Ensuring sustainability in internationalisation efforts at higher education institutions

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Abstract

Purpose – Higher education institutions (HEIs) around the world are engaged in internationalisation efforts. Yet internationalisation per se is associated with significant pressures on the environment and environmental resources, which need to be addressed. This study aims to assess the opportunities, benefits and challenges associated with the internationalisation of universities at a global level.

Design/methodology/approach – A total of 27 relevant case studies were extracted from the literature to illustrate how HEIs worldwide are ensuring sustainability in their internationalisation efforts.

Findings – Through case studies of international HEIs, the study lists the opportunities, benefits and challenges associated with the internationalisation of universities at a global level and some of the measures that may be deployed to reduce the environmental impacts of their international activities.

Originality/value – This study provides a welcome contribution to the literature because it outlines some of the works taking place at universities, where matters related to sustainable development are considered against a background of internationalisation efforts.

Keywords Sustainability, Internationalisation, Higher education, Case studies, Universities

Paper type Literature review

1. Internationalisation in higher education and its environmental aspects

Universities across the world are increasingly participating in global and cross-border collaborations that aim to enable the transfer of knowledge and expertise. This internationalisation may be achieved through research, coursework, conferences and targeted programmes. However, international education is largely considered to be unsustainable and not environmentally friendly, mostly due to factors such as academic mobility and energy consumption. Internationalisation often supports the economic sustainability of participating universities but does not support global sustainability (Ilieva *et al.*, 2014).

International travel is necessary for staff and students to engage in collaboration, such as when international students travel between their homeland and university or when students and staff travel for research or conferences. This increases the amount of air/land travel, and therefore, increases carbon emissions. A study in The Netherlands found that travel accounts for 40%–90% of the carbon emissions in Dutch universities (Versteijlen *et al.*, 2017).

One of the most effective solutions is to reduce travel through online-based programmes, where possible. The use of online systems for education and conferences would significantly reduce the amount of air travel associated with universities and thus improve their sustainability (Bousema *et al.*, 2020; Versteijlen *et al.*, 2017).

Furthermore, it was found that the mobility of students alone accounted for between 14.01 and 38.54 megatons of CO_2 equivalent per year in 2014. This value doubled from the year 1999 (Rumbley, 2020). This international mobility in universities has a significantly higher carbon footprint than normal university activities. However, various greener modes of international education exist. This includes better international options at home, transnational education opportunities that replace student travel and the usage of online learning systems for virtual exchanges/collaborative online international learning. For physical mobility, regional mobility can be incentivised to prevent larger emission releases. This does affect the broader knowledge concepts because staff and students are limited, and it further restricts students in countries with limited internet access (Nikula and Van Gaalen, 2022).

Additionally, it has been found that more focus is placed on elite international activities that potentially draw in money and prestige rather than those that build social responsibility and reduce social inequality. This makes it difficult to ascertain the effects of international service-learning activities that have been designed to assist communities and their benefits to the student. More specifically, it is difficult to determine the impact that international students have on the community they are assisting due to the lack of frameworks and proper guidelines (Farnell and Ilić, 2021).

It is also concerning that a recent European mapping report shows that instead of internationalisation being considered a tool for social sustainability and engagement at local, national and global levels, it is associated instead withdrawing resources, focus and infrastructure away from social sustainability (Benneworth, 2018; Farnell and Ilić, 2021).

Despite the shortcomings of internationalisation, there are some benefits. Internationalisation in higher education (HE) allows for the transfer of necessary skills, knowledge and tools from developed countries to developing nations. Research is considered to be an answer to societal problems, and education provides democracy in decision-making.

Internationalisation, therefore, allows for the development of solutions for environmental problems in developing nations. The increased access to international students and staff allows for capacity-building initiatives that will assist in promoting sustainability in low- to middle-income countries (Pashby and Andreotti, 2016).

2. Methods

Departing from case studies of higher education institutions (HEIs) on all continents, this study aimed to assess the opportunities, benefits and challenges associated with the internationalisation of universities at a global level. A total of 27 relevant case studies were extracted from the literature to illustrate how HEIs worldwide are ensuring sustainability in their internationalisation efforts. The rationale behind this approach relies on the global efforts of the Higher Education and Research for Sustainable Development (SD), guided by the Sustainable Development Goals (SDGs) 4 (Inclusive and Equitable Quality Education), 13 (Urgent Action to Combat Climate Change), 16 (Peaceful and Inclusive Societies) and 17 (Global Partnership) (International Association of Universities – IAU, 2022; United Nations, 2022a, 2022b).

The case study method enables researchers to understand the phenomenon in depth while strengthening the analytical conclusions of the study (Yin, 2009). However, given that most researchers design their studies to collect new primary data, case studies in academia, in general, tend to remain isolated and independent. Novelty tends to be prioritised over the accumulation of knowledge (Rousseau et al., 2008). Therefore, the potential cumulative advantage of advancing knowledge in the field has been overlooked (Hoon, 2013). Nevertheless, by accumulating evidence from similar research interests, the theory is grounded in a broader set of studies and applications (Yin, 2009).

In this sense, research based on different case studies can cover a variety of data sources and a range of different methodologies, being an effective technique for compiling a significant amount of data (Miles and Huberman, 1994; Yin, 2009). In this regard, case study research can guide the production of new theoretical insights arising from contextualised findings of specific cases (Eisenhardt and Graebner, 2007).

Thus, from secondary data available online and studies published in peer-reviewed journals, the researchers involved in this study selected multiple case studies based on the relevance of each HEI's internationalisation efforts to address sustainability and counterbalance the impacts of international activities. Then, for the case studies analysis, a table was designed, which included a specific set of information, namely, the name of the university and the country and the type of internationalisation activity undertaken. Also, to ensure the tracing of the information, the table contains bibliographical references. It allows for a crosscheck of the information and enables readers to obtain further details.

It is important to highlight the regional differences that exist in terms of different stages of internationalisation in HEIs around the world (e.g. HEIs in Europe and North America are at an advanced stage as opposed to HEIs in Asia-Pacific and Africa); and the varied timing of internationalisation efforts undertaken by HEIs (e.g. involvement in internationalisation efforts to achieve the SDGs through collaborative partnerships is a very recent phenomenon in HEIs in Asia-Pacific and Africa compared to Europe and North America). This difference partially prevented the authors from comparing selected case studies on similar grounds.

3. Results and discussion

The 2030 Agenda for SD and its associated SDGs should be systematically integrated into campuses as an integral component of HEI activities (Leal Filho et al., 2021). Therefore, it is deemed necessary to develop approaches, methods and tools to support this process. To achieve this, some HEIs around the world have engaged in international collaborations,

encouraging students and staff to participate in short-term exchanges, such as summer schools or internships that attract international students to campus and conducting faculty exchanges (Sahasrabudhe *et al.*, 2020).

According to Kafarski and Kazak (2022), the promotion of global education experiences has clear effects on the economy in many professions and domains, putting sustainability into action, requiring assistance to transition from traditional teaching to a more global setting, with the Erasmus+ Programme contributing to the SDGs, in particular SDG4 (inclusive and equitable quality education), SDG5 (gender equality) and SDG8 (decent work and economic growth). Foreign language programmes have been identified as good platforms to advocate for the SDGs (Makarova, 2021). Even though internationalisation is also seen as a strategic priority of HEIs in terms of reputation-building and rankings, the broad definition of internationalising HE also includes more global perspectives, promoting global citizenship and working for international SD ethics, necessarily addressing "intelligibility" (addressing inequality), "dissidence" (challenging the doctrines and acknowledging collaborations) and "solidarity" (combining efforts, despite differences) (Pashby and Andreotti, 2016). To reshape understandings of internationalisation in the scope of SD, including the connections between the global and the local, internationalisation and international, innovative forms of communication and collaboration are required concerning HEI research, teaching and civic engagement roles (Pashby and Andreotti, 2016). More than the competition (Vellamo *et al.*, 2022), the discourse of sustainable internationalisation needs to be of collaboration.

Thus, a key component of internationalising HE is creating strategic collaborations to incorporate global, multicultural and international perspectives into teaching, learning and research while also benefiting society (Sahasrabudhe *et al.*, 2020) and delivering the scientific foundation for wise national and international policy (Leal Filho *et al.*, 2021). A strong example of it at the European level is the European School of Sustainability Science and Research (ESSSR), an inter-university consortium united by a shared interest in SD and sustainability science, acting as a living lab and contributing to HEI environmental sustainability (Leal Filho, 2020) and education for SD (ESD). In Belgium, De Wit and Broucker (2022) discuss how two very different institutions, the Institute of Tropical Medicine and Katholieke Universiteit Leuven, included internationalisation as a crucial part of their institutional strategy, raising the question of whether HEIs can be other than international in the future.

Until recently, HE internationalisation was traditionally viewed with Western industrialised countries often driving this trend and becoming more globally connected. However, the situation has changed, as there are numerous additional national and institutional participants at various levels and regional patterns "overseas" (Tight, 2022), with an increasing proportion of Asian (240,154 total) and African (49,792 total) students present in China, a top HE international destination (Wen *et al.*, 2018). Within the Asia Pacific context, two very prominent international networks, the "ProSPER.Net" and the "Regional Centre for Expertise (RCE) network", have been deeply engaged in promoting SD solutions via international post-graduate programmes and international joint research and collaboration amongst institutions of HE and related stakeholders (United Nations University Institute for the Advanced Study of Sustainability – ONU-IAS, 2022a, 2022b). Inter-university collaborations have, in fact, the advantage of fostering peer learning and knowledge exchange on sustainability, such as is the case for the ESD in Africa project in cooperation with Asian institutions (Nyerere *et al.*, 2021).

Similarly, a partnership between HEIs in Africa (the University of Kinshasa and the University of KwaZulu-Natal) promotes the adoption of English as an instruction means for boosting the ability to develop countries to generate collaborative research with international partners (Horwood *et al.*, 2021). As another example in the African context, the "University Development and Innovation Project" aims to further develop

the internationalisation of universities into strategies for translating sustainable growth into the local socio-economic contexts, advancing a culture of social innovation (Craveiro *et al.*, 2020). The development of holistic competencies via the curriculum has also been keenly researched, and a study led by Kjellgren and Richter (2021) highlights how global competencies development can make programmes such as engineering education more aligned with the aims of ESD.

In the context of ESD, Vicente *et al.* (2021) describe the "Joint Initiative for Teaching and Learning on Global Health Challenges and One Health", which aims at education and training in global health challenges. The project involves six HEIs from Brazil (the Federal University of Espírito Santo and the Federal University of Paraná), Germany (Ludwig Maximilian University of Munich and Technical University of Munich), Mozambique (Catholic University of Mozambique) and Kosovo (Kolegji AAB). The course involves intense international collaboration, contributing to the curriculum's internationalisation and benefiting the institutions involved. This initiative also enables important exchange opportunities that would not be possible in person, especially considering the challenging scenario of the COVID-19 pandemic and the barriers faced by low-income students, such as the costs of transportation, lodging and fees that impose inequities in the accessibility of such opportunities. The same occurs in the virtual exchange experience described by Lenkaitis (2022), involving HEIs from the USA, Colombia and Poland. This study reveals that students in different geographical locations who partner with each other through technology can benefit from incorporating SDG content into their virtual exchange activities.

Still, in the context of the Americas, there are some examples of HEIs working through international research networks for SD. For instance, the "International Climate Resilience Research Network (IPEDRC)", cooperation between Western Paraná State University (Brazil), the University of York (UK) and the University of Leeds (UK), aims to contribute to the training of university professionals from interactions between different sectors of governance and organisations (Carniatto *et al.*, 2021). Another example is the "EmpoderaData Project", a transnational collaboration among the University of Manchester (UK), Fundação Getulio Vargas (Brazil), Universidad del Rosario (Colombia) and Data-Pop Alliance (the USA and France). This project enables undergraduate social science students to practise data skills through workplace immersion, improving the quality of statistical education at the national level and supporting the skills needed to deliver the SDGs (Carter *et al.*, 2021). Table 1 summarises the mentioned cases and adds others.

Based on the case studies previously discussed, it is possible to identify some opportunities and benefits, as well as challenges or requirements for HEIs to ensure sustainability in their internationalisation activities. As opportunities, these can be classified into four main groups. Firstly, curriculum-focused activities rely on the use of foreign languages to instruct during courses where SD is advocated, develop holistic skills for SD and improve the capacity of developing countries to generate collaborative research with international partners.

Secondly, the creation of strategic collaborations helps bring multicultural perspectives into those scientific and policy-making endeavours that have a high potential for delivering societal benefits. The inter-university consortium of the ESSSR represents an example of a living lab combining education and HEI operations for SD. Thirdly, specific networking projects are built for connecting global-level SD actions with local-level initiatives. One example is the International Climate Resilience Research Network, which brings together universities and industrial entities, as well as the University Development and Innovation Africa project, which fosters a social innovation culture within member institutions. Finally, knowledge dissemination is another important goal of internationalisation within

Case study	Example	Purpose	University and Country	Reference
1	Living Labs for Sustainable Development: The Role of the European School of Sustainability Sciences and Research	Promoting sustainable development across European universities	Hamburg University of Applied Sciences (Germany)	Leal Filho (2020)
2	The Inter-University Sustainable Development Research Programme	Promotion of sustainability research around the world	Manchester Metropolitan University (UK)	Leal Filho et al. (2021)
3	Ethical internationalisation and sustainability	The links between sustainability in ethics in an international context	University of Alberta (Canada)	Pashby and Andreotti (2016)
4	Developments of and in higher education internationalisation	Critical reflections on contemporary higher education impacts and challenges	Newcastle University (UK) and Lund University (Sweden)	Robson and Wihlborg (2019)
5	The staff mobility for teaching under the Erasmus+ programme	The implications of the Erasmus staff mobility in building a European Network	Wrocław University of Environmental and Life Sciences (Poland)	Kafarski and Kazak (2022)
6	Collection of the research The evidence behind higher education internationalisation	Challenges and opportunities of higher education internationalisation beyond the West	Lancaster University (UK)	Tight (2022)
7	Internationalisation of Finnish higher education as a policy driver towards competition, collaboration or sustainability	Investigating Finnish internationalisation strategies and the ensuing identities of universities in a merger process	Tampere University (Finland)	Vellamo et al. (2022)
8	Flanders internationalisation institutional strategy	Internationalisation strategy in Flanders	Institute of Tropical Medicine (Belgium)	De Wit and Broucker (2022)
9	Fostering sustainable and inclusive development at universities through training, international mobility, promotion of a culture of social innovation and entrepreneurship	Improving the capacity of universities to better address local economic and social challenges	University Development and Innovation (Angola and Mozambique)	Craveiro et al. (2020)
10	Training of specialized health workers to ensure international integration of universities and equitable socio-economic development	Cross-contamination and training for developing SDGs regionally	Muhimbili University of Health and Allied Sciences (Tanzania)	Balandya et al. (2022)

(continued)

Table 1.
Examples of internationalisation efforts towards sustainability at HEIs

Case study	Example	Purpose	University and Country	Reference
11	Facilitating peer-learning co-generation of knowledge for sustainable development	Inter-university collaborative programmes	Africa-Asia partnership	Nyerere et al. (2021)
12	Use of English as a medium of instruction for developing research skills through international partnerships in line with the SDGs	Global partnerships in higher education to develop research capacity in low-income countries	University of Kinshasa (the Democratic Republic of the Congo) and University of KwaZulu-Natal (South Africa)	Horwood et al (2021)
13	Sustainable and internationally developed higher education institutions through the promotion of a research culture	Strengthening the sustainability of research partnerships in developing countries	University of Rwanda (Republic of Rwanda)	Hartvigson and Heshmati (2022)
14	International Research Network on Climate Resilient Development (RIPEDRC)	International contribution to SD by interactions between different sectors of governance and organisations	The Western Paraná State University (Brazil), University of York (UK) and University of Leeds (UK)	Carniatto et al (2021)
15	EmpoderaData project: a transnational collaboration to develop data fellowship programmes within Latin America	Experiential learning initiative by developing a data fellowship programme to foster and develop data literacy skills in Latin America	University of Manchester (UK), Fundação Getulio Vargas (Brazil), Universidad del Rosario (Colombia) and Data-Pop Alliance (the USA and France)	Carter et al (2021)
16	Joint Initiative for Teaching and Learning on Global Health Challenges and One Health: a platform to enable collaborative learning in One Health	International educational initiative to build a collaborative teaching and learning environment	Federal University of Espírito Santo (Brazil), Federal University of Paraná (Brazil), Ludwig Maximilian University of Munich (Germany), Technical University of Munich (Germany), Catholic University of Mozambique (Mozambique) and Kolegji AAB (Kosovo)	Vicente et al (2021)
17	UN SDGs through virtual exchange	Teaching the UN SDGs through a virtual exchange partnership	USA, Colombia and Poland	Lenkaitis (2022)
18	Collaboration between Future Earth and its Knowledge-Action Networks and Innovation Labs	Road maps to locate the challenges and reach solutions from local to global scales	University of Tokyo (Japan)	Smith et al (2018)

Table 1.

Case study	Example	Purpose	University and Country	Reference
19	A partnership program between two HEIs in the co-creation of SDG solutions	Co-creation through the integration of human-centred design (HCD) and shared-action learning (SAL)	University of Mataram (Indonesia)	Agusdinata (2022)
20	Regional cooperation for collaborative research in South East Asia	Partnerships for research development and application of advanced molecular breeding technologies for tropical crops	Mahidol University (Thailand)	Seki et al. (2018)
21	Co-generation of scientific knowledge through co-authorships on SD	Regional partnerships for the creation of knowledge	ASEAN University Network (AUN)	Eclevia (2021)
22	Malaysian-foreign HEIs collaborations	Collaborations to facilitate international branch campuses and research, and student and teacher mobility from Malaysia	Universiti Teknologi Malaysia (Malaysia)	Ohajionu (2021)
23	Integrating holistic global competencies within engineering education to promote education for sustainability	Global competencies via the curricula as well as training for faculty members and staff	Italy, Sweden, France, Spain and Hungary	Kjellgren and Richter (2021)
24	Pursuing SD and internationalisation in the HE context	Foreign language programmes and foreign language teachers within universities as change agents for internationalisation efforts that help promote the SDGs	Ural State University of Economics (Russia)	Makarova (2021)
25	Reimagining internationalisation in HE through the UN SDGs	Universities' contributions to the SDGs via dimensions such as research, partnerships, mobility and institutional initiatives	University of Saskatchewan (Canada) and the Network of Universities from the Capitals of Europe (UNICA)	Ramaswamy et al. (2021)
26	Enabling HE for the SDGs via an international network of institutions in the Asia Pacific (ProSPER.Net)	Integrating SD within post-graduate curricula and courses, with a broader international agenda of advocating for sustainable futures through education and research	Asia Pacific	ONU-IAS (2022a)
27	Engaging Communities for Biodiversity Conservation: Education for Sustainable Development Projects from the Global RCE Network	A multi-pronged approach to tackling sustainability challenges	ONU-IAS	ONU-IAS (2022b)

Table 1.

universities for the enhancement of competencies among students. This can happen via post-graduate work immersion programmes (Asia-Pacific cases) or inter-university collaborations across continents (Africa-Asia project of ESD, Joint Initiative for Teaching and Learning on Global Health Challenges and One Health involving HEIs from Europe, South America and Africa).

These types of activities can enable the transfer of knowledge and expertise among different countries and backgrounds, contribute to tackling common issues and develop joint solutions for environmental problems through partnerships with foreign researchers and provide students with learning experiences and opportunities that they would not have otherwise – contributing to reducing inequality and providing inclusive and equitable quality education, as well as gender equality – offer global and local impact for the community, in addition to social innovation and global citizenship, among other benefits. Therefore, an international HEI for SD has the potential to align multiple institutional agendas, solve common challenges and achieve common goals through collaboration, intercultural engagement and local and global thinking (Ramaswamy *et al.*, 2021; Jones *et al.*, 2021).

Nevertheless, there are some challenges that deserve attention. For instance, there is a need to improve HE curricula to address sustainability issues and connect them with international experiences. This can be a barrier in many institutions due to a lack of awareness and support from administrations and a culture of resistance to change in the university community. Garcés and O'Dowd (2021) claim that, in many cases, the impact of innovation in international education – as in other areas of HE – can be blocked in institutional and political processes due to a lack of support or understanding of innovative practices. Moreover, it demands partnerships, collaborations and cooperation among institutions, organisations and governments, the development of new tools and innovative forms of communication and collaboration, as well as technology and pedagogical skills. Addressing these needs requires not only robust governance systems but also innovation in teaching, learning, research, curricula and pedagogies, aiming to be more holistic and meaningful.

Against this background, Figure 1 presents four important dimensions to be considered by HEIs in their international efforts for SD and the achievement of the SDGs: international cooperation/partnership, university community commitment, administration support and curriculum.

The four dimensions are surrounded by a background that supports diversity, equity and inclusion, global and local impact, leadership and multicultural and international lens.
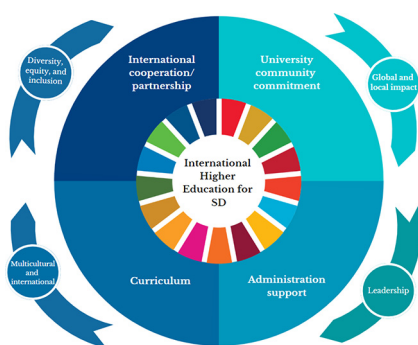

Figure 1.
Some dimensions in
international higher
education for
sustainable
development

These elements can maximize the benefit for the stakeholders and parties involved in the educational process and reduce the environmental impacts of their international activities.

4. Conclusions

The internationalisation of HEIs yields several opportunities for elaborating solutions for social and environmental issues of industrialised and developing nations alike through better cross-country research competencies. Conversely, university mobility also generates the highest levels of emissions compared to other academic practices.

This paper aimed to foster an understanding of the extent of this challenge by analysing examples of HEIs that successfully integrated a sustainability vision into their international operations. To this end, secondary data from the extant literature was collected for a total of 27 case studies of universities or university partnerships. The results were summarised in a table to present an overview of the type of international programmes implemented and their contribution to overall SD. Findings reveal that certain HEIs realised the crucial role of internationalisation activities for reaching a larger pool of stakeholders and partners within their sustainability efforts; establishing educational experiences in a more global context that would amplify the scope of action on the SDGs dealing with gender equality and decent working conditions; and strategically building a reputation in university rankings by promoting SD perspectives that address global citizenship issues.

This paper has some limitations. The first is the fact that the set of case studies was limited to 27. Secondly, the study focused on efforts in the field of internationalisation and did not consider specific thematic aspects. Also, the non-comparative nature of the selected case studies means that the impacts of regional differences could not be assessed. Finally, the study did not focus on the role played by specific networks. But despite these limitations, the study provides a welcome contribution to the literature because it outlines some of the works taking place at universities, where matters related to SD are considered against a background of internationalisation efforts.

The contribution of this paper to society may be better understood if it is considered that it outlines the many advantages of international cooperation in fostering the cause of sustainability in HE. Here, not only the academic community but also external partners may benefit as opportunities for joint work are identified. In this context, networks such as the Inter-University SD Programme, the ESSSR and others may be helpful in providing information and access to cooperative initiatives.

Future research may focus on further exploring the so-far adopted solutions by HEIs to incorporate sustainability into international cooperation and study abroad programmes. Also, further studies are needed in identifying ways to use the potential of international cooperation in reducing their respective environmental impacts. Moreover, research is needed on provisions for high-level international programmes that attract worldwide students and which may help in the reduction of flights by university staff or the replacement of student travel with better transnational opportunities via virtual learning and exchanges.

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