



Charles Sturt  
University

Research Sustainability  
Guidelines





Developed by Charles Sturt researchers,  
for Charles Sturt researchers 2019



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## Executive Summary

Charles Sturt University (Charles Sturt) made a commitment to the Talloires Declaration with the Association of University Leaders for a Sustainable Future in 2008.

The declaration says:

We, the presidents, rectors, and vice chancellors of universities from all regions of the world are deeply concerned about the unprecedented scale and speed of environmental pollution and degradation, and the depletion of natural resources. Local, regional, and global air and water pollution; accumulation and distribution of toxic wastes; destruction and depletion of forests, soil, and water; depletion of the ozone layer and emission of “green house” gases threaten the survival of humans and thousands of other living species, the integrity of the earth and its biodiversity, the security of nations, and the heritage of future generations.

These environmental changes are caused by inequitable and unsustainable production and consumption patterns that aggravate poverty in many regions of the world. We believe that urgent actions are needed to address these fundamental problems and reverse the trends. Stabilization of human population, adoption of environmentally sound industrial and agricultural technologies, reforestation, and ecological restoration are crucial elements in creating an equitable and sustainable future for all humankind in harmony with nature.

Universities have a major role in the education, research, policy formation, and information exchange necessary to make these goals possible. Thus, university leaders must initiate and support mobilization of internal and external resources so that their institutions respond to this urgent challenge.

To contribute towards a continued reduction in Charles Sturt’s environmental footprint, these Sustainable Research Guidelines have been developed by Charles Sturt researchers, for Charles Sturt researchers. This was coordinated by the Charles Sturt Green Office and other stakeholders across our organisation. These guidelines highlight areas where sensible research design can minimise waste without adversely impacting on the validity and reliability of the research outputs.

Charles Sturt adopted the Learning in Future Environments (LiFE) Index in 2013 and these guidelines are a direct output of the implementation of an action which has progressed our institution towards best practice in the Research framework.

As Australia’s first carbon neutral tertiary institution in 2016 Charles Sturt prioritises behaviours that minimise our environmental footprint.

Charles Sturt’s Sustainability Statement expresses the institution’s commitment to incorporating sustainability into its actions and practices as part of its responsibility to

the community and the environment. Charles Sturt actively contributes towards the United Nation’s Sustainable Development Goals (SDG’s) including (but not limited to): Good Health and Wellbeing (Goal 3); Quality Education (Goal 4); Gender Equity (Goal 5); Sustainable Cities and Communities (Goal 11); Climate Action (Goal 13); Life Below Water (Goal 14); and Life On Land (Goal 15).

Charles Sturt is implementing the Carnegie Community Engagement Classification which signifies institutional achievement of the highest standards of community engagement. The Classification is recognised internationally and will contribute to building a stronger University; producing successful graduates; and supporting vibrant regional communities.

Through these Sustainable Research Guidelines Charles Sturt will be enabling sustainable research practices aligned with the University ethos to create a world worth living in, ‘Yindymarra winhanganha’.

**Professor Heather Cavanagh**  
Deputy Vice-Chancellor,  
Research, Development and Industry

## 1. Definitions and Acronyms

Term	Definition
<b>Carbon Neutral</b>	Carbon neutrality is achieving net zero greenhouse gas emissions for a particular activity, process or organisation. To become carbon neutral, organisations calculate their greenhouse gas emissions, reduce emissions as much as possible and then purchase carbon offsets or carbon credits equivalent to the remaining emissions. This process results in emissions being offset and leads to net zero emissions or carbon neutrality. Charles Sturt has been certified Australia's first Carbon Neutral University. On 28 July 2016, the Australian Government's Carbon Neutral Program certified Charles Sturt as 'carbon neutral' against the National Carbon Offset Standard.
<b>Carnegie Community Engagement</b>	This classification is an evidence-based documentation of institutional practice to be used in a process of self-assessment and quality improvement. It is the gold standard for higher education in the United States of America. (Appendix 1.)
<b>Learning in Future Environments (LiFE)</b>	Charles Sturt adopted the Learning in Future Environment Index in 2013 as a key element of the University's Strategy. LiFE is a structured process for evaluating current practices that support or impede good sustainability practices and for developing improvement plans via cross-organisational participation.
<b>Sustainability</b>	Meeting the needs of the present without compromising the ability of future generations to meet their own needs. (Brundtland Commission Report, 1987)
<b>Sustainable Development</b>	Development that improves the quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends. (Australian National Strategy for Ecologically Sustainable Development).
<b>Sustainable Development Goals (SDG's)</b>	The SDG's are the blueprint to achieve a better and more sustainable future for all. They address the global challenges we face, including those related to poverty, inequality, climate, environmental degradation, prosperity, and peace and justice.
<b>Sustainable Research</b>	Research that is set-up and/or delivered in a way that minimises sustainability impacts. That is, it considers the environmental, social, cultural and economic implications of how the research is undertaken. For example, research projects that actively employ methodologies that minimise environmental impacts such as employing teleconference or video conferencing rather than extensive travel, or research that minimises carbon impacts through use of highly energy efficient equipment.
<b>Research into Sustainability</b>	Research that is set-up and/or delivered in a way that minimises sustainability impacts. That is, it considers the environmental, social, cultural and economic implications of how the research is undertaken. For example, research projects that actively employ methodologies that minimise environmental impacts such as employing teleconference or video conferencing rather than extensive travel, or research that minimises carbon impacts through use of highly energy efficient equipment.

## 2. Objective

The objective of this guide is to enable the inclusion of sustainability principles and best practice in all aspects of Charles Sturt University's research operations.



## 3. Scope

The Sustainability Research Guidelines apply to all University staff, students and agents engaged in any research activity attributable to Charles Sturt. As the University increases its alignment with best practice standards, this guide will be updated to enable access to valuable resources outlining sustainable practice.



## 4. Principles

The Sustainability Research Guidelines adopt seven guiding principles, aligned with the responsibilities and values outlined in the University Research Narrative (Appendix 3.) as follows:

<b>Inclusive</b>	There will be opportunity for broad and transparent involvement in decision-making processes related to sustainability across the University community, including academic and professional staff and students.
<b>Impactful</b>	Long-term economic, social and environmental considerations will be integrated into all aspects of research related decision-making processes; considered in strategic and operational planning; central to student experience enabled through sustainable practices.
<b>Collaborative and shared responsibility</b>	All members of the University community share responsibility for the University's sustainability performance and as such will be made aware of their research role through induction, professional development, the provision of necessary educational and material resources, and ongoing training and awareness-raising.
<b>Leadership, innovation, creativity and best practice</b>	Creative and innovative approaches will be employed to implement and continuously improve sustainability outcomes. Evidence-based and innovative research for sustainability will be complemented by monitoring and analysing best practice in the higher education and other sectors to ensure the University maintains or leads best-practice in relation to sustainability wherever possible.
<b>Insightful global citizens</b>	Research activities will be conducted in a sustainable manner that reflects an awareness that their influence reach beyond the confines of its own organisation and current generation.
<b>Inspiring and student-focussed</b>	The University will ensure that graduates are equipped and motivated to undertake research in a way that contributes to sustainable futures.
<b>The Precautionary Principle</b>	The lack of full understanding will not be used to justify postponing measures to prevent degradation where there is any risk of irreversible environmental or social damage as part of research activities.

## 5. Sustainability themes and goals

### Leading for change

- Embed, promote and progress sustainability in research activities.
- Embed, promote and progress sustainability across the University and within the broader research community.

### Managing systemic impacts

- Reduce waste and pollution, including greenhouse gas emissions.
- Reduce resource consumption through sustainable procurement, improved design, efficient use and prudent practices.
- Protect and improve the natural environment through direct initiatives and reduced resource consumption.
- Improve environmental and social outcomes from procurement and contracting activities.
- Increase resilience of the University and its adaptability to a changing environment (social sustainability).

### Managing operational impacts of research within the University

- Improve energy efficiency and reduce overall energy use.
- Increase use of sustainable transport to and from the University.
- Improve environmental and health outcomes from the built environment.
- Improve environmental management of University landholdings, including improving biodiversity outcomes.



## 6. Sustainability Management Framework

The sustainability management framework consists of this guide supported by:

- [The University Strategic Plan](#)
- [Charles Sturt Sustainability Statement \(Appendix 4.\)](#)
- [The Green Labs Guide \(Appendix 5.\)](#)
- [The action plan for the LiFE framework for research](#)
- [The National Institute for Health Research Carbon Reduction Guidelines \(UK\)](#)

### Responsibilities

All members of the Charles Sturt community are responsible for working in the most sustainable manner possible. The University's Vice-Chancellor is committed to the effective implementation of the Sustainable Research Guidelines, through the Vice-Chancellor's Leadership Team and the LiFE Steering Committee to:

- Develop and implement sustainability actions to progress towards best practice
- Ensure compliance with all relevant laws and regulations.
- Continuously improve environmental, social and economic performance using the LiFE framework and go beyond compliance to maximise social good and minimise adverse environmental impacts.
- Promote, facilitate and integrate principles of sustainability across all research activities.
- Lead by example in addressing University impacts on the community and the environment (e.g. First carbon neutral university in 2016).
- Providing all students with an understanding of sustainability and environmental issues, giving them a platform to integrate sustainability into their own lives and future careers.
- Raise awareness and encourage action for sustainability through training and general education of staff, students and the wider University community.
- Require all independent operators and contractors on University campuses and property to comply with the requirements of this guide.
- Monitor and evaluate performance on a regular basis, using agreed targets and indicators.

## 7. Key recommendations for researchers

The following recommendations have been informed by Charles Sturt researchers and the NIHR Carbon Reduction Guidelines and placed into a Charles Sturt context.

### 7.1 Efficient study design

- Ensure research design is rigorous / high quality so that the findings are valid / trustworthy and so the research is not wasteful of effort and resources.
- Encourage cooperation through improved connectivity across and between Faculties at Charles Sturt and student populations.
- Share research opportunities across faculties and schools to build supportive and highly productive research teams.
- Focus on conducting research that is sustainable for the researchers themselves.
- Employ factorial design, multiple uses of data or gaining participant consent to store and use data again, in future studies.
- Involve methodologists in the design of the research to ensure maximal utility of data generated.
- Forge external and cross-campus collaborations (local, national and international) maximising opportunities for discussions via video conferencing.
- Design realistic budgets and consider creating a line item for sustainability improvements.
- Incorporate a user-centred approach, so impacts of intended study are translated to practice and can be continued by the community.
- Plan financially sustainable research ensuring adequate current and future infrastructure needs for laboratory and field-based projects.

### 7.2 Study set up and conduct

- Work with appropriate Charles Sturt colleagues and if relevant, with Division of Human Resources staff, to optimise procedures for recruitment and retention of suitably qualified staff.

### 7.3 Sustainable information communication technology (iCT)

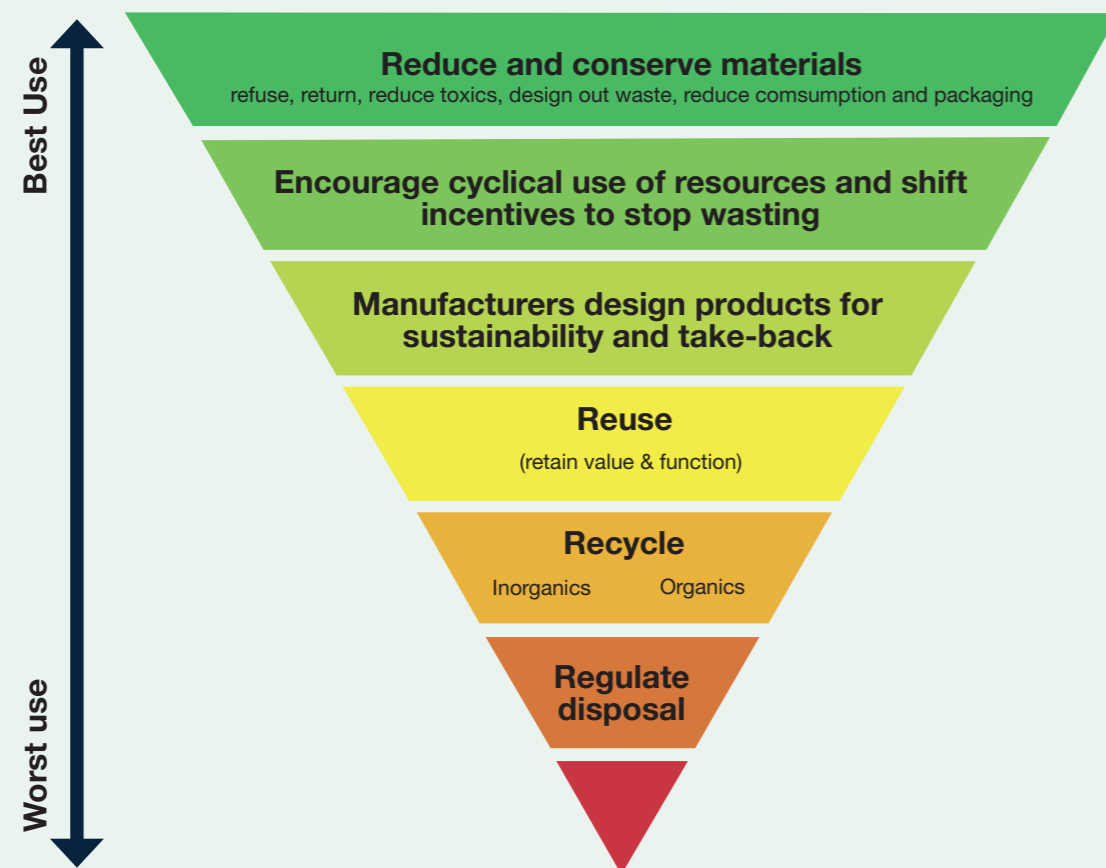
- Outcomes should be measured remotely by phone, video conference, E-mail or the internet wherever possible.
- Digitally edit most online articles / ebooks by adding your own notes and highlighting text.
- Searching for terms within a document saves time using the online version.
- Reduce time reproducing articles or references by your online library into folders or manage references using EndNote, Mendeley or Zotero.
- IT usage, data storage, data protection, IP registers etc.

## 7. Key recommendations for researchers (continued)

### 7.4 Resources

- Avoid printing/ copying as much as possible – work online rather than on paper
- Maintain electrical equipment to ensure it is operating efficiently (e.g. fridges/freezers)
- Reuse non-sterile items when collecting samples (e.g. plastic storage containers)
- Coordinate data collection so that as much of the required data is collected during a single visit as possible, and so that data is collected from geographically co-located sites at the same time
- Reduce: where possible minimise one use plastic materials and packaging, animals, consumables and other reagents, apply the principles of ‘refine, reduce replace’ in all our research activities
- Reuse: materials as much as possible, talk to your fellow researchers to potentially share resources e.g. externally sources biological samples, by products from other research projects including microorganisms, animal or plant tissues or products, or be accessing samples for multiple projects through the same researchers or sites; reuse plastic or non-bio-degradable consumables as much as possible
- Recycle: paper waste products, fluoro tubes, paper, batteries and E-waste e.g. outdated mobile phones and computer hardware should be returned to the Charles Sturt Computer Shop at Bathurst.

### Waste Management guide



### 7.5 Field work

- Coordinate data collection so that as much of the required data is collected during a single visit as possible, and so that data is collected from geographically co-located sites at the same time.
- Minimise unnecessary duplication of effort or activities in the preparation and maintenance of off-campus research or teaching visits. Share outcomes and activities where possible to reduce catering, transport and time footprints.
- Research local environmental issues to consider ways of minimising your impact e.g. if traveling to a drought affected area, ensure every individual is aware and encourage water saving behaviour.
- Ensure waste is removed responsibly, field sites are left cleared and environmental impacts are reduced as much as physically possible.
- Consider car-pooling to sites and minimise the need to fly depending on the location and number of staff participating.
- If camping or trekking ensure you leave no trace of your presence, take your waste and recycle wherever possible.
- Use rechargeable batteries, solar batteries and phone charges to improve energy efficacy and reliability in remote locations.
- Purchase supplies as near as practical to support the local economy and if possible, avoid products shipped from overseas.
- Avoid highly packaged processed foods and encourage students and staff to bring home cooked food where possible without risk of food contamination or health issues for staff and students.

### 7.6 Optimising outcomes from data collection

- Cross-utility of collection across a number of projects.
- Future proofing scientific collections so as to avoid unnecessary repetition.
- Ensuring samples are stored for maximum utility and lifespan.
- Avoid contamination or spillage, loss of samples or contamination that could prevent future use.
- Appropriate data collection and storage and potentially open access for other users.
- Study protocols should clearly set out what will be measured, when it will be measured, and how the measures will be used in the analysis, as illustrated in the dummy tabulations.
- When participant contact is necessary, outcome assessors should be geographically close to the participants where possible.
- Depending on the research, not all outcomes may need to be measured in all subjects at all times.

### 7.7 Good practice in reporting research

- Publicise your process and outcomes via photographs and through social media and Charles Sturt web pages.
- Set the results of new primary research in the context of updated systematic reviews of other relevant research.
- Ensure that reports of research contain the information needed to make them usable to the funding agency or community stakeholder.
- Incorporate a user-centred approach, so impacts of intended study are translated into practice and can be continued by the community.

## 8. Best Practice Case Study

The following case study highlights an example of best practice towards sustainable research being undertaken at Charles Sturt.

### 8.1 Dr Helen Masterman-Smith

School of Humanities and Social Sciences  
Faculty of Arts and Education

Dr Masterman-Smith has over 20 years' experience as a sociologist. She teaches and researches a wide range of social issues including: labour struggles and working poverty, social class and other inequalities, political economy and democracy, revolutions, political organisations and social movements, communities, rurality, globalisation, media, health, environmental justice, and human-animal relations. She specialises in class analyses of these issues employing Marxist, Weberian, feminist and other critical theoretical frameworks. Her tips for conducting research sustainable way are in the table on the right.



Research steps	Examples of good practice
<b>1. Research design</b>	<ul style="list-style-type: none"> <li>Physical hub within research community to reduce travel and communication costs of participants/staff</li> <li>Build sustainability tour of Albury-Wodonga campus into design</li> <li>Distribute energy efficient products via partners</li> <li>Transport groups to events by bus rather than individual cars</li> </ul>
<b>2. Conducting your research</b>	<ul style="list-style-type: none"> <li>Avoid plastic/single use catering equipment – involve participants in washing up crockery etc. Partner with community orgs (e.g. Salvos) to provide re-usable crockery</li> <li>Re-use resources from previous projects instead of buying new ones – e.g. projectors, iPads</li> <li>Give left over/unwanted food and other items to community organisations instead of going to waste</li> </ul>
<b>3. Avoiding unnecessary data collection</b>	<ul style="list-style-type: none"> <li>Use survey monkey (with paper copy on request)</li> <li>Use Endnote</li> <li>Use track changing</li> <li>Work collaboratively with other Charles Sturt colleagues/students (e.g. volunteers)</li> </ul>
<b>4. Reporting and promoting your results</b>	<ul style="list-style-type: none"> <li>Use social media, radio podcasts</li> <li>Laminate posters and encourage phone photos instead of invitations, to reduce printing and paper</li> </ul>
<b>5. General tips</b>	<ul style="list-style-type: none"> <li>Collaborate with other organisations to avoid resource duplication and waste</li> </ul>



## 9. Conclusion

The adoption of strong, measurable and sustainable research and research practice will be an ongoing priority of Charles Sturt to ensure we are proactive in minimising our environmental footprint and continually striving towards new, innovative and improved sustainability practices.

These Guidelines are currently in their infancy, and will be an evolving resource over time as new tools and methods for sustainable research are developed and tested. To initiate our journey towards best practice the following practical tools, located in the Appendices will support researchers in implementing best practice:

**Appendix 1. Carnegie Community Engagement Classification**

**Appendix 2. Sustainable Development Goals**

**Appendix 3. Charles Sturt University Research Narrative**

**Appendix 4. Charles Sturt University Sustainability Statement**



All Charles Sturt researchers are encouraged to engage and participate in the evolution of this resource. You can discuss your ideas and feedback by contacting

**Director Research,**  
Associate Professor Jason White  
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**Charles Sturt Green Office**  
Kym Witney-Soanes M.Sc  
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## APPENDIX



## Appendix 1.

### Carnegie Community Engagement Classification

#### What is it?

The Carnegie Community Engagement Classification is an elective program that signifies institutional achievement of the highest standards of community engagement. The Classification is recognised internationally and is the gold standard for higher education in the U.S.

#### The Classification is an evidence-based documentation of institutional practice to be used in a process of self-assessment and quality improvement

The Classification was developed by the Carnegie Foundation for the Advancement of Teaching and Learning for U.S. higher education institutions in 2006 (the most recent U.S. program was 2015 and the next is 2020). It involves evidence-based documentation of institutional practices related to community engagement. This includes activities of all staff and students.

#### An Australian Classification

The Carnegie Foundation, in partnership with Brown University's Swearer Center (its administrative and research home) is seeking to extend and adapt the Classification in other regions. In this regard, a number of Australian universities (including Charles Sturt) are participating in an Australian pilot of the Classification.

The pilot applications involve a comprehensive self-study process that:

- Identifies existing community engagement practices
- Highlights areas for improvement
- Provides a framework for development
- Strategically integrates community engagement as institutional practice

The Australian Pilot commenced in October 2018, with applications due in December 2019. Site visits to participating institutions by Carnegie assessors are scheduled for February 2020. The launch of the full Framework for all Australian institutions is planned for mid-2020.

Preliminary assessment of the Classification requirements suggest that Charles Sturt is strongly engaged with our constituent communities in many areas, but improvements can be made.

More information is available at:

<https://www.brown.edu/swearer/carnegie>

#### What do U.S. institutions say about the Classification?

##### Duke University

"Receiving the Carnegie classification for a second time is both an honour and an opportunity for us. The extensive reapplication allowed us not only to measure our progress over the past five years, but also to refresh the campus conversation about future directions for civic engagement at Duke."

##### Cornell University

"Benefits exist both for the university as well as for communities. Our students can apply lessons learned in the classroom and come to understand the real issues that often underlie theories and principles. Our faculty members gain robust research sites for their work. And communities have the opportunity to educate us about what is needed for them to thrive."

##### Florida State University

"What we discovered is that in every nook and cranny of campus, there is a strong commitment to experiential learning and to the creation of civic-engagement and service opportunities for our students, faculty and staff."

#### Why is community engagement important?

Community engagement describes collaboration between higher education institutions and their larger communities (local, regional/state, national, global) for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity.

#### The purpose of community engagement is the partnership of university knowledge and resources with those of the public and private sectors to:

- enrich scholarship, research and creative activity
- enhance curriculum, teaching and learning
- prepare educated, engaged citizens
- strengthen democratic values and civic responsibility
- address critical societal issues
- contribute to the public good

#### What changes will it make at Charles Sturt?

- Improved focus on community engagement
- Better recognition of community engaged staff
- Increased understanding of community needs
- Rewards for community-engaged activities
- Development of reciprocal partnerships
- Pathways for participation in community activities
- Enhanced social innovation platform
- Closer links between community and Charles Sturt operations
- Expansion of mutually beneficial outreach programs
- New professional development opportunities
- Quality assessment of Charles Sturt engagement and impact
- Learning outcomes linked to community engagement
- Community engagement aligned with strategic plan
- Recognition of engagement on academic transcripts
- Systems to record community engagement

## Appendix 2.

### Sustainable Development Goals

The Sustainable Development Goals (SDGs) are a collection of 17 global goals set by the United Nations General Assembly. The SDGs are part of Resolution 70/1 of the United Nations General Assembly: "Transforming our World: the 2030 Agenda for Sustainable Development." That has been shortened to "2030 Agenda."

The goals are broad and interdependent, yet each has a separate list of targets to achieve. Achieving all 169 targets would signal accomplishing all 17 goals. The SDGs cover social and economic development issues including poverty, hunger, health, education, global warming, gender equality, water, sanitation, energy, urbanisation, environment and social justice.

Charles Sturt works towards the SDGs through the LiFE Index.

## SUSTAINABLE DEVELOPMENT GOALS



## Appendix 3.

### Charles Sturt University Research Narrative

Charles Sturt University is operating in a paradigm of research excellence and partnership. We will provide meaningful outcomes for industry, government, business, and communities. We seek to make an impact on our worlds – regional, national and global – and contribute to their economic, social and environmental sustainability and well-being.

**Three interdisciplinary research spheres have been identified to encapsulate our research activity.**

### Resilient People

This encapsulates research that contributes to the development of educated, healthy, resilient people. It will include our 2015 reported 2 digit Field of Research codes:

- 11 Medical and Health Sciences
- 13 Education
- 16 Studies in Human Society
- 17 Psychology and Cognitive Sciences

### Flourishing Communities

This encapsulates research that contributes to developing communities that will be thriving economically, with strong social frameworks, and where diversity and harmony reside. It will include our 2015 reported 2 digit Field of Research codes:

- 08 Information and Computing
- 14 Economics
- 15 Commerce, Management Tourism and Services
- 19 Creative Arts and Writing
- 20 Language, Communication and Culture
- 21 History and Archaeology
- 22 Philosophy and Religious Studies

### Sustainable Environments

This encapsulates research that contributes to the development of sustainable solutions in agriculture and water resources while enhancing the biodiversity of our environments and strengthening ecosystems. It will include our 2015 reported 2 digit Field of Research codes:

- 05 Environmental Sciences
- 06 Biological Sciences
- 07 Agricultural and Veterinary Sciences
- 09 Engineering

## Appendix 4.

### Charles Sturt University Sustainability Statement

*Nganga-dha garray-gu, bila-galang-gu!  
Yandu garray-bu bila-galang-bu  
nganga-girri nginyalgir*

*Look after the land and the rivers, then the  
land and the rivers will look after you.*

*Yindyamarra Winhanganha*

*The wisdom of respectfully knowing how to live  
well in a world worth living in*

Charles Sturt University recognises and acknowledges the diversity and unique position of Aboriginal and Torres Strait Islander peoples as the traditional owners and custodians of Australia and the islands of the Torres Strait, in accordance with local Indigenous laws and customs. Charles Sturt recognises that sustainable practices are inherent within Indigenous culture and seeks to learn from this.

## RECOGNITION

Charles Sturt is committed to incorporating sustainability into its actions and practices as part of its responsibility to the community and the environment.

## ACKNOWLEDGEMENT

The University takes the approach that sustainability is a process that integrates environmental, social and economic considerations into decision making with the goal of creating a thriving and healthy society. Its focus is on improving the quality of life for all citizens without increasing the use of natural resources beyond the capacity of the environment to supply them indefinitely. Sustainability is based on a simple principle: Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment.

## RESPONSIBILITY

Our contributions to the Sustainability process can start with how we use and build on our connections to the global community and the shared knowledge gained from research, our creative approaches to learning and teaching, our positive community partnerships and our modelling of sustainability on Charles Sturt's campuses. As Australia's first certified carbon neutral University, Charles Sturt recognises that climate change remains one of the single greatest environmental and social challenges that we face as a species, and will actively seek to be part of the global response that is needed.

## COMMITMENT

The University has adopted the Learning in Future Environments (LiFE) Index as a structured process for evaluating current practices that support or impede best sustainability practices and identifying strategies for improvement. As Australia's leading university of inland Australia, we recognise and values its role and responsibility in promoting best sustainable practices and subscribes to the United Nations Sustainable Development Goals.

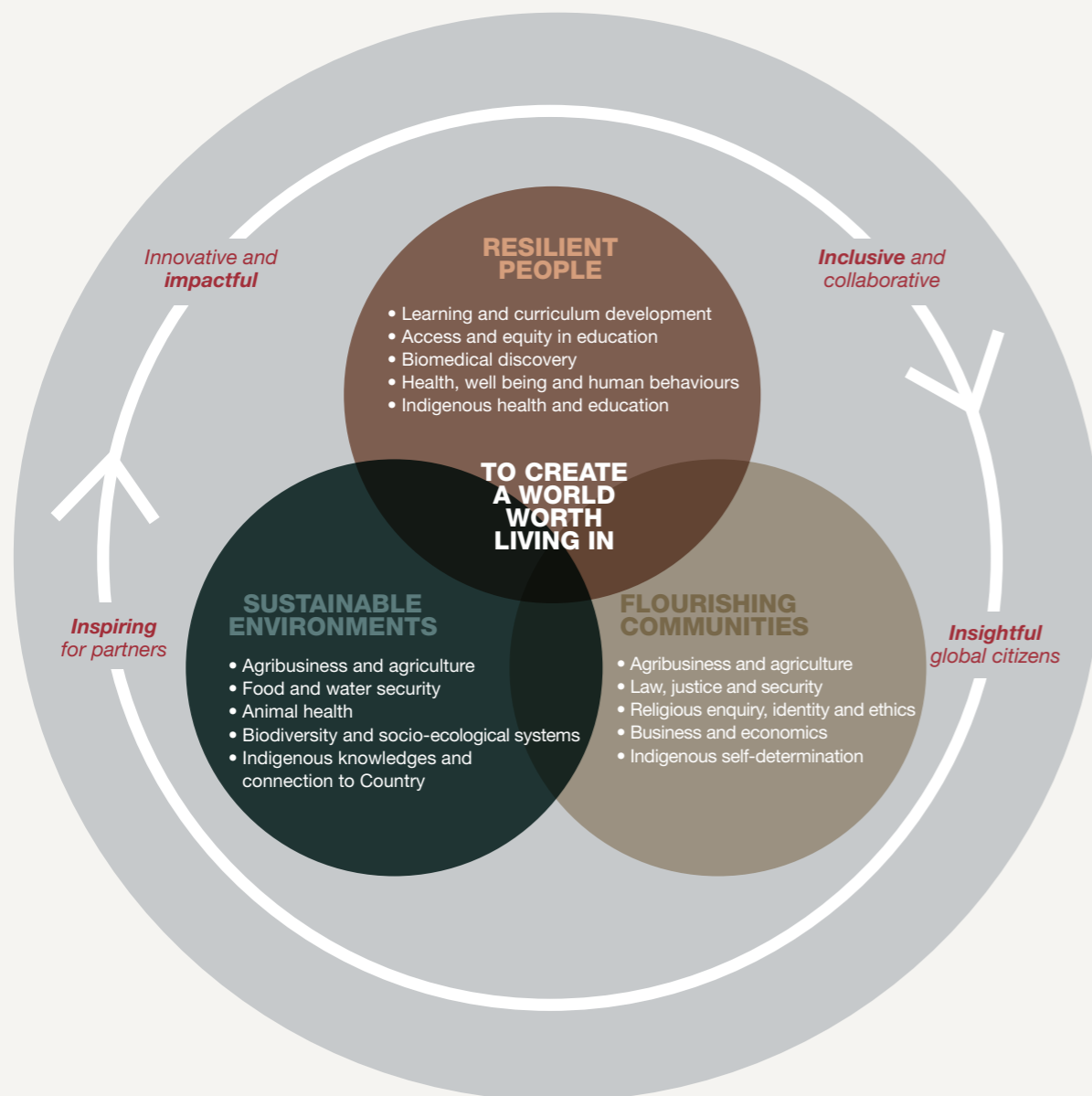


The research spheres are interlocking to indicate the interdisciplinary nature of our research. Similarly, the Field of Research codes are not fixed to one sphere: there will be deliberate cross-fertilisation across the three spheres through collaboration innovation, and co-investment. Our research is performed in a broader context, and at Charles Sturt, we accept the responsibility to undertake research consistent with our values. In our research efforts we will be

- Innovative and Impactful
- Inspiring for Partners
- Insightful Global Citizens
- Inclusive and Collaborative

The Research Narrative is aligned with the University 2017-2022 Strategy in delivering impactful, solution-driven research that reflects our existing areas of strength and tackles new challenges. It will have greater import for investment and recruitment at Charles Sturt. It will drive research investment decisions, research staff recruitment activities, and HDR recruitment and scholarship support.

Office of the Deputy Vice-Chancellor  
(Research, Development and Industry)



## Charles Sturt University Green Labs Program

The Charles Sturt Green Labs Program uses a team approach to minimise the use of energy, water, material goods and hazardous chemicals in university laboratories without compromising research integrity or safety. This model is based on similar programs and has been refined in partnership with the Faculty of Science with the secondment of skilled and passionate laboratory technician Therese Moon.

Laboratories are large consumers of resources and present huge opportunities for sustainable outcomes. Our laboratories are critical centres of intellectual innovation and discovery with a vast variety of functions from animal, health and environmental sciences to engineering. They also have a large environmental footprint. Charles Sturt has approximately 594 laboratories across our six major campuses that take up 9.6% of the total campus floor area<sup>1</sup>. Complex equipment and consumables use also contributes to their larger than usual environmental footprint in comparison to other teaching spaces. Initial rollout of the Green Labs checklist has commenced at each campus with preliminary findings influencing the latest version to enable greater flexibility and suitability to different laboratories, sites and the issues raised. The checklist works to:

- Involve technical staff and students in identifying opportunities for efficiency in their laboratory and promotes efficient behaviour among laboratory users
- Identifies inefficient laboratory equipment and techniques;
- Understand the methods to reduce the flow of laboratory materials into the waste stream;
- Promoting 'green' chemistry and chemical re-use where feasible; and
- Raising awareness about the large resource footprint of laboratories.

1. In 2018 the Division of Facilities Management (DFM) reported that laboratories occupied 31,141 meters square of room area which is 9.6% of total campus per gross floor area.

View the  
Green Labs  
Check list



## Case Study

NWGIC is committed to supporting Charles Sturt initiatives to progress sustainable practices through improved operating in our offices and laboratories. Staff regularly participate in suitability initiatives including lab clean up days and Plastic Free July to name a few.

In response to a proposal from the Green Labs fact sheet, centre research chief investigators and researchers were invited to review documentation suggesting that it is possible to lower Ultra Low Freezer temperatures from  $-80^{\circ}\text{C}$  to  $-70^{\circ}\text{C}$ . Benefits by increasing the running temperature include achieving a 30% energy reduction and also in prolonging the life of the freezers.

NWGIC centre members were provided literature to review and invited to provide feedback. Following a two week consultation period and follow up discussions, NWGIC CI's agreed to a trial period of increasing the Ultra-Low Freezers to  $-70^{\circ}\text{C}$  to determine unforeseen impact. No negative incidents have occurred to date (we are currently at the two month mark of increased temperatures) – and daily monitoring of freezers and samples is ongoing.

An additional benefit of increasing the temperatures of the freezers has been less noise from the freezers due to the motors running less often. Researchers have commented that this is an unexpected and positive result of the temperature increase, improving the ambience and therefor the experience of working in the labs.



Helen Pan showing temperature change on UL freezer.

Document evolution	
<b>Version 1 - November 2017</b>	The Charles Sturt Green Office
<b>Version 2 April - October 2018</b>	LiFE Champions for Research consultation
<b>Version 3 - 17th September 2018</b>	University stakeholder consultation and integration of the NIHR CO2 Reduction Guidelines (UK)
<b>Version 4 - October 2018</b>	Final consultation with interested group of researchers incorporating feedback from Adobe session.
<b>Version 5 - February 2019</b>	Endorsed by Deputy Vice-Chancellor, Research, Development and Industry
<b>Version 6 - July 2020</b>	Branding update and revision to Green Labs checklist



**References:**

[www.sduhealth.org.uk/areas-of-focus/r-and-d/nihr-carbon-reduction-guidelines.aspx](http://www.sduhealth.org.uk/areas-of-focus/r-and-d/nihr-carbon-reduction-guidelines.aspx)

“How to make your field trips more sustainable” sheet, by Alzena Wilmot. How to sheets for; lectures, tutorials, practicals and offices are also available. Funded and supported by the Centre for Bioscience and the Higher Education Academy ESD Project, produced in collaboration with the Centre for Alternative Technology and Aberystwyth University, U.K.

