Eawag, Maryna.Peter@eawag.ch): "WHO Network on Household Water Treatment and Safe Storage"

E. Hoekstra (EC-JRC, eddo.hoekstra@jrc.it): "Status of the revision process of the drinking water directive and focus on sampling and monitoring for decentralized supply"

T. Petterson (Chalmers Uni., thomas.petterson@chalmers.se): "Risk assessment in drinking water systems – Framework and tools developed for Water Safety Plans"

C. Swartz (Swartz Engineering, cswartz@mweb.co.za): "A Techneau Case Study: Risk Assessment of water supplies in small South African communities"

F. Kozisek (SZU, water@szu.cz): "Small water supplies in the Czech Republic: numbers, water quality and first case studies in risk assessment"

R. Wielinga on behalf of M. Mons (Kiwa, ronald.wielinga@kiwa.nl): "Monitoring of water quality in small supplies"

B. Mihaylova on behalf of M. Samwel (WECF, bistra.mihaylova@wecf.eu): "The role of the civil society in monitoring drinking water quality in the rural areas of the EECCA countries"

B. Lesjean (Berlin Centre of Competence for Water, boris.lesjean@kompetenz-wasser.de) "Closure Address"