Developing a more holistic university sustainability report: Experiences from the University of Leeds

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Abstract

During the last decade an increasing number of higher education institutions have engaged in incorporating and institutionalizing sustainability into the university system (including curricula, research, operations, outreach, and assessment and reporting). This paper focuses on assessment and reporting, where a number of tools and guidelines have been developed; of these, the Global Reporting Initiative (GRI) Sustainability Guidelines offers one of the best options available. However, the GRI guidelines were not developed for universities. The Graphical Assessment for Sustainability in Universities has been developed to address this drawback, as well as helping to provide a more holistic report. This paper presents the process undertaken to develop the first draft of the University of Leeds sustainability report using an updated version of the Graphical Assessment for Sustainability in Universities. The objective of the exercise was to provide a base and complement other sustainability initiatives taken at the University of Leeds. The process of developing the report was in three stages: (1) collecting data; (2) populating the indicators; and (3) assessing the performance values from the information collected. Although there was limited time and resources for the process, the results in indicator coverage and performance were higher than other universities that have published GRI based reports. The exercise revealed that when preparing a sustainability report it is important to have a holistic perspective, addressing the different inter-relations between indicators, categories, and dimensions, as well as throughout the university system. The results can then be used to tackle those areas where the university could improve, with respect to sustainability, throughout its entire system. This research shows that although it might look like a daunting task, sustainability reporting can be facilitated if there are individuals who understand the concept and complexity of sustainability, and there are supported by managers who are engaged in making their institutions more sustainability orientated.

Keywords: *sustainability reporting, Global Reporting Initiative (GRI) guidelines, Graphical Assessment of Sustainability in Universities (GASU), University of Leeds*

1. Introduction

During the last decade an increasing number of higher education institutions (HEIs) have engaged in incorporating and institutionalising sustainability into their curricula, research, operations, outreach, and assessment and reporting (Calder & Clugston, 2003; Cortese, 2003; R. Lozano, 2006a), as well as in collaboration with other universities, making Sustainable Development (SD) an integral part of the institutional framework, on-campus life experiences, and 'Educate-the-Educators' programmes (Barth & Rieckmann, 2012; Huisingh & Mebratu, 2000; F. J. Lozano et al., 2008; R. Lozano, Lukman, Lozano, Huisingh, & Lambrechts, in press).

This paper focuses on the assessment and reporting element. It presents the process of developing the first draft of the University of Leeds' sustainability report. The paper is structured as follows: the first section focuses on a discussion on sustainability reporting; it is followed by an overview of the Graphical Assessment of Sustainability in Universities (GASU) tool and its update; then the methods (specially the process of developing the report) are explained; the next three sections present the results, discussion, and conclusions.

2. A discussion on Sustainability Reporting

Sustainability Reporting (SR) is a voluntary activity with two general purposes: (1) to assess the current state of an organisation's progress towards sustainability, and (2) to communicate to stakeholders the efforts and progress in the Economic, Environmental and Social dimensions (Dalal-Clayton & Bass, 2002; GRI, 2011). It can be used for assessing sustainability performance over time, benchmarking against other companies, and demonstrating how the organisation influences, and is influenced by, expectations about sustainable development (Daub, 2007; GRI, 2011; R. Lozano, 2006a; Schaltegger & Wagner, 2006).

Sustainability Reporting (SR) has gained widespread recognition as an element of corporations' contributions to Sustainability (Cherp, 2003; Davis-Walling & Batterman, 1997; Morhardt, Baird, & Freeman, 2002). During the last ten years there has been an increase in the number of published corporate Sustainability Reports (SRs) (ACCA, 2004; Andersson, Shivarajan, & Blau, 2005; Beggington, Larrinaga, & Moneva, 2008; GRI, 2007, 2009; Morhardt, et al., 2002), particularly in Europe and Japan (Kolk, 2008). The KPMG surveys, of the largest 2,200 companies in the world, show an increase in reporting by these companies from 13% in 1993 to 41% in 2005 (KPMG, 2005). Similarly, the data from the CorporateRegister (2008) indicate an increase of global SR output from 26 in 1992 to approximately 3,011 in 2008. In spite of an increasing number of companies producing SRs, the number of companies reporting is still insignificant compared with the total number of businesses operating in the world today. In the particular case of universities, the number of institutions is

even smaller, with less than 15 publishing full Sustainability Reports (see R. Lozano, 2011).

According to Burritt and Schaltegger (2010) there are two main paths for sustainability reporting: the critical theorist approach, which sees SR as the cause and source of corporate sustainability problems; and the management oriented approach, which sees SR as a tool to help managers deal with different decisions. They also indicate that there are two main approaches driving sustainability reporting: "outside-in", focusing on the opinion and perception of stakeholder towards the organisation; and "inside-out", relating to the decisions taken inside the organisation in regards to social and environmental problems, which strengthen the competitive position of the organisation. These two dimensions could be complemented by: (1) hierarchy flows, which include top-down or bottom-up (Doppelt, 2003); and (2) focus of the changes, whether through managerial measurement and control (Henriques & Richardson, 2005), or stressing the importance of internal change and innovation (Henriques & Richardson, 2005). Top-down processes facilitate incorporation but can limit institutionalisation if leadership is changed (R. Lozano, 2006a), while bottom-up processes can facilitate institutionalisation, but these efforts can be blocked by leadership (Kanter, 1999). Managerial measurement and control relies on strategic changes, whilst internal change and innovation relies on participative cultural changes, which are more proactive. Organisations have a higher degree of control over proactive changes, than over external stimuli led changes, *e.g.* political or economic change (Freeman, 1984).

As aforementioned, reporting can be used to manage sustainability performance. Schaltegger & Wagner (2006) proposed an approach to manage sustainability performance and economic performance more successfully by integrating the Sustainability Balanced Scorecard, sustainability accounting, and sustainability reporting. This approach links management, measurement, and reporting. However, it is theoretical and does not specify how to measure performance. Daub (2007) proposed a quasi-quantitative analysis of 25 Swiss companies' sustainability reports, which provides a more practical quality and performance assessment.

SR presents a number of challenges, such as gaining knowledge, experience, and understanding of sustainability (Adams & McNicholas, 2007), providing the extra resources needed to gather data and engage stakeholders, and the need to keep a balance between the details and core information (Lozano, 2006). Additionally, the quality of the SR disclosures has yet to translate into meaningful and comprehensive SRs (ACCA, 2004), and in many cases data is selectively reported (Gray, 2006). Many of the reports fall short of the GRI/SR guidelines (Andersson, et al., 2005; Hussey, Kirsop, & Meissen, 2001; Wilenius, 2005). SR guidelines do not provide a framework to address or report upon possible synergies within, between, and among Sustainability issues (R. Lozano & Huisingh, 2011)

Notwithstanding the aforementioned challenges, an increasing number of company leaders and their employees are embarking on, and staying with, the GRI/SR learning journey (R. Lozano & Huisingh, 2011). SR is an important driver and vehicle to engage with, and report on, a company's efforts towards becoming more sustainable (R. Lozano & Huisingh, 2011), as well as being a catalyst for change towards sustainability (for more details refer to Adams & McNicholas, 2007; Adams &

Whelan, 2009; Doppelt, 2003; R. Lozano, early view). In these changes, there is a need for rethinking the 'managerial capture' (Adams & Larrinaga-González, 2007), *i.e.* the way managers understand and implement changes towards sustainability. In the case of universities, there is a need to foster trans-disciplinarity (R. Lozano, 2006a), and incorporate it into the entire university system (Calder & Clugston, 2003; Cortese, 2003; R. Lozano, 2006a; R. Lozano, et al., in press)

3. Methods

This section presents a background on the University of Leeds and the process of preparing the sustainability report.

The University of Leeds has 33,002 students from over 142 countries: 29,015 full time students and 3,987 part time students of which: 25,000 are undergraduates and 8,000 are postgraduates. It offers 560 undergraduate degrees and 300 postgraduate degrees. The University has 7,645 staff from 97 different nationalities.

The University has a total income of £517.7 million, with a total expenditure of £505 million (Leeds, 2011; University of Leeds, 2010). It is divided into nine faculties (each faculty is subdivided into schools, institutes and centres) (Leeds, 2011):

- Faculty of Arts
- Faculty of Biological Sciences
- Faculty of Business
- Faculty of Education, Social Sciences and Law
- Faculty of Engineering (including the School of Computing)
- Faculty of Environment
- Faculty of Mathematics and Physical Sciences
- Faculty of Medicine and Health
- Faculty of Performance, Visual Arts and Communications

The sustainability report was commissioned by this paper's third author and developed by Organisational Sustainability Ltd using the Graphical Assessment of Sustainability in Universities (GASU) tool.

4. The Graphical Assessment of Sustainability in Universities (GASU) tool

To help assess the current state of an organisation's sustainability, communicate it to stakeholders, and manage it, a large number of standards and guidelines have been developed during the last two decades. The guidelines provide a systematic framework for addressing a myriad of sustainability issues (R. Lozano & Huisingh, 2011). From the range of tools and guidelines developed for sustainability reporting (see the comprehensive lists by Dalal-Clayton and Bass (2002) and Cole (2003)), the most widely used guidelines include: the ISO 14000 series (especially ISO 14031) and EMAS; the Social Accountability 8000 standard (SAI, 2007); and the Global Reporting Initiative (GRI) Sustainability Guidelines (GRI, 2002, 2006). Among these, the GRI Sustainability Guidelines offers one of the best options (Hussey, et al., 2001;

R. Lozano, 2006b; Morhardt, et al., 2002). The GRI Guidelines are voluntary and intended to serve as a generally accepted framework for reporting on an organisation's economic, environmental, and social performance (GRI, 2011).

Nonetheless, the GRI guidelines were not developed for universities (Cole, 2003; R. Lozano, 2006b). In the particular case of universities Shriberg (2002) compared the different guidelines developed, with examples such as the National Wildlife Federation's State of the Campus Environment, the Sustainability Assessment Questionnaire, Higher Education 21's Sustainability Indicators, and the Auditing Instrument for Sustainable Higher Education (AISHE). Lozano (2006b) modified the GRI Guidelines to include the core competence of universities, the Educational Dimension, to develop the Graphical Assessment of Sustainability in Universities (GASU) ((R. Lozano, 2006b). GASU provides a systemic and systematic way of assessing the indicators available, as well as their performance, which can then be used to prepare a sustainability report.

GASU has been used to analyse 12 universities (see Table 2) that have published GRI Sustainability Reports (R. Lozano, 2011).

Table 1 Universities that have published full GRI sustainability reports

Institution	***Date of publication***	***Number of pages***	***Reference***
University of Birmingham, UK	2008	18	(University of Birmingham, 2009)
*University of Natural Resources and Applied Life Sciences (BOKU), Vienna, Austria**	2005	194	(BOKU, 2005)
University of British Columbia (UBC), Canada	2007	74	(UBC, 2007)
Florida University, USA	2009	63	(Florida Universitària, 2009)
Gothenburg University, Sweden	2009	34	(Göteborgs universitet, 2009)
University of Hong Kong, China	2007	24	(University of Hong Kong, 2007)
University of Leuphana, Lüneburg, Germany	2007	60	(Leuphana University, 2007)
University of Michigan, USA	2002	415	(Rodriguez, Roman, Sturhan, & Terry, 2002)
*Pontífica Universidad Católica del Perú (PUCP), Perú***	2007	58	(PUCP, 2007)
*University of Santiago de Compostela (USC), Spain****	2006	220	(USC, 2007)
Singapore Polytechnic, Singapore	2008	87	(Singapore Polytechnic, 2007)
Turku Polytechnic, Finland	2008	52	(Turku Polytechnic, 2008)

* BOKU published sustainability reports from 2005 to 2007 (GRI, 2009)
** The PUCP report is only for the Science and Engineering Faculty
*** USC published sustainability reports from 2004 to 2006 (GRI, 2009)
Source: (R. Lozano, 2011)

GASU 2006 was updated in 2011 to align it with the GRI G3 (2011), as well as adding Inter-linking issues and dimensions (R. Lozano, in press; R. Lozano & Huisingh, 2011) to provide a more holistic coverage of sustainability issues and their interactions.

The Inter-linking issues and dimensions include the following categories and indicators:

- Relations within the same dimension
    - Relations within the Economic Dimension
        - RS1. Tuition fees and Income
    - Relations within the Environmental Dimension
        - RS2. GHG emissions and Energy
        - RS6. Transport and Emissions
    - Relations within the Social Dimension
        - RS3. Employee training and development with Health and safety
        - RS4. Volunteering and philanthropy and Communities
    - Relations within the Educational Dimension
        - RS5. SD Research-led Teaching
- Relations to issues in another dimension
    - Relations between the Economic and Environmental dimensions
        - RA1. Eco-efficiency and Earning
        - RA2. Six Sigma and the Environment (This indicator does not apply to universities' context.)
        - RA9. Environmental accidents and Fines
        - RA10. Purchasing and Environment
    - Relations between the Educational and Social dimensions
        - RA11. Training and education and SD curriculum
        - RA12. Training and education and SD research
        - RA13. Training and education and SD administrative support
    - Relations between the Environmental and Social dimensions
        - RA3. Communities and the Environment
        - RA4. Communities and Biodiversity
        - RA5. Employee training and Eco-efficiency
        - RA6. Environment and Health and Safety
        - RA7. Products (This indicator does not apply to universities' context.)
        - RA8. Water and Communities
- Relations among all dimensions
    - RT1. Accidents and remediation
    - RT2. Green buildings and Social Dimension
    - RT3. Supply chain (This indicator does not apply to the University of Leeds context.
    - RT4. Time dimension (The report provides the bases to explore past and current activities, and those planned for the future that are contributing to the Economic, Environmental, and Social dimensions, as well as how to connect them to the core competencies of the University: Education and Research.

GASU provides a graphically assessment of the sustainability universities' efforts, facilitating their analysis, longitudinal comparison, and benchmarking against other universities, with respect to: Profile; Economic Dimension; Environmental Dimension; and Social Dimension, as well as the Educational Dimension and Inter-linking issues and dimensions. Table 2 shows the dimensions, with their categories and aspects.

Table 2 Graphical Assessment of Sustainability in Universities (GASU 2011) dimensions and categories

	Category
Profile	Strategy and analysis Organisational profile Report parameters Governance, commitments, and engagement Management approach and performance indicators
Economic	Economic performance Market presence Indirect economic impacts
Environmental	Materials Energy Water Biodiversity Emissions, effluents, and waste Products and services Compliance Transport Overall

	Category
Social	Labour Practices and Decent Work
	Human rights
	Society
	Product responsibility
Educational	Curriculum
	Research
	Service
Interlinked issues and dimensions	Relations within the same dimension
	Relations to issues in another dimension
	Relations among all dimensions

The numbers of performance indicators in GASU 2011 are: 43 for the profile, 9 for the economic, 30 for the environmental, 40 for the social part, 29 for the educational, and 23 for the Inter-linking issues and dimensions. The large number of indicators demands a large amount of resources to create a full report, as well as for its analysis.

The indicators are analysed by using the following grades, following Daub's (2007) approach and Lozano's GASU (2006b) criteria:

0. There is a total lack of information for the indicator, it is non-existent, or the information was not found;
1. The information presented is of poor performance. This is given when there is some information, but it is too general or it has little detail or coverage;
2. The information presented is of regular or fair performance. This is assigned when the data covers around half of the issues in the indicator, or when there is good detail but it only covers some areas (for example for the curriculum category);
3. The information presented is considered to indicate of good performance. This is given when there is not enough detail, the information or coverage is not thorough, or an issue has not been addressed;
4. The information indicates excellent performance. This is assigned when there is complete and detailed information for that particular indicator. It is also assigned for indicators that do not apply to the University or to the context.

GASU provides information about the percentage of indicators where information is available against the total number of indicators in each aspect, category and dimension, as well as for the entire report. GASU results are presented in eleven charts (combining indicator coverage and indicator performance as proposed by Lozano (in press)) in the following dimensions:

- **General chart (**performance with respect to Profile, Economic Dimension, Environmental Dimension, Social Dimension, Educational Dimensions, and Inter-linking issues and dimensions);
- **Profile**;
- **Economic Dimension**;
- **Environmental Dimension**;
- **Social Dimension (5 charts):** Overall, Labour Practices and Decent Work, Human Rights, Society, and Product Responsibility;
- **Educational Dimension**; and
- **Inter-linked issues and dimensions**.

GASU can help universities on their road towards sustainability by making recommendations as to where the University should effect the changes needed to make its system more sustainability orientated, and thus be better aligned with the UN Decade of Education for Sustainable Development. GASU can also facilitate comparisons of the University's efforts and achievements towards sustainability in different years, as well as benchmarking against other universities.

5. Developing the report

The objective of the exercise was to provide a base and complement other sustainability initiatives taken at the University of Leeds. The process of developing the report was in three stages: (1) collecting data; (2) populating the indicators; and (3) assessing the performance values from the information collected. The data was analysed with an updated version of the Graphical Assessment for Sustainability in Universities tool.

1.1. Collecting data

The information was collected by this paper's second author, between March and July 2011, under the supervision of the first author. Most of the information gathered was for the academic year 2009-2010, although some information was only available from 2005-2006.

The first step in the data collection was to review the university's web pages to try to obtain as much available information as possible, as well as to understand the university's structure. Some information was obtained from statistical calculation from available databases, such as the SAP system and the Higher Education Statistics Agency (HESA, 2011).

The second step was to locate who was the owner or responsible of the information not available on the web pages, and to carry face-to-face or phone interviews to acquire the data. Table 3 shows where the information for the different dimensions and categories was obtained from, whether through secondary or primary sources.

Table 3 **Information location or provider for the indicators in each GASU (2011) dimension and category**

Dimension	Category	Information location or provider for this report
Profile		University web pages
Economic		Annual account report and University web pages
Environment		Sustainability Development office (e.g. Environmental policy, Sustainable purchasing policy, Fair Trade policy, Environmental co-ordinators, Environmental Management Systems (EMS), Energy Management, and Transport policies)
Social	Labour Practices and Decent Work	*Employment category:* Human Resources department, and Wellbeing and health and safety office *Labour/Management relations category:* Wellbeing and health and safety office and CUU web pages *Occupational Health and Safety category:* Health and Safety department, Human Resources department, and Occupational Health and Safety office *Training and Education category:* Staff and Departmental Development Unit (SDDU), Health and Safety office *Diversity and Equal opportunities category:* Caroline Human Resources department and University web pages
	Human Rights	Currently not available
	Society	Legal Advisor Office
	Product Responsibility	University web pages
Educational		STAUNCH® assessment
Inter-linking		Collated and developed by Organisational Sustainability

1.2. Populating the indicators

The next stage was to populate the indicators. As Table 3 shows the ones for the Profile and Economic Dimensions were obtained mainly from secondary sources, such as the University's Annual Report and Accounts (University of Leeds, 2010) and web pages. The indicators for the Environmental Dimension were mainly obtained through from the Estate and Campus Support Services, with additional input for the Biodiversity indicators. The indicators of the Labour Practices and Decent Work category were acquired from people in different departments and schools. The information for the Society category was provided by Legal affairs. The Product Responsibility's information was obtained from University web pages. There was no information found for the Human Rights category.

The Educational Dimension indicators were obtained through the Sustainability Tool for Assessing UNiversities' Curricula Holistically (STAUNCH®)[1] project (for details on the project refer to R. Lozano & Young, in press) assessment the Faculty of Business, and the Faculty of Environment (including the School of Earth and Environment, School of Geography, and Institute for Transport Studies). The assessment was done for 2,761 Bachelor and Post-graduate taught degrees during the academic year 2010-2011. The analysis was performed according to the information

[1] For details on STAUNCH® refer to Lozano (2010) and Lozano and Peattie (2011)

in the module descriptors. The number of students was compiled from the academic year 2009-2010.

Once all the information was collated, it was triangulated to check for consistency and reliability; whenever there was a doubt the individuals involved were contacted again.

The next step was to integrate the indicators to populate the ones in the Inter-linking issues and dimensions, followed by the assessment of all the indicators.

1.3. Assessing the performance values from the information collected

The assessment of the indicators was based on Daub's (2007) quasi-quantitative analysis using Lozano's GASU (2006b) criteria, as aforementioned, for each of the indicators in the Profile; Economic Dimension; Environmental Dimension; and Social Dimension; as well as the Educational Dimension and Inter-linking issues and dimensions.

Once these steps had been undertaken a 102 pages report was written, providing details for each GASU 2011 indicator, as well as a discussion on each dimension and the twenty-two graphs generated by GASU. The results are presented in section 6.

1.4. Methodology caveats

One of the first challenges when preparing the report was to become familiar with the university's structure. Although universities tend to have similar systems, each one has its own peculiarities in its structure.

Some of the challenges in the data collection or analysis included: the information from the SAP software was input by different individuals with possibly different criteria and priorities. The information for the Product responsibility category was obtained from the National Student Survey (NSS), this might not be totally representative of the numbers per faculty, since some of the subjects names are slightly different from those offered in the University faculties. Another challenge in the data collection was the limited time assigned to locate the data. Some of the information was not publicly available, or was not explicit in regards to the GASU indicators. This was particularly prevalent for indicators within the Human Rights and Society categories in the Social dimension. These two dimensions are covered by the U.K.'s laws and regulations, which apply to all types of organisations, including universities. Two issues were particularly challenging: the information was scattered through different offices, departments, and centres; and there seems to be no shared understanding within the university of sustainability or how it can be implemented more holistically throughout the university.

The sustainability report exercise was facilitated by the experience in sustainability reporting from this paper's first two authors, and the access provided by this paper's third author. This meant that there was the researchers knew exactly which information they were looking for, and this was enabled by the right access to it, despite the limited time and resources.

6. Sustainability Report Exercise Results

This section presents the results for each of the dimensions in regards to indicator coverage and indicator performance. Illustrative graphs are provided for the Overall results, the Educational dimension, and the Inter-linking issues and dimensions.

Table 4 and Figure 1 show the coverage and performance of the indicators in the Profile were easily available (almost 80% obtained), followed by those in the Economic, and Environmental dimensions (over 60%). The ones in the Social and Educational dimensions were more difficult to obtain (less than 50%). Those in the Inter-linking issues and dimensions were collated from other indicators. The performances of the Profile and Economic indicators are relatively high (around 60%). The ones for the Environment and Inter-linking-issues and dimensions are medium (around 40%), those for the Social Dimension are low (almost 30%), mainly due to the information from Human Rights and Society not being made explicit. The Educational Dimension tends to be quite low (less than 20%), mainly due to the difficulty of obtaining information for the Research category. The SD incorporation in the curriculum category tends to be good (50%) due to the STAUNCH® curriculum assessment exercise. The ratios between coverage and performance range from 0.4915 to 0.8611. This shows that performance accounts for roughly two thirds of coverage, with the exception of the educational dimension, where it is half. The shapes in Figure 1 show that 'performance' is fairly congruent with 'coverage', which indicates that performance in each of the categories could still be improved in the reports.

Table 4 Percentage of GASU 2011 indicators coverage and their performance

Sustainability Reporting Dimension	**Indicators coverage**	**Indicators performance**	**Performance-coverage ratio**
Profile	76.74%	61.05%	0.7955
Economic	66.67%	57.41%	0.8611
Environment	63.33%	40.67%	0.6422
Social	45.00%	29.53%	0.6562
Educational	37.93%	18.29%	0.4915
Inter-linking issues and dimensions	56.52%	40.00%	0.7077
Total	**57.47%**	**42.06%**	0.7955

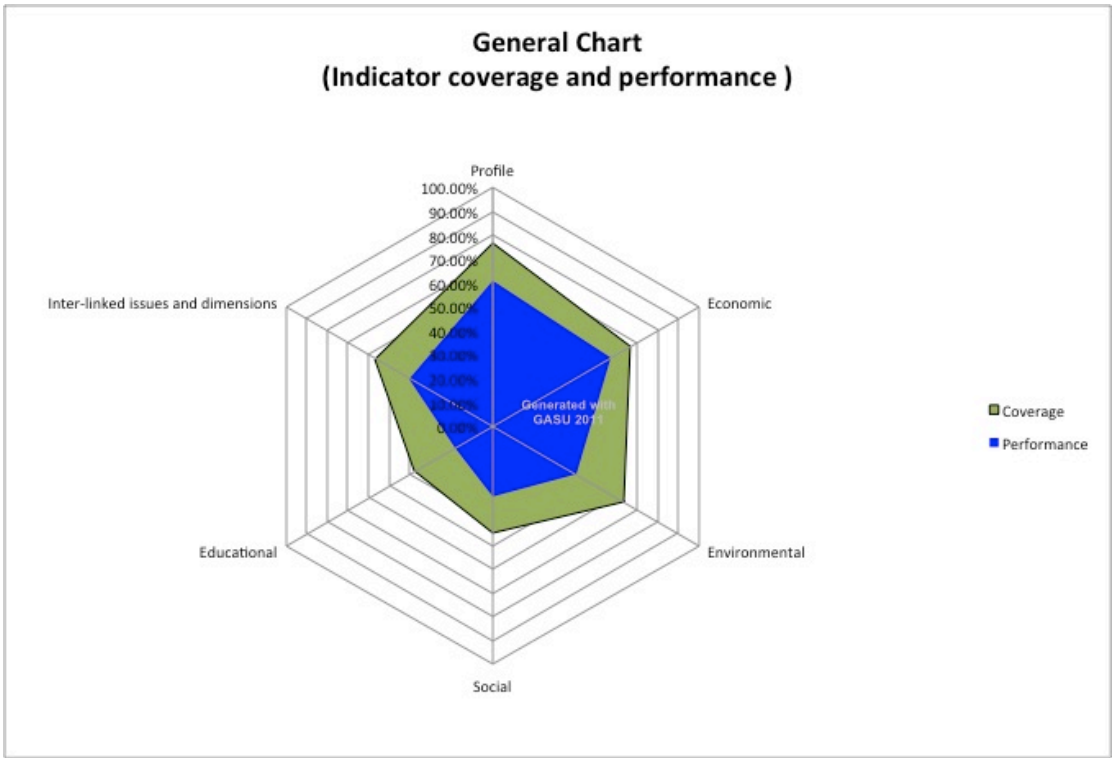

Figure 1 General chart: indicators coverage and performance

Table 5 shows the indicator percentages coverage in the Economics Dimension and their performance. The indicator percentages collated in respect to the GASU 2011 Economic Dimension indicators. As it can be observed all the indicators for Economic Performance were found, together with more than half of those from Market Presence. However, there were no indicators found for Indirect economic impacts. The indicator performances with respect to the GASU 2011 Economic Dimension. As can be observed the indicators for Economic Performance are good performance (81.25%), while those for Market Presence are low (36%). The ratios between coverage and performance range from 0.5356 to 0.8125. This shows that performance accounts between half and four fifths, with the exception of the Indirect economic impacts that were not present. This indicates that 'performance' could still be improved.

Table 5 Percentage of GASU 2011 indicators coverage and their performance for the Economic Dimension

Category	Indicators coverage	Indicators performance	Performance-coverage ratio
Economic Performance	100.00%	81.25%	0.8125
Market Presence	66.67%	35.71%	0.5356
Indirect economic impacts	0.00%	0.00%	-
Total	**66.67%**	**57.41%**	0.8611

Table 6 shows the indicator coverage in the Environmental Dimension and their performance. The indicator percentages collated in respect to the GASU 2011 Environmental Dimension indicators. All the indicators for the Biodiversity, Products

and services, Compliance, and Transport were found; a large number of those for Emissions, effluents, and waste were found (70%); and some of Energy, and Water (40% and 33% respectively). No indicators were found for Materials and Overall. The performances with respect to the GASU 2011 Environmental Dimension indicators are varied. The performance for Products and Services, and Transport are excellent; Biodiversity has good performance (61%), and those for Emissions, effluents, and waste, Energy, Compliance, and Water have low performance. The ratios between coverage and performance range from 0.25 to 1.00. This shows a large variation, where some categories are fully covered and some not even considered.

Table 6 Percentage of GASU 2011 indicators coverage and their performance for the Environmental Dimension

Category	Indicators coverage	Indicators performance	Performance-coverage ratio
Materials	0.00%	0.00%	-
Energy	40.00%	27.78%	0.6945
Water	33.33%	20.00%	0.6001
Biodiversity	100.00%	61.11%	0.6111
Emissions, effluents, and waste	70.00%	35.42%	0.5060
Products and services	100.00%	100.00%	1.0000
Compliance	100.00%	25.00%	0.2500
Transport	100.00%	100.00%	1.0000
Overall	0.00%	0.00%	-
Total	**63.33%**	**40.67%**	0.6422

Table 7 shows the indicator coverage in respect to the total indicators in the Social Dimension and their performance. The indicator percentages collated in respect to the GASU 2011 Social Dimension indicators. A large number of the indicators for the Labour practices and decent work category were found (71%), a fair number of the ones of Product responsibility (44%) and Society (38%), but a low number for the Human Rights ones (11%). The performances with respect to the GASU 2011 Social Dimension indicators are varied. The Labour practices and decent work indicators have a fair performance (47%), the ones for Product responsibility and Society have a low performance (29% and 23% respectively), while those for Human Rights are quite low (13%). As indicated previously, human rights and society indicators are covered by U.K.'s laws and regulations, for which universities have to comply. The ratios between coverage and performance range from 0.6021 and 1.1611. The performance is in general two thirds of the coverage. The exception is in Human Rights, where only one of additional indicator is present, and this is fully covered thus giving a higher performance than coverage.

Table 7 Percentage of GASU 2011 indicators coverage and their performance for the Social Dimension

Category	Indicators coverage	Indicators performance	Performance-coverage ratio
Labour Practices and	71.43%	47.92%	0.6709

Decent Work			
Human Rights	11.11%	12.90%	1.1611
Society	37.50%	22.58%	0.6021
Product Responsibility	44.44%	28.57%	0.6429
Total	**45.00%**	**29.53%**	0.6562

Table 8 shows the summary of the STAUNCH® curricula assessment of the Faculty of Business and the Faculty of the Environment, where it can be seen that the Faculty of Business has a low contribution, and the Faculty of the Environment a medium one. Both faculties have roughly the same number of students exposed to SD issues and similar percentage of modules contributing to SD. Each faculty has a different coverage of SD issues.

Table 8 Summary of the STAUNCH® curricula assessment of the Faculty of Business and the Faculty of the Environment

Faculty	%				% of modules contributing to SD	Contribution	% of students exposed
	Economic	Env.	Social	Cross-cutting			
Business	76%	2%	20%	1%	55%	0.98	63%
Environment	15%	54%	7%	24%	62%	1.75	66%

Source: (R. Lozano & Young, in press)

Figure 2 and Table 9 show the indicator coverage and performance in respect to the GASU 2011 Educational Dimension indicators. All the indicators for SD incorporation in the curricula, and Programmes and centres were found. A good number of the indicators for Administrative support, and SD monitoring in the curricula (67% and 50%) were obtained, and a low number of the ones for Community activity and service (33%), and Research in general (11%). There was no information found for SD capacity building, Grants, Publications and products, Service learning, and Declarations. The indicators for Programmes and centres have a good performance (75%), the ones for SD incorporation in the curricula, fair one (50%), while those for Administrative support, SD monitoring in the curricula, Community activity and service, and Research in general are low (25%, 19%, 17%, and 5% respectively). The ratios between coverage and performance range from 0.3750 to 0.75. This shows that performance in this dimension is quite varied, but also that some of the aspects are not covered. The shapes in Figure 2 show that 'performance' is fairly congruent with 'coverage'. As indicated by Lozano (2011) the educational dimension is usually the least addressed. The coverage and performance in this category could be improved considerably.

Table 9 **Percentage of GASU 2011 indicators coverage and their performance for the Educational Dimension**

Aspect	Indicators coverage	Indicators performance	Performance-coverage ratio
SD incorporation in the curricula	100.00%	50.00%	0.5000
SD capacity building	0.00%	0.00%	-
SD monitoring in curricula	50.00%	18.75%	0.3750
Administrative Support	66.67%	25.00%	0.3750
Research in general	11.11%	4.69%	0.4221
Grants	0.00%	0.00%	-
Publications and products	0.00%	0.00%	-
Programs and centres	100.00%	75.00%	0.7500
Community activity and service	33.33%	16.67%	0.5002
Service learning	0.00%	0.00%	-
Declarations	0.00%	0.00%	-
Total	**37.93%**	**18.29%**	0.5000

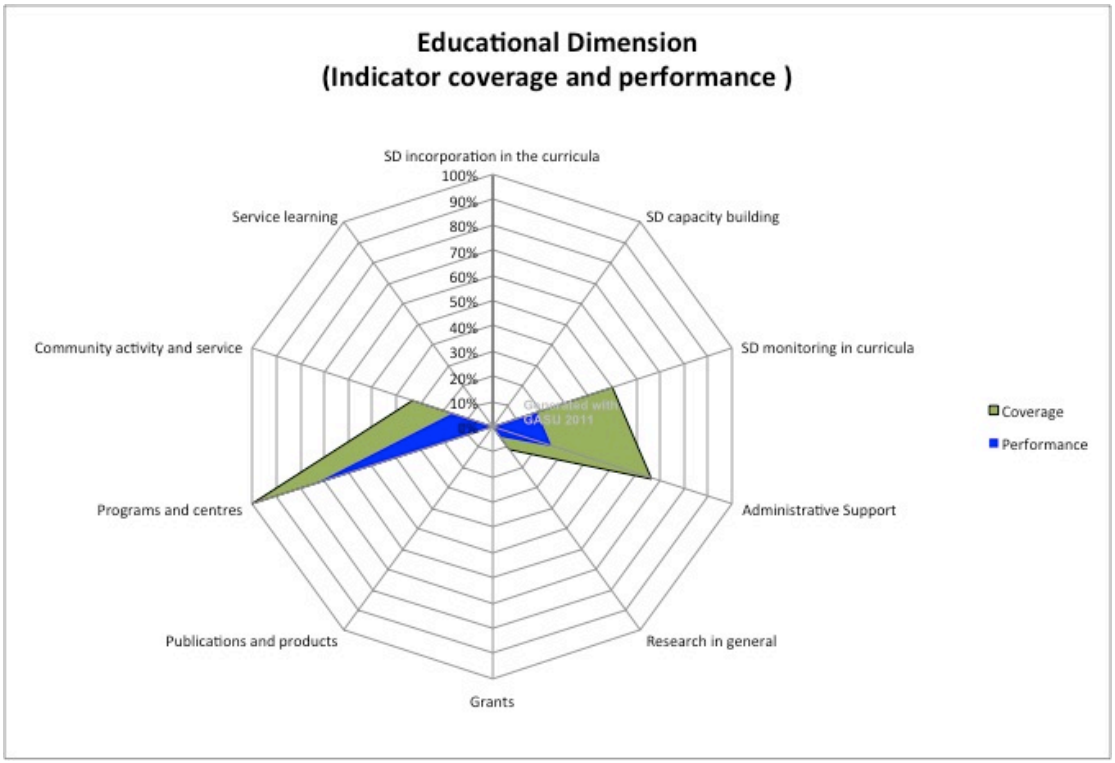

Figure 2 Educational dimension: indicators coverage and performance

Figure 3 and Table 10 show the indicator coverage and performance in respect to the GASU 2011 Inter-linking issues and dimensions indicators. A good number of the indicators for Relations among all dimensions and Relations within the same dimension (75% and 68% respectively) were found, and almost half of those for the Relations to issues in another dimension. The indicators for Relations among all dimensions, and Relations within the same dimension have a fair performance (56% and 54% respectively), and performance for Relations to issues in another dimension was low (23%). The ratios between coverage and performance range from 0.5001 to

0.8125. This shows that performance accounts between half and four fifth of coverage. The shapes in Figure 3 show that 'performance' is fairly congruent with 'coverage', which indicates that performance in each of the categories could still be improved in the reports.

Table 10 Percentage of GASU 2011 indicators coverage and their performance for the Inter-linking issues and dimension

Category	Indicators coverage	Indicators performance	Performance-coverage ratio
Relations within the same dimension	66.67%	54.17%	0.8125
Relations to issues in another dimension	46.15%	23.08%	0.5001
Relations among all dimensions	75.00%	56.25%	0.7500
Total	**56.52%**	**40.00%**	0.7077

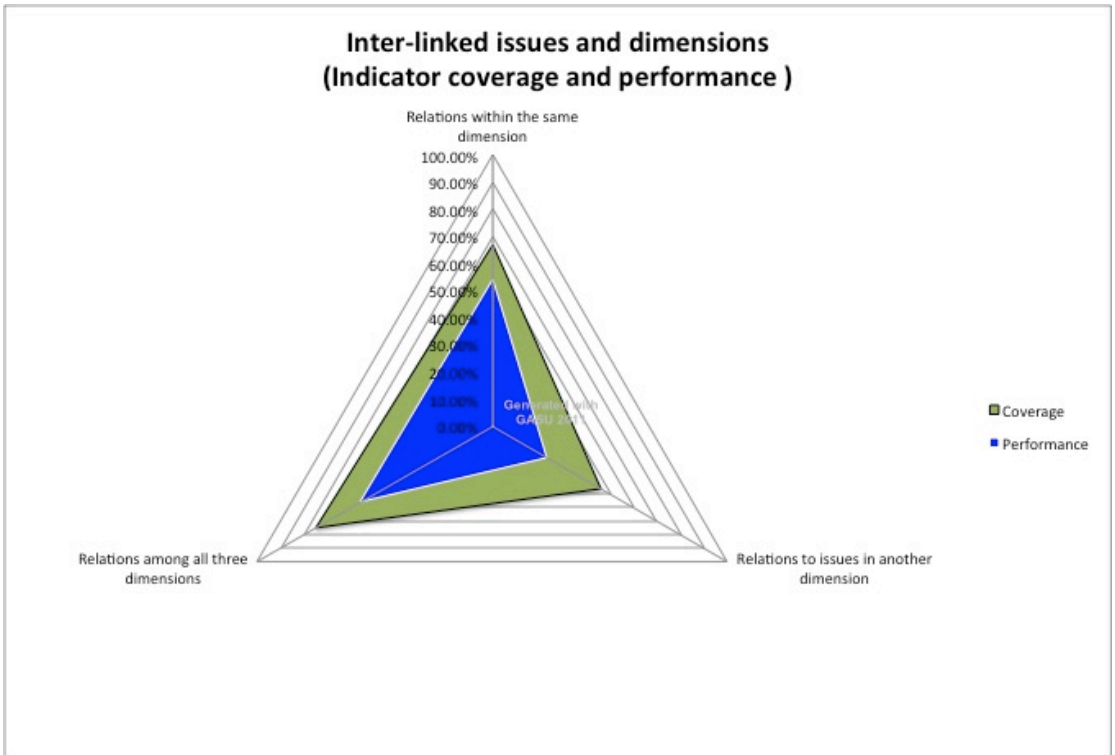

Figure 3 Inter-linking issues and dimensions: indicators coverage and performance

7. Discussion

This SR exercise was aimed at developing the first draft of the University of Leeds sustainability report. This was intended at providing an indication of what issues were being covered and to what extent. It was an "inside-out" approach, allowing the university to be proactive, and framed by a "managerial orientation", by focusing on managers' decisions (as posited by Burritt & Schaltegger, 2010). It was also based on a 'managerial measurement and control' approach (see Kanter, 1999). These pragmatic decisions allowed the report to be prepared in relatively little time;

however, they did not take into consideration stakeholders and their perceptions, which can lead to resistance from different groups (as posited by R. Lozano, early view). The quasi-quantitative approach based on Daub's (2007) approach and Lozano's GASU (2006b) criteria allowed to obtain the coverage and the performance of the indicators, aspects, categories, and dimensions for the report.

The indicators for the Profile section were easy to obtain, and they had a relatively good performance. The University Strategy statement mentions sustainability; however, it is unclear how it is addresses the university system (curricula, research, operations, outreach, and assessment and reporting), or the Economic, Environmental, Social, and Educational dimensions, together with the Inter-linking issues and dimensions. There seemed to be a need for improved co-ordination between the operational elements (*e.g.* Environmental policy, Sustainable purchasing policy, Fair Trade policy, Environmental co-ordinators, Environmental Management Systems (EMS), Energy Management, and Transport) and the Educational Dimension (more specifically, links to curriculum and research).

In general, Economic Dimension information was found in the Annual Report and Accounts(see University of Leeds, 2010), which resulted in the good performance of the Economic Performance category. The Market presence category indicators could be improved if the economic activities involving local suppliers or hiring people from the local community were considered, or made more explicit. The University could look into collecting and making the information for the indicators for the Indirect economic impacts more explicit.

There was considerable information for the Environmental Dimension, where the information was available through the Sustainable Development Team in the Environmental Management Office. The information for the Transport category was excellent, due to a transport survey. The data for the Biodiversity category performance could be better if the draft plans were implemented. Only direct energy (scope 1 and 2) is being considered, where the information was generally good, but it should be updated. In the Water category, the quantity of water used, discharged, and recycled should be calculated and specified. For Emissions, effluents, and waste, the Carbon Management Plan provides good information; however, it was still in the process of being executed. There was no information about emissions and effluents other than carbon, *e.g.* ozone depleting substances, NO_x, and SO_x. There was no information currently available for the Materials category, or for the total environmental protection expenditures and investment (in the Overall category), these data should be compiled.

Information for the Social Dimension was quite variable within its categories; for some categories it was easy to obtain (Labour Practices and Decent Work category, for example), but not so easy for others. It should also be noted that there was no central co-ordination or management strategy for collecting/collating information in the Social Dimension. The Human Rights and Society categories tend to be low scoring because the issues are not made explicit; this should not be a problem for a Western European University. The Product responsibility category was analysed from the perspective that a University has responsibility for the quality of service to its students. For this category there was *some* information (*e.g.* for Customer health and

safety and for customer satisfaction); however, more explicit data on how incidents are dealt with could improve the category's performance.

Curricula assessment, using the STAUNCH® tool, provided detailed information about SD incorporation into the curricula for two faculties (Business and Environment). Had the assessment been done for the entire University, the performance outcomes would have been much better. The assessment had to be complemented by educating the educators and by monitoring *in vivo* the SD incorporation into the curricula. Several centres and departments in the University have been doing Research about sustainability; however, this information is scattered. A project to assess and manage the information about SD research would help to improve the University's performance in this category. The SD Service category should go beyond presenting information about student associations focusing on the environment, where the University looks into providing more organised and bespoke support for these associations.

A fairly good percentage of the indicators coverage, and their performance in the Inter-linking issues and dimensions categories, showed that the University is already tackling some issues holistically. These efforts should be recognised and encouraged, so that there are better connections between the different dimensions, and improved interactions between operations, education, research, outreach, and assessment and reporting.

In general, there was congruence between 'coverage' and 'performance', with the latter usually lower, which concurs with Lozano (R. Lozano, in press). The lowest ratio between coverage and performance range was one quarter, with an average of three quarters. This indicates that performance in each of the categories could still be improved in the reports.

It was not possible to find information for some indicators, for reasons such as; the short time allocated for the project, information not being made explicit, difficulties finding or accessing data, compartmentalisation of information, and not having a common understanding of sustainability throughout the University.

Developing the report presented a number of challenges, such as extra resources to gather data (see R. Lozano, 2006b) to populate the 174 indicators in the updated GASU. Nonetheless, the experience allowed to provide a good coverage of the GRI guidelines, addressing (addressing Andersson, et al., 2005; Hussey, et al., 2001; Wilenius, 2005comment about reports falling short of the GRI guidelines) [and showing the synergies within, between, and among sustainability issues (as indicated by R. Lozano & Huisingh, 2011).

One of the purposes of sustainability reporting is to benchmark against other institutions (see Daub, 2007; GRI, 2011; R. Lozano, 2006a; Schaltegger & Wagner, 2006). Table 11 shows that the comparison of the present Report with the sustainability reports of 12 other universities that have published Sustainability Reports. It shows that the University of Leeds draft sustainability report has better performance values than the other universities in all the dimensions and their averages, except for the Educational Dimension, where UBC has the better performance than the University of Leeds.

Table 11 Performance from the GASU analysis of thirteen university sustainability reports. The maximum score attainable in each dimension is 100%.

Institution	Economic	Env.	Social	Educational	Inter-linking
Birmingham	7.95%	7.22%	3.54%	3.92%	NA*
BOKU	11.93%	28.89%	10.63%	3.92%	NA*
UBC	13.07%	32.78%	5.78%	22.29%	NA*
Florida	27.84%	5.00%	7.46%	0.00%	NA*
Gothenburg	11.93%	10.00%	12.69%	3.01%	NA*
Hong Kong	9.09%	28.89%	2.99%	0.00%	NA*
Leuphana	15.90%	10.00%	8.02%	6.63%	NA*
Michigan	25.00%	20.50%	11.75%	17.47%	NA*
PUCP	4.55%	6.67%	1.49%	0.00%	NA*
USC	15.91%	30.00%	22.57%	11.75%	NA*
Singapore	0.00%	17.78%	8.40%	13.25%	NA*
Turku	26.14%	26.67%	18.66%	8.73%	NA*
Leeds	**57.41%**	**40.67%**	**29.31%**	**18.29%**	**42.06%**
Averages	17.44%	20.39%	11.02%	8.40%	-

* NA: Not available, since these indicators are not explicitly considered in the reports
Source: Adapted from (R. Lozano, 2011)

The results from the SR exercise demonstrate the potential for the University to: overcome the compartmentalisation problem (as indicated by R. Lozano & Huisingh, 2011); provide a framework to reduce the lack of knowledge and understanding of sustainability (see Adams & McNicholas, 2007); and balance the details and core information (see R. Lozano, 2006b).

In future developments, the University of Leeds could engage with its stakeholders to further develop and validate the Report (as indicated by Beggington, et al., 2008; Burritt & Schaltegger, 2010; Gray, Kouhy, & Lavers, 1995; R. Lozano, 2006a). This necessitates planning internal change (see Henriques & Richardson, 2005; Kanter, 1999; R. Lozano, early view) and incorporating sustainability into the entire university system (see Calder & Clugston, 2003; Cortese, 2003; R. Lozano, 2006a; R. Lozano, et al., in press).

8. Conclusions

Universities are increasingly recognising their role in helping societies become more sustainable. Comprehensive Sustainability assessment and reporting can help to communicate the university's efforts more systematically and effectively to its stakeholders, to assess coverage and performance, and benchmark against other institutions. Although some universities have engaged in this process, the percentage of universities worldwide publishing sustainability reports is still small compared to company reports.

This paper presents the process of developing the first draft sustainability report for the University of Leeds, where the key challenges faced were the limited amount of time allocated for data collection, the compartmentalisation of the data, and the lack of a common understanding of the sustainability concept (even though it appears in different university policies).

The results for the Educational dimension could be greatly improved by performing an assessment of all the curricula throughout the university. The results from the Inter-linking issues and dimensions show that even where the information is compartmentalised, it is possible to find indicators that relate to others in other dimensions. Thus confirming that sustainability is holistic and integrative, *i.e.* it is as much about the issues as it is about there between indicators, categories, and dimensions, as well as effective functioning throughout the whole university system (curricula, research, operations, outreach, and assessment and reporting), where linking Operations, Education, and Research is crucial.

A gap analysis of the GASU results can also help to focus on coverage and performance weaknesses, thereby highlighting where remedial action is to be taken and better plan changes to pursue a more holistic SR. The coverage and performance of the indicators tend to be fairly congruent; however, the latter is usually lower, which indicates that the understanding and addressing the sustainability dimensions could be improved.

GASU can help universities on their road towards sustainability by making recommendations as to where the University should effect the changes needed to make its system more sustainability orientated, and thus be better aligned with the UN Decade of Education for Sustainable Development. GASU can also facilitate comparisons of the University's efforts and achievements towards sustainability in different years, as well as benchmarking against other universities.

The paths and approaches can help university leaders should be decided, depending on their context and priorities, which is the most suitable path, approach, and hierarchy flow for their institution's change efforts for sustainability. GASU can assist in this process to prepare a sustainability report providing a clear understanding of the issues, their interactions, and their strengths and weaknesses in the different dimensions across the whole sustainability spectrum. A sustainability report can also serve as the basis for a necessary common understanding of SD within the institution.

In the process of preparing the report is it important to have sufficient time, access for data collection, and to engage with stakeholders (such as support staff, managers, academics, and students). The exercise, once done, should be updated periodically, for example through an interactive web page where the information can be made available at any and all times. The university should make explicit which indicators from the guidelines do not apply in the University context. A SD champion should be appointed, who is in charge of compiling and generating the information about SD activities within the University, as well as helping to coordinate a sustainability information hub. This individual should have access to the required data, or at least have direct access to those who would facilitate it.

The inclusion of the Educational dimension should make the GRI more relevant to universities, whilst the inter-linking issues and dimensions category provides a more holistic and integrative perspective to the indicators.

The reporting exercise would be more beneficial if it is integrated to other sustainability efforts being done at the university. It can also help to trigger change by pointing out where the opportunities for improvement in indicator coverage and performance are.

This paper shows that, although it might look like a daunting task, sustainability reporting can be facilitated if there are individuals who understand the concept and complexity of sustainability, and they are supported by managers who are engaged in making their institutions more sustainability orientated. Such an exercise can then help to better embed sustainability into a university's system. The Educational dimension can help convince the developers of sustainability guidelines of the importance of the education sector, and that educational indicators are formally included in future guidelines.

From this research it is possible to state the following aphorism: Sustainability reporting is a necessary step for universities and their leaders to detect current efforts and plan future ones.

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