Received 26 October 2020
Revised 7 February 2021
30 March 2021
12 May 2021
Accepted 17 May 2021

A whole-institution approach towards sustainability: a crucial aspect of higher education's individual and collective engagement with the SDGs and beyond

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Abstract

Purpose – Higher education and its leadership are not yet using their potential impact for a sustainable future. This paper aims to focus on UN developments and the long history of university involvement in sustainability might create more interest and understanding that sustainably oriented universities are actually possible and a much stronger role for higher education is needed when nations are discussing their future.

Design/methodology/approach – Literature review with a focus on international treaties and declarations on the UN level and international university networks, literature review of the background and potential of the whole-institution approach and the need/suggestions for further research, also to measure advancement.

Findings – History shows a strong engagement of higher education with sustainability from its beginnings. There have been strong calls/offers from within university networks to take a crucial role in moving towards sustainable development that involves more than teaching about sustainability. The international community

The open access publishing of this article was generously funded by York University's Faculty of Education.

International Journal of Sustainability in Higher Education
Vol. 23 No. 2, 2022
pp. 218-236
Emerald Publishing Limited
1467-6370
DOI 10.1108/IJSHE-10-2020-0398

calls for higher education to be involved in policymaking rather than simply implementation, have been limited and the full potential of higher education institutions using all opportunities such as being living labs for sustainability has not as yet been realized. Currently, calls for engagement are often still limited to training and providing research when scientific evidence is wanted.

Research limitations/implications – Literature review focused on UN level treaties/declarations English- and German-language review national developments limited to samples of members of the Sustainable Development Goal (SDG) 4 subcluster in the Higher Education and Research for Sustainable Development (HESD) Global Cluster by the International Association of Universities (IAU).

Practical implications – Guidance for university leaders and other stakeholders to become aware of and consider a whole-institution approach. Practitioner relevance as countries is encouraged to embed UN recommendations, treaties and declarations. Defining opportunities for further research. Presenting the HESD Cluster by the IAU as a sample for new approaches of higher education to interact with the SDGs.

Social implications – Strengthening the role of higher education in the pursuit of a better future would focus on science and research as a neutral basis for decision-making and policy development. Sustainability embedded in all streams of university can help universities to be a practical example of the possibilities of sustainability at work.

Originality/value – Composition of authors with UN background and involvement. Focus on UN treaties/declarations and guidance for academics and practitioners in leadership on adopted UN and other international documents. Summarizing the background of the whole-institution approach as a genuine development over time but including limitations and implications for future roles for higher education leadership. IAU SDG 4 Subcluster is unique in its own approach and with its connections to a global network of higher education institutions and UNESCO.

Keywords UNESCO, Higher education, Quality education, Sustainable Development Goals (SDGs), Higher education networks, Whole-institution approach

Paper type Literature review

Introduction

The *United Nations 2030 Agenda* with the *Sustainable Development Goals (SDGs)* was adopted more than five years ago and the world has started moving towards implementation. Member states have prioritized the *SDGs* in different ways, many follow national action plans and intend to meet the targets of the *SDGs* by 2030. Higher education institutions (HEIs) have a crucial role in accelerating progress towards a sustainable future, as delineated by the *SDGs*. For decades, the higher education (HE) community has been committed to sustainable development. HEIs have been key actors in discussing reorienting teaching and creating research to better understand sustainability and sustainable development (ULSF, 1990; Findler *et al.*, 2019).

Based on their research agenda and supported by their individual applied examples with indicators for successfully embedding sustainability in a systemic way (Fien, 2002), HEIs can support today's and prepare tomorrow's leaders to make a significant contribution to society's transformation (Mulder, 2010). In implementing sustainability throughout the institution, establishing a "whole-institution approach" (WIA), HEIs even have the potential to transform themselves (Rieckmann, 2018). Thus, they can create a voice of the global HE community to become both a recognized advisory body in policymaking and exemplars that are striving for a sustainable future, as advocated for by the *2030 Agenda* (Corcoran *et al.*, 2021).

This article provides a brief overview of the history of the *UN*-related HE movement towards addressing sustainability and its role in the international sustainability discussion. With hopes to accelerate the engagement, HE associations and individual institutions are encouraged by *UNESCO* to pursue a WIA (UNESCO, 2020a). Therefore, the WIA as recommended by *UNESCO* is at focus as a promising and assessable tool to strengthen the

contributions of the HE community collectively, beyond individual institutional change. It has the potential to fully reorient HEIs towards modelling sustainability. HE can create transferrable examples of practice at all levels as a unique contribution towards sustainable development.

Methodology

The authors used desk-based research, open interviews with HE experts, specific practical examples and personal documents to trace the involvement of HE in the evolution of sustainability on the global stage, from earliest beginnings to the calls from the *United Nations (UN)* in 2017/2019. Today, the *UN* calls for education for sustainable development (ESD) to be an integral element of quality education and a key enabler of all the other *SDGs* (United Nations, 2017a, 2019). Beginning in 1990, statements from HE networks, as well as from government bodies and/or international organizations, mandated to oversee HE developments, were systematically analysed. The focus was to understand the perceived or aspired role of HE for a sustainable future through the lens of *UNESCO*.

Further literature that specifically addresses these international developments was used to cluster the initiatives according to their origins and themes addressed. The clustering informed the understanding of regional or global perspectives of these statements from within or from outside the HE community. Consultations with experts that are active in the *Global Cluster on Higher Education and Research for Sustainable Development* hosted by the *International Association of Universities (IAU HESD Cluster)* added a meta-level of specific national developments and practical cases of institutions striving towards a sustainable future.

The beginnings of higher education's evolving engagement in sustainable development

As the world's HEIs have long been involved with the conceptualization and implementation of sustainability, the assumed role by HE, with the demands placed upon it, have both evolved over time. Initial governmental expectations towards HE were limited to being a supplier of training and knowledge (Findler *et al.*, 2019). Yet, HEIs are increasingly recognized as potential influencers of future societies whilst the actual range of HE's engagement with sustainability is in continuous development (UNESCO, 2005a).

The formal recognition of sustainable development by the *UN* in 1987 (United Nations, 1987) as a concept for a better future was informed and guided by the principles of science and research. Inspired by the discussion, some HEI presidents, rectors and vice-chancellors saw the potential for HE's engagement very early on, resulting in international meetings to strategize on determining specific roles in the pursuit of a sustainable future. This first group of leaders recognized a unique position and potential of HE, bringing together the disciplines through "[. . .]education, research, policy formation and information exchange[. . .]" (ULSF, 1990). HE could help humankind to understand and address the large and complex sustainability issues. The initial vision of sustainable development saw the concept primarily as a balancing act between environmental and economic concerns (United Nations, 1987). HE leaders focused more on environmental sustainability (ULSF, 1990).

During the *Talloires Network Meeting* in France in 1990, with 22 HE presidents and chancellors from both the developed and the developing world, it was agreed to "[. . .]Foster Environmental Literacy For All: Create programmes to develop the capability of university faculty to teach environmental literacy to all undergraduate, graduate and professional students[. . .]". It was also understood that institutional approaches with systemic monitoring processes were crucial for HE's successful entry into the emerging sustainability

discussion (ULSF, 1990). Interest grew and 1 year later, more than 100 universities had signed the *Talloires Declaration*.

In 1991, another international meeting of HE leaders was convened on the road to the *Earth Summit* to be held in Rio de Janeiro, Brazil, in 1992. Organized by *the International Association of Universities (IAU)* in partnership with the *United Nations University (UNU)* and universities from Canada and abroad, the *Halifax Meeting* emphasized global sustainability threats posed by environmental destruction, widespread unsustainable practices and rapidly increasing poverty in the developing countries. Participants agreed that a cooperative approach of universities from the Global North and South based on their competencies "[. . .]in education, research and public service[. . .]" was needed for a concerted approach towards "[. . .]an environmentally secure and civilized world[. . .]" (IAU, 1991). They also committed to reorient their current practices towards sustainable development, communicate about sustainability broadly and called upon the engagement of the HE community as a whole. The senior representatives of 33 universities from 10 countries on five continents that met in Halifax, Canada, adopted a collective plan with concrete actions to achieve short-term and long-term goals (IAU, 1991).

From these early meetings on, prior to the adoption of *Agenda 21* in 1992, it was an understanding that HE should do more than teach about sustainable development and develop research to inform policy (ULSF, 1990). HE also had the potential to seek out and model sustainable approaches (Galang, 2010) and pursue a policy-influencing role.

Higher education's networks striving towards sustainability

Networking to expand their knowledge and join forces in teaching, research and furthering exchange has a longstanding tradition and has been inherent in the HE culture (Ebers, 1997). In the pursuit of sustainable development, it appeared natural for HEIs to launch new networks focusing on sustainability. Therefore, in the years following the *Earth Summit*, (regional and global) HE networks were formed to address sustainable development and further define their roles. Several declarations were initiated. A trend for securing institutional action was seen in mentioning "interdisciplinary institutional approaches" or even "a whole-institution approach" (Michelsen, 2016).

The level of formal commitment to concrete efforts resulting from such declarations varied (Wright, 2004). Yet, the specific role and overall responsibility of individual institutions, and the HE community as a whole, was acknowledged and the interpretation of sustainability evolved beyond environmental aspects. Examples of commitments are:

- 1993 Swansea Declaration of the Association of Commonwealth Universities (with a focus on environmental sustainability).
- 1993 Kyoto Declaration of the International Association of Universities in Kyoto, Japan (with a focus on environmental sustainability).
- 1994 Copernicus University Charter for Sustainable Development of the Conference of European Rectors in Geneva, Switzerland (regional approach with a focus on environmental sustainability).
- 2001 Lüneburg Declaration on HE for Sustainable Development on the occasion of the International COPERNICUS Conference (holistic approach to sustainability)
- 2005 Graz International Conference Declaration on Committing Universities to Sustainable Development (holistic approach to sustainability).
- 2014 Nagoya Declaration on HE on Education for Sustainable Development (holistic approach to sustainability).

- 2014 International Association of Universities Iquitos Statement on HE for Sustainable Development (holistic approach to sustainability).
- European Universities Association (2021) on their vision of universities for 2030 (regional approach to sustainability as "[. . .]the most significant global challenge [. . .]").

Today, there is a significant number of HE networks that promote sustainability or practice sustainability within the individual institution. Often, these networks are comprising members of a particular region to drive their institutional change, e.g. *PROSPERnet, the Association of Commonwealth Universities (ACU), Copernicus Alliance, Association for the Advancement of Sustainability in Higher Education (AASHE), Agence Universitaire de la Francophonie (AUF), Alianza de Redes Iberoamericanas de Universidades por la Sustentabilidad y el Ambiente (ARIUSA),* etc.

Examples of global networks for promoting sustainability are: *the UNITWIN/UNESCO Programme, Global University Network for Innovation (GUNi), Sustainable Development Solutions Network (SDSN), SDG Accord* led by the *Global Alliance of Tertiary Education and student Sustainability Networks*, etc. Since 2012, the *Higher Education Sustainability Initiative (HESI)*, a partnership between *UNDESA, UNESCO, UN Environment, UN Global Compact's Principles for Responsible Management Education (PRME) initiative, UNU, UN-HABITAT, UNCTAD* and *UNITAR*, with the support of regional and global networks, as well as universities, also advocates for the role of HEIs for the *SDGs*, in particular at the *UN High-Level Political Forum (HLPF)*.

There are also global student movements, furthered through regional networks such as the *World Student Environmental Network (WSEN)* or by youth chapters within some of the networks mentioned above.

Whilst regional, global and rather autonomous HE cooperation for sustainability has been cherished and proven successful in creating change within HE (Dlouhá *et al.*, 2018), network-based action has faced challenges in external influencing. National, regional and international networks have often had limited resources beyond research-funded collaboration. They have been based on the voluntary engagement of their members. In most cases, statements and agreements apply only towards their members, are not binding and consequently not automatically resourced when signed or proclaimed (Bekessy *et al.*, 2007). As a result, attempts at networking have been subject to change over time (e.g., the Global Higher Education for Sustainability Partnership from 2002–2017). In addition, voluntary networks with equal rights for all partners are seldomly legally incorporated and consequently, their capability to receive formal status in national and international policymaking processes is limited.

Higher education, a not yet recognized policy influencer for sustainable development

Many HE leaders have worked tirelessly within their own spheres to embed sustainability at the institutional level and define a broader role for the HE community. The number of institutions involved has continuously increased and sustainability has become a priority. Today, there is a still growing quantity of sustainability (under-) graduate programmes and research activities (Weiss and Barth, 2019), participation in rankings and activity in networks related to sustainability. It indicates that a rising number of universities recognize sustainable development as a grand challenge (e.g. *York University*, Canada) for today's and future generations and make changes accordingly (Wals, 2014; Pashby and de Oliveira Andreotti, 2016).

However, globally HEIs have not had a strong voice beyond their own networks in the sustainability policymaking processes such as treaties, declarations and action plans towards sustainable development, originated and led by the *UN* and the international community.

For example, HE was not mentioned in the *Brundtland Report,* named *Our Common Future* in 1987 (United Nations, 1987). *Chapter 36* of *Agenda 21* in 1992 (United Nations, 1992) – the *UN*'s first sustainability action plan focusing on promoting education, raising public awareness and training – referred to the role of HE limited to the national level as:

> Countries could support the university and other tertiary activities and networks for environmental and development education. Cross-disciplinary courses could be made available to all students. Existing regional networks and activities and national university actions which promote research and common teaching approach on sustainable development should be built upon and new partnerships and bridges created with the business and other independent sectors, as well as with all countries for technology, know-how and knowledge exchange (United Nations, 1992, Chapter, 36.5 lit. i).

In *Chapter 36* and throughout *Agenda 21*, HE was given responsibility for producing and sharing evidence-based knowledge. There was no mention nor a mandate to go beyond knowledge dissemination through education or training to actually take a policy-influencing role and actively get involved with national implementation strategies.

Following the *Earth Summit* in 1992, several UN-related international conferences, attended by government and UN officials regularly included HE only as a tool for the implementation of sustainable development such as:

- 1997 *Thessaloniki Declaration*, International Conference on Environment and Society: Education and Public Awareness for Sustainability in Thessaloniki, Greece (organized by *UNESCO*).
- 1998 *World Declaration for Higher Education or the Twenty-First Century: Vision and Action* in Paris, France (organized by *UNESCO).*
- 1999 *World Conference on Science* in Budapest, Hungary (organized by *UNESCO* and the International Council for Science).
- 2002 *World Education Forum* (Education for All) in Dakar, Senegal (organized by *UNESCO*).
- 2002 *World Summit on Sustainable Development* in Johannesburg, South Africa (organized by *UNESCO* and adopted by the *UN General Assembly*).
- 2009 *Bonn Declaration* in Bonn, Germany (organized by *UNESCO*).
- 2009 *World Higher Education Summit* in Paris, France (organized by *UNESCO*).
- 2012 *The Future we want Rio+20* Declaration in Rio de Janeiro, Brazil (organized by the United Nations Conference on Sustainable Development Secretariat).
- 2014 *Aichi-Nagoya Declaration on Education for Sustainable Development in Aichi-Nagoya, Japan* (organized by *UNESCO*).

In most instances, statements or declarations from these conferences had a focus on how HE would support sustainable development, mostly limited to creating improved access to HE and aided by the informing role of science and the value of international cooperation (Michelsen, 2016).

A change occurred in the early 2000s when the *UN* decided to hold a *UN Decade* recognizing the crucial role of education in promoting sustainable development, titled *UN*

Decade on Education for Sustainable Development (UNESCO, 2005c). Expectations shifted towards recognizing and requesting HE's influence in shaping society. The complex role of HE, in particular, was recognized by *UNESCO* in preparing for the *UNDESD*. The *Draft Framework for the UNDESD* (UNESCO, 2005b) stated a strong role for HE. Yet, in the final outcome document, the role of HE was again reduced to a focus of reorienting education programmes, providing educational research and fostering cooperation (UNESCO, 2005c). From an HE perspective, this outcome seems unfortunate but underlines the ambitious ideas that *UNESCO* had originally considered. *UNESCO* had temporarily shifted from HE solely delivering knowledge and training in specialized courses as nations requested in 1992, to providing graduates from all disciplines with knowledge of sustainability and following a research agenda for sustainability (= reorienting education towards sustainability; UNESCO, 2007).

A broader engagement of the HE community with sustainability has steadily emerged since 2005. Supporting such changes, emerging statements on the state/national level by governments and influential institutions underline that sustainability has commenced playing an additional role in raising awareness for sustainability in the general public:

- *Canada*: The Association of Canadian Deans of Education published the *Québec City Statement of Commitment on the Climate Emergency and Environmental Crisis* in 2019, recognizing the climate urgency and committing to releasing an accord reflecting on and further defining the role of HE in the fight against climate change.
- *Germany*: The Declaration of the *German Rectors' Conference* and the *German Commission for UNESCO* on HE and Sustainability in 2009/2010, as well as the Recommendation from the General Assembly of the *German Rector's Conference for a Culture of Sustainability in Higher Education in 2018* underline sustainability as a guiding principle of all HE efforts.
- *Malaysia*: The national agenda towards sustainable development was included in the country's *Development Framework* in the 1960s with the socio-economic restructuring of the society as one of the main objectives. Economic growth models have since highlighted equity and inclusiveness as important pillars. In the *New Economic Model*, established in 2018, sustainable development is specifically highlighted as the Malaysian national framework of development until 2020. Malaysia's commitment was further reinstated with the introduction of the *Shared Prosperity Vision 2030,* stating an overarching philosophy of development for all with a specific thrust intending to address wealth distribution and income disparities (2019). Malaysian universities are compelled to integrate sustainable development into their institutional performance and emerging national statements show that sustainability has arrived within the strategic thinking of HE. HEIs play an additional role in raising public awareness for sustainability.

Whilst the universal concept of academic freedom remains fully acknowledged (Higgins, 2000), HEIs have been increasingly called upon to tailor research and science to be directed towards a better understanding of our planet and (future) concepts in creating economic, environmental and social balance. Therefore, some arrived at a specific call for sustainability science (Sibbel, 2009), aiming to understand the complex and dynamic interactions between natural and human systems and engaging all subjects as an entirely new discipline (Yarime *et al.*, 2012). Sustainability science was to tackle the "[. . .]wicked problems[. . .]" that pose global and local challenges of our century (UNESCO, 2018). Yet, understanding sustainability science as its own discipline created new limitations for a

holistic application of fundamental sustainability principles. Therefore, it has been widely accepted that moving from interdisciplinary to transdisciplinary approaches and understanding the scientific process as a whole is necessary to transform societies towards sustainability (WBGU, 2011, p. 25).

To date, formal *UN/UNESCO* frameworks have not invited the HE community to serve as a policy-influencing advisory body but have recognized the importance of their role for policy implementation with requests for specific actions:

- 2000 *Millennium Development Goals* (with a focus on equal access to all levels of education).
- 2005–2014 *UN Decade on Education for Sustainable Development* (with a focus on reorienting education programmes, provide research, partnerships).
- 2015 *Sustainable Development Goals* (with a focus on equal and affordable access for all in *SDG 4,* as well as calls for education, science and research to inform the agenda in *SDGs 2, 3, 7, 8, 9, 13, 14, 17*).
- 2015 *Global Action Programme on Education for Sustainable Development* (with a focus on university leaders as stakeholders for transforming learning and training environments, HE serving as examples of best practice for WIAs, faculty training).
- 2020 *UNESCO Education for Sustainable Development for 2030 Framework* (with a focus on promoting and implementing the WIA).

Even *UNESCO* as the mandated agency for education and science does not promote HE as a stakeholder in the international sustainability discussion beyond creating access for all (*SDG 4.3*), producing/sharing science and research knowledge, as well as fostering international collaboration. Only in *UNESCO*'s own ESD-related action plans, i.e. the *Global Action Programme* 2015–2019 (UNESCO, 2014c) and the new *ESD for 2030 Framework* 2020–2030 (UNESCO, 2020a), is HE explicitly requested to move ahead with changes to fully embed sustainable development in their institutional agendas and to implement a "whole institution approach".

Implementing a whole-institution approach to achieve a policymaking role for higher education

What could be the role of HE beyond providing *education* and *research* in preparing future generations and informing policies? Could HEIs be more active in policymaking if sustainability was at the core of their own practice? What could a WIA towards sustainability mean and entail? Could implementing a WIA lead to such a policymaking role?

From individual measures to holistic ways

A university can be a microcosm, containing most aspects of society (Kaldis, 2009). In size, it can be the equivalent of a small to mid-size town, complete with collectible data, capable of measuring and monitoring its own footprint such as water, energy and waste flows. Consequently, a university can serve as a *living lab* for exploring sustainable lifestyles, new ways of conducting enterprises and documenting the benefits of sustainability practices (Purcell *et al.*, 2019). Initial approaches in addressing sustainability in HE varied widely and are to date often driven by individuals (Scott *et al.*, 2012) or fragmented (McMillin and Dyball, 2009). Some plans followed the early model of sustainability, as envisioned by the private sector as simply being synonymous with "eco-efficiency" (Shriberg, 2002). HEIs

focused on cost-saving measures in operations and created successful sustainability practices, i.e. sustainable procurement, transportation and building design. As "greening the campus" later seemed insufficient to create societal change, "greening the mind" was the next stage of this movement (Alshuwaikhat *et al.*, 2017), marked by curricula revisions, changes in pedagogy and revising expectations towards the learning outcomes for all graduates (Caiado *et al.*, 2017). Today, HE approaches towards an engagement in sustainability have become more manifold, beginning equally in teaching and/or research and are then extended to operations and beyond (Mallow and van't Land, 2020).

The whole-institution approach as a promising tool

The term "whole" has been used since the 1980s to describe a holistic way of teaching that goes further than knowledge dissemination to include practice and implementation. "Whole language" and "whole mathematics" initiatives are two examples of their usage in the context of education. *UNESCO*'s success during the *UNDESD* heightened awareness and significantly influenced the ways of teaching *for* sustainability instead of simply teaching *about* sustainability (UNESCO, 2014b). The *Global Action Programme* in Priority Action Area 2 *Transforming Learning and Training Environments* recognized the WIA as a central concept in schools and other educational settings to enhance ESD (UNESCO, 2014c). The new *ESD for 2030 Roadmap* with a ten-year programme reaffirms the potential of the WIA in its Priority Action Area 2 *Transforming Learning Environments* (UNESCO, 2020a). *UNESCO*'s recognition has elevated the WIA with consistent references in their education programmes.

When first mentioned, it was described as a tool that:

> [. . .]required the active engagement of multiple actors in the joint redesign of basic operations, processes and relationships – are increasingly put forward as a mechanism for making meaningful progress towards sustainability (UNESCO, 2012).

Today, the WIA is understood as a way to move towards sustainability in a holistic way, encompassing teaching content and methodology, influencing the learning process whilst embedding sustainability in all aspects of the institution including facilities, operations and creating interaction with stakeholders in the community, governance and capacity-building (UNESCO, 2014b).

"[. . .]The promotion of whole-institution approaches requires, in particular, the following:

- An institution-wide process is organized in a manner that enables all stakeholders – leadership, teachers, learners, administration – to jointly develop a vision and plan to implement ESD in the whole institution.
- Technical and, where possible and appropriate, financial support is provided to the institution to support its reorientation. This can include the provision of relevant good practice examples, training for leadership and administration, the development of guidelines, as well as associated research.
- Existing relevant inter-institutional networks are mobilized and enhanced to facilitate mutual support such as peer-to-peer learning on a WIA and to increase the visibility of the approach to promote it as a model for adaptation[. . .]" (UNESCO, 2014c, p. 35).

When the *SDGs* were adopted, further momentum was achieved. The *SDGs* lay out a holistic agenda for the world. Individual *SDGs* are not only a framework of interconnected goals in economic, environmental and social spheres but reflect the complex challenges in tackling

the wicked issues of sustainability whilst seeking synergy and understanding necessary trade-offs (Kroll *et al.*, 2019).

UNESCO responded with their *ESD for 2030 Roadmap* that was launched to support ESD within the *SDG*s as the integral element of quality education and emphasizes the WIA in light of transforming education. Since 2020, *UNESCO* has moved forward to "transform all aspects of the learning environment through a WIA to ESD to enable learners to live what they learn and learn what they live" (UNESCO, 2020a, p. 16). Research supporting the relevance of the WIA as a holistic way of addressing sustainability (Rieckmann, 2018; O'Donoghue *et al.*, 2018) reinforces *UNESCO*'s rationale to recommend this tool. As countries will have to report on the *SDGs* and – within their membership in *UNESCO* – on the progress on implementing the WIA, the *UNESCO* definition is central for the authors' perspectives as HE practitioners from different global regions.

Leadership within the whole-institution approach

One of the aspects deemed crucial within the WIA, is the concept of leadership for successful transformation (Mader *et al.*, 2013). Visionary leadership was also identified as the first key element of a successful WIA by *UNESCO* (UNESCO, 2012). HE systems are complex with an absence of direct hierarchy or chain of command, the underlying principle of academic freedom and operating at the interface of science and management (Purcell *et al.*, 2019). Leadership is needed to engage and motivate followers, including high-potential students, graduates, (aspiring) professorial leaders in their field and other stakeholders.

In management theory, leadership has always played a pivotal role in any holistic management model (e.g. beginning with *Ohio State Leadership Studies* pioneering in 1945). With the WIA, every aspect of the institution, including its purpose, policy, programmes and practices, is to be reoriented towards sustainability. This includes considering critical perspectives on the limitations of the theoretical concept. Yet, sustainability has to be at the core of each institution's mandate. It will take leaders at all levels in all departments to achieve fundamental paradigm shifts for HE that will be based upon sustainability as a guiding principle.

Within the *UN*, an interagency mechanism, defined elements of leadership based on the following attributes: norm-based, principled, inclusive, accountable, multi-dimensional, transformative, collaborative and self-applied (United Nations, 2017b). If we fully understand the current threats to our planet and humankind, HE needs to take such leadership and must move forward to provide cutting-edge scientific advice to tackle sustainability issues. If we wish for a stronger leadership role by HE globally, transforming leadership within universities and colleges will be crucial (Mader *et al.*, 2013).

Education for sustainable development within the whole-institution approach

Moreover, the understanding of the concept of ESD is essential within a WIA. ESD was first defined in the *Agenda 21 Chapter 36* (United Nations, 1992) with its four thrusts:

(1) access to and retention in quality basic education;

(2) reorienting education systems to address sustainability;

(3) building public awareness and understanding of sustainable development; and

(4) providing training to all in both the private and public sectors to promote sustainability at home and in the workplace.

Education has always been acknowledged as crucial to achieve sustainable development. This was fully established within *Agenda 21* in 1992 and has since been unanimously

reiterated by the *UN*. Recently and in light of the *2030 Agenda*, the *UN General Assembly* recognized ESD as an integral element of *SDG 4 Quality Education* and as a key enabler of all other *SDGs* (United Nations, 2017a, 2019).

ESD is not yet another discipline to be taught, but rather a purpose of education, a way of addressing locally relevant economic, environmental and social matters in culturally appropriate ways making education relevant for students and inferring social transformation that enables sustainable development (McKeown *et al.*, 2002). The *UN* and *UNESCO* fully:

> [. . .]emphasize the potential of ESD to empower learners to transform themselves and the society they live in by developing knowledge, skills, attitudes, competences and values required for addressing global citizenship and local contextual challenges of the present and the future[. . .] (UNESCO, 2014a).

Overall, ESD can transform the learners, the pedagogy and the entire learning environment (UNESCO, 2017).

The four thrusts of ESD, when practically applied to HE in the frameworks of the *SDGs*, entail:

(1) access to and retention in affordable quality education at tertiary level;

(2) reorienting teaching and research to address sustainability;

(3) building awareness and understanding of sustainable development with its implications for the graduates, the university and its surrounding community; and

(4) providing training for all staff to promote sustainability in the workplace and at home.

The WIA reflects in its holistic way all four thrusts in the three streams of the university mandate: teaching, research and community service.

Embedding ESD influences the manner in how HEIs prepare students for their future and address sustainability in programmes. It changes how HEIs design and offer professional development to those who work at or return to HE at a later stage of their careers (Mulà *et al.*, 2017). Evidence and following actions, developed through and from research, can underline curricula design and content taught in all fields of study. Finally, this evidence can be shared with the community and broader public to enhance their knowledge and understanding.

ESD also offers the standing invitation to be critical of the concept of sustainable development and to keep questioning and improving it as a normative principle. Part of the role of ESD is, therefore, to embrace its continuous development through lifelong critical engagement and learning. HE could take the stage in moving further than sustainable development as the currently accepted development paradigm as it has faced criticism for its human-centric limitations. This could potentially even lead to a profound refinement of sustainable development or even the emergence of an entirely new paradigm that might serve as a (new) purpose of education in the future (UNESCO, 2020b).

Current layers of tracking sustainability actions

Criteria to measure the successful implementation of a WIA are not formalized at the level of *UN/UNESCO*'s policymaking. Yet, there are a number of examples showing how the level of implementation is being quantified and understood through documenting the inclusion of sustainability in policies and implementation strategies. For instance, some analyse the

extent of initiatives across the entire institution or report on the engagement of leadership and fiscal support (Mallow *et al.*, 2020).

Growing interest in the approach towards the institution as a whole is also implied by the relevance and developments of award and ranking schemes (Atici *et al.*, 2021). Their success criteria largely reflect the indicators used to measure a WIA, e.g. by addressing all 17 *SDGs* in the *Times Higher Education Impact Ranking Methodology*[1] to measure the impact of universities in achieving the *SDGs*. Whilst controversy surrounds the award/ranking discussion, more and more HEIs are getting involved and participate in sustainability-related activities.

Other examples of the award schemes that recognize many aspects of the WIA include *Green Gown Awards*, *ISCN Awards*, the *Sustainability Tracking, Assessment and Rating System (STARS)* by *Association for the Advancement of Sustainability in Higher Education (AASHE)*, *Learning In Future Environments (LIFE) Index* by *Australasian Campuses Towards Sustainability*.

In the categories of research, outreach and stewardship, the *University of Indonesia's Green Metric World University Ranking* focuses on the environmental aspect of operations but also includes economic and social sustainability questions. The *Alternative University Appraisal (AUA)* initiated by the *Promotion of Sustainability in Postgraduate Education and Research Network (ProSPER.net)* associated with the *Institute for the Advanced Study of Sustainability (UNU-IAS)* as a self-assessment tool encourages dialogue and institutional engagement (Razak *et al.*, 2013). In addition, there is the *Sustainability Assessment Questionnaire (SAQ) by the Association of University Leaders for a Sustainable Future (ULSF)*.

From a policy information role to policymaking

The perceived absence of HE to date in playing a formally recognized, active role in both national and international sustainability policy formulation is noteworthy and needs further explanation, as all UN agencies and most governments benefit from collaboration with HE to advance science towards sustainability. The *UN* in full and the vast majority of governments operate on the principles of science-based knowledge for policy development to fulfil their particular mandate or enhance national strategies. Thus, seeking advice from HE is not limited to sustainability. HEIs often inform national governments regarding other specific (national) challenges and opportunities (Andereggen *et al.*, 2012). Moreover, HEIs are trusted to intrinsically contribute to knowledge dissemination, working not only with those in power (Nicol, 2008). Academics are trusted knowledge holders for the general public and all other sectors such as industry and business.

Understanding the sense of urgency to move towards sustainability, the complex interconnectedness of societal interaction and the need for the sought-for transformation of many from our current worldviews and lifestyles – HEIs are tremendous assets, capable of sharing knowledge, seeking solutions and influencing change. If recognized as a crucial societal influencer, HE can model and support engineering the peaceful transformation of present-day societies towards a sustainable future as stated in the *SDGs*.

Anecdotal evidence and individual case studies underline the potential and show success (Mallow and van't Land, 2020). However, more empirical research, enriched by concrete policy recommendations, is needed to fully understand the effectiveness and efficiency of the WIA. If mandated and resourced, HEIs are in a unique position to not only engage with societal changes from many disciplinary and cultural lenses but to hold high-quality transdisciplinary discussions to integrate singular approaches into concerted efforts. Within their own networks, they are also able to regionally contextualize and find culturally

appropriate adaptation, e. g. through *Collaborative Online Intercultural Learning (COIL)* or *Globally Networked Learning (GNL)*. They can also properly monitor their changes and verify newly-created knowledge to benefit both policy and practice in society at large (Shriberg, 2002).

Policy advice and specific recommendation based on HE graduates of all disciplines contributing to change and HEIs successfully designing and modelling a WIA could widely enhance the understanding of sustainability (UNESCO, 2020a). It could support a new level of credibility that transforming learners and practising sustainability is actually possible and highly beneficial.

The international association of universities and its Global Cluster on Higher Education and Research for Sustainable Development

The *IAU HESD Cluster*[2] is one of the most relevant global initiatives to target the *SDGs* within HE, contributing perspectives to the global discussion. *IAU*, founded in 1950 and associated with *UNESCO*, has been assisting the HEIs to enhance their policies and develop appropriate responses. Beginning in 1991, *IAU* has consistently been an initiator in establishing and furthering the role of universities and colleges in the pursuit of a sustainable future. This journey has taken *IAU* beyond engaging its members with ESD and promoting sustainability practices.

Since 2015, *IAU* has also been supporting institutions to achieve their goal set within the *SDGs* and is a formal supporter of *HESI*. Now *IAU*'s leadership is even more accentuated by the launch of the *IAU HESD Cluster* in 2018 with a focus on the WIA as a crucial tool to transform universities and colleges, the HE community as a whole, and in creating a unified global voice. The implementation of the broad concept of ESD and the individualization of what the WIA actually means for each university will regularly need attention. This will avoid the overall vision of sustainable development getting lost in daily teaching or campus operations.

As a current example, of how easily the focus can shift from established priorities has been seen in many countries during the COVID-19 pandemic as HEIs are being confronted with dire needs for liquidity. Travel restrictions and economic uncertainty have led to considerable financial implications due to the decrease in enrollment and consequent reduction of tuition income, especially from international students. In addition, also research funding has already been rolled back in some cases. Further cuts in education spending are expected from governments that have been managing unexpected public health and unemployment expenses in nations facing the global recession.

Yet, the pandemic should emphasize our striving towards sustainability and mandate HEIs to implement a WIA as – in all scenarios currently possible in explaining the origin of COVID-19 – unsustainable behaviours and practices are at the forefront of causes for the current situation. Successfully implementing a WIA may be a major contribution of HE to society through creating new and improving existing sustainability practices as we move forward.

For the remainder of the time until 2030, the *IAU HESD Cluster* will research, nurture and encourage a holistic approach to the *SDGs*, focusing specifically on the various and multi-faceted aspects of a WIA in HE. Whilst sustainable development as a vision is broader than the *SDGs*, it offers a current and accepted global framework. As *SDG 4* is both a singular goal, as well as interrelated with the other *SDGs*, it is of utmost importance to ensure its successful implementation.

The *IAU SDG 4 Subcluster* particularly encourages HE to develop their WIA to improve social impact and expound upon their social responsibility. Recognizing opportunity takes

leaders to build back better and build resilient societies when returning to our next normal. The WIA will be a crucial aspect of the *Subcluster's* attention. The Subcluster members have a long history of embedding sustainability in education and research, as well as providing policy advice regarding sustainable development. Current examples of their activities include:

(1) *Canada*: In 2020, in the midst of the global pandemic and an international mobilization against anti-black racism, a new *University Academic Plan 2020–2025* was adopted at *York University*. The plan recognizes that *York University* has unique capabilities to help meet the challenges of today and tomorrow and to uncover the opportunities that lie within them for their local community and beyond. A signature element of the new *University Academic Plan 2020–2025* is a university-wide challenge to elevate *York University*'s contributions to the *SDGs*. The university will provide a support infrastructure to facilitate groups coming together to collaborate on the *SDG* Challenge and to document the positive impact in key areas, including the alleviation of climate change, poverty and inequality.

(2) *Czech Republic*: The mission of the *Charles University Environment Centre (CUEC)* is to open new opportunities for interdisciplinary, sustainability-oriented teaching and research in collaboration with other faculties and institutes. Policy development has been at the core from the very beginning, shaping evidence-based policies in the Czech context. In 2017, the *Regional Centre of Expertise on ESD Czechia* (as a member of the Global RCE Network associated with the *Institute for the Advanced Study of Sustainability (UNU-IAS)* was founded to frame ESD outreach into non-formal education and lifelong learning. In 2019 and initiated by *CUEC* students, a university-wide dialogue was initiated that led to the development of a sustainability strategy at *Charles University*, including research on sustainability operations and understanding the ecological footprint of the university. The implementation process is still underway but a full transformation of the university towards sustainability is expected.

(3) *Germany*: The former *IAU SDG 4 Subcluster* coordinator *Leuphana University Lüneburg* started a global research initiative, titled *Towards a Sustainability University Barometer* within the work of this subcluster (2018–2020) and with additional partners examining opportunities for continuously mapping the contributions of HE for sustainability and meeting the *SDGs*. The research follows a twofold approach: observing agreed-upon principles to indicate progress towards sustainability and investigate new pathways, as well as documenting examples of good practice combining elements of monitoring, exploring and mutual learning.

(4) *Malaysia*: The *International Islamic University Malaysia (IIUM)* launched a whole-institution transformation process towards sustainability in 2018 to be implemented in 2020 with five aspects being prioritized and measured:

(5) Ending academic/administrative silos towards total, transformational and transversal (3T) ways of teaching and research,

(6) Establishing voluntary teams/teamwork across all disciplines/departments based on shared aspirations and interest ("SDG flagships") aiming at achieving all of the *SDGs*,

(7) Encouraging more creativity and (social) innovation in translating the *SDGs* into the local context and underlining their relevance in defining relevant issues and problem-solving,

(8) Enhancing community engagement in defining issues and participatory approaches towards problem-solving, based on the 17 *SDGs* and beyond where local worldviews are not met (e. g. a potential *SDG 18* on spirituality) and

(9) a new combination of data and information monitoring transformation through "Key Intangible Performance (KIP)".

This holistic approach deepens the understanding of a "humanizing education" that compels *IIUM* to review its academic programme and to co-create a second transformation trajectory – the whole-curriculum *Sejahtera* transformation to be implemented in 2021.

Further exploring particular research projects to underline the effectiveness of the WIA will complement the current action of members. The *IAU SDG 4 Subcluster* also aims at achieving a better understanding of the potential in addressing the *SDGs* as a driver for institutional and societal transformation. The *Subcluster* promotes ESD as an integral element of quality education in light of *SDG 4*.

Conclusion

HE has been at the forefront of sustainable development from the early beginnings. Some HEIs immediately saw their relevance for this new global development paradigm. However, the full potential of HE capabilities to enhance the international dialogue and implementation has not been realized to date by either the institutions or governments. Fortunately, the analysis of the evolution of the role of HE found in the *UN*-related and other selected documents show a growing institutional engagement in requesting a seat at the negotiation table and willingness to adapt their own activities.

With the recognition of the role of quality education with ESD at the core by the *United Nations General Assembly* as a key enabler of all the *SDGs*, *UNESCO* and many HE associations are urging all education systems to adopt a relevant version of a WIA. It is a promising way of implementing the respective targets and contributing to societies at large in achieving the *SDGs*.

There is much to be learned for understanding and assessing sustainability in a HE setting such as appropriate tracking, monitoring and evaluation, understanding the synergies with traditional disciplines or even the interface with academic freedom. More research-based evidence to prove the effectiveness of the approach is aimed and hoped for.

The examples from the *IAU HESD Cluster* show the positive impact of embedding sustainability with the potential of going beyond the specific project goal. Individual sustainability activities, due to their nature, not limited to only one department or discipline can spark broader discussions and involve all stakeholders to consider and create change. Memberships in global networks such as the *IAU HESD Cluster*, provide HEIs with an opportunity to gain important insights into their peer universities and help to better understand and contextualize challenges and solutions. Together, they can unfold their transformative potential in taking leadership to co-create and provide expert advice from a global perspective and model the changes needed to achieve a sustainable future within their communities and beyond.

Notes

1. Available at: www.timeshighereducation.com/world-university-rankings/world-university-rankings-2021-methodology (Accessed 21 September 2021).
2. More details here: https://iau-aiu.net/HESD (Accessed 21 September 2021).

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