Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 553– 566
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.4751

Universities and Sustainable Development: Options to Help 'Walk the Talk'

Khadijah Supaat[1], Sarah Aziz[2], Siti Zuhaili Hasan[3], Noor Ezlin Ahmad Basri[4], Siti Haslina Mohd Shafie[5]

Abstract

The United Nations' agenda on sustainable development, since 1972 via the Stockholm Declaration 1972, the 1992 Rio Agenda 21, and the 2030 Agenda for Sustainable Development, has consistently earmarked academia as an agent of change. Academia, i.e., institutions of higher education are seen as major contributors to help governments contribute to national aspirations for sustainable development, which in turn contributes to global aspirations. Since the adoption of the SDG 2030, universities have begun to incorporate SDGs into their institutional systems and processes. This paper will briefly review related literature pertaining to the role of universities in mainstreaming sustainable development, to help determine the shift needed for universities in Malaysia to embed sustainable development into its governance systems and processes. A list of what is expected of universities, and how such expectations can be accommodated will facilitate determination of key areas to drive change. It will also explore the role of universities as a 'living lab; medium for influence; connector with civil society; and contributors to the knowledge, and know-how related to sustainable development. Options for consideration related to embedding the sustainable development agenda within the governance framework will be highlighted in the paper.

Keywords: *Universities, University Governance, Sustainable Development, Sustainable Development Goals.*

Introduction

Last century, a clarion call rang out, calling for the prevailing global development trajectory to adopt a more sustainable pathway, beginning with the casting to stone the relationship between humans and the environment in the Stockholm Declaration and Action Plan for the Human Environment 1972. This was followed by the 1992 Rio Declaration on Environment and Development that recognised the integral and interdependent nature of Earth, and the need to work together to protect the integrity of the global environment and developmental systems (UNGA, 1992). The Agenda 21 document, highlighted the role of the academia and research institutes to among others, to enhance scientific understanding in order to promote sustainable development (UNDSD, 1992).

This century, the call has become resoundingly louder, with the adoption of the 2015 United Nations General Assembly Resolution; Transforming Our World: the 2030 Agenda for Sustainable Development, setting out a plan of action for people, planet and prosperity, recognising past efforts, and the need to "…take the bold and transformative steps…to shift the world on a sustainable and resilient path" (UNGA, 2015). The UNGA 2015 Resolution clearly states in paragraph 45, that governments and public institutions will work closely on the implementation of the 2030 Sustainable Development Goals (SDGs) 2030 with the academia (among other stakeholders). It can be said here that the academia or higher education institution has a role to play at national, regional and global levels to help meet the aspirations set out in the 17 sustainable development goals.

Higher education institutions (HEIs), according to UNESCO (2022), "…are uniquely positioned to contribute to the social, economic and environmental transformations that are required to tackle the world's

[1] Institute for Environment and Development (LESTARI), Universiti Kebangsaan Malaysia, 43600 UKM Bangi, Selangor, Malaysia, Email: khadijahimamsupaat@gmail.com.
[2] Institute for Environment and Development (LESTARI), Universiti Kebangsaan Malaysia, 43600 UKM Bangi, Selangor, Malaysia, Email: dasn19762002@gmail.com, (Corresponding Author)
[3] Institute for Environment and Development (LESTARI), Universiti Kebangsaan Malaysia, 43600 UKM Bangi, Selangor, Malaysia, Email: sitizuhaili@gmail.com.
[4] Institute for Environment and Development (LESTARI), Universiti Kebangsaan Malaysia, 43600 UKM Bangi, Selangor, Malaysia.
[5] Geography Section, School of Humanities, Universiti Sains Malaysia, 11800 USM, Pulau Pinang, Malaysia, Email: haslinashafie@usm.my

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 553– 566
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.4751

most pressing issues". UNESCO (2022) recognises the various efforts undertaken by HEIs contributing positively to sustainable development, but stresses that a much deeper and far-reaching transformation is needed. This paper briefly explores, what changes are expected to affect the 'deeper and far-reaching transformation' required, and the terms 'university' and 'higher education institutions' are used interchangeably.

Literature Review

Universities and Sustainable Development

In 1990, the Talloires Declaration became one of the first global events in which university chancellors and directors pledged their commitment to incorporate sustainable development into university operations (Yanez et al., 2018). The declaration has the effect of signalling of intention despite it is not being mandated (Zutshi & Creed, 2018). Lozano et al. (2013) note that there have been many declarations, charters and partnerships promoting environmental education, sustainable development, and education for sustainable development, with measures recommended to enhance the implementation of sustainability.

The United Nations Decade of Education for Sustainable Development (2005-2014) emphasized the central role of universities play in implementing sustainable development, not just to generate and transfer knowledge, but to educate future leaders who will contribute to a sustainable future (Barth, 2016). Universities also serve as transformative agents by influencing the values and thought processes of future leaders in academia, business, and politics (Findler et al, 2018). Education for sustainable development (ESD) has been seen as a soft governing tool for achieving sustainable development, since education appears to be a relevant intermediary to achieve targets across the various goals of SDGs (Kushnir & Nunes, 2022; Xing et al., 2023).

Higher education institutions also have a role in transforming society and serving the larger public interest (Pranovi, 2017), developing human potential as drivers of change, enabling individuals and the institution itself to build a sustainable path (Bina & Pereira, 2020). Serafini et al. (2022) notes that a university serves as an agent of knowledge, playing a crucial role in fostering a socially equitable, economically sustainable, and environmentally protected world. It has an important role, as it links knowledge generation with knowledge transfer to society as well, educating future decision makers through community outreach and service (Barth & Rieckman, 2016).

Žalėnienė & Pereira (2021) also note that HEIs have a responsibility to nurture future professionals, which Franco & McCowan (2021) highlights can be made possible by developing human capital, generating scientific discoveries, and allowing the emergence of new technologies, where universities can work towards achieving human well-being and environmental protection dimensions in the framework of global development. Sustainable development is promoted and implemented in higher education to stimulate a circle of rethinking and recreating value, as it transforms into change agents for societal transformation (Giesenbauer & Georg Müller-Christ, 2020).

As the planetary crises looms over all countries, climate change impacts and risks being one of the main threats, the Intergovernmental Panel for Climate Change's (IPCC) Climate Change 2023: Synthesis Report (IPCC, 2023), has also highlighted the important role universities play to help various stakeholders understand and adapt (Facer, 2020), and universities are urged to "…enhance climate change education, training, public awareness, public participation, and public access to information" (Paris Agreement) to combat climate change (Filho et al., 2018). This role has seen universities take on dual education or twin strategy in which universities simultaneously work to reduce their own "carbon footprint" by adopting low-carbon operational practices and develop the "carbon brain print" of society by imparting knowledge and skills about carbon-neutral practices (Filho et al., 2021).

Universities can adopt an informed, ambitious and long-term approach to decarbonising at the most practical level before offsetting residual emissions while advancing world-leading research on climate change, technologies and actions needed to prevent it (Mitchell-Larson et al., 2020). Offsetting involves

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 553– 566
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.4751

emission reductions (e.g., reducing emissions of harmful pollutants) and carbon removals (e.g., restoration of native forests) both of which enable progress toward global net zero emissions (Mitchell-Larson et al., 2020). According to the IPCC (2018), "net zero emissions are achieved when anthropogenic emissions of greenhouse gases to the atmosphere are balanced by anthropogenic removals over a specified period". Meaning that, enhancing the carbon sink capacity of ecosystems for carbon removal, is the key to achieving the target of carbon neutrality and a practical way to reduce the increase of atmospheric carbon dioxide (CO2) and global warming (Yang et al., 2022).

Universities are better positioned to persuade communities to adopt climate change adaptation and disaster risk management strategies because of their reputation for innovation, knowledge production, academic prowess, and public trust (Dzvimbo et al., 2022). They must act as organizational role models for civic participation and responsibility, setting an example for society (Jarillo et al., 2019). Climate action in higher education institutions envision a 'system' rather than a 'compliance' approach that requires structural change (Barron et al., 2021). Building capacities for adaptation and mitigation to climate change are critical elements of ESD (UNESCO, 2017) which is an integral component of quality education and key enabler for sustainable development (UNESCO, 2020).

SDG 2030 and Expectations on Universities

Wals and Schwarzin (2012) note that sustainability cannot be thought in terms of "inconvenient truths", but in "…terms of challenges to be taken on in the full realization that, as soon as we appear to have met the challenge, things will have changed, and the horizon will have shifted once again". There is an expectation that universities or HEIs, to not only contribute to solve some of the world's greatest problems, but to "…rethink their role in society and their key missions and reflect on how they can serve as catalysts for a rapid, urgently needed and fair transition towards sustainability" (UNESCO, 2022).

The primary academic missions—education, research, and societal engagement—are crucial to how universities are expected to tackle the global unsustainability challenge (Hurth & Stewart, 2022). SDG literacy and sustainability should become essential for both faculty members and students. The SDGs present a common challenge for everyone and must be reflected into research, education, and outreach strategies (UNESCO, 2022). Three key areas of transformation are proposed: shifting towards inter- and transdisciplinary education and research, universities becoming centers of epistemic dialogue and diverse knowledge integration, and enhancing their societal presence through proactive outreach and partnership, that not only builds awareness on ecological deterioration and SDGs, but also influence policy (UNESCO, 2022). Education is expected to help students develop a holistic perspective on challenges and solutions. Programs will need to incorporate inter- and transdisciplinary courses aligned with the SDGs, using inclusive methods that provide opportunities for experiential learning and dialogue with various communities (Agarwal et al., 2024; UNESCO, 2022).

Through education, students are expected to develop a holistic perspective on problems and possible solutions, and education programmes will need to incorporate inter- and transdisciplinary courses related to SDGs, using inclusive approaches, that provide opportunities for experiential learning and dialogic activities with various communities (UNESCO, 2022). One approach would be to build "…critical hope – the ability to recognise significant challenges and disruptions that are being faced as well as the ability to engage creatively and hopefully with these conditions…" which will support long-term and meaningful transformative practices (Ojala, 2016).

Sustainability research involves inter-, multi- and trans-disciplinary research in order find solutions and design strategies that can support to creating better lives for the community today and in the future (Leal et al., 2018), as well as to address the complex problems that face modern society (Menon & Suresh, 2020). In promoting the systemic change, HEIs will need to continue expanding academic freedom, with a focus on SDG challenges, bringing together multiple disciplines, and a shift towards the co-production of knowledge with diverse communities (UNESCO, 2022).

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 553– 566
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.4751

The problem of sustainability is complex and embedded in various of social, economic, technological, political, cultural and environmental areas of human settlement, and the university function of co-creation has emerged in response, where collaborations between academia, industry, government and civil society are fundamental to addressing these challenges (Trencher et al., 2014). Outreach and community engagement should broaden to include policy advice and participation in sustainability-related societal projects, as well as creating networks between multiple stakeholders and HEIs, where knowledge is inherently and unavoidably co-produced within the social orders that shaped and produced (UNESCO, 2022). It should engage across political, economic, legal and other societal sectors to promote sustainability. This includes advocacy, policy design, social experimentation and the application of innovation and technology transfer (UNESCO, 2022).

HEIs act as 'free institutions for innovative and critical thinking, providing unique intellectual spaces that encourage openness to diverse perspectives and foster rethinking sustainable development beyond SDGs (UNESCO, 2022). HEIs will need to look beyond 2030, shaping new goals (McCowan, 2016) that bring the agenda for sustainable development farther along into the future.

Method

The research to determine the expectations on universities to adopt, adapt and embed sustainable development and sustainability practices relied on qualitative methods which Hamilton and Finley (2019) refers to as a category of research methods that generate findings without relying on quantitative measurements or statistical analysis. Content analysis of related literature on sustainable development, sustainability and universities was conducted to explore and better understand what changes are expected to impact the 'deeper and far-reaching transformation' required in implementing sustainable development in higher education institutions. Here systematic coding and categorization were used to review selected literature to investigate vast amounts of textual information in order to identify trends and patterns in the words used, frequency, relationships, and structures (Vaismoradi et al., 2013).

The rationale for employing content analysis is to uncover the various meanings and interpretations of the global community's expectations regarding how higher education institutions contribute to advancing the SDGs from data sources including United Nations documents, books and journal articles. A checklist was developed, focusing on 5 key themes, i.e. the role of higher education or universities can play and have played in the context of the SDGs; common measures or actions taken to implement SDGs; steps taken to change or adapt university or HEIs governance; and contributions made by universities or HEIs in implementing the SDGs.

Discussions

Wals et al. (2016) noted that "…higher education is at a crossroads having to choose between the path of commodification of knowledge creation and learning focusing on optimisation and efficiency with the wellbeing of the economy as a key driver, or the path of socio-ecological transitions requiring new forms of research and learning as well as alternative capabilities and values that contribute to the well-being of planet and people". SDG 2030 appears to align with UNESCO's recommendation that sustainability should be embedded and monitored within HEI governance structures, with HEIs serving as leading examples for other institutions and society (UNESCO, 2022).

HEIs are complex organisations where change cannot be brought about in the short term, as sustainable development implementation requires reasoned conceptions of and structures for sustainable development (Bauer et al., 2021). Conception of sustainability refers to the understanding that the university has a holistic view of sustainable development in terms of how sustainable development is envisioned (Bauer et al., 2020). The drivers for sustainable actions are also diverse, comprising three main stakeholders; top-down management; student led-initiatives; and community-based drivers (Zutshi et al., 2021). It also requires a whole institutions approach (Ferrer-Balas, et al., 2008). Implementing sustainable development requires change, and change affects all organisations (Vlachopoulos, 2021) and change can also foster growth

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 553– 566
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.4751

(Cohen, 2019). This will also require taking into account the need for the various missions of the universities to continue evolving and adapting to changes in the world at large (Trencher et al., 2014).

Educational changes would necessitate HEIs to integrate sustainability content and motivate faculties to establish inter- and transdisciplinary units for SDGs. This should encompass education, research, outreach, and engagement with various stakeholders. (UNESCO, 2022). Teaching methodologies must integrate more experiential and dialogic activities that engage with various sectors of society, giving students a greater role in shaping education related to sustainability (UNESCO, 2022). This approach seeks to cultivate specific and cross-disciplinary sustainability competencies (Zamora-Polo & Sánchez-Martín, 2019) by leveraging real-world learning experiences like project- and problem-based learning, service learning, and internships with communities, businesses, and governments (Brundiers et al., 2010).

Neidlich et al., (2019) found that HEIs will view themselves as members of society with an obligation to shaping it, going beyond the tasks of research and teaching, had a variety of structures in place to enable regular interaction and cooperation with stakeholders. Universities can then become engines of social, economic and cultural development for regions in which they operate by transferring knowledge and technologies to industry and to general society (Compagnucci & Spigarellib, 2020). They need to go beyond the traditional distinctions between basic and applied knowledge, uniting truth-seekers with problem-solvers. (UNESCO, 2022).

The relationship between the university and external stakeholders in the production of knowledge, helps make teaching and research useful for the wider community (Nakwa & Zawdie, 2016), and the engagement demonstrates its relevance to society (Fayolle and Redford, 2014). The role of universities has also shifted from passive knowledge creation toward a more proactive and engaged role within their regions (Peer & Penker, 2016). Thus, ESD must be incorporated into international, regional, and national policies to establish a supportive pedagogical environment that encourages individual empowerment and provides students with the knowledge and skills required for sociopolitical engagement (UNESCO, 2020).

As the economy and society must change from the current unsustainable state to a sustainable and resilient one, through a deliberate process that aims to fundamentally change the elements and structures that cause the system to behave in the current unsustainable way (Voulvoulis et al., 2022), universities have a role to contribute to the change. In this sense, for higher education institutions to become more sustainable and resilient, there is a need for a fundamental change in the culture, purpose, policy, and practice of higher education institutions (Niedlich et al., 2020). The five aspects to accommodate change are listed below.

Change in the Direction of Governance

A university that aims to promote sustainability will need to have a clear vision and governance commitment towards sustainability, demonstrated by the university having an organizational structure that can embed the vision and aspirations of sustainability (Umar, 2020). Governance is an element of the transformation of higher education to sustainability and should support fundamental changes in the core domain of higher education (Niedlich et al., 2020).

Vaughter et al. (2016) note that as a central sphere that coordinates four more specific institutional areas activities (education, operations, research and community outreach), in mainstreaming sustainability, institutional goals and objectives, accountability, finance, long-term planning, and leadership which are key aspects of governance, should be looked at within the context of sustainable development. This includes the adoption of an institutional agenda for sustainable development an expression of the commitment of the entire academic community, essentially defining the "tone at the top" of the sustainable university (Paletta & Bonoli, 2019).

The long-term visions of sustainability can serve as a guide for developing programs and policies, as well as for establishing both short- and long-term goals and these visions must be as compelling and creative as to be backed by various actors (Loorbach & Rotmans, 2006). Higher education governance for sustainability should also focus on all the conditions, pathways, and techniques through which sustainability

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 553– 566
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.4751

enters and permeates HEIs (Bauer et al., 2020). Thus, by putting sustainability at the top of the strategic agenda, networks formed around a common goal can connect the various stakeholders within the university and with those outside of it, advancing the achievement of the SDGs (Purcell et al., 2019).

Institutional and Management Changes

The implementation of sustainable development requires some structural and organizational changes that can facilitate the cooperation of stakeholders in this field (Blasco et al., 2021). The organizational structure may take on a variety of roles, facilitate change processes, or concentrate on individual or group efforts and determining who has the power or authority to implement change is particularly crucial in the process of organizational change for sustainability (Hoover & Harder, 2015).

Good management is an initial step for good governance (Filho et al., 2020) where higher education management must also be transformed to implement SDGs, which necessitates new approaches to working, planning, budgeting, decision-making, and monitoring (Ketlhoilwe et al., 2019). Management should complement governance that focuses on fostering sustainable campus management and operations (Nhamo & Mjimba, 2019).

Various managerial techniques including goals and systematic follow-up of these goals through a strategic plan, clear organizational structures and leadership, principles, tools, frameworks, and approaches can help better mainstream sustainable development and sustainability (Macheridis & Paulsson, 2021). For example, from a structuring perspective, when an institution commits to one or more sustainability reporting that require specific measurement, standardizing the requirements for that reporting purpose will cause the institution to define data sources, lines of authority and division of responsibilities in sustainability initiatives (Zutshi & Creed, 2018).

Niedlich et al. (2019), in their research in some universities, they identified different structures of responsibility for the sustainability process where some university management showed a strong commitment and became a driving force. In other universities, there was a centralized management but lacked commitment, and in another cases, university management emphasized a joint development process encompassing all of its stakeholders so that responsibility for the sustainability process was shared between the various disciplines and institutional areas.

In fact, stakeholder partnership and collaboration which includes staff, students and communities play an integral part in ensuring effective implementation and adoption of sustainable practices in universities (Mazhar et al., 2017; Mendoza et al., 2019). Involvement of higher-level staff in the collaboration process is essential to set and mandate the clear goals, direction, and specific objectives within the time frames that is reflected in strategies or action plans, while active participation and involvement of staff and students are crucial to drive and achieve these sustainable targets (Alam & Lin, 2022; Mazhar et al., 2017; Thuy et al., 2024).

Mendoza et al. (2019) highlight the significance of creating mixed teams including operational and strategic staff to facilitate the effective adoption and implementation of sustainable practices in universities. In order to facilitate the effective adoption of sustainable practices, emphasis should be placed on cultivating the right mindset and change the inherent thinking (Qu et al., 2021). By making everybody a sustainability champion, this could instil the responsibility and a sense of ownership in committing sustainable practices (Alam & Lin 2022; Mendoza et al. 2019).

This is important as to embed sustainable practices in daily life as culture, and assuming that it is not another business priority (Mendoza et al. 2019). This can be achieved by providing relevant training and organization training to these members (Mendoza et al., 2019; Salas et al., 2021), as according to Alam & Lin (2022) by "providing more inducements to enhance their motivation to internalize sustainability".

Despite the broad focus of sustainability practices regarding campus operations, the most discussed topics in studies covering sustainable buildings, sustainable transport, water management, energy management,

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 553– 566
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.4751

waste management, sustainable procurement, carbon footprint, reporting, and green offices (Dawodu et al., 2022; Leal Filho et al., 2019; Menon & Suresh, 2020; Sutawaidjaya et al., 2024; UNEP, 2014). The term campus greening according to Leal Filho et al. (2019) often refers to technical issues such as environmental management, sustainable buildings, renewable energies or carbon footprint and reporting. It is considered as a first step in implementing sustainability initiatives in universities (Aedi, 2024; Leal Filho et al., 2017).

Green office or sustainability office is a governance structure established in universities to assist and implement sustainability goals (Leal Filho et al., 2019). It can play specific roles in promoting campus sustainability by making it more visible, integrating and coordinating all aspects of sustainability into one facility, cutting across various disciplines including curriculum, research, campus operations, community and governance (Leal Filho et al. 2019).

Leal Filho et al. (2019) also note that campus sustainability can create awareness among staff and students and focuses on education and training (Leal Filho et al., 2019). Further, the establishment of the green office or sustainability office contributes to the accountability of administration, promotes a sense of leadership, mobilizes and bridges staff and students. In this sense, it may reduce the information asymmetry as highlighted by Alam & Lin (2022), by providing extensive training and sharing information and knowledge regarding sustainability among staffs and students.

On another note, Leal Filho et al. (2019) draw a distinction between a sustainability office and a green office, based on their respective operations. Sustainability office functions as a node, which coordinating all sorts of sustainability activities, embedding sustainability within campus operations, research and teaching. It focuses on staff leadership, with or without student involvement (Leal Filho et al. 2019). In contrast, a green office functions as a university sustainability platform, embedding sustainability into the curriculum, campus operations, community and governance, typically led by students (Leal Filho et al., 2019). Their functions also involve in executing projects, conducting planning and also supporting sustainability communities (Leal Filho et al., 2019).

Another aspect to look at is sustainable procurement. Often, it is challenging to relate procurement to the sustainability outputs, as measuring procurement performance in relation to sustainability is a daunting task (Mendoza et al., 2019). Furthermore, due to the structure of the contracts, it is also difficult to get data from suppliers (Mendoza et al., 2019). UNEP (2014) recommends that sustainability criteria should be addressed in three stages of procurement stages, the initial tendering process, tender evaluation and contract management. These criteria can be either performance-based, technical-based or even both (UNEP, 2014). Procurement of goods and services can be based on certain requirements, such as environmentally and socially sound, designed for disassembly, recycled or recyclable, made from renewable and non-toxic materials, energy efficient, climate-neutral and others (Leal Filho et al., 2019; Nunes et al. 2018). Additionally, the introduction and application of service, repair, leasing or pay-per-use contracts can encourage the re-use of products and services, instead of procuring new products or services (Nunes et al., 2018).

Embedding Sustainable Development and Sustainability into the University's Core Business

Moving forward, as HEIs are committed in practising sustainable development, the most fundamental aspect involves incorporating sustainable development principles into the mission and vision of these institutions (AbuBakar et al., 2020; Hurth & Stewart, 2022; Leal Filho et al., 2023; UNEP, 2014). It is regarded by Lozano et al. (2013) as an "official commitment to sustainable development". This is crucial as it helps to rethink and reorient the purpose of the entire institution's system towards sustainability, and, to foster an eco-effective mindset (Nunes et al., 2018).

This in turn, will translate into comprehensive sustainability policies, goals and action plans to span the whole HEI's dimensions (Abdullah et al., 2017; Mendoza et al., 2019). Although many institutions embark on a journey towards sustainability, the actions are often bolt-on instead of built-in approach, are limited in scope and only focus on specific targets (Nunes et al., 2018; Mendoza et al, 2019). In this sense, Nunes et al. (2018) emphasize that these actions should focus on extending the whole entire system (academic,

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 553– 566
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.4751

administrative policies or facilities management). For instance, focus should be targeted from reducing carbon footprint to achieving carbon positivity or adopting circular economy practices within HEIs (Nunes et al., 2018).

However, there are no definite criteria in implementing sustainability practices in HEIs, as there is no size fit all solutions for every HEI (Bautista-Puig & Sanz-Casado, 2021). Since every HEI has different local, culture, structure and governance context, the adoption of sustainability practices may differ from each other (Bautista-Puig & Sanz-Casado, 2021; Dawodu et al., 2022). Also, the effectiveness of one's approach in each HEI may not be practical and applicable in other HEIs (Dawodu et al., 2022). Lozano et al. (2013) interpret that sustainable development is the "golden thread", that permeates throughout the entire university system. This means that the adoption of sustainable practices should be embedded in every sector, transcending its triple functions of HEIs – education, research and community engagement (Bautista-Puig & Sanz Casado, 2021; Cortese 2003; Du et al, 2020; Lozano et al. 2013; Salas et al., 2021; UNEP 2014); which also includes campus operations (Cortese, 2003; Du et al, 2020; Lozano et al. 2013; UNEP 2014), and assessment and reporting (Bautista-Puig & Sanz-Casado, 2021; Lozano et al. 2013).

As sustainability grapples with complex socio-ecological problems, learning should transition from reformative to transformative learning to reflect their values, belief and behaviour (Menon & Suresh, 2020; Qu et al, 2021). Transformative learning, a concept coined by Jack Mezirow described as "a process of changing deeply held assumptions (i.e., frames of reference or meaning perspectives) about the world and oneself, thereby strengthening one's capacity to contribute to social change processes" (Singer-Brodowski, 2023). To address these complexity issues, foster critical thinking, and bridge different perspectives, it is best to incorporate sustainability knowledge that transcends different disciplines, including interdisciplinary, multidisciplinary, and transdisciplinary courses (Abdullah et al., 2024; Menon & Suresh, 2020). A myriad of pedagogical approaches, such as social constructive pedagogy, case study, problem-based learning, place-based learning, service learning, educational games and e-learning help in delivering sustainability knowledge and facilitating learning (Menon & Suresh, 2020; Nugraheni et al., 2024).

Research and scientific discoveries play an important role in pursuing knowledge creation at universities (Alam & Lin, 2022). Recognizing its significance, it is pivotal to integrate sustainability concepts considering "quadruple bottom line" (UNEP 2014) within research, for instance, through inter- and transdisciplinary research at universities (Alam & Lin, 2022; Camillus et al., 2024; Menon & Suresh, 2020). A study conducted by Alam & Lin (2022) found that there are several factors contribute to the effectiveness of sustainability integration within research. Apart from sufficient funding and technology advancements to carry out research, (Alam & Lin, 2022; Benn & Dunphy, 2009) active involvement of higher-level management for collaborative goals setting, reallocation of slack resources, strong motivation and information sharing, and dissemination contribute to the successful integration of sustainability into research (Alam & Lin, 2022). In addition, through research, reflection and engagement, higher education institutions can also contribute to evidence-based policy advice aimed at improving governance and decision-making in many low-income countries (Heleta & Bagus, 2021).

Living Laboratories

Universities can serve as living laboratories to facilitate research on what constitutes sustainable lifestyles and determine cutting-edge sustainable business models, highlighting the benefits of sustainability practices (Kohl et al., 2022). Sustainability in higher education institutions (HEIs) extends to the sustainable operation of university facilities and communities (Aedi, 2024). This approach serves a dual purpose, as universities can function as living labs or institutional research centers, aligning research efforts with community needs to foster a more sustainability-oriented society (Alm et al., 2022).

An effective way to frame strategic alignment of the academic mission with sustainable development is to adopt a "living lab" model, which unifies various projects under one governance framework. It also fosters collaboration between the professional sustainability team, faculty, and students to solve real-world issues through experiential learning and teaching (Purcell et al., 2019). Universities can leverage their potential to

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 553– 566
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.4751

establish living labs, focusing for SDGs, providing a safeguarded environment for such integration to occur (Leal Filho et al., 2020). One of the most important outcomes of using the university campus as a living laboratory for sustainability problem-solving is making connections between theory and practice as well as between the university campus and the outside world visible to students and the campus community (Rivera & Savage 2020).

Contributing to the Community

Hurth & Stewart (2022) emphasize the concept of purpose-driven university in promoting the third mission of university, which involves the direct transfer of knowledge and technology to society. According to Hurth & Stewart (2022), this third mission of university can be regarded as a "CSR-type activity" that bridges with society.

This is also corroborated by Menon & Suresh (2020) by reiterating that research within universities should be focusing on developing, improving and providing solutions to problems faced by communities. For example, Kumble (2019) reports how students from University of Massachusetts have set up a start-up company called AbonOrgániCo in Guatemala City, to make compost from the green waste, and sold the compost to Guatemala City's Municipal Government. The company has created job opportunities especially for youth from Zone 3, the most impoverished neighbourhood in Guatemala City, and the surrounding communities (Kumble, 2019).

Universities have increasingly assumed more responsibility when it comes to their contribution to society where their local initiatives also have a fundamental impact on the context in which they are applied (Chen et al., 2024; Filho et al., 2019). In order to influence and shape public policy, particularly with regard to the SDGs, universities can take an active role in the political process by planning, coordinating, lobbying, and advocating. University should play a pivotal role in reinforcing the science–policy interface by working with policymakers and other stakeholders to identify policy priorities/problems, assess policy options, implement solutions and evaluate policies. More important, University can help translate the SDGs into measurable, country-specific targets by actively matching academic capital with public policy priorities and making knowledge and resources available to governments and communities (El-Jardali et al., 2018).

Conclusion

Mainstreaming sustainable development and implementing measures for sustainability beyond the SDG 2030, will require institutional and organisational change along with a rethink of the university's primary mission of education and research mission, and engaging stakeholders, particularly society. A clear understanding of what sustainability means to the university, for it to embed, implement and practice on itself is critical, if it is to see itself as a contributor to meeting sustainable development aspirations at local, national and global level. It must turn itself into a 'lab', and see itself as being part of society, with a responsibility and obligation to shape it.

Institutional and organisational changes will be dependent on how the university sees sustainable development, and the role it must play to help meet the aspirations as set in the SDG 2030 targets, and beyond. A strategic plan laying out the goals, strategy and actions as well as measures required, as well as set out the mandates within the organisation, roles and tasks, including indicators measuring the outcome of the plan is critical. The strategic plan should be matched to the expectations set at global, national and local levels, at least at the minimum expectation, to allow for transitions within the University to take place. Universities or HEIs are not just purveyors of knowledge on sustainable development but need to become the practitioners of sustainable development, as a member of a larger community, to which it contributes to.

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 553– 566
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.4751

References

Abdullah, A. H., Razman, R. & Muslim, R. (2017). A Review on critical success factors of governance towards sustainable campus operations. IOP Conf. Series: Materials Science and Engineering, 226, 012057. https://doi.org/10.1088/1757-899X/226/1/012057

Abdullah, M. L., Hamidon, Z., Mat, H., Shafie, N. & Keat, O. C. (2024). Implementing education for sustainability in information technology course at Open University Malaysia. Educational Administration: Theory and Practice, 30(7), 434-444. https://doi.org/10.53555/kuey.v30i7.6705

Abubakar, I.R., Aina, Y.A. & Alshuwaikhat, H.M. (2020). Sustainable development at Saudi Arabian universities: an overview of institutional frameworks. Sustainability, 12, 8008. https://doi.org/10.3390/su12198008

Agarwal, K., Jaiswal, S., Goel, M. & Yadav, D. (2024). The impact of higher education on sustainable development goals: a quantitative analysis of enrollment growth and educational quality. Educational Administration: Theory and Practice, 30(1), 3495-3499. https://doi.org/10.53555/kuey.v30i1.7287

Alam, M, & Lin, F.R. Internalizing sustainability into research practices of higher education institutions: case of a research university in Taiwan. Sustainability, 14, 9793. https://doi.org/10.3390/su14159793

Alm, K., Beery, T.H., Eiblmeier, D. & Fahmy, T. (2022). Students' learning sustainability – implicit, explicit or non-existent: A case study approach on students' key competencies addressing the SDGs in HEI program. International Journal of Sustainability in Higher Education, 23(8), 60-84. https://doi.org/10.1108/IJSHE-12-2020-0484

Amaral, A. C. F., Rodrigues, E., Gaspar, A. R., & Gomes, Á. (2020). A review of empirical data of sustainability initiatives in university campus operations. Journal of Cleaner Production, 250, 119558. https://doi.org/10.1016/j.jclepro.2019.119558

Anderson, A. A. (2005). The Community builder's approach to theory of change: A Practical guide to theory development. New York: Aspen Institute Roundtable on Community Change. http://www.theoryofchange.org/pdf/TOC_fac_guide.pdf

Awang, M., Mohammad, A. H., Sapri, M., & Rahman, M. S. A. (2014). Requisite facilities management competencies for sustainable development at higher education institutions. Journal of Sustainability Science and Management, 9(2), 71-89.

Baharudin, A. K. S., & Aziz, S. (2020). Menganjak ke satu pengurusan sisa pepejal secara lestari di Kampus UKM Bangi, Selangor: Pertimbangan awal. Jurnal Personalia Pelajar, 23(2).

Barkat, S. (2019). Evaluating the impact of the Academic Enrichment Programme on widening access to selective universities: Application of the Theory of Change framework. British Educational Research Journal, 45(6), 1160–1185. https://doi.org/10.1002/berj.3556

Barron, A. R., Domeshek, M., Metz, L. E., Draucker, L. C., & Strong, A. (2021). Carbon neutrality should not be the end goal: Lessons for institutional climate action from U.S. higher education. One Earth, 4(9), 1248–1258. https://doi.org/10.1016/j.oneear.2021.08.014

Barth, M. (2016). Implementing sustainability in higher education learning in an age of transformation. London: Routledge

Barth, M., & Rieckmann, M. (2016). State of the art in research on higher education for sustainable development. In M. Barth, G. Michelsen, M. Rieckmann, & I. Thomas (Eds.). Routledge handbook of higher education for sustainable development (pp. 100–113). London: Routledge.

Bauer, M., Niedlich, S., Rieckmann, M., Bormann, I., & Jaeger, L. (2020). Interdependencies of culture and functions of sustainability governance at higher education institutions. Sustainability, 12(7), 1–21. https://doi.org/10.3390/su12072780

Bauer, M., Riekmann, M., Niedlich, S., & Bormann, I. (2021). Sustainability governance at higher education institutions: Equipped to transform? Front. Sustain., 2, 640458. https://doi.org/10.3389/frsus.2021.640458

Bautista-Puig, N. & Sanz-Casado, E. (2021). Sustainability practices in Spanish higher education institutions: an overview of status and implementation. Journal of Cleaner Production, 295, 126320. https://doi.org/10.1016/j.jclepro.2021.126320

Benn, S. & Dunphy, D. (2009). Action research as an approach to integrating sustainability into MBA programs: an exploratory study. Journal of Management Education, 33(3), 276-295. https://doi.org/10.1177/1052562908323189

Bennis, W. G., Benne, K. D., & Chin, R. (1969). The planning of change. American Journal of Nursing, 69(8), 1754. https://doi.org/10.1097/00000446-196908000-00051

Bina, O., & Pereira, L. (2020). Transforming the role of universities: from being part of the problem to becoming part of the solution. Environment, 62(4), 16–29. https://doi.org/10.1080/00139157.2020.1764286

Blasco, N., Brusca, I. & Labrador, M. (2021). Drivers for universities' contribution to the sustainable development goals: An analysis of Spanish public universities. Sustainability, 13(1), 89. https://doi.org/10.3390/su13010089

Brundiers, K., Wiek, A. & Redman, C.L. (2010). Real-world learning opportunities in sustainability: From classroom into the real world. International Journal of Sustainability in Higher Education, 11(4), 308-324. https://doi.org/10.1108/14676371011077540

Chen, S. S., Chi, Y. R., Chen, S. W., Su, C. S., Huang, W. P. & Sung, W. P. (2024). Exploring the connection between university social responsibility and local sustainable development through practical teaching in higher education. Educational Administration: Theory and Practice, 30(4), 7863-7872. https://doi.org/10.53555/kuey.v30i4.2660

Cohen, H. (2019). The change management fallacies. SAM Adv. Manag. J., 84, 4–15.

Compagnucci, L., & Spigarelli, F. (2020). The Third Mission of the university: A systematic literature review on potentials and constraints. Technological Forecasting and Social Change, 161, 120284. https://doi.org/10.1016/j.techfore.2020.120284

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 553– 566
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.4751

Cortese, A.D. (2003). The critical role of higher education in creating a sustainable future. Planning for higher education, 31(3), 15-22. https://www.redcampussustentable.cl/wp-content/uploads/2022/07/6-CorteseCriticalRoleOfHE.pdf

Crow, M. M (2010). Organizing Teaching and Research to Address the Grand Challenges of Sustainable Development. BioScience, 60(7), 488–489. https://doi.org/10.1525/bio.2010.60.7.2

Dawodu, A., Dai, H., Zou, T., Zhou, H., Lian, W., Oladejo, J. & Osebor, F. (2022). Campus sustainability research: indicators and dimensions to consider for the design and assessment of a sustainable campus. Heliyon, 8(12), e11864. https://doi.org/10.1016/j.heliyon.2022.e11864

Du, Y., Arkesteijn, M.H., den Heijer, A.C. & Song, K. (2020). Sustainable assessment tools for higher education institutions: guidelines for developing a tool for China. Sustainability, 12, 6501. https://doi.org/10.3390/su12166501

Dzvimbo, M. A., Mashizha, T. M., Zhanda, K., & Mawonde, A. (2022). Promoting sustainable development goals: Role of higher education institutions in climate and disaster management in Zimbabwe. Jàmbá: Journal of Disaster Risk Studies, 14(1). https://doi.org/10.4102/jamba.v14i1.1206

El-Jardali, F., Ataya, N. & Fadlallah, R. (2018). Changing roles of universities in the era of SDGs: Rising up to the global challenge through institutionalising partnerships with governments and communities. Health Research Policy and Systems, 16, 38. https://doi.org/10.1186/s12961-018-0318-9

Facer, K. (2020). Beyond business as usual: Higher education in the era of climate change. HEPI Number Debate Paper 24. Oxford: HEPI. Retrieved from https://www.hepi.ac.uk/wp-content/uploads/2020/12/HEPI_Beyond-business-as-usual_Higher-education-in-the-era-of-climate-change_Debate-Paper-24_FINAL.pdf

Fayolle, A., & Redford, D. T. (2014). Handbook on the entrepreneurial university. Cheltenham: Edward Elgar Publishing.

Ferrer-Balas, D., Adachi, J., Banas, S., Davidson, C.I., Hoshikoshi, A., Mishra, A., Motodoa, Y. & Ostwald, M. (2008). An international comparative analysis of sustainability transformation across seven universities. International Journal of Sustainability in Higher Education, 9(3), 295-316. https://doi.org/10.1108/14676370810885907

Filho, W. L., Morgan, E. T., Godoy, E. S., Azeiteiro, U. M., Bacelar-Nicolau, P., Ávila, L. V., Mac-Lean, C., & Huge, J. (2018). Implementing climate change research at universities: Barriers, potential and actions. Journal of Cleaner Production, 170, 269–277. https://doi.org/10.1016/j.jclepro.2017.09.105

Filho, W. L., Salvia, A. L., Frankenberger, F., Akib, N. a. M., Sen, S. K., Sivapalan, S., Novo-Corti, I., Venkatesan, M., & Emblen-Perry, K. (2020). Governance and sustainable development at higher education institutions. Environment, Development and Sustainability, 23(4), 6002–6020. https://doi.org/10.1007/s10668-020-00859-y

Filho, W. L., Sima, M., Sharifi, A., Luetz, J. M., Salvia, A. L., Mifsud, M. C., Olooto, F. M., Djekic, I., Anholon, R., Rampasso, I. S., Donkor, F. K., Dinis, M. a. P., Klavins, M., Finnveden, G., Chari, M. M., Molthan-Hill, P., Mifsud, A., Sen, S. K., & Lokupitiya, E. (2021). Handling climate change education at universities: an overview. Environmental Sciences Europe, 33(1). https://doi.org/10.1186/s12302-021-00552-5

Filho, W. L., Vargas, V. R., Salvia, A. L., Brandli, L. L., Pallant, E., Klavins, M., Ray, S., Moggi, S., Maruna, M., Conticelli, E., Ayanore, M. A., Radović, V., Gupta, B., Sen, S. K., Paço, A. D., Michalopoulou, E., Saikim, F. H., Koh, H. L., Frankenberger, F., Kanchanamukda, W. & Vaccari, M. (2019). The role of higher education institutions in sustainability initiatives at the local level. Journal of Cleaner Production, 233, 1004–1015. https://doi.org/10.1016/j.jclepro.2019.06.059

Filho, W. L., Vidal, D. G., Dinis, M.P., Lambrechts, W., De Vasconcelos, C. R. P., Molthan-Hill, P., Abubakar, I. R., Dunk, R. M., & Salvia, A. L. (2023). Low carbon futures: assessing the status of decarbonisation efforts at universities within a 2050 perspective. Energy, Sustainability and Society, 13(1). 5. https://doi.org/10.1186/s13705-023-00384-6

Findler, F., Schönherr, N., Lozano, R., & Stacherl, B. (2018). Assessing the impacts of higher education institutions on sustainable development—an analysis of tools and indicators. Sustainability, 11(1), 59. 5. https://doi.org/10.3390/su11010059

Franco, C., & McCowan, T. (2021). Rewiring higher education for the Sustainable Development Goals: the case of the Intercultural University of Veracruz, Mexico. Higher Education, 81(1), 69–88. 5. https://doi.org/10.1007/s10734-020-00525-2

Giesenbauer, B., & Müller-Christ, G. (2020). University 4.0: Promoting the transformation of higher education institutions toward sustainable development. Sustainability, 12(8), 3371. https://doi.org/10.3390/su12083371

Griebeler, J.S, Brandli, L.L, Salvia, A.L., Leal Filho, W., & Reginatto, G. (2021). Sustainable development goals: A framework for deploying indicators for higher education institutions. International Journal of Sustainability in Higher Education, 23(4), 887-914. https://doi.org/10.1108/IJSHE-03-2021-0088

Hamilton, A. B., & Finley, E. P. (2019). Qualitative methods in implementation research: An introduction. Psychiatry Research-neuroimaging, 280, 112516. https://doi.org/10.1016/j.psychres.2019.112516

Heleta, S. & Bagus, T. (2021). Sustainable development goals and higher education: Leaving many behind. High Education, 81, 163–177. https://doi.org/10.1007/s10734-020-00573-8

Hoover, E., & Harder, M. K. (2015). What lies beneath the surface? The hidden complexities of organizational change for sustainability in higher education. Journal of Cleaner Production, 106, 175-188. http://dx.doi.org/10.1016/j.jclepro.2014.01.081

Hurth, V & Stewart, I. S. (2022). Re-purposing universities: The path to purpose. Front. Sustain. 2:762271. https://doi.org/10.3389/frsus.2021.762271

Hwang, J., & Rivera, J. (2020). Leveraging single-use plastic to foster a sustainable community: Empowering Toronto communities to reduce and reuse plastics through the co-creation of pro-environmental initiatives. http://openresearch.ocadu.ca/id/eprint/3081/7/Hwang_Jenny_Rivera_Jaime_2020_MDES_SFI_MRP.pdf

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 553– 566
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.4751

IPCC. (2023). Summary for policymakers. Climate Change 2023: Synthesis Report. A Report of the Intergovernmental Panel on Climate Change. https://www.ipcc.ch/report/ar6/syr/summary-for-policymakers/

IPCC, 2018: Annex I: Glossary [Matthews, J.B.R. (ed.)]. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. In Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (Eds), pp. 541-562. Cambridge University Press: Cambridge, UK and New York, NY, USA. doi:10.1017/9781009157940.008.

Jarillo, M.P., Pedraza, L., Ger, P.M. & Bocos, E. (2019). Challenges of online higher education in the face of the sustainability objectives of the United Nations: Carbon footprint, accessibility and social inclusion. Sustainability, 11(20), 5580. https://doi.org/10.3390/su11205580

Kelman, I. (2017). Linking disaster risk reduction, climate change, and the sustainable development goals. Disaster Prevention and Management, 26(3), 254-258. https://doi.org/10.1108/DPM-02-2017-0043

Ketlhoilwe, M. J., Silo, N., & Velempini, K. (2019). Enhancing the roles and responsibilities of higher education institutions in implementing the sustainable development goals. In Nhamo, J. & Mjimba, V. (Eds), Sustainable development goals series (pp. 121–130). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-26157-3_10

Kohl, K., Hopkins, C., Barth, M., Michelsen, G., Dlouhá, J., Razak, D.A., Abidin Bin Sanusi, Z. & Toman, I. (2022). A whole-institution approach towards sustainability: A crucial aspect of higher education's individual and collective engagement with the SDGs and beyond. International Journal of Sustainability in Higher Education, 23(2), 218-236. https://doi.org/10.1108/IJSHE-10-2020-0398

Kumble, P.A. (2019). Reflections on service learning for a circular economy project in a Guatemalan neighborhood, Central America. Sustainability, 11, 4776. http://dx.doi.org/10.3390/su11174776

Kushnir, I., & Nunes, A. (2022). Education and the UN development goals projects (MDGs and SDGs): Definitions, links, operationalisations. Journal of Research in International Education, 21(1), 3–21. https://doi.org/10.1177/14752409221088942

Leal Filho, W, Azeiteiro, U, Alves, F, Pace, P, Mifsud, M, Brandli, L, Caeiro, S.S. & Disterheft, A. (2018). Reinvigorating the sustainable development re-search agenda: The role of the sustainable development goals (SDG). International Journal of Sustainable Development and World Ecology, 25 (2),131-142. https://doi.org/10.1080/13504509.2017.1342103

Leal Filho, W., Abubakar, I.R., Mifsud, M.C., Eustachio, J.H.P.P., Albrecht, C.F., Dinis, M.A.P., Borsari, B., Sharifi, A., Levesque, V.R., Ribeiro, P.C.C., LeVasseur, T.J., Pace, P., Trevisan, L.V. & Dibbern, T.A. (2023). Governance in the implementation of the UN sustainable development goals in higher education: global trends. Environment, Development and Sustainability. https://doi.org/10.1007/s10668-023-03278-x

Leal Filho, W., Salvia, A.L., Pretorius, R.W., Brandli, L.L., Manolas, E., Alves, F., Azeiteiro, U., Rogers, J., Shiel, C. & Do Paco, A. (Eds.). (2020). Universities as living labs for sustainable development: Supporting the implementation of the sustainable development goals.Cham: Springer.

Leal Filho, W., Will, M., Salvia, A.L., Adomßent, M., Grahl, A. & Spira, F. (2019). The role of green and sustainability offices in fostering sustainability efforts at higher education institutions. Journal of Cleaner Production, 232, 1394-1401. https://doi.org/10.1016/j.jclepro.2019.05.273

Leal Filho, W., Wu, Y.C.J., Brandli, L.L., Avila, L.V., Azeiteiro, U.M., Caeiro, S. & Gama, L.R.R.G. (2017). Identifying and overcoming obstacles to the implementation of sustainable development at universities. Journal of Integrative Environmental Sciences, 14(1), 93-108. https://doi.org/10.1080/1943815X.2017.1362007

Loorbach, D. & Rotmans, J. (2006). Managing transitions for sustainable development. In X. Olsthoorn & A.J. Wieczorek (Eds.). Understanding industrial transformation: Views from different disciplines (pp. 187-206). Dordrecht: Springer.

Lozano, R. (2012). Are companies planning their organisational changes for corporate sustainability? An analysis of three case studies on resistance to change and their strategies to overcome it. Corporate Social Responsibility and Environmental Management, 20(5), 275–295. https://doi.org/10.1002/csr.1290

Lozano, R., Lukman, R., Lozano, F. J., Huisingh, D., & Lambrechts, W. (2013). Declarations for sustainability in higher education: Becoming better leaders, through addressing the university system. Journal of Cleaner Production, 48, 10–19. https://doi.org/10.1016/j.jclepro.2011.10.006

Macheridis, N., & Paulsson, A. (2021). Greening higher education? From responsibilization to accountabilization in the incorporation of sustainability in higher education. International Journal of Sustainability in Higher Education, 22(8), 208–222. https://doi.org/10.1108/IJSHE-09-2020-0338

Mazhar, M.U., Bull, R. & Lemon, M. (2017). Critical success factors for embedding carbon management in organizations: Lessons from the UK higher education sector. Carbon Management, 8(5-6), 379-392. https://doi.org/10.1080/17583004.2017.1386533

McCowan, T. (2016). Universities and the post-2015 development agenda: An analytical framework. Higher Education, 72(4), 505-523. https://doi.org/10.1007/s10734-016-0035-7

Mendoza, J.M.F., Gallego-Schmid, A. & Azapagic, A. (2019). A methodological framework for the implementation of circular economy thinking in higher education institutions: Towards sustainable campus management. Journal of Cleaner Production, 226, 831-844. https://doi.org/10.1016/j.jclepro.2019.04.06

Menon, S. & Suresh, M. (2020). Synergizing education, research, campus operations, and community engagements towards sustainability in higher education: A literature review. International Journal of Sustainability in Higher Education, 21(5), 1015-1051. https://doi.org/10.1108/IJSHE-03-2020-0089

Mitchell-Larson, E., Green, T., Lewis-Brown, E., Jennings, N., Joly, C., Goodwin, F., Reay, D., Rothman, R., Scott, C., Allen, M. & Forster, P. (2020). How can carbon offsetting help UK further and higher education institutions achieve net zero emissions? COP26 Universities Network Briefing. https://doi.org/10.25561/86462

Molina, Á. A., Helldén, D., Alfvén, T., Niemi, M., Leander, K., Nordenstedt, H., Rehn, C., Ndejjo, R., Wanyenze, R., & Biermann, O. (2023). Integrating the United Nations sustainable development goals into higher education globally: a scoping review. Global Health Action, 16(1), 2190649. https://doi.org/10.1080/16549716.2023.2190649

Muhiddin, A. A. M., Isa, H. M., Sakip, S. R. M., Nor, O. M., & Sedhu, D. S. (2023). Green campus implementation in the Malaysian public universities: Challenges and solutions. Planning Malaysia, 21(1), 274-298. https://www.planningmalaysia.org/index.php/pmj/article/view/1239/921

Nakwa, K., & Zawdie, G. (2016). The 'third mission' and 'triple helix mission' of universities as evolutionary processes in the development of the network of knowledge production: Reflections on SME experiences in Thailand. Science & Public Policy, 43(5), 622–629. https://doi.org/10.1093/scipol/scw030

Neidlich, S., Kummer, B., Bauer, M., Rieckmann M., & Bormann, I. (2019). Cultures of sustainability governance in higher education institutions: A multi-case study of dimensions and implications. Higher Education Quarterly 74(4), 373-390. https://doi.org/10.1111/hequ.12237

Nhamo, G., & Mjimba, V. (2019). The context: SDGs and institutions of higher education. In Nhamo, J. & Mjimba, V. (Eds). Sustainable development goals series (pp. 1-13). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-26157-3_1

Niedlich, S., Bauer, M., Doneliene, M., Jaeger, L., Rieckmann, M. & Bormann, I. (2020). Assessment of sustainability governance in higher education institutions—a systemic tool using a governance equalizer. Sustainability, 12(5), 1816. https://doi.org/10.3390/su12051816

Nunes, B.T., Pollard, S.J.T., Burgess, P.J., Ellis, G., de los Rios, I.C. & Charnley, F. (2018). University contributions to the circular economy: Professing the hidden curriculum. Sustainability, 10, 2719. https://doi.org/10.3390/su10082719

Ojala, M. (2016). Facing anxiety in climate change education: From therapeutic practice to hopeful transgressive learning. Canadian Journal of Environmental Education, 21, 41-56. https://cjee.lakeheadu.ca/article/view/1393

Owens, T.L. (2017). Higher education in the sustainable development goals framework. European Journal of Education, 52(4), 414–420. https://doi.org/10.1111/ejed.12237

Paletta, A. & Bonoli, A. (2019). Governing the university in the perspective of the United Nations 2030 Agenda: The case of the University of Bologna. International Journal of Sustainability in Higher Education, 20(3), 500-514. https://doi.org/10.1108/IJSHE-02-2019-0083

Peer, V. & Penker, M. (2016). Higher education institutions and regional development: A meta-analysis. International Regional Science Review, 39(2), 228-253. https://doi.org/10.1177/0160017614531145

Pranovi, F. (2017). Sustainable campus in a historical town: The "Ca'foscari University Of Venice" case study. Leal Filho, W., Skanavis, C., do Paço, A., Rogers, J., Kuznetsova, O., Castro, P. (Eds). Handbook of theory and practice of sustainable development in higher education. world sustainability series (pp. 121-130). Cham: Springer. https://doi.org/10.1007/978-3-319-47889-0_9

Purcell, W.M., Henriksen, H. & Spengler, J.D. (2019). Universities as the engine of transformational sustainability toward delivering the sustainable development goals: "Living labs" for sustainability. International Journal of Sustainability in Higher Education, 20(8), 1343-1357. https://doi.org/10.1108/IJSHE-02-2019-0103

Qu, D., Shevchenko, T., Saidani, M., Xia, Y. & Ladyka, Y. (2021). Transition towards a circular economy: the role of university assets in the implementation of a new model. Detritus,17, 3-14. https://doi.org/10.31025/2611-4135/2021.15141

Reinholz, D. L., & Andrews, T. C. (2020). Change theory and theory of change: What's the difference anyway? International Journal of STEM Education, 7(1), 1-12. https://doi.org/10.1186/s40594-020-0202-3

Rivera, C., & Savage, C. O. S. (2020). Campuses as living labs for sustainability problem-solving: Trends, triumphs, and traps. Journal of Environmental Studies and Sciences, 10(3), 334–340. https://doi.org/10.1007/s13412-020-00620-x

Salas, D.A., Criollo, P. & Ramirez, A.D. The Role of higher education institutions in the implementation of circular economy in Latin America. Sustainability, 13, 9805. https://doi.org/10.3390/su13179805

Salvioni, D. M., Franzoni, S., & Cassano, R. (2017). Sustainability in the Higher Education System: An opportunity to improve quality and image. Sustainability, 9(6), 914. https://doi.org/10.3390/su9060914

Serafini, P. G., de Moura, J. M., de Almeida, M. R., & de Rezende, J.F.D. (2022). Sustainable development goals in higher education institutions: A systematic literature review. Journal of Cleaner Production, 370, 133473. https://doi.org/10.1016/j.jclepro.2022.133473

Singer-Brodowski, M. (2023). The potential of transformative learning for sustainability transitions: moving beyond formal learning environments. Environment, Development and Sustainability. https://doi.org/10.1007/s10668-022-02444-x

Trencher, G., Yarime, M., McCormick, K. B., Doll, C. N., & Kraines, S. B. (2014). Beyond the third mission: Exploring the emerging university function of co-creation for sustainability. Science and Public Policy, 41(2), 151-179. https://doi.org/10.1093/scipol/sct044

Umar, T. (2020). An integrated sustainability-management approach for universities. Proceedings of the Institution of Civil Engineers-Engineering Sustainability, 173(7), 344-355. https://doi.org/10.1680/jensu.19.00014

UN. (1973). Report of the united nations conference on the human environment. A/CONF.48/14/Rev.1. United Nations. New York: United Nations.

UN. (2015). The millennium development goals report 2015. New York: United Nations.

UNDSD. (1992). Agenda 21. New York: United Nations.

Journal of Ecohumanism
2024
Volume: 3, No: 8, pp. 553– 566
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i8.4751

UNEP. (2014). Greening universities. Toolkit V2.0 transforming universities into green and sustainable campuses: A toolkit for implementers. Nairobi: UNEP.

UNESCO. (2015). Draft preliminary report concerning the preparation of a global convention on the recognition of higher education qualifications. ED/2015/PLS/HED/02. UNESCO. Paris: UNESCO.

UNESCO. (2017). UNESCO at COP23. Climate change education. Paris: UNESCO. http:// unesdoc.unesco.org/images/0026/002600/260083e.pdf.

Leicht, A., Heiss, J. & Byun, W.J. (Eds). (2018). Issues and trends in education for sustainable development. Paris: UNESCO.

UNESCO. (2022). Knowledge-driven actions: Transforming higher education for global sustainability. Paris: UNESCO

UNESCO. (2020). Education for sustainable development. A Roadmap. Paris: UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000374802

UNFCC. (2015). Adoption of the Paris Agreement. FCCC/CP/2015/L.9/Rev.1. https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf.

UNGA. (1992). Annex 1: Rio Declaration on Environment and Development. A/CONF.151/26 (Vol. I)]. United Nations General Assembly. New York: United Nations.

UNGA. (2015). Resolution adopted by the General Assembly on 25 September 2015: Transforming our world: the 2030 Agenda for Sustainable Development. A/RES/7-/1. New York: United Nations.

Vaismoradi, M., Turunen, H., & Bondas, T. (2013). Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. Nursing & Health Sciences, 15(3), 398–405. https://doi.org/10.1111/nhs.12048

Vaughter, P., McKenzie, M., Lidstone, L. & Wright, T. (2016). Campus sustainability governance in Canada: A content analysis of post-secondary institutions' sustainability policies. International Journal of Sustainability in Higher Education, 17(1), 16-39. https://doi.org/10.1108/IJSHE-05-2014-0075

Vlachopoulos, D. (2021). Organizational change management in higher education through the lens of executive coaches. Educ. Sci. 2021, 11(6), 269. https://doi.org/10.3390/educsci11060269

Voulvoulis, N., Giakoumis, T., Hunt, C. A., Kioupi, V., Petrou, N., Souliotis, I., Vaghela, C., & Rosely, W.B.W. (2022). Systems thinking as a paradigm shift for sustainability transformation. Global Environmental Change-human and Policy Dimensions, 75, 102544. https://doi.org/10.1016/j.gloenvcha.2022.102544

Wals, A.E.J. and Schwarzin, L. (2012). Fostering organizational sustainability through dialogic interaction. The Learning Organization, 19(1), 11-27. https://doi.org/10.1108/09696471211190338

Wals, A. E. J., Tassone, V. C., Hampson, G. P., & Reams, J. (2016). Learning for walking the change: Eco-social innovation through sustainability-oriented higher education. In Barth, M., Michelsen, G., Rieckmann, M. &Thomas, I. (Eds.). Routledge Handbook of Higher Education for Sustainable Development (pp. 25-39). London: Routledge.

Xing, W., Jamaludin, K. A. & Hamzah, M. I. (2023). Application research of the theory of sustainable education scientific development in the teaching of high school art education. Educational Administration: Theory and Practice, 29(4), 85-101.

Yanez, S., Uruburu, A., Moreno, A., & Lumbreras, J. (2018). The sustainability report as an essential tool for the holistic and strategic vision of higher education institutions. Journal of Cleaner Production, 207, 57-66. https://doi.org/10.1016/j.jclepro.2018.09.171

Yang, Y., Shi, Y., Sun, W., Chang, J., Zhu, J., Chen, L., Wang, X., Guo, Y., Zhang, H., Yu, L., Zhao, S., Xu, K., Zhu, J., Shen, H., Wang, Y., Peng, Y., Zhao, X., Wang, X., Hu, H., Chen, S., Huang, M., Wen, X., Wang, S., Zhu, B., Niu, S., Tang, Z., Liu, L. & Fang, J. (2022). Terrestrial carbon sinks in China and around the world and their contribution to carbon neutrality. Science China Life Sciences, 65(5), 861–895. https://doi.org/10.1007/s11427-021-2045-5

Žalėnienė, I., & Pereira, P. (2021). Higher education for sustainability: A global perspective. Geography and Sustainability, 2(2), 99–106. https://doi.org/10.1016/j.geosus.2021.05.001

Zamora-Polo, F., & Sánchez-Martín, J. (2019). Teaching for a better world. sustainability and sustainable development goals in the construction of a change-maker university. Sustainability, 11(15), 4224. https://doi.org/10.3390/su11154224

Zhu, B., Zhu, C., & Dewancker, B. (2020). A study of development mode in green campus to realize the sustainable development goals. International Journal of Sustainability in Higher Education, 21(4), 799–818. https://doi.org/10.1108/ijshe-01-2020-0021

Zutshi, A., & Creed, A. (2018). Declaring Talloires: Profile of sustainability communications in Australian signatory universities. Journal of Cleaner Production, 187, 687-698. https://doi.org/10.1016/j.jclepro.2018.03.225

Zutshi, A., Creed, A., & Connelly, B.L. (2021). Education for sustainable development: Emerging themes from adopters of a declaration. Sustainability, 11(1), 156. https://doi.org/10.3390/su11010156.