Further Insights I.2
Making sustainable development in higher education a reality: Lessons learned from leading institutions

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INTRODUCTION

Sustainability is today one of the most widely used words in the scientific field as a whole and in the environmental sciences in particular. The analysis of the evolution of such a concept, as performed by Leal Filho (2010a) is a difficult exercise. This is because the records of the systematic use of such an expression, whose reference in the current vocabulary and political discourse is nowadays so popular, are scattered around. Until the late 1970s, the word 'sustainability' was only occasionally employed in most cases to refer to ways through which forest resources should be used. It has, in other words, strong connections with the forestry sector from where, some believe, it is originated.

A key question one might ask at this stage – a question that is posed over and over again, every day, by millions of people all over the world – is *what does sustainable development really mean*? Depending on the ways it is looked at, it may have many meanings, such as (Leal Filho, 2010a):

- The systematic, long-term use of natural resources – as defined in the Brundtland Report – so that these are available for future generations (here referring to country and local policies)
- The modality of development that enable countries to progress, economically and socially, without destroying their environmental resources (here referring to country policies)
- The type of development that is socially just, ethically acceptable, morally fair and economically sound (here referring to the social ramifications of development)
- The type of development where environ-

mental indicators are as important as economic indicators (here referring to the close links it bears with economic growth)

Many other variants may be listed and are indeed used by different organizations, taking into account their political perspectives and institutional aims. IUCN, which in liaison with UNEP and WWF produced 'Caring for the Earth' (IUCN, WWW, UNEP, 1991), suggested at the time that the expression 'sustainable development' be replaced in some context by 'sustainable living', since although the suffix 'development' is associated with governments and refers to a government´s responsibilities, the word 'living' is closer to an individual´s life.

The authors defend the view that there is unlikely to be a consensus – at least a total one – on the *meaning* of sustainable development, although most people would agree on what it is all about. The reason for this is rather simple: one´s own definition will be influenced by one´s training, working experience and political and economic setting. There is nothing negative in that, but, equally, there is the need to establish some ground rules so that the search for a consensus on what it is and in what it means, may not be made hopelessly impossible due to individual differences in opinion and perspectives. Another way to overcome the problem is by looking at approaches to *sustainability* – this meaning the processes that may ultimately lead to sustainable development. This paper will thus refer to sustainability, as opposed to the broad spectrum of sustainable development, having universities as a focal point.

EXAMPLES FROM SOME LEADING UNIVERSITIES

The implementation of sustainable development in higher education (HE) is now a global trend and has been widely documented (for example Leal Filho, 2010b). Yet, the intensity and the depth with which higher education institutions (HEIs) are taking on the challenge of sustainability, significantly differs. Many HEIs across the world are including sustainability issues in different areas (for example teaching, research, outreach and institutional management).

The literature on sustainability contains a wealth of works that have been written on the subject of integration of sustainability in an HE context. Whether it is in respect of approaches and methods (Leal Filho 1999), communication (Leal Filho, 2000), teaching (Leal Filho, 2002) or research (Leal Filho, 2005), much ground has been covered. The same line of thinking applies to areas such as sustainability learning (Hansmann, Crott, Mieg, Scholz, 2009) or sectoral approaches to sustainability dealing, for example, with the academic profession (Hammond and Churchman, 2008) or in respect of campus operations (Conway, Dalton, Loo, Benakoun, 2008). The many efforts that have been made in trying to understand and promote sustainability at, within and around universities are the reason why it is so well developed today. Indeed, the introduction of sustainability approaches and the execution of sustainability-based projects is still a dynamic process and can be regarded as a growing trend. The rest of this section offers some examples of what universities across the world have been doing.

Starting with North America, perhaps a leading example of best practice in sustainability university campuses is offered by the University of British Columbia, which was the first university in Canada to have a sustainable development policy and a Campus Sustainability Office, which, for example, keeps a running score of the use on campus not only of paper but also of electricity and water. Futhermore, students are encouraged to sign a sustainability pledge requiring them to consider the social and environmental consequences of all their actions.

In addition, Michigan State University has produced a sustainability report describing social and economic as well as environmental indicators of performance. Yale University started a programme in 2007, which involves core courses from both the School of Engineering (water resources, industrial ecology, and sustainable design) and the School of Forestry and Environmental Studies (environmental science, social ecology, economics, and policy and law). The Engineering faculty at the University of Texas (Austin) have developed 'Signature Courses' such as the course titled 'Sustaining a Planet' which describes material and energy cycles in the natural world, how natural systems interact with and are modified by engineered systems and how students' lives fit into these systems.

The University of California at Davis pursues research on strategies and technologies for sustainable management of urban forests. With regard to education, one may mention Harvard University's Center for the Environment, Brandeis University's master's degree programme in Sustainable International Development and Brown University's student projects on campus sustainability. On infrastructure, the green buildings of the University of California at Santa Barbara and of the University of Texas at Houston are well-known examples of sustainable construction. As far as outreach is concerned, Bates College has established responsible purchasing, composting, and recycling initiatives and at the University of South Carolina, students and campus recycling staff work with charitable organizations to donate food, clothes, building materials and furniture in order to reduce the university's disposal costs. Columbia University's Earth Institute, which was established in 1995, has a focus on sustainable development and the needs of the world's poor. The Earth Institute's activities are guided by the idea that existing science and technological tools could be applied to greatly improve conditions for the world's poor, while preserving the natural systems that support life on Earth.

In Europe, the University of Mid-Sweden was the first HEI to have an EMAS (Environment and Management System) accreditation, followed by Zittau-Görlitz University, which was the first one in Germany. Both are committed to sustainability as a matter of concern to the whole institution. The University of Malta offers a prime example of the impact of transformative pedagogies on pre-service teachers, preparing them to approach matters related to sustainable development among future generations of students. A further example of what is happening today comes from Hamburg, Germany where the Hamburg University of Applied Sciences set-up the 'World Sustainable Development Teach-In Day'. Organized to run every other year, it is directed towards disseminating information on the concept, aims and purposes of sustain-

able development so that it can be understood by a broad public, and will include elements relating to its environmental, social, economic and policy aspects. The University of Gloucestershire in the UK has an active Institute of Sustainable Development, whereas in Spain, UPC in Barcelona has been innovating in the areas of curriculum greening and extension. The Technical University of Delft in the Netherlands has been for many years active in respect of institutional sustainable development processes, while the University of Opole in Poland has specialized in economics and sustainable development.

In terms of Australasia, Hong Kong University in China is also committed to sustainability and this is evident from its curriculum structure and booklets promoting environmentally sustainable practices. In India, TERI University, which is devoted to environmental issues, provides a good example of an institutional focus on sustainable development. This is similar to the work done at the University of the Philippines at the Los Baños Campus, where matters related to sustainability are present in the curriculum of many courses. Deakin University, in Australia, has developed a suite of generic attributes graduates should have, which is called 'The Deakin Advantage', where attributes such as 'an understanding of the principles and applications of sustainable development' are meant to be applied to the graduates' own disciplinary fields and work situations. The Australian National University has also been for many years a driving force in the realization of sustainability goals in HE.

SOME LESSONS LEARNED

The overall positive trends should not hide the fact that there are many problems and barriers that prevent developments in respect of the integration of sustainability issues in HE. However, to the same measure, there are some concrete steps that may be undertaken in order to allow universities to integrate sustainable development in their activities. Indeed, the examples provided by the universities and listed in this paper indicate a number of features that successful universities have considered and dealt with:

- The need for political and institutional support for university initiatives
- The need for coordination between individual initiatives within a university
- The proper provision of suitable infrastructure for sustainability initiatives
- The existence of a team of well-motivated and competent staff

In addition, further reflection is needed in respect of ensuring sustainability is embedded into a university programme, as opposed to being a marginal part of it, as has largely been the case so far. Figure 1 outlines some elements that need to be considered in order to catalyse a greater integration of sustainability in university programmes.

This paper suggests a set of ten points that may help to foster the efforts of implementation of sustainability at HEIs:

1. Encourage and promote the development of initiatives and projects on sustainable development at universities, not only in respect of subjects (for example curriculum) and campus greening, but also in terms of research and extension (for example training events to an external audience).
2. Ensure universities take part in local, regional and national initiatives related to sustainable development, so as to put the principles of sustainability into practice and support initiatives in respect of sustainable consumption and production and the promotion of ecological, social and economic development.
3. Identify and use tools, toolkits, practical measures and monitoring mechanisms, which show how much progress can be achieved with the implementation of sustainability efforts.
4. Provide examples of approaches and methods that show how sustainability principles may lead to improvements in efficiency and in costs reduction, as well as in reducing environmental degradation, pollution and waste.
5. Mobilize sources for financial and technical assistance and capacity building for projects in both industrialized and developing countries.
6. Develop materials and instruments that show or illustrate environmental and health impacts, using, where possible and appropriate, case studies to implement them.
7. Run regular awareness-raising initiatives illustrating the importance of sustainable development and take part in information and dissemination schemes using the media.
8. Establish and seek peer support for sustainability programmes. If appropriate, by setting up centres around which university professors from different disciplines (faculty) may gather.
9. Collect and disseminate information on the activities taking place at the university and promote the exchange of best practices and know-how on sustainability methods and processes.

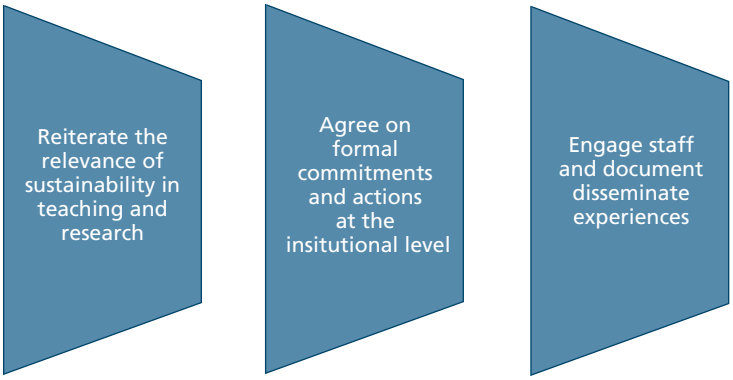

FIGURE 1 Some elements to catalyse a greater integration of sustainability in university programmes

10. Involve the university administration (for example Rector, Vice-Rector, Dean, and so on) in sustainability activities so that they can see it is worth it.

It may be the case that it is not possible to implement all ten measures at one go, but in trying to get them implemented, universities may realize they have a potential which has been dormant but which can be made concrete if they have the political will to do so.

CONCLUSIONS

As shown in this paper, HEIs worldwide are including sustainability issues in different areas such as in teaching, research, outreach and institutional management, but it has to be said that this is happening at different levels of depth and with different degrees of success.

Even though much progress has been made over the past years, there are still many problems and barriers that prevent developments in respect of the integration of sustainability issues in HE. These barriers and problems can be addressed if the necessary political will is available. When applied to various contexts such as water, energy, industry or transport, sustainable development has proved to be an important tool in fostering life quality and in reducing human impacts on the environment.

There are many universities that have excelled in putting the principles of sustainable development into practice, as this paper has outlined. For some of them, part their success is due to the fact that they have not only chosen innovative approaches and pursued innovative ideas, but they have also established partnerships and hence were able to provide added value to their own projects. Cooperation therefore may be one effective means by which universities may consolidate their own good work and at the same time open the door to new opportunities.

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