

Editorial

# Introduction: The Role of Universities in Regional Transitions towards Sustainability

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The transition of sociotechnical systems towards sustainability has been studied comprehensively based on the multilevel perspective. Universities and other public research organizations have been identified by this literature as an important change agent for sustainability transitions. In addition to numerous investigations of the incorporation of sustainability into the structure of universities, scientific research into their real impact on sustainable development is still in its infancy. We therefore identify the need to better understand the interdependence between the agency of universities and, in particular, the emergence of transition paths from a spatial perspective. The agency of universities in their specific regional context is usually related to their so-called ‘third mission’. This is exercised by activities of individual scientists and organizational strategies in research, teaching, and the operation of the university itself. Universities thereby come into effect in the course of regional sustainability transitions based on a wide variety of forms and multiscale actor constellations.

This Special Issue brings together researchers from multiple disciplines, e.g., geography, regional planning, sustainability science, education science, and management studies. It contributes to the theoretical and practical understanding of the role of universities in regional transitions towards sustainability. In the introductory paper by Radinger-Peer et al. [1] on establishing the regional sustainable developmental role of universities from the Multilevel-Perspective (MLP), the authors take the MLP as their starting point to study complex systemic change processes in sociotechnical systems and to develop a future research agenda beyond the MLP. Radinger-Peer et al. [1] show that the application of the MLP to the higher education system, especially to conceptualize the transition of universities towards a sustainable (regional) developmental role, is still in its infancy. It is shown that the MLP has to be adopted for studying the transition of universities and university systems towards a sustainable developmental role in the regional context. In addition, three further perspectives are identified and conceptualized which need to be considered for establishing a more comprehensive understanding of the universities’ sustainable developmental role: (a) the target dimension of sustainable regional development, (b) the role of agency, and (c) the introduction of space and place to multiscale regional transitions.

The remaining eight papers that are part of this Special Issue can be grouped around four main topics with regard to different aspects of the role of universities in regional transitions towards sustainability: (i) concepts for sustainability transfer and just transitions, (ii) the involvement of students in sustainability transitions and the role of sustainability in teaching programs, (iii) participatory and transdisciplinary approaches in formerly centralized post-Soviet university systems, and (iv) the impact of the sustainability orientation of universities on the regional quality of life.

Demele et al. [2] initiate the discourse on sustainability transfer activities of higher education institutions (HEIs) by undertaking an explorative empirical study on Eberswalde



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University for Sustainable Development (HNEE). Based on a mixed method approach, they provide a rich picture with regard to the generic processes leading to sustainability transfer, the opportunities of action, as well as the identification of the protagonists involved. The framework, as well as the definitions of sustainability transfer provided, state the basis for further fine-grained investigations of sustainability transfer activities in other HEIs. Although this empirical research does not have a specific spatial or regional focus, the authors provide guidance for the contextualization of the HEIs and practitioners involved.

Velasco et al. [3] investigate the role of a Colombian regional university, the University of Ibagué (UI), to spur regional just transitions in Global South contexts, which are characterised by environmental, social, and institutional un-sustainability (ibid). The UI's contribution is investigated based on two experiments. The first is a governance experiment piloted between 2018 and 2019 that constructed an aspirational vision for this university through the definition of eight human capabilities. The second is a formal curriculum regional programme named "Peace and Research". The proposed analytical framework to study 'just transitions' merges the human development capability approach and the Regional Transition Paths Towards Sustainability (RTPS) approach. Based on multiple sources of data, they reveal that both initiatives have a strong directionality that resonates with the normative ambition of a just transition. Moreover, in both processes, the people involved have expanded human capabilities, and co-produced holistic and transdisciplinary knowledge through the interaction of academic and non-academic actors.

Budowle et al. [4] investigate the little-explored role of students in building and strengthening community–university partnerships. Drawing on a community resilience framework and the social-theoretical construct of agency, they examined an informal, multi-year partnership developed through a project-based, community-engaged Campus Sustainability course at the University of Wyoming. They found that students played a vital and catalysing role in building and strengthening informal community–university partnerships in support of a local climate action planning process. Their findings support the need to take into account power dynamics and whose agency is driving higher education institutions' roles in regional sustainability transitions in specific contexts.

Krah et al. [5] comprehensively investigate the extent to which sustainability is anchored in university curricula for the whole federal state of Brandenburg (Germany). Their methodological approach builds on the National Monitoring on Education for Sustainable Development (ESD), which was adapted to the federal state level. They revealed that sustainability is anchored to an equal extent in both bachelor's and master's degree programs. At the same time, it is anchored to an above-average extent in study programs in the fields of science and engineering. Furthermore, the analysis makes the gaps between the incorporation of sustainability (in curricula, study, and examination regulations and staff capacity building measures) in the various areas within the university visible and provides a starting point for a further strategic incorporation of sustainability into the HEIs in Brandenburg and into HEIs in general.

Hoinle et al. [6] focus on how universities foster regional transition through teaching, particularly in collaboration with local non-university partners. Certificate programs on sustainable development at the German Universities of Tübingen and Duisburg-Essen are studied as niches for innovative teaching designs and possibilities to involve regional stakeholders. The transdisciplinary teaching cooperation involves the engagement of different actors: certificate coordination, teachers, regional actors, and students. They reveal that one of the most essential challenges is the unequal power relation in terms of access to resources, financing, and determining of course planning. The study shows that such bottom-up motivation by individuals is not enough to protect the niche of certificate programs in the long term. Changes at the landscape level such as long-term financing and a clear prioritization of the SDGs and sustainable values by ministries and HEIs are necessary to maintain transformative teaching spaces.

Hovakimyan et al. [7] undertake a systematic literature review to investigate the developments of the post-Soviet HE landscape within the last 30 years with the aim to

synthesize current barriers and highlight if and how participatory curriculum development (PCD) can support to overcome these barriers especially in the country of Armenia. In doing so, the article provides a summary of the status quo of HE, which is still marked by a top-down approach, not meeting the demand of “real-world” problems, and having a weak connection with the labor market. Influenced by participatory curriculum development (PCD) in the US and in Europe, the article formulates the needs for further curriculum development (bottom-up approach, more active learning, new teaching methods, etc.), that are inexplicably linked to sustainable higher education.

Keryan et al. [8] identified the universities’ societal role as a critical factor when implementing transdisciplinarity in the academic system of post-Soviet countries. Using Armenia as a case study, the societal role of universities is grasped based on the triangulation of semi-structured expert interviews, focus groups, and document analysis. Discrepancies in the perception of the universities’ societal role are presented and discussed according to four main features of transdisciplinarity: focusing on real-life problems, transcending and integrating disciplinary paradigms, ensuring participatory research and teaching, and searching for unity of knowledge beyond disciplines. Their findings show that no formal obstacles exist for implementing transdisciplinarity in two Armenian universities and that the societal understanding of the role of universities could be expanded.

de Matos Pedro et al. [9] take a quantitative approach to study the efficiency of higher education institutions (HEIs), considering the social, environmental, and cultural factors (pro-sustainability), and at the same time examine how this efficiency can influence regional quality of life (QoL). The study adopts a two-step methodology. In the first step, the standard Data Envelopment Analysis (DEA) is used to estimate the efficiency scores of 23 Portuguese public HEIs; in the second step, a multivariate logit regression is performed to assess the role played by the HEIs’ pro-sustainability efficiency in regional QoL. The implications of the current study can be seen in two ways: firstly, through the type of association made, which strengthens knowledge about HEIs’ influence on their regions, synthesizing at the same time the change in HEIs’ social, environmental and cultural role, considering the population’s QoL. Secondly, HEIs can reinforce the institutional orientation of pro-sustainability management, and the study provides new lines for public policies devoted to strengthening HEIs’ role in the necessary stimulation of more and better social and cultural activities with environmental awareness as levers of regional QoL.

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## References

1. Radinger-Peer, V.; Pflitsch, G.; Kanning, H.; Schiller, D. Establishing the Regional Sustainable Developmental Role of Universities—From the Multilevel-Perspective (MLP) and Beyond. *Sustainability* **2021**, *13*, 6987. [\[CrossRef\]](#)
2. Demele, U.; Nölting, B.; Crewett, W.; Georgiev, G. Sustainability Transfer as a Concept for Universities in Regional Transformation—A Case Study. *Sustainability* **2021**, *13*, 4956. [\[CrossRef\]](#)

3. Velasco, D.; Boni, A.; Delgado, C.; Rojas-Forero, G.D. Exploring the Role of a Colombian University to Promote Just Transitions. An Analysis from the Human Development and the Regional Transition Pathways to Sustainability. *Sustainability* **2021**, *13*, 6014. [[CrossRef](#)]
4. Budowle, R.; Krszjzaniek, E.; Taylor, C. Students as Change Agents for Community–University Sustainability Transition Partnerships. *Sustainability* **2021**, *13*, 6036. [[CrossRef](#)]
5. Krah, J.M.; Reimann, J.; Molitor, H. Sustainability in Brandenburg Study Programs. Perspectives for Anchoring Sustainability in Higher Education Curricula. *Sustainability* **2021**, *13*, 3958. [[CrossRef](#)]
6. Hoinle, B.; Roose, I.; Shekhar, H. Creating Transdisciplinary Teaching Spaces. Cooperation of Universities and Non-University Partners to Design Higher Education for Regional Sustainable Transition. *Sustainability* **2021**, *13*, 3680. [[CrossRef](#)]
7. Hovakimyan, H.; Klimek, M.; Freyer, B.; Hayrapetyan, R. Sustainable Shift from Centralized to Participatory Higher Education in Post-Soviet Countries: A Systematic Literature Review. *Sustainability* **2021**, *13*, 5536. [[CrossRef](#)]
8. Keryan, T.; Muhar, A.; Mitrofanenko, T.; Khoetsyan, A.; Radinger-Peer, V. Towards Implementing Transdisciplinarity in Post-Soviet Academic Systems: An Investigation of the Societal Role of Universities in Armenia. *Sustainability* **2020**, *12*, 8721. [[CrossRef](#)]
9. Pedro, E.d.M.; Leitão, J.; Alves, H. HEI Efficiency and Quality of Life: Seeding the Pro-Sustainability Efficiency. *Sustainability* **2021**, *13*, 514. [[CrossRef](#)]