

SUPSI

WASH COMPETENCE CENTRE SUPSI

2013

Annual report



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"WASH is an acronym used in international development programs and refers to "Water, Sanitation and Hygiene". Access to safe water, adequate sanitation, and proper hygiene education can reduce illness and death from disease, and also impact poverty reduction and socio-economic

Objectives of the WASH Competence Centre

The WASH Competence Centre was founded at SUPSI on the 22. March 2012, in occasion of the World Water Day.

WASH is an acronym used in international development programs and refers to "Water, Sanitation and Hygiene". Access to safe water, adequate sanitation, and proper hygiene education can reduce illness and death from disease, and also impact poverty reduction and socio-economic development.

These areas are treated together as the impact of deficiencies in each area overlap strongly, and so to achieve a strong positive impact on public health, they need to be addressed together. The WASH competence centre, is a network of SUPSI staff members involved in teaching, research and services/consultancies in the field of water resources.

Members have experience in cooperation and development projects at international level.

Remind:

In 2014, the UN system – working closely with its Member States and other relevant stakeholders – will collectively bring attention to the water-energy nexus. Celebrated since 1993, World Water Day has grown to become one of the key dates in the UN calendar. Visit the [official UN website](#).



Staff

Staff member, Department*	Profession	Main geographic work experience
Sebastian Pera (Coordinator) DECD	Hydrogeologist	Argentina, Cuba, Indonesia, Chad
Claudio Valsangiacomo (Coordinator) DECD	Microbiologist	Zimbabwe, DR Congo, Pakistan, Philippines, Central Asia, Haïti, Caucasus Region
Marcus Hoffmann DECD	Physicist	Azerbaijan, Caribbean, Indonesia, Slovenia
Pamela Principi DIT	Microbiologist	South Africa, China
Enrica Massardi DHS	Nurse	Afghanistan, Sierra Leone, Nicaragua, Cambodia, Togo
Paola Solcà DBSS	Sociologist Anthropologist	South Africa, Nicaragua, Bolivia, Argentina, Romania, Burkina Faso
Renzo Longhi DIT	Environmental scientist	South Africa, Romania, Santo Domingo, China
Jennifer Duyne Barenstein DECD	Social Anthropologist	India, Bangladesh, Sri Lanka, Indonesia, Philippines, Mexico, Nicaragua, Argentina, Haiti
Massimiliano Cannata DECD	Environmental Engineer	Vietnam, Brazil, Romania
Andrea Rizzoli DIT	Control Engineer	Europe
Francesca Cellina DECD	Environmental Engineer	Europe

*) DECD: Department for Environment Constructions and Design, DIT: Department of Innovative Technologies, DHS: Department of Health Sciences, DBSS: Department of Business and Social Sciences



From left: Claudio Valsangiacomo, Sebastian Pera, Marcus Hoffmann, Pamela Principi, Enrica Massardi, Paola Solcà, Renzo Longhi (Jennifer Duyne, Massimiliano Cannata, Andrea Rizzoli and Francesca Cellina are missing on this picture).

Teaching

The WASH CC is involved both in graduate/postgraduate education and in lifelong learning within SUPSI and other academic institutes.

Teaching module and Staff members involved	Content	Target students
Training in water lab analysis for the Swiss humanitarian aid unit Claudio Valsangiacomo	All members of the Swiss humanitarian aid unit have to be trained in water lab analysis before field assignments. The water lab training delivers skills for the use of the SHA portable laboratory. Bacteriological and basic chemical and physical parameters: E. coli, Turbidity, Conductivity, pH, Free Residual Chlorine, Nitrites/Nitrates/Ammonia, AS, Chlorid, etc.	Members of the Swiss humanitarian aid unit
Training in water lab analysis WATSAN course @UNI-NE Claudio Valsangiacomo	Course within the module offered at Centre d'hydrogéologie et de géothermie (CHYN) Université de Neuchâtel, for more details: http://www2.unine.ch/chyn/page-15833.html	Engineers and scientists who might in their professional life encounter water and sanitation problems in situations of emergency
CAS Drinking water and wastewater treatment Pamela Principi and Renzo Longhi	This course in the continuing education program offers students and operators the chance to deep on the know-how in the field of water and waste water treatment. Basics of wastewater treatment process and plant design are covered in the national and international legislative framework.	Wastewater treatment plant operators, engineers willing to deep their knowledge in the water and wastewater theme
Master of Science Engineering (Energy Environment) Pamela Principi and Renzo Longhi	In the MSE program SUPSI offers an Energy & Environment Specialization providing knowledge and practical experience to address environmental related projects. This MSE is oriented to the wastewater treatment topic as well as energy recovery from biomasses.	Engineers at bachelor level and scientists wanting to have a practical experience on projects related to environmental topics.

<p>Training in internships in developing countries</p> <p>Paola Solcà and Enrica Massardi</p>	<p>Courses and practical training offered at DBSS and DHS for small groups of students at Bachelor level.</p> <p>The Department of Health SUPSI within the theoretical course "International Cooperation" offers an annual series of events with the aim to interest, motivate and raise awareness on the meaning and value of cooperation. In 2013 ,declared by the UN as the " International Year of Water Cooperation " , the focus of the meetings was the theme of water, explored in various dimensions. The conferences have integrated the screening of documentaries, with the participation of some keynote speakers who have brought their different points of view around the topic H2O: i) the anthropological perspective with the symbolic and sacred value of water; ii) the health context which enhanced WASH items, specifically cholera epidemics, and the management of CTC; iii) the planning and technical concepts which the NGO face on the field to achieve sustainable projects in developing countries.</p>	<p>Health and social care students who will experience clinical and educational practices in resource-poor countries</p>
<p>CAS development and cooperation</p> <p>Claudio Valsangiacomo</p>	<p>A Certificate of advanced studies in development and cooperation has been prepared and submitted to the school body responsible for lifelong learning, it will be launched in 2014</p>	<p>Any student interested in development and cooperation with a Bachelor or Master degree.</p>
<p>MAS Sustainable Water Resources, ETHZ</p> <p>Jennifer Duyne Barenstein</p>	<p>Course on "Cultural Dimensions of Water Management" held within the framework of the MAS on "Sustainable Water Resources" organized by the Institute of Environmental Engineering of the Federal Institute of Technology (ETH), Zurich</p>	<p>Regular ETH M.A. students in Environmental Engineering and a group of international professionals active in the field of water resource management</p>

Applied research

Project, main authors, country	Description	Partners
<p>Hydrogeological Investigation of the Nubian Sandstone Aquifer System (NSAS) in Northern Chad. A baseline study for a sustainable management</p> <p>Sebastian Pera</p> <p>Chad</p>	<p>The NSAS aquifer shared among Lybia, Egypt, Sudan and Chad, begins to be intensively exploited by the first two countries, having also better knowledge of the hydrogeology and characteristics of the aquifer. The last two countries are still lacking of such information and may suffer negative impact of exploitation. The project aim to minimize negative consequences of exploitation by contributing to a better understanding of the hydrogeology of the NSAS in Chad.</p>	<ul style="list-style-type: none"> • Université de N'Djamena • Université de Neuchâtel • UNOSAT – UNITAR  <p>Shallow Well in Chad, 2013</p>
<p>Piora project: waste treatment for the alpine dairy production activities</p> <p>Pamela Principi</p>	<p>The project PIORA and its potentiality for developing countries. This project is a case study for waste treatment feasibility in alpine isolated small facilities. The localization in pristine areas allows for high quality dairy production appreciated at local and international level, demanding at the same time for civil responsibility in terms of waste management. In fact, even if the production activities are limited to three/four months per year and the annexed wastes are quantitatively scarce, the dairy wastes have high organic loads. The wastes produced at the Alpe Piora (Ticino) cheese factory were chemically and biologically characterized and collected separately in order to evaluate the best treatment available feasible in term of costs and environmental impact. The biogas potential production and aerobic and anaerobic degradability were assessed for sludge, manure, and whey. The different scenarios evaluated to treat small volumes of high loaded wastewaters in a decentralized approach has pinpointed the specifics needed for the technological solution for isolated decentralized realities that could applied also in developing countries</p>	
<p>Woods and friends: Street soccer, peer education approach and a free instant messaging to communicate effectively</p> <p>Paola Solcà</p>	<p>The project aims to prevent drug and alcohol abuse and the spread of HIV/AIDS through counselling and the promotion of citizenship values using a Peer Education approach. Street soccer will be used as a hook to gather youth (10-13 years old) in a Cape Town township. The novelty of this project lies in using a free instant messaging application (Mxit) as the vehicle to deliver messages amongst peers. This pioneering model is intended to be replicable in other developing countries.</p>	<ul style="list-style-type: none"> • Department of Business and Social Sciences, Social Work Research Group, SUPSI • Cape Peninsula University of Technology, Cape Town, South Africa

<p>South Africa</p>		 <p>Peer education activity in Masiphumelele</p>
<p>The impact of post-disaster reconstruction on communities' access to water and sanitation</p> <p>Jennifer Duyne Barenstein</p> <p>India</p>	<p>The research is carried within the framework of a 3-years project funded by the Swiss National Science Foundation on "Understanding habitats, housing and social changes in post-disaster traditional and relocated rural settlements in India". It is found that while post-disaster reconstruction projects invest considerable resources in the provision of sanitary latrines and drinking water supply systems due to insufficient emphasis on hygiene education and infrastructure maintenance related investments all too often do not lead to sustainable changes.</p>	 <p>Poor maintenance of a recently built domestic water supply system in Tamil Nadu</p>

Consulting activities

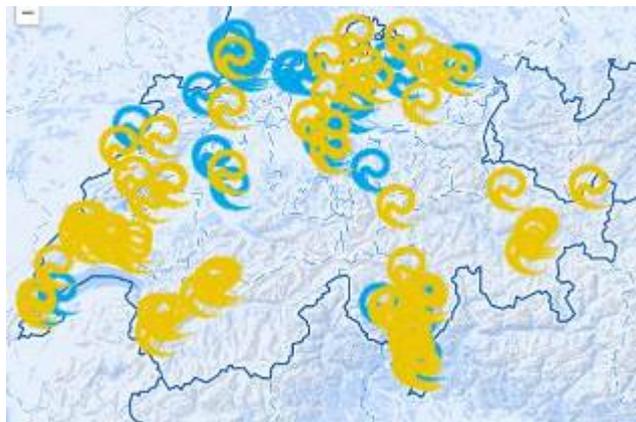
Consultancy and main authors	Description	Partners
<p>WASH evaluation mission in South Kivu, Democratic Republic of Congo</p> <p>Claudio Valsangiacomo,</p>	<p>Africa is the most virulent continent for Cholera: The DR of Congo holds the sad record of 14% of all global cholera cases and 22% of all deaths from cholera during the last ten years. Among the most prominent districts in DRC with most of the cholera cases are South and North Kivu. The mission focused on activities in the interface between health and water.</p>	<p>Mission on behalf of SDC, with Lucas Beck, Hydrosolutions, zurich</p>
<p>Stability of drinking water sources Mada Hospital Cameroon</p> <p>Sebastian Pera</p>	<p>In Mada village some artesian wells drilled during oil exploration campaigns, were successively used for drinking water supply. Without tabs, continuous flow from wells and loss of piezometric head led to decreasing discharges. To forecast water availability scenarios, preliminary contact with Maggi Foundation was initiated. Information about the site was acquired. Further steps include discharge monitoring and water sampling.</p>	<p>Fondazione Maggi</p>

Memberships

Membership	Description	WASH staff members
AGUASAN	Swiss Community of practice on WASH issues www.aguasan.ch	Claudio Valsangiacomo, Sebastian Pera, Pamela Principi and Jennifer Duyne
Swiss Water Partnership, SWP	The SWP goal is to bring together relevant stakeholders to promote a sustainable and equitable use and management of water resources and universal access to water and sanitation. www.swisswaterpartnership.ch	Claudio Valsangiacomo (Member of the steering Board)
Swiss humanitarian aid unit	Membership in specialized groups WES (Water and Environmental Sanitation) and Med (Medicine) www.skh.ch	Claudio Valsangiacomo
Solidarit'eau suisse	solidarit'eau suisse is an initiative of SDC, the Aguasan Group and Swiss aid organizations enabling local authorities to support a drinking water project in a developing country in an efficient and transparent manner. www.solidariteausuisse.ch	Claudio Valsangiacomo (Member of the steering Board)
HydroDWG	Hydrology Domain Working Group of the OGC www.opengeospatial.org	Andrea Rizzoli (observer)
iEMSS	International Environmental Modeling & Software Society www.iemss.org	Andrea Rizzoli
Swiss Municipalities	Local energy planning processes for Municipalities. In energy planning processes at the local level, identification of the opportunities for electricity production and thermal energy recovery in waterworks systems and sewage water networks. (FC)	Francesca Cellina
Federazione delle ONG della Svizzera italiana, FOSIT	Member of the steering committee since April 2013, www.fosit.ch	Paola Solcà

Solidarit’eau suisse in the Canton of Ticino.

Thanks to our presence in the Steering Committee of solidarit’eau Suisse, the Canton of Ticino has the highest score of municipalities promoting water projects in developing countries (26 municipalities out of 110).



Institutional partnerships

Institution, WASH member involved	Type of partnership	Internet web-page
FOSIT, Federazione delle ONG della Svizzera italiana Paola Solcà	Memorandum of understanding for joint projects in development and cooperation SUPSI-FOSIT	www.fosit.ch
KFH Development and Cooperation Office Paola Solcà and Claudio Valsangiacomo	Focal point for development and cooperation within Swiss Universities of Applied Sciences and Arts	www.kfh.ch/dc
Foundation for Education and Development (since January 2013 Education 21)	The Foundation has supported financially and practically the project “practical internship in the developing countries” at DBSS since 2002. Recently the Department of Teaching and Learning has joined the 3rd phase of the SDC program “partnership Nord-South” (2012-2015).	www.education21.ch
International Cooperative Programme on Assessment and Monitoring of the Effects of Air Pollution on Rivers and Lakes, ICP Waters Luca Colombo	ICP Waters is a programme for monitoring of the effects of acid rain and air pollution on water and water courses. Twenty countries (18 European countries, USA and Canada) participate and supply monitoring data to the programme's central database at NIVA. The monitoring data provide a basis for documenting effects of long-range transboundary air pollutants.	www.unece.org/env/lrtap/workin_ggroups/wge/waters.html
Associazione svizzera dei professionisti della protezione delle acque, VSA	The Swiss Water Association is the professional society for water in Switzerland lobbies for clean and vital bodies of water is generalist for all questions concerning water is specialist for sanitation and bodies of water. The association represents the aggregation of the Swiss professionals for water protection. VSA offers professional training programs, defines the standards for security and quality and informs	www.vsa.ch

Pamela Principi and Renzo Longhi	about water pollution control.	
BioSweet SCCER Pamela Principi	SUPSI is a research partner in the newly funded SCCER, focusing on energy recovery from biomass. SCCER BIOSWEET focuses on the biochemical and thermochemical conversion of wood, biowaste/manure and algae to gaseous and liquid biofuels with the vision to contribute additional 100 PJ towards fulfilment of the Swiss Energy Transition by 2050. Research will be directed towards small and medium-size installations in order to meet the needs of the Swiss market and to exploit the high innovation potential in both fields together with Swiss industry.	
Open Source Geospatial Foundation OSGeo Massimiliano Cannata	OSGeo, support the collaborative developments open source geospatial software, and promotes its widespread use. The foundation's projects are all freely available and useable under an OSI-certified open source license.	www.osgeo.org

Media, communication and events

Subject and staff members involved	Type of media, communication, event	Contents
Visit of water experts of the Swiss humanitarian aid unit	21. June 2013, 25 water experts visited our Centre: demonstration of bacteriological water analyses in the field and water treatment using dissolved air floatation (picture)	

<p>H2O PROJECT - DSAN SUPSI and HELVETAS-Swiss Intercooperation</p> 	<p>TAP WATER : No fees for bottling, no transport, no waste to be disposed of : "just water." An initiative for staff and students.</p> <p>The idea of the project born in 2011 from the thoughtful work of 2 students who performed a short internship at Helvetas. In an ecological perspective, the project aimed to reduce the environmental impact and to raise the visibility of the value of sustainability.</p> <p>In 2013 the project was officially unveiled at the opening ceremony of the new headquarter of the Department of Health Sciences.</p>	
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H2O PROJECT - DSAN SUPSI and HELVETAS-Swiss Intercooperation



ITINERARIA TEATRO
 presenta
 Fabrizio De Giovanni in:
"H2O - L'ACQUA UN DIRITTO DELL'UMANITÀ"
 Un progetto di: Fabrizio De Giovanni e Maria Chiara Di Marco
 Testi: Ercole Ongaro e Fabrizio De Giovanni
 Regia: Emiliano Viscardi
 Allestimenti tecnici e scenografia: Maria Chiara Di Marco
 Macchinista e tecnico luci: Eliel Ferreira
 Contributi video: Dario Barezzi
 Post produzione video: Franco Vattellina

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 e-mail: h2oro@itineraria.it - www.itineraria.it | Fabrizio De Giovanni

S. RUBINETTO
 Fresca di Giornata

Per il terzo anno consecutivo ITINERARIA sta contribuendo al sostegno delle attività della LVIA di Palermo che realizza pozzi d'acqua in Africa, prima in Burkina Faso, poi in Tanzania ed ora in Kenya.

Puoi versare il tuo contributo tramite bonifico di conto corrente a: BANCA ALPI MARITTIME - CREDITO COOPERATIVO DI CARRU - IBAN: IT 61 E 08450 10200 000170103178 intestato a LVIA
 Causale: pozzi d'acqua Kenya - Itineraria

Progetto grafico: Laura Campanella

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Publications

Title, WASH member involved	Journal, Book, year	Authors
Hydrochemical exploration of Ennedi, Northern Chad Sebastian Pera	11th Swiss Geoscience Meeting, Lausanne, 2013 http://www.geoscience-meeting.scnatweb.ch/sgm2013/	Marie Louise Vogt, Sebastian Pera, Abderamane Hamit, Yves Haerberlin, Marc-Andre Bünzli
KFH project Woods and friends Paola Solcà	http://www.kfh.ch/index.cfm?nav=14&pg=48&gtyp_id=1&&menu_type=about Final report	Igor Sertori, Paola Solcà, Wilma Minoggio
Hydrogeological investigation of the Nubian Sandstone Aquifer System in Northern Chad, baseline study for sustainable management. Sebastian Pera	http://www.kfh.ch/uploads/dcdo/doku/1203_13_Chad_PERA_DFT.pdf Final report	Sebastian Pera, Marie Louise Vogt, Abderamane Hamit

Abbreviations

COHEP	Swiss Conference of Rectors of Universities of Teacher Education
CRUS	Rectors' Conference of the Swiss Universities
EU	European Union
FOSIT	Federazione delle ONG della Svizzera italiana
KFH	Rectors' Conference of the Swiss Universities of Applied Sciences
SDC	Swiss Agency for Development and Cooperation
SNSF	Swiss National Science Foundation
SUPSI	Scuola universitaria professionale della Svizzera italiana (University of Applied Sciences and Arts of Southern Switzerland). Departments: DACD: Department for Environment Constructions and Design, DTI: Department of Innovative Technologies, DSAS: Department of Business and Social Sciences, DSAN: Department of Health Sciences, DFA: Department of Teaching and Learning
UN	United Nations
UAS	Universities of Applied Sciences and Arts
UNOSAT	UNITAR's Operational Satellite Applications Programme
UNITAR	United Nations Institute for Training and Research
UTE	Universities of Teachers Education
USI	Università della Svizzera italiana
WHO	World Health Organization