Research UNESCO Chair

UNESCO Chair on Natural and Cultural Heritage for Sustainable Mountain Development

In brief

The UNESCO Chair on Natural and Cultural Heritage for Sustainable Mountain Development promotes research and exchange of experiences in areas like nature conservation, renewable resources, protected area management, sustainable tourism, culture, traditions, and regional development.

The chair is run by the management centre of the Swiss Alps Jungfrau-Aletsch UNESCO World Heritage site, jointly with the Institute of Geography (GIUB) and the Centre for Development and Environment (CDE), both at the University of Bern, Switzerland, and the Research Centre for Training and Integrated Research in Arid and Semi-Arid Lands Development (CETRAD) in Nanyuki, Kenya. Activities focus on the Swiss Alps Jungfrau-Aletsch and Mount Kenya UNESCO World Heritage regions, as well as on a protected area and potential natural heritage site in Coyhaique, Chile.

Learn more at:
https://www.jungfraualetsch.ch/en/unesco-chair-2/

Dear Readers,

Our aim in launching this newsletter is to keep you informed about the activities of the UNESCO Chair on Natural and Cultural Heritage for Sustainable Mountain Development. Our work centres around the promotion of research, training, consultancy, and communication concerned with developing existing UNESCO World Heritage sites as an integral part of sustainable regional development.

Thematically, we focus on the following fundamental question: How can societal concerns about fair distribution of the costs and benefits of sustainable regional development be adequately addressed? These concerns include questions of nature and landscape conservation, protected area management, sustainable tourism, culture, and traditions, as well as associated traditional and new forms of using common-property resources like land, water, biodiversity, and forests, or the extraction of renewable energies. We believe that the concept of environmental justice is particularly relevant in finding adequate ways of addressing these concerns. The concept assumes that sustainable development is only possible if the basic rights of both humans and nature are recognized and respected, the costs and benefits of economic development are distributed fairly, and a high degree of democratic participation in business and politics is ensured.

With this focus, our UNESCO Chair helps to implement UNESCO's initiative, adopted in 2017, to promote research for sustainability worldwide. In addition, we also view the Chair as being part of the global mountain community.

For this reason, our activities in research, education, consultancy, and communication focus on mountain areas in Switzerland as well as in Kenya and Chile. The activities are run jointly by the two co-holders of the Chair, Prof. Stephan Rist (University of Bern, Switzerland) and Dr. Boniface Kiteme (CETRAD, Nanyuki, Kenya). The Chair is further supported by the World Nature Forum in Naters, Switzerland, and the Swiss Alps Jungfrau-Aletsch UNESCO World Heritage site.

In this first issue of our newsletter, we would like to present a brief overview of major ongoing activities and showcase an extremely exciting development project in southern Patagonia, Chile.

Our goal is to promote participatory governance in and around World Heritage sites in such a way that the areas inside and outside the actual site become part of joint efforts for sustainable development based on the principles of environmental justice. Such development includes democratic participation by the local population, guarantees fair distribution of costs and benefits within and between present and future generations, takes account of sociocultural differences within the population, and recognizes "nature's" right to secure existence. Our politically well-founded, critical contributions are further intended to advance achievement of the SDGs. Rather than ignoring trade-offs in the search for justice between humans and nature, we view them as a starting point for a holistic renewal of science and education.

Stephan Rist and Boniface Kiteme

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Democratic participation in a nature reserve: an initiative to combat air pollution

In brief

- Research at the University of Bern's UNESCO Chair into the experiences of the Goms energy region shows that combining decentralized and democratically controlled energy-efficient building and sustainable energy production constitutes an innovative approach to sustainable regional development.
- This approach inspired the conception and establishment of the first energy self-sustaining nature reserve in Chile, which is 100 per cent based on renewable energies.
- The energy self-sustaining nature reserve was democratically planned and implemented. This made it possible to address many concerns of the local population regarding its use for local tourism, environmental education, energy production, and preservation of the area's cultural and historical heritage.

Air quality in the Chilean city of Coyhaique is awful. Researchers from the University of Bern's UNESCO Chair and their Chilean partners want to change this. Their focus is on combining environmental education in schools, nature conservation, and the promotion of renewable energies and energy-efficient building. A main insight from the project is that the population's active participation is crucial to successful sustainable development.

What's that rustle in the bushes? Perhaps a hidden puma? The video they have seen in the classroom about the puma family in the reserve has sparked the children's imagination. Gradually, the 25 pupils of the Colegio Baquedano are shedding their initial shyness, and curiosity is getting the better of them.

Their school is located in the city of Coyhaique. Coyhaique lies in Patagonia, in southern Chile. Many of the children have never been to the national forest reserve, which is only five kilometres away from the city. Equipped with magnifying glasses, they are now roaming through the forest, discovering unknown bird species and the bizarre patterns of lichen growing in the park's natural forest.

The visit to the reserve on this sunny spring morning is at the core of the pilot project for environmental education. The idea is for children to learn about the local flora and fauna out in the fresh air of the reserve and experience them with all their senses: to get out of the classroom and into nature.

Air pollution is a health risk

Wood is the cheapest fuel used by Coyhaique's around 50,000 inhabitants to survive the long and cold winters. The poorly insulated wooden houses are heated with simple pot-bellied stoves. The result is one of the highest particulate matter concentrations in all of South America. Smoke from burning green, undried wood is causing massive health problems for people in the city. More and more children and adults are treated each winter for respiratory problems.

Nature conservation and the fight against air pollution

What does the presence of students in the park have to do with air pollution? Their introduction to the tour of the nature reserve has taken place in the former town library. This building connects local people to the memory of their own history and the struggle for compulsory education. When the stately wooden house had to make way for a new building, the city decided to move it to the nature reserve five kilometres away. The traditional timber construction was dismantled and then rebuilt at the new location.

In Patagonia, timber is a construction material that is not only renewable, but also lends itself to dismantling and rebuilding. At the end of its life, it requires no hazardous waste dump; it simply disintegrates back into fertile soil. In the case of the former town library, an innovation was added to these traditional benefits: Insulation and newly installed solar panels have made the rebuilt house independent of external fossil energy supply. Visitors can now experience the advantages of sustainable living and building traditions, nature conservation, and energy self-sufficiency all in one place.

This is eminently important, because it is precisely this innovation of the building tradition that will make it possible to drastically reduce air pollution. Insulation of the local traditional wooden houses reduces the need for heating energy by 60 per cent and more. The cost savings enable people to use the slightly more expensive dried firewood, which emits much less particulate matter.

Infrastructure is the key to success

In Coyhaique, the combination of traditional timber construction with well-insulated windows and walls that radically reduce energy consumption and associated particulate matter emissions was long known only from theory. There were no model houses in which people could experience for themselves that such energy-saving measures not only reduce air pollution, but also lower heating costs. This changed with the construction of a well-insulated model house under the guidance of our Chilean project partners. The little energy now required to heat the house can be covered with dried wood. Electricity is generated by the solar panels on the roof.

The building was presented to the population and the authorities in a big opening ceremony, and their reactions were extremely positive. Questions about costs and delivery times showed that people were highly interested. The combination of traditional timber construction – an important cultural heritage – with modern energy-saving technologies can thus be regarded as extremely forward-looking from both a scientific and a public perspective.

Keyword “participatory governance”

On the one hand, the local city authorities are legally obliged to address the causes of air pollution together with the local population. On the other hand, the park administration is required to involve the population more directly in developing and using the reserve. The UNESCO Chair researchers were well aware that these two tasks need to be tackled together, not separately, to achieve sustainable development. Accordingly, they created a forum that enables citizens to have a direct say.

More concretely, city councillors, the mayor, representatives of the regional government, and the forestry authority of the nature reserve discussed and reached an agreement with teachers and representatives of tourism, hospitals, and NGOs on how they intend to link the issue of air pollution with further development of the nature reserve. The result was a highly innovative sustainability project: to create Chile’s first national protected area supplied with 100 per cent renewable energy. Bringing environmental education from the classroom out into the park’s natural environment, using the large hall in the relocated and renovated library building for holding meetings, and building the energy-efficient and 100 per cent renewable wooden model house has created a powerful incentive for the local population to become more active in taking care of their nature reserve.

The project is led by researchers of the UNESCO Chair and carried out in close collaboration with the Chilean branch of Ernst Basler und Partner (EBP) and researchers from the Universidad de la Frontera. Half of the project funds are covered by the Swiss Programme for the Promotion of Renewable Energies, Energy and Resource Efficiency (REPIC), a joint initiative of the Swiss State Secretariat for Economic Affairs (SECO), the Swiss Agency for Development and Cooperation (SDC), the Swiss Federal Office for the Environment (FOEN), and the Swiss Federal Office of Energy (SFOE). The other half is covered by the Chilean regional and national government.

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Editors:
Theresa Tribaldos
Stephan Rist

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