



SWP Learning event “Assessment of surface and ground water”

Date: 26. October 2017, 09:00 | **Participants:** SWP Members | **Fee:** CHF 90.00 including lunch bag

Location: NADEL, Center for Development and Cooperation, Building CLD, Clausiusstrasse 37, ZH

Registration Deadline: 16. October 2017 via email to soraya.kohler@swisswaterpartnership.ch

Registration Modalities: while registering for the event, please register as well for the 2 breakout sessions, indicating 1st choice and second choice

Timing	Topic	Hosts
09:00	<i>Welcoming coffee</i>	
09:30	Welcoming speech and introduction	SWP
10:00	Setting the scene basic & state-of-the-art tools and approaches to assessment of surface and ground water	SWP
10:40	Breakout session “Water Quantification/Estimation” * ✚ Quantifying surface water through remote sensing tools ✚ Methods to estimate groundwater recharge *with last 30mn: rotation to another session	Photrack (Salvador Peña) CHYN (Philip Brunner)
12:20	<i>Networking lunch</i>	
13h30-15h00	Breakout session: “Assessing water quality”* ✚ Water analysis portable lab: practical demonstration of major parameters (fecal contamination, turbidity, residual chlorine) ✚ Challenges of geogenic contamination, an introduction to the EAWAG GAP platform ✚ Use of environmental tracers to determine groundwater residence time & parameters (flows, transmission time) *with last 30mn: rotation to another session	SUPSI (Claudio Valsangiacomo) EAWAG (Joel Podgorski) CHYN (Daniel Hunkeler)
15:00-	<i>Coffee break</i>	
15:30	Plenary: from assessment towards implementation Inputs followed by an interactive discussion ✚ Holistic water resources assessment, case study Switzerland ✚ Focus on assessment for humanitarian purpose	BAFU/CSD (tbc) Humanitarian Aid (tbc)
17:00	<i>Concluding remark & evaluation</i>	
17:15	<i>Networking apéro</i>	



Breakout Session Description

Break-out sessions on the topic of “Water quantification and mapping”

Break-out session: Measuring discharge in channels and rivers using a smart-phone App.

In many places of the world there is few data or no data at all regarding water discharge. This greatly restrains any effort towards effective water resources management, especially in places where the water resources are scarce, highly variable and where strong growth in water demand overlap with administration underfunding. There is a need of cheaper and easy-to-use methods for gathering data regarding how much water is flowing in natural rivers and in man-made irrigation furrows. We have developed a mobile device application for determining open-channel discharge in e.g. rivers, artificial channels and irrigation furrows. Discharge measurement via smartphones provides a non-intrusive, accurate and cost-effective monitoring method. This break-out will show how to set-up a site and how to use the Discharge App and its associated data management platform.

Break-out session: Methods to estimate recharge

The rate of groundwater recharge is an important factor in the analysis and management of groundwater resources in arid and semi-arid regions. However, quantifying groundwater recharge remains a challenge. A wide range of different methods to estimate recharge has been developed. This break-out session will introduce several methods with a focus on arid- and semi-arid environments. Their suitability and data requirements are discussed, as well as the potential to use of remote sensing products.

Breakout sessions on the topic of “Assessing water quality”

Breakout session: Water analysis portable lab

The « Laboratory Session » will focus on water quality, setting priorities in the choice of parameters to be analysed in the field and involving participants in a “hands-on” exercise. Participants will benefit of a 20 min lecture on water quality for based the “WHO Guidelines for drinking water quality” and a full hour for measuring hands-on few important parameters using the portable laboratory designed by the Swiss Humanitarian Aid Unit, such as faecal contamination (standard bacteriological analysis), turbidity, free residual chlorine, small physics-chemical parameters (Cl, No3, No2, NH4, Fe, Hardness, conductivity, pH and others).

Challenges of geogenic contamination, an introduction to the EAWAG GAP platform

The following functionality and features of the GAP online platform (www.gapmaps.org) will be demonstrated: (a) viewing and printing global and regional arsenic and fluoride hazard maps and datasets of related variables, (b) uploading, analyzing and sharing data in a secure environment and (c) modeling one's own data, which can then be used to create a prediction map that be downloaded as a raster file. Users are encouraged to bring their own laptops and data to work with, such as GIS files or Excel tables with columns of latitude, longitude and some quantity (e.g. measured pollutant concentrations). Note that GAP can also be used for contaminants other than arsenic or fluoride.

Break-out session: Environmental Tracers

Environmental tracers play an important role in characterising hydrological and hydrogeological systems. Owing to the rapid advances in measurement methods, tracers can be analysed at a much higher spatial and temporal resolution, opening new possibilities for tracer studies. With the advances of measurement technologies, several new tracer approaches also emerged. This break-out session provides an introduction to environmental tracers (CFC, SF2, stable and radiogenic isotopes), their use, analysis and interpretation based on case studies in Switzerland and abroad.