

SUSTAINABILITY AND UNIVERSITIES

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Keywords: sustainable development, university education, higher education, curriculum, pedagogy, change, partnerships, and facilities management.

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Summary

Universities have an important role in modern communities and a clear role to play in advancing the principles of sustainable development. Since the early 1990s their move towards environmental management and sustainability has been guided by agreements such as the Talloires Declaration.

This, and similar initiatives, have provided a framework for universities to: improve the environmental management of their campus operations; introduce curriculum changes such as Education for Sustainable Development; develop partnerships with organisations in their local region for mutual benefits; and either through focused research centres or the efforts of individual researchers, to explore the dimensions of sustainable development and its achievement.

This article outlines the developments in these four areas of university activity, and further explores the range of activities taking place in universities in a variety of nations. Importantly it illustrates possibilities for those in universities who are seeking suggestions for changing these organisations so that they support movement towards the principles of sustainable development.

1. Introduction/Relationship of Universities and Sustainability

A university is a collection of people brought together to take on a number of roles. While the Concise Oxford Dictionary defines a ‘university’ mainly in terms of instruction and examination of students, a Google search identifies a number of definitions. Generally they build on the following definitions:

- an institution of advanced learning that offers various taught and research programmes
- an institution of higher education, usually offering degree and higher level courses, while some universities also offer vocational education and training courses
- an establishment where a seat of higher learning is housed, including administrative and living quarters as well as facilities for research and teaching
- a large and diverse institution of higher learning created to educate for life and for a profession and to grant degrees

An important ‘footnote’ is that the word university is derived from the Latin *universitas magistrorum et scholarium*, roughly meaning "community of masters and scholars." However, these people do not stay isolated from their neighboring communities, nor from the physical environment of which they are a part. Rather, they interact with the world by:

- educating students who go into professions and positions of power where, over the three or four decades of their careers, they make decisions that have substantial effects on the bio-physical environment and human communities
- research conducted by faculty (academic staff) which helps to inform their teaching contributes to human understanding of the world
- engagement with the local community (businesses, government and public groups) to provide examples of professional experiences for students and to contribute knowledge to parts of the community
- the operational elements of the university that support the other activities, including the provision of services like solid waste management, energy and water supply, purchasing of equipment and supplies, office activities

Three stages have been identified in the historical evolution of universities. To begin, universities were gatherings of scholars who were primarily concerned with the authority and dogma of religion around the Middle Ages. The second stage saw the development of formal institutions to serve human progress at the time of the Renaissance and Scientific Revolution. Finally, during the Twentieth Century a stage has been developing where the previous goal of utility has begun to narrow to focus on commercial and vocational issues. Across this last period the activity of universities has expanded, not least in reaching many more students. Prior to the mid 1900s universities were relatively small establishments since the numbers of scholars and students were small. For example, Yale University’s student body numbered around 200 in the year 1800, growing to some 2500 in 1900. For that reason, the effects of universities on their surrounding bio-physical environment generally could be considered minor. However, the Twentieth Century saw a growth in the number of universities and their size; Yale’s student body was around 8500 in 1950 and 11000 in the year 2000. As a

result of this growth, there has been an increase in the probability of substantial direct and indirect impacts of modern universities on their surrounding communities and their environments.

In each of the four areas of activity noted above there is potential for universities to assess their impacts, and opportunities for them to demonstrate their engagement with the principles of Sustainable Development. Both of these points have been recognised by an initially small number of university leaders, and increasingly by other leaders and the international community. There are now substantial expectations that encourage universities to recognize and relate to the ways in which they impact their bio-physical and social environments.

The immediate following sections of this article will look at the development of these expectations. Then the article will provide a general overview of the responses by universities in relation to campus operations, curriculum, community engagement, and research. The intent is not to present a comprehensive overview of all international activity, but to outline the general issues associated with university activities related to sustainability and provide some illustrative examples.

2. Promotion of Sustainability in Universities

The idea that the university is a missing link in global sustainability is a sentiment that many have echoed. Since the early 1990s, numerous calls have been made for universities to adopt sustainability as a core guiding principle. Internationally, through conferences, publications and declarations, there have been increasing moves towards the inclusion of understanding about environmental issues and sustainability in higher education. Recognition of the role of Education for Sustainable Development (ESD) was given prominence at the United Nations Conference on Environment and Development in Rio de Janeiro in 1992, with the inclusion of Chapter 36 “Promoting Education, Public Awareness and Training”, in Agenda 21. Of relevance to universities in this chapter was the following:

Countries should:

- Set up training programmes for school and university graduates to help them achieve sustainable livelihoods.
- Encourage all sectors of society, including industry, universities, governments, non-governmental organizations and community organizations, to train people in environmental management...

In 2002 the World Summit on Sustainable Development in Johannesburg reconfirmed and promoted the need to reorientate the role of education within the sustainability agenda. Most recently the declaration by UNESCO in 2002 of a United Nations Decade of Education for Sustainable Development starting in 2005 has repositioned the significant contributions of education to sustainability by saying:

Education for Sustainable Development is an emerging but dynamic concept that encompasses a new vision of education that seeks to empower people of all ages to

assume responsibility for creating a sustainable future.

As a consequence of this and other UN conferences, and to stimulate action, the UN has launched the Decade of Education for Sustainable Development (2005-2014). It has been said that this act will stimulate efforts by educators, practitioners and policy makers to partner and make sustainable development a global educational focus. It follows that the role of Education for Sustainable Development, as outlined by UNESCO, is to have all educators include sustainable development concerns and goals in their own curriculum. Some national governments have expressed similar interest. For example the 2005 United Kingdom's Sustainable Development Strategy identified the need to make "sustainability literacy" a core competency for professional graduates.

University staff and students have complimented these directions with the development of several other initiatives, including:

- Talloires Declaration of University Leaders for a Sustainable Future, October 1990 (see Appendix 1 for the Declaration);
- Halifax Action Plan for Universities in "Creating a Common Future", December 1991;
- Copernicus University Charter for Sustainable Development of the Conference of European Rectors, Autumn 1993 (see Appendix 2 for the Charter);
- Kyoto Declaration of the International Association of Universities, November 1993;
- Student Charter for a Sustainable Future of the student unions of the United Kingdom, July 1995.

The Talloires Declaration is frequently referred to, and was an initiative of a group of university leaders and has international recognition by being signed (as of 2006) by over 320 institutions from 47 countries across five continents. Importantly the institutions that sign this declaration commit themselves to operational activities and curriculum initiatives that lead to sustainable development. More recently the Earth Charter, developed as a consequence of the 1992 UNCED activities in Rio de Janeiro, has provided direction and details for universities to build the principles of sustainable development into their activities. It has also been noted that specific trends are related to these initiatives, most especially the moral obligation for universities to become sustainable, and the need for development of environmentally literate staff, academics and students.

The intent of these agreements has generally been fairly broad. Therefore, in order to give more specific support and direction to universities, guideline documents have also been produced. Early examples of these were those developed for 'polytechnics' in the United Kingdom. The general principles underlying these agreements and documents have also been translated into the contexts of individual institutions. For example, Tufts University, a signer of the Talloires Declaration, was among the first of the universities to prepare an environmental policy. While this policy has a strong focus on the operations of the university (see Appendix 3), it generated interest in the extent to which students were literate in environmental matters. As a consequence the Tufts Environmental Literacy Institute was established to provide faculty with the professional development needed to help them teach about environmental issues within

their subjects and disciplines. Subsequently many other universities have developed such policies.

To support these initiatives, partnerships of organisations have formed to act as a focus for expanding the efforts of the pioneering groups. Through these partnerships and networks resources have been assembled to assist other institutions develop their own policies and activities to support the Decade for Education for Sustainable Development. Appendix 4 in this article provides a summary of some key networks, while Appendix 5 illustrates the range of resources available, using the example of the University Leaders for a Sustainable Future.

In summary, there are many sources of encouragement and support for universities to become involved in sustainability. Increasingly the international community and a range of governments are saying that universities should be teaching students about sustainability, and operating in a sustainable manner. To assist them there is a growing range of networks and resources, and a wealth of experience that can be accessed. The next section of this article will explore some of the ways in which university efforts have developed in the four areas of sustainability - environment, society, economy and culture.

3. Progress in Campus Operations

The implementation of environmental sustainability on campuses was initially referred to as “greening the campus.” The activities covered generally included: facilities management; staff office practices; financial management; procurement; human resource management; public relations; information technology management; and internal management and decision making processes. However, most attention has been given to procurement/purchasing and facilities management, where the focus is on the management of resource use (energy, water, paper), emission of pollution (solid waste, water and air discharges), and maintenance of biodiversity (management of open space, waterways).

3.1 Characteristics of a Green University

Discussion of sustainability in university operations has mainly focused on environmental management of the campuses, to establish a “green campus” or university. Green universities actively attempt to minimise their impact on the environment through a series of policy decisions, implementation strategies and cultural change programs. Among other things, a green university:

- seeks to minimise its consumption of resources by putting in place measures to conserve water, energy and paper, etc;
- cuts waste output through a process of reducing consumption and reusing materials via recycling where possible;
- makes purchasing decisions based on knowledge of the environmental and social impacts of the product, e.g. paper manufactured from sustainably managed forests;
- encourages environmentally preferred transport options such as car pooling, bicycle facilities, public transport facilities and staff incentives to discourage car based

travel;

- engages staff and students and supports them to continually improve environmental practices and reduce their negative environmental impacts;
- ensures that any maintenance and construction is carried out to minimise environmental impacts and constantly improves the environmental performance of the university facilities; and
- makes decisions about financial investments and research with consideration given to the social and environmental implications of those decisions.

There are many factors that make a university green in terms of operations. The examples given above are by no means an exhaustive list.

3.2 Motivation and Support for University Greening

There are a number of factors that influence the adoption of sustainability principles and each university is driven by its own specific factors. Experience has shown that many campus greening programs arise as a result of lobbying from staff and students. For example at Australian National University the Vice-chancellor established a formal committee to develop an environmental policy for the university in 1996. The primary catalyst behind this decision was lobbying by undergraduate students and academic staff.

The greening of university operations has been underway in various forms for many years. However, following the Earth Summit in 1992 in Rio de Janeiro activities noticeably increased, along with the wider community's growing understanding of environmental issues. Within this context, the greening of the university has been discussed by a range of authors. Their reports provide illustrations of the mechanisms for introducing change, and insight into the techniques that have been effective at specific institutions. From these experiences suggestions and models have been developed to guide others. For instance, the barriers that hinder change in the university have been examined extensively, and numerous suggestions for overcoming these barriers have been presented.

Often similar barriers are found at several institutions, so the opportunity to learn from the experiences of others is important. As a consequence individuals involved in greening campus operations have frequently shared information and experiences. The books *Greening the Ivory Tower* by S. H. Creighton and *Planet U* by M. M'Gonigle and J. Starke are examples of the documentation that provides many examples of programs and activities for campus greening. Since the mid 1990s several networks have also been formed to provide information and support. These include the Campus Consortium for Environmental Excellence, the National Wildlife Federation's Campus Ecology Program, and Sustainable Campuses. An example of a network developed specifically to design and to share information among staff in roles related to campus greening was the Australian University Environmental Managers Network (AUEMN), established in 1995 using a website and email network. Unfortunately this initiative lost momentum and the network disbanded, but was subsequently reinvigorated in 2001 by a new generation of staff employed in campus greening across Australia. The new network, due to the larger critical mass of nation wide staff, has since held three

successful conferences and continues to maintain a dialogue through an email discussion group. To include green initiatives in Technical and Further Education in addition to Higher Education the network is now known as the ACTS Network or Australasian Campuses Toward Sustainability. Annual conferences are held and a contemporary interactive website has been developed to provide a forum for people who are interested in campus greening to share experiences and to discuss common issues.

Through assessments of campus projects and discussions at conferences, several factors (below) have been identified as being important contributors to the implementation of plans for a sustainable campus. These can be identified in the case studies that are provided in Appendices 6, 7 and 8, where these examples of campus greening activities serve to illustrate points of similarity, and subtle differences.

3.2.1 Staff Dedicated to Greening

The number of staff employed in campus greening has significantly increased since the creation of AUEMN in 1995. If nothing else, the increased number shows that there is at least an in-principle agreement by universities that institutions need to improve the environmental performance of their operations. An unpublished survey conducted by M. Nolan in 2002 found that most Australian universities employed one or more staff dedicated to the greening of campuses. The location of these positions within the university structure varies, however the majority sit within the facilities management area or the occupational health, safety and environment departments. Usually they have the title of Environmental Officer/Manager, and more recently, Sustainability Officer/Coordinator.

3.2.2 Committees

The need for senior staff of an organisation to be guiding environmental management is a common theme of those who promote change. However, it has been found that of 10 Australian universities surveyed for their environmental initiatives, six had formally established environmental management committees, while four had no committee structure. A common feature of the case studies in Appendices 6, 7 and 8 is the role of committees.

3.2.3 Environment policies

In an unpublished survey of Australian universities in 2001, 55% had specific environment policies. This moderate percentage indicated that interest in environmental management generally was not a top issue for the institutions surveyed. However, the indication is that internationally there has been a growing interest in sustainability and many more universities have developed environmental or sustainable development policies since the Australian survey.

3.2.4 Funding Allocation

Allocation of funding for environmental programs varies significantly across Australian universities. There is also significant variation in the method that funding is allocated.

It has been found that only a small percentage of Australian universities had a specific budget line used to further the goals of the university's environmental plans. An exception is the Australian National University that dedicated \$A2 million over ten years to fund specific initiatives identified within its environmental plan. This ensured that initiatives identified within the plan would be implemented and that members of the environmental committee and peripheral environmental groups were motivated.

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Biographical Sketch

Ian Thomas is an Associate Professor at RMIT University in Melbourne, Australia. He teaches in undergraduate and postgraduate environmental policy programs, and has written on environmental impact assessment and environmental management systems. In his research Ian has investigated the issues of embedding environmental education and sustainability education in the curricula of universities, examined the status of tertiary environmental programs, and investigated employment of graduates from these programs. His recent research has focused on capacity building of academics to support curriculum change across a range of disciplines.