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Summer School

SUSTAINABLE NATURAL RESOURCE USE IN ARCTIC AND HIGH MOUNTAINOUS AREAS

Salzburg, Austria
7th – 21st July, 2019



Outline

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01. Organizers

The summer school was organized by University of Salzburg (Austria) and the Society for Urban Ecology (SURE) in cooperation with Austrian and international partners.

02. School participants

A total of 78 participants took part in the school, including students and lecturers, from a wide range of countries with very different socio-ecological conditions. These include: Russia, China, India, Iran, Turkey, Romania, Slovakia, Czech Republic, Austria, Germany, Estonia and Colombia.

SUNRAISE project partners

- *Central Himalayan Environment Association, Nainital, India*
Tewari Pankaj
- *Estonian University of Life Science, Tartu, Estonia*
Anton Skaruba
Jaak Kliimask
Kalev Sepp
Lagle Lõhmus
- *Gorno-Altaisk State University, Gorno-Altaisk, Russia*
Natalia Iurkova
Olga Zhuravleva
Oxana Klimova
Uliana Starygina
- *Jawaharlal Nehru University, Delhi, India*
Anees Mohammad Mangalasseri
P. K. Joshi
Praveen Kumar
Shonali Sharma

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- *Kumaun University, Nainital, India*
Bhagwati Joshi
Kevla Nana
Prakash C. Tiwari
Vaseem Ahmad
- *NGO Altai-Sayan Mountain Partnership*
Tortokova Aisulu
- *Russian State Hydrometeorological University, St. Petersburg, Russia*
Alexander Evdokimov
Denis Alexeev
Timur Nizamutdinov
- *Siberian Federal University, Krasnoyarsk, Russia*
Anastasia Garmash
Julia Evseeva
Marina Rubleva
- *University of Bremen, Bremen, Germany*
Igor Novopashenny
- *University of Salzburg, Salzburg, Austria*
Angela Hof
Anja Renate Lieselotte Müller
Carola Helletsgruber
Christian Haslinger
Christoph Elbl
Clemens Herrmüller
Daniel Baumgartner
Darija Cosic
Eva Schreckeneder
Florian Peters
Jan Keily
Johann Grugger
Jürgen Breuste
Julia König
Kevin Zeller
Luana Neis
Marc Giménez Maranges
Petra Pröll
Philipp Zitzler
Robert Siller
Sarah Braun
Tetiana Hlieksieienko
Wolfgang Rainsberger

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Participants from other institutions

- Adam-Mickiewicz-University, Poznań, Poland
Andrzej Mizgajski
- Albert-Ludwigs-University, Freiburg, Germany
Nora Leszczynski
- Catholic University of Eichstätt-Ingolstadt, Eichstätt, Germany
Tabea Klier
- China Agricultural University, Beijing, China
Ruiming Ma
- Climate change adaption region Pongau, Bischofshofen, Austria
Nadine Guggenberger
- Earth Observation Centre, Weßling, Germany
Hannes Taubenböck
- East China Normal University, Shanghai, China
Junxiang Li
Wu Caiyan
- EcoNat, Bogotá, Colombia
Henry Garay Sarasti
- Ege University, Izmir, Turkey
Arifa Karadağ
Çağdem Coşkun Hepcan
- Geopark Ore of the Alps, Bischofshofen, Austria
Horst Ibersberger
- Humboldt University, Berlin, Germany
Salman Qureshi
- Land Salzburg, Austria
Günther Nowotny
Rosanna Scriba
- Leibniz Institute of Ecological Urban and Regional Development, Dresden, Germany
Martina Artmann
- Mendel University, Brno, Czech Republic
Kristýna Kohoutková
- National Park Berchtesgaden, Berchtesgaden, Germany
Bernd Becker
Carolin Klar
- Regional Association Pongau, Austria
Stephan Maurer
- Salzburg city council
Achim Ehrenbrandtner

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- *Slovak University of Agriculture, Nitra, Slovakia*
Attila Tóth
- *Tongji University, Shanghai, China*
Jing Gan
- *University of Bucharest, Bucharest, Romania*
Ana-Maria Calotă
Ana-Maria Popa
Cristian Ioa
Monica-Gabriela Paraschiv
- *University of Tabriz, Tabriz, Iran*
Akbar Rahimi
Maryam Bayat
- *Yildiz University, Istanbul, Turkey*
Meryem Hayir Kanat

03. School objective

A practice-oriented school was designed aiming at the examination of challenges for people and the environment in the context of environmental change and of solutions to them, with a specific focus on mountainous areas. This is the reason why a mixture of highly interactive theoretical sessions held by renowned international lecturers, field trips and group work projects was used. The aim was to explore theoretical concepts implemented worldwide, their practical adoption in the mountains of Salzburg and surroundings, and their applicability in the mountainous city of Salzburg. The location of the city of Salzburg in the Austrian alpine region, the challenges faced in this area related to environmental change and the schemes already put into practice in order to address these challenges justify the selection of Salzburg as a good location for the development of the school.

04. School description

The school had a duration of 2 weeks (from Sunday 7 July to Sunday 21 July 2019) and had its venue in the Faculty of Natural Sciences of University of Salzburg, where most part of the theoretical and practical activities were held. The first week was devoted to the introduction of theoretical concepts and practical experiences through in-class sessions and activities and field trips within and outside the city, while the second week was fully devoted to group work activities on various research projects.

Theoretical sessions

During the theoretical sessions, which took place between Monday 8 and Thursday 11 July, a variety of topics were covered, including urban agriculture, urban climate, urbanization patterns and near-natural solutions in cities and mountain areas. Different blocks were created on the following thematic areas: 1) mountainous areas as a special ecosystem and a place for human activity, including urbanisation; 2) nature-

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based solutions for urban sustainability, with a focus on both mountainous and non-mountainous areas (very diverse topics were addressed such as the edible city concept, urban trees, urban flood management, eco-city development, etc.); and 3) mountain cities and towns, where experiences were shared on the actual situation in several mountainous cities and towns mostly but not only located in Austria on a wide range of topics related to nature and sustainability. Both internationally renowned scientists and students at University of Salzburg were involved in the provision of interactive theoretical lectures. It was intended to also give visibility to very valuable experiences and projects developed by the latter at the local scale.



Field trips

A lot of attention was paid to the need to work with local stakeholders and learn from practical experiences directly in the field, the reasons why it was decided to organise 3 field trips during the school. They included:

- A visit through the city of Salzburg led by Achim Ehrenbrandner and Günther Nowotny, from the city council and the regional government of Salzburg, respectively. The urban green strategy and urban green spaces in the mountainous city of Salzburg were visited and discussed, as well as the appropriateness of calling Salzburg a green city. The theoretical concept ("green city") and its practical implementation were contrasted.

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- A one-day excursion to the UNESCO Global Geopark “Ore of the Alps” in Bischofshofen and the Weithwörther wetlands close to the city of Salzburg, led by Dr. Horst Ibersberger (Geopark “Ore of the Alps”) and Rosanna Scriba (regional government of Salzburg). Two very different landscapes needing different approaches for its management were visited in a single day, which allowed the participants experiencing the different strategies required for nature protection in high mountains areas (UNESCO Global Geopark “Ore of the Alps”) and flat areas close by (Weithwörther wetlands – renaturation project of the wetlands of the river Salzach). Apart from explanations on these two singular sites, presentations were offered by Stephan Maurer (Regional Association Pongau) and Nadine Guggenberger (Climate change adaption region Pongau) on schemes for sustainability in the mountainous region of Pongau (in the south of the city of Salzburg).
- A one-day excursion to the National Park Berchtesgaden (Germany), led by Carolin Klar and Bernd Becker (National Park Berchtesgaden). This excursion offered the opportunity to the participants to listen to presentations, visit the museum and experience first-hand through a walk through the park the actions taken to protect very sensitive high-mountain ecosystems and make compatible protection with human activity.



Visit through the city of Salzburg led by Achim Ehrenbrandtner and Günther Nowotny, from the city council and the regional government of Salzburg, respectively



Presentation by Nadine Guggenberger (Climate change adaption region Pongau) on the climate change adaptation plan for the mountainous region of Pongau, during the visit to the Visitor Centre of the UNESCO Global Geopark “Ore of the Alps”

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Dr. Jürgen Breuste, head of the summer school (right), and Dr. Horst Ibersberger, head of the UNESCO Geopark “Ore of the Alps” (left), during the visit to the Visitor Centre of the UNESCO Geopark “Ore of the Alps”



Visit to the UNESCO Global Geopark “Ore of the Alps” led by Dr. Horst Ibersberger (head of the UNESCO Geopark “Ore of the Alps”)

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Visit to the Weithwörther wetlands (LIFE renaturation project) led by Rosanna Scriba, from the regional government of Salzburg

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Presentation of Carolin Klar (National Park Berchtesgaden) on ecological connectivity, in the "Haus der Berge" of the National Park Berchtesgaden



Visit to the museum ("Haus der Berge") of the National Park Berchtesgaden



Visit to the National Park Berchtesgaden, led by Carolin Klar and Bernd Becker (National Park Berchtesgaden)

Research activities

Between Monday 15 and Sunday 21 July, participants were held responsible for the development of research projects on three different topics related to the sustainable development of the mountainous city

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of Salzburg: 1) urban agriculture/ urban gardening; 2) urban trees; and 3) citizen science. It was sought to work on the applicability of the theoretical concepts and practical experiences learnt during the previous week for the specific case of the city of Salzburg. Participants were divided into 3 groups and assigned a particular topic. They were supported and supervised by 3 international specialists: 1) Kristýna Kohoutková from Mendel University in Brno, Czech Republic (group working on urban agriculture/ urban gardening); 2) Meryem Hayir Kanat from Yildiz University in Istanbul, Turkey (group working on urban trees); and 3) Arifa Karadağ from Ege University in Izmir, Turkey (group working on citizen science). Contact was also kept with local stakeholders, who showed interest for the results of the explorations that were being carried out.

05. Results

The development of the summer school resulted in a very satisfactory experience and very enriching learning process for all participants. The inclusion of stakeholders from very different contexts and with very different experiences made the discussions very enriching and exciting. Additionally, the research part of the school resulted in the execution of 3 very interesting research projects. They were presented during the last day of the school in the form of a poster, which is expected to be useful for local stakeholders in order to improve their strategies for a more sustainable city of Salzburg.

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