

# 5th World Symposium on Sustainable Development at Universities (WSSD-U-2020) - Gotland, Sweden



## Sustainable Development: an analysis on the basis of conference papers

Authors: Carlos Rogério Montenegro de Lima, André Borchardt Deggau, Gisele Mazon,  
Thiago Coelho Soares, José Baltazar Salgueirinho Osório de Andrade Guerra



# 1. Introduction



- Sustainability in Higher Education is a relatively recent, but important, topic. More than 600 universities around the world have signed commitments to be more sustainable by signing international agreements and conventions, such as the Bologna Charter, the Halifax Declaration, the Talloires Declaration and the Copernicus Charter for Sustainable Development.
- Universities are an important actor in the sustainability process and their help is essential.
- The goal of this research is to analyze the significance of international conferences for Higher Education Institutions' (HEIs) promotion of sustainability.

## 2 Literature Review

- HEIs play a key role in the global effort for sustainability and for a sustainable development, because of their impact in the society and in the formation of its individuals.
- While there is a large and growing discussion about sustainability in these institutions, many practical and concrete actions still must be taken.
- Cooperation between HEIs in international conferences is an important measure to promote and disseminate research regarding sustainability and sustainable development, and for improving interdisciplinary communication and action.

### 3. Method

- A first step was a literature review. A research in Web of Science (Wos) database resulted in 648 articles, using the criteria of relating to keywords ("higher education" OR "campus" OR "university \*" OR "college \*") AND ("sustainab \*" OR "sustainable development") and to be an article of a congress (proceedings paper) in the Education Educational Research WoS Category. The most cited references in the sample were analyzed.
- Articles presented in the “World Sustainability Symposium, Bridge International Conference 2019” in Palhoça, Brazil, were also analyzed. Several details of such papers were analyzed, including geographical locations of authors and their universities, as well as the goals and the results of their papers.

## 4. Results

- Using Global Citation Score (GCS), a list of the 20 most frequently cited articles was created (Table 1).

	Articles	Citations (n)	Citations (%)
1	Chen, L; Lee, G.; Chen, Li. (2015)	22	10,1%
2	Pashby, K; Andreotti, VD (2016)	17	7,8%
3	Sierpinski, G; Staniek, M; Celinski, I (2015)	9	4,1%
4	Dzienkowski,M; Plechawska-Wojcik,M; Milosz,M; Stryczewska, H (2016)	8	3,7%
5	Artal-Sevil, JS; Bernal-Agustin, JL; Dominguez, JA (2015)	8	3,7%
6	Plechawska-Wojcik, M; Milosz, M; Stryczewska, HD (2015)	7	3,2%
7	Tian, YY (2017)	6	2,8%
8	Katiliute, E; Daunoriene, A (2015)	6	2,8%
9	Tasci, BG (2015)	6	2,8%
10	Martins, AMT; Carlos, JS; Nepomuceno, MCS (2017)	4	1,8%
11	Alabugin, A; Aliukov, S; Alabugina, R (2016)	4	1,8%
12	Dulama, ME; Vana, VM; Ilovan, OR (2016)	4	1,8%
13	Pena, OFC; Llanos, RA; Coria, MD; Perez-Acosta, AM (2015)	4	1,8%
14	Platonova, E; Bogomolova, J; Musarskiy, M; Igumnov, O (2015)	4	1,8%
15	Mikhailova, EI; Chorosova, OM (2017)	3	1,4%
16	Palaigeorgiou, G; Malandrakis, G; Tsolopani, C (2017)	3	1,4%
17	Matei, A; Savulescu, C; Antonovici, CG (2016)	3	1,4%
18	Ferrer-Marti, L; Garfi, M; Ferrer, I (2015)	3	1,4%
19	Hagen, ST; Hasleberg, H (2015)	3	1,4%
20	Momete, DC (2015)	3	1,4%

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- Similarly, Table 2 shows the ten conferences with the largest number of papers cited in the 648 articles.

Conference	No. of Papers
<b>9th International Conference on Education and New Learning Technologies (Edulearn17)</b>	39
<b>12th International Technology, Education and Development Conference (Inted)</b>	38
<b>Iceri2016: 9th International Conference of Education, Research and Innovation</b>	34
<b>Iceri2015: 8th International Conference of Education, Research and Innovation</b>	31
<b>10th International Conference of Education, Research and Innovation (Iceri2017)</b>	30
<b>Inted2017: 11th International Technology, Education and Development Conference</b>	30
<b>Inted2015: 9th International Technology, Education and Development Conference</b>	24
<b>Edulearn16: 8th International Conference on Education and New Learning Technologies</b>	21
<b>Inted2016: 10th International Technology, Education and Development Conference</b>	20
<b>Edulearn15: 7th International Conference on Education and New Learning Technologies</b>	19

## 4. Results

- Table 3 shows the 8 universities that published the most articles in these conferences.

Institution	Country	No. of articles
<b>Univ Politecn Madrid</b>	Spain	13
<b>Univ Politecn Valencia</b>	Spain	9
<b>Univ Novi Sad</b>	Serbia	8
<b>Buckinghamshire New Univ</b>	England	7
<b>Univ Basque Country UPV EHU</b>	Spain	7
<b>Silesian Tech Univ</b>	Poland	6
<b>Tianjin Univ Finance &amp; Econ</b>	Peoples R China	6
<b>Univ Jaume</b>	Spain	6





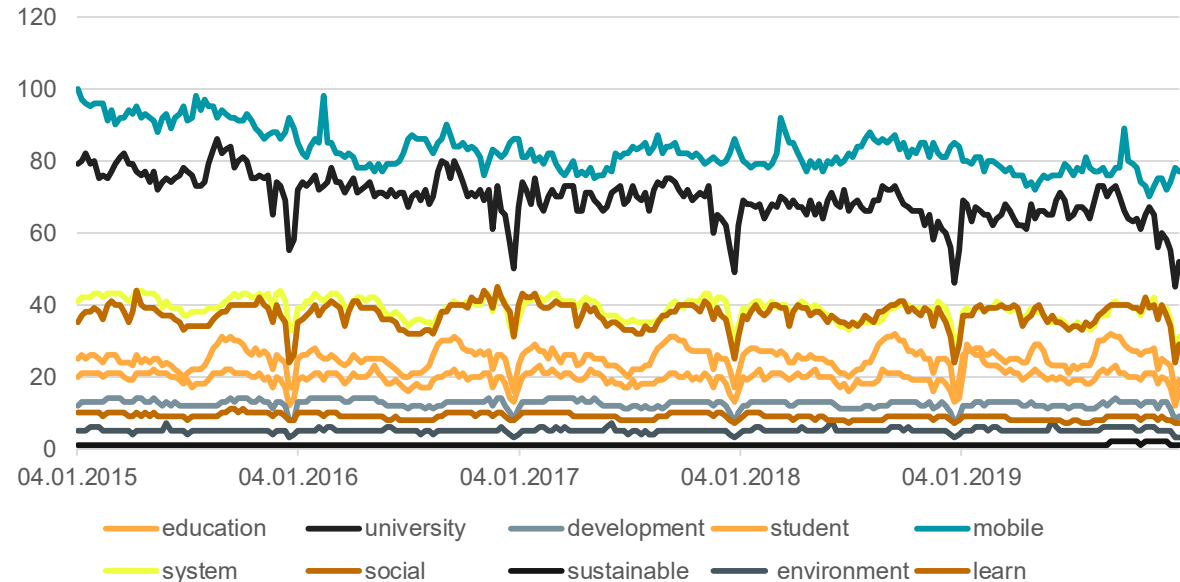
## 4. Results - Conference papers on sustainable development

- Table 5 presents the most cited terms in the papers in the sample.

Terms	Frequency
<b>Education</b>	53
<b>University</b>	43
<b>Development</b>	42
<b>Student</b>	41
<b>Learn</b>	38
<b>System</b>	31
<b>Mobile</b>	25
<b>Social</b>	23
<b>Sustainable</b>	21
<b>High</b>	21

## 4. Results - Conference papers on sustainable development

- Figure 2 shows in a graph the terms addressed in the international conferences.



## **4. Results - World Sustainability Symposium, Bridge International Conference 2019**



World Sustainability Symposium, Bridge International Conference 2019, organized by University of Southern Santa Catarina (Unisul); Cambridge University; Hamburg University of Applied Sciences, Germany Manchester; Metropolitan University, United Kingdom; Center for Sustainable Development (Greens), Unisul; Cambridge Center for Energy, Environment and Natural Resources Governance (Ceenrg); Inter-University Sustainable Development Research Program (IUSDRP); University of Exeter; and Open University.

## 4. Results - World Sustainability Symposium, Bridge International Conference 2019



Objectives of the event:

- Promote the exchange of information, ideas and experiences acquired in the execution of projects, based on successful initiatives and good practices related to technological changes in the Brazilian energy sector and their impacts on altering the use of land, food, water and emissions of greenhouse gases;
- Discuss methodological approaches and projects that aim to integrate the study of the links between water, energy and food in supporting projects and implementing action plans in communities and rural areas;
- Highlight the importance of innovation in the generation of technologies and in the promotion of sustainable development;
- Develop permanent knowledge exchanges between conference participants on the links between water, energy and food sustainable development;
- Establish research cooperation between the universities participating in Bridge, in order to contribute to a permanent scientific collaboration on sustainable development.

## 4. Results - World Sustainability Symposium, Bridge International Conference 2019

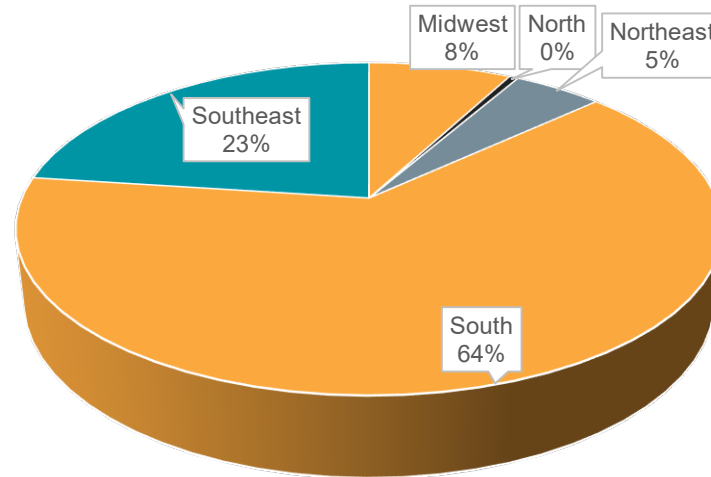


Presentations divided into three themes:

- Theme 1: The connections between water, energy and food in Brazil.
- Theme 2: Technological change in the Brazilian energy sector and its impacts on land use, food production, energy, water and the generation of greenhouse gases.
- Theme 3: Political and legal responses to conflicting/competing demands for energy, food and water.

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- Figure 4 analyzes the geographic origins of papers submitted by Brazilian authors “World Sustainability Symposium, Bridge International Conference 2019”.



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The Conference accepted 245 papers, with the most cited words shown in the word cloud (Figure 5). Of these, 215 articles were presented at the conference, 222 had their abstracts published in the Book of Abstracts, and 182 were published in special editions of Revista Gestão e Sustentabilidade Ambiental.



## 4. Results - World Sustainability Symposium, Bridge International Conference 2019

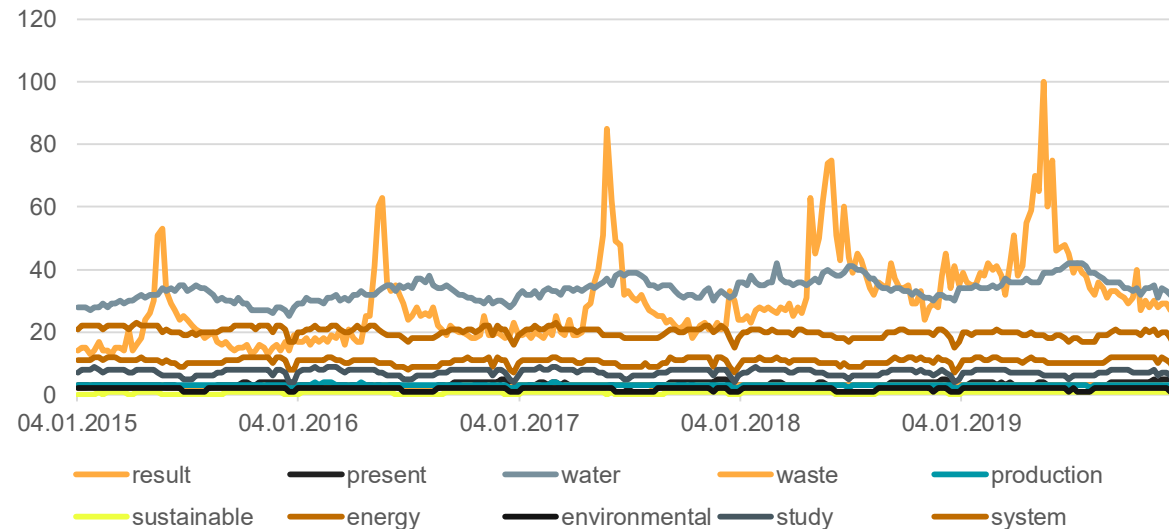
- Table 6 shows the ten most cited terms in the “World Sustainability Symposium, Bridge International Conference 2019”.

Terms	Frequency
<b>Energy</b>	248
<b>Environmental</b>	207
<b>Study</b>	194
<b>Water</b>	183
<b>Waste</b>	140
<b>Result</b>	138
<b>Production</b>	138
<b>Sustainable</b>	128
<b>Present</b>	124
<b>System</b>	118



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- Figure 6 shows in a graph the terms addressed in “World Sustainability Symposium, Bridge International Conference 2019”.



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- The construction of the Bridge Conference articles demonstrates that society has developed its own studies and established priorities in its research agendas regarding the SDGs.
- The publication of these in scientific events will contribute to debates on the national implementation challenges of the SDGs.
- Society articulates to take the SDGs as a guiding axis for the action of subnational governments.

# 6. Conclusions

- The findings suggest that conferences set up by HEIs, in addition to cooperation, participation and collaboration, can promulgate interdisciplinary and multidisciplinary approaches to addressing global challenges.
  
- Inter and multidisciplinary still have room to improve by involving better some relevant stakeholders at local and regional scales.
  
- This paper is limited by the use of a single database, the single focus on research and the focus on Education. Future research is necessary to develop a better understanding of how universities' conferences can promote the implementation of the Sustainable Development Goals.