ASSOCIATION FOR TOURISM
AND LEISURE EDUCATION AND RESEARCH

ATLAS Annual Conference 2023

Quality of Life: Health, Tourism and Climate

Bad Gleichenberg, Austria

October 10-13, 2023

BOOK OF EXTENDED ABSTRACTS

FH | JOANNEUM
University of Applied Sciences

ISBN: ISBN: 978-94-93064-12-6

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Organizers

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Introduction

Bad Gleichenberg is located in the southeast of Styria, nestled in rolling hills, surrounded by vineyards, and surrounded by seven thermal spas. Located in the destination “Thermal and Volcanic Land (www.thermen-vulkanland.at/en), the campus of FH JOANNEUM Bad Gleichenberg is the ideal place to study topics of health, well-being, sports, and tourism. Around 360 students appreciate the family atmosphere, the high quality of life and study, and the region's culinary offerings. Like the bachelor's and master's degree programs on offer, the conference theme also fits in perfectly with the gentle hilly landscape and mild climate.

Quality of Life: Health, Tourism, and Climate

The ATLAS Conference 2023 is intended to provide a multi-perspective view of tourism and its relation to a wide range of burning contemporary issues. It means to address such questions as:

- How does tourism impact the quality of life of those who work within the industry and the people in the communities in it?
- How are health and tourism-related—not just in the context of health and medical tourism, but also in connection with ways in which tourism may be health-promoting (or not)?
- How can the economic health of communities, particularly demographically and infrastructurally disadvantaged ones, for example, in rural areas, be enhanced by tourism?
- How will climate change impact the health of the tourism industry?
- What is necessary for “healthy” tourism development?

The Bad Gleichenberg campus has state-of-the-art technology to guarantee a smooth conference process. The large Audimax can accommodate 220 people. In addition, two lecture halls, seven seminar rooms, and two IT rooms offer enough space for workshops during the conference.

Our motto: we practice what we preach (and teach)

Sustainable oriented conference
One of the ways we hope to practice what we preach is to organize the conference as a “sustainable oriented event”. We will do as much as we can to avoid producing waste, whether it be in a digital-only version of the book of abstracts and the conference schedule (in the form of an app), digital signage, or sourcing all beverages locally in returnable bottles. Catering will be done by local firms using regional, organic ingredients, also because doing so can significantly reduce waste. We will also encourage conference participants to travel to the event in as sustainable a way as possible by explaining public transportation options and encouraging transport pooling. We will also provide those traveling by air with information about how to buy CO2 compensation. Keynote speakers who would normally need to travel from overseas to attend will be given the option of sharing their keynotes via video stream. In keeping with the principle of doing good and talking about it, during the conference itself, we will make specific reference to how the conference has been organized to encourage others to follow our example.

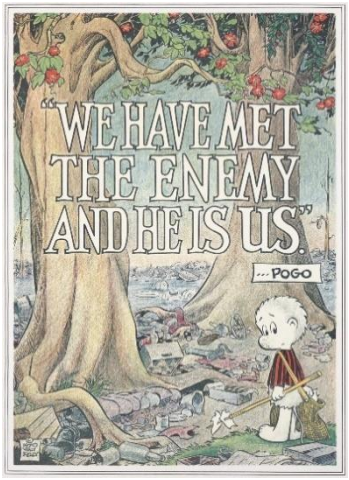
Keynote Speakers

Susanne Becken

Susanne Becken is a Professor of Sustainable Tourism at Griffith University in Australia and a Principal Science Investment Advisor in the Department of Conservation, New Zealand, where she works at the science-policy interface.Her research focuses on the tourism-environment nexus with particular focus on tourism resource use, climate change, regeneration and resilience, and tourism policy. Susanne is a member of the Air New Zealand Sustainability Advisory Panel, the Travalyst International Advisory Group, and the New Zealand Tourism Data Leadership Group. She is an elected Fellow of the International Academy of the Study of Tourism and a UNWTO Ulysses Award recipient.

Confronting Climate Breakdown and Human Stupidity

July 2023 was the hottest month on record; about 1.5°C warmer than the pre-industrial average for 1850-1900. Climate experts are now referring to a climate breakdown, Hothouse Earth and the era of 'climate boiling'. Yet, very little progress is being made in terms of reducing greenhouse gas emissions to the level that would minimise the risks of 'dangerous climate change'. Moreover, the contribution to the calamity of planetary crisis shows profound inequalities, both historically in terms of cumulative emissions and presently due to skewed distribution of wealth and behaviours of excess. Climate (in)justice is nowhere more apparent than in the case of global air travel; an activity that contributes about 3% of global emissions but is only enjoyed by 11 percent of global population (4% of people fly internationally). A focus on aviation as a significant contributor to global climate change reveals an unfettered growth agenda, put forward by industry and governments alike, that lacks adequate and genuine efforts to curb emissions compatible with a low carbon future. Resistance to change, pluralistic ignorance and wishful thinking amongst all stakeholder groups combine fuel a persistent push back against interventions that might constrain the aviation systems' trajectory of growth; ironically often justified through aviation's purported contribution to sustainable development. The idea of 'compensating' aviation emissions through carbon offsets, the institutionalised notion of 'carbon neutral growth' and the unrealistic expectations of 'sustainable aviation fuels' are all forms of green gaslighting orchestrated by key aviation actors. Whether greed, complacency or convenience, false 'solutions' to climate change



abound; not only in aviation. As these solutions defer real action, whilst consuming valuable resources in the meantime, they contradict the precautionary principle and undermine global progress on a just transition to net zero emissions by 2050. Improved flows of accurate information are essential in addressing such collective stupidity, but they will not be enough to turn around humanity's propensity to self-destruct. Instead, a profound recalibration of human's relationship with nature – of which humans are part of (!) – along rapid decoupling of wellbeing from materialism where 'less is more' – may be more promising. Staring the beast in the eye, speaking truth to power, accepting climate grief, and opening up to the possibility of spiritual regeneration, all provide personal anchor points in an otherwise paralysing dread. Giving up is not an option.

Harald A. Friedl

Dr. Harald A. Friedl is Assoc. Professor for Ethics and Sustainability in Tourism at FH JOANNEUM - University of Applied Sciences, Institute for Health and Tourism Management in Bad Gleichenberg, Austria, where he coordinates the Master program "Sustainable Tourism and Management". He holds a doctorate in philosophy with a focus on the ethics of ethno-tourism using the example of the Tuareg nomads in the Central Sahara. His applied approach to tourism has been influenced by his twenty years of working as an adventure tour guide alongside his research and teaching. His current research focuses on the ethical problems of flights in times of global warming and on ways to influence (political) systems for defossilisation. He is co-founder of the international think tank "Action for Climate in Tourism Network" (ACTnetwork) together with Susanne Becken (Griffith Institute, Univ. Brisbane, AUS), Daniel Scott (University of Waterloo, CND) and Paul Peeters (University of Wageningen). He is also a member of the Scientific Advisory Board of the Tourism Panel on Climate Warming (TPCC - https://tpcc.info/foreword/).

After the Gig just more of the same? The quest for Ethical Consequences of Tourism Research in Times of Multiple Crises

This keynote addresses the complex interplay of tourism, sustainability, artificial intelligence and ethics. Based on the results of the ATLAS Annual Conference 2023, the question is how tourism can improve the quality of life in times of global warming. This raises the need to collect and process Big Data to address the complex issues in the interplay between sustainable tourism, climate neutrality and quality of life. Big Data and artificial intelligence can be powerful and efficient tools in this regard to support the development of effective policies that accelerate society's transition to greater sustainability. Unfortunately, this raises fundamental ethical dilemmas regarding the use of AI, with questions about collective surveillance and control, coercion and threats to human dignity. The contrast between Western values and China's surveillance system highlights this ethical dilemma. The critical examination of the role of AI in

tourism research therefore seems essential for every tourism researcher, at the latest since the publication of ChatGPT.

At the end of a conference, I am always moved by three intense, opposing feelings: on the one hand, relief that everything went well and that I was able to enjoy all the good food; on the other hand, great joy over the many exciting presentations with their inspiring insights as well as the moving encounters and conversations; and finally, the feeling of a great crushing lesson in the face of the question:

What follows from this now? What do I, what do you all do with these insights? File it away in folders, note attendance at the conference on your CV, leave and carry on as before, carry on researching as before? This would mean that research, and especially the exchange of research results, would have no factual relevance other than to generate symbolic capital, some nice experiences and some more or less significant emissions from travelling...
At the center of all the contributions was the multi-faceted question of how tourism could contribute to the quality of life of all people involved in times of global warming.

To summarize even more briefly: How can tourism become more sustainable for all involved?

What for me can be derived as an essential insight from the many different contributions is ultimately the confirmation of what every prudent researcher is becoming increasingly aware of through their practice: research problems are becoming increasingly complex, and with them possible solutions. The time of simple solutions á la "one fits all" are long gone. Instead, promoting a transition of regional as well as global tourism towards more sustainability and climate neutrality requires an unimaginable amount of data. To be able to intervene in systems in a targeted manner, the structure and dynamics of these systems must be sufficiently understood. This applies first to systems as complex as the climate in its many-layered manifestations and, in a next step, to the interaction of humans with the climate and the resulting climate warming. Understanding the effects of human actions on our habitats and thus on our future living and development conditions are indispensable prerequisites for simple but momentous questions such as:

To what extent do we have to adapt our current living, consumption and tourism practices to be able to live as well as possible in the long term and continue to "do tourism well"?

And which instruments are suitable for this, but also ethically justifiable, so as not to cause rebound effects again, i.e. undesirable consequences as a result of new technological "solutions"?

In other words, as researchers we must ask ourselves which research topics and methods make sense or are even justifiable today in view of these challenging issues? To what extent can or may we still afford to waste research resources on topics that could counteract efforts to achieve a necessary transition?

But who should be able to answer this highly complex ethical question satisfactorily? For first of all, an ethically reflected decision presupposes one thing: a sufficiently large degree of freedom of choice with regard to the question of how scarce research resources should be used. In practice, we know that such decisions are rarely "free"...

Essentially, this problem is reflected in Immanuel Kant's four basic questions:

1. What can I know?
2. What should I do?
3. What can I hope for?
4. What is the human being? (2021)

Transferred to the relationship between sustainable tourism development and the climate crisis on the one hand and the question of ethical consequences for researchers on the other, I would like to illustrate the complexity and contradictory nature of the question of "proper research" on the example of Artificial Intelligence:

We assume that modern research methods such as the use of big data, artificial intelligence and machine learning can be helpful in better understanding the systems to be changed to better control them. We hope that new findings will help us to better understand the connections and feedback processes between tourism development and the environment.
But what are the normative implications of these insights? Does artificial intelligence already provide us with insights into how we should use these insights "in the best possible way"?

I would like to illustrate the problem behind those questions with the following questions:

1. What obligations can be derived, for example, from the mounting evidence that the systematic burning of fossil fuels is the cause of global warming?
2. What should this mean for our everyday economic and cultural, but above all for our political actions?

To be able to answer those two ethical questions, we first need a much better knowledge of the areas in question. In fact, our knowledge about our daily, economic and cultural, but especially our political actions is extremely rudimentary. The current research initiative of the international "Tourism Panel on Climate Change" to clarify the impact of global tourism on global warming reveals increasingly relevant gaps in our understanding of e.g. customer behaviour, especially behavioural patterns under polycritical conditions (rising inflation, migration pressure, global warming, increasing weather extremes, climate change, skills shortages...) (TPCC, 2022). Solid answers to such questions are, however, indispensable in order to be able to develop meaningful, i.e. effective, intervention instruments.

At this point it is appropriate to take up Kant's question about the "essence of man". For if we assume

- that today's modern human behaviour patterns of intensive fossil fuel burning are accelerating global warming,
- that future life chances are increasingly impaired as a result,
and when we realize
- that the preservation of future life chances is thus essentially in our hands and thus our responsibility,
then it would be imperative for us tourism researchers to develop suitable countermeasures to prevent or at least minimize this foreseeable damage.

However, this raises fundamental questions that have hardly been asked in tourism research so far:

- What role do the principles of human dignity and human self-determination play in choosing appropriate methods to promote transition?
- To what extent is it ethically legitimate to use instruments of manipulation of people to influence their behaviour in a future-proof direction? (Think of the behavioural economics method of "nudging").
- Under which conditions is the use of coercion to preserve threatened life chances also effective, legitimate, but also free from the danger of critical rebound-effects, for example in the form of collective resistance or even escalating collective conflicts?

For example, does it make sense to introduce a speed limit in traffic to effectively reduce traffic emissions if such a measure would lead to severe political unrest or even to a triumphant march of radical political parties that would annul previous achievements in environmental and health protection for populist motives?

We can already see that ethical questions are always inseparable from the first Kantian question about the possibility of fundamental knowledge of the world. For providing informed answers to the latter questions, research in the field of big data, artificial intelligence and machine learning is developing powerful tools. Those tools can support by identifying patterns in highly complex systems in a very short time. By doing so, those tools can contribute significantly to a better understanding of collective human behavior. This allows the development of highly effective methods and tools for influencing human behavior. How successfully such methods and tools can be used is shown by their systematic application in China. The methods of AI-based surveillance and "guidance" of the population practiced there are considered in the West as massive violations of human rights. This system of collective surveillance and control clearly contradicts our Western notions of "quality of life" as well as associated individual development rights (King & Petty, 2021).

This Chinese example of the intensive use of Big Data and artificial intelligence for political purposes illustrates in an outstanding way the central ethical dilemma for researchers in the field of sustainable tourism and climate protection:

- The increasing climate-damaging emissions caused by consumption-oriented tourism practices require, on the one hand, corresponding instruments to change these practices in the direction of "sustainability" in order to be able to maintain the greatest possible degree of individual freedom - both in the field of tourism and in everyday life.
- On the other hand, the successful development of such effective instruments also brings with it the danger of their misuse and thus the loss of individual freedom.

How can this dilemma be resolved? Or should the question rather be:

How can we preserve our vital environmental resources in the best possible way in the face of the given framework conditions and increasing threats, while at the same time preserving the greatest possible degree of individual freedom?

The insights provided at this conference are undoubtedly inspiring pieces of the puzzle in the search for appropriate answers to this fundamental question.

Let me summarize my thoughts so far. The use of powerful artificial intelligence tools is becoming increasingly indispensable for an evidence-based, goal-oriented understanding of the (tourism) world regarding sustainable (tourism) development. At the same time, however, there is a growing need for a critical examination of these and other research tools. After all, sustainability always means cushioning or even preventing undesirable rebound effects. In the

case of big data and artificial intelligence, these are shortcomings such as risks of bias and, above all, their potential for abuse. Just as you can use a pencil to write a love poem or physically hurt someone, big data and artificial intelligence can be used to better understand the world, but they can also be misused to the detriment of many and the advantage of a few.
So if the rapid, unregulated development of Artificial Intelligence could, in extreme cases, even run counter to our notion of sustainable tourism development, is it still dispensable for prudent researchers in the age of ChatGPT to address the ethical implications of Big Data and AI in the context of sustainability in tourism?

This brings me to the last Kantian question:

What can I hope for (or "What can I believe in"?)

As a convinced follower of the epistemological paradigm of "Radical Constructivism" (Watzlawick, 1980), I can answer from deep conviction: I don't know! I cannot know!
However, based on previous experience, it seems plausible to me to doubt that a naïve belief in the "good in people" would be very helpful without a correspondingly prudent, critical assessment of the inherent dynamics and risks of technology and the development, based on this, of helpful instruments for coping with such undesirable effects.

My core thesis is therefore that responsible tourism research in the field of sustainability, regional development, quality of life, climate change and environmental protection in the age of ChatGPT makes a critical examination of the opportunities and risks of Big Data and Artificial Intelligence essential. In summary, the axiom can be formulated as follows:
“At the latest since the public availability of ChatGPT, tourism ethics is obsolete without the consideration of Big Data ethics.”

Perhaps this could be a stimulus for discussion at the next ATLAS Annual Conference.

Thank you very much for your attention, and I wish you a safe, pleasant and climate-friendly journey home!

Harald A. Friedl is associate professor for ethics and sustainability in tourism at the FH JOANNEUM - University of Applied Sciences in Bad Gleichenberg, Austria.

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Susanne Kraus-Winkler
State Secretary for Tourism of the Republic of Austria

Susanne Kraus-Winkler, State Secretary for Tourism, has more than 40 years of practical experience as an entrepreneur in the hotel and restaurant business. As an industry representative she worked in the hospitality industry, as well as in tourism consulting and academic lecturing.
She was a founding partner of the LOISIUM Wine & Spa Resort Hotel Group, with the LOISIUM Wine World in one of Austrian's leading wine regions, two wine & design hotels in Austria and one wine & design hotel in Champagne Region of France and one wine hotel project Alsace, France. In addition, she was partner in several hotel management and tourism consulting companies such as Kohl & Partner Vienna, RIMC Austria GmbH and the Harry's Home Hotel group and advisory board member of MRP-Hotels, a hotel consulting company in Europe.
Susanne Kraus-Winkler was HOTREC President from 2015 to 2018 representing the European Hospitality industry at EU level in Brussels, as well as President of the Austrian Professional Hotel Association within the Austrian Chamber of Commerce representing 16.000 hotels in Austria. She held several positions in the management board of tourism representations in Austria and at EU level and is member of the Austrian chapter of the Royal Institute of Chartered Surveyors.

Dagmar Lund-Durlacher

Dagmar Lund-Durlacher, Professor for Sustainable Tourism Management, is Senior Research Associate at the Center for Sustainable Tourism (ZENAT) at the University for Sustainable Development Eberswalde (HNEE) and at the Institute for Tourism Sustainability (ITS) in Vienna. She holds a PhD in Social and Economic Sciences from the Vienna University of Economics and Business Administration and has been researching and teaching in the field of sustainable tourism for many years, shifting her focus from classical consumer behavior research and marketing in recent years especially to the topics of CSR, climate change, mobility, sustainable gastronomy and transformation processes in tourism. She is active in numerous international scientific networks, as well as a scientific and technical consultant for national and international organizations.

Food as a Key Solution to the Climate Crisis: Can our Self-interest save the World?

Today's global food system is the single biggest driver of global biodiversity loss and responsible for 30% of all greenhouse gas emissions. It also occupies half of the world's habitable land and uses up 70% of its fresh water. Yet demand for food is steadily and rapidly increasing as the world's population is expected to grow to over 9 billion by 2050. Thus, we could make a big difference if we changed our diet and food choices for the better.
For most tourists, food is an important part of their vacation, and tourists usually want to experience the destination with all their senses. Eating local, authentic food enriches the vacation experience. The health aspect of food is also a growing concern, especially in modern society where food allergies and various diet plans are playing an increasingly important role. In addition, rapid sociocultural changes are taking place in many countries, raising the question of how we can protect local food cultures and traditions. But which foods are good for us and our planet? How can we experience the unique flavors of our destination while protecting our planet?
The tourism industry has an important role to play in reducing the environmental footprint, not only in developing more sustainable food offerings, but also in changing the way guests consume food. And most of the changes needed would benefit the industry and the tourists alike, whether in terms of our wallets, our health, or our tourism experiences.
As we need to take our guests with us on the journey towards low-carbon and sustainable food production and consumption, it is particularly interesting to show that many climate protection measures also have benefits for tourists and the tourism industry, through which they could be encouraged to take action.
This presentation will show how climate protection and other sustainability measures can be implemented in the hospitality industry, what challenges arise and what future solutions for a healthy planet and healthy people might look like.

Daniel Scott

Dr. Daniel Scott is a Professor and Research Chair in the Department of Geography and Environmental Management at the University of Waterloo. He is also an International Research Fellow at the School of Hospitality and Tourism at the University of Surrey (UK). Daniel has worked extensively on sustainable tourism for 25 years, with a focus on the transition to a low carbon tourism economy and adaptation to the complex impacts of a changing climate. He has advised and led projects for a wide range of government agencies and tourism organizations around the world, including the United Nations World Tourism Organization, United Nations Environment Programme, World Bank, European Tourism Commission, World Travel and Tourism Council, International Olympic Committee, OECD, the Caribbean Tourism Organization. He has also been a contributor to the UN Intergovernmental Panel on Climate Change Third, Fourth, Fifth, and Sixth Assessments and their 1.5°C special report. In 2021, he was ranked in the world top 250 climate scientists by Reuters. His tourism research publications have been downloaded over a half million times and have been featured in many leading media outlets, including The

Economist, New York Times, Washington Post, Wall Street Journal, BBC, Time, Scientific American, and National Geographic.

Tourism in a +3°C World – Are we Ready?

The summer of 2023 was the hottest recorded, with heatwaves, fires and floods impacting millions from North America, to Europe, to India and China. The media was replete with images of tourists struggling with extreme heat and being evacuated from devastating fires. This is climate change; we no longer need to use our imagination. But this is climate change in a +1.2°C world. Most countries have committed to net-zero emissions by 2050, but as the recent United Nations Stocktake on climate action revealed, the world is missing its necessary interim targets. A survey of Intergovernmental Panel on Climate Change scientists found over 60% expect the world to warm by at least 3 °C by the end of the century. What would that mean for tourism? Such futures are rarely considered by the tourism community. Together we will explore the implications this climate future for tourism development and climate justice. A review of the state of climate change adaptation in the tourism sector will ask - are we ready?

Competences for sustainable travel planning and hybrid excursion realization in higher education

Albert, Linn
Deggendorf Institute of Technology (DIT)
Germany
linn.albert@th-deg.de

Sascha Kreiskott
Anna Marquardt

Geospatial web applications are an integral part of travel and tour planning and play an important role in the digitization and sustainable development of tourism. For students of any field, but especially for those studying tourism, the relevance and added value of excursions in their curricula is undeniable. To address current and future challenges such as pandemics, climate change and sustainability, the XtraveL project develops an innovative teaching module for the real conception and implementation of a hybrid excursion co-designed by students. The module is individually adaptable and combines digital and face-to-face sessions, theory, method application and extracurricular learning locations. In particular, “hybrid” stands for the combination of on-site excursions with corresponding course content on the (digital) campus, providing a high degree of flexibility and inclusiveness. The project is being carried out at the European Campus Rottal-Inn, the international campus of the Deggendorf Institute of Technology. Both students and faculty have been involved in the design and testing of the XtraveL module from the beginning.

Key applied concepts are excursions as a hands-on teaching method, hybrid learning as an innovative and inclusive method in higher education, integration of digitization in tourism education, and tour planning as a way towards sustainable tourism. Excursions as a teaching method create memorable experiences for the participants and provide effective results in learning about a particular topic or field, it increases the interest and participation of students and the level of interaction (Astalin & Chauhan, 2018). In addition, excursions are considered to enrich the study curriculum and the study experience which tends to have a greater impact on students as excursions involve a practical perspective (Astalin & Chauhan, 2018). Another applied concept is hybrid teaching, which can be defined as an approach that combines traditional face-to-face with online teaching methods, which is currently considered an innovative approach in education that offers several benefits to both lecturers and students (Linder, 2017). This form of teaching allows flexibility and diversity in teaching, the use of new technologies, and the availability of various online resources that can be implemented in teaching and learning (Linder, 2017). In addition, the approach of co-created teaching and learning has been successfully applied in higher education with the aim of increasing student engagement and creating relevant collaboration with lecturers (Bovill, 2020). This approach allows students to directly contribute and shape the learning experience according to their interests in consultation with the lecturer (Bovill, 2020). A hybrid, student co-created excursion is thus perceived as an innovative teaching method that responds to future challenges in teaching, including the increased use of technological innovations, blended learning, and participatory project-based learning. To determine the initial situation and the interests of students and faculty, module handbooks were analyzed, followed by mixed methods research. Interviews with tourism students and teachers were conducted to obtain their opinions on the current tourism curricula and teaching methods. In addition, based on the first results of the interviews, an online survey was developed to get an even broader picture of

the interest in integrating innovative and interactive components. The evaluation of the first implementation of the whole concept is planned for the end of the summer semester 2023. The test of transferability is planned through the further development and use of elements such as the toolbox during the winter semester 2023/2024.

The XtraveL concept is tested in the summer semester 2023 within a lecture of the master program “International Tourism Development” on the topic of global and regional sustainable tourism development through sustainable tour and excursion planning with the use of storytelling and content creation. Students should acquire a theoretical understanding of sustainable development and its relevance to tourism as well as a practical understanding through examples of sustainable tourism destinations. Students also gain knowledge of sustainable tourism trends and policies, digital tour planning tools, and excursions. Upon completion of the module, students should have professional and methodological competences such as being able to identify relevant sustainable models, policies and strategies, understanding the trends in and importance of sustainable tourism and sustainable development and demonstrating knowledge in the field of excursions. Students should be able to identify and critically evaluate tour planning tools, both from the perspective of both tourists and tourism providers and their relevance for sustainable tourism development. They should be able to implement and present tours in Outdooractive and apply knowledge of storytelling and digital tour planning tools through video and audio documentation to conceptualize and implement a hybrid excursion in a sustainable way. Students should have personal and social skills such as written and oral presentation skills. They demonstrate group work, listening and critical thinking skills in an international environment. Students train their competences of independent and self-directed work by applying the acquired knowledge in an individual research paper. Outstanding objectives include a double change of perspective (learner — teacher, employer — tourist), through which students learn important professional and methodological skills while designing and experiencing the experiences they will create for their future clients. Students learn about geospatial web applications and digital tools, as well as of the promotion of digital literacy (digital learning, legacy, collaboration). Furthermore, all learning contents and objectives are being critically discussed in relation to sustainable development.

The individually adaptable teaching module combines digital and face-to-face sessions, teaching of theory, application of methods, and extracurricular learning locations. The concept includes a wide range of methods such as seminars, webinars, lectures and workshops, self-study and group work, and the provision of digital tools. This variety of methods not only significantly strengthens the current range of teaching methods, but also addresses future teaching challenges that await us with the use of blended learning methods, multidisciplinarity, project-based learning, technological innovations, and interactive education. One focus is on the actual design and implementation of a hybrid excursion. The hybrid excursion should lead to high student participation and interest. This marks an effective way of teaching students the aimed theories and skills (Bovill, 2020). The practical aspect of tour planning in this module should involve the students’ supporting skills such as creativity, decision-making, organizational skills, time management, and funding to plan and implement a successful project (Kokotsaki et al., 2016). In parallel to the excursion on-site, the relevant content will be made available in the geospatial web application Outdooractive, so that the excursion can be digitally experienced. The workshops qualify students to plan a sustainable excursion for a specified target group from scratch. The workshops include theoretical input as well as practical exercises in the areas of tour planning and web map applications, content conception and creation, and storytelling. By trying out the learned methods on self-chosen examples, students prepare for their course submission and future careers. As a basis for hybrid collaboration for joint project work and excursion preparation, a workshop for suitable digital and hybrid tools including the learning platform is provided in

cooperation with the students. Through the digital platform, students' engagement, concentration, enjoyment, and perceived learning are supported by incorporating gamification elements (Rahman et al., 2019). Digitization is not seen as a goal to be achieved, but as a tool to facilitate appropriate processes and networks. Therefore, XtraveL does not try to completely transform the excursion and classroom experience into an online format, but rather tries to identify how digital possibilities can make a useful contribution. The toolbox supports students along the semester and provides exam-relevant learning content, additional information for deeper insights and links online and on-site teaching and learning with the Outdooractive platform. In addition to the lecture script and literature recommendations, the toolbox contains interactive material such as guidelines for relevant programs (e.g. Outdooractive, DaVinci Resolve, Elevenlabs, Audacity) and important methods (e.g. giving feedback, sustainable tour planning), videos, quizzes and a webinar. Results of the mixed methods analysis and discussions with colleagues from different fields have shown great interest in transferring the teaching concept and using various toolbox elements for subjects in other tourism subjects, as well as in e-learning and technical study programs. This encourages the continuous development of the toolbox but also of the concept to reach its maximum potential. The inclusion of feedback and comments is promising to improve students' cognitive presence, especially in online classes, while the inclusion of different types of technology-enhanced quizzes can have a positive impact on their motivation (Boettcher, n.d.; Raes et al., 2020; Singh et al., 2021). With the advancement of blended and hybrid learning methods through improved synergy, teacher and student creativity, and enhanced cloud-based capabilities, there are multiple opportunities for the future development of the module (Akcil & Bastas, 2021; Singh et al., 2021).

Central part of the concept is the hybrid excursion. Students who are unable to attend on site have the opportunity to participate in the entire process of preparing for and following the excursion and to access all (exam) relevant content. The digital delivery allows students to complete the excursion independently later. Flexible module delivery options in the sense of remote versus on-site attendance have shown little to no negative impact on learning outcomes and revealed similarities in need satisfaction, motivation, test scores and perceived success (Butz & Stupnisky, 2016; Raes et al., 2019). Undeniable benefits of incorporating digital formats into excursions for the overall learning experience include the enhanced visualization and documentation capabilities that allow students to review some or all of the content. The active role of students in planning the excursion can help to avoid information overload in the field and can sharpen the focus on key aspects (Vater, 2021). In this respect, a combination of an on-site experience with online components, as is done in XtraveL, allows to use the current and future potential of both methods. The double change of perspective emphasized in XtraveL gives students the possibility either to be in a teaching position, adding contributions to the toolbox and giving feedback to help other students improve their work, or to slip into the role of both tourist and organizer. The research at the beginning of the project has shown the benefits of involving students in the planning of excursions, which contributes to the development of important soft skills and the acquisition of practical experience. Moreover, hybrid and blended learning approaches foster students' awareness of self-paced learning, self-efficacy, and simply themselves. Their awareness of a flexible learning environment increases, while the approach also improves the accessibility for the physically and mentally disabled (e.g. closed captioning options for hearing impairments, digital participation in inaccessible excursions) (Crouse et al., 2018; Singh et al., 2021; Vater, 2021). Embedding various software elements into the iLearn learning platform and presenting something new has been shown to enhance the learning experience, create a sense of urgency, and engage the participants (Davis et al., 2016). Incorporating storytelling elements into the XtraveL module further fosters the connection between students and lecturers by creating a sense of a more interactive environment. Additionally, information retention can be enhanced through the use of the aforementioned

elements (Baldwin & Ching, 2017). In this way, students have a long-lasting learning experience that includes content in line with the fundamentals and practice of sustainability without the complexity of elusive sustainability theory.

Excursions are a proven, efficient, and practice-oriented teaching method. To adapt to current and future demands, the teaching module developed in XtraveL combines future skills, participatory approaches, and current issues, while being flexible and applicable to different fields of study and involving all students. The innovative concept of hybrid excursions can bring a great advantage, as it encourages active learning and high involvement of students in co-creating an experience that can result in a valuable source of knowledge and new skills. Furthermore, the module will provide participants with solutions, critical thinking and planning to focus on the current challenges in sustainable tourism along with the necessary knowledge and practice in understanding the concept of sustainable tourism and tour planning using digital tools. The approach has the potential to meet current and future changes in teaching influenced by technology, but also the expectations of students in higher education, making learning an exciting and practice-oriented experience.

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Hydrogen as an alternative zero emission mobility fuel for the tourism Industry

Birds, Kathryn
University Rovira i Virgili
Spain
kathbirds@hotmail.com

With *UNWTO* report predictions on tourism demand and CO2 transport emissions set to rise drastically in the future to alarming levels, just how aware are tourists of their CO2 footprints? "One of the main challenges facing the tourism sector today is the need to decouple its projected growth from the use of resources and greenhouse gas (GHG) emissions" (UNWTO 2019). Through the availability of affordable, more regular connections, and easier travel in general, the world has become more accessible but at what cost to the planet and its future generations? As scientists and experts around the world tell us on a regular basis, it has become near enough impossible to ignore the fact that we are standing on the verge of a climate crisis, now is the time for action and in terms of travel, a time for alternative fuel recognition.

Hydrogen (H2) mobility, runs on hydrogen, green hydrogen. Green hydrogen is produced from renewable energy sources, for example wind and solar and can be used to power aeroplanes, boats, trains, trams, cars and bicycles. It is made by using electrolysis, a process that uses renewable electricity to split hydrogen from water. All that a hydrogen vehicle leaves behind is water. There are various types of hydrogen, blue, grey, purple etc some of which can be extremely damaging to the atmosphere, producing harmful pollutants for example NOx and CO2 gasses, depending on the way that they are produced. For the purpose of this research, only green hydrogen from renewable energy sources is intended. Hydrogen as an alternative fuel is a relatively new concept but one that according to the experts and leading associates of the World Hydrogen Summit in Rotterdam, 9-11th May 2023, is ready to go, the technology is there.

Public awareness of hydrogen as an energy source is relatively scarce, mainly because other alternative energy sources have been pushed and backed by climate activists, governments, and commercial companies in recent years. Of course, they are all important in the global green energy transition but we shouldn´t leave behind hydrogen and its potential to transform the future of the travel and tourism sector.

Hydrogen has needed time to develop, to improve its safety and for technology to evolve, which it has in so many ways. Hydrogen has many positive features, for example its versatility, lightness, and cleanliness. It can enable longer travel distances, and shorter, easy refuelling procedures to that of electric mobility for example. Hydrogen is developing fast, it is building its own value chain which if the tourist sector is to be a part of in these early stages, there seems to be a need for interest and involvement. With public acceptance and joint support of this new alternative fuel, the current high price could be driven down considerably, providing economical zero emission transport of the future. This enabling tourists and residents to travel leaving behind zero CO2 emissions, only water, on the way to, from and around their chosen destinations.

Hydrogen transition is powered by the European concept of hydrogen valleys (H2V). Originating back to the first EU subsidised H2V in Gronningen, Northern Netherlands*, Heavenn* in 2017. According to the *Mission Innovation* hydrogen platform (Clean Hydrogen Partnership, 2023) there are 81 H2Vs around the world in 32 different countries. Hydrogen valleys are clusters / hubs /

eco-systems connecting stakeholders of various sectors with the overall aim of supporting and accelerating the transition of the zero-emission alternative fuel, green hydrogen into local society. ¨The presence of a cluster of related industries in a location will foster entrepreneurship by lowering the cost of starting a business, enhancing opportunities for innovations and enabling better access to a more diverse range of inputs and complementary products¨ (Delagado et al. 2010). In addition, the concept of a H2V is to collaborate and interconnect with other valleys increasing knowledge, experience, and expertise to further accelerate the H2 transition on a European and global level.

Using green hydrogen for tourism is a relatively new and novel concept with very little academic research carried out to date. The same applies when connecting tourism directly to hydrogen valleys where there is a considerable gap or even an absolute void of academic literature even though some transitional developments have occurred and have been in planning for the last few years. Collaboration possibilities for the two value chains are growing and evidence suggests that exciting projects are emerging connecting tourism to the uses of hydrogen. Hydrogen end uses can be implemented in tourism to power hotels, cool and heat buildings, heat swimming pools or to power vehicles, transporting tourists to and from their destinations at no cost to the planet as well as in addition, preserving natural habitats.

Although hydrogen valley numbers around the world and especially in Europe are increasing rapidly, the *Green Hysland* hydrogen valley in Mallorca is one of very few valleys working directly together with tourism. Mallorca is an island destination most popular for offering sun, sea, and sand tourism. In 2022, it attracted 11.44 million tourists. (Europass 2023). Therefore, in terms of end users, not only the residents benefit from green hydrogen transitional developments but the tourists visiting the destination. ¨Mallorca first in the world to have Hydrogen powered transport for tourists". (Mallorca Bulletin 2023). The German travel and tourism company, *TUI* is a partner of the *Green Hysland* project and has been from the early stages, as commented by the CEO of *TUI* Sabastien Ebel "we wish to continue this line of work by a government with which we have collaborated for years to improve tourism" (Majorca Bulletin 2023). An important aspect of *Green Hysland's* success is its collaboration of cross collaboration value chains, connecting hydrogen with tourism for example, a principle that has been present from the beginning of the project. An important partner of the project*, Enagás* and their chairman, Antonio Llardén stated: "Projects such as *Green Hysland* and its set up in Mallorca demonstrate the importance of coordinating and cooperating to move the decarbonisation process forward. Thanks to consortium, the entire value chain is represented in the project, which ensures both the deployment of infrastructure for the production of green hydrogen and its end-uses¨ (Recharge 2022). End uses in Mallorca include H2 buses and ground transport within the airport for inbound and outbound passengers as well as transfer buses to and from the airport to accommodation on the island. In addition, a hotel in Palma is supplied with a power system, as well as a municipal building in Lloseta and a hydrogen fuel cell power supply at the Port of Palma Ferry Terminal. Although the project of *Green Hysland* is still a pilot project in the early stages, it is developing a successful ecosystem of significant size and through its collaboration with local governance and destination stakeholders, it is able to move and develop with the project from the very early stages.

Through intensive research of hydrogen valleys within Europe it is clear to see that this level of collaboration is rare. Especially considering the amount of H2Vs and therefore opportunities for tourism in a H2 transition there are. When speaking to leading hydrogen in Europe representatives, they all clearly suggest that all the H2Vs and associations are open to all sectors. That although tourism isn´t always considered, the sector is seen as an important player in the green transition. Involvement of any sector, on whatever level is welcomed, the more weight the transition has, the quicker, stronger and more effective the transition will be.

Hydrogen transport is becoming more popular; cities can be explored using H2 buses in London, Aberdeen, Birmingham, Barcelona, etc. and H2 Taxis as featured in Copenhagen, Paris and London. H2 Water Taxis are in operation in Rotterdam, *SwimH2* and H2 ferries *Norled* are a popular tourist experience and useful mode of transport in Norway, transporting tourists and preserving nature. There are many opportunities, especially for innovative, SMEs and start-up companies, some of which are already taking advantage. In the Loire Valley, Les Châteaux à Vélo (The Châteaux by bicycle) offers 400 km of cycle trails especially attractive to tourists. The route travels between historic Châteaux along idyllic scenic cycling paths and trails giving tourists an opportunity to discover the beauty of the region, with little effort and an abundance of power, zero charging and zero CO2 emissions. Distances that would not be possible on an e-bike due to charging interruptions, and too far a distance for many on a manual bicycle.

As opposed to a standard aeroplane, *innovative aviation company Zeroavia* planes feature a propeller system which in addition provides limited noise emissions as opposed to regular aircraft. *AGS Airports* in Aberdeen, Glasgow and Southampton, UK, are currently planning on developing zero emission flights stating that ¨the development of hydrogen-powered aircraft has the potential to completely revolutionise aviation, and it is becoming an increasingly viable option for regional and short-haul aircraft" (Future Flight 2022). On the bigger picture, aviation emission levels are predicted to grow, aviation is the highest emitter of CO2 from tourist emissions. Hydrogen planes are developing, although not yet available, a transition is certainly underway as the aviation company *Airbus* suggests ¨we consider hydrogen to be an important technology pathway to achieve our ambition of bringing a low-carbon commercial aircraft to market by 2035¨ (Airbus 2023). One welcome development to the aviation industry is the introduction of sustainable aviation fuels (SAF). Made from biomass, used cooking oil, household waste etc., one way of producing it is by using hydrogen. With the EU regulations on increasing SAFs and the technological aviation progression, the aviation industry shows great potential with the help of hydrogen to change course, considerable sustainable development is required and looks set to occur in the future. Trains in Europe generally run on electricity and when for geographical or technical reasons electricity coverage is not possible, diesel fuel is used. Hydrogen offers a zero-emission alternative solution to this and is slowly but successfully being added to European train routes and services.

Evident to see is that hydrogen as a technology is here. This does not mean that only hydrogen alone has the capabilities to deter the planet away from fossil fuels but that it will be a selection of several alternative fuel methods that will pave the way for a sustainable future with hydrogen being a prominent player now and in the future.

This is an opportunity for the tourism sector to be involved, to be connected to the hydrogen value chain, collaborating with governance, stakeholders, suppliers and actors of local tourism value chains and hydrogen value chains encouraging all partners of all levels to get involved. A cluster is at its most effective when all the partners get involved to make a change. A detachment of societies reliance on fossil fuels is a process and one that must be approached together, through collaboration, making change happen. Hydrogen Valleys are regional, often built in areas surrounded and dependant on tourism. The current role of the tourism sector in terms of sustainability in general, is questionable, and in most cases, especially concerning the hydrogen transition, is not involved, and therefore not directly considered. The reality however is that the tourism sector is welcome on all levels and encouraged to get more involved and to push for innovative change. With the dramatically changing climate, the devastating future climate change predictions, there is no better time for action and to be productive than now, after all – there is no PLANET B.

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Climate change projections and adaptation of water-related tourism: The case of Slovenia

Kokot, Katja
University of Maribor
Slovenia
katja.kokot1@um.si

In Slovenia, water-based activities such as bathing in thermal or natural waters and water sports are a significant part of the tourism offer. Although the Slovenian tourism industry has always been aware of sustainable and environmentally protective tourism development, climate change action has not yet been largely addressed. This research aims to analyse the impacts of climate change on Slovenian water-based tourism to provide appropriate climate change adaptation recommendations for tourism stakeholders in Slovenia. It is designed in a way that tourism stakeholders will be able to recognise the importance of climate change and see it not only as a threat but also as including potential opportunities for further development.

Climate change projections and past data were interpreted for each of the selected destinations, taking into account the ideal climate conditions necessary for a comfortable holiday experience. The analysis of different temperature and precipitation indicators was conducted since thermal comfort is one of the most important decision factors for tourists and has a major impact on their daily routines. Temperature indicators are relevant as thermal comfort is the most important for beach tourists, especially for people more sensitive to extreme heat. It also heavily affects the daily habits of tourists on holiday. Due to the multifaceted nature of weather and the complex way in which weather influences tourism activity, an index approach is commonly used in assessing weather suitability for tourism. CIT is an integrated index for tourism and recreation that rates climate and weather along a favourable-to-unfavourable spectrum. CIT rates the climate resource for highly climate/weather sensitive activities, specifically beach "sun, sea and sand" (3S) holidays. The climate index CIT-3S was used to calculate climate comfort in Slovenia for historic periods 1971–2000; 1981–2010; 1991–2020, and for future periods 1986–2005 (reference period); 2021–2040; 2041–2060; and 2081–2100 concerning RCP 2.6, RCP 4.5 and RCP 8.5 scenarios. The presentations of the percentage of warm days per month (above °25 C), hot days per month (above 30 °C), tropical nights per month (night temperature above 20 °C) and days per month with at least 20 mm precipitation are calculated for past (1981–2010), current (2011–2040) and future periods (2041–2070; 2071–2100) according to RCP 2.6, RCP 4.5 and RCP 8.5 scenarios. The days with heavy rainfall were chosen because, for many water-based activities (such as canoeing), the water level is crucial for the execution of some activities. Additionally, heavy rainfall lowers the (sea) water temperature and causes temporary (sea) pollution (e.g., seagrass) that is not favourable for bathers. Tropical nights are relevant as beach tourism is highly seasonal in months when temperatures are highest, and consequently, the cost of air-conditioning is the highest for providers. The analysis was performed on seven different weather stations in Slovenia, which were chosen as they are geographically close to tourist destinations known for water-based activities.

The projections show an increase in the number of days per year with ideal conditions for all analysed destinations. The percentage of days with ideal climatic conditions for water-based tourism activities remains the highest in the summer; however, an extension of the season into the spring and autumn months is expected. Lakes and rivers will likely become more attractive in the future with an increasing number of days with higher temperatures. At the same time, coastal

destinations can be negatively affected due to extreme temperatures. Adaptation measures such as promoting shoulder season tourism or alternative activities during summer may reduce the loss in overnight stays that could result from avoiding heat waves during months that are currently considered peak seasons. At the same time, the effects of climate change significantly threaten natural resources such as freshwater and seawater. Sea level rise will likely contribute to upward trends in extreme coastal high-water levels in the future, leading to flooding and beach erosion. On the other hand, ground and underground freshwater resources are expected to be negatively affected by climate change, resulting in a decrease in water quality and reduced water levels available for tourism activities.

According to all scenarios, the number of days with heat stress will increase in the future. Consequently, it is necessary to be aware that some outdoor activities will be possible in the future only for a limited time or not at all. Additionally, the extreme temperature affects human health safety. High air temperatures are a major health risk factor, especially for vulnerable groups such as seniors, chronic patients and children, which are dominant visitors in Slovene natural spas. Most changes can be made regarding public infrastructure and spatial planning, which should strive to minimise the negative effects of thermal discomfort as a result of anticipated heat stress due to climate change. Such measures include providing natural and artificial shade, adapting activities such as, e.g. animation in swimming pools, and providing protective equipment and clothing for employees and tourists. Additionally, it is necessary to educate both employees about providing first aid in crisis events and tourists about possible personal adjustments to reduce health risks. High temperatures and heat waves will significantly impact the energy consumption needed to cool the premises. Tourism providers must therefore strive primarily to reduce energy consumption (e.g., optimisation of consumption in relation to operating time), increase energy efficiency (mainly by improving the thermal conductivity of buildings) and switch to renewable energy sources (e.g. installation of photovoltaic systems).

Tourist arrivals to Slovenia are concentrated in summer when water consumption generally increases. Forecasts of rising temperatures and dry weather further emphasise the need to address this issue. Adjustments by tourist providers are necessary mainly due to the forecast of a shortage of water resources. Possible measures are, e.g. rainwater harvesting, greywater recycling systems and water consumption monitoring. Educating guests and employees about saving water in daily activities for both employees and guests during their stay is also important. Higher air temperature also implies an increase in water temperatures, which negatively increases the chances of bacterial and chemical infections and leads to an increased bloom of harmful algae. Water quality monitoring and appropriate communication with tourists are particularly important. It is necessary to ensure more frequent monitoring of bathing waters and waters that are not meant for bathing but are still used by tourists. Up-to-date information for swimmers along coasts and beaches is recommended.

The main limitation of this study is the uncertainty of the climate projections, which may cause systematic deviations between the simulated and real climates. Three different scenarios were used in this study: RCP2.6, RCP4.5, and RCP8.5. The GHG scenarios are used as input data for climate models, which only approximate the real state of the climate system and whose spatial and temporal resolution is limited by computing power and limited knowledge of some physical processes. Second, conclusions regarding sea level rise, water flows and temperature of water bodies are not based on actual calculations and projections. However, some conclusions can be made regarding these possible effects from our research and projections on temperature, rainfall and other variables. Further research is needed primarily on tourist behaviour and market adaptation to climate change, tourism stakeholders' awareness, involvement and communication on climate change, and effects and adaptation of climate change on workers in tourism.

The research provided an analysis of projected climate change impacts on water-based tourism in Slovenia with recommendations for future necessary climate change adaptation on four levels: the tourists, the tourism providers, local and macro-regional destinations, and the national level. An effective transition to more climate-friendly tourism will largely depend on public-private cooperation. Public support can help ensure policy alignment that incorporates climate change mitigation and adaptation into tourism policies, strategies and initiatives. Developing a system directed by all tourism stakeholders and aimed at achieving sustainable economic and social development is essential.

VR Customer Experience from Finland: Driving Personalized Service through “Extended Dinner”

Kushcheva, Natalia
South-Eastern Finland University of Applied Sciences
Finland
natalia.kushcheva@xamk.fi

Hospitality enterprises are embracing new digital trends and smart technology to make the customer journey as seamless and enjoyable. As a result of the development of technologies and their active implementation in various sectors of the economy, there is an urgent need to study digital experiences in the field of hospitality to create favorable conditions for the further improvement of the provision of quality services to people.

A McKinsey survey (2022), looking at the banking, auto insurance, retail energy, hospitality services, and mobile communications sectors, found that the quality and availability of digital interactions have a significant impact on customer satisfaction. This survey shows that companies with expansive digital offerings receive stronger feedback scores. Kushcheva N. (2022) states that expectations like service availability, and more recently, a convenient buying journey, all this could affect how consumers make decisions to buy services. The companies that customers are willing to recommend most are those that use digital capabilities to create a consistent and personalized experience across channels.

Today Finland is the most digitalized country in Europe, according to the European Commission’s Digital Economy and Society Index (DESI). Digitalization can help service companies be more profitable at lower costs, while it can help public institutions improve services at lower costs. Efficiency is a key benefit, but digitalization can also boost innovation and creativity.

This research study examines the real experience of a group of XAMK students at Kuopio (Finland) restaurant which provides an “The Extended Dinner”. The Extended Dinner” is a unique way of dining wearing VR glasses. This research paper aims to determine satisfaction of young customers from digital services suggested at the restaurant. Results of the 7-question survey analysis “Digitalization as a part of service production in the hospitality industry” are presented in this research. By analyzing results, the author could state that modern customers want new experiences, faster customer service and the utmost comfort. Discussion with students revealed that service companies that have a greater number of digital offerings achieve higher customer satisfaction ratings, which motivates them more willing to recommend these businesses to others.

Analysis also shows that digital experience is rather expensive and could be affordable by customers rather rare; digital technology is not creating an experience, it is only the tool of building a potentially more profitable business model and thus reaching a new level of communication with customers.

BeyondSnow: Enhancing the Resilience of Snow Tourism Destinations and Communities to Climate Change

Karmen Mentil
Technische Hochschule Deggendorf
Germany
karmen.mentil@th-deg.de

Marcus Herntrei
Technische Hochschule Deggendorf
Germany
marcus.herntrei@th-deg.de

Philipp Corradini
BeyondSnow: EURAC Research
Philipp.Corradini@eurac.edu

Veronika Jánová
Deggendorf Institute of Technology (DIT)
veronika.janova@th-deg.de

Introduction and Objectives

The debate on climate change in the Alpine region dates back to the 1980s and 1990s (Bausch et al., 2016). Climate change has very different regional impacts and represents a major challenge for the tourism industry (Dworak et al., 2021). Particularly small medium-altitude snow tourism destinations and communities across the Alpine region are already facing climate change issues, first and foremost the diminishment of snow coverage. Climatic data indicate that this effect will considerably worsen in the future (Kotlarski et al., 2023). In addition to the ecological impacts, also its socio-economic consequences need to be considered. These include, among others, shorter snow seasons, major demand shifts, increased costs, and resource consumption of artificial snowmaking, as well as a more accurate evaluation regarding the potential renovation of outdated (ski) infrastructure and tourism facilities. Depending on the destination and existing tourism offers, different options to adapt to climate change exist (Lotter & Dvorak, 2021). In this context, adaptation refers not only to mitigating potential risks arising from climate change but also to using climate change as an opportunity to realign the offer and supply. Accordingly, adaptation strategies and measures should be designed in such a way not to exacerbate climate change and not burden the environment in the long term but to have an overall positive effect on the environmental conditions (Dworak et al., 2021).

However, snow tourism destinations confronted with climate change-induced ecological and socio-economic consequences often lack the financial and human resources to properly analyse their situation, let alone design their future strategies based on long-term, sustainable development solutions. A transnational approach, uniting knowledge, experiences, financial resources as well as best practices from the entire Alpine region through a project consortium is therefore a substantial benefit for these destinations.

The Interreg Alpine Space project *BeyondSnow* represents such a transnational approach. The project builds on available theoretical knowledge and practical examples, particularly with regard

to the vulnerability, resilience, and adaptation of tourism destinations to climate change. Furthermore, it aims at exploring measures, sustainable development pathways, and implementable solutions to enhance the resilience of snow tourism destinations to climate change. Based on a thorough analysis of snow dependency, comprehensive climate transition strategies will be participatively developed within 10 specific pilot working areas (hereinafter PWAs), focusing on the improvement of liveability for residents and the attractiveness for tourists. The strategies will include sensitisation, knowledge transfer, and integration of a wide range of stakeholders. Participation represents namely the fundament for developing viable concepts for transition processes to adapt to climate change. Moreover, participatory planning approaches have proven to positively influence the quality of life of local inhabitants, their acceptance of tourism, the competitiveness of the destination, and, not least, the resilience of the destination (Herntrei, 2014; Herntrei et al., 2022; Zacher, 2022).

The PWAs, spatially distributed across six Alpine countries, differ in size, development level, and challenges faced by climate change. The consortium comprises 13 public and private entities. All project partners are connected to one or more snow tourism destinations – the PWAs – and to regional/local authorities as well as Observers. Each project partner is responsible for project implementation in the respective PWA.

As such, the BeyondSnow project enables to integrate and connect heterogenous PWAs, allowing the project partners to address a multitude of different issues and to consider different perspectives, which play an important role in the subsequent generalisation of the findings and their dissemination in the Alpine region and at EU level.

Methodology

To achieve the aforementioned objectives, the project's methodology comprises both secondary and primary research. As part of secondary research, quantitative and qualitative data regarding the PWAs are collected to gain an in-depth overview of each PWAs' tourism system. In doing so, the indicators such as arrivals, overnight stays, average length of stay, and source markets are gathered to assess the PWAs' tourism demand while the indicators such as the number of accommodation structures, number of beds, gross bed availability, and gross bed occupancy are collected and calculated to assess the PWAs' tourism accommodation. Concurrently, socio-economic data including GDP divided by sector, employment by sector, number of inhabitants, and demographic development are incorporated into the overall PWAs' analysis to provide a more detailed insight into the potential impact of the tourism sector on the local PWAs' communities and their (in)dependence on/from the tourism sector itself.

Secondary qualitative data encompass an analysis of PWAs' tourism offer in terms of winter and summer activities and attractions. Activities and attractions are essential elements of tourism products, contributing to the overall tourism experience. The presence of more activities and attractions can also have a positive influence on the average length of stay, giving guests the opportunity to experience different things during their stay. Moreover, in terms of possible climate change adaptation, diverse activities, and attractions can help decrease the destination's dependency on snow and ski tourism. Therefore, a precise inventory of various PWAs' activities and attractions is essential for the development of alternative transition pathways, initially focusing on existing resources. Secondary research is complemented by a systematic literature review on, among others, scientific literature on climate change, sustainability, resilience, and public participation in tourism planning and decision-making processes.

One of the further important elements for generating a coherent understanding regarding the PWAs' tourism structure is the identification and analysis of stakeholders. Stakeholder identification and analysis are crucial to ensure transparency and equal representation of diverse interests by engaging stakeholders in activities that directly or indirectly affect them; to enable their participation in the development of transition pathways and strategies based on their knowledge and competencies; and to reduce the risk of stakeholders undermining or hindering project activities through active consultation, engagement, and outreach. In addition, stakeholder analysis is a crucial step for the following primary qualitative data collection phase, encompassing expert interviews with PWAs' tourism stakeholders such as mayors, local DMO managers, lift operators, tourism service providers, and local inhabitants.

The comprehensive methodology of the BeyondSnow project follows a holistic participatory strategy to improve decision-making processes and herewith support governance structures in the PWAs. Alongside the expert interviews, such a strategy includes also innovative workshops (co-design laboratories) in the PWAs, guaranteeing intensive involvement of local decision-makers and other interested parties in the development of local climate change adaptation strategies. Furthermore, sensitisation of local stakeholders within each PWA will take place, following the format of roadshows (BeyondSnow on Tour). These refer to touring promotion event series across the Alps, enabling selected target groups to directly access project contents and elaborated solutions. Among the BeyondSnow on Tour are included the following objectives: disseminating project results (reports, deliverables); raising citizens' awareness about the project to promote the project's local actions; collecting inputs from local communities. Key stakeholders to be involved in the BeyondSnow on Tour are public decision-makers, local tourism service providers, tourist boards, destination management bodies, associations, ski resort management bodies, journalists, and local communities. Educational field trips, hikes, snowshoe tours, photo exhibitions, and summer schools rank among the possible initiatives to be implemented in PWAs.

To ensure smooth and appropriate consortium management, regular meetings are held within the PWAs at the local and regional level and between project partners at the international level.

Project Outcomes

Arising from the previously outlined methodology, the envisioned outcomes of the BeyondSnow project include the following:

Resilience Adaptation Model (RAM)
Based on the data obtained, specific in-depth analyses of each PWA, and the scientific literature collected, the RAM will comprise a theoretical, methodological, and practice-oriented basis for assessing, developing, and strengthening the resilience of alpine snow tourism destinations to climate change. Its primary objective will be to act as a resilience guideline for PWAs and alpine space practitioners, its secondary objective will be to serve as a conceptual basis for the Resilience Decision-Making Digital Tool described below.

Resilience Decision-Making Digital Tool (RDMDT)
Being a digitalised version of the RAM, RDMDT is an automated assessment tool for informed decision-making by local and regional authorities, development agencies, and local stakeholders. It will enable stakeholders to analyse local characteristics, data, and resources in relation to current climate change trends and future scenarios, highlight different development options and recommendations corresponding to internal and external factors as well as identify best practices to refer to.

PWAs Transition Strategies
The co-designed strategies will serve as a guide to initiate and continue transition processes within PWAs to reduce their dependence on snow and strengthen their resilience to climate change-induced ecological and socio-economic impacts. Depending on the results of the PWAs' participatory processes and their refinement, the strategies will encompass new sustainable development pathways, transition processes, and/or implementable solutions.

Pilot Actions for RDMDT Implementation and Resilience Enhancement of the PWAs
By involving local communities and stakeholders, the pilot actions aim at field-testing and fine-tuning the RDMDT as well as developing transition strategies and implementing concrete actions based on experiences in the 10 PWAs. Pilot actions will be developed and implemented jointly with the aid of all project partners and the supervision of observers.

Resilience-Oriented Policy Guidelines for Alpine Space Snow Tourism Destinations
Based on the theoretical and practical findings and experiences gained from the PWAs, BeyondSnow will deliver concrete policy guidelines oriented towards climate change adaptation and resilience for tourism actors and decision-makers such as DMOs and regional development agencies. The guidelines will also consider the introduction and use of the RDMDT in the decision-making processes of these target groups.

Policy Recommendations for Alpine Convention, EUSALP, and EU
The policy recommendations will meet the Alpine Convention results on climate change strategies, including the Alpine Convention ACB Working Group and the Climate Action Plan 2.0. The recommendations will ensure the transfer of results towards the EUSALP and contribute to the further development of the EUSALP Action Plan. At the EU level, the policy recommendations are being developed in light of the EU strategy for sustainable tourism.

The model developed and the lessons learned are transferable to other destinations and can foster sustainable tourism development in many further snow tourism destinations facing climate change challenges.

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Promoting Health and Well-being tourism through Community Participation, A Case Study from Kerala, India.

Antony, Nimmy
Faizal and Shabana Foundation
India
nimmy.antony@faizalshabana.org

The travel and tourism industry is one of the major contributors to climate change and has been recognized by the sector since the 2003 Djerba Declaration on Tourism and Climate Change. From there, the sector is slowly trying to transition into a sustainable one. Tourism plays a significant role in the economies of many South Asian countries that are rich in natural beauty, warm beaches, and indigenous health practices. Embracing sustainable tourism practices has become a priority in these countries, as they recognize the importance of preserving their natural and cultural heritage for future generations. In this context, even modern wellness centers have embraced sustainability as a guiding principle in their operations. One notable experiment involved integrating local communities to promote health and wellness tourism. This approach seeks to establish pathways that benefit both communities and industries. Tulah is an Integrated Clinical Wellness Resort based in Kerala, India, designed to help guests achieve balance through healthcare, nutrition and fitness, mindful practices, wisdom, learning, and awareness programmes. An attempt was made to integrate the community in promoting health and well-being tourism through food production and distribution systems.

This study aims to learn the potential benefits of promoting health and well-being through community participation in luxury wellness centers such as Tulah. It seeks to evaluate potential benefits, including sustainable livelihood development, reduced carbon emissions, and biodiversity. The social, economic, and ecological benefits will be examined for the community, and health and well-being experiences will be investigated for the guests. Furthermore, this research investigates how this approach aligns with broader efforts to transition the tourism industry towards sustainability and support the well-being of both residents and visitors.

Methodology

The research aims to examine the implications of community participation in promoting health and well-being tourism at the clinical wellness resort, Tulah. The primary focus is on understanding the impact of integrating local farmers into the food production and distribution process and assessing the socio-economic and ecological benefits for various stakeholders involved in the process. A mixed methodology approach will be utilized to capture the multifaceted dimensions of this intervention.

The research will assess the inclusive business models which support farmers in meeting the food requirements of tourists at Tulah. The process involves the development of smallholder organizations and the strengthening of knowledge regarding agro-ecological practices and creating value chain systems for procuring directly from the community. These interventions serve as the basis for investigating the subsequent effects on the tourist experience and the socio-economic and ecological well-being of the local community.
To gain a comprehensive understanding of the process and its outcomes, a case study approach will be employed. In-depth interviews will be conducted with various stakeholders, including community farmers and the guests. The interviews and focus group discussions with community

farmers will delve into the social and ecological benefits resulting from the intervention, uncovering insights on the changes experienced by the community. In-depth interviews will be conducted to analyze the narrative of the guests' lived experience, as well as the advantages and difficulties of the wellness experience.

Furthermore, a survey will be administered among all participating community farmers to assess the economic benefits derived from their involvement in the sustainable food production network. The survey will collect data on factors such as income improvements, changes in livelihood patterns, and overall economic empowerment resulting from their collaboration with Tulah.

Results

This research will aid in understanding the interconnections between sustainable tourism, community participation, and health and well-being promotion, and will shed light on how local community integration practices will enhance the well-being of the community and guests, as well as bring an understanding of the initiatives' contribution to the protection of local ecosystems, the conservation of traditional knowledge and practices, and the sustainable use of natural resources. Overall, the results of this study underscore the potential of community-driven initiatives to promote social, economic, and ecological sustainability within the community and enhance the experience of tourists. Through regenerative farming practices, the development of local value chains, and the integration of the local community, Tulah demonstrates how sustainable tourism can foster positive environmental outcomes. These findings contribute to the growing body of knowledge on sustainable development in the tourism sector by emphasizing the importance of preserving natural and cultural heritage, promoting local economies, and enhancing the overall well-being of individuals and communities.

It can also bring light into the practices that worked well and what did not and can see why certain interventions worked well and other failed.

Discussions

This research emphasizes the importance of local involvement in food production and distribution for the advancement of sustainable tourism. By emphasizing the use of regenerative agriculture methods for food production, the potential for carbon sequestration in soil and the establishment of local supply chains will aid in reduction in carbon footprint due to fewer long distance transportation. Not only did this create a more sustainable experience for tourists, but it also boosted the local economy, leading to an improvement in the quality of life of community members.

Guests who are not open to changing their dietary habits can find the living experience restrictive, and the community may be burdened with the responsibility of meeting their needs. The detrimental effects of climate change, pest infestations, and other unforeseen events can jeopardize agricultural outcomes and diminish the overall effectiveness of this model.

Conclusion

The study concludes that local participation in production, distribution of food will support the local farmer in preserving the local varieties and help the tourist to gain local authentic experiences. This paper will evaluate evidence on how promoting local produce for local conception will help in reducing carbon emissions and protection of biodiversity.

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