

THE LATIN AMERICA MEETING OF SUSTAINABLE UNIVERSITIES (I ELAUS): RESULTS AND POSSIBILITIES

Luciana Londero Brandli¹, Dra., Marcos Antonio Leite Frandoloso². MSc., Joel Tauchen, MSc³, Letícia Canal Vieira⁴, Luis Adriel Pereira⁵

¹ Civil Engineering post graduation project, University of Passo Fundo - São Jose district - BR 285, 99052-900 – Passo Fundo – Brazil –brandli@upf.br

² University of Passo Fundo – frandoloso@upf.br

³ Faculty of Horizontina – tauchenjoel@cfjl.com.br

⁴ University of Passo Fundo – Grant student FAPERGS – 79117@upf.br

⁵ University of Passo Fundo –Grant student CNPq – 69036@upf.br

Abstract

Higher Education Institutions (HEI) play an important role in sustainable development with their education, research and developed extension activities on environmental practices. With the purpose of organizing an event focused on the argument for education for sustainable development within Latin America and to initiate a process of coordination of the regional proposals, the First Latin America Meeting of Sustainable Universities (ELAUS) took place in October, 2008. This objective of this article is to relate and systemize the results of ELAUS, aggregated at the University of Passo Fundo, Brazil, with the support of the National University of Cordoba, Argentina and the University of São Paulo, Brazil and with collaboration from the Technical University of Catalonia, Spain. The data was obtained from the analysis of the reports, workshops and sessions that formed part of the event schedule and proceedings. The results show that the initiatives are expanding and increasing irreversibly. However, the majority of them are still isolated far from a systemic ideal. In conclusion, some possibilities and challenges have been indicated; among them, the necessity of having a systemic vision involving all the people and the activities of the university. The necessity of having a space for the discussion on sustainability in the universities of Latin America guaranteed the success of ELAUS. This event will be continued every two years in other countries..

Key-words

Sustainable Universities, Possibilities, Latin America, ELAUS.

1. Introduction

Higher education institutions (HEI) are increasingly concerned about the conceptual questions for the practice of encouraging sustainable development. This role is both inevitable and important in the context of an urgent challenge for them to develop in a sustainable fashion. This can clearly be seen in the commitment of UNESCO for the sustainable development decade (2005-2014): “integrate the principles, values and practices of sustainable development in all aspects of education and learning. This educative directive will encourage behavioural changes which will create a more sustainable future in terms of environmental standards, economical viability and a fair society for the present and future generations”.

This involvement of the universities has been observed to have been increasing over recent decades. Examples of this are the conferences and meetings of universities which have given rise to declarations, as related by Brandli et al. (2007): The Talloires Declaration, October, 1990; The Halifax declaration, December, 1991; The Swansea declaration, august, 1993; the Kyoto declaration, November 1993 and the Hague declaration, 2000; 2002, among others.

Besides this, networks of cooperation between universities have been forming, such as Ecocampus, which contribute to establishing similarities and differences in the implementation of administrative tools and teaching guidelines (ECOCAMPUS, 1997).

One important event has been ‘Environmental Management for Sustainable Universities’ - EMSU, which established the guidelines and challenges of HEI for sustainable development (SD). The event has been repeated five times since 1999 and has already been taken to countries such as Switzerland, South Africa, Mexico, The United States and Spain (EMSU, 2006; 2008).

EMSU is an international conference which aims towards the creation of new knowledge and attitudes to face current environmental pressures and to encourage bidirectional exchange of experiences between universities and society.

According to studies by Gallón et al. (2008), there is an indication that the situation regarding education for sustainable development (ESD), in Latin America can provide great potential for the universities by linking up with the various isolated activities currently in progress. There is still the need for directives which can unite the proposals, consolidating the practices of the existent primary networks.

In October, 2008, the first Latin American meeting of Sustainable Universities took place. Its aim was to establish the same proposals of EMSU, with a focus on the Latin America question and to begin a process of coordination of the regional proposals of EDS.

The aim of this article is to relate and systematize the obtained results from the first event, which took place at the University of Passo Fundo, Rio Grande do Sul, with the support of the National University of Cordoba (UNC), the University of São Paulo (USP) and the Polytechnic University of Catalonia (UPC).

The central theme of ELAUS was "SUSTAINABLE UNIVERSITIES: POSSIBILITIES AND CHALLENGES". The aim of the event was to unite and demonstrate current practices and research, discuss the application of the concepts related to sustainability and to aggregate further data concerning the discussion of the role of universities and higher education institutions in relation to sustainable development.

These specific objectives were: broadcast and discuss the research results and elaborated policies by participating universities on sustainable development; make available discussions on the role of universities and higher education institutions in relation to sustainable development, encourage the integration of Latin American universities; their professors, researchers and administrators, discuss the environmental performance of the various participating universities; broadcast the sustainable practices of each one, put into operation networks of scientific-technical cooperation of sustainable Latin American Universities; stimulate the continued realization of ELAUS in other universities for them to consolidate the research on sustainable universities; give space for students and researchers for presentation and discussion of scientific work and also their publication in the event annals and encourage the participation and integration of doctorate, master and graduate students.

2. Methodology

ELAUS was organized by the Master in Engineering Infrastructure and Environment Program of the University of Passo Fundo (UPF) and was promoted in conjunction with the National University of Cordoba (UNC), the University of São Paulo (USP) and the Polytechnic University of Catalonia (UPC). The first ELAUS was a preparatory step for the 5th Environmental Management for Sustainable Universities (EMSU 2008), which took place shortly afterwards between the 15th and 17th of October, 2008 in Barcelona, Spain.

Together with ELAUS the SDPROMO Latin America took place, a project linked to the Erasmus Mundis Action 4 plan, lead by KTH of Switzerland, TU of Delft- Holland and PUC of Barcelona - Spain.

Data was obtained from analysis of the presented reports and plenary sessions which were part of the events proposed by the I ELAUS. The proceedings of the event were also analysed, evaluating the published articles in each sub-theme. Besides this, information

related to the registrations, access to the site and organizing commission reports were also considered.

3. Results

Thirty six universities participated in the first ELAUS, twelve of them from abroad, bringing together around four hundred and fifty students, researchers and professionals from countries such as Argentina, Peru, Mexico, Guatemala, Spain, Ukraine, Switzerland, Bolivia and Holland, together with representatives from nine Brazilian states.

Figure 1 represents the participating universities of the first ELAUS, showing a clear concentration of Southern Brazilian universities.

Latin America has a great diversity of integrated countries which themselves contain regional diversities. Latin American countries have progressed considerably since the II Congress of the United Nations Congress on the Environment and Human Development (RIO92, which took place in Rio de Janeiro in 1992.

Despite serious problems and the urgent necessity to address them, sustainable development has made significant advances. The level of public awareness has notably increased and, little by little, the questions of SD have been the focus of public debate. In this scenario, the concern of the universities and their participative role in SD has increased. The main negative aspect affecting Latin America today is the lack of events which bring people together to discuss theme of SD and also the lack of organized networks to promote unified and collaborative thinking.

In either way, sustainable development is not a question to be quickly resolved, likewise the engagement of HEI in this process. Global agreements have stimulated a series of important institutional changes and innovative vehicles of international cooperation, thereby strengthening potential regions.

Generally speaking, it can be said that discussions which took place during ELAUS and also the presentation of cases from various Latin American universities have shown the similarities with the problems discussed in other events. There is recognisable similitude among the concerns and difficulties encountered by researchers and professors from various HEI, and corresponding similarities in the ongoing activities which are very prompt but not systemic. Obviously, there are examples of universities which are well ahead, especially older ones or those which have been including SD in their strategies for longer.



Figure 1: Participating Universities of ELAUS 2008

- 1) São Paulo University
- 2) Espírito Santo Federal University
- 3) Passo Fundo University
- 4) The Federal University of Rio Grande do Sul
- 5) The Federal University of Technology of Paraná
- 6) The Catholic Pontificate University of Minais gerais
- 7) Vale Itajaí University Foundation
- 8) The Federal University of Pelotas
- 9) The Federal University of Santa Catarina
- 10) The Higher Education School of Agriculture
- 11) Feevale
- 12) The Environmental Perception Study Centre
- 13) Union of Dynamics of Faculties Cataratas
- 14) Santa Cruz University
- 15) The Federal University of Mato Grosso do Sul

- 16) The Federal University of Paraná
- 17) The National University of Córdoba
- 18) Polytechnic University of Catalonia
- 19) The Bolivian Pontificate University
- 20) CIIIMAD – IPN
- 21) Guadalajara University
- 22) Los Andes University
- 23) The Autonomous University of the State of Morelos
- 24) Representative of the United Nations University
- 25) The National University of La Rioja

The programme of events was divided into workshops within the plenary sessions and parallel workshops and sessions with paper presentations. Ninety five scientific papers were chosen and presented in parallel technical sessions. Figure 2 shows an activity during ELAUS.



Figure 2: Auditorium with an on going lecture

3.1 Workshops

Four workshops took place with the aim of sharing experiences between European and Latin American realities and to identify areas of weakness and areas of potential and to define medium term strategies.

The workshop themes were: (1) Sustainable management for cities and urban infra-structure; (2) Sustainable Campus Management; (3) Guidelines for Sustainability; (4) Networks of sustainable universities.

The 14th European Roundtable on Sustainable Production and Consumption (ERSCP)

The 6th Environmental Management for Sustainable Universities (EMSU)

The proposals in question for each of these events were defined further by two coordinators from different institutions and/or countries.

In the discussions generated from the workshop ‘Sustainable Campus Management’, which used the D.A.F.O methodology, an example of the results obtained can be seen. The group debated the existing conditions within each university context, presenting a list of deficiencies, threats, strengths and opportunities (Figure 3), in relation to the difficulties of Latin American universities to establish environmental management systems in HEIs.



Figure 3: Application of DAFO methodology in a workshop

The three most common concepts mentioned by the 30 participants were categorized and presented after the general plenary session (see Table 1), which generated the following proposals:

- Creation of a Latin American or Iberian American network for SD;
- Creation of an Iberian American electronic magazine focussed on SD in universities;
- Share experience and information to address the difficulties and extract the positive points of opportunities.

Table 1: University Campus Management Workshop results

Weaknesses	Threats	Strengths	Opportunities
<p>-Bureaucratic System and rigid hierarchy;</p> <p>-Lack of awareness and commitment from agents involved (teaching bodies, student bodies and administration);</p> <p>-Inexistence of short and long term institutional policies.</p>	<p>-Technological Innovation;</p> <p>-Competition;</p> <p>-Budget quotas</p>	<p>-isolated experience of IES or sections/departments;</p> <p>-Diversity of initiatives;</p> <p>-Participation of the public in general and the community.</p>	<p>-image improvement of the institution;</p> <p>-more demanding legislation;</p> <p>-Construction of networks and exchange.</p>

Various coincidences were encountered in the remaining sessions similar to the difficulties and potential opportunities shown in Table 1. In other words, regardless of the context, the conditions for applying SD are very similar for Latin America in comparison with those presented by European universities.

3.2 Articles presented

The articles presented in I ELAUS were divided into 4 sub-themes:

I – University course for Sustainable Development at Graduation and Post-graduation level: 16 articles.

II- Sustainable construction, modernization and operations of university Campuses: 44 articles.

III- Investigation into the Environment and Sustainable Development 16 articles

IV- The University and the Community: 29 articles.

The theme which presented the greatest number of articles was Sustainable construction, modernization and operations of University campuses, with 44 works, revealing that the majority of research about universities and sustainable development is being realized in university environments and that sustainability is beginning to be no longer just a concept from which to take action.

2.1 University course for Sustainable Development at Graduate and Post-graduate levels

The first theme of the event discussed the revision of curriculums for Sustainable Development at Latin American Universities at graduate and post-graduate levels. Educative policies, procedures and programmes for sustainability were also discussed, experiences of adapting curriculums, orientation and focus on sustainable development.

Of the different work presented from various universities, certain experiences relevant to the theme can be quoted.

The works demonstrated the importance of involving the students in practical problems, such as the impact of disposing of solid urban residual products and their relation to environmental recuperation monitoring. The practice of creating gardens by the students is a reflection of the constant interference of man on the environmental landscape.

Certain universities are including environmental and sustainable themes in various sections of their curriculums in graduate and post-graduate courses, with the aim of preparing responsible professionals, committed to this process and aware of its importance and who understand that the effective change of society must be gradual and consistent.

Within their various programmes, projects, research, disciplines and outside activities related to sustainability and environmental education, the universities are also presenting various studies which they are including in the education of sustainability for the students; work which establishes processes of management and education and their application in the construction of sustainable practices at the university; an example of this being the development of various educative strategies (courses, workshops, events, fairs, projects and innovative in conjunction with the university community. Other projects presented by the universities were practical classes of composting, application of selective refuse collection on the campus with student environmental education, workshops for reutilization of recycled and reusable material and the use of water, among others.

3.2.2 Sustainable construction, modernization and operations at University Campuses

The second topic consisted of a presentation of various suggested concepts of environmental sustainability in university campi. All of these were focussed on improved preparation of professionals within the context of a campus which is conduction sustainable activities. Various subjects were explored, such as: reports of experience for established environmental management systems in university campuses, polices, procedures and action plans for sustainable management plus practice of sustainable management: water, earth, residues, economy of energy, among others.

Some universities showed steps for the development and setting up of Management of Residue Plans, producing subsidies to define the guidelines of management programmes.

Various works on diagnostics were presented, such as solid residues produced on campus with a view to setting up a management programme. Within these activities, continuous environmental awareness was emphasised as a fundamental tool to ensure the success of a management system. Some universities showed works in the form of educative folders;

meetings and informative lectures which they perform for the academic community. Concomitantly, the setting up of a preliminary system for internal selection and destination of residues was shown and from this, was created a classification of the main residues produced.

Some works concentrated on research about the arboreal vegetation of university campuses, illustrating the necessity of planning spaces where vegetation can play its part in minimizing the effects of temperature, air humidity and wind speed and where each new building constructed optimizes environmental comfort with new tree filled areas, which contribute to sustainability.

Problems related to construction and demolition residues (CDR) were also shown, which present an environmental problem. The studies analysed the economic viability of the creation of a recycling venue for CDR on a campus. Some works defined guidelines for an environmental management system (EMS) adequate for a university campus and also showed that, despite having the tools for applying an EMS, certain improvements are necessary and the collaboration of all the academic community.

Some articles focussed on the contribution of architecture in relation to sustainable buildings and the setting up of environmental practices. They stated that university campus buildings should have new projects or adaptation of existing buildings. These, in turn, would require new products, attitudes and procedures and from this would come research and contribution to form a sustainable culture; projects for rational use of water, which represents a change in the paradigm of administering the offer and demand of water, to be more in line with the requirements of sustainable development. Together with this project, a similar one was presented for rational use of energy. Both of these gave very satisfactory results.

The exploration of eco-efficiency by various universities presents innumerable opportunities for improvement in the question of the environment in areas such as reduction in water and energy consumption and better management of the separation of residues, among others. However, there were few presentations of Environmental Management Systems or even environment certification on campus, indicating that, although there is an abundance of isolated actions, a general approach to the subject still lacking.

3.2.3 Investigation into the Environment and Sustainable Development

In part III the subject of research and research groups from different Latin American universities was discussed. This included experience of scientific and technological exchange between researchers and universities and the experience of the transfer of research results to society.

Some institutions showed the structure and application of environment perception research. The results permitted the identification and gauging of the level of environmental knowledge of society, especially concerning the analysis of society's perception of the environment vis-à-vis, environmental legislation. They also showed contributions from Faculties of Pharmaceutical Sciences of activity and intervention, sustainable development and examples of selective recycling schemes and the management of residues generated by the health service.

Educational institutions have demonstrated throughout their history the capacity of transforming individual and collective ideas into reality. Despite the enormous variety of options for incorporating environmental premises, few universities have really committed themselves to the promotion of sustainable development; such a fact being justified because of administrative reasons (a lack of commitment by the top administrative levels), finances, (lack of specific budgeting for environmental management activity/ contracting of professionals) and cultural, (lack of knowledge/interest on the part of students and teaching/non teaching staff).

3.2.4 University and the Community.

The IV subject to be explored was the University and the Community, universities in conjunction with their communities to improve the environment plus the sustainability of the cities in which they are located. The work was focussed on the involvement of the communities with the population in projects such as low income housing and the role of the university. This included getting to know the people who live in these communities, learning about their particular realities and, with this information, improving the environment and levels of sustainability in these places. Projects which involve sustainable development of the communities and the universities include: study of the correct use of medication from the beginning to the end of its use, sustainable development from a local perspective of the municipalities, surveillance of rivers and subterranean water, preservation and recuperation of hydraulic resources, analysis of arboreal vegetation, landscaping, destination of residues from construction and evaluation of the impact on the environment of residues from civil construction, among others.

All the work presented at the event was of great importance in relation to their aim of analysing developed projects, the urbanization of slum areas (favelas) and opportunities for the creation of income; all of which need their sustainability guaranteed by state and municipal support and critical and technological support from the universities.

Areas which have been inhabited by poor communities for more than 20 years are being studied and plans being drawn up to improve the standard of living and create strategies for the creation of jobs and income because it is exactly this which represents sustainable development which improves the day to day lives of the people who live in these places.

This theme most widely approached the concepts of Sustainability, provoking relevant questions of economic, social and environmental sustainability of these communities.

3.3 Multidisciplinary Significance

As an important characteristic of an event such as this, where such wide and far reaching subjects are discussed, the participants of ELAUS presented significant multidisciplinary work. The presented articles were the result of research projects developed in 19 different graduate and post-graduate courses.

The courses are the following: Administration; Architecture and Urbanisation; Agronomy; Design; Science and Biology Sciences ; Social Sciences and Biology; Science and Economics; Pharmacy; Odontology; Law; Environmental Engineering; Civil Engineering; Environmental Management Specialisation; Medicine; Master's in Development; Master's in Environmental Science; Master's in Infrastructure of Engineering and the Environment; Master's in Urban and Regional Planning.

4. CONCLUSIONS

To approach research, teaching, and internal and external university life, the research presented at ELAUS revealed the reality of many Latin American universities. In general, it can be said that the initiatives are expanding and spreading irreversibly. However, the majority of them are still at an isolated stage, far from a systemic ideal. For a university to be sustainable, it needs to think and act in a sustainable fashion both in its own environs and its external context.

The possibilities and challenges:

- Sustainable action, not just concepts which need to emerge from the universities;
- The universities should resolve problems through research and divulge scientific information and knowledge.
- The universities should form local leaders, capable of making decisions about sustainable management.
- The universities should divulge information and knowledge for local and regional society.

Necessary Changes - challenges:

- The support, commitment and investment from university leaders (management/administration) is both necessary and essential.
- Change the culture of the university, beginning at the top.
- Medium and long term planning.
- The necessity of involving the various specialities and departments in a multidisciplinary fashion with the sole aim of sustainability.
- Formation of university networks for sharing experience and offering support.

The necessity of a space for discussing sustainable universities in Latin America ensured the success of I ELAUS and its periodic continuation. ELAUS 2011 will take place in São Paulo, Brazil.

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