

## Outline

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### 01. Organizers

The piloting was organized by University of Salzburg (PLUS) in cooperation with the Royal University of Bhutan (RUB). Not least, it was prepared by Prof. Jürgen Breuste and MSc. Marc Giménez Maranges (PLUS), organisationally supported by Dr. Om Katel (RUB), and conducted by Prof. Jürgen Breuste (PLUS).

### 02. List of participants

A total of 5 lecturers and 12 master students from different study backgrounds took part in the piloting.

#### Lecturers

- *Jawaharlal Nehru University, Delhi, India*  
Prof. P. K. Joshi
- *Kumaun University, Nainital, India*  
Prof. Bhagwati Joshi  
Prof. Prakash C. Tiwari
- *University of Salzburg, Salzburg, Austria*  
Prof. Jürgen Breuste  
MSc. Marc Giménez Maranges

#### Master students

- *Master in development studies – Royal University of Bhutan*  
Govinda Rimal  
Kencho Tshering  
Sangay Wangmo  
Sidarth Pradhan  
Sunita Uroan  
Tshering Deki
- *Master in Natural Resource Mangement – Royal University of Bhutan*  
Bigyen Rasaily

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## ECOLOGICAL ASPECTS OF URBANISATION IN MOUNTAIN AREAS

Lobesa, Bhutan  
14<sup>th</sup> – 15<sup>th</sup> August, 2019



Kezang Choden  
Kinley Dorji  
Parul Sharma  
Sanjeev Rai  
Sunil Sapkota

### 03. Piloting objective

The aim of the carrying out of the piloting at Royal University of Bhutan was to test the practicability of the learning materials and teachings methods proposed in the recently created learning module “Ecological aspects of urbanisation in mountain areas”, which was developed in 2019 by the research team at University of Salzburg. In particular, a course was organised, based on the in-class version of the aforementioned module, aiming at the examination of the suitability of its implementation for the improvement of curricula at partner universities from the Himalayas. The location of the city of Lobesa in the Bhutanese Himalayas and the rapid urbanisation phenomenon that some Bhutanese cities are currently experiencing, with its associated challenges, justify the selection of Lobesa as a good location for the development of the school. It is expected that the enrichment of current curricula at universities in Himalayan countries with the contents and teaching methods suggested in the module can potentially lead to the formation of professionals better trained for the management of sustainability-related issues in mountains. This is shown by the aims of the learning module, which are to understand:

- The weaknesses and strengths of the responses provided to the environmental crises, including the eco-city concept.
- The alternative approaches for a more sustainable city.
- The role of urban nature as a strategy for the attainment of sustainable cities.
- The potential of ecosystem services to promote urban nature.
- The natural basis of mountain areas and mountain dynamics.
- The human-nature relation in mountain areas and its evolution in time.
- The issue of urbanisation in mountain areas.
- The risks and challenges of settlements in mountain areas, and adequate measures of dealing with them.
- Strategies for sustainable mountain cities.

### 04. Description of the piloting

The piloting had a duration of 2 days (from Tuesday 14 August to Wednesday 15 August 2019) and had its venue in the Lobesa Campus of Royal University of Bhutan, where all activities were held. The first day was devoted to the introduction of theoretical concepts and practical experiences on urbanisation processes and sustainability strategies, with a special focus on the eco-city concept and alternative sustainability transition pathways. Additionally, theories and concepts were further developed through a case study on urban nature and urban rainwater management. On the other hand, the second day was devoted to sessions specific on mountain areas, during which the applicability in mountain environments of the concepts learned during the

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previous days was discussed, inter alia. The bio-physical reality of mountain environments and the issue of urbanisation in mountain areas were analysed. A particular focus was put on the evolution of urban settlements in mountain areas and the challenges and risks that they face. Finally, the piloting was concluded with a lecture on sustainability strategies for a more liveable urban mountainous environment.

Altogether, 8 theoretical lectures and 7 seminars were offered. Through the latter, a reflection and discussion on the theoretical concepts learnt was sought. The lectures and seminars provided and the respective lecturers are:

- Lecture + seminar 1: “Conceiving the city of the future”. *Lecturer: MSc. Marc Giménez Maranges*
- Lecture + seminar 2: “Transitioning towards a more sustainable urban paradigm”. *Lecturer: MSc. Marc Giménez Maranges*
- Lecture + seminar 3: “Urban nature”. *Lecturer: Prof. Jürgen Breuste*
- Lecture + seminar 4: “Urban rainwater management”. *Lecturer: MSc. Marc Giménez Maranges*
- Lecture + seminar 5: “Introduction to mountain areas”. *Lecturer: Prof. Jürgen Breuste*
- Lecture + seminar 6: “Urbanization in mountains”. *Lecturer: Prof. P. K. Joshi*
- Lecture + seminar 7: “Risks, challenges and sustainable management in mountainous towns”. *Lecturer: Prof. Prakash C. Tiwari*
- Lecture 8: “Eco City - The role of sustainable cities in conserving natural resources”. *Lecturer: Prof. Jürgen Breuste*





### 05. Results

The development of the piloting resulted in a very satisfactory experience and very enriching learning process for all participants. It gave new ideas to the participants for their further studies and provided knowledge that connected very well to their already existing knowledge. This could be included into the discussions and communications. All participants, including students and lecturers were very interested, engaged and actively participated in all activities, especially during the seminars. The teaching contents and methods were valued

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## Piloting of the learning module

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very positively by all of them. Thus, the practicability and suitability of the enrichment of the existing curricula in Himalayan partner universities with the inclusion of the developed learning module was proved.