

Institutionalizing cooperation between biosphere reserves and universities – the example of Science_Link^{nockberge}

Heike Egner, Julia Falkner, Michael Jungmeier & Daniel Zollner

Keywords: biosphere reserve, management plan, participative research design, education for sustainable development, regional innovation

Abstract

Biosphere reserves (BRs) as recognized model regions for sustainable development are supposed to maintain permanent access to scientific findings, innovation, new technologies and scholarly discussions. Science_Link^{nockberge} is an institutionalized cooperation between the Carinthian part of Salzburger Lungau & Kärntner Nockberge BR on the one hand, and Alpen-Adria-University Klagenfurt, on the other. The authors document and reflect the experiences of five years and argue that such a cooperation is mutually beneficial for all sides: the management of the BR, the region and the university.

Profile

Protected area

Salzburger Lungau &

Kärntner Nockberge BR

Mountain range

Alps, Austria

Introduction

Biosphere reserves as learning regions

The paradigm shift, from research-driven biosphere reserves (BRs) in the early 1970s to holistic and participatory learning sites – as advocated by UNESCO's Seville strategy (UNESCO 1996) – nowadays, calls for a new understanding of scientific processes. These are to produce *socially robust knowledge* (Nowotny 1999) and consequently need to be based on transdisciplinary designs and methods (Dressel et al. 2014; Ukowitz 2014: 21). The Lima Action Plan for the future development of the world's network of BRs thus focuses on *exploring and testing policies, technologies and innovations* for sustainable development (UNESCO 2016: 2).

These tasks meet with recent political and scholarly discussions, in which BRs are considered to be learning sites or – at least – essential parts of learning regions (e.g. Kusova et al. 2008). Following the definition by Hassink (2004: 1), learning regions are to be understood as *regional development concepts in which the main actors are strongly, but flexibly connected with each other and are open both to intra-regional and inter-regional learning processes*. Higher education institutions are explicitly considered main actors in such regions.

Salzburger Lungau & Kärntner Nockberge BR

Salzburger Lungau & Kärntner Nockberge BR is situated in the Austrian federal states of Salzburg and Carinthia. It covers different mountainous areas, including the lower mountain range of the Nockberge. In both federal states, discussions and conflicts related to nature conservation and sustainability date back many decades; on the Carinthian side a national park had been established in 1984 in response to intensive public discussions about large-scale investments in touristic infrastructures, which led to a referendum in favour of nature conservation (Gräbner 2014). The

establishment of a BR was the final result of a debate about the future of the region, starting in 2002. Interestingly, two parallel processes in both federal states resulted in the application for a joint BR, which was recognized by UNESCO in 2012.

Management plan for the Carinthian part

Due to substantial differences in their institutional environments, both sections of the BR recently developed separate plans in a participatory way (SPES 2014; Zollner et al. 2015), linked to BRIM, a BR integrated monitoring (Jungmeier et al. 2013; Huber et al. 2014). The management plan outlines the importance of scientific support for handling challenges at regional level and draws on the importance of long-term research and monitoring programmes to identify and to understand changes in society and in the environment. The cooperation with scientific and educational institutions in general, and the cooperation Science_Link^{nockberge} with the Alpen-Adria-University Klagenfurt in particular, is considered fundamental to develop a regional knowledge base (Jungmeier et al. in print).

Cooperation Science_Link^{nockberge}

Institutional setting and goals

The long-term cooperation between park and university is based on a contract, as agreed and signed in 2013. It aims at (1) building a bridge between excellent international research and everyday life in the region of Nockberge, (2) stimulating, triggering and scientifically supervising technical, economic, ecologic and social innovations in the region, (3) providing access to international developments and trends as well as the scientific community and (4) raising public awareness of the importance and potentials of the BR. The BR contributes to the research activities with technical, logistical and financial support, the university contributes network

and scientific expertise. Technically, the cooperation is based on a yearly work plan and an annual report on activities and achievements. The ongoing activities are supported by E.C.O., a specialized consultancy.

Special conditions and challenges

Compared to other parks in Austria, the research work conducted in the former Nockberge National Park had never been very intense. The University of Klagenfurt does not have a faculty of natural sciences, and the region had limited access to other research institutions. Moreover, the establishment of the BR in 2013 called for work on social, cultural and economic research questions.

The region of Nockberge is a peripheral region, characterized by an ageing population, brain-drain and little contact with academic life. This has implications for the development of a research cooperation like Science_Link. In particular, the cooperation is to be developed with a long-term perspective and needs to overcome cultural and institutional barriers.

Since the BR concept always had strong links with the scholarly world, various examples and concepts of cooperation between BRs and universities exist. For instance, Redberry Lake BR (Canada) developed a partnership with the School of Environment and Sustainability (SENS) of the University of Saskatchewan, providing a platform for master or PhD theses. The joint platform *turns out to be close and beneficial* (<http://www.redberrylake.ca>). Others, such as the Swiss Entlebuch BR, the Austrian Wienerwald BB or the German Rhön BR, to give just a few examples, intend to stimulate research work conducted by students through offering relevant research questions, support and supervision.

As approaches differ from one BR to another, depending on cultural, regional and legal preconditions, Science_Link^{nockberge} follows a specific cooperation design. So, (1) it has a long-term institutionalized character (contract between equal partners, established coordinators, annual work plan, activity reports). (2) A set of tools forms the technical backbone for the cooperation (a virtual library – the *Nockotbek*, the research forum – a catalogue of research questions, standardized agreement on students' papers). (3) Joint outreach activities support the dissemination of results. (4) Last but not least, Science_Link^{nockberge} is closely connected to the management plan of the BR.

Main activities

Primarily, different educational options at the university (such as seminars or lectures) and students' papers (such as bachelor or diploma thesis) should be connected to the BR. Courses at the Institute of Geography, such as *Mountain ranges of the world*, *Management of protected areas* or *Conservation of nature and landscapes* have shifted to addressing regional issues and allow for presenting students' papers at small regional events. Students face the challenge of presenting to a

real-life audience beyond the university's seminar facilities and of answering unexpected *real-life* questions. In addition to new information, guests and stakeholders from the region gain personal insights into university and the scholarly world. Such events have turned out to be interesting, surprising and sometimes irritating for all sides. We can see them as an intervention in both *worlds* to gain personal competencies related to the UNESCO's Decade of Education for Sustainable Development (Nagel & Affolter 2004; Rauch et al. 2016; Vare & Scott 2007).

Referring to a catalogue of potential research topics, some students have addressed the BR in their bachelor or master thesis. Here, mainly topics of human geography and landscape planning are tackled. The BR journal, *Meine Biosphäre*, has created a column that is dedicated to the results of the students' papers in particular and the activities of Science_Link^{nockberge} in general. In this way, the cooperation and its outcomes can be communicated to the region on a regular basis.

By conducting *GEO-Days of Biodiversity*, the cooperation also integrates elements of citizen science (Finke 2014). On a first GEO-Day in the Nockberge region in June 2016, notable zoologists and botanists explored the flora and fauna of a territory around St. Oswald. Interested laypeople, stakeholders from the region and school children were invited to accompany the scientists in their expeditions and to support the research work.

Technical backbones of the cooperation

Technically, the cooperation is based on two features:

- The *Research Forum* contains a catalogue of potential research topics as a living document, collecting and briefly explaining fields of research that appear to be relevant. The description of topics is general and allows for developing specific research questions that relate to the personal interest of the student. The research forum is open to students of all disciplines and is also an invitation to students beyond Alpen-Adria-University.
- The *Nockotbek* database is publicly accessible through the BR homepage (<http://www.biosphaerenparknockberge.at/bildung/science-link-nockberge>). It is regularly updated and provides relevant information about the Nockberge (recently some 190 publications, documents, grey literature materials).

Conclusions

The cooperation Science_Link^{nockberge} has not yet been subject to a systematic review nor evaluation. However, after some five years, Science_Link^{nockberge} appears to be a relevant institutional arrangement that is mutually beneficial to both partners, the BR management and the university, as well as the region where the BR is located. Bringing together two distinct in-

stitutions, with different focuses on research and education, definitely provides new opportunities and generates new networks for knowledge-based activities. However, the concepts and practices of a park management differ greatly from the concepts and practices at a university and vice versa. Both follow a distinct logic in terms of priorities, time scales, decision-making procedures and planning processes. Furthermore, both address different issues and stakeholders. Thus, besides opportunities and new networks, the cooperation between park management and university created unexpected inter-institutional challenges. The practical and theoretical implications of the cooperation need to be understood and will be investigated in more depth.

Acknowledgements

We want to thank our partners in the management and the region of the BR for the good cooperation. We appreciate the region's readiness to explore and reflect its potentials and challenges, to openly discuss sensitive issues and to demonstrate patience whenever scientists need their time in coming to the point.

References

- Dressel G., W. Berger, K. Heimerl, V. Winiwarter (Hrg.) 2014. *Interdisziplinär und transdisziplinär forschen. Praktiken und Methoden*. Bielefeld. [In German]
- Finke, P., 2014. *Citizen Science: Das unterschätzte Wissen der Laien*. München. [In German]
- Gräbner, H. 2014. Die Kärntner Nockberge. Vom Ringen um ein Schutzgebiet (1980) bis zum Biosphärenpark (2013). *Alpine Raumordnung* 39. Innsbruck. [In German]
- Hassink, R. 2004. *The Learning Region: A Policy Concept to Unlock Regional Economies from Path Dependency?* Paper presented at the conference: Regionalization of Innovation Policy, Berlin.
- Helming, K., J. Ferretti, K. Daedlow, A. Podhora, J. Kopfmüller, M. Winkelmann, J. Bertling & R. Walz 2016. Forschen für nachhaltige Entwicklung. Kriterien für gesellschaftlich verantwortliche Forschungsprozesse. In: *GALA* 25(3): 161–165. [In German]
- Jungmeier, M., M. Huber & D. Zollner (in print). Zur Vermessung von Wissenslandschaften: Regionen als Träger, Produzenten und Nutzer von Nachhaltigkeitswissen – das Beispiel Biosphärenpark Salzburger Lungau und Kärntner Nockberge. *Mitteilungen der Österreichischen Geographischen Gesellschaft*. [In German]
- Jungmeier, M., T. Köstl, S. Lange & M. Bliem 2013. The art of omission: BRIM^{Nockberge} – design of a BR Integrated Monitoring for the Carinthian part of the BR Salzburger Lungau & Kärntner Nockberge. *eco.mont* 5(2): 15–22.
- Kusova, D., J. Tesitel & M. Bartos 2008. Biosphere reserves – learning sites of sustainable development? *Silva Gabreta* 14(3): 221–234.
- Nagel, U. & C. Affolter 2004. Umweltbildung und Bildung für eine Nachhaltige Entwicklung – Von der Wissensvermittlung zur Kompetenzförderung. *Beiträge zur Lehrerbildung* 22(1): 95–105. [In German]
- Nowotny, H., 1999. The need for socially robust knowledge. *TA-Datenbank-Nachrichten* 8(3/4): 12–16.
- Rauch F., M. Jungmeier, R. Hübner & W. Elmenreich 2016. *Sustainable Development and the Dialectic of Change. Research-driven teaching to identify and handle aporetic conflicts by example of dilemmas on regional scale*. Poster at: COPERNICUS Allican Conference, Sept., 14th-15th, 2016, Vienna.
- SPES 2014. Managementplan / Leitbild für den UNESCO-Biosphärenpark Salzburger Lungau. Entwurf. Regionale Agenda 21 Lungau, Mauterndorf. [In German]
- Ukowitz, M. 2014. Auf dem Weg zu einer Theorie transdisziplinärer Forschung. *GALA* 23/1: 19–22.
- UNESCO 1996. Biosphere Reserves – The Seville Strategy and the Statutory Framework of the World Network. Available at: unesdoc.unesco.org/images/0010/001038/103849Eb.pdf
- UNESCO 2016. Lima Action Plan for UNESCO's Man and the Biosphere (MAB) Programme and its World Network of Biosphere Reserves (2016–2025). Available at: <http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/man-and-biosphere-programme/strategies-and-action-plans/new-mab-strategy-and-action-plan/documents/>
- Vare, P. & W. Scott 2007. Learning for a Change – Exploring the Relationship Between Education and Sustainable Development. *Journal of Education for Sustainable Development* 1(2): 191–198.
- Zollner, D., M. Huber, M. Jungmeier, D. Rossmann & H. Mayer 2015. Managementplan 2015-2025 Biosphärenpark Salzburger Lungau & Kärntner Nockberge – Teil Kärntner Nockberge. Bearbeitung: E.C.O. Institut für Ökologie, Klagenfurt. [In German]

Authors

Heike Egner

born 1963, is professor of human geography and heads the Department of Geography and Regional Studies at Alpen-Adria-Universität Klagenfurt. Her research focuses on the relations between society / humans and environment / nature. Email: heike.egner@aau.at

Julia Falkner

born 1984, holds a diploma in philosophy from the Alpen-Adria Universität Klagenfurt, joined the staff of the university-biosphere reserve cooperation SCIENCE_LiNKnockberge in 2014 as coordinator with responsibility for the research exchange. Email: jfalkner@edu.aau.at

Michael Jungmeier

born 1965, is an ecologist and human geographer. He is the managing director of E.C.O. Institute for Ecology in Klagenfurt and Senior Scientist at the Department of Teaching and Schools Development at Alpen-Adria-Universität Klagenfurt. Email: michael.jungmeier@aau.at

Daniel Zollner

born 1971, studied landscape planning at the University of Natural Resources and Life Sciences in Vienna and in Bangor / UK. He heads the sustainability team at E.C.O. – Institute for Ecology in Klagenfurt, with a focus on the participatory development of model regions and protected areas. Email: zollner@e-c-o.at