Rethinking Higher Education in light of Climate Action (SDG13): Harnessing traditional knowledge to mitigate and adapt the impact of climate change

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Executive summary

This policy document outlines a critical shift towards community-based climate action, recognizing the vital role of traditional knowledge in mitigating and adapting to climate change impacts.

Climate change is one of the most urgent global challenges, demanding immediate action to curb its impact. Addressing this issue requires innovative, local, and relevant approaches, effective policy development and implementation, and increased climate initiatives as outlined in Sustainable Development Goal (SDG) 13.

Higher education institutions (HEIs) play a crucial role in research, innovation, and capacity building for sustainability by documenting and sharing valuable knowledge.

Despite their significant role in redefining climate action paradigms and developing sustainability competencies through integrated teaching programs, effective implementation of sustainable practices necessitates the involvement of local communities. There is often a disconnect between classroom teaching and practical implementation, leading to traditional and local knowledge being overlooked in designing socio-environmental solutions.

- 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
- 13.2: Integrate climate change measures into national policies, strategies and planning
- 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

Figure 1: Sustainable development goal 13 and its targets relevant to this policy.

To address climate change effectively, HEIs must prioritize the unique knowledge held by traditional communities and incorporate it into research and education for policy development. This collaboration can lead to developing strategies deeply rooted in the local contexts to appropriately contribute to the urgent mitigation and adaptation needs at the community level while fostering a deeper appreciation and understanding of traditional and local approaches to managing climate change.

Introduction

We might not be able to think ourselves into a new way of living, but we can certainly live our way into a new way of thinking (White & Wright, 2002).

Global climate changes present significant challenges worldwide, with both global and local impacts (IPCC, 2023). Addressing local environmental challenges and global

issues requires implementing various effective policies. As highlighted in SDG 13, we depend on a higher degree of climate action to overcome these challenges. SDG Target 13.1 emphasizes the need to strengthen resilience in climate-related hazards in all countries. HEIs could benefit from co-creating new knowledge from traditional and local communities to provide practical solutions to climate change mitigation and adaptation needs. Additionally, traditional and local knowledge is vital for generating new insights and researching local problems (Naess, 2013). As local communities face local climate problems firsthand they provide an important basis that could enhance research on local problems. However, transferring new research to local communities can be difficult due to entrenched traditions and habits (Naess, 2013; Leal Filho et al., 2017; Ryan 2017). As a result, valuable information and research opportunities continue to be overlooked, especially since these novel approaches in social research have only recently been considered in the context of climate change science (Goodman & Marshall, 2018; Hirvilammi et al., 2023).

The SDG Target 13.2 concerns integrating climate change measures into national strategies, planning, and policies. To strengthen the bridge between the university and traditional communities to enhance innovative local research and help create locally relevant policies, there is a significant necessity to create strategies, methodologies, and tools that can assist HEIs in systematically incorporating SDG 13 into their research and teaching programs as part of individual courses (Gozin and Hatami, 2024).

Therefore, integrating local communities is crucial in targeting the SDG. In recent years, HEIs have led the way in establishing and redefining climate action paradigms and developing sustainability competencies through their integrated teaching programs, educating future decision-makers, entrepreneurs, and leaders (Lozano et al., 2022). The present study aims to contribute to this research goals and it is focused on following distinct aspects, identify community stakeholders that would collaborate with HEI; engage indigenous and local experts in the design of a school curriculum, The introduction of fieldwork and field visits in the climate education curriculum, and setting up of a cultural learning hubs within the community for student placements and exchanges.

Problem Statement

According to McCowan (2020), while there is a growing body of work on campus sustainability and climate issues in the curriculum, there is a need to understand more holistically the forms of influence universities have on society and the environment. Studies have established the problem of a disconnect between classroom teaching and practical implementation (Fantinelli et al., 2024; Hulme, 2014; Lee, 2018; Pellecchia et al., 2018). Very often, Indigenous and traditional knowledge is rarely harnessed in the design of socio-environmental solutions, including climate action plans, as evidenced by the many studies that emphasize the importance of values, knowledge, and cultural practices of local and Indigenous communities as invaluable in understanding and addressing social and environmental problems (Brondízio, 2021; Ludwig, 2020; Shaffril et al., 2020; Turnhout, 2018). The disconnect between top-down strategies and local realities delays the development of effective, culturally appropriate, and sustainable climate resilience solutions. Lenton et. al (2019) stressed that intervention time and reaction are crucial to taking the necessary action towards climate action.

Centering traditional perspectives and knowledge systems in community-led climate change education can foster resilience, environmental stewardship, and adaptation strategies that can enhance climate change education programs within HEIs (Datta, 2024; Mbah et al., 2021). However, traditional knowledge is often not documented in decision-making processes and policy development, highlighting the underutilization of this valuable resource (Cuerrier et al., 2015). Incorporating traditional knowledge and perspectives into higher education curricula is crucial for effectively addressing climate change, promoting cultural diversity, and ensuring sustainability. By integrating this knowledge into curricula, HEIs can improve students' understanding of climate change impacts and cultivate a deeper appreciation for traditional ecological knowledge (Yazidi, 2024).

Research has emphasized integrating this knowledge into educational frameworks to bridge the gap between traditional wisdom and scientific inquiry, making science education more relevant and engaging (Yazidi, 2024). Additionally, including traditional knowledge in curricula can help develop adaptive expertise among

students, preparing them to tackle the complex challenges of climate change (Bell et al., 2010).

Solutions

- *Identify stakeholders in the community that would collaborate with HEI.*

  There is a need to explore the enormous possibilities when students, staff and HEI institutions work in partnership and constructively co-create the spaces and places they inhabit. As a collaborative research platform, we shall advocate for praxes and habits that allow for cooperation both within and out-with academic institutions, that enable the formation of diverse Communities of Practice (Lave and Wenger, 1991) and the development of pedagogy networks that create those very human interpersonal spaces for growth. Such liberatory spaces need to be supported by critical (Freire, 2007) and democratic (Dewey, 1916) pedagogic practices that create a more welcoming university that acknowledges the super-complexity of people's lives (Abegglen et al., 2020). As argued by Bhabha (2004), it is in a collective 'third space' (Burns et al., 2019; Gutierrez, 2008) whereby 'being with' (Nancy, 2000) individuals start to 'become', together. Where: everything comes together . . . subjectivity and objectivity, the abstract and the concrete, the real and the imagined, the knowable and the unimaginable, the repetitive and the differential, structure and agency, mind and body, consciousness, and the unconscious, the disciplined and the transdisciplinary, everyday life and unending history. (Soja, 1996, p. 56-57, emphasis in the original).

- Engage Indigenous and local experts in the design of a school curriculum that takes into consideration Indigenous ontologies and epistemes in climate change mitigation and adaptation. An integrated vulnerability assessment was conducted on the whole island of Abaiang in Kiribati, on the basis of which the government integrated climate adaptation activities into the local development plan. Teachers in all primary and secondary schools have been trained on climate change issues. Courses were tailored to the region's specific circumstances (Giz).

- The introduction of fieldwork and field visits in the climate education curriculum where students go into the community to engage and learn ways of doing, such as how communities tackle the impact of climate change. eg. Several Pacific island states have integrated the subject of climate change and its effects into their primary and secondary school curricula and their teacher training and continuing professional development programmes (Giz).

- Co-creating new methods of climate mitigation and adaptation research between the HEI and the traditional knowledge holders for appropriate local climate-related solutions; e.g Indigenous land and sea managers are working with western scientists, policy makers and planners on a wide range of environmental issues including loss of biodiversity, threatened species, stressed aquatic ecosystems, invasive species, and climate change for example the National Cultural Flows Research Project, which was Aboriginal-driven, and based on key research principles concerning water governance (Woodward,).

- Knowledge sharing by inviting and allowing community stakeholders (community chiefs or heads, older people, the ordinary community member) to share their Indigenous expertise and experiences on climate impact management with students. Networks in Australia that promote traditional-led knowledge practices and their application to international environmental challenges such as the UN Permanent Forum on Indigenous Issues, the International Indigenous Forum on Biodiversity and Ecosystem Services, and the Indigenous and local Knowledge Centres of Distinction that offer peer-to-peer learning opportunities for Indigenous land and sea management practitioners (Giz).

- Setting up of a cultural learning hubs within the community for student placements and exchanges. Five years ago, an academic department in the United States and the Ann Sullivan Center of Peru (CASP) initiated an international partnership to foster research collaborations and reciprocal consultation, and to create an advanced clinical placement for occupational therapy doctoral students. Today CASP is a globally recognized and respected hub for community-based research, demonstration and training for people with disabilities (most of whom are from low-

income families). CASP has provided occupational therapy students and faculty with a rich cultural environment in which to learn and collaborate as well as opportunities for developing research collaborations (Yolanda S. et al. 2012).

Recommendations

- Integration with Modern Technologies: Combine traditional knowledge with modern technologies, such as Geographic Information Systems (GIS) and climate modeling, to enhance climate resilience strategies. This would provide a comprehensive approach to climate adaptation, enabling more precise and effective interventions. Member states to encourage HEIs to conduct interdisciplinary research that combines traditional knowledge with advanced technological tools, creating innovative solutions for climate resilience. They can also teach and engage communities in how to do this based on their research outcome.
- HEIs can facilitate regular policy dialogues and stakeholder engagement sessions to ensure continuous communication between policymakers, Indigenous communities, and other stakeholders. E.g., Universities can host forums and conferences that bring together diverse stakeholders to discuss and develop climate policies. Ongoing dialogue fosters trust, transparency, and knowledge exchange, ensuring that policies remain adaptive and responsive to local community needs.
- HEIs can engage the community in collaborative research initiatives. For instance, through the facilitation of research partnerships as well as providing platforms for sharing knowledge and methodologies. This would bridge the gap between traditional knowledge and scientific methodologies, promoting mutual learning and co-creation of innovative climate solutions.
- Governments should provide financing (adequate resourcing) to HEI institutions to be able to fund students to undertake fieldwork and visits within local communities.

- HEI can award credit scores to students for carrying out fieldwork activities. Students gain hands-on experience by working together on community-initiated action against climate change. For instance, to find out how communities are tackling the impact of climate change and get involved.
- Students should be made to write a report that includes a SWOT analysis of the communities they visit. This report can be shared with the community for co-creation of recommendations and solutions for the weaknesses and threats.
- HEI can initiate co-creation workshops with and in communities to co-design capacity building courses and initiatives for climate action applicable to communities.

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