

# Stocktake of Sustainability at UWS

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## Introduction

From August to October 2011 the UWS Executive Director of Sustainability met with key leaders and staff from across the University. The purpose of these meetings was to identify all of the major activities currently underway in UWS focused on social, economic and environmental sustainability in the University's curriculum, research, engagement activities and operations.

An internationally benchmarked organising framework – *Bringing Sustainability to Life at UWS* - was used to ensure the stocktake was both focused and comprehensive. Attachment One gives a definition of the key terms for the area as they are being used at UWS and in our international study of turnaround leadership for sustainability in higher education in North America, UK, Europe, Australasia and Africa.

The stocktake was one of the initial steps identified in the UWS Sustainability Strategy discussed at the Board of Trustees Strategy Day in July 2011.

The next step will be for the University to consider how best to link, leverage and promote the wide range of excellent initiatives that are already underway. This is a strategically propitious time for such work, given national and international policy developments; what is unfolding across the globe in terms of rapid social, demographic, economic, technological and environmental change; and the increased expectation that universities must take a more coherent leadership role in assisting their nations to address these changes.

## Strategic context

We are now in the last 4 years of the United Nations' Decade of Education for Sustainable Development (EfS). The focus of the UN Decade of EfS is on:

- Biodiversity
- Climate Change
- Cultural Diversity
- Indigenous Knowledge
- Disaster Risk Reduction
- Poverty Reduction
- Gender Equality
- Health Promotion
- Sustainable Lifestyles
- Peace and Human Security
- Water
- Sustainable Urbanisation

To action this agenda the United Nations University gives oversight to 85 Regional Centres of Expertise (RCEs) in EfS. The UWS Office of Sustainability is leading the establishment of a UN University RCE for Greater Western Sydney, the first on east coast Australia.

UWS is already addressing many of the DESD themes in its research, curriculum, campus operations, strategic plans and engagement projects.

Universities Australia (formerly the Australian Vice-chancellors Committee) declared its commitment to Education for Sustainable Development in a Media Release on Tuesday 8<sup>th</sup> August 2006. The President of the AVCC at this time, Professor Gerard Sutton said:

*“Through this policy the AVCC declares a commitment to Education for Sustainable Development, and will strive to ensure that universities are a major driver to society’s efforts to achieve sustainability...This will be achieved through the skills and knowledge of its staff and students and through engagement with communities.*

*The AVCC will further promote sustainability by supporting its members and through the creation of strategic linkages with government”.*

The AVCC policy encourages its members to adopt the following principles:

- *create an appropriate institutional culture of sustainable development through benchmarking and the sharing of good practice;*
- *build capacity in the community by educating the next generation of professionals and leaders to become fully aware of sustainability:*
  - *for students, consider embedding elements of sustainability at appropriate levels in academic programs;*
  - *for staff, consider implementing Professional Development programs on sustainability themes;*
- *have a clearly enunciated policy on sustainable development for all capital works, including the building of new as well as the refurbishment of existing infrastructure;*
- *engage with schools, industry and communities in partnership and projects which promote sustainable development; and*
- *undertake research which will strengthen sustainable development and education for sustainable development.*

In the School sector, the Australian Curriculum Assessment and Reporting Authority (ACARA) has set sustainability as a key cross curriculum theme for the nation.

In the Vocational Education & Training sector, the national Green Skills Accord Implementation Group – GSAIG - (upon which UWS is the U.A. representative) has now added a green module to every national training package. The GSAIG has identified universities as having a key role in developing graduates who will act on this development.

The 2010 Hanover Research report<sup>1</sup> on embedding sustainability in the university curriculum (2010: 2) has predicted a significant increase in the demand for sustainability specialists in the professions. It found that:

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<sup>1</sup> Hanover Research (2010); Embedding sustainability in to university curricula, Washington DC. At: <http://www.niu.edu/ese/images/attachments/Embedding%20Sustainability%20into%20University%20Curricula.pdf>

- Interest in sustainability-related programs in universities has greatly increased in the last few years, indicating a shift in demand from students and employers.
- Over half of employers in the U.K. are looking to employ recent graduates who are socially and environmentally responsible. For the promotion, recruitment, induction, and training of staff in terms of social and environmental responsibility, larger businesses are the most demanding.
- According to the U.S. Bureau of Labor Statistics, Employer need for graduates educated in concentrations related to sustainability is expected to increase at least 20 percent between 2008 and 2018. While the Australian labor market will not mirror that of the United States exactly, it is not unreasonable to assume that broad trends will be similar in both.

Demand for sustainability-focused higher education courses is already building in the U.S.A.:

With an increased interest in the environment and growth in the "green collar" job sector, colleges and universities are beginning to incorporate sustainability into their programs. From MBAs in sustainable-business practices to programs that give students the technical training necessary to operate wind turbines, students have an increasing array of options to choose from.... David Soto of *The Princeton Review* says student interest is driving colleges to create programs that offer training in sustainability.

Two-thirds of students surveyed for the recent "College Hopes and Worries" survey said a college's "environmental commitment" would be a factor in where they applied... Students are really savvy shoppers these days, so they're realizing, with a changing economy and green jobs looking to take a leap within the next couple of years, that they want to be armed with those types of skills.... A University of Pennsylvania program that started this year lets students earn an MBA and a master's in environmental studies at the same time. ... Arizona State University's School of Sustainability graduated its first class in May. The school offers a bachelor of arts and a bachelor of science in sustainability as well as a graduate degree.... Kalamazoo (Mich.) Valley Community College will offer a 26-week program starting in October to train students in operating wind turbines.

USA Today 2<sup>nd</sup> August 2009

UWS has a strong commitment to building attention to sustainability issues, especially those affecting GWS, into its core activities. For example, the University's current strategic plan states that one of its core beliefs is environmental and social responsibility and its vision is to bring knowledge to life in GWS through community and business engagement.

As the UWS Vice-Chancellor noted in her address to the 2011 Talloires Network Leaders Conference:

*UWS's legislated mission focuses on its commitment to its mandate of enhancing the region's cultural, economic, environmental and educational development.*

And as the VC also observed in an email to all UWS staff on 20<sup>th</sup> October 2011:

*'The Higher Education landscape looks quite different from that of just a few years ago and UWS will play a key role in the Federal Government's goals .... It is one of those rare times when our values, plans, prospects and national policies are aligned'.*

The Master Plan for the development of then UWS Hawkesbury Campus states, inter alia:

*“... the Hawkesbury Campus is designed to both reflect and promote the University’s commitment to the principles and practices of sustainability through education, research, development and community engagement. As a vibrant multidisciplinary exhibition space it will show a special regard for the social and ecological demands of sustainable living and for integrated and sustainable use and management of productive, natural and built landscapes with a particular emphasis on peri urban environments”.*

The alignment of change forces at a global level and the policy developments which are giving universities an increasingly central role in helping their regions address key issues of social, economic and environmental sustainability align neatly with the UWS commitment to the area, its vision and, as we shall see, with what the University is already doing in its research, curriculum, engagement activities and campus operations.

The strategic opportunity is now to link, leverage and promote what the University is already doing so that it becomes a national model of how a University can address in a coordinated and disciplined fashion:

- the critical needs of peri-urban areas like GWS,
- the objectives of the government and the UN Decade of ESD objectives,
- the commitments of the Talloires Declaration (*University Leaders for a Sustainable Future*) to which UWS is a signatory.

If UWS is successful in its application to become a United Nations University Regional Centre of Expertise in EfS for Greater Western Sydney this will provide a key integrating tool for acting on this strategic opportunity.

### **Findings – current UWS sustainability activities**

Below the framework used in the UWS *Bringing Sustainability to Life* site has been used to locate and illuminate what has emerged from the stocktake. In each area only activities directly focused on social, economic and environmental sustainability or a combination of these areas have been included.

## Curriculum

<p><b>National stocktake of EfS</b> UWS/ALTC undertook a <u><a href="#">national stocktake of sustainability in the curriculum</a></u> of every Australian university for the Government in 2010 (2011 finalist for a NSW Green Globe award)</p> <p><b>UWS curriculum initiatives</b> <i>33 Programs/majors/sub-majors on Sustainability at UWS</i> are listed on the <u><a href="#">National HE sustainability in the curriculum database</a></u></p> <p>A large number of <u><a href="#">UWS units of study on social, economic or environmental sustainability</a></u> already exist</p> <p><b>UWS examples - Science:</b> 2 sustainability majors – climate change science and adaptation; and ecosystem accounting - were passed in SNS SAC August 2011 for delivery in 2014.</p> <p>3<sup>rd</sup> year student environment projects on the Hawkesbury campus are planned for 2012.</p> <p>UWS to design and deliver post graduate level sustainability training in food manufacturing and Agrifoods – pilot for delivery in 2012.</p>	<p><b>UWS Examples - Health:</b> Environmental epidemiology, Indigenous perspectives, healthy lifestyles and preventative health have been embedded into the new Bachelor of Nursing curriculum.</p> <p><b>UWS Examples- Teacher Education</b> The ‘Education for Sustainability’ unit in the <i>SoE</i> is one of the highest rating units in UWS</p> <p><b>UWS Examples - SoSSP:</b> A Peace &amp; Development Studies major is planned;</p> <p>Specialisations in Urban Planning; and a possible B. Peace &amp; Sustainability are also being considered.</p> <p><b>UWS Examples - Business:</b> UWS has received \$340K to develop and deliver energy efficiency and carbon accounting modules for UWS Business students and partners in GWS.</p> <p>‘Contemporary Management Issues’ is a high rating engaged learning unit focused on EfS; the potential for sub-majors in energy saving and environmental economics has been identified</p>	<p><b>Relevant graduate attributes</b> The <i>UWS Indigenous graduate attribute</i> is now being addressed in a range of courses and schools.</p> <p>A UWS Sustainability Graduate Attribute has been proposed by a cross disciplinary UWS working party.</p> <p><b>Engaged learning for EfS</b> Community placements are being used for engaged learning on sustainability issues with partners in RCE-GWS</p> <p><b>Proposed university-wide elective</b> <i>A university-wide elective on sustainability</i> was proposed in Feb 2011 by Phil Stubbs and team</p> <p><b>Professional specialisations in sustainability</b> Professional specialisations have been identified as emerging in most professions – e.g. carbon law, environmental law and accounting; green logistics; food security; urban sustainability; environmental engineering; green IT. UWS has the opportunity to respond with sub-majors in such areas.</p> <p><b>Lectures/talks by Office of Sustainability in UWS</b> Talks on EfS were delivered to some 1500 UWS students in 2011</p> <p>Meetings on BSTL were held with some 1000 UWS staff.</p>
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## Research

<p><b>All key UWS research Groups, Centres and Institutes give focus to the area</b></p> <p>– including:</p> <ul style="list-style-type: none"> <li>• HIE,</li> <li>• Infrastructure Engineering/ Civionics,</li> <li>• URC,</li> <li>• Health Research Institute,</li> <li>• Institute for Culture &amp; Society,</li> <li>• Sustainability &amp; Social Research Group,</li> <li>• Solar Energies Group</li> <li>• Centre for Citizenship &amp; Public Policy,</li> <li>• Centre for the Study of Contemporary Muslim Societies &amp; National Centre of Excellence in Islamic Studies</li> <li>• Justice research Group,</li> <li>• CInIS</li> <li>• Corporate Social Responsibility &amp; Environmentalism Group</li> <li>• Communications Sciences</li> </ul>	<p><b>Indicative research</b></p> <ul style="list-style-type: none"> <li>• <i>Cross-connections</i> - Linking urban water managers.with HSS &amp; Arts researchers – Zoe Sofoulis (Ien.Ang.)</li> <li>• Sustainability in Business; SMEs in a carbon constrained economy</li> <li>• WISER is underway</li> <li>• SoSSP – Urban &amp; Regional Planning; Human society; sustainable tourism</li> <li>• CInIS – research on supply chain innovation; science, technology &amp; social innovation; innovation in Health Organisation &amp; Mgt; Forecasting; SMEs &amp; the green economy; meat processing; noxious weed harvesting; smart buildings; and student-led climate initiatives</li> <li>• Medical school: <ul style="list-style-type: none"> <li>Disaster Resilience &amp; Recovery Research (malnutrition, terrorism, hazard managemenet, anxiety disorders, AIDER program, adolescent mental health, resilience, population and preventative health)</li> <li>Health impacts of climate change; environment and healthy ageing</li> </ul> </li> </ul>	<p><b>Key resources</b></p> <ul style="list-style-type: none"> <li>• For engaged research see the <u>UWS TICE</u> database.</li> <li>• UWS Research Videographies series – 12 completed and accessible via the Research section of the UWS BSTL site</li> </ul> <p><b>International study of Turnaround Leadership for HE</b></p> <p>Funded by the Australian Government (\$180K) &amp; led by UWS in partnership with ANU and the Sustainable Futures Academy Salzburg</p> <p>Focus: 400 experienced EfS leaders in the USA, Canada, UK, Europe, Australia, NZ and South Africa</p> <p>Currently being implemented</p>
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## Engagement

<p><b>UWS engagement activities around sustainability in GWS</b></p> <ul style="list-style-type: none"> <li>- Greening the Greater West Expo (2009)</li> <li>- National Powershift 2009 Conference (with AYCC)</li> <li>- TVS has a pilot series underway on ‘Bringing sustainability to life in Sydney’ &amp; is awaiting the outcomes of a Commonwealth grant to make this a permanent feature</li> <li>- UWS gave the 2011 keynote address to the 2000 school students involved in the <i>NSW Youth Eco-Summit</i> &amp; Beatriz Cardona has developed strong links with all the key players</li> </ul> <p><b>Indicative partnership projects/requests to partner</b></p> <ul style="list-style-type: none"> <li>- The Australian Museum has approached UWS to partner on “Science in the Suburbs” for 2012</li> <li>- The Western Sydney Environmental Educators Group (representing 100,000 students in 240 GWS schools) is actively involved in the UN University RCE application and in our living laboratory projects</li> <li>- UWS is a participant in the NSW Office of Environment and Heritage Sustainability Advantage program.</li> <li>- UWS has partnered with Penrith City Council in the OEH “Love Food Hate Waste” project</li> <li>- National Climate Network to host national climate change conference at the Parramatta campus of UWS in April 2012.</li> </ul>	<p><b>Intellectual Property</b></p> <ul style="list-style-type: none"> <li>- The term ‘Bringing Sustainability to Life’ is being <i>trademarked</i></li> </ul> <p><b>The Hawkesbury-Nepean project</b></p> <ul style="list-style-type: none"> <li>- UWS has an MOU with WSI TAFE &amp; HEN. The partnership has achieved international <i>Waterkeepers</i> Endorsement for its Hawkesbury-Nepean Waterkeeper’s project</li> <li>- HNCMA and CWF UWS have a partnership in priority wetland conservation management;</li> </ul> <p><b>Potentially relevant engagement funding allocated to UWS Schools</b></p> <ul style="list-style-type: none"> <li>- Up to \$250K has been given to UWS Schools for partnership grants – many of which could include a focus on key GWS sustainability issues</li> </ul> <p><b>Short course funding for EfS</b></p> <ul style="list-style-type: none"> <li>- UWS Consulting has won \$350K to train managers/ accountants on energy saving (see Curriculum)</li> <li>- UWS is short-listed for the <i>AusAid</i> water and irrigation training program in Africa – around \$400K</li> </ul> <p><b>Tracking</b></p> <ul style="list-style-type: none"> <li>- An extensive range of engagement projects on sustainability are listed on the <i>UWS TICE</i> database</li> <li>- There is potential to set up a <i>data warehouse on sustainability</i> indicators and a total planning environment for GWS (URC)</li> </ul> <p><b>Awards</b></p> <ul style="list-style-type: none"> <li>- Green Gown &amp; Green Globe Awards – UWS was a finalist in numerous categories in 2011 &amp; aims to win in 2012</li> </ul>	<p><b>Indicative examples</b></p> <ul style="list-style-type: none"> <li>• SoSSP community environment project in Mt Druitt;</li> <li>• Health workforce research group</li> </ul> <p><b>UN University RCE-GWS</b></p> <ul style="list-style-type: none"> <li>- UWS is leading a <i>United Nations University application to establish RCE-GWS</i> – high levels of partner involvement &amp; positive feedback from UNU evaluator</li> </ul> <p>Key RCE partners include:</p> <ul style="list-style-type: none"> <li>• WSROC,</li> <li>• H-N CMA &amp; Office of H-N,</li> <li>• DEC &amp; TAFE,</li> <li>• GWS Councils,</li> <li>• HEN,</li> <li>• UWSC,</li> <li>• Parramatta Climate Action Network,</li> <li>• Hawkesbury Harvest &amp; Hawkesbury Earthcare</li> <li>• GWS Indigenous organisations (Land councils, AMSs, Aboriginal Corporations)</li> <li>• Sydney Olympic Park Authority</li> </ul> <p><b>Promotion of the UWS Bringing Sustainability to Life Strategy over the past year</b></p> <p>Presentations at:</p> <ul style="list-style-type: none"> <li>• The UNESCO-Microsoft HE Leaders Conference, Warsaw</li> <li>• Sustainable Futures Council, Salzburg</li> <li>• US Association for Sustainability in HE Conference</li> <li>• Australian Campuses Towards Sustainability Conference keynote</li> <li>• South African Institutional Research Conference</li> <li>• Global Meeting of 85 UN University RCEs – November 2011.</li> <li>• The meetings of Australia’s Green Skills Accord Implementation Group</li> </ul>
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## Campus operations & support

<p><b>UWS Living Laboratory proposals &amp; initiatives</b></p> <ul style="list-style-type: none"> <li>- Proposed Penrith Sustainable Design Hub</li> <li>- Creation of Nirimba Campus as a living laboratory for sustainability</li> <li>- The UWS Riverfarm is now underway</li> <li>- OEH Bio-banking proposal accepted by UWS BOT and is currently with Crown Lands for Endorsement (\$1.8m for Cumberland Plain Woodland management)</li> <li>- Hawkesbury Campus as a living laboratory for EfS – Options suggested by staff:             <ul style="list-style-type: none"> <li>- campus sustainability trail,</li> <li>- sustainable buildings,</li> <li>- solar semi-conductors,</li> <li>- local/greenhouse based food,</li> <li>- eco-gastronomy,</li> <li>- recycling &amp; waste initiatives</li> <li>- students' garden,</li> <li>- Riverfarm,</li> <li>- Tree experiment,</li> <li>- Yarramundi Farm,</li> <li>- Rickerby's creek,</li> <li>- HEN work on the river</li> <li>- Hawkesbury discovery centre,</li> <li>- methane harvesting,</li> <li>- water recycling,</li> <li>- 'wellness' including mens' health centre,</li> <li>- use of co-located Richmond TAFE's sustainable campus,</li> <li>- showcase of the successful ZERI Blue Economy projects.</li> </ul> </li> </ul> <p>Theme: 'making GWS liveable'.</p>	<p><b>The UWS Green Office</b></p> <ul style="list-style-type: none"> <li>- program is now rolled out to more than 1,600 UWS staff</li> </ul> <p><b>The UWS Sustainable University Rolling Fund</b></p> <ul style="list-style-type: none"> <li>- Some 30 locally developed &amp; centrally endorsed sustainability projects are currently being implemented and evaluated</li> </ul> <p><b>Energy metering &amp; monitoring</b></p> <ul style="list-style-type: none"> <li>- This is underway in UWS buildings on campuses like Hawkesbury</li> <li>- UWS is addressing its <i>NGERS</i> reporting requirements and developing a Carbon Reduction Strategy</li> </ul> <p><b>Water and waste</b></p> <ul style="list-style-type: none"> <li>- Considerable <i>savings from water and waste</i> have been achieved</li> <li>- Pulpmaster has been installed on the Hawkesbury campus.</li> <li>- Public Space Recycling Initiative with Packaging Stewardship Forum is being implemented (\$30k)</li> </ul> <p><b>UWS Student action on sustainability</b></p> <ul style="list-style-type: none"> <li>- Student sustainability groups have been set up at Bankstown (ACE - Action for Community and Environment) and at Hawkesbury (Hawkesbury Sustainability Collective)</li> <li>- Hawkesbury Remnants Landcare group is in its third year with many Landcare awards and a small group is now active at Kingswood.</li> <li>- A UWS Student Residence Recycling program was successfully established 2010.</li> <li>- UWS Community Cookbook project is underway for 2011</li> <li>- A Milperra students' <u>environmental mapping project</u> has been completed.</li> </ul>	<p><b>Libraries &amp; Sustainability at UWS</b></p> <ul style="list-style-type: none"> <li>- Potential to position a new role for the <i>UWS Library</i> in an era where universities no longer control knowledge but can quality assure it and link it into new, productive, 'green' ways of learning – including via mediated learning networks of practitioners working on the same sustainability issue across the world.</li> </ul> <p><b>Operational targets 2012</b> (<i>draft for confirmation</i>)</p> <p>Savings compared with 2009</p> <ul style="list-style-type: none"> <li>• 10% energy (see <i>NGERS</i>)</li> <li>• 10% water per EFTSU</li> <li>• 50% reduction of waste to landfill</li> <li>• 50% increase in recycling</li> <li>• 5% p.a. reduction in office paper use &amp; 5% increase in paper recycling</li> </ul> <p><i>Need to confirm targets on:</i> greening IT, green meetings, sustainable transport, campus biodiversity, green buildings, CO<sub>2</sub> emission targets, kg recycled p.a. per student in UWS residences (a suggested target is 6kg)</p>
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## Strategies to link and leverage current UWS sustainability activities

<p><b>Benchmarking with Best Practice Universities</b>  UWS has identified <i>international best practice</i> in the following areas against which it will benchmark</p> <ul style="list-style-type: none"> <li>• <i>Strategy, Leadership &amp; resourcing:</i> Universities of Gloucestershire; Sains Malaysia, Gothenburg</li> <li>• <i>Research &amp; curriculum:</i> Universities of Plymouth, Gloucestershire, Luneburg, British Columbia</li> <li>• <i>Campus operations:</i> Universities of British Columbia, Autonoma Madrid, Hong Kong, ANU and Bond University</li> <li>• <i>Engagement:</i> Universities of Shanghai, Beijing Normal, Guadalajara, Rhodes University</li> </ul>	<p><b>Strategic Partnerships</b>  - <i>MOUs</i> like the one signed between TAFE WSI – UWS – HEN in October 2011 are achieving productive cross-sector linkages</p> <p>- UWS is represented on the Councils of the Sustainable Futures Academy, the Australian Campuses for Sustainability and the Minister’s Green Skills Accord Implementation Group</p> <p><b>Strategic use of key networks of EfS practitioners</b>  - There is strong interest within UWS in establishing a <i>network of EfS educators</i> – the UWS EfSNet can be linked to equivalent networks in</p> <ul style="list-style-type: none"> <li>- The U.S. - AASHE EfS curriculum network of 1000 Colleges &amp; Universities</li> <li>- Australia – ACTS curriculum group</li> <li>- The curriculum teams associated with the UN University’s 85 RCEs for EfS</li> </ul>	<p><b>UN University RCE-GWS</b></p> <ul style="list-style-type: none"> <li>• all key groups in GWS are partners – strong opportunities for joint grants</li> <li>• UWS &amp; GWS has access to the work and proven approaches of 85 UNU RCEs around the world</li> </ul> <p><b>UWS-Australian Government projects</b>  These both position UWS strategically and will generate findings which can be used by the University:</p> <ul style="list-style-type: none"> <li>• International study of leadership of EfS in HE (\$180K)</li> <li>• National stocktake of sustainability in the curriculum of HE (\$100K)</li> </ul> <p>UWS Strategies &amp; Awards</p> <ul style="list-style-type: none"> <li>• The UWS Sustainability Taskforce has been underway for three years and is chaired by the Deputy Chancellor</li> <li>• VCs sustainability awards</li> </ul>
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## Recommendations

It is recommended that this report be:

- Assessed for its strategic potential and implications at both the UWS SQC and Executive
- Taken into account as budget and staffing decisions are made for 2012.

## Attachment One Key Terms & Concepts

### ***Sustainability***

The word sustainability is derived from the Latin *sustinere* (*tenere*, to hold; *sus*, up). Dictionaries provide more than ten meanings for *sustain*, the main ones being to “maintain”, “support”, or “endure”.<sup>[3][4]</sup> However, since the 1980s *sustainability* has been used more in the sense of human sustainability on planet Earth and this has resulted in the most widely quoted definition of sustainability and sustainable development, as follows:

### ***Sustainable development***

*“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:*

- *the concept of **needs**, in particular the essential needs of the world's poor, to which overriding priority should be given; and*
- *the idea of **limitations** imposed by the state of technology and social organization on the environment's ability to meet present and future needs.”*

From *Our Common Future*, also known as the Brundtland Report:<sup>[1]</sup>  
International Institute for Sustainable Development At: <http://www.iisd.org/sd/>

The concept incorporates an interlinked focus on social, economic and environmental sustainability and emphasises the importance of having a sense of continuity, of building on and learning from the past, of having consistency of purpose and of looking not just to the present but to the future. As William Wordsworth (cited Hargreaves, 200: 232) put it some two centuries ago:

*Let us learn from the past, to profit by the present, and from the present to live better in the future*

Furthermore:

*“Sustainability is not a utopian end-state. It is an attribute of dynamic, adaptive systems that are able to flourish and grow in the face of uncertainty and constant change. Achieving sustainability will require innovation, foresight, and effective partnerships among corporations, governments, and other groups. While we cannot foretell the future, we can equip ourselves to adapt to the turbulence ahead. Resilience – resisting disorder – may be the key to global sustainability”.*

(Centre for Resilience, Ohio State University. At: <http://resilience.osu.edu/CFR-site/concepts.htm>).

### ***Corporate sustainability and responsibility***

Graduate Careers Australia (2001: p 12)<sup>2</sup> explains that corporate sustainability and responsibility (CSR) is characterised by giving focus to improving the organisation's environmental, community and social impact, workplace practices, marketplace and business conduct and governance to support sustainable development. They note an anticipated growth in multi-disciplinary occupations related to CSR.

*“An increase in CSR functions in organisations has been driven by a range of factors including looming carbon pricing, consequences of an increased requirement for transparent and accountable governance (post-GFC), and a growing understanding of the necessity for stakeholder engagement. New roles are being created in workplace functions such as carbon accounting, ESG investment decision-making, community investment programs, sustainable procurement policies and employee diversity programs.”*

(GCA, 2011: 13)

### ***Education for sustainability (EFS)***

*Education for sustainability is a lifelong learning process that leads to an informed and involved citizenry having the creative problem-solving skills, scientific and social literacy, and commitment to*

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<sup>2</sup> GCA (2011): Mainstreaming corporate sustainability and responsibility, *Graduate Grapevine*, Autumn, No 11, 2011: 12-13.

*engage in responsible individual and cooperative actions. These actions will help ensure an environmentally sound and economically prosperous future.*

US Global Change Research Information Office  
At: <http://www.gcric.org/edu/pcsd/chap1.html>

EfS (education for sustainability) and ESD (Education for sustainable development) are two interchangeable terms used across the sector to refer to this broad educational movement and its strategic direction.

### ***Adaptation***

In biology

‘Adaptation’ is the evolutionary process whereby a population becomes better suited to its habitat.<sup>[1][2]</sup> This process takes place over many generations,<sup>[3]</sup> and is one of the basic phenomena of biology.<sup>[4]</sup> Adaptations are produced in a variable population by the better suited forms reproducing more successfully, that is, by natural selection.

The concept of adaptation is also used with more nuanced meanings in a range of other contexts including in the Arts, Medicine, Control and Information Systems, Economics, Psychology and Sociology.

### ***Mutual adaptation***

Mutual adaptation recognises that people not only have to adjust to their context but, in certain circumstances, can influence and shape it.

### ***Resilience***

*Resilience is the capacity of a system to survive, adapt, and grow in the face of unforeseen changes, even catastrophic incidents.*

*Resilience is a common feature of complex systems, such as companies, cities, or ecosystems. These systems perpetually evolve through cycles of growth, accumulation, crisis, and renewal, and often self-organize into unexpected new configurations....*

*A resilient enterprise has the capacity to overcome disruptions and continually transform itself to meet the changing needs and expectations of its customers, shareholders and other stakeholders.*

(Centre for Resilience, Ohio State University. At: <http://resilience.osu.edu/CFR-site/concepts.htm>).

In the context of sustainability it is possible that a tipping point is reached beyond which even the most resilient system is unable to survive.