Student’s Teaching Module

Unit 6. Higher Education Institutions (HEI) and Sustainability
Authors – Unit 6

MATERIAL DEVELOPMENT

- BACELAR-NICOLAU, Paula, Universidade Aberta
- CAEIRO, Sandra, Universidade Aberta
- GALLI, Alessandro, Global Footprint Network
- MALANDRAKIS, George, Aristotle University of Thessaloniki
- MAPAR, Mahsa, Universidade Aberta
- MORENO PIRES, Sara, University of Aveiro
- NICOLAU, Mariana, University of Aveiro
- PAPADOPOULOU, Athanasia, Aristotle University of Thessaloniki
- PATRIZI, Nicoletta, University of Siena
- PULSELLI, Federico Maria, University of Siena
- THEODOSIOU, Nikolaos, Aristotle University of Thessaloniki
- ZACHOS, Dimitrios, Aristotle University of Thessaloniki

COORDINATION

Aristotle University of Thessaloniki (AUTH)

HOW TO CITE THIS MATERIAL

SESSION 6
Higher Education Institutions (HEIs) & SUSTAINABILITY

Sustainability of Universities

a. Slides

b. Homework 3 – Sustainability around the world – See Homework guidelines

This Homework is aimed at finding examples of virtuous sustainability projects around the world; a list of web-sites in which students can look for virtuous examples is provided.
Table of contents

• What sustainability means for HEIs (including universities)
• Aspects of HEIs Sustainability
• Factors and indicators related to Universities’ Sustainability
• Scales & indicators used to assess Universities’ sustainability
• Examples of used scales (SAQ, STARS, STAUNCH, THE World University Ranking)
WHAT SUSTAINABILITY MEANS FOR HIGHER EDUCATION INSTITUTIONS
Introduction

• Since 1972, higher education Institutions (HEIs) begin to implement environmental education and education for sustainable development (ESD) into their academic systems.

• HEIs embedded ESD into their:
  • Education research
  • Campus operations
  • Community engagement
  • Assessment and reporting

(Lozano et al., 2015).
Since 1972 – UN Conference ESD is a Priority

- 1992 Rio + 20 Initiative for Sustainability and Higher Education
- 2005 - 2014 UN Decade of Education for Sustainable Development (DESD)
- 2015 - 2030 Sustainable Development Goals (4th Goal)
Sustainability in Universities

Sustainability in HEIs can be divided into three dimensions (Aleixo A.M., Leal S. & Azeiteiro U.M. 2018)
• Economic
• Social
• Environmental (Footprints – Ecological, Carbon, Water etc.)

HEIs contribute to sustainability in two ways:
• Create knowledge and transfer it to the society and
• Prepare accordingly students for the requirements of society

The stakeholders in HEIs related to sustainability in HEIs
• Leaders (Rectors, Deans, Vice Deans, Heads, Boards, etc.)
• Faculty
• Administrative staff
• Students
• External stakeholders
ASPECTS OF UNIVERSITY SUSTAINABILITY
Aspects / domains of sustainability

1. Operation (sustainable policies and practices in both production and consumption (e.g. GHG emissions reduction strategies, energy conservation practices to waste reduction and management)

2. Curricula (how universities can properly incorporate the concepts of sustainability into all academic disciplines)

3. Administration (developing plans to move toward sustainability and engaging stakeholders in governance, having human resources management programs)

4. Engagement / Assessment and Reporting (provide their students with sustainability learning experiences outside the formal curriculum and connect with communities)

5. Outlook / external communication / outreach (the ability to attract undergraduates, postgraduates and faculty from anywhere around the world)

6. Research (conducting research on sustainability topics)
Whole-institution Approach
Multi-stakeholder interactions

EDS Practices

Holistic integrated

I. Facilities/campus operations
II. Education and Curricula
III. Organization management
IV. Assessment and Reporting
V. External Community/Outreach
VI. Research

Adapted from Lozano et al., 2015a and UNESCO, 2012
FACTORS AND INDICATORS
I. Facilities / campus operations

- **Air & climate** *(measuring and reducing the greenhouse gas and air pollutant emissions)*
- **Buildings** *(sustainability performance of the buildings)*
- **Energy** *(reducing their energy consumption and switching to cleaner and renewable sources)*
- **Food & dining** *(supporting a sustainable food system)*
- **Grounds** *(welcoming campus grounds can be planned, planted, and maintained)*
- **Transportation** *(sustainable transportation systems)*
- **Waste** *(moving toward zero waste by reducing, reusing, recycling, and composting)*
- **Water** *(conserving water, making efforts to protect water quality)*
II. Education and Curricula

- **Academic courses** (*offering courses that address topics related to sustainability*)
- **Graduate program** (*formal, graduate academic degree programs focused on sustainability*)
- **Sustainability literacy assessment** (*assessing the sustainability literacy of their students*)
- **Campus as a living laboratory** (*utilize their infrastructure and operations as living environments for multidisciplinary learning and applied research*)
II. Education and Curricula

1. Sustainability contentes inside disciplines (e.g. Multiple-Perspective Approach)

2. Module/Course in traditional programs (e.g. mathematics, English)

3. Development of a program (formal or non formal)

4. Renovation of a complete curricula (undergraduate or post-graduate)

Types and approaches of ESD in the curricula (adapted from Lozano et al., 2015b)

Teachers training
Pedagogical tools
Competences
II. Education and Curricula

A Multiple-Perspective Approach (UNESCO, 2012).

- Scientific perspective of SD Concept
- Historical Perspective of World Changes
- Geographical perspective of events, problems
- Human rights perspectives
- Gender Equality Perspective
- Perspective of individual values, cultures and nations
- Perspective of cultural diversity
- Sustainability Perspective - Environmental, social and economic balance and focused on the future

UNESCO multimedia education programme (educational resources) - http://www.unesco.org/education/tlsf/....
To apply and change curricula, you need:

- Reorient and train teachers: link theory to practice, **interdisciplinary, transdisciplinarity**, informal learning, transformative learning.

- Use of holistic, collaborative learning methods, approaches and **tools** (*problem-based learning, case study, workshops, Triple Bottom Line, LCA, games, e-learning, collaborative learning, etc.*)

- Reformulation of **competences** and student learning outcomes within ESD
II. Education and Curricula

In the contents link theory to practice for students competences acquisition (Amador et al., 2015):

<table>
<thead>
<tr>
<th>CATEGORIES / LEVELS</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principles (Theoretical level)</td>
<td>Philosophies, ideologies and principles underlying statements and decisions, expressed explicitly or easily inferred.</td>
</tr>
<tr>
<td>Pre-action (Pre-action level 0)</td>
<td>Undertake analysis and develop skills in a progressive process. Intermediated category associated to the acquisition of knowledge, assuming often the form of causal scientific explanations.</td>
</tr>
<tr>
<td>Pre-action (Pre-action level 1)</td>
<td>Prepare for action, outlining interventions, analyzing consequences. Shows a concern in understanding and clarifying communication and dialogue in social contexts, based in the view that a solid theoretical argumentation could inform and guide practical judgment.</td>
</tr>
<tr>
<td>Praxis (Action level)</td>
<td>Development of student attitudes that permits them to fight for what they consider right, good and just.</td>
</tr>
</tbody>
</table>
II. Education and Curricula

Key-competences for ESD (Disterheft et al., 2013, UNESCO, 2017, Lozano et al., 2017):

▪ reflection and holistic thinking;
▪ interdisciplinary work;
▪ cosmopolitan perception; understanding and cultural cooperation;
▪ participation;
▪ planning and implementation;
▪ Capacity for empathy, compassion and solidarity; trust
▪ Motivation and to motivate others

Holistic approach for change and transition to SD
Organizational Change Management in the **Management systems** (through values, visions, philosophies, policies, employee involvement):

✔ Institutional model (i.e. Commitment of organizations): policies, vision, mission, office DS, strategies and signature of statements (e.g. Copernicus Chapter, Declarations of Barcelona and Tailloires Rio + 20);

✔ Involvement of students, teachers, staff / workers in participation practices (e.g. Green offices);

✔ Change in management practices, top down or bottom up

✔ Internal changes and innovation, changing mental models

Several techniques to *Empower* de community (Forums, Workshops, Constellation, Dragon Dreaming, Meditative walks, etc. Disterhelft et al., 2016)
3. ADMINISTRATION

- **Coordination & Planning** *(institutionalising sustainability by dedicating resources to sustainability coordination)*

- **Diversity and Affordability** *(building a sustainable society, diverse groups will need to be able to come together and work collaboratively to address sustainability challenges)*

- **Wellbeing & work** *(significant opportunities for staff growth to enhance understanding, teaching and research in sustainability)*
4. ENGAGEMENT

- **Campus engagement** *(provide their students with sustainability learning experiences outside the formal curriculum (co-curricular activities))*

- **Public engagement** *(support sustainable communities in the surrounding area by developing relationships)*
5. OUTREACH / OUTLOOK

- International collaboration *(citations with international co-authors)*
- International students *(attract undergraduates, postgraduates and faculty from all over the planet)*
Examples of Outreach applications:

- **Courses / training in partnership** with Universities
- **Research** among different groups / exchanges of knowledge
- Partnerships with **outside communities** (e.g. public and private companies, NGOs, central and local government, other HEIs and other levels of education)
- **Interdisciplinary SD networks** (e.g. UN Regional Center of Expertise (RCE), UNEP, IUSDRP)
- SD events **open to the community**
- **Participatory communication** initiatives and involvement with all stakeholders (students, teachers and non-teachers, employers).
6. RESEARCH

▪ **Reputation** *(reputation for research excellence among its peers)*

▪ **Open access** *(repository programs and policies in place to facilitate open access to new peer-reviewed research and scholarship)*

▪ **Productivity** *(integrated into students' research in topics related to sustainability)*
Practices within ESD: Research

- **Pedagogy**, learning (transformative, innovative ...), skills, teaching methods, cross rubrics
- **Holistic thinking systems**, transdisciplinarity;
- Overcoming **barriers** from leaders / managers to students and all staff; change attitudes (and evaluate them throughout the community)
- **Collaboration** with external communities
- Involvement and participation of **key actors**
- **Case studies** (cases of successful practices and ESD)
- **Action research** (e.g. in real learning environments)
- **New knowledge and theories**
- Transfer of knowledge and collaboration strategies between **academia and practice**.

Lozano et al., 2015a, 2017
UNIVERSITIES’ SUSTAINABILITY ASSESSMENT TOOLS

Classified (1 – 3):

1. Understanding
2. Comparability
3. Level of easiness access to data
4. Measuring progress towards organizational change/transition
5. Broadness/integration of sustainability dimensions
6. Usefulness for decision-making and communication
7. Level of participation
8. Level of access to be used
EUSTEPs contribution – The universities’ EF calculator

• Assessment of Universities’ Environmental Aspect (green aspect) – NOT the economic or societal

• Current tools assessing Universities’ sustainability use different methodologies which cannot directly be compared with other studies

• EUSTEPs calculator will provide results DIRECTLY comparable with other universities worldwide, as long as between Universities and other bodies
<p>| AISHE - Auditing Instrument for Sustainability in Higher Education | Based on Deming cycle, Narrative/indicators/whole university target; Applied in many universities, worldwide; several upgrades versions, 30 indicators; 5 dimensions (Operations, Education, Research, Society, Identity), less focus on environment dimension (only one indicator); not available on-line; Holanda |
| AMAS Adaptable Model for Assessing, Sustainability in Higher Education | Ferramenta baseada em 3 domínios (comportamento institucional, liderança e sustentabilidade avançada); Com 4 níveis de hierarquia de aplicação que culminam no uso de indicadores normalizados (baseados em outras ferramentas já existentes), com diferentes pesos e participação de atores-chaves, permitindo ser adaptada por cada instituição, mas comparáveis entre si no mesmo país. Com um sistema de consulta de especialistas. Ferramenta não disponível on-line, Chile |
| ASSE Assessment System for Sustainable Campus | Ferramenta baseada num questionário sendo os resultados comunicados sobre a forma de gráficos; 26 indicadores; 4 dimensões - Gestão; Educação e Investigação; Ambiente; Comunidade Local; Baseada nas ferramentas STARS, Uni-metrics, GM e BIQ - AUA. Sistema de rating com 4 níveis, permitindo obter uma certificação: platina, ouro, prata e bronze; Permite informar sobre os pontos fortes e fracos de implementação da sustentabilidade nas IES e ajuda-a a decidir futuras estratégias; inclui especificidades do país onde foi desenvolvida (e.g. desastres naturais) Desenvolvida pela Hokkaido University em 2013, no âmbito da CAS-NET JAPAN (Campus Sustainability Network no Japão), mas utilizada noutras universidades no Japão. Japão Ferramenta disponível on-line, <a href="https://www.osc.hokkaido.ac.jp/en/action/ascc">https://www.osc.hokkaido.ac.jp/en/action/ascc</a> |
| AUSP – Evaluación de las políticas universitarias de sostenibilidad como facilitadoras para el desarrollo de los campus de excelencia internacional CADEP (2010) CRUE &amp; CSC (2011, 2018) Gómez et al. (2015) | Baseado em 4 áreas: organização, docência, investigação e gestão ambiental; menor ênfase na componente social 176 indicadores; Desenvolvido especificamente para as IES em Espanha e testado em diversas Universidade Espanholas; Dados recolhidos por questionário e entrevistas (auto-avaliação) e reviso por uma organização externa; desenvolvido com o objetivo de melhorar o desempenho e as políticas en termos de responsabilidade social, ambiente (incluindo compras públicas), e implementação dos Objetivos do Desenvolvimento Sustentável. Representação dos indicadores por gráficos. Desenvolvido pelo Comisión Sectorial De La Crue Para La Calidad Ambiental. El Desarrollo Sostenible Y La Prevención De Riesgos da CRUE - Conference of Rectores of Spanish Universities Questionário disponível on-line; com diversas atualizações (última em 2018), Spain |</p>
<table>
<thead>
<tr>
<th>Sustainability Assessment Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BIQ - AUA –</strong> Alternative University Appraisal</td>
</tr>
<tr>
<td>Criado pela rede ProSPER (Promotion of Sustainability in Postgraduate Education and Research Network - <a href="http://prospener.iias.unu.edu/projects/upcoming-projects/alternative-university-assessment-aua">http://prospener.iias.unu.edu/projects/upcoming-projects/alternative-university-assessment-aua</a>) uma aliança académica entre a Asia e o Pacífico. É composta por três componentes baseadas na avaliação de acordo com a Década nas Nações Unidas para o Desenvolvimento Sustentável: questões de auto-avaliação, perguntas para cálculo de indicadores para benchmark (BIQ) e Diálogo. A BIQ tem especial foco na governança, educação, Investigação e comunicação e dividida em 4 categorias, 15 sub categorias (com igual peso) e inclui 30 indicadores e 60 questões. Não inclui indicadores de gestão ambiental e responsabilidade social. A classificação é 0-100 permitindo assim a comparação. Ferramenta não disponível on-line. O diálogo é a componente que permite as instituições partilhar as suas preocupações, melhores práticas e aprendizagem sobre EDS. Asia e Pacífico (28 universidades). Cuba, China, Filipinas, Japão, Australia, Indonesia, Coreia, México, Malásia, Tailândia, Taiwan, Vietnã, Canadá, EUA, Argélia, Brasil, Chile, Coreia, Filipinas, Japão, Hungria, Itália, México, Malásia, Tailândia, Turquia, Vietnã, Canadá, EUA, Argélia, Brasil, Chile, Coreia, Filipinas, Japão, Hungria, Itália, México, Malásia, Tailândia, Turquia, Vietnã, Canadá, EUA, Argélia, Brasil, Chile, Coreia, Filipinas, Japão, Hungria, Itália, México, Malásia, Tailândia, Turquia, Vietnã</td>
</tr>
<tr>
<td><strong>CITE AMB – Red de Ciencia, Tecnologia, Innovacion y Educacion Ambiental en Iberoamerica</strong></td>
</tr>
<tr>
<td>CITE – AMB et al., (2014)</td>
</tr>
<tr>
<td>Baseado num questionário sim com 27 perguntas (com perguntas Sim e Não), inclui domínios da Gestão, Investigação, Educação, Comunidade; sistema fornece um conjunto de indicadores de componentes da infraestrutura e componente social; fenda, enta não disponível on-line (é disponibilizado em um link no relatório para google docs, mas já não disponível, desenvolvido em 2014 mas sem atualizações disponíveis.). Colombia</td>
</tr>
<tr>
<td><strong>DUK – German Commission for UNESCO</strong></td>
</tr>
<tr>
<td>Ferramenta desenvolvida pela Comissão Alemã para a UNESCO em 2011 para o contexto Alemão; baseado em indicadores nos domínios da Operacionalização, Investigação e comunidade. Com forte enfoque na parte institucional, funcionando a ferramenta como moderadora na abordagem Whose Institution. Contém 10 campos de ação e cada campo é lido por um estágio de implementação aos quais as IESs podem designar a si mesmas. Não disponível on-line; apenas disponível um relatório sobre a ferramenta em Alemão. Germany</td>
</tr>
<tr>
<td><strong>ESDGC - Education for Sustainable Development and Global Citizenship</strong></td>
</tr>
<tr>
<td>Baseado num sistema de ranking em 5 áreas: Comprometimento e liderança, Ensino e Aprendizagem, Gestão Institucional, Parcerias, Investigação e monitorização) e na categorização de 4 níveis, baseado num modelo de maturidade e capacitação usualmente aplicado às empresas e sector industrial; baseado no final em um sistema de semáforo; específico para a zona do país de gales, Reino Unido e delineado pelo Governo do País de Gales para permitir uma avaliação do estado de implementação de EDS nas Universidades. Ferramenta Não disponível on-line. País de Gales, Reino Unido</td>
</tr>
</tbody>
</table>
## Sustainability Assessment Tools

<table>
<thead>
<tr>
<th>Tool</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GASU Graphical Assessment of Sustainability in Universities tool</td>
<td>Based on GRI reporting: Applied in many universities, 8 dimensions (Direct Economic impact, Environmental, Labour Practices &amp; decent work, human rights, society, product responsibility, curriculum, research), up to 126 indicators; represented in a graphical way; not available on-line for free, UK/international</td>
</tr>
<tr>
<td>GC - Good Company’s Sustainable Pathways Toolkit</td>
<td>Baseada em 20 indicadores de desempenho chave e mais 10 suplementares. Desenvolvida com o objetivo de apoio à decisão/gestão e benchmarking, mas não abrange todas as categorias da implementação da sustentabilidade nas IES, nomeadamente a investigação e envolvimento de partes interessadas, mais focada nas operações no campus. Desenvolvida por uma empresa de consultoria nos EUA (Good company) e sem apoio a especialistas/atores-chave. Ferramenta não disponível on-line, nem o relatório e sem atualização. EUA/internacional</td>
</tr>
<tr>
<td>GM - Green Metrics university ranking</td>
<td>Used worldwide in several universities, 6 domains (setting and infrastructure, Energy and Climate Change, Waste, Water, transportation, Education) 33 indicators, two focus on environment, no community engagement or other social components; online survey, point system of awarding allowing benchmarking, available on line, Indonesia</td>
</tr>
<tr>
<td>GMID – Graz Model for Integrative Development</td>
<td>narrative; 5 domains (Leadership, Social networks, Participation, Education &amp; learning, Research); not specific for HEI, applied to RCE “a Network of existing formal, non-formal and informal education Organizations, mobilized to deliver education for sustainable development (ESD) to local and regional community; aiming transformative potential in RCE in three levels; not available on line (paper) Austria</td>
</tr>
<tr>
<td>Sustainability Assessment Tools</td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>GP - Green Plan and the Label</strong></td>
<td></td>
</tr>
<tr>
<td><strong>DD&amp;RS ou Plan Vert</strong></td>
<td></td>
</tr>
<tr>
<td>5 domains (Strategy governance, teaching and training, research, environmental management, social policy and regional presence), aims to assist drawing sustainability plans/policies; 44 indicators; can be audit by the internal and external stakeholders certifying through a label, available on line (in French)</td>
<td></td>
</tr>
<tr>
<td><strong>HE 21 - Higher Education 21’s sustainability Indicators or HEPS Higher Education Partnership for Sustainability</strong></td>
<td></td>
</tr>
<tr>
<td>Buckland et al., 2001 Sribreg et al., 2012 Yarime and Tanaka (2012)</td>
<td></td>
</tr>
<tr>
<td>Ferramenta desenvolvida para 18 Universidades no Reino Unido que formaram uma parceria com o objetivo de apoia as Universidades Inglesas e para a sua monitorização face à implementação da sustentabilidade. Baseado em indicadores, 12 indicadores de topo, 8 indicadores de gestão estratégica; com enfoque principalmente em parâmetros de alteração da gestão organizacional. Menor enfase em indicadores sociais e não engloba de forma equilibrada todas as dimensões da ES nas IES (mais enfase na governança). Dificil a comparação entre instituições. Última versão e atividade da rede em 2003. Ferramenta não disponivel on-line. <strong>Reino Unido</strong></td>
<td></td>
</tr>
<tr>
<td><strong>PSIR - Penn State Indicator Report</strong></td>
<td></td>
</tr>
<tr>
<td>Penn State green Destiny Council, 2000 Yarime and Tanaka (2012)</td>
<td></td>
</tr>
<tr>
<td>Desenvolvido para ser aplicado nas Universidades dos EUA (no Estado da Pensilvânia) e ser reportado como a sustentabilidade está a ser implementada para o publico em geral; 33 indicadores, abrangendo as dimensões ambientais do campus; transportes, apoio à decisão, investigação e comunidade; resultados de cada indicador reportados em 4 níveis de implementação e com propostas de melhoria. Menor enfase em indicadores sociais e sem componente de educação e curricula. Não disponivel on-line, apenas em relatorio disponivel on-line. Última versão disponivel em 2000.</td>
<td></td>
</tr>
<tr>
<td><strong>P&amp;P People &amp; Planet</strong></td>
<td></td>
</tr>
<tr>
<td>People and Planet (2013)</td>
<td></td>
</tr>
<tr>
<td>University League, tested in several Universities in UK, no dimensions, 13 indicators, more focus on environmental operations, less in community, allow annual ranking, data collection based on Universities websites and Higher Education Statistics Agency (HESA); results in graphical way, available on line. <strong>UK</strong></td>
<td></td>
</tr>
</tbody>
</table>
# Sustainability Assessment Tools

<table>
<thead>
<tr>
<th>Tool</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SAQ</strong> - Sustainability Assessment Questionnaire <strong>ULSF (2009)</strong></td>
<td>Indicators, based on a questionnaire survey to several internal stakeholders. 8 dimensions (curriculum, research and scholarship, operations, faculty and staff, outreach and services, students opportunities, administrative, mission and planning); narrative/indicators; 35 indicators; more question on operations; questionnaire available online; <em>Global, Association of University Leaders for a Sustainable Future, Secretariat for Taillores Declaration</em></td>
</tr>
<tr>
<td><strong>SRC</strong> - Sustainability Report Card <strong>Sustainable Endowments Institute, (2011)</strong></td>
<td>Narrative/indicators (52); 5 dimensions (campus operations, dining services, endowment investment practice, students actives; based on a questionnaire survey; focus on energy saving and not in education; final rating from A to D; suspended in 2012; USA</td>
</tr>
<tr>
<td><strong>STARS</strong> - Sustainability Tracking, Assessment &amp; Rating System <strong>ASHE, (2012)</strong></td>
<td>Developed for USA, Canada Universities; Narrative/indicators (74); 5 dimensions (Academic, Engagement, Operations, Planning and Administration, Innovation); on-line reporting tool with 5 levels of final rating; one of the most popular tools; USA</td>
</tr>
<tr>
<td><strong>SUM</strong> - Sustainable University Model <strong>Velazquez, (2006)</strong></td>
<td>Tested in several worldwide Universities, narrative/indicators; based on and Deming cycle; 4 phases: developing the vision, the mission, sustainable committee, and at last auditing the sustainability strategies (education, research, outreach and partnership, sustainability on campus), 23 indicators, not available on-line (paper); Mexico</td>
</tr>
<tr>
<td><strong>SLS - Sustainability Leadership Scorecard</strong></td>
<td>Based on the Green Scorecard and linked with standards and SDG; planning and self-assessment tool specifically for colleges and universities to improve social responsibility and environmental performance through a whole institution approach; 4 domains (leadership &amp; Governance, Learning, Teaching &amp; Research, Estates &amp; Operations); performance indicators, scores 0-4; no weights results in dashboard; available on-line for free in UK, Ireland</td>
</tr>
<tr>
<td><strong>EAUC (2016)</strong></td>
<td>Focus on areas/programs or whole institution; indicators, few focus on environment; 8 dimensions (Environmental support, Funding Stability, partnership, organization capacity, program, Evaluation, Program Adaptation, Communications, strategic planning) 40 question self-assessment; The assessment can be taken as an individual or group; allows to report, revise and develop a action plan; tool available on line; USA.</td>
</tr>
<tr>
<td><strong>SustainTool – Program Sustainable Assessment Tool</strong></td>
<td>Baseado na avaliação da implementação dos Objetivos para o Desenvolvimento Sustentável (ODS) nas IES. Baseado obrigatoriamente nos 11 ODS: SDG17 – Partnerships for the Goals as mandatory field plus SDGs, 3 – Good Health and Well-being, 4 - Quality Education, 5 - Gender Equality, 8 - Decent Work and Economic Growth, 9 - Industry, Innovation and Infrastructure, 10 - Reduced Inequalities, 11 - Sustainable Cities and Communities, 12 - Responsible Consumption and Production, 13 - Climate Action, 16 - Peace, Justice and Strong Institutions. Each SDG has a small number of metrics associated with it. É dado igual peso a cada ODS. Primaria versao disponivel para 7 ODS Ferramenta disponivel on-line. Desenvolvido pelo Times. Internacional</td>
</tr>
<tr>
<td><strong>THE - Times Higher Education Impact University Ranking</strong></td>
<td>3 dimensions (research, educational, Environment), 15 indicators, weighted based on a participatory process and Analytical Hierarchical Process (AHP), allows raking based on world universities rankings, sustainability simplified only in 5 indicators, not holistic approach, results in graphical way, tested in top universities, not available on line (paper) International</td>
</tr>
</tbody>
</table>

| **TUR – Three Dimensional University Ranking** | **Lukman et al., (2010)** |
## Sustainability Assessment Tools

<table>
<thead>
<tr>
<th>Tool</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UEMS – University Environmental Management System</strong></td>
<td>Based on EMAS/ISO14001 with a Social responsibility component; indicators, 3 dimensions (University EMS, public participation and Social Responsibility, Sustainability teaching and research); 27 indicators; more focus on environment and campus, not available on-line (paper). <em>Asia-Pacific Region</em></td>
</tr>
<tr>
<td><strong>USAT – Unit-Based Sustainability Assessment tool; PSPE, (2012)</strong></td>
<td>Based on SAQ, AISHE, GASU, 4 domains (teaching, research and community services, operation and management, students involvement, policy and written statement), 75 indicators, indicators score 1 to 4 can be used at department, faculty or HE unit, source book available on line; <em>Africa, UNEP</em></td>
</tr>
</tbody>
</table>

The Sustainability Assessment Questionnaire (SAQ), which has been developed by University Leaders for a Sustainable Future (ULSF) in 2001, is a quality questionnaire designed for colleges and universities in order to help calculate the degree to which a college or university is sustainable in seven dimensions of higher education (Beringer A., Wright T. & Malone L., 2008).

This questionnaire was developed as an assessment tool and a teaching tool. In total, the SAQ consists of 24 quantitative and qualitative research elements corresponding to seven areas of SHE (Beringer et al., 2008).
Example of Curriculum factor

Sustainability Assessment Questionnaire - 4

Date: __________________________

Name: __________________________ Position: __________________________

Institution: __________________________

CURRICULUM

1. Indicate the extent to which your institution offers courses which address topics related to sustainability. (Such topics could include globalization and sustainable development; environmental policy and management; environmental philosophy; nature writing; land ethics and sustainable agriculture; urban ecology and social justice; population, women and development; sustainable production and consumption; and many others.)

[Please circle the appropriate number on this and the following questions]:

0 (don’t know)  1 (none)  2 (a little)  3 (quite a bit)  4 (a great deal)

Please list any courses you are aware of in which such topics are taught: __________________________

___________________________________________________________________________

___________________________________________________________________________

___________________________________________________________________________

___________________________________________________________________________

2. What courses do you regard as essential that are not being taught?

___________________________________________________________________________

___________________________________________________________________________

___________________________________________________________________________

___________________________________________________________________________
STARS

STARS started gathering data for reports in 2009.

The reports translate into tens of thousands of data points which provide valuable information on the size and scope of campus sustainability activities.

AASHE publishes STARS reports (annual and quarterly) highlighting interesting findings, trends, and best practices from STARS data.
### Example of Curriculum Data Tracking

**STARS 2.1 | Academics | Curriculum Data Tracking Sheet**

For complete credit criteria, please see the STARS 2.1 Technical Manual.

<table>
<thead>
<tr>
<th>Credit</th>
<th>Reporting Field</th>
<th>Field Type</th>
<th>Response</th>
<th>Status</th>
<th>Internal Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>A brief summary of the institution’s notable activities and accomplishments relevant to this subcategory</td>
<td>Optional</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Total number of undergraduate courses offered by the institution</td>
<td>Required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Number of undergraduate sustainability courses offered (i.e., courses for which the primary and explicit focus is on sustainability and/or understanding or solving one or more major sustainability challenge)</td>
<td>Required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Number of undergraduate courses offered that include sustainability (i.e., courses that are focused on a topic other than sustainability, but incorporate a unit or module on sustainability or a sustainability challenge, include one or more sustainability-focused activities, or integrate sustainability issues throughout the course)</td>
<td>Required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Total number of graduate courses offered by the institution</td>
<td>Required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Number of graduate sustainability courses offered</td>
<td>Required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Number of graduate courses offered that include sustainability</td>
<td>Required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Total number of academic departments (or the equivalent) that offer courses (at any level)</td>
<td>Required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Number of academic departments (or the equivalent) that offer at least one sustainability course and/or course that includes sustainability (at any level)</td>
<td>Required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>A copy of the institution’s inventory of its sustainability course offerings and descriptions (text or upload)</td>
<td>Required</td>
<td>Upload file in the online Reporting Tool</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Do the figures reported above cover one, two, or three academic years?</td>
<td>Required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>A brief description of the methodology used to determine the total number of courses offered and to identify sustainability course offerings, including the definitions used and the process for reviewing and/or validating the course inventory</td>
<td>Required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>How were courses with multiple offerings or sections counted for the figures reported above? (Each offering or section of a course was counted as an individual course, each course was counted as a single course regardless of the number of offerings or sections; Not applicable - no courses with multiple offerings or sections were included; or Other - please describe below)</td>
<td>Required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>A brief description of how courses with multiple offerings or sections were counted (if different from the options outlined above)</td>
<td>Required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Are internships included in the course inventory?</td>
<td>Required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Are practicums included in the course inventory?</td>
<td>Required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Are independent study courses included in the course inventory?</td>
<td>Required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Are special topics courses included in the course inventory?</td>
<td>Required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Are thesis/dissertation courses included in the course inventory?</td>
<td>Required</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The role of Universities in the implementation of the SDGs
RESEARCH

Objective
The university is to promote research that aims to identify, increase knowledge of, and solve global societal challenges.

Results
In 2019, researchers at the University of Gothenburg published 622 scientific articles concerning issues within sustainable development; an increase of 10 per cent compared to 2018. In total, 4,931 scientific articles in relevant categories were published.

Mapping of the Global Goals for Sustainable Development
In the spring, a workshop with the theme “The School of Business, Economics and Law and the Global Goals” was held. The workshop focussed on research and education, and the participants discussed how the Global Goals for Sustainable Development (SDGs) are linked to the operations, and how they can promote new, cross-institution collaborations. The work resulted in a plan with tasks for different parts of the School of Business, Economics and Law. The School of Business, Economics and Law has also mapped research aimed at the Global Goals through work with self-evaluation that has been discussed in management forums on institution and faculty levels. The process has led to increased dialogue about sustainability issues between representatives of different departments. The Faculty of Science has also reported how the faculty’s research and education relates to each and every one of the 17 Global Goals.

Good examples
A number of events and seminars have been held, enabled by strategic initiative UGOT Challenges, and scientific articles have been published. The initiative was evaluated in 2019, and was approved for continuation.

The Centre for Future Chemical Risk Assessment and Management Strategies, FRAM, is one of six UGOT Challenges centres. Researchers from FRAM participated as experts in an investigation of legislation concerning chemicals. Focus was on the issue of whether legislation concerning chemicals could also cover mixtures and groups of chemicals, which resulted in eleven recommendations to the Swedish government.

The University of Gothenburg and Chalmers have decided to establish a joint platform for collaboration, Global Sustainable Futures, to contribute to sustainable development on a global scale. Work is done in research, education and utilisation in collaboration with stakeholders in low and middle income countries in Africa, Asia and Latin America.

EDUCATION

Objective
The university is to increase and assure the quality of integration of sustainable development into education.

Results
Results from 2019 show that 14 per cent of the courses were sustainability labelled. Out of the 4,302 courses that the University of Gothenburg provided in 2019, 581 were sustainability labelled, and the trend has been positive for the past few years. Of the 211 programmes that were provided in 2019, 41 were sustainability labelled, a share of 19 per cent and an increase with 6 programmes.

Sustainability labelling of courses and programmes
The University of Gothenburg measures the share of sustainability labelled courses and programmes every year according to an in-house system. The University of Gothenburg has two levels of sustainability labelling – a course or a programme can be sustainability related or sustainability focused – depending on how important the sustainability theme is in the course or programme respectively.

All faculties are involved in integrating sustainability into education. Changing course and programme overviews has meant that sustainability has obtained a clearer focus, and there are plans to get more courses sustainability labelled.

During the past year, a working group consisting of representatives from all eight faculties, the university library, the PIL unit, as well as the student union has worked with revising the current sustainability labelling system. The primary purpose has been to incorporate the Global Goals for Sustainable Development.

Award to student theses on sustainability
Gothenburg University Sustainability Thesis Award (GUSTA), was established to incentivise students to critically analyse and engage with sustainability issues, and seek new knowledge for a sustainable world. The first award ceremony took place in 2019 and two students were selected for their work in sustainable development. One thesis focuses on how economic inequality and corruption affect the personal environmental responsibility, while the other studies how a municipality can work with synergies and conflicts within the Agenda 2030.
ENERGY & BUILDINGS

Objective
The university is to reduce energy usage by 10 per cent per square metre by 2019 compared to 2015.

The university is to set environmental requirements equivalent to Environmentally Classified Building, level Gold, for new builds and big rebuilds.

Results
The usage of electricity and heating amounted to 200 kWh per square meter, a reduction by four per cent since 2015.

In 2019, environmental requirements equivalent to Environmentally Classified Building, level Gold, were set for one new build, Nya Humanisten.

Green Power from the Sun
96 per cent of the university’s electricity usage is green power from solar, wind and hydropower. There are photovoltaics at the School of Business, Economics and Law, and at Pedagogi at the Faculty of Education from before, and in 2019, a further two of the university’s buildings have been equipped with photovoltaics; the Wallenberg conference centre, and the newly built Humanisten.

A big new build and rebuild project, Nya Humanisten, was completed in 2019. The new build is to meet the requirements for Environmental Building Gold. Further rebuild projects are underway within the university. There too, the goal is Environmental Building Gold, especially when it comes to energy usage.

Environmental building is a system for environmental certification of buildings which means that the environmental work and the building’s environmental performance is reviewed by a third party. Environmental building measures 16 different parameters within for instance energy usage, air quality, ventilation and building materials. Gold is a very high level which buildings with a pronounced environmental profile can be labelled with.

1 Swedish Green Building Council

The Baltic University Programme Teachers Course 2019-2020: EDUCATION FOR SUSTAINABLE DEVELOPMENT IN HIGHER EDUCATION


BUP Teachers Course 2019-2020
Education for Sustainable Development in Higher Education
Content

The course consists of five cycles. The participants will get an introduction to and use different methods and processes applied in the course cycles.

Each participant will develop a so-called Change project during the course. The Change project is based on an already existing course, study programme or a future teaching experience. The idea is to change the content to better integrate the ESD. The planning and implementation of the Change project will be the main outcome of the course. All the participants will have support of a critical friend and peer reviews via the e-platform Moodle and during the workshops.

**Cycle 1.** E-learning on Moodle. Introduction to sustainability and ESD. Preliminary planning of the Change project (1 month, September-October 2019).

**Cycle 2.** Workshop I with focus on SDG, ESD methodology and Design Thinking. Presentation of the plans and further development of the Change project (October 20-23, 2019 in Lodz, Poland).

**Cycle 3.** Development of the Change project at the home university. Preparation for presentation of the project (including implementation plan, teaching and learning methods). (November 2019-February 2020).

**Cycle 4.** Workshop II with focus on critical reflection. Presentation, reporting and peer learning together with the course. Discussion how to take the Change project forward. (3 days in March 2020, date and location open).

**Cycle 5.** Post course work in implementation of the Change project at the home university. Possibility to publish the project reports at the BUP website and/or a scientific journal.

Educational Videos for Section 6: HEI and Sustainability

1- Sustainability in universities (learn about other universities measures)

https://www.youtube.com/watch?v=eUurJEQvNkI

- Subject: Culture Shift for a More Sustainable World-Sustainability at Harvard University
- Content: It explains the sustainability model at Harvard University

https://www.youtube.com/watch?v=eksLn-P3v_4

- Subject: Green Campus Partnership: ReThink Your Footprint
- Content: Some initiatives that has been done in Pennsylvania University

2- Tips about living sustainably in the Campus

https://www.youtube.com/watch?v=ZjYmU2Yufww

- Subject: Sustainable smart campus as a living lab-Launch video
- Content: Some tips about sustainable life in Campus

https://www.youtube.com/watch?v=cjxvURrQJD8

- Subject: How-To Green Your Campus
- Content: Some tips about sustainable life in Campus
Homework 3

Sustainability around the world
References


References


• Lozano, R. (2006b). Incorporation and institutionalization of SD into universities: breaking through barriers to change”, Journal of Cleaner Production. 14(9/11), 787-796.


References


About the authors of the EUSTEPs module

BACELAR-NICOLAU, Paula. Assistant Professor in the Department of Sciences and Technology, Unibersidade Aberta, PORTUGAL, pnicolau@uab.pt https://www2.uab.pt/departamentos/DCT/detaildocente.php?doc=59.

CAEIRO, Sandra. Associate Professor with habilitation I Environmental Sciences, Department of Science and Technology, UAb, Portuguese Distance learning University, PORTUGAL, scaeiro@uab.pt https://www2.uab.pt/departamentos/DCT/detaildocente.php?doc=64.


MALANDRAKIS, George. Assistant Professor in Environmental Education, School of Primary Education, Aristotle University of Thessaloniki, GREECE, gmalandrakis@eled.auth.gr https://qa.auth.gr/en/cv/gmalandrakis.

MAPAR, Mahsa. Postdoctoral researcher. Department of Science and Technology and Distance Education and Elearning Laboratory (LE@D), PORTUGAL, m.mapar@fct.unl.pt

MORENO PIRES, Sara. Researcher in Sustainable Cities and Regions, Research Unit on Governance, Competitiveness and Public Policies (GOVCOPP), Department of Social, Political and Territorial Sciences, University of Aveiro, PORTUGAL, sarapires@ua.pt https://www.ua.pt/govcopp/profile_160.

NICCOLUCCI, Valentina, PhD in Environmental and Cultural Heritage, Sustainability and Indicators. Department of Physical Sciences, Earth and Environment, University of Siena, ITALY, valentina.niccolucci@unisi.it.

NICOLAU, Mariana. MSc in Political Science, Department of Social, Political and Territorial Sciences, University of Aveiro, PORTUGAL, mariananicolau@ua.pt.

PAPADOPOULOU, Athanassia. Agriculturalist, Primary School Teacher, Ph.D. Candidate, School of Primary Education, Aristotle University of Thessaloniki, GREECE, papath55@yahoo.gr.

PATRIZI, Nicoletta. Post-doc fellow in Environmental and Cultural Heritage Chemistry, Sustainability, Indicators, Environmental assessment, Department of Physical Sciences, Earth and Environment, University of Siena, ITALY, patrizi2@unisi.it http://www.ecodynamics.unisi.it/?page_id=123&lang=it.

PULSELLI, Federico Maria. Associate Professor in Environmental and Cultural Heritage Chemistry, Sustainability, Indicators, Environmental assessment, Department of Physical Sciences, Earth and Environment, University of Siena, ITALY, federico.pulseli@unisi.it http://www.ecodynamics.unisi.it/?page_id=107&lang=en.

THEODOSIOU, Nikolaos. Professor Division of Hydraulics and Environmental Engineering, Department of Civil Engineering, Aristotle University of Thessaloniki, GREECE, niktheod@civil.auth.gr https://qa.auth.gr/en/cv/niktheod.

ZACHOS, Dimitrios. Assistant Professor of Pedagogy – Intercultural Education, School of Primary Education, Aristotle University of Thessaloniki, GREECE, dimzachos@eled.auth.gr https://qa.auth.gr/en/cv/dimzachos.
Thank you!

Name, affiliation

Email address, telephone