

# ForumAlpinum 2018 & 7<sup>th</sup> Water Conference

## Alpine Water – common good or source of conflicts?

### Programme

#### **Monday 4<sup>th</sup> June 2018**

##### **13:00 – 13:30 Opening, welcome addresses (Tauernsaal)**

- Leopold Füreder (ÖAW & ISCAR & University of Innsbruck)
- Markus Reiterer (Secretary General of the Alpine Convention)
- Ingrid Felipe (LH Stellvertreterin)
- Ronald Petrini (Tourism association Reutte)

##### **13:30 – 16:00 (Tauernsaal)**

#### **Module 1: Hydrological and water-driven hotspots in the Alps**

*Chair: Rolf Weingartner (University of Bern)*

Although there is sufficient water in the Alpine region, seasonal and regional scarcity of supply must be expected in the future. In addition, global warming will lead to a destabilization of high mountain areas and change the landscape. These developments are overlaid by the socio-economic dynamics and the increasing water demand of existing and new user groups. Module 1 aims to identify, describe and locate current and future conflicts of use in the Alpine region. For this purpose, the participants work out an exemplary overview of water-related conflicts (hot spots). The results form the basis for the discussion in the following modules.

##### **13:30 – 14:00 Keynote (Tauernsaal)**

#### **Keynote 1: Analysing alpine water related hotspots: Setting the ground**

*Rolf Weingartner (University of Bern)*

##### **14:00 - 14:30 Introduction - Workshops**

#### **Introduction: What is a water-related hotspot and how can we map it?**

*Klaus Lanz (International Water Affairs)*

##### **14:30 – 16:00 Workshops**

#### **Workshop 1.1 Existing water-related hotspots and hazards (Tauernsaal)**

*Chair: Andreas Schaffhauser, ZAMG; support for mapping: Heidi Humer-Gruber, IGF*

Any change or a seasonal reduction of the available water resources can cause serious management challenges and downstream conflicts in the Alpine Region. Therefore, the results of hydroclimatological models with different RCP scenarios give a very valuable quantification of future climate change effects on the availability of water resources in e.g. the Ötztal Alps (Tyrol, Austria).

The Copernicus program and Earth Observation in general can contribute to a continuous and area-wide monitoring of water resources in the Alps. Such a monitoring will increase not only the understanding of hydrological processes under a changing climate, but also support sustainable water management for irrigation, energy production or technical snow production.

#### Inputs

*Ulrich Strasser & Thomas Marke: Hydrological scenarios in the Austrian Alps for the next century - first results of the HydroGeM3 project*

*Marc Zebisch C. Notarnicola, C. Marin, M. Callegari & F. Greifeneder: The Alps Water tower – an earth observation perspective*

Discussion & mapping

## **Workshop 1.2 Emerging water-related hotspots and hazards due to climate change (Saal Fort Claudia)**

*Chair: Andrea Fischer, IGF; support for mapping: Valerie Braun, IGF*

Alpine Landscapes can be read as imprints of the forming forces, amongst them frozen and liquid water. On various time scales, natural processes as drifting continents, formation and disappearance of seas, erosion and deposition as well as climate changes influence topography and conditions for life. After the last glacial maximum, human activities changed the landscape by land use and cultural practices. The workshop aims at tackling various aspects of water as geomorphological parameter influencing the landscape, as well as modern anthropogenic aspects and views on water availability and management. The workshop aims at discussing past and modern influence of water on natural and cultural landscapes.

### Inputs

*Marco Di Tullo, A. Nascetti, M. Di Tullio, N. Emanuelli, F. Nocchi, A. Camplani & M. Crespi: AR Big Data and Google Earth Engine: key tools for glaciers health monitoring*

*Jan-Christoph Otto & Markus Keuschnig: Future lakes - future potentials. New lakes in Austria following glacier retreat.*

Discussion & mapping

## **Workshop 1.3 Emerging water-related hotspots and hazards due to socio-economic changes (Saal Ehrenberg)**

*Chair: Elisabeth Sötz, WWF Austria; support for mapping: Anna Schöpfer, UIBK*

Human land-uses have been shaping the Alps for millennia, just as the human living patterns have been influenced by the natural environment. In the course of climate change, hazard hotspots might be shifting – due to glacier retreat, permafrost melting, or changing precipitation. In other cases, it is the human activity, or the sudden abandonment of human activity, which involuntarily is triggering destabilization which leads to new hazards. Apart the hazard occurrence, exposure and vulnerability play an equally important role in disaster risk. The present workshop will highlight some aspects of this reciprocal impact of nature and human activity, and in conclusion seek to emphasize key factors to take into account when we have to deal with socio-economic development in an environment of increasing destabilization.

### Inputs

*Thomas Thaler, Andreas Zischg, Maria Papathoma-Köhle, Margreth Keiler & Sven Fuchs:*

Fair distribution of risk and benefits – the challenges of social justices in mountain hazard management

*Caterina Franco: The construction of a landscape for tourism. The role of water in the creation of high altitude ski resorts in the French-italian Alps (1950-1980)*

Discussion & mapping

## **Coffee Break**

**16:30 – 19:30** *Excursion*

### **Lechtal LIFE project: presentation and excursion to Lechtal, public discussion**

Presenters: Leo Füreder, Wolfgang Klien, Reinhard Lentner, Charly Winkler

With its large dynamic gravel banks and other wild riverine landscape elements the River Lech belongs to the most threatened river types in Europe. In 2016 the project “Dynamic River System Lech” within the EU-funded scheme “LIFE multiannual work programme” was launched. Under the Sub-programme for Environment, project activities are concentrated within the priorities Environment and Resource Efficiency, Nature and Biodiversity, and Environmental Governance and Information. Quite a variety of water management measures together with habitat and species protection activities have been planned and implemented to restore formerly impacted river stretches. Being the second LIFE project on this river, it provides also for evaluation, reassessment and monitoring of earlier performed restoration measures. After the introductory presentations,

enjoy this inspiring atmosphere during the excursion to the River Lech, followed by a social dinner in a mountain restaurant.

*Visits: Information center, 2 sites with measures*

**19:30 - 22:00** local dinner

*Visit Highline 179 – Gasthof Klause - Local dinner – Music: Bluatschink*

## **Tuesday 5<sup>th</sup> June 2018**

### **7<sup>th</sup> Water Conference**

**of the Water Platform of the Alpine Convention in dialogue with EUSALP AG 6 Subgroup Water**

### **Water in the Alps - Management of hydrological extremes and sustainable hydropower use**

**8:30 – 16:30 (Tauernsaal)**

#### **Welcome addresses - Official greetings of the Authorities**

- *Markus Reiterer* (Secretary General of the Alpine Convention)
- *Stefan Wildt* (Regional Government of Tyrol)
- *Paolo Angelini & Luka Štravs* (Co-Chairs of the Water Platform of the Alpine Convention)

**09:00 – 12:30 (Tauernsaal)**

### **Module 2: The impacts of and response to droughts in the Alpine region**

**9:00 – 10:30 (Part I)**

*Chair: Hannah Berger* (Bavarian Environment Agency, German delegation to the Water Platform)

The two sessions of Module 2 are aimed at highlighting experiences with and identification of droughts events in different regions of Alpine Countries (Germany, Austria, Italy, Slovenia) and to present existing approaches to cope with challenges in different sectors of water resources management. The sessions are dedicated to facilitate the knowledge exchange in the field of drought management and to raise the awareness about the importance of drought management. One focus will be sharing existing knowledge, which is already available to mitigate impacts of droughts events which are likely to become more frequent in future in the Alpine area.

#### Inputs

*Andreas Kolbinger* (Bavarian State Ministry of the Environment and Consumer Protection, Germany): Current developments and challenges in drought management in Northern Bavaria

*Johannes Wiesenegger* (Regional Government of Salzburg, Austria): Strategic water resources management and drought

*Gaia Checcucci* (Italian Ministry of the Environment, Land and Sea, Italy):  
debate / interactive section

#### **Coffee break**

**11:00 – 12:30 (Part II)**

*Chair: Christian Schilling* (Austrian delegation to the Water Platform, BMNT, Austria)

#### Inputs

*Andreja Sušnik* (SI- ARSO, Slovenia): New tools for better drought risk management

*Gunther Heißel* (Regional Government of Tyrol, Austria): Security of drinking water in light of climate change

*Andrea Bianchini* (Italy, IMELS Consultant, for the Platform Water Management in the Alps): Facing droughts in the Alpine region - Experiences, approaches and common challenges  
*debate / interactive section*

## Lunch

**13:30 – 15:00 (Tauernsaal)**

### **Module 3: Green infrastructure for an integrated and sustainable water management**

*Chair: Luka Štravs* (Ministry of the Environment and Spatial Planning, Slovenia)

In the Green infrastructure for an integrated and sustainable water management session possibilities and potentials of using different kinds of green infrastructure (nature based) solutions in the wider framework of sustainable water management will be addressed. Issues, challenges and also some other hot topics (is there a fully green nature based solution in the field of the water management?) connected to the green infrastructure theme will be presented and discussed. Experiences regarding that from different alpine countries will be shared.

#### Inputs

*Elisabeth Sötz* (WWF, for EUSALP AG 6): Greener Alpine Rivers? Conclusions and Recommendations of the EUSALP AG 6 – Subgroup Water

*Joze Papež* (Hidrotehnik, Slovenia), *Mateja Ribnikar* (MOP, Slovenia), *Maja Jelen* (MOP, Slovenia): 50 Shades of Green Infrastructure - Experiences from Slovenia

*Manuela Künzl* (Bavarian State Ministry of the Environment and Consumer Protection, Germany) & *Franziska Drasdo* (City of Munich - Department of Urban Planning): Alpine green infrastructure – joining forces for nature, people and the economy

*debate / interactive section*

## Coffee break

**15:30 – 16:30 (Tauernsaal)**

### ***Common guidelines for the use of small hydropower in the Alpine region***

*Chair: Gaia Checcucci* (Italian delegation to the Water Platform, Italian Ministry of the Environment, Land and Sea, Italy)

*N.N.* – presentation of the elaboration and content of common guidelines

*Christian Schilling* (BMNT, Austria): Application of the Common Guidelines for the use of Small Hydropower in the Alpine region

*debate / interactive section*

**Rapporteur to the Forum Alpinum plenary: Joze Papež** (Slovenia)

**14:00 – 16:00 ForumAlpinum: additional workshops to Module 1**

**Workshop 1.4. Alpine springs under pressure**

**(Saal Fort Claudia)**

*Chair: Stefanie von Fumetti (Uni Basel)*

Alpine springs provide ecosystem services such as being a supply of drinking-water. Ecologically, they are important aquatic habitats under pressure. They suffer e.g. from cattle trampling, capturing or relocation. Land use changes and climatic changes threaten springs additionally. Headwaters in alpine regions will be affected strongly by climatic changes such as increased water temperatures or altered discharge regimes. In this workshop we will discuss conflicts of interests and threats for natural springs and how we can monitor them effectively. The development of conservation strategies should be a focus of future efforts in order to sustain important ecosystem services of springs in the Alps.

#### Inputs

*Stefanie von Fumetti & Daniel K ry: Alpine springs under pressure will Global Change increase present conflicts of interest?*

*Gabi Leonhardt: Long-term monitoring of alpine springs to determine climate change impact*

*Reinhard Gerecke & Marco Cantonati: Collecting biota in spring habitats: A proposal for a sustainable methodology in long-term monitoring studies*

*Daniel K ry: Ecological evaluation, conservation and restoration of spring habitats in the Swiss Alps*

**15:00 – 16:30 ForumAlpinum: additional workshops to Module 1**

### **Workshop 1.5 Monitoring and managing European Union species and habitats of alpine rivers (Saal Ehrenberg)**

*Chair: Norbert M ller (Uni Erfurt) & Helmut Kudrnovsky (Kematen)*

The EU Habitat Directive is requiring the monitoring and managing of their Annex species and habitats. In this session, we will discuss this subject area for alpine rivers. Special focus will be on key species and their habitat types 3220, 3230, 3240 “Alpine rivers” and 7240\* and 91E0. Within the last EU Habitats Directive Article 17 Reporting the conservation status of these habitats was assessed with unfavourable inadequate to bad. Therefore, besides methods of monitoring also examples of managing and reintroduction of key species will be part of this workshop. This workshop is also part of the “16th International Alpine Workshop” an annual meeting of scientists, practitioners and advanced students working in alpine rivers (see [www.fh-erfurt.de/la/tagliamento](http://www.fh-erfurt.de/la/tagliamento)).

#### Inputs

*Helmut Kudrnovsky: 3230 “Alpine rivers with Myricaria germanica” - actual findings along river Lech*

*Bruno Michielon & Tommaso Sitzia: Reintroduction of Myricaria germanica in Italy - an overview*

*Norbert M ller: 30 years monitoring and managing Typha minima at the Tyrolean Lech river – a key species of the habitat 7240\* “Alpine pioneer formations”*

*Michael Reich: Monitoring Bryodemella tuberculata - a key species of the habitats 3220, 3230 and 3240 “Alpine rivers”*

*Anna Sch pfer & Leopold F reder: Standardized selections of FFH-species and habitats for protection measures*

**break**

**16:30 – 19:00**

### **Current programmes and networks (Saal Fort Claudia)**

*Chair: Thomas Scheurer*

#### **Programme and networks presentations:**

*Primo  Skrt: Alpine Space Programme: Outlook*

*Bernat Claramunt: NEMOR network / Vision 2030*

*Massimo Bastiani: Network of River Contracts*

*Georg Niedrist: Forum Water*

*Taja Ferjančič-Lakota: Announcement of Young Academics Awards*

## **Poster Session**

**16:30 – 19:00 EUSALP AG 6 Subgroup Water meeting (closed)**

**19:00 – 22:30 (Tauernsaal)**

### **Conference dinner with guests, entertainment, water tasting**

*Welcome addresses*

– Roland Psenner (ÖAW)

– Invitation of local politics: Mag. Katharina Rumpf (BH); Hanspeter Wagner (Mayor of Breitenwang)

Music: Landesmusikschule Reutte

Water tasting: Roland Psenner

## **Wednesday 6<sup>th</sup> June 2018**

**8:30 – 12:00 (Tauernsaal)**

### **Module 4: Conflicting water use in the Alps**

*Chair: Roland Psenner (EURAC Bolzano) & Günter Köck (ÖAW)*

Water resources play a particular role not only in the Alps, but also in large areas of Europe. They occur in various forms, are highly interlinked, belong to different countries and administrative units and provide habitats for rich and particular diverse groups of organisms. However, changing environmental and climatic conditions as well as growing demand is likely to lead to conflicts in water use and to exacerbate existing disputes over water management strategies. The session will identify hot spots of water use and management, analyze target conflicts, assess their relevance in regional, national and international context, and discuss possible solutions.

**8:30 – 9:45 Keynotes (Tauernsaal)**

#### **Keynote 1: Water-related hotspots in the Alps – Results of the workshops of Module 1 and perspectives**

*Klaus Lanz (International Water Affairs)*

#### **Keynote 2: Snowmaking - a vital adaptation measure creating conflicts**

*Robert Steiger (University of Innsbruck)*

#### **Keynote 3: Ergebnisse der 7. Wasserkonferenz (Module 2 and 3)**

*Joze Papež (Slowenien)*

## **Break**

**10:15 – 12:00 Workshops**

### **Workshop 4.1. Local water use: water supply, agriculture, tourism (Saal Fort Claudia)**

*Chair: Heike Zimmermann-Timm (Goethe University, Frankfurt am Main)*

While the climate change and its effects on the water balance in the mountains have attracted considerable attention, the land-use change and water management at the different spatial scales in the Alps have so far

received much less attention. Within the framework of this session, examples will be introduced which aim to bridge the gap between theory and practice, such as in agricultural irrigation. Further, the examples do not tie decisions on the water balance to political boundaries and involve the affected parties more actively in decision making processes. The presented examples will be critically discussed to determine if a paradigm shift is indicated and what role identifying with common objectives plays in the success.

### Inputs

*Oliver Ike*: Problem of private or public use of water resources: Case study Val Masino

*Calianno Martin*: Is Alpine irrigation overestimated?

*Simone Persiano, Alessio Pugliese, Alberto Aloe, Jon Olav Skøien, Stefano Bagli, Paolo Mazzoli, Juraj Parajka, Berit Arheimer, René Capell, Alberto Pistocchi, Alberto Montanari, Günter Blöschl & Attilio Castellarin*: Transboundary water supply assessment of surface water resource availability: application in Danube and Tyrol

*Primož Pipan, Mateja Šmid Hribar & Mimi Urbanc*: The role of local community in governing water as a common-pool resource

## **Workshop 4.2. Energy production (Tauernsaal)**

*Chair: Peter Hanisch (DonauConsult)*

The presentations show the variety of conflicts arising from hydropower generation in Alpine surroundings. They serve as input for the discussion on how much society is ready to "pay" for the preservation of intact ecosystems or in return for their optimized use. Scale level and dimensions taken into account have a significant impact on the result of the evaluation, as well as the need to shift objectives between different spatial, ecological or socio-economic subsystems.

The objective of the discussion will be to propose how scientific research, technical practice and economic actors can agree on a common approach for evaluation and implementation of hydropower projects that provides democratic legitimacy for the decision process accepted by the society.

### Inputs

*Wolfram Sparber*: Energy transition in Alpine regions – what does it mean for water use and water management? A view from South Tyrol

*Lutz E. Schlange & Werner Hediger*: Sustainability assessment of hydropower from a stakeholder perspective

*Monica Camuffo, Giovanna Deppi, Luigina Malvestio & Lucia Ruffato*: Small hydropower plants: A critique related to the Belluno area (Italy)

*Christian Schlüchter & Thomas Scheurer*: Impacts and risks of reservoirs: The case of reservoirs along the Spöl river

*Daniel Hayes, Julia Brändle, Carina Seliger, Bernhard Zeiringer & Stefan Schmutz*: Preserving Alpine Floodplain rivers through functional floodplain flows

## **Workshop 4.3. Tourism (Saal Kreckelmoos)**

*Chair: Philippe Bourdeau (F)*

'While water has become a central resource of the summer and winter tourist experience and economy in the mountains, its increasing uses (sports and leisure activities, well-being, cultural snow...) make it a common good with stakes facing the risks of shortage and competition between recreational and utilitarian uses (daily life, agriculture, industry). The workshop will address key questions for the prospective of recreational uses of water in the mountains:

- What know-how for regulating water uses between the tourism sector and other activities, and vis-à-vis the downstream watersheds?
- What governance of water between public and private actors?
- What are the benefits of integrated water management systems?

## Inputs

*Jernej Stritih, Matjaž Harmel & Klemen Strmšnik: Valuation of recreation related ecosystem services on rivers Soča (Slovenia) and Tara (Montenegro)*

*Emmanuel Reynard, Martin Calianno, Marianne Milano & Christophe Clivaz: Integrated water resource management in tourist areas: moving from the hydrological basin to the water use basin.*

*Emmanuel Reynard: Summary of Conference Water & Tourism 2017*

*Massimiliano Fazzini: On the recent variation of the "Snow Reliability Line" in the south-eastern Alps*

## **Workshop 4.4. Ecological integrity of rivers (Saal Ehrenberg)**

*Chair: Leopold Füreder (ÖAW & ISCAR & University of Innsbruck)*

Alpine rivers play a particular role in the Alps, their surroundings and over large areas of Europe. They occur in various forms, are highly interlinked, cover surfaces involving different countries and administrative levels, provide habitats for a rich and particular biodiversity, but also suffer from multiple demands and use. A wide spectrum of anthropogenic impacts has resulted in an alteration of catchments and discharging rivers, sometimes even in a complete disruption of river systems. Several national and international directives for their protection and sustainable use as well as improvements of their ecological status are in place and contribute to the high conflict potential. Here, we discuss a) the ecological status of rivers in the Alpine regions, b) look at conflict scenarios and key management measures, and c) propose innovative projects and concepts towards a sustainable ecological integrity.

## Inputs

*Susanne Muhar & C. Seliger: Overview of the environmental conditions of the rivers of the Alps*

*Roberto Epple: The Wild Rivers Label - an effective tool to conserve alpine river landscapes?*

*Gebhard Tschavoll: WWF Austria - River Restoration Concept*

*Andrea Cottini, Filippo Miotto, Marzia Ciampittiello, Angelo Boggero & Stefania Cerutti: Clean Water Project - San Giovanni Torrent (Lake Maggiore - Verbania - Italy)*

*Stefanie Oberarzbacher, Erich Tasser & Wolfgang Mark: Holistic (multiscale) analysis of the factors and their effect on the fish fauna in Inner-Alpine space*

**8:00 – 12:00 NEMOR Workshop (Seminarraum Moserhof)**

## **Lunch**

**13:00 – 17:30 (Tauernsaal)**

## **Module 5: Managing conflicting water use**

*Chair: Valerie Braun*

The growing demand and the availability of Alpine water resources for water provision, energy production and tourism in Europe makes the future of water resources relevant for the local population, economy and politics. Moreover, the Alps are considered as the water tower of Europe providing the lowlands with water for agricultural, domestic and industrial use. Alpine water resources are threatened by climate change and may lead to social conflicts. In this modul we will discuss past, present and future water-related conflicts.

**13:00 – 14:00 Keynotes (Tauernsaal)**

### **Keynote 1: Water as a cause for conflicts**

*Martin Grambow (TU Munich)*

### **Keynote 2: Participative processes in water management**

*Klaus Michor (practice, Revital)*



14:00 – 16:30 (incl. Coffee break): Workshops

### **Workshop 5.1. Learning from the past for the management of present and future water-related conflicts: Dealing with floods and flood risk in historical Alpine societies**

**(Saal Kreckelmoos)**

*Chair: Patrick Kupper (Institute of History and European Ethnology, University of Innsbruck)*

Conflicts over water use and water management have affected historical societies in the Alps at least since the Middle Ages. As water had been a common good in many Alpine regions, people had to find solutions how to share the costs for water supply and flood protection and how to avoid significant disadvantages for the one party caused by initiatives of another party. This workshop wants to shed light on historical adaptation and coping strategies towards floods in 18th to 20th century Austria and Switzerland and will highlight the question, why learning from the past will also help dealing with conflicts over water and flood management today and in the future.

#### Inputs

*Reinhard Nießner: (Institute of History and European Ethnology, Univ. of Innsbruck): The 1989 Flooding of Innsbruck: Human Induced Disaster, Social Conflict and Contemporary Challenges*

*Melanie Salvisberg: Taming the torrent? Flood control and conflicts of interest at the Gürbe River (Canton of Bern) from the 19th century until today*

*Christian Rohr: Avoiding conflicts by revisiting historical experience? Flood marks and their use for disaster memory past and present*

### **Workshop 5.2. Integrated river basin management**

**(Tauernsaal)**

*Chair: Susanne Muhar (BOKU Vienna) & Primož Skrt (Alpine Space)*

The Interreg Alpine Space project “SPARE” aims to harmonize the protection and development of Alpine river ecosystems. After more than two years of intensive work, SPARE shares some first results: An interactive workshop will be held to present, test and discuss an online database of reference cases, which shall support practitioners and decision makers by introducing existing solutions of Integrated River Ecosystem Management (IREM). Also, one of the five SPARE pilot areas will present itself and the participatory process that was started to develop long-term solutions to balance the use and protection of the Inn River Basin in the Engadine valley.

#### Inputs

*Susanne Muhar & Kerstin Böck: SPARE - Strategic Planning for Alpine River Ecosystems Integrating protection and development*

*Sašo Šantl & Urška Kocijančič: A reference database to support practitioners toward Integrated River Ecosystem Management*

*Angelika Abderhalden & Barbara Grüner: Integrated River Basin Management in the Inn River Basin (CH)*

*Thomas Fleury (Alpine space): Lessons learnt from past projects*

### **Workshop 5.3. Mitigating future water conflicts**

**(Saal Ehrenberg)**

*Chair: Susanne Brandstetter (BMNT)*

River dialogue –The “River dialogue” format has been developed by the Austrian Federal Ministry responsible for Environment and Water Management and the regional government of Upper Austria. More broadly seen, it is about stakeholder involvement and dialogue processes in the field of Water and integrated river basin management (IRBM). 13 River Dialogues have been held in 10 river catchments of Austria, one transboundary with Bavaria (Untere Salzach). At the Forum Alpinum 2018, there is a parallel workshop on IRBM. So the present one will mainly focus on the following topics (while embracing the submitted inputs):

1) Main obstacles for a successful dialogue, and how to prevent/mitigate them 2) Defining the scope – how to take the river basin system into account, while not neglecting the local perspective? 3) How to make sure all concerned stakeholders can participate in an equitable and fair way? 4) The role of brokers and facilitators 5) The specific challenge of transboundary dialogue processes.

#### Inputs:

*Michela Bevione*: Socio-ecological transition, wealth creation and territorial metabolism: the case of Maurienne Valley.

*Roland Köck, Hubert Siegel, Elisabeth Gerhardt & Eduard Hochbichler*: Best Management Practices within forested drinking water protection zones

*Bettina Urbanek*: How NGOs can contribute to water governance on different levels: from EU Water Framework directive to regional management planning

*Thomas Thaler & Sebastian Seebauer*: Planned retreat as an option for the European Alps? To whom, what and when we have to talk

#### **Workshop 5.4 Alpine multi-purpose reservoirs: Future potential and relevance (Saal Fort Claudia)**

*Chair: Astrid Björnsen Gurung (WSL) & Petra Schmocker-Fackel (BAFU)*

Concerns about water scarcity and related conflicts are almost absent in Switzerland. Yet, both the summer drought of 2003 and the anticipated impacts of climate change on alpine water resources remind us about the increased probability of local water shortages towards the end of this century. Multi-purpose reservoirs might alleviate the negative effects of regime shifts triggered by rising temperature, reduced snow pack and glacier melt. Ideally, such reservoirs would meet various demands, such as electricity production, agricultural irrigation, snow-making, drinking water supply, ecological needs and flood control. But is this realistic? Can reservoirs, glacier lakes and other natural or artificial ponds indeed hold back enough water to compensate for the anticipated losses? This workshop presents the framework, methodology and first insights from the project Swiss Water Potentials

##### Inputs

*Manuela Brunner & Manfred Stähli* (Swiss Federal Research Institute WSL, Switzerland): The “Hydro-CH2018 Reservoir” Project

*Elke Kellner* (Bern University, Switzerland): Evolving polycentric climate governance: The case of multifunctional water use in Oberhasli, Switzerland

*Gottfried Gökler* (Vorarlberger Illwerke AG, Austria): Management options for Alpine multi-purpose reservoirs

*Melanie Clivaz, Emmanuel Reynard* (University of Lausanne): Contribution of dam reservoirs to Alpine society under changing context: social-economic and ecological trajectories. A case study in Valais (Swiss Alps)

*Marion Douarche* (CIMEO agence pour l'eau en montagne, France): One extraction - Several uses: A case study from France

Discussions

16:30 – 18:00

(Tauernsaal)

#### **Public Event / Öffentliche Veranstaltung**

#### **Wasserkonflikte in den Alpen – und in Breitenwang?**

*Anette Kestler* (Naturpark) - Einleitung über Region

*Closing panel*

**What is needed to solve (future) conflicts in water use?**

**Wie können wir zukünftige Wasserkonflikte im Alpenraum lösen?**

Questions to discuss: Which water conflict management is needed for Alpine space? Water availability between individual interests and public good (all scales from local to European)?

*Chair: Klaus Lanz*

Panelists: *Leopold Füreder* (ÖAW & ISCAR & University of Innsbruck), *Luka Štravs* (Ministry of the Environment and Spatial Planning, Slovenia), *Astrid Björnsen Gurung* (WSL), *Elisabeth*

Sötz (WWF), *Gaia Checcucci* (Italian Ministry Andrea Paolo, opt. Water Conference) (TS),  
*Anette Kestler* (local representative)

18:00 – 20:00

*(Tauernsaal)*

## **Regional products - presentation and tasting**

20:00 *Public film presentation*

### **Film**

#### **Universum „Fünf Grad plus - Wie das Klima unsere Welt verändert“**

Eine Koproduktion von ORF und Posch TV Filmproduktion 2011. Für die kommenden einhundert Jahre sagen Wissenschaftler eine Temperaturerhöhung von drei bis sechs Grad für den Alpenraum voraus. Ganze Landstriche sollen sich verändern, unter den Lebewesen wird es Verlierer und Gewinner geben. Die Universum-Dokumentation „Fünf Grad plus“ ist den ersten Anzeichen dieser Veränderung auf der Spur. Regisseurin Waltraud Paschinger und Kameramann Franz Posch sind mit ihrem Team den Spuren der schmelzenden Gletscher gefolgt und unter das „ewige Eis“ eingestiegen. Sie haben Tiere beobachtet, Forscher zu deren Untersuchungen begleitet und auch einen bekannten österreichischen Zeitzeugen vor die Kamera gebeten: Sepp Forcher – er kennt die Bergwelt des Alpenraumes wie kaum ein anderer. „Fünf Grad plus“ zeigt die Schönheit der derzeitigen Alpenwelt ebenso, wie die einer möglichen neuen Welt. Und versucht den Wandel dazwischen in beeindruckenden Bildern näher zu bringen.

**Thursday 7<sup>th</sup> June**

### **Meetings**

8.30 – 11.00 ISCAR Partner meeting

8.30 – 12.00 Water Platform Meeting

9.00 – 15.00 Excursion Lech catchment area and Streimer Bach Gorge (max. 10 participants) *Guided by Norbert Müller*