UN Decade of Education for Sustainable Development: Perceptions of Higher Education Institution's Stakeholders

Ana Marta Aleixo, Ulisses Miranda Azeiteiro and Susana Leal

Abstract

The purpose of this study is to investigate how the main stakeholders of Portuguese Higher Education Institutions (HEIs) perceive the commitment of HEIs related to: (a) teaching sustainable development Sustainable Development (SD) across all courses, (b) encouraging research and dissemination of SD knowledge, (c) implementing green campuses and supporting local sustainability efforts, and (d) engaging and sharing information with international networks (as defined in Higher Education Sustainability Initiative, United Nations). Through a qualitative approach (semi-structured interviews and content analysis), we explore the perspectives of twenty stakeholders from four Portuguese public HEIs (leaders, faculty, staff, students, and external stakeholders). The results show that all stakeholders see teaching SD across all courses as a necessity, but they have different visions about how to implement it. Concerning the research and dissemination of SD knowledge, they defend that both should be encouraged and transversal to all HEIs. About implementing green campuses and supporting local sustainability efforts, stakeholders agree that is important, but the practical

A.M. Aleixo (✉)
University of Aberta, Rua da Escola Politécnica, no. 141-147,
1269-001 Lisbon, Portugal
e-mail: anamartaafsantos@gmail.com

U.M. Azeiteiro
CESAM – Centre for Environmental and Marine Studies & Department of Biology,
University of Aveiro, Campus de Santiago, 3810-193 Aveiro, Portugal
e-mail: Ulisses@ua.pt

S. Leal
Polytechnic Institute of Santarém & Life Quality Research Centre,
Complexo Andaluz, Apartado 279, 2001-904 Santarém, Portugal
e-mail: susana.leal@esg.ipsantarem.pt

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results, in the Portuguese HEIs analysed, fail to achieve an acceptable degree. As a long term objective, the motivation for engaging and sharing information with international networks is latent.

Keywords
UN Decade of Education for Sustainable Development · Education for Sustainable Development · Sustainability · Portuguese Higher Education Institutions

1 Introduction

The focus of the UN Decade of Education for Sustainable Development (UN-DESD) is "a world where everyone has the opportunity to benefit from education and learn the values, behaviour and lifestyles required for a sustainable future and for positive societal transformation" (UNESCO 2005, p. 11). To help reach these goals, Higher Education Institutions (HEIs) must contribute for Education for Sustainable Development (ESD) and learn with the participation of its main stakeholders.

At the end of UN-DESD (2005–2014), it is pertinent to assess if Portuguese HEIs are implementing practices that promote Sustainable Development (SD), namely those that are seen as "good practices" (UNESCO, UN-DESA, UNEP, Global Compact, and UNU). These good practices are promoted by international initiatives (for example, the Higher Education Sustainability Initiative) and can be looked upon as a guide on what HEIs should do. Such initiatives help to achieve the UN-DESD (2005–2014) objectives.

This work explores the perceptions that key stakeholders have about the importance of SD integration in HEIs' systems regarding the following aspects: (a) teaching SD across all disciplines of study, (b) encouraging research and dissemination of SD knowledge, (c) implementing green campuses, (d) supporting local sustainability efforts, and (e) engaging and sharing information with international networks. HEIs have a role to play in achieving "The future we want" (United Nations 2012) during the next decade (2014–2025). As stated by Beynaghi et al. (2014), the UN-DESD should continue after completion of the initial decade (2005–2014). Therefore, this study intends to assess if the stakeholders consider the main areas of intervention of HEIs in the domain of SD pertinent, and reflects on how SD can be implemented in Portuguese HEIs.

The relevance of this work is based on the fact that empirical knowledge in this field in Portuguese HEIs' context is scarce (Aleixo et al. 2016). A qualitative analysis was conducted through semi-structured interviews. The sample embraces twenty stakeholders of four Portuguese HEIs, including leaders, faculty, staff members, students, and members of society.

This paper is a part of an ongoing, cross-sectional research project that aims to investigate: (a) the amount of SD practices formally communicated in the websites of the Portuguese HEIs (Aleixo et al. 2016), (b) the stakeholders perceptions about

the conceptualization of SD, Sustainable Higher Education Institutions (SHEIs) and the role of HEIs in the promotion of SD, as well as about the barriers, challenges, and drivers to SD in HEIs, (c) the SD practices adopted and implemented in the Portuguese HEIs.

With this in mind, we structure the paper as follows. We start by clarifying the importance of the UN-DESD in HEIs, then we define who the main stakeholders in HEIs are, and later we reflect on ways of integrating SD in HEIs. In the end, we present the main conclusions, the study's limitations, and suggest avenues for future research.

2 Literature Review

2.1 The Decade of Education for Sustainable Development in HEIs

As stated by UNESCO (2005, p. 27), "Education is held to be central to sustainability". In this context, the UN-DESD has seven strategies to achieve it, which are the following: (a) vision-building and advocacy, (b) consultation and ownership, (c) partnership and networks, (d) capacity-building and training, (e) research and innovation, (f) use of Information and Communication Technologies (ICTs), and (g) monitoring and evaluation (UNESCO 2005, p. 17).

Recognizing the role of education in the change of mentalities and attitudes related to SD, the United Nations General Assembly, in December of 2002, adopted the Resolution 57/254, and from there started the UN-DESD for 2005–2014 (Wals 2014). As stated by Wals (2014, p. 8) "the DESD seeks to provide an opportunity to promote a vision of a more sustainable and just global community through different forms of education, public awareness and training activities".

For UNESCO (2006), Higher Education has a particular role in the promotion of SD through learning, research, and leadership. In this context, "higher education should emphasize experiential, inquiry-based, problem-solving, interdisciplinary systems approaches and critical thinking. Curricula need to be developed, including contents, materials and tools such as case studies and identification of best practices" (UNESCO 2006, p, 23).

As stated by Sammalisto et al. (2015), the role of HEIs in ESD has been encouraged by several declaration and initiatives. Amongst these initiatives and declarations, we could list the following: The Higher Education Sustainability Initiative, the Rio + 20 Treaty on Higher Education, Talloires, Earth Charter, and the Declaration of University Leaders for a Sustainable Future.

As stated by Leal Filho (2015, p. 4), EDS is the "Educational process characterized by approaches and methods aimed at fostering awareness about the issues pertaining sustainable development". Moreover, this process is not only about environmental issues but—through interdisciplinary thinking—it is also about social, political, economic and ecological issues.

2.2 Main Stakeholders for the ESD in HEIs

There are several stakeholders that can influence the ESD, namely: faculty, staff, leaders, students, and external stakeholders. The faculty and staff are the changeable agents who can and will engage in the ESD (Sammalisto et al. 2015). Additionally, leaders, faculty and staff are the stakeholders who could improve the ESD in HEIs' activities (Sammalisto et al. 2015). In the campus context, there was an increased participation of students in environmental initiatives (Figueredo and Tsarenko 2013) and, consequently, students are also SD key stakeholders (Nejati and Nejati 2013). External stakeholders are equally relevant regarding the ESD because HEIs establish partnerships with them for research, services, and regional development.

2.3 Integration of SD in HEIs

Several authors defend the integration of SD into HEIs' systems (for example, Alonso-Almeida et al. 2015; Cortese 2003; Disterheft et al. 2013; Jorge et al. 2015; Kościelniak 2014; Leal Filho 2011, 2015; Lozano 2010; Nejati and Nejati 2013; Popescu and Beleau 2014, Waas et al. 2010). Several authors claimed this integration into the whole system: curricula (education), research, campus operations, community outreach and partnerships, and assessment and reporting. As stated by Alonso-Almeida et al. (2015) the development of SD in HEIs means not only statements but also actions. Cebrian et al. (2015) advocate the connection of the whole system and not its compartmentalization.

For Sibbel (2009, p. 75) the challenge for HEIs is to redesign curricula to "prepare graduates with the necessary knowledge and values, a capacity for critical thinking and the motivation to deal with the multitude of diverse problems associated with non-sustainable states". Several authors defend the integration of the SD concept in the curricula for the development of new skills, values, attitudes and competencies (e.g., Popescu and Beleau 2014). In this context and as stated by Jorge et al. (2015) the integration of operations and curricula should be integrated into mainstream HEIs.

Wyness and Sterling (2015) argue that the curriculum review needs to undertake the agenda of sustainability in HEIs. For the authors, this happens if there is an institutional commitment, staff knowledge, and motivation. According to Lozano (2010) the introduction of the SD concept in the curricula could help HEIs to develop a further balanced academic system in synergistic, interdisciplinary and holistic terms, thus increasing the probability of students participating in the construction of a more sustainable society.

For Waas et al. (2010), the research on SD should have various levels (from the local to the global scale), various time perspectives (from the short to the long term), different SD dimensions (economic, environmental, social and institutional), and all the academic group should share full responsibility. HEIs have the

responsibility to encourage SD research and the development of new tools and models for a SD world (for example, Popescu and Beleau 2014).

Regarding community outreach and partnerships, one must consider the relationships between HEIs and enterprises and other institutions. Alonso-Almeida et al. (2015) identified HEIs' contributions to the social and economic development of the community as engagement or outreach.

For Jongbloed et al. (2008) there are three institutional barriers which interact with HEIs: (a) the determination of the research agenda and education offering; (b) the internal reward structure, and (c) the lack of an entrepreneurial culture. As stated by Jongbloed et al. (2008), despite the continued lack of knowledge about what HEIs can provide to enterprises, the development of these partnerships can result in new research, development of new products, relationship strengthening, obtaining patents, and solving technical problems. These partnerships with enterprises intend to obtain funds for research (equipment, human resources, and others) and to enable research testing (Jongbloed et al. 2008). Besides these aspects, partnerships, services and collaborations with the community also represent improved relationships with local authorities and civil society.

In what concerns assessment and reporting, Alonso-Almeida et al. (2015) argue that only some HEIs publish sustainability reports under the Global Reporting Initiative (GRI) Framework. Several authors argue about the scarce HEIs' reports regarding SD (for example, Alonso-Almeida et al. 2015; Disterheft et al. 2013). Nevertheless, Alonso-Almeida et al. (2015) report the importance of GRI framework in terms of social impact.

In the campus context, and about the integration of SD in HEIs, Krizek et al. (2012) suggest four campus phases: (a) grassroots, (b) executive acceptance of the business case for sustainability, (c) visionary campus leaders, and (d) fully self-actualized and integrated campus community. In this scope, the social changes are identified by Stephens et al. (2008) regarding three different levels: (a) strategic; (b) tactical and (c) operational. The first refers to the definition and development of a strategic societal vision and long-term goals, the second to coalitions and cooperation among stakeholders, and the third to the implementation of changes through the curricula, research, campus operations and societal teaching for specific challenges.

3 Method

3.1 Research Questions

The study's aims were achieved through a qualitative research design. As an instrument of data collection, semi-structured interviews were used. The interviews were designed to measure the stakeholders' understanding and concerns about several activities and practices for SD in HEIs: (a) teaching the concepts of SD, (b) encouragement of research on SD issues, (c) green and environmentally friendly

Table 1 Interview guide

1. Do you consider that HEIs should teach the concepts of sustainable development to undergraduates and/or graduates (master's, doctoral) of its various faculties/schools? If yes: a. Why? b. How should this be formalized/implemented?
2. Do you consider that HEIs should encourage research on sustainable development issues? a. How can this be implemented or encouraged?
3. Do you consider that HEIs should implement efforts to make the campuses greener, e.g., environmentally friendly? a. How could this be implemented or encouraged? b. Should these decisions be centralized or decentralized?
4. Do you consider that HEIs should work with local authorities and civil society to promote more sustainable communities? a. In your institution's context in what way could this be implemented? b. Who should take this initiative?
5. Do you consider that HEIs must commit to results and actions through international structures? a. What are the benefits that might arise from this involvement?
6. In addition to the above, what other practices or measures could be implemented by Portuguese HEIs in order to promote sustainable development and/or become sustainable HEIs?

campuses, (d) cooperation between HEIs, local authorities and civil society to promote more sustainable communities, and (e) committing to results and actions through international structures. The interview guide is in Table 1.

3.2 Sample and Procedures

In Portugal there are 34 public HEIs (of which 20 are polytechnics and 14 universities). For this study's purposes, four HEIs were selected (the University of Aveiro, the University of Coimbra, the Polytechnic Institute of Leiria, and the Polytechnic Institute of Santarém). We opted for a convenience sample due to: (a) easier access to the required stakeholders for intervening, and (b) geographic proximity. In each HEI, we interviewed five stakeholders (one leader, one faculty member, one staff member, one student, and one external stakeholder), involving a total of 20 individuals. As Bengtsson (2016) pointed out, "in qualitative studies, it is common that data are based on 1 to 30 informants (Fridlund and Hildingh 2000)".

All participants were invited to participate in the study through personal contacts and email messages. Each respondent was interviewed once, through a face-to-face interview. All interviews were audio-recorded after obtaining written consents.

A content analysis methodology was used for the interviews. The data was analysed by implementing the four main stages identified by Bengtsson (2016): decontextualisation, recontextualisation, categorisation, and compilation. As suggested in the literature, each stage was repeatedly performed to maintain the quality and trustworthiness of the analysis.

4 Findings and Discussion

The following sections present the analyses of the data and are organized according to the questions asked in the interview process.

4.1 Teaching the Concepts of SD

Regarding the teaching of SD in HEIs' curricula, all respondents agree about its importance (N = 20). Some of the interviewers also referred the need of teaching this subject in the context of families, in the lower levels of education, and throughout life. As a faculty member said: "You have to be involved in everything. Moreover, it has to begin at home with the parents when the children are born and afterwards in pre-school, primary school and so on" (F_1).

In what concerns the best way to teach SD concepts, one staff member mentioned "We should teach and acquire a base knowledge of what SD is, how the first foundations for participatory citizenship and responsibilities should be. However, these questions could be diluted in different subjects, not only in a specific topic about SD" (Stf_4). In this context, some respondents referred to SD as a topic that should be introduced in curricula in a transversal way. One staff member said "A university does not only have a formal curriculum, and it does not only have the mission of giving formal education. It should also educate citizens and adults. It is the university's civic spirit. In a less formal sense, the word sustainability has always to be there. Not always in a specific technical way, or in a particular technical area, but in a transversal way" (Stf_2).

Other stakeholders, namely external stakeholders and leaders, also agree about the introduction of SD in courses and disciplines in a transversal way. An external stakeholder said: "I think that this should be transversal to all courses. It is this culture that has to be transmitted from kindergarten to higher education, where obviously it needs to be adapted to each domain, but that is transversal to all the university's domains" (Es_2). For a leader, "Sometimes we might not be able to justify changing a certain curricular course specifically to teach SD. However, in other cases, we can justify it. It all depends on the courses. Nevertheless, the concept should be transversal to all curricular units, all the courses, all education levels" (L_4).

Students and faculty members defend that SD should be taught through concrete actions. For a student, practice is the best way to achieve SD goals: "I think that the best way to implement these new ideas (…) is to put them into practice" (Sdt_4). A faculty member defends this same view: "Each course should include practical actions that could involve the students' participation" (F_4).

The common idea to all respondents is the importance of introducing SD in all courses and subjects in a transversal way, not only theoretically, but also through practical actions on campus.

4.2 Encouragement of Research on SD Issues

This section addresses the importance of research on SD topics. As with education, all respondents agree on the promotion of SD issues (N = 20). However, for some respondents, research should be done in all study areas, while for others there are subjects where it is more pertinent to investigate the topic than others. For instance, social sciences, engineering, and environmental areas are the ones more often mentioned. Other respondents mention that, taking into account the new framework of Horizon 2020 (European Commission 2015), the research on SD is critical and almost mandatory.

The main stakeholders agree on the need to do research in a strategic way and involving partnerships within the community, namely with companies. A faculty member: "HEIs should promote the investigation of SD issues, namely through synergies with the business community, and also promote partnerships with universities, NGOs and the business community" (F_4). For a staff member: "HEIs should, without a doubt, take care to encourage research on SD issues, and we do not need leaders to do it, because all financed projects have, at the moment, that component. For example, Horizonte 2020 has what it is called the "Cross-cutting issues", the so-called transversal themes, and SD is transversal. It fits everything" (Stf_3).

Despite the importance given to interdisciplinarity in recent times, there are constraints related to the change of mentality. Many of these constraints are associated with some professors who do not conceive this relationship, particularly when it comes to expanding the role of SD in society. Some professors express difficulties in understanding the need for promoting SD in all courses and training areas. Therefore, attitudes can condition such joint actions on behalf of SD and on behalf of the creation of HEIs that are sustainable and more open to society.

4.3 Green and Environmentally Friendly Campuses

When asked about the necessity for green and environmentally friendly campuses, all respondents considered that HEIs must have this concern (N = 20). The interviewees reported different practices and initiatives that SHEIs could implement. However, the practices listed and considered as significant by stakeholders, in the majority of cases, were not sufficiently developed. Stakeholders believe that the encouragement for sustainable campuses should come from above and be centralized in all schools, as in these examples:

- "There must be a strategy coming from the central services and the responsibility to implement it should be given to the organic units", a staff member said (Stf_4).
- "Yes, I think that the responsibility and the coordination of initiatives should come from the central services, but each department should be given the

autonomy to implement them and to motivate all stakeholders", said a student (Sdt_1).

Respondents agree with the initiative, mentioning the cost savings that this could bring. An external stakeholder, for example, says that "with the development of our society it is fundamental to adopt SD practices to sustain our planet, and this will be very important in the medium and long term where there is a need to have these worries. Moreover, I can say that the majority of these worries are compatible with economic development. "If I save energy, reduce waste production and water waste, I am lowering costs of my business" (Es_3). "The interaction with the natural environment is not a cost, it is an investment", said a faculty member (F_4).

There seems to be a tendency for believing that the adoption of green and environmentally friendly campuses result in cost savings. However, the lack of action regarding these initiatives is equally noted, and it is justified by the lack of financial and human resources.

4.4 Cooperation Between HEIs, Local Authorities and Civil Society to Promote More Sustainable Communities

The respondents agree about the need of cooperation between HEIs, local authorities, and civil society regarding SD. When questioned about who should take the initiative, most interviewees stated that any of those parties can take the first step (N = 13). For a faculty member, "We all have to take the initiative as soon as we see the opportunity. Also, when we see an opportunity or a problem that needs to be solved, we can't wait for others." (F_1). For a staff member: "All can take the initiative. The initiative can come from stakeholders or from institutions, to raise awareness, to encourage, to show a more efficient solution in a sustainable point of view." (Stf_4).

However, two interviewees (N = 2) reported that the initiative should come from HEIs, and one other believes that it should start in local and/or civil authorities. One leader mentions, "I think that universities should have the initiative as much as possible" (L_2).

4.5 Commitment to Results and Actions Through International Structures

Regarding the commitment of HEIs through international structures, all sample (N = 20) agrees about its importance. However, the respondents also referred that this commitment should be translated into day-to-day practices and not only into signed documents.

The various stakeholders mentioned the advantages of joining these structures. They can benefit from the network, as well as from the positive image they share and from the benchmarking of best practices.

As stated by an external stakeholder "I think that the interchange of experiences, ideas and concepts brings us closer to our goals" (Es_1). Moreover, for a leader, "I think that we can have access to good practices in international terms. We learn a lot with benchmarking, so all this sharing between HEIs is always very important. Because many times, it is with the knowledge of other realities that we can progress in our institution" (L_3).

As argued by Leal Filho et al. (2015) the exchange of experience at an international level is very important. The international organizations and rules "can be used as anchors eliciting action by constituencies" (Leal Filho et al. 2015, p. 125). Moreover, as proposed by Kamal and Asmuss (2013), benchmarking can be a tool for assessing and tracking sustainability in HEIs, and also a way for HEIs to learn how to implement it.

5 Conclusion

We first conclude that SD is recognized as being very important to HEIs and society, but it still has not yet entered HEIs' system and activities, as other studies already pointed out (Aleixo et al. 2016; Kościelniak 2014). The interviewees agreed about teaching the concept of SD, encouraging SD issues research, green and environmental friendly campuses, cooperation between HEIs and local authorities and civil society, and their commitment to results and actions. Despite all stakeholders being unanimous in accepting the importance of the ESD, in the opinion of the interviewed stakeholders, there are no formal and strategical declarations encouraging its implementation. In practice, there does not seem to exist many initiatives in HEIs, except for research and community outreach through partnerships and development services to companies and institutions. This evidence might be explained by financial necessity, and by the emphasis on funded projects related to the societal issue. The introduction of the SD concept in the curriculum and the development of initiatives on campuses could allow further integration of the concept in the regular activities of the Portuguese HEIs.

Faced with the new UN-DESD (2014–2025) it becomes essential to identify HEIs' strategies regarding SD. It is essential to introduce SD in HEIs, in all activities, through a "top down" process, starting with planned activities from the governing body, and then involving all stakeholders.

This research contributes to a better understanding of what some Portuguese HEIs are doing in what concerns SD education. It has no pretension to represent the institutional view of the HEIs considered in the sample regarding the theme, and even less the Portuguese panorama about it.

The paper has two main limitations. Firstly, the study can suffer from social desirability bias because the interviewees might have felt impelled to answer what they consider to be the "right answer" (that is, what is socially expected), instead of what they effectively think. This problem can occur with higher probability with leaders and faculty members. Future studies might ask about what is already being

done in HEIs concerning SD issues, and ask for evidence. Secondly, the convenience sample does not permit the generalization of results to all the Portuguese Higher Education system. Future studies should consider all Portuguese HEIs, or a representative sample of it, as well as information that could be analysed in a more quantitative way. The results of the present study should be seen as an input for future, and more holistic studies.

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