

Clare and the Mid North Sustainability Hub Feasibility Study – May 2019



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APR] N T E R N

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Executive Summary

This report establishes the feasibility of a Sustainability Hub in South Australia's Clare and the Mid North. The report is the outcome of an internship project for the Legatus Group as part of the Yorke and Mid North Regional Alliance. The study involved a literature review, an exploration into the previous attempt at a sustainability hub in the region – the Goyder's Line Sustainability Hub, various case studies in Australia and internationally of sustainability hubs and centres, and how sustainability is already being practice in the region.

The literature review established that the term sustainability is ambiguous but that it is a concept that people and their communities endeavour to achieve. Nevertheless, sustainability is relative to place and is interpreted in many and varying ways. Despite the ambiguity and relativity, there is a lot of evidence that governance and community are integral to its success. Sustainability was explored in terms of local government, energy, water, the built environment, education, agriculture and food production and community gardens because these were issues pertaining to Clare and the Mid North region.

A vulnerability to climate change assessment which occurred in 2011 resulted in a previous attempt at developing a sustainability hub, The Goyder's Line Sustainability Hub. A gap between research around regional sustainability and climate change adaptation and what information was reaching the community led to the concept of a sustainability hub. This envisioning of a hub was about filling that gap and addressing some of the findings from the vulnerability assessment. The report found that many factors inhibited the progression of the hub despite a comprehensive effort; unclear vision and headship constraining strategy development, funding and partnership opportunities, and the opportunity to move the aspiration to a structured, on-the-ground project.

The case studies demonstrate the variety of ways sustainability can be put into practice and that sustainability hubs are conduits for education and building knowledge about sustainability, adaption, and climate change. Therefore, sustainability hubs importantly provide knowledge and experiences that allow for experiential and tangible learning and build community around the concept of sustainability as a way of addressing climate change.

The study also found that there is a solid foundation of sustainability occurring in Clare and the Mid North which constitutes a solid foundation for building a sustainability hub.

The continuing aspiration to establish a sustainability hub in Clare and the Mid North is testament of its feasibility. The factors recommended for consideration in the development of a sustainability hub in Clare are shaped by the findings of the report: Clearly defining sustainability for the context of Clare and the Mid North; defining a vision and desired outcomes for the hub; decide on a management structure which priorities the hub; establish funding; decide on a space for the hub; include community; and establish a preliminary project to get the hub on-the-ground. Adopting the recommendations will ensure the future sustainability hub feasible and evolves into a place that is practical, functional and services this community's needs.

Introduction

Climate change adaptation is increasingly a focus for regional areas in Australia and internationally. Sustainability is a term frequently referenced in association with climate change adaptation using new methods and technologies, signifying the ability of humans to meet the social, economic, and environmental needs of existing and future generations without exhausting natural resources or degrading the quality of the natural environment; sustainability is central to global resource conservancy. However, since the 'Earth Summit', Rio 1992, the difficulties and resolutions associated with climate change, addressed by 'Agenda 21', have been seen to be rooted at a local level, placing local governments in a primary position to address them. Indeed, local governments in Australia are piloting initiatives in their communities, leading education and practice around sustainability, both internally and externally, with community and organisational projects, policy development, regulation, and service delivery.

The Legatus Group of fifteen local council members is the overseer of this internship project. The Legatus Group signed the Yorke Mid North (YMN) Regional Climate Change Adaptation Sector Agreement for the period November 2017 – June 2020 in partnership with Regional Development Australia Yorke & Mid North (RDAYMN), Northern and Yorke Natural Resource Management (NYNRM) and the South Australian Government. The Mid North Region of South Australia has a strong presence of renewable energy projects with major solar and wind farms and the recent Tesla lithium-ion battery. The Legatus Group actively supports the awareness of climate change issues and in 2017 developed a Climate Change Guide for council use. The Legatus Group Climate Change Adaptation Plan 2018-2021 includes an action previously identified in the Integrated Vulnerability Assessment Plan 2011, to establish a knowledge centre for regional climate change information and a pilot site for an eco-building/township. A previous collaborative effort in 2015 created the Goyder Line Sustainability Hub (GLSH) as a virtual office for regional climate change information. The GLSH website, linked to the RDAYMN website, is no longer supported or visible.

The internship project; the feasibility study into a potential sustainability hub for Clare and the Mid North of SA, was a project initiated and supervised by the Legatus Group as part of the Yorke and Mid North Regional Alliance Sector Agreement for the Climate Change Adaptation Plan for the Yorke and Mid North Region.

Funding was by the Legatus Group and the Northern and Yorke Natural Resource Management (NYNRM) Board. A working group, consisting of members who represent the Yorke and Mid North Regional Alliance (Legatus Group, NYNRM Board and Regional Development Australia Yorke and Mid North), Department of Environment and Water (DEW), the Clare and Gilbert Valleys Council and a member of the former Goyder Line Sustainability Hub working group have given their time to oversee the project and the development of the report.

The project was endorsed by the Legatus Group and the NYNRM Board to provide a thorough review of existing physical and virtual sustainability hubs to inform the viability of developing a sustainability hub in the Mid North Region of South Australia. The commitment to pursuing and supporting the development of climate change adaptation strategies in the Yorke and the Mid North region envisions that a sustainability hub is a way of putting this into practice. The feasibility study is part of a process to ensure that the future sustainability hub is functional and successful.

Research Aims

The principle aim of the project was to establish the feasibility of a sustainability hub, based in Clare, but representative of the broader Mid North region of South Australia. In order to establish the feasibility of the sustainability hub, the project's goals of the project were fourfold.

1. Identify the opportunities and challenges associated with establishing a sustainability hub in Clare to represent the Mid North region of South Australia.
2. Establish the reasons behind the failure to progress the Goyder Line Sustainability Centre.
3. Determine the viability of a sustainability hub in Clare.
4. Present recommendations for the continued success of a sustainability hub in Clare that will represent the Mid North region.

Concept Proposal

The concept, or vision of a sustainability hub for Clare and the Mid North is yet to be determined. At the onset of the project the working group presented a range of visions, however, the overall premise of the hub is to build a hub to lead positive change for regional communities in preparing for climate change.

An initial and broad idea is that the hub could be either a physical and virtual site, or a combination of the two. The physical site suggested is the premises at 155 Main North Road Clare, offices owned and operated by DEW, and in which State Government and Regional Development Offices are located, and the premises that is likely to be offered as a potential location. It is thought that this location would facilitate a link between community and government agencies to promote, educate and assist sustainability practices for the region. Community would in some way be involved in the centre, however, how, and who would be involved is yet to be determined. The structure, management and funding of the hub is also to be decided upon.

However, the idea of a hub has generated a range of possibilities, particularly for engaging the broader community into the idea of sustainability. For example, showcasing sustainability is a way in which people could learn how to put into practice sustainability at home. This would be through the repurposing of the site at 155 Main North Road in terms of energy efficiency and the installation of solar and other aspects of energy use at the site, water efficiency through the installation of water efficient practices on the site and the renovations of old buildings into modern facilities with sustainability in mind. Indeed, in the time of the project, one of the buildings was vacated because it was condemned, which has provided another showcase opportunity for redevelopment of that space.

The gardens of 155 Main North Road were another way in which the site was seen to be able to showcase sustainability. The front garden would demonstrate native plantings to suit the climate and a community garden which would in some way be open to the community emerged from the working group as a way that would engage people in practical ways of sustainable living. Activities such as learning to grow your own food, and waste management through composting and worm farms, and other plantsmanship skills, such as propagation or pruning which are often daunting to beginners but are skills that can be put into practice at home. It was also suggested that a community garden had the possibility to be a place of learning about adapting to changing climate by using plants that work within the local climate. This idea of community gardens, which will be elaborated on in the literature review below, is also seen to be an important community investment which has other valuable benefits such as a place for building connections and relationships.

Another aspect of the preliminary discussions with the working group members was that a sustainability hub was an opportunity for the agencies in the premises of 155 Main North Road to engage with the community and share vital knowledge about sustainability and climate change

adaptation. An overriding assertion of the working group was that much of the issue around sustainability is about education, and that it is a responsibility of these agencies to be part of a process of engaging the people within the Clare and Mid North region to influence change in through knowledge sharing to enact behaviour change regarding sustainable practices, and sustainability hub, in this light, is seen to be a way in which to have an effect on that change.

Interviews with the working group members individually, provided the impressions, which are reflected in Box 1, of what a possible hub may look like. The ideas presented in these discussions, although do not represent an agreed concept proposal, demonstrate the varying thoughts that people have when conceiving a sustainability hub, and in so illustrate the complexity of understanding the concept of sustainability and how that then translates into a 'sustainability hub'. The working group demonstrated an openness to the findings from the report in their decision-making regarding the Clare and Mid North sustainability hub.

Box 1: The working group's initial impressions of what a sustainability hub could look like

Concept

That site (155 Main North Rd) is as sustainable as possible

Showcases sustainable building design, energy systems, water re-use, sustainable garden design

Regarding climate change – there is an obligation to teach people how to survive it and helping our region survive the impacts, such as what is happening along the coastlines, and fire, and extreme weather.

A focus on energy sustainability.

People often feel completely overwhelmed with climate change – therefore creating something that seems possible locally, something that's tangible, that they can put into practice.

It needs to interest people and give people something that can inspire them.

Provide a platform for passionate people to get involved and contribute.

Focus on delivering things that can be used by ordinary domestic households and small businesses.

Have clear objectives and not get too ambitious.

Need commitment.

Investments in the community has value - community well-being is of value.

Develop community's awareness of how the environment does work, what climate change really means and how it affects them and their lives.

Show people things that are achievable (some things can be too much to take in)

It's all about education – showing people, especially the younger ones how we can do things better.

Something physical because people need something to go to – something tangible.

Start small, don't be too ambitious, create some street cred and then track funding – unless you really know it's going to be a winner.

Function

That the site is open for the community use the meeting rooms and facilities – in a highly efficient, energy efficient space.

Showcasing the site as ways of taking very old buildings and readapting them to modern energy use as an exemplar across multiple avenues - play a role in providing education about wind power and solar and how people can have them in their homes. Showcasing innovative things that people can take on board themselves.

The site as a meeting place, or make available the space for other uses, such as hot desks, for example, for entrepreneurs.

That the site has a community garden. This could be accessible to the community, but also a site for schools can get involved.

Education and awareness for the schools – school groups come here and be educated about gardens and animals and buildings and you know solar and wind power and all those sorts of things.

Gardens onsite – out the front – out the side and then at the carpark there – educate people about how to garden and how to grow their own food and good garden design for the climate and are water-wise native, food and exotic gardens The food grown would also be used by the site and for community purposes.

Involve the local Aboriginal community in traditional sustainable practices.

A training facility so that we can have other staff and businesses come and be trained in a big centre.

Onsite catering available to the community.

All the buildings on the site should be used.

Just pure education.

RDA – provide information about grants, making mission statements, about energy audits, and how to make businesses more sustainable – how they can achieve sustainability or improve sustainability. Support training and workshops. Support people with grant writing and linking people to opportunities.

Showcase businesses that are doing stuff that other businesses might be able to learn from.

The ideal home exhibition –

It doesn't have to be only on the NRM site, it could also use other council sites, or be in several sites across the region.

Audience

The general community.

We need to consider what is the outreach of the centre – where are the users coming from – residents of the Clare and Gilbert Valley or further afield.

landholders, NRM region, local councils, anyone who pays the NRM Levy.

Volunteers and friends' groups.

Older people could come and share their knowledge.

Staff from the site using their skills and facilitating groups, meetings.

Hire out rooms, like the board room to the public.

Funding/management

Try and get a grant and just start off small to create something that is going to be useable.

The department would be a key driver of its management and its function. The department owns the site and therefore responsible to be involved more and take a lead role in this.

Initially there was a vision for the DEW site to become a showcase for sustainability and connect the department with the community – it would be to bring money to the site, maintain it and make it bigger. The project is now bigger because of the involvement of Legatus and the Alliance.

Research Method

The method of research included an extensive desktop study which analysed a range of secondary data, and fieldwork which gained primary data through semi-structured interviews. The secondary data included academic, government and other relevant documents and websites. Interviews were undertaken with a range of stakeholders and people relevant to the subject. All data contributed to the overall analysis and findings of the report.

Desktop study

The desktop study explored a range of secondary data. Documents reviewed included academic literature, and government and NGO documents and websites relating to sustainability and to sustainability centres or hubs. Secondary data, such as documents and other resources where the data has been collected by others' (Gray 2013, p. 497) provide insight into the discussions, both academic and other, on all issues on and around sustainability.

The data obtained through the substantive desktop study provide the academic literature to achieve a comprehensive literature review, enabling an extensive understanding of the subject matter. Relevant websites, such as, sustainability hub websites also provided important information about case studies of sustainability hubs and centres which are comparable examples from Australia and internationally. All searches related to sustainability, sustainability hubs or centres, local government and sustainability practices, community sustainability practices, and then specially. Analysis of all the documentation relating to the GLSH also provided essential context regarding that sustainability hub attempt.

Interviews

Audio-recorded semi-structured interviews provided the primary data for the research. Semi-structured interviews inform the analysis by providing 'access the subjective interpretations people attach to their objective circumstances' (Packer 2011, p. 52). The 'interview', is a useful qualitative data-gathering method which facilitates the determination of gaps in knowledge around a subject or issue, examine complex behaviours and motivations, and provide a diversity of meaning, opinions, and experiences that relate intrinsically to the research topic (Dunn 2000). As such, interviews bring depth to the data and enrich the analysis. Interview participants included people who participated in the GLSH working group, people associated in some way with an operational sustainability hub/centre, and people who are practicing sustainability in Clare and the Mid North region.

Case study analysis

An extensive compilation of sustainability hub/centre case study examples from Australia and internationally are presented. Case studies provide real-world examples (Yin 2015) that add to the understanding of experiences within similar or contrasting contexts (Gray 2013), by revealing the commonalities and differences embedded in different contexts (Baxter 2016). The use of case studies in this feasibility study provides insight into the into the structures and management profiles that can be considered as well as gaining an overview of the various ways in which sustainability is interpreted, disseminated, showcased and put into practice in a hub or centre. The case studies are presented into two sections. Firstly, three case studies are in-depth evaluations of sustainability hub/centres with information gained through interviews as well as from various websites. Another seven case studies are presented from information gained through desktop research.

Conclusion

This report, the result of the internship, seeks to establish the feasibility of a Mid North Sustainability Hub in Clare. An analysis of the literature, government and other relevant documents, as well as data gained from interview from key stakeholders and from an extensive range of case studies will establish the challenges and opportunities posed by the previous attempt to progress a sustainability centre in region, ascertain the successes of sustainability centres operating elsewhere and provide recommendations for the progression of a Hub in Clare. By deepening the understanding of what sustainability hubs are, how they function, and how they succeed, the study will establish factors that will be used to inform the development and success of a future sustainability hub in Clare.

Literature Review

The notion of a sustainability hub is an ambiguous one. The concept of sustainability is difficult to define and how it is then translated by individuals, communities, organisations, and government varies with each situation. Indeed, in Australia, there is no standard or legislative definition (Herriman et al. 2008). As such, a sustainability hub or centre is subjective and will be

comprehended and brought to fruition in different communities in different ways. However, despite the ambiguity, the literature suggests that successful moves towards sustainability depend on how well it is governed and how local communities are involved. Whilst there are a range of general themes in the literature around sustainability, such as how it is governed, conservation, biodiversity, water management, waste, gardening and food production, agriculture and education, this review will focus on how local governments have taken on sustainability, agriculture and food production, water and education, energy and the built environment, and community gardens.

Defining sustainability

A recent concept, the idea of sustainability was given global recognition in the 60s and 70s when the international community started to address the environmental and developmental challenges faced globally. Initially the term was used in reference to environmental conservation and other environmental concerns identified, such as pollution, smog and the impacts of development on the natural world (McElwee 2012). Sustainability related to the recognition that human activities are transforming Earth systems and having far-reaching implications for society. However, in 1987 the Brundtland Report; “Our Common Future”, written by the World Commission on Environment and Development (WCED) defined sustainability adopting a human-needs focus:

“development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (taken from McElwee 2012, p.3)

It was from this human-focus that sustainability was linked to social systems such as livelihoods and economics, however the report continues to inform scientific research about sustainability to this day (Chhetri & Chhetri 2010). The environmental and human development challenges faced by the global community were viewed to be interconnected and therefore measures towards sustainability require simultaneous and mutually reinforcing management approaches (Chhetri & Chhetri 2010). ‘Agenda 21’ which came out of the UN Rio Earth Summit in 1992 espoused the term ‘sustainable development’ and consumption, production and trade, as well as gender equality were emphasised as important focuses to addressing welfare in a sustainable way (McElwee 2012).

The study of sustainability is multifaceted and recognises that human activities are consequently transforming the Earth’s systems (Kennedy 2007). Researchers focus on the nature-society dynamics and address economic, social, technological and environmental tensions that include a broad range of stakeholders and their complex interactions across geographical scales (Chhetri & Chhetri 2010). Additionally, sustainability is difficult to measure (Clammer 2016; Franklin et al. 2011). Uncertainty lies in how sustainability is achieved, what timeframes are applicable, and what the criteria and indicators are that make sustainability (Clammer 2016). Subsequently, the breadth of what sustainability represents makes it a difficult concept to clarify and explains the vast range of forms that sustainability is rendered at local levels. Furthermore, because the term’s exemplificatory status in relation to environmental conservation and development it carries a lot of weight and assumptions; economic, social, and ethical, leading to numerous benchmarks and expectations (Kennedy 2007).

Sustainability is also inextricably linked with quality of life demonstrated by the interchanging of such terms as ‘environmental quality, liveability, quality of life and sustainability’ in the literature, but also the importance of the natural and built environment to people’s quality of life. However, as an overall concept which has been embraced by the global community, sustainability, resonates with people and decision-makers as something to aspire to, and is seen to be something that will make a community, and the world a better place; a notion described effectively by Whitesides (2012, p. xxvii):

Sustainability. What is it? What it is not is a concept with a sharp definition. Its general meaning is clear: It represents a wish for a world in which human uses of resources do not produce irreversible, global-scale change, where consumption (for example, of energy) is balanced by replenishment (from the sun), and where waste (for example, carbon dioxide) does not produce harmful change (of climate). Ultimately, it is a hope for stability. It is, in many ways, more a mood or aspiration than a clear direction. The almost undefined, aspirational, or even sometimes ideological character of sustainability may be fine in giving a name to an intention: We spend much of life pursuing concepts – beauty, liberty, justice – that we are hard-pressed to define in precise terms.

Sustainability governance

The Brundtland report in 1987 and the Rio Summit in 1992 were global events with local effects. In Australia, when the Government signed Agenda 21 in Rio, it committed Australian local councils to consult with their local communities to preparing long-term strategies to achieve sustainability (Kupke 1996). Local governments in Australia have since had sustainability on their agenda. An early reflection of the initial on-the-ground responses to Agenda 21 in South Australia, Kupke (1996) found that despite sustainability programs active in one form or another throughout the state, it was down to key individuals to drive the programs, that funding tended to be discretionary and likely to decrease and therefore not facilitating long-term planning, and that training in environmental management is inadequate and information exchange is poor. More than twenty years later, sustainability remains a focus for Australian local councils, yet there is still more to be done to achieve sustainability targets (Fallon & Sullivan 2014).

Sustainability is often translated in local government in Australia as a response to top-down State and Federal initiatives to reduce greenhouse gas emissions, carbon mitigation and to implement adaptation policy to adapt to impacts of climate change (Fallon & Sullivan 2014; Zeppel 2013). Federal and State sustainability policy has lacked consistency and legislation relating to the environment, climate change. For example, the initiatives of sustainability policies pursued by the Western Australian Government in 2001 were short-lived with none of the sustainability legislation enacted (Brueckner & Pforr 2011). Sustainability often reflected through neoliberal tenets with strong emphasis on improved efficiency and economic outcomes, and much of the on-the-ground responsibility is devolved to local government (Pini et al. 2007) and is often unfunded (Dollery et al. 2008). Additionally, the scale of decision-making does not match the scale of the problem of climate change; it is limited to jurisdictions and therefore not addressed in regional, national, biospheric or global scales (Kiem & Austin 2016). Moreover, legal, economic and political constraints mean that local government is often inhibited in its decision-making powers; they lack constitutional status, they are the least resourced tier of government and periodically politically undermined by state governments (Strengers 2004).

Sustainability in practice

Local government

As a result of the state of National and State governance of sustainability, local government is particularly affected. Local government is susceptible to climate change because of the proximity to on-the-ground effects and have overwhelming challenges as the authority carrying out day-to-day climate change and sustainability related policy. Nursey-Bray (2010), for example, discusses that land-use planning policy and development assessments are challenged by urban development and pressure on local resources, as well as environmental impact management such as erosion and water management. Land use and development policy the maintenance of infrastructure, such as stormwater and water supply, waste, roads and public amenities, are all susceptible to the effects of

climate change (Fallon & Sullivan 2014). Thus, local governments face a multifarious and layered levels of responsibility in which the complex interconnections between the environment, society, and the economy that need to be considered; this dynamic concisely presented by Rypkema (2013, p. 234).

For a community to be viable, there needs to be a link between environmental responsibility and economic responsibility; for a community to be livable, there needs to be a link between environmental responsibility and social responsibility; and for a community to be equitable, there needs to be a link between economic responsibility and social responsibility

With this complexity in mind, governing for sustainability is no easy task, however local councils are well-suited to the task because of their proximity to their communities (Collins 2010). Dollery et al. (2008) argue that local governments in Australia are 'place shapers', which includes the role of shaping local identity, representing community in broader regional and national discussions and debates, regulating and maintaining a cohesive community, supporting local economies and providing services suiting the locality. Taking this 'place-shaping' role in mind, local council initiatives are shaping the regional responses to climate change by increasingly making efforts to incorporate sustainability into their decision-making. However, councils can also contribute practically to lowering greenhouse gas emissions, up to 50% in a local area (Flowers & Chodkiewicz 2009)

In NSW the state division of the Local Government Managers Australia (LGMA) created the 'Sustainability Health Check'; a tool to assist councils assess their performance and develop strategies and action plans for sustainability (Herriman et al. 2008). Collins (2010) also describes various measures taken by New South Wales councils to incorporate sustainability into their decision-making. Measures include partnerships between councils and state departments to address environmental management. Developing a culture of awareness around sustainability within decision-making, such as the Wyong council 'sustainability decision-making framework' which has six guiding principles (Collins 2010). The proposed/draft guiding principles are:

- *We successfully integrate ecological, social and economic sustainability.*
- *We support our long-term vision, focusing locally in a global context.*
- *We protect the natural environment to help maintain healthy ecological systems.*
- *We apply good governance, striving to improve our processes and outcomes.*
- *We build partnerships by engaging with and listening to the community.*
- *We lead by example and support actions for sustainability.*

(Cuming 2007)

Weeding out bad practice by improving communication practices and training and education, as well as demystifying the concept of sustainability by providing tools measure and develop strategies are also key to bringing sustainability into decision-making (Collins 2010).

Strengers (2004) explores the role of the International Council for Local Environmental Initiatives—Australia/New Zealand (ICLEI-A/NZ) in assisting local governments affecting cultural change in relation to sustainable development. Four methodologies are discussed. First is the performance-based approach which uses milestones to take councils to achieve environmental goals; goal setting, planning, implementation, re-evaluation and monitoring. Second is working to support local governments at multiple levels across all spheres of council operations and in the political council chamber. Third is a capacity building approach in which ICLEI-A/NZ assists councils to rely on themselves, adopting an educational approach to support councils in setting their own sustainability agenda and determining strategies that best suits the council and its community. The fourth and

final methodology is quantification, requiring councils to set climate change mitigation and environmental targets and quantify their results, which provides a feedback loop and demonstrate the multiple benefits of environmental action.

Local councils are also incorporating sustainability through sustainability disclosure. Goswami and Lodhia (2014) discuss that disclosing sustainability targets and measures highlights councils' organisational performance relating to the local economy, social matters (including wellbeing and quality of life), and governance and environmental themes. Indeed, Dollery et al. (2011) suggest that by incorporating these broad measures in relation to sustainability, local governments refer to their ability to perform efficiently over the long-term.

However, there are factors inhibiting local councils progress toward incorporating sustainability into governance and decision-making processes. Despite reporting on sustainability issues in their annual reports there is a focus on economic sustainability over and above the social and environmental, and councils are less likely to have standalone sustainability reports (Dollery et al. 2008; Goswami & Lodhia 2014). Dollery et al. (2008) argue that a financial emphasis on local governance in Australia is unfortunate because it diminishes other vital aspects not accurately measured in monetary terms and it ignores significant factors of the role of local government. Pini et al. (2007) found that there were many barriers inhibiting regional local government-led environmental sustainability measures: (i) a lack of capacity because of limited funds, expertise, and legislative and political power alongside increased devolved responsibilities; (ii) a lack of commitment from key decision-makers with other priorities viewed a more important – economics and services; (iii) poor coordination between levels of government; between the regional and the local; (iv) poor community participation relating to a lack of interest in the community, competing demands and priorities, poor community engagement processes. Furthermore, Zeppel (2012) found that larger councils in Adelaide had greater capacity (the budget and staff) to adopt climate change strategies, such as carbon emission mitigation policies.

Energy

The debate about energy is presently polarised in Australia, and indeed internationally. There is much debate about the continuation of fossil fuels versus the development of renewable energy sources, and how to move towards a fossil fuel free future without adversely affecting the national and local economies. In the Mid-North the renewable industry with wind farms has a growing footprint and is embraced by some communities, although does not enjoy social licence in others. In relation to sustainability, renewable energy is often viewed in the literature to be the future of energy supply in the future, despite the drivers not necessarily being environmental (Curran 2018) and that the environmental impacts are not necessarily clear-cut (Savino et al. 2017). Furthermore, persistent advances in renewable energy technology and the ensuing substantial reductions in cost have made them competitive with fossil fuel generation (Say et al. 2018). Therefore, exemplifying and critically examining how renewable energy is integrated into communities, energy systems and economies is important in adding to the knowledge of sustainable energy.

Renewable energy policy is critical for the development of the renewable industry. In Australia, there are many barriers inhibiting the renewable energy sector. Politically, there is a deficit in funding and political will, which affect the modification of existing structures to allow for new actors and technologies (Simpson 2017). Curran (2018) argues that the socioeconomic and political processes producing many of the environmental issues that we face require as much transformation as energy technologies do. The reluctance to move away from the fossil fuel industry (Falk & Settle 2011) exemplified by policies and regulations that prop up and support the industry, is contrasted by the obstruction of innovation in the renewable energy sector, and the processes that would overcome technical issues with a contemporary network connection (Martin & Rice 2012; Simpson 2017). Conversely, when government has developed incentive schemes, or when communities have

taken initiatives in the uptake of renewables, the results are positive, reduce the cost of electricity for users, and increased knowledge about energy consumption and how to reduce it (Havas et al. 2015; Hicks & Ison 2011; Rajgor 2006).

The Australian Government Solar Cities initiative between 2008-2013 is an example of how government policy can facilitate people's ability to purchase and have the benefits of renewable energy. In Alice Springs, the Solar Cities program immediately reduced the participant's electricity usage up to 34% with long-term reductions (Havas et al. 2015). In Townsville, the Solar City program resulted in a council-run project focusing on painting rooves white to reduce energy use. The project resulted in a significant uptake of residents painting their roofs white and a noteworthy reduction in electricity demand (Townsville City Council 2013). Correspondingly, off-grid and fringe-of-grid renewable energy projects funded by the Australian Renewable Energy Agency (ARENA), demonstration projects designed to facilitate the expansion of a viable renewable energy sector, established the complexities relating to this kind of project, such as, the costs and availability of equipment coupled with structural barriers of governance (Herteleer et al. 2018).

Similarly, a remote island community, Lolland, in Denmark, exemplified the positive impacts of taking up a range of sustainable energy initiatives. The initiatives included wind turbines at sea and on land; centralised heating plants based on woodchips and hay and Denmark's first hydrogen community based on wind power (Magnoni & Bassi 2009). In this example the private sector, research institutions and government collaborated the local community to bring together a platform for renewable energy technology and products at a regional location, with socio-economic benefits and the ability to preserve the quality of the environment (Magnoni & Bassi 2009). Germany too is an exemplar in how a large industrialised economy can transition to a low-carbon energy system, which has occurred because of a strong political narrative and via wide-ranging initiatives and technologies and included extensive community renewable energy projects (Rommel et al. 2018).

Renewable energy is also explored in relation to rural and remote regions, and local community renewable energy projects. Rural Australian community-owned renewable energy projects provide opportunities to help meet the challenges of population growth and depopulation and foster resilience to contemporary issues facing rural communities; social-economic, environmental, political and technical. Hicks and Ison (2011) argue that in areas of population growth, these community-based energy projects meet the increasing demand for electricity, whereas areas experiencing a decline in population they act as an income source which facilitate new enterprises and jobs attracting people back into the area.

Part of argument used against renewable energy is the intermittent power generated. Batteries are increasingly used in renewable energy plants to even out these intermittencies to make the energy more dispatchable (Khalid & Savkin 2014; Yang et al. 2018). Khalid and Savkin (2014) from their research into the development of a scheme to minimize the capacity of battery storage in a distributed configuration found that batteries improved operation compared to the conventional configurations, distributed and aggregated storage. Consideration of battery size is another concern which is determined by the size and nature of energy systems applied which has implications to renewable energy system design and application (Yang et al. 2018). Another concern is the influence of the cost of purchase and installation and feed-in tariff policies on the transitioning of battery and renewable energy technology to the residential market. Decreases in the costs and increased returns to the consumer will ensure the viability of the renewable energy market (Say et al. 2018).

Water

The issue of water management, an issue currently scrutinised in Australia through the management of the Murray Darling Water Basin, is a sustainability issue that impacts all aspects of society, the environment and all scales of the economy. Water management is highly contested because of

conflicting values relating to it as well as multiple users relying on it (Clay & Albers 2016; Richter 2014). Therefore, sustainable management of water systems is integral to all sustainability goals.

In cities and urban areas water issues arise because of the close vicinity and intensity of human activity and water sources (Clay & Albers 2016). New developments add pressure to water resources and sustainable approaches developing new sites have minimal demand on resources. Key to ensuring sustainability in urban water systems is the integration of elements, such as reducing demand, raingardens and rainwater tanks on housing sites, bioretention trenches and swales and on-site wastewater treatment plants providing recycled water (McLean, J 2004).

In rural areas, growing demand for water resources has put immense pressure on water systems, especially in Australia where water is a limited resource. With good maintenance water systems provide innumerable benefits and services to society and natural process adequately provide, but only if enough water is allocated to those natural systems to work (Richter 2014). Therefore, managing sustainable water sources requires accurate understanding of the availability of water verses how much water is being used (Richter 2014). In other words, sustainable water is the 'use of water that supports the ability of human society to endure and flourish into the indefinite future without undermining the integrity of the hydrological cycle or the ecological systems that depend on it' (Peter Gleick, taken from Richter 2014, p. 77)

(Richter 2014, p. 77) argues that to ensure water use is sustainable management needs to be guided by seven principles:

- *Principle #1: Build a shared vision for your community's water future.*
- *Principle #2: Set limits on total consumptive use of water.*
- *Principle #3: Allocate a specific volume to each user, then monitor and enforce.*
- *Principle #4: Invest in water conservation to its maximum potential.*
- *Principle #5: Enable trading of water entitlements.*
- *Principle #6: If too much water is being consumptively used, subsidize reductions in consumption.*
- *Principle #7: Learn from mistakes or better ideas and adjust as you go.*

The built environment

Sustainability within the sphere of the built environment is as difficult to define as the word sustainability and will vary depending on the sensitivity of the environment to be sustained (Bothwell 2015). Adding to this, sustainability is not always obvious, and the idea of eco-friendly is not only because of solar-panels or wind turbines. As Bothwell (2015) argues, buildings that are environmentally friendly exploit daylight, use natural ventilation and use other passive forms of environmental control and in so reduce the demand for energy and minimise carbon emission. Indeed, energy performance of buildings is crucial with large-scale, even global impacts (Gorse, Johnston, et al. 2016) and Bothwell (2015, p. 147) suggests such effects of reducing energy demand in buildings:

1. eliminating or requiring smaller mechanical service systems
2. making the buildings themselves more robust and resilient, in that they require less heating or cooling
3. reducing the number of new power stations required to generate electricity

However, whatever definition is used, sustainable built environments will include the broader aspects of sustainability concerning environmental, economic and social concepts (Khosrowshahi &

Ghodous 2016), such as, protecting biodiversity, conserving resources and limiting pollution and buildings, typified by their reduced use of resources such as energy, materials and water (Bothwell 2015). Nevertheless, adding to the complexity, the literature indicates the following important factors presented by (Dastbaz & Strange 2016, p. 7):

- Population growth
- Urbanisation and poverty
- Pollution and the challenge of developing renewable and sustainable energy
- Availability and use of resources

Therefore, sustainable buildings should have small ecological footprints and symbolically ‘tread lightly’ with minimal impact to the environment connected to ‘their construction, their life in use and at the end of their life’ (Sassi 2006, p. 8). However, (Sassi 2006, p. 9) also suggests that buildings have a greater social responsibility in that they should contribute positively to the social environment they inhabit, and address people’s practical needs as well as enhance their surrounding environment and psychological and physical well-being.

So, when exploring how these factors are translated into buildings the literature presents varying focusses. For example, Gorse, Johnston, et al. (2016) focus on the need for the built environment to harness energy as well as being energy efficient. Therefore, in order to achieve energy efficiency, the design and construction of, and retrofitting buildings, need to consider an understanding of the way buildings perform and respond to climatic variations. In fact, in industrialised countries, buildings represent approximately ‘40 % of total energy use and around 30 % of greenhouse gas emissions’ (Khosrowshahi & Ghodous 2016, p. 63). Dastbaz and Strange (2016) suggest that crucial to successful sustainable buildings is in the use of technology which allows for transformative responses needed in grasping how to reduce pollution and consumption. Sassi (2006) alternatively suggests that water and availability is an important factor to individuals, their communities, and their local environments, with implications therefore on government through planning and management. The built environment consequently will consider approaches external to accessing natural water systems and include resources for example roof and surface runoff and recycling wastewater. Additionally, (Gorse, Thomas, et al. 2016) argues that the environmental, social and economic considerations; the ‘triple bottom line’ of sustainability is applicable to construction encompassing attributes of sustainable buildings as demonstrated in Table 1.

Table 1: Attributes of sustainable buildings with relation to the triple-bottom line, taken from (Gorse, Thomas, et al. 2016, p. 185)

Environmental	Social	Economic
Energy and natural resources	Usability and function	Flexibility and adaptability
Water conservation	Indoor environmental conditions – health and wellbeing	Economic performance and affordability
Material use, durability and waste	Architectural – cultural and aesthetic	Building manageability
Land use	Innovation and design	Whole life function and value
Transport and accessibility		
Greenhouse gasses and pollution		

Sassi (2006) also provide a list of considerations for sustainable design, presented in Box 2, which further explores environmental and social significances.

Box 2: Considerations for sustainable design taken from Sassi (2006 p.8)	
Land and ecology	Materials

<ul style="list-style-type: none"> • use of brownfield sites • reuse of existing buildings • appropriate density • investment in landscaping • public transport • new pedestrian routes • effects on micro-climates 	<ul style="list-style-type: none"> • conservation of natural resources • use of recycled materials • low embodied energy materials • renewable materials from a verifiable source • no ozone-depleting chemicals • no volatile organic compound materials
<p>Community</p> <ul style="list-style-type: none"> • consultation with the local community • mixed development • contribution to the economic and social well-being of the community • amenity of the wider area • visual amenity space • aesthetic excellence • collaborative enterprise involving all the design professions 	<p>Energy</p> <ul style="list-style-type: none"> • highest standards of energy efficiency • renewable energy sources • use of natural ventilation • use of passive solar energy • user-friendly building management systems • exploiting the constant ground temperature use of planting for shading and cooling
<p>Health</p> <ul style="list-style-type: none"> • comfort for building inhabitants • maximum use of natural light 	<p>Water</p> <ul style="list-style-type: none"> • efficient use of water • harvesting rainwater and greywater • minimising rainwater run-off

Therefore, a sustainable built environment is as much part of the bigger picture of sustainability as any other aspect. All the considerations mentioned are important; energy and water-efficiency are wasteful if nobody wants to live in it (Sassi 2006). Loved buildings are assets because they are part of community and culture, exist for a long time and are economically sustainable (Sassi 2006).

Education

Education for sustainability is another area where there is substantial literature reflecting the extensive uptake of programs in place globally. Indeed, high-quality education supports sustainable communities (Bierbaum et al. 2011). The purpose for education for sustainability is to facilitate positive attitudes around sustainability and providing the tools, knowledge and relevant skills, and competency in leadership and decision-making to incorporated it into everyday life (Brown 2012) and even to contribution scientific knowledge building (Wals et al. 2014).

Education facilitated by councils, local communities and schools are seen to be key sites for climate change action undertaking sustainability strategies and education for sustainability programs provide authentic and transformative learning experiences on issues such as energy, waste, water conservation and biodiversity (Flowers & Chodkiewicz 2009). For example, (Herriman & Partridge 2010, p. 80) provide a snapshot of the types of education programs that councils are targeting in Australia:

- *Water efficiency / conservation/ demand management – in homes, schools and businesses*
- *Waste – how to best use recycling services, organic waste, composting, waste and consumption, sustainable living, litter*
- *Toxics/ pollution prevention – green cleaning (in homes and preschools), stormwater pollution prevention*
- *Energy efficiency – in the home, in schools, in business*

- *Climate change – general awareness as well as how to respond*
- *Coastal ecosystems, estuarine ecosystems, learning, monitoring, protection*
- *Terrestrial ecosystems - bushland restoration and protection (eg through the Bushcare program), monitoring and appreciating local biodiversity (focus on key threatened species)*
- *Transport – active transport and facilities, health links*
- *Gardening – native gardens, community gardens, permaculture, sustainable gardening, kitchen gardens, sustainability dimensions of food production*

Programs aimed at educating local communities and in schools in sustainability are vital therefore as ways in which these issues can be learned in ways that are meaningful and transformative; in other words, experiential and hands-on with real, tangible and on-the-ground outcomes (Ripple 2012).

Agriculture and food production

Food production and agriculture, including through community gardens, is another way in which sustainability is translated into local communities globally. Buying fresh and locally produced food is seen to support local food economies, providing a market for organically grown food as well as reducing the footprint of food from seed to plate. Indeed, the value of locally grown produce is exemplified by a US study in 2012 US found that most people who prefer buying local food are willing to pay more for it (Knigge et al. 2016).

Sustainable agriculture is a shift away from the 'industrialised and technologically intensive farming'. Although more a 'philosophical approach, rather than a specific production system', sustainable agriculture thrives commercially and socially, is knowledge-intensive, and founded on 'renewable, low-input, and locally based resources' (Mauro 2010, p. 3). Interestingly people often refer to sustainable agricultural systems as alternative, however such practices are practiced worldwide, mostly in developing countries. Farmers in western countries, finding industrial agriculture unviable, have successfully returned to more traditional and sustainable farming practices (Mauro 2010). Sustainable agriculture includes a range of food production types; organic and biodynamic and natural systems farming, agroecology, holistic management, and urban and community-supported agriculture (Mauro 2010).

Food hubs and local markets are a commonality within sustainable food systems. There are many examples of 'food hubs' in the literature as emerging contributors to the local and regional food market where consumers can support sustainable attributes such as 'diversification, resilience, and long-term sustainability of local food systems' (Connelly et al. 2011; Franklin et al. 2011; Knigge et al. 2016). Such hubs also offer services such as distribution and aggregation and provide source identification and growing practice information for consumers as well as providing farmers with a diversification options by providing additional markets formerly inaccessible (Knigge et al. 2016). Furthermore, expand the market for local businesses such as restaurants and supermarkets, schools and other wholesale distributors (Knigge et al. 2016).

The different compositions of food hubs are relative to the places they come from. For example, the Just Food's Community Food and Sustainable Agriculture Hub in Ottawa, Ontario, Canada the food hub encompasses projects, such as Savour Ottawa and the Community Gardening Network, and producer-oriented programs, such as sustainable agriculture education 'where people can learn to grow food sustainably on many different scales, from household production to market gardening and commercially viable farming' (Ballamingie & Walker 2013, p. 532). The Good Food Box, Edmonton is another food hub in Canada where locally produced food is made available and affordable to people living beyond the accessibility of weekly farmers' markets. The project delivers

a selection of fresh produce to people on a weekly basis and subsidised low-income clients (Connelly et al. 2011). The New City Market Local Food Hub, Vancouver, is a site that provides for 'wholesale and retail food sales, processing and food preparation facilities, cold storage and warehousing services and office space for local food organizations' (Connelly et al. 2011). In the UK, Stroudco is a local food hub in Stroud, Gloucestershire, England, which attempts to bridge social groups by:

providing affordable, locally produced food to people in the more socially deprived communities of Stroud; giving producer members access to a local market at higher than wholesale prices; building supportive and understanding links between producers and consumers; and, developing a more sustainable local food culture and resilient community (Franklin et al. 2011, p. 778).

Community gardens

Numerous versions of community-based sustainability programs exist throughout Australia. They range from groups running conservation and biodiversity programs to community gardens and permaculture, to groups supporting and advocating for solar and renewable energy. Community gardens have been explored in the literature because of they are viewed to be the on-the-ground implementation of Local Agenda 21 (Ferris et al. 2001; Hagelman et al. 2016; Stocker & Barnett 1998). Community gardens, as well as playing a role in the production of fresh food, spaces for community connection and disseminating knowledge and technology, they also promote aspects of sustainability such as renewable energy, conservation, and biodiversity (Stocker & Barnett 1998) and recycling of domestic waste (Flowers & Chodkiewicz 2009). Community gardens also provide positive outcomes for poor and disadvantaged communities in cities and rural areas globally by providing positive community experiences and healthy food alternatives (Ferris et al. 2001; Hagelman et al. 2016). Green urban spaces are also associated with connecting city people to their environment and promote welling and health equity (Metcalf et al. 2016) and therefore influencing their attitudes towards environmental sustainability (McLean, DD et al. 2016).

Conclusion

Despite sustainability's ambiguous meaning, it is something that people and their communities strive to achieve. However, the ambiguity means that sustainability is relative to where it is being adopted. Australia had a mixed vision regarding sustainability; however, the literature is clear that governance and community are integral to its success. Local governments and their communities are pivotal in the success of sustainability programs, such as planning and the built environment, energy, food production and agriculture, water management and education and community gardens.

Context

In 2008, a climate change forum was held in the Yorke and the Mid North, illustrated in Figure 1, to increase understanding of climate change and its relevance for the local communities in the region. The forum highlighted a collaborative effort between key regional bodies was needed as well as distinguishing information scarcity relating to the vulnerability of the region to climate change. As a result, a partnership was developed between the Central Local Government Region (now Legatus), Regional Development Australia Yorke and the Mid North, and Northern and Yorke Natural Resource Management and the 'Regional Climate Change Steering Committee' was formed, initiating a vulnerability assessment to be conducted to consider the economic, social, and environmental implications of climate change.

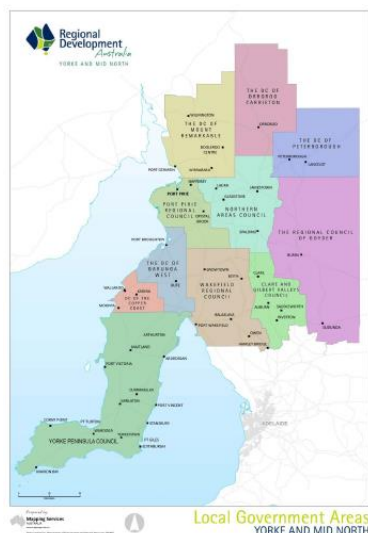


Figure 1: Map of the Yorke and the Mid North Government Region (Yorke and Mid North Regional Sector Agreement 2007)

The Yorke and Mid North Regional Alliance

The Yorke and Mid North Regional Alliance consists of The Central Local Government Region of South Australia (now known as the Legatus Group), Northern and Yorke Natural Resources Management Board and Regional Development Australia Yorke and Mid North. One of the reasons the alliance was established was to enable the agencies to work together in managing and mitigating climate change across the region. The Yorke and Mid North region include parts of the Adelaide Plains and all the Mid North, the Southern Flinders Ranges, and the Yorke Peninsula, encompassing 11 South Australian Councils. (Note that the Legatus Group also includes the Barossa, Light, Adelaide Plains and Flinders Ranges Councils). The region is diverse in terms of its climate and environment, and its geography, industry and economy, and demography.

The region represents the largest of the local government regions in the state and consists of approximately one quarter of South Australia's regional population, which is in decline and with most people living outside of the regional centres. The region is characterised by diverse landscapes of coastline, agricultural land and mountain ranges. The economy contributes in the region of 3% of the gross state product through agriculture, viticulture, mining and forestry along with a growing tourism market, health and community services and manufacturing. The region covers an area of approximately 34,930 square kilometres and is bound by approximately 760 kilometres of coastline.

The region includes most of the Northern and Yorke NRM region and majority of the 15 Councils represented by the Legatus Group. For the purpose of this agreement, the region is aligned with the boundaries of the Yorke and Mid North Region (refer Addendum 1) although all Councils represented by, or within the area of partner organisations can be included in activities under this Agreement.

Climate projections for the region indicate that average temperatures will increase across seasons, and will result in more hot days, fewer frosts, and harsher fire-weather. Projections also indicate that the region will see a decrease in winter rainfall, but an increase in the intensity of extreme rainfall events. Sea level rise will continue to increase, as will the height of extreme sea-level events.

The environmental assets of Yorke and Mid North underpin the region's economy and amenity. Ensuring the ongoing sustainability and productivity of these assets in a changing climate is key to the long-term growth and development of the region.

In 2011 the Central Local Government Region Integrated Climate Change Vulnerability Assessment – 2030 was released. The initiative was the result of a climate change forum in 2008 and the subsequent ‘Regional Climate Change Steering Committee’ formed from a partnership with local councils, Regional Development, and Natural Resource Management. The vulnerability assessment was conducted to consider the economic, social, and environmental implications of climate change.

The climate change vulnerability assessment report

The report found that the environment was deemed to be the most sensitive and have the least adaptive capacity, particularly the fauna and flora. Water dependent systems were deemed to most vulnerable, however managing water systems was deemed a possibility to managing an adaptive response. The main issue with water is the conflicting demands, however these demands are possible to reduce through improved water efficiency, recycling and desalination.

Economic capital was less vulnerable however vulnerability lies with adaptive capacity – livestock is more adaptive than agriculture and viticulture to climate change impacts such as reduced rainfall, increases in temperature and extreme weather events. Manufacturing’s vulnerability lies on its reliability on electricity and production from the agricultural and viticultural sectors.

Social capital was deemed more vulnerable than that of the economic capital. The key aspect to this relates to human health from affects to climate variability, however education was deemed crucial for developing adaptive capacity; a lack of advanced education facilities constrains adaptive capacity.

The results relate only to the time period 2011-2030 and therefore only consider the climate change impacts predicted for that time – climate change impacts beyond that time period would change the vulnerability analysis outcomes. The report also provided recommendations on what would be needed to respond to these vulnerabilities, presented in Box 3.

Box 3: The Mid North vulnerability assessment’s recommendations for responding to climate change vulnerabilities

Environmental capital

- Protect the land and the local ecosystems;
- Protect local icons (such as pigmy bluetongues and dry land grapes);
- Recognise that the landscapes we value, have value;
- Renewable energy;
- Improve and adapt housing;
- Integrated design and planning processes;
- Protect remnant vegetation, increase biodiversity;
- Manage coastal effects; and
- A healthy, vibrant natural environment.

Economic capital

- Enhance local economic viability;
- Protect the key local industries;
- Find funds to resource locally approved change;
- Manage tourism to maximise benefit and minimise negative impacts;
- Manage new industry to maximise benefit and minimise negative impacts;
- Focus on valuing and improving agriculture;
- Funding for agricultural and ecological research and extension;
- Renewable energy; and
- Integrated design and planning processes.

Social capital

- Protect the communities – celebrate local difference;

- Protect the local cultures as they are but don't fossilise them. Change is welcome if it is in keeping with local spirit;
- Protect local icons (such as pigmy bluetongues and dryland grapes);
- Vibrant communities – attracting young people and families;
- Leadership empowerment;
- Training and education – support and facilities; and
- Connect people – transport, broadband internet.

As a result of the vulnerability assessment, sustainability in relation to agriculture, viticulture, facilitating low-carbon technologies, and community living became a focus for Regional Alliance regarding the future of the region. Recommended by the vulnerability assessment, educating the community with information on sustainability and building skills to adapt was seen to be needed to ensure successful climate change adaptation. It was from these recommendations that a vision to develop a sustainability centre evolved.

Goyder's Line Sustainability Hub

The Central Local Government Region and the NYNRM Board created the role of Climate Change Coordinator for Yorke and Mid North Regions who took on the responsibility of administrating the Regional Alliance's climate change steering committee to investigate ways in which the region could address the vulnerabilities to climate change found in the report. It was from these meetings that a 'sustainability hub' emerged. Broadly, 'sustainability' was from a climate change adaption context, and as such, the idea of the hub was about the continuation of communities whilst being viable and sustaining the environment. Therefore, the hub would facilitate adapting and changing the community's actions to continue to have a healthy environment as well as being economically sustainable and the community's survival in the region.

A gap between the extensive research into rural sustainability and the ability of rural communities, and the key agencies in the working group that represent the environment, community, and the economy, to access and employ that research was identified as a key factor in exacerbating the regions vulnerability. Therefore, the committee ascertained that connecting the community with knowledge and new ideas from research, as well as exploring people's lived experiences and local knowledge to find solutions were central to the original and overarching vision of the hub. It was from this position the working group was established, and representatives from all South Australian universities, from the Australian branch of the University College London, a representative from TAFE SA - Yorke and the Mid North, and the newly established Mid North Knowledge Partnership were invited to join. The Goyder's Line Sustainability Hub working group operated between 2013 and 2015. A range of approaches to establish the hub were pursued, and included commissioning a consultancy firm, Arup, to produce a feasibility report and business case for the hub, research grant applications, developing a memorandum of understanding with the partners of the hub, and establishing a website. The website; a depository of research and publications relating to climate change adaptation and sustainability in and for the region, was disbanded in 2015 and is no longer visual on the web.

Investigating the experience of the GLSH will provide important insight into developing a sustainability hub in Clare and the Mid North which will need to be considered in future decision-making. The processes undertaken to develop the GLSH will be outlined and the key findings from interviews with members of the GLSH working group will be discussed below.

Arup – feasibility study and business case

A feasibility study and business case for a Regional Sustainability Centre was undertaken by Arup, an independent consultancy firm, and completed in August 2013. This project was funding through the

State Government Prospering in a Changing Climate Grants program with support from the Regional Alliance partners. The process was undertaken in two stages: Stage 1 – Feasibility Study and Concept Statement; Stage 2 – building a business case from the work from Stage 1.

The vision for the Goyder Line Sustainability Centre

Arup's consultation results were consolidated in a concept statement:

The Goyder Sustainability Centre is a community hub and regional visitor attraction that showcases and incubates research, regional business and adaptive rural living practices in the Yorke and Mid North Region of South Australia.

It acts as a research generator, industry cluster, information exchange and sustainable educational platform.

And additionally:

The Goyder Sustainability Centre makes an important and substantial contribution towards increasing public understanding and appreciation of climate change adaptation, particularly with relation to sustainable agricultural and viticultural practices and embedding large scale renewable energy within the community.

The centre was therefore seen as a hub for forging relationships with universities and industry by engaging in state-of-the-art research which would resonate locally as well as reaching a global audience, whilst creating showcasing possibilities for the region. Also considered, was that the hub could act as a tourism destination, educational facility and restaurant/café to provide a funding avenue.

The key features of the centre:

- Innovative thinking and learning
- Industry learning
- Showcasing adaptation practices
- Integrating with environment
- Demonstrating sustainable design

Feasibility

The Feasibility Study established that a regional Sustainability Centre for the Yorke and Mid North Region, promoting and showcasing local initiatives aimed at addressing climate change impact or mitigation, was viable in a precinct style centre based on three potential sites; in Bowman Park, Crystal Brook and two sites in Clare. However significant upfront and ongoing costs were estimated for each option, requiring identification of substantial funding necessities. Revenue opportunities were identified through either Federal and State Government grants, and potentially through leasing arrangements and tourism. The following conditions were identified as essential to the centre's feasibility in relation to initial and sustaining funding opportunities and support:

- Federal and State Government support to secure upfront funding to commence the project.
- Local Government support through providing land in-kind to reduce the burden to the Government on up-front funding.
- Strong partnerships with research and industry to enable the GSC to become a community-based world class research and development institute and through this secure the ongoing viability of the GSC.
 - These should be aimed at: Renewable energy partners due to the level of active wind energy producers in the region.

- Viticulture partners leveraging off the internationally renowned Clare Valley wine producing district.
- Agricultural partners due the central role of agriculture in the region.

In addition to this, the following factors were deemed necessary for the success if the centre were to be part of a global education campaign to live more sustainably:

- International best-practice standards
- Donor agency support
- Multi-level inter-governmental collaboration and policy alignment
- Active community involvement
- Committed support from leaders in every industry
- Involvement and advocacy from relevant NGO's, educational institutions and community-based organisations.

Key attributes of the centre would be:

- The Goyder Sustainability Centre should exist as a defined open space precinct that provides a platform to accommodate organisations and installations. These may be housed within buildings or be presented as outdoor sustainability demonstration exhibits
- The Goyder Sustainability Centre should utilise sustainable “installations” or “exhibits”, thereby exploiting the opportunity for both applied research and community learning within a changing environment
- Visitors should be intrigued and encouraged, both passively and actively, to enquire into and investigate the Centre’s sustainability features
- The Goyder Sustainability Centre should convey a clear message and illustrate the potential of sustainable design – to look beyond and challenge current perceptions of sustainable and ecological design – to look towards climate change innovation as a positive and exciting process of learning
- The design and construction processes of installations are documented/recorded and made available
- The Sustainability Centre clearly illustrates through various installations sustainable design and construction techniques
- The Sustainability Centre should include monitoring facilities to enable the effectiveness of sustainability/adaptation learning responses to be monitored and lessons learnt

Management structure

The management structure encompassed was threefold: A Steering committee, working groups and sub groups illustrated in Figure 2.

A Steering Committee, represented by Government, Councils, Industry and Research institutions, providing the strategic vision, guidance, monitoring and direction, programming and the budget. The Steering Committee reports to the Project Sponsor.

A Co-ordinator, reporting to the Steering Committee, delivering the project outputs and responsible for day-to-day running of the Centre and engaging with all levels of Government.

The working groups work on the operational aspects of the project such as strategy, policy and other aspects that work on the ‘big picture’ of the project – such as research and industry relations etc.

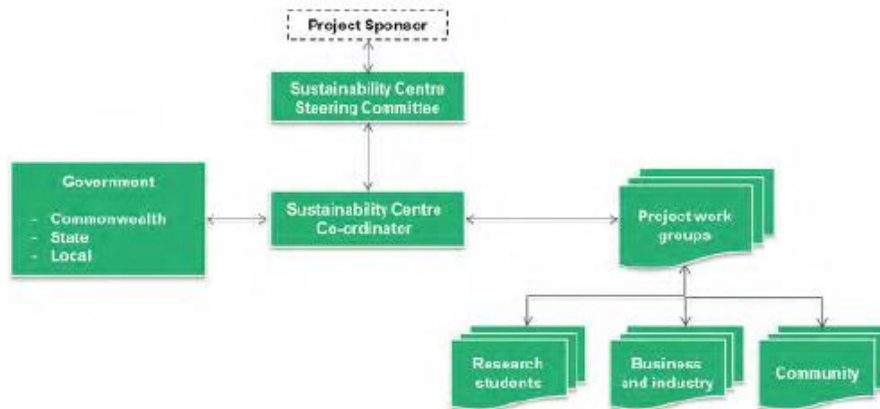


Figure 2: Governance structure taken from the YMNRA Sustainability Centre Business Case 2013

Funding

With high upfront and continuing costs, funding for the centre was reliant on government money and grants, however these options would require a total revaluation. Establishment was to be covered by grants and it was considered that the Sustainability Centre eventually would be self-funded through revenue from research and development initiatives, visitors (universities, school and tourism), and commercial activities (leasing office space, and at a later stage café /restaurant operations).

Stakeholders

The key stakeholders were identified as:

- Potential alliance partners: Government agencies and departments, research and development, business and industry partners
- Government:
 - Local – Yorke and the Mid North region
 - State – PIRSA, DEWNR (now DEW), SATC, SAFECOM, NRM, SA Museum
 - Federal – CSIRO, Department of Agriculture, Fisheries and Forestry, Department of Climate Change and Energy Efficiency, Department of Innovation, Industry, Science and Research, Department of Regional Australia, Local Government, Arts and Sport, Department of Sustainability, Environment, Water, Population and Communities
 - Mid North Knowledge Partnership – Flinders University, the University of South Australia, Regional Development Australia- Yorke and Mid North, the Regional Council of Goyder and the Clare and Gilbert Valleys Council
- Research and development through the University of South Australia, Flinders University and the University of Adelaide
- Industry – Renewable, agriculture and viticulture
- International – UNESCO, WWF, International Conservation Union and Green Globe
- Community – End-users

Risk

The main risks were seen to be through funding uncertainty and maintain interest and engagement of partners.

Key research findings regarding the GLSH

Interviews were undertaken with members of the GLSH working group. The key findings from those interviews, presented in Table 2 and detailed below, establish the central reasons why the GLSH was

not fully progressed and why the website was eventually shut down. Although there was a genuine effort by a range of people and a definitive aspiration for the establishment of the GLSH, crucial aspects inhibited its progress; predominantly, a broad and undefined vision which lacked a strategic plan and a key person to take responsibility. Additionally, Arup's contribution was too substantial requiring considerable commitment and cost. However, despite this, the achievements accomplished present the foundations for a future hub in the region. All the key findings are interrelated but essentially relate back to the fundamental inhibitor to the progress of the GLSH, an unclear central vision for the working group to hinge discussions and decision-making on.

Table 2: Key findings from interviews with members of the GLSH working group

Key findings from interviews with members of the GLSH working group	
A central vision of the hub and strategy for its implementation were never properly established	<ul style="list-style-type: none"> • The vision was too broad and lacked clarity. • The scope of the hub was never defined • A strategy was never agreed upon • A lack of cohesion amongst members in the overarching vision and how that would be implemented • The complexity and diversity of the region made the scope of the hub too broad, and made it difficult to ascertain where a physical hub could be placed
No organisation or person assuming responsibility for the hub	<ul style="list-style-type: none"> • There were a lot of agendas on the table from the different organisations involved but no one organisation willing to take responsibility for the hub • There was no paid position to take on the task of putting the hub into action – to make the hub a priority
The role of partners was not fully established	<ul style="list-style-type: none"> • The relationship with tertiary organisations in particular was not properly understood by all parties • Academics were keen to be involved, however needed projects to establish their connection with the hub • Partnerships with industry, regional agencies lacked clarity and were not established
Funding was a significant problem	<ul style="list-style-type: none"> • Because an organisation didn't take responsibility for the hub, funding allocation was difficult to ascertain • The broad scope of the hub meant that it did not fit certain criteria for funding applications • Large grant funding applications were not successful • There was no buy-in from either universities or industry
No projects were undertaken to get the hub off the ground	With no strategy, funding or key person, there were no projects undertaken under the banner of the hub. This meant that the hub was unable to be recognised in terms of delivery and therefore as a recognisable entity, and something for the hub to grow from.
Arup's reports were unsatisfactory	The report delivered a hugely aspirational hub which would take many years to establish. The scope, therefore, was too large, required large funds and a great deal of commitment which was unattainable for the working group at the time.

Insufficient community involvement	The concept of the hub was to provide a platform to engage the community with the latest climate change research in order to facilitate knowledge building capacity and behaviour change, however community was seen as an end user was not involved in the hub's development process, which is insufficient for successful community-based sustainability programs.
Successes from the GLSH experience provide the foundations for the future sustainability hub	<ul style="list-style-type: none"> • The GLSH experience established that a sustainability hub is something will facilitate the region's adaptability to climate change. It started the conversation which is continuing today. • The raised the interest of universities regarding climate change research in the region – the discussions were intelligent and gave the region a platform for a voice when it often does not have one. • It provided a platform for thinking about the region in new and different ways. • That a sustainability hub is still on the table is testament that the GLSH was on the right track.

A central vision of the hub and strategy for its implementation were never properly established

The predominant issue for the GLSH for people on the working group was that the vision of the hub was too broad and lacked clarity, resulting in the working group's inability to establish a strategy for its implementation. The lack of clarity about how the broad idea of connecting the community with climate change research in the region would happen, meant that the scope of the hub was never defined, and hence a strategy to implement and manage the hub was never established. Indeed, it was apparent that after years of discussions, what the hub was, and how it would be had not been decided.

The common theme about the vision from the interviews was that there was need to fill the abovementioned gap in connecting research opportunities and outcomes to the community. However, uncertainty lay in how this gap would be filled, and how academic research focus could respond to the community's needs. The vision was therefore aspirational and unspecific, that the group was unable to convey into something distinct and tangible. Because of this, it was impossible to ascertain the scope of the hub and the necessary requirements for developing a strategy to move it to the next step. Indeed, many interviewees commented that the reason for the GLSH not progressing was the working group's inability move it from an idea into something concrete – to take it to the next step.

The signing of a memorandum of agreement (MOA), a task which took a considerable undertaking to complete, was seen by one interviewed as more of memorandum of understanding rather than agreement and that it was vague as to what it was that they were doing. As such, it was seen to be an agreement to talk and cooperate where possible, but not a document which defined any action forward. One person concluded that the purpose of the hub was not clear. They argued that what 'could' be done was often talked about rather than what was 'wanted' to be achieved; agreements on this would then set in motion strategy building and approaching potential partners. Indeed, it was also suggested that potential partners, such as industry and universities, would need a clearly defined purpose if they would consider entering an agreement.

The interviews also revealed that the complexity and diversity of the region was a difficulty when defining the scope of the hub. The multiplicity in demographic, industry, and environment made it difficult to define the hub's function. The diversity of communities; their needs, their livelihoods,

their vulnerability to climate change all vary, bringing complexity to decision-making about how best to address these vulnerabilities, and how best to connect to the community. For example, one person interviewed suggested that the broadness of the concept of climate change adaptation in the region is on one hand individual when considering change on private land, however when considering it collectively, decisions could have marked impacts on communities. This is also more complicated when community may not see a need to change or may not identify with the hub if it is in a community that does not represent their demographic, industry, and environmental needs.

This lack of a concise vision and the inability of the working group to reconcile the aspiration into something well-defined explains the following findings and are therefore important considerations for future decision-making.

No organisation or person assuming responsibility for the hub

The interviews revealed that people on the working group understood the GLSH couldn't progress because there wasn't anybody to take responsibility to get the hub to the next step and into the future – a funded position. There was a core group of people on the working group, however it was the Climate Change Coordinator who was pivotal in coordinating meetings, capturing information in the background and ensuring that goals were being worked towards. But significantly, the GLSH was not their only priority, and over time their role shifted. As a result, over the period that the working group met, the meetings were often ad hoc, and it was difficult them to keep the momentum.

It was suggested that what the GLSH needed was somebody in a position to drive the project and respond to opportunities when they came; a person who could have prioritised the GLSH who would also have kept the momentum. It was also suggested that the organisation paying for the role would also be important in promoting the hub. However, because everybody on the working group had busy lives with their own work loads, and as the GLSH was not their priority, the momentum was lost over time. It was also suggested that having a person responsible for the GLSH would also take on responsibility for building the necessary cohesion in the group to formulate the range of ideas into the vision of the hub from which to build a strategy to take it to the next step and put it into practice. Additionally, having somebody to tell the story of the hub was also deemed important because if people are not told, they don't know. And then there were the difficulties with logistics such as gathering members together who were scattered around the state – a time-intensive task which would have benefitted from a person in a dedicated role.

The web page that contained information about who and the type of research and activities occurring in the region, was difficult to maintain, and with only a limited amount of information put into it, it was closed two years ago. This was another area that was ascribed to there not being a person with responsibility for the hub, and a naivety in managing such publications. The vision of the website was to facilitate bridging the gap between what is done in and for the region that the region didn't know about meaning that this deficit in local knowledge was resulting in new and innovative practices not being taken up in the region. However, with nobody acting in that capacity this information was not making it onto the website. One person noted that websites only work with multiple people committed to maintaining it.

There was also scrutiny about which organisation would have been best to take responsibility. Some thought that the NRM would be ideal to take on the hub because of their core focus on the region and the huge amount of resources would not only contribute to and strengthen what the hub could do, but also be something to build on. It was suggested that the NRMs presence in all areas of the region would be a way in which to connect with those outlying communities. On the other hand, the RDA was noted to have the necessary 'buy in' from community, industry and businesses in the region to take on that responsibility. However, it was never identified who was going to take charge of the GLSH or where the resources needed for its implementation were going to come from.

The interviews also highlighted a sense of ambiguity regarding the cohesion of the group. There was uncertainty how each person's portfolios and agendas would unite into a set common purpose. It was thought that this ambiguity resulted in a lack of any formal structure in the meetings. This ambiguity was seen to be exacerbated by group members moving on without being replaced, and the time taken to make formalised agreements.

The role of partners was not fully established

Another key issue was the identification of partners for the project. Without a key vision for the hub there was no specific role or reason to approach potential partners with. Although the main partnerships sought were with universities and industry, there was no defined role to engage with each potential partner and therefore nothing to negotiate.

For the academics on the working group, although there was interest the idea of the GLSH, universities require funding opportunities in order to put into practice research projects and are not in the position to invest without a plan, or grant. Indeed, it was suggested that although there was a lot of talk about what research was being done at the time in the area, there was no talk about what could be done collaboratively under the banner of the hub. From this perspective, the academics in the group did not necessarily see themselves as invested in the rollout of the hub and working collaboratively together, but rather as providers of information or advise. Universities are under pressure to deliver high-quality research outcomes and get big grants so they often tend to focus on certain things that will deliver the goods. In this way, developing partnerships with universities are difficult without a funded research project per se.

The academic working with UCL however, was keen to establish a partnership with the hub, but found problems with forming partnerships with other government departments, particularly when looking for grant applications and establishing project opportunities. The difficulties arose because of the compartmentalised nature of the government agencies and any proposed projects were rejected because they did not fit completely with their agendas and priorities.

There was also a problem identified with the Adelaide-centric nature that exists in the state being reflected in the working group with meetings often being held in the capital. Concern was expressed that this may then be an issue into the future; that it would be difficult to maintain the central focus on the region through the relationships with the universities.

The representative from TAFE was unsure TAFE could contribute which was partly to do with TAFE not delivering courses regarding sustainability at the time – however this is changing now. However, the lack of a clear vision and strategy made it difficult to determine a partnership in this instance.

There was also an aim to find a partner in industry to perhaps take a lead of the group and move it forward and provide stability and funding. It was proposed that the renewable industry could take on this role as well as showcasing their products to provide a base for the hub to grow from. A workshop with some of the people working in the renewable industry space at that time determined some interest, however they were uncertain about making a commitment as they were not sure what was in it for them. But the often-strained relationship between the industry and the community was another inhibitor.

However, the interviews revealed mixed opinions about forming partnerships with industry because of potential conflicts with the overarching hub agenda – some people thought that by just getting some money to start off with was justification enough, whereas others were conscious of the implications, particularly in relation to industry expectations of the GLSH when it wasn't about providing industry with resources but providing communities with resources.

There was also uncertainty about connecting with some of the community-based and industry-based groups, such as environmental/conservation groups and farming systems groups or peak bodies for different areas of farming. These groups have often strong community connections, but at the same

time provide similar extension services to those communities through their relationships with research. It was not established how best to form partnerships with those groups.

Funding was a significant problem

The interviews revealed, almost unanimously, that funding was a considerable barrier. It was thought that money would be a way in which to get something off the ground, however with no direct alignment with funding, varying agendas, and criteria issues with funding application made it difficult to secure anything.

In relating to obtaining grant funding, challenges in finding grant funding related to the research proposals not fitting into learning streams, instead the proposals were broad; not about finding a wheat variety, but about tackling regional issues. Therefore, establishing scope and the methods of the delivery was very difficult. This difficulty was noted by one respondent to be because issues pertaining to 'sustainability' inherently cross many disciplinary boundaries. Government agencies' limited range of responsibilities means they are reluctant to allocate money when aspects of a proposal are outside of those responsibilities. So, despite interest in proposals, the funding rules and the boundaries of the agencies within the organisations within government are a barrier to researching sustainability.

Another challenge was the absence of any buy in. The three universities did not come to the table with a guarantee of money that would place their commitment to supporting the hub. The University of South Australia were not in the position to do so because at the time they were divesting themselves of interest in the regions. Although they still have two regional campuses, they are managed by ex-headmasters, and without a focus of research. One academic on the working group did not have money in his budget to allocate to the hub and knew that any requests to the university would be declined.

It was clear to the working group that small pots of money would not be enough to meet the needs of what was envisioned. There was also no decision made on where to go to for funding particularly in a time when there was little support at a national level for anything, sustainability or environmentally oriented. Although there was some interest at the State level in a funding application for a learning network that would be an online platform that was thought could provide the home for the GLSH funding was never granted.

For the agencies involved in the alliance, funding was also an issue. Because they are government funded, the allocation of funds has certain KPIs associated with them and discretionary spending is only from income made on other projects. Also, funding raised through levies is not money managed locally, with the funds more likely to be focused more populated areas.

No projects were undertaken to get the hub off the ground

Another aspect highlighted in the interviews was that the GLSH group did not take on projects as a collaborative effort and develop them. The absence of this type of initiative was viewed to be one of the reasons for the GLSH not progressing; an absence of having something that could be associated with the hub and relates directly to the previous findings.

The interviews highlighted variances in the types of projects envisaged for the hub. For example, there was a view that projects would be small-scale and region-specific and that would benefit the community – not necessarily 'blue-skies' research but would engage the community so that they could own it. However, conversely, it was suggested that the hub had the potential to be a mechanism to take advantage of opportunities by generating new collaborations and projects that may not have necessarily existed before. This organic vision of the hub included international big-picture collaborations. Indeed, despite a range of ideas on the table, the group were unable to decide in which direction would be approached. Furthermore, as previously mentioned, any funding applications were unsuccessful.

Arup's reports were unsatisfactory

The Central Local Government Region (Legatus) commissioned Arup to undertake the feasibility report and business case report, however it was an exercise in establishing what the costs would be when all ideas were put on the table. Arup's contribution ultimately did not fully represent the vision of the group. What was proposed was a substantial scheme requiring considerable commitment and cost. The reports were not used by the working group and indeed many working group members did not know about the reports, or the commissioning of Arup.

Many of the aspirations in the report, such as a café and tourism destination were possible revenue raisers and a need for a tourism centre in the region, and a showcasing site for 'best practice' was identified because none existed at the time. Consideration of building the site specifically for the hub was put aside after the NRM's move to Clare. Therefore, for several reasons, the reports were not taken up. Firstly, an anchor tenant was needed and although the NRM was thought to be that anchor tenant, it was not feasible at the time. Secondly, although the newly established Mid North Knowledge Partnership were keen to be involved and there were valuable conversations with the university at the time, the commitment was limited to the people involved and when they moved on that commitment disbanded and ultimately, there was no buy-in from the universities. Finally, the feasibility study worked on figures that were unfeasible considering there was no external person or partner.

Insufficient community involvement

The interviews highlighted that the vision of the hub had strong connections with the community; that community would be at the heart of the hub. The intention was that the hub would be something that the community would embrace; that knowledge produced could be captured and put into practice by the community, that the community would feel the hub was theirs and something they could access. The hub was thought to be local, to solve local, site-specific issues, to link community with expertise and information, to connect community with sustainable thinking and solutions. Communities were seen to be the beneficiaries of the hub. For example, the community could access and put into practice new and localised research. People would be able learn new and better ways of doing things. The community could be connected with already existing community groups, such as Landcare groups, 'friends of' groups, and bureaus. People could participate in research.

The hub was not only seen as a mechanism to inform and give to the community, there was also an aspect of recognising and showcasing the community. For example, with the sustainable practices already happening in the region – the hub would be a platform to support and showcase entrepreneurial and visionary practices that perhaps have not had an opportunity to have a sympathetic audience, or the support to think differently. In this way, the hub would provide opportunities for community, support existing groups and efforts to practice sustainability, create links to research opportunities, grants, and other networks. Equally, it was anticipated that the community understand the need for the hub, that it would be beneficial for them.

However, it was also apparent that the community was intended to be an end user of the hub. This was demonstrated by the absence of community members in the development of ideas about the hub and community representation on the working group. The interviews highlighted that the working group was not clear about how to resolve how to involve community despite a consensus that sustainability is dependent on community-based solutions.

Successes from the GLSH experience provide the foundations for the future sustainability hub

Despite the challenges faced by the working group and the difficulties in finding a clear path for the GLSH, there were successes which continue to be foundations for the new and developing visions of a sustainability hub in Clare.

One success was that for many years, an annual planning day was continued under the GLSH banner to expose local people to research and researchers to what locals wanted to know. The day provided an opportunity to bring people together and provide information about what was being worked on regionally and some work that was 'out of the box' that might have been of interest to others – a sharing of ideas and a basis for people to be able to conversation and ask questions. The GLSH also gave the alliance a platform to approach the state departments – a region that doesn't always have the biggest voice

Success of the GLSH was also in bringing together great thinkers from a range of positions, which provided an opportunity to have discussions about the possibilities of collaborations that had not previously happened before.

Importantly, the groundwork was done for a sustainability hub in the region – particularly the consensus around the idea that continues to this day. The present effort to develop a sustainability hub in the region demonstrates the sustained willingness and intent, that the original idea had substance; the opportunity remains.

Conclusion

The Yorke and the Mid North region have taken responsibility over recent years to address its vulnerability to climate change. The identification of a gap between research around regional sustainability and climate change adaptation led to the concept of a sustainability hub which would help fill that gap.

The GLSH is an important case study for a future sustainability hub in the area. Interviews with members of the GLSH working group revealed key features which inhibited the progress of the hub. Fundamentally, the overarching vision of the hub was not refined, but rather aspirational and not the priority of one organisation or person. The lack of clarity and headship resulted in implications to building a strategy, funding and partnership opportunities, and the opportunity to move the aspiration to a structured, on-the-ground project. Although it did not progress, the experience laid the important foundations for the future hub.

Case Studies

The case studies are presented in this report in two sections. The first section provides in-depth examinations of three case-studies of sustainability hubs/centres. Together these case-studies provide substantial information regarding the workings and structures that exist which are the foundation of successful centres and hubs. The information presented in the case study overviews was gained by interviews and desktop study. The second section provides further examples of case studies that were gained via desktop research. These examples provide further insight into the many ways in which sustainability hubs put into practice, disseminate, showcase and educate sustainability.

In-depth case study examinations

Adelaide Sustainability Centre

The Adelaide Sustainability Centre (ASC) (Figure 3) is a working physical site as well as having an extensive website. It is operated by an advisory board, has one paid employee and a team of volunteers. The centre is a public space and community-focused hub that seeks to connect people and provide information and learning experiences that facilitate sustainable living and connecting people with their environment.



Figure 3: The Adelaide Sustainability Centre in The Joinery, Franklin St, Adelaide. Photo: https://www.conservation.sa.gov.au/adelaide_sustainability_centre

The centre provides a range of has ongoing activities, listed in Box 4, where it connects with the community, such as workshops and film nights and provides a home for many community groups. It also acts as a link to other places or sites related to all things sustainable, through the website and the physical centre.

Box 4: The range of features offered by the Adelaide Sustainability Hub

- Events, workshops, film nights, public talks and children’s activities focusing on connecting with nature and sustainable urban living.
- A space to connect with people in a positive, sharing environment.
- Resources and information that build the capacity of the community to undertake action to support natural resource management and sustainable urban living.
- Connections to sustainable food production.
- Support for ecologically sustainable natural resource management in the region.

This centre is part of a network of community-led natural resource centres within the Adelaide and Mount Lofty Ranges NRM region. These centres are community owned and operated groups that engage with their community and respond to local needs and issues in a variety of ways. They provide a range of community and environmental services including reference material and referrals, volunteer programs, workshops, training and field days, meeting space, information, recycling, resources and equipment. Each centre has grown out of different reasons, have their own individual team and try to differentiate themselves; however, they are united in their focus on driving behaviour change, sustainable living and environmental connection. The centres are supported by the Adelaide and Mount Lofty Ranges Natural Resources Management Board and run by volunteers and part-time staff. The ASC does have an environmental focus, however they chose to use the ‘sustainability centre’ in their title because they were acknowledging as a city centre they were not about agricultural or rural issues, but that the centre was as much about what you do with your energy, and what you do with your waste as it is about planting for biodiversity and managing your land.

Sustainability

For the Adelaide Sustainability Centre, sustainability is about looking at the actions that can be undertaken to leave the planet in a better way than you found it. Therefore, the centre focuses on facilitating change at the point at which people make decisions, in the spaces identified in Table 3,

whether it's what they choose to purchase, what they choose to eat, what they choose to bring into their houses or their communities, how they act, the impact they have the world, how that affects the natural environment and how they can take action to alter that.

Table 3: Spaces of Urban Sustainability

Home	Personal behaviours/values as well as 'in the home'
Backyard	Outdoor space around the home
Street/neighbourhood	Local neighbours/streets
Suburb/community	Suburb/community level/local government
Global	While this is noted, the contribution to the global cause is reduced to not overwhelm

Funding and management

The sustainability centre is run as a partnership between the NRM board and the Conservation Council of SA. The conservation society were looking to have a public interface and to diversify their income stream. They were also attempting to position themselves away from a dialogue of 'you shouldn't do this and don't do that' to 'this is what you can do and how you can do it'. When the Joinery site came up there was an interest in establishing a community hub around the environmental movement. They first identified that they wanted to do community gardens and have an independent café on site to bring people in and support them.

At the same time, the community engagement team at the Adelaide and Mt Lofty NRM Board had developed a new unit called the Urban Biodiversity Unit, now called the Urban Sustainability Team. They recognised that Adelaide impacted the broader regions in the way that the population approaches their lives and uses resources and wanted to have a team that focused on urban environs; not just on planting trees but also embedding sustainability.

The ASC coordinator is entirely funded by the NRM Board but employed by Conservation Council. The NRM board have a funding agreement with the Conservation Council, and as they are already an incorporated body, they can act as host to the ASC. This model gives the centre an independent, community voice and the ability to be responsive to the needs of the community and to work peer to peer rather than from a position of authority. The coordinator also has full autonomy in managing the site. For example, they can call the media at any time and publish anything they want without having to go through state government PR processes. It is also meant that the advisory board is not responsible for hiring people and organising the volunteers and the programming and management of the centre. This autonomy is thought to help with community connection.

The funding agreement does come with specifications. It needs to be a publicly accessible space for information dispersal, such as brochures and open to the public at least 5 days a week. In this case the office is not manned five days a week, but the area which is open to the public has space for the NRM produced brochures within the required timeframe. The office is staffed 3 days a week because the paid coordinator is paid for that time. The goal is to have it open for the 5 days a week, but that is a work in progress. The coordinator's role focuses on the volunteers, such as coordinating and developing systems that support volunteers. Another requirement for funding is that there needs to be events that raise awareness of NRM or sustainability issues that build the capacity of people to support NRM activities and facilitate the networking, such as, workshops and school programs. In a recent meeting with the NRM the eight centres in the network demonstrated that the NRM pay for 160 hrs of paid employment per week but that in return there is 1200 hours per week in community participation in NRM activities.

An advisory group supports the coordinator through quarterly meetings by providing information, act as networkers and connections to community as well as being ambassadors for the centre.

What the ASC offers

The programming is focused on specific themes presented in Table 4. The programming therefore addresses what people can do in their home, back yards and their community. It is aimed at meeting people where they are at and then taking them on a sustainability journey. It is important too that each person is accepted.

Table 4: Adelaide Sustainability Centre themes

Home	Things people can do at the home level, mostly related to energy, waste (recycling/reusing), attitudes towards consumption and sustainable transport
Food	Attitudes/behaviours towards food and food waste
Water	Behaviours towards sustainable water use, infrastructure in and around the home, Water Sensitive Urban Design and healthy waterways
Garden	Health and wellbeing from plants inside and outside of the house, microclimate, gardening with natives, healthy urban creek banks (riparian zones), healthy ecosystems, stewardship
Nature	Values and behaviours towards nature, interactions with nature, supporting native animals, participating in science/research

In the home the focus is on energy and water, gardening for food and biodiversity. However, food also extends to supporting local food agriculture and local food systems, identifying the food footprint and then food waste, as well as nature connection. The coordinator responds to people's interest around a topic by setting up activities to address those interests. However, the overarching plan is always used to make sure the main goals are always addressed and to not miss out on any potential audiences. As some workshops become more advanced in what is covered, there is always a need to go back to the basics to ensure new people beginning can engage with the program. Importantly, the programming needs to be balanced with getting to know the community and responding whilst keeping to the overarching priority points of engagement.

The strategic priorities and the concept of sustainability are very broad. For example, a workshop on edible flowers is designed to bring people into the building who don't identify as 'environmentalists', but will nonetheless learn about sustainability, and in an entertaining way. The programming is focused on providing a community space with workshops that focus on doing things together and on individual action. This is a deliberate approach which is a move away from advocacy or protesting, another traditional approach to 'sustainability'. The centre has experienced that much of the audience engaging in the centre are very new to this space, and although they might agree with the philosophy behind the Conservation Council, would not usually interact with them. Therefore, the centre is opening discussions with people that would not normally intersect with the sustainability space.

The initial focus of the centre was about finding the scope and audience. To begin with, the coordinator chose the programming but over time the programming is developed from a combination of what has been identified as a need from community responses and then filling the gaps with what is left from the core themes. People who approach the centre with a skill set wanting to run a workshop are also supported by the centre. People who attend a workshop often put their hand up for something else, identified through feedback forms that ask if people want to share skill sets, even without experience in giving workshops. As each year progresses more people are engaging.

Examples of workshops and other events that relate to the themes of the centre are presented in Table 5. The range is flexible according to what is happening and the perceived need at the time. Recycling services are provided, which is a way of getting face to face opportunities and that tend to draw people in. Film nights, that start with a pot-luck dinner and have a guest speaker who put the

film into a local context are popular and ways bring people in. Parents with small children started the Eco Families program; a child friendly, mum’s group, was given a space and a small budget so they could pick the topics and the speakers. Another example of a community-led group was started by person wanted to run a boomerang shopping bag group but didn’t want strangers coming to their house, so once a month a sewing bee group meet to make shopping bags at the centre. Another group is the waste collective, they look at waste management strategies and community education. In this way, the centre is open to people interested using the space for their group and do what they want to do. By linking people with other like-minded people, allowing them to form groups on their own, and facilitating, not just driving sustainability programs and education the centre works as a kind of incubator of ideas and community. That facilitation also includes supporting the groups with fliers and other forms of promotion for their group to help them.

Table 5: ASC activities and workshops

Home	DIY Plastic Free Workshop One Big Home: Film Night Paper Jewellery Making Textile Jewellery Making Plastic Free July Expo Plastic Free July Preparation Climate Change and Health Eco Families Adelaide: Mending Circle Eco Families Adelaide: Bees, beeswax, candles and Lip Balm Zero-Waste Life Hacks @ Womadelaide 2017 Eco Families Adelaide: Cloth Nappy Troubleshooting Waste-Free Christmas Eco Families Adelaide: Non-Toxic Homes National Recycling Week // Clothes Swap Party Eco Families Adelaide: Plastic Free Family Plastic Free July DIY Workshop Mindful Shopping Living Building Challenge (An Introduction) Film: Bag It Film: The Economics of Happiness Just Mend It! Machine-free mending
Food	Preserving the Home Harvest Fermenting & Natural Dye Workshop Eco Families Adelaide: Snack Sharing Session (repeat) Eco Families Adelaide: Natural Remedies for all Seasons Kefir and Kombucha: Fermented Goodness Eco Families Adelaide: Snack Sharing Session Growing Great Veggies Feed your belly, not the bin! Food Waste Workshop Eco Families Adelaide: Preserving Summer Delights Film: Dirt! The Movie Edible Flowers Workshop & Afternoon Tea Native Food Gardening Advanced Backyard Vegetable Gardening Film: Fair Food the Documentary Film: Just Eat It. A food waste story

Nature	<p>Eco Families Adelaide: Native Bees + Build your Own Bee Hotel</p> <p>The Sustainable Artist: Workshop with Alana Gregory</p> <p>Clothing as Medicine: Natural Dye and Ayurvedic Medicine workshop</p> <p>Campfire Stories Australia: Spring Cleaning</p> <p>Campfire Stories Australia: The Road Less Travelled</p> <p>Natural Dye Workshop with Samorn Sanixay</p> <p>Campfire Stories Australia: Courage</p> <p>Re-Creating with Natural Dyes (Workshop)</p> <p>Public Talk – Somebody Else’s Problem: Consumerism, Sustainability and Design with Robert Crocker.</p> <p>Film: Love Thy Nature</p> <p>Campfire Stories Australia: Belonging</p> <p>Wildlife of Greater Adelaide, Meet author James Smith</p> <p>Campfire Stories Australia: Change</p> <p>Film: Dirt! The Movie</p> <p>Native Bees in Your Backyard</p> <p>Growing a Flourishing City with Costa Georgiadis... for birds, bees, you and me Koalas of Adelaide</p> <p>Film: The Best of Scinema International Science Film Festival</p> <p>The Wonderful World of Frogs</p> <p>Nesting Box Workshop</p>
Water	<p>Film: Flow for the Love of Water</p> <p>Water Sensitive Urban Design for Your Backyard</p>
Garden	<p>Caring for Indoor Plants</p> <p>Plant Propagation Workshop</p> <p>Dig a Little Deeper into Compost</p> <p>Film – A Simpler Way: Crisis as Opportunity</p> <p>Growing Great Veggies</p> <p>Film: Dirt! The Movie</p> <p>Native Food Gardening</p> <p>Advanced Backyard Vegetable Growing</p> <p>SA Community Garden Gathering</p> <p>Wicking Bed Workshop</p>
For children	<p>Hot Rocks!</p> <p>Workshop for Home-schooling Families – The Wonderful World of Frogs</p> <p>Edible Flowers for Kids</p> <p>Kids Christmas Garden Crafts</p> <p>Paper Making Workshop</p> <p>Film: Oddball</p> <p>Just Make It! Nature Collections and Mandalas</p> <p>Urban Bugs N Slugs Safari</p> <p>School Holiday Workshop – Nature Collections and Mandalas</p> <p>Just Make It! Christmas Crafts for Children</p>
Community	<p>Film Night: Living the Change</p> <p>Film Night: A New Economy</p> <p>Film Night: Tomorrow</p> <p>Monthly Boomerang Bag Working Bees</p> <p>Community Organising Training with the Wilderness Society</p>

Recent research the impact of the centre found that awareness events alone do not translate into action; these events are not transformative – they translate to intention but not to action. Instead,

when the workshops are structured so that there are learning outcomes embedded in them, they are more likely to have transformative outcomes for those who participate. For example, if plastic reduction is the goal, a film about how bad plastic can inform people of the issue but it may seem too overwhelming to do anything about the problem. Participating in a beeswax wrap making workshop, will get people in, reveal the problem of plastic and provide alternatives which enable transformative behaviour. Tupperware is still an option; however, beeswax wraps are an alternative to gladwrap. In this way, the workshops show you how to do, such as sewing a drawstring produce bag, and then you go home with your goods. Therefore, with 30 people coming in and participating, 60 produce bags and 60 beeswax wraps go out. The hands-on experience is coupled with a take-home experience; having the plants, the knowledge, and the habitat from a native bee workshop. Phone surveys revealed 85% of people changed their behaviour and 6 months later that behaviour is sustained. In addition, people go home and say, 'what can I do next?', bringing them in another time. Importantly doing workshops is fun, making the centre less daunting and intimidating. Additionally, there is a ripple effect with people learning from workshops and starting their own businesses selling goods they have learned to make in the workshops. These are the ways that the influence is measured.

Partnerships

An Adelaide TAFE 'sustainability' module has been delivered at the ASC for the adult English program. Also, an academic from Uni SA working in sustainable fashion has shown interest in connecting their research with what is happening in workshops related to such things as natural dyeing and mending; this is potential partnership yet to be fully explored. Such a partnership would provide support with workshop design and publishing opportunities, helpful in measuring and demonstrate the centres impact.

Interns from media and PR have used the centre for their study projects. These opportunities have provided the cash-strapped centre with value-adding features from students with real interest in sustainability. One example was with website development which was then used in the intern's portfolio and helped them find work after their degree.

There is a lot of opportunity, however that requires volunteers to free up the coordinator's time to go out and connect with other institutions. They are also chance opportunities that show themselves and need to be followed up, and they need to be specific projects with specific outcomes. All of which requires structures and resources in place for them to happen.

School excursions is another consideration, however, despite a lot of enquiries, it is not an option until a person can help with establishing a curriculum. An initial idea is that it could be around urban heat mapping and climate change which could be an activity at the centre and then taken back to school to complete/continue.

Challenges

As with any community space it is a challenge to find the audience and getting people through the door. Another is getting the volunteer systems in place so that people feel involved and are eager and happy to come along; this requires support systems in place so that people feel valued, empowered and achieves what they want to get out of it, so it's about community and not just about doing the work. The lack of resourcing around paid staff or being able to support volunteer staff is barrier to the level of impact you can have. There is always a list of projects and possibilities and it takes time to work out what is achievable. There is also the challenge to ensure the coordinator is not too much of a volunteer as well, so they don't over commit and burn out.

Another challenge was with the steering committee/advisory group in the early stages of the centre. There were unclear terms of reference and very unclear roles. The role of the steering committee at the time was not made clear which resulted in some members making decisions and appointments without informing the coordinator; including specific ideas and use of the centre to lobby

government around mass scale change. This practice conflicted with the centre's small-scale focus on empowering and guiding individuals within the community and needed to be managed at a higher level to work out. As a result, the steering committee was changed to an advisory committee, and instead advises the coordinator rather than directs them.

Another challenge is the community. There are already a lot of people in the sustainability space, so the challenge lays in who and how you reach people, and what it is that you are offering; finding a niche.

What is needed for a centre such as this to be successful

A diversity of funding is important for longevity, especially if reliant on government funding. It is important to structure budgets to make a small profit that can be put back into the centre to allow opportunities to be developed. Partnerships or sponsors are helpful, however diversity in income could maybe resource the centre to be open more or a project officer for example.

It is important to be aware of trends and rising issues and identifying your unique role. For example, there is a lot of places now running beeswax wrap workshops – so you really need to find the gaps in the market, find the niches that will have the biggest impact with the small amount of resources and focus on those.

Partnerships and peer support are important. The ASC is part of the Natural Resource Centre Alliance. The coordinators in the alliance meet quarterly and support each other and share ideas.

Making sure that opportunities are responded to. For example, the Recross were training in how climate change would impact Adelaide and the suburbs; training advocates about adaptation for those in the suburbs. Out of that training, an action group emerged who wanted to run a community conference on climate readiness and preparation. This was an opportunity for the centre to provide the venue space and support for the conference. From this a partnership was formed whilst broadening the centre's reach.

How to draw in the community

A community representative is important on any committee developing the project; it is important to give the community a voice in the project. This ensures that what the community wants, and needs is delivered (delivering with, rather than delivering to) because then people that are interested are engaged from the start that. At the very least, flexibility built into the structure will enable the program, and projects run out of the centre can respond and reflect to the community.

Roles need to be clear, and the strategy, shaped by certain principles that the community can identify with, also need to be clear. The autonomy of the coordinator and the community-centred focus of the centre is also very important in how the ASC functions. The funding is at an arm's length and it is visibly a community centre, and not a government agency run centre. It was from this foundation that the ASC could evolve.

The centres in the Natural Resource Centre network are:

Mount Pleasant Natural Resource Centre, Willunga Environment Centre, Normanville Natural Resource Centre, South Coast Environment Centre, Adelaide Hills Natural Resource Centre, Adelaide Sustainability Centre, Gawler regional Natural resource Centre, Barossa Bush gardens, and a new centre is in the process of being developed in Port Adelaide.

Mount Pleasant Natural Resource Centre

The Mount Pleasant Natural Resource Centre (MPNRC) opened in 2000. From that time, the group has grown from a local council and NRM initiative into an independently run not-for-profit community group and social enterprise.

The amalgamation of the Mount Pleasant Council and the Barossa Council left an opportunity for a group to take residence in the old Mount Pleasant council building. The original group operated as a community group section committee under the council but always had partnerships for funding as well. After some time, the group wanted independence so then became an incorporated group. The close relationship with the council continued, particularly because the site is council land, the Council cover the overheads, arranged by a peppercorn lease agreement. And until recently the coordinator's position was hosted by council; now the MPNRC are doing their own payroll which was the next step in having independence.

Funding has been through a range of grants – government, soil boards and catchment groups. Originally there were around five different catchment group boards that they received funding from. Geographically, Mt Pleasant is across, or close to, a lot of different councils and NRM boundaries as well as various catchment areas. It is centrally located for a range of groups which has helped with funding diversity. Currently funding comes from the Adelaide and Mt Lofty NRM Board and the South Australian Murray Darling Basin NRM Board.

The MPNRC is proactive to ensure it keeps ahead of potential changes in funding revenues. With strong community support and involvement, they are good value for money with outcomes that value-add but are also done on a small budget. NRCs generally deliver a lot in terms of community outcomes that are not achieved elsewhere.

Having arm's length from State Government is important for the centre; press releases are fast-tracked, and the centre can undertake projects autonomously and respond quickly to needs as they arise which is of real benefit.

Projects

There are several projects run out of the MLNRC. A few years ago, there was an effort as part of the strategic planning and long-term sustainability to look at diversifying the funding base. Social enterprise was a way to bring money into the centre and increase their independence. As a result, the current projects came about. Recreate was an idea at the same time the Mt Pleasant farmers market was put into place, however, was kept in the background for about two years. The farmer's market became its own incorporated group and now runs independently. The MPNRC continues to partner and support, and often shares volunteer resources with the Farmer's Market, however, it was felt that the market, which has now been running for seven years, and donated nearly \$100,000 back to other community groups, is better managed independently. The economic impact of the farmer's market alone is seen through improvements to the Mt Pleasant township – new businesses have started, and that the town has now become a destination for visitors.

Other projects include Recreate, a nursery, a resource depot, and a community garden.

Recreate

Recreate is the new face of the MPNRC. The idea behind Recreate is transforming old wares and waste into something fabulous; revalue, revive, reuse and renew. As such, Recreate is a creative reuse centre, shop, materials depot and workshop space that transforms old wares and waste into something of value. Run as a social enterprise, recreate brings people together to share ideas around upcycling and waste minimisation as well as providing an important fundraising avenue for the MPNRC.

Recreate is sited behind the old council building and is a restored circa late 1800s building. The original space is still used to display the required NRM brochures and information, and for some of the workshops, however it is no longer the hub of the space with the main function of the community group occurs in the newer, Recreate site. What the site has to offer has developed organically – the garden, free cart, free library, people use the space even when it's closed.



Figure 4: Outside the front of the Recreate shop. Photo Bridie Meyer-McLean



Figure 5: the Recreate Logo, <http://mountpleasant.sa.au/our-community/community-groups/natural-resource-centre/recreate/>



Figures 6 and 7: Inside the Recreate shop. Note: all the items are either second hand or have been made from second hand items. The floor is made from lino samples and seconds. Photos Bridie Meyer-McLean

Nursery and community garden

The MPNRC also has a nursery project and a community garden at the site. The nursery (Figure 6) acts as a workshop site, a supply for the community garden, as well as a revenue raiser by selling plants to the public. The garden is always open to the public, and in the development phase of the garden it was found that gated gardens were more prone to vandalism. As a result, the garden (Figure 5) has no fencing and people are encouraged to take produce and cutting for their own use, and there have been no vandalism issues.



Figure 8: The garden at Recreate. Photo: Bridie Meyer-McLean



Figure 9: The nursery at Recreate. Picture: Bridie Meyer-McLean

Materials depot

Another project run out of Recreate is a materials depot. The items are donated to the site and they are either used to make new items to sell as seen in Figure 7 or sorted and sold to the public as shown in Figure 8.



Figure 10: Handmade items for sale at Recreate. Photo: Bridie Meyer-McLean



Figure 11: The second-hand materials depot at Recreate. Photo: Bridie Meyer-McLean

Workshops and community engagement

Regarding community engagement the MPNRC projects aim to attract people who would not normally think about waste issues or climate change. It was identified that workshops on climate change attract people who are already concerned – the goal of the workshops is to engage with people who don't care about climate change; to start having that conversation, but from a different viewpoint and start shifting behaviours that way. The centre receives visitors and volunteers who had never recycled, never had a worm farm, never grown vegetables, and climate change has not been on their radar. Interestingly, feedback from people is often that they have learned new ways of doing things, such as reusing materials for something that they would normally have bought new. What the MPNRC has to offer is a gentle way to get people engaged which people enjoy and want to come back and do more.

As the Adelaide Sustainability Centre does, the MPNRC incorporates practical, hands-on workshop experiences, such as making something, learning a skill-set, building something that you take home and put in your garden; it's not just a PowerPoint presentation – they haven't used that technique for years. The idea is to have the centre as an awesome place to be in and in this way, the centre works as a community centre with people often just staying for a chat. It has a friendly and welcoming atmosphere and people coming in will get offered a cup of tea at which point they find out about the workshops which might lead them to learning to crochet, but also doing a worm farm workshop.

MPNRC focus

The MPNRC offers a different sustainability agenda than other environmental groups that may address threatened species or revegetate with native plants. Contrastingly, the MPNRC addresses waste as the basis of human's impact on the natural environment. From this perspective the centre aims to engage the community to care about the harm contemporary living has on the environment. Sustainability is framed in terms of resource use and consumption, and common environmental problems such as, unsustainable farming practices, land clearing, mining, the degradation and water pollution that that occur from these activities relate back to human consumption. Therefore, by addressing human consumption an environmental outcome is achieved.

As well as wanting these community outcomes there is also the issue of ensuring a diverse funding base so that they are not as at risk to government changes and potential funding cuts. The economic benefit is new employment; it pays for two new part time positions that did not exist before.

Therefore, the MPNRC's overall impact is not only social and environmental, but also economic. They are now in the position that if all our external funding is withdrawn, it would still be able to exist in some form. Before the Recreate project, the centre would not have survived external funding cuts, however, now it would be able to operate in some capacity.

Townsville

Townsville is Queensland's largest regional city with a population close to 200,000. The region has a diverse economy; it is a hub for the mining, manufacturing and cattle industries, defence and government agencies, the James Cook University, as well as tourism. With this diversity, the city can survive changes in circumstances such as the recent slowdown in the mining industry, in contrast to a city reliant economically on tourism such as Cairns which is impacted significantly by cyclone events, for example. Geographically, Townsville is an intersection of four different biospheres – rainforests to the north, tropical savanna to the west, RAMSAR wetlands to the south, and to the east, the great barrier reef.

Sustainability hub

In relation to sustainability, over a decade ago the focus was on jobs; keeping mining, agriculture and government jobs. Energy was also inexpensive and renewable energy had not been taken up in the region; before starting the Solar Cities program in 2008 there were three houses with small solar systems.

However, approximately 20 years ago a growing focus on safeguarding the local environment began the development of a small environment team that worked on protecting key local sites; waterways and natural landscapes within the growing urban and industrial development. Additionally, there was a growing understanding of the interrelationship between the environmental systems existing within and around the city; the relationship between landscape and human systems. For example, roads, electricity and water systems were considered in relation to human social systems, communications, human behaviour and food systems. It was from this new management and policy development approach that the concept of building systems of hubs occurred, and the focus on the environment shifted to 'sustainability and the environment'; the first concept of a sustainability hub which significantly shifted management and policy development in the Townsville Council.

Integrated Sustainability Services

Integrated Sustainability Services (ISS) integrates management services and policy development. One aspect of this was to include an NRM approach to the department managing the landscape. Distinct to Parks which focuses on the management of spaces, this new approach focuses on ecological services, such as weeding waterways to get them back to pre-human habitation condition. In addition, an environmental management team was also created that integrated environmental outcomes by focusing strategically across council; planning and policy development and the different departments of council; the projects implemented by the NRM team on the ground.

A Water Cycle Team was another inclusion. The water utility, which is part of council but is also a commercial business and required to make sure the water gets to the home, manage the sewage and abide by the regulations. The Water Cycle Team on the other hand focuses on water conservation; in waterways and in the home. In doing so the Water Cycle Team looks at the whole water cycle from the top of the catchment to where the water flows into the bay, including the effluent. The focus is therefore to work with the water utility and to address the interrelationships with the water systems. This includes educating people around the complex systems around water in Townsville and the council offers tours of the catchment – school groups and other visitors can participate in tours of the system. The council has advanced eco-tourism certification for the catchment tours.

Finally, the Carbon Cycle Team focuses on the energy interrelationships across the city. The energy utility is state-owned; however, the Carbon Cycle Team is responsible in supporting and communicating the interrelationships with energy with the community. The solar city project is an example of the Carbon Cycle Team’s role. Part of the Australian Government’s leading-edge Solar Cities program, the project is aimed at trialling new sustainable models for electricity supply. The project has incorporated a range of initiatives to reduce wasteful energy usage, increase solar energy usage and cut greenhouse gas emissions by more than 50,000 tonnes. It is from this project that the white roof campaign started. A white roof painters’ network was created to help implement the project; aimed at encouraging people to paint their rooves, or install white rooves when building new dwellings to keep the house cool and reduce electricity use. This project has been immensely successful and the role of council communicating about white rooves has reached a tipping point – it is no longer needed because people are communicating about it themselves, and you see white rooves across the city, as demonstrated in Figure 12.



Figure 12: Google image demonstrating the extent of white rooves in Townsville City.

The integration of these agencies with the environment, council policies, and the community, is one part of Townsville’s sustainability hub.

Rowes Bay sustainability Centre

A physical component of the hub is the Rowes Bay Sustainability Centre, illustrated in Figure 13. It was an old sanitary reserve from the early days of the city and includes a wetland. The depot was saved after the amalgamation of the councils the site was saved and turned it into the sustainability centre. Now, the site is emblematic of the city in that it contains the wetland, and has examples of the woodland, savanna and is located on the foreshore.

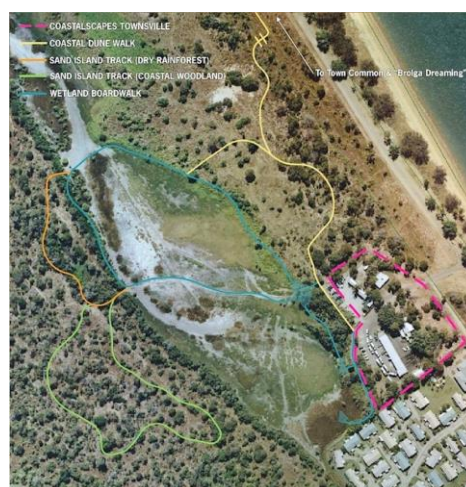


Figure 13: Tracks and trails at the Rowes Bay Wetlands and the Rowes Bay Sustainability Centre <https://www.creektocoral.org/learnsapes/rowesbay/tracksandtrails.htm>

The site also contains what was the caretakers building, an old Besser block building, typical of a Townsville home, designed to be airconditioned and not for the climate. It was an opportunity to retrofit a house and use it as a communication and demonstration site to showcase a retrofitted house which was affordable for the average person. The council was focused on encouraging retrofitting houses as an effort to reduce the burdens on water and energy. The project was achieved with very little money and aimed on doing the small things with a large impact. First, the roof was painted white and louvers replaced the windows.



Figure 114: The Rows Bay Sustainability Centre on an open day
<https://sustainablehouseday.com/house/rows-bay-sustainability-centre/>

Before the retrofit a demonstration tailor retrofitted with solar panels and white roof and with a range of communications; one side about energy, and the other side about water, was taken to community events and used to start the conversation about the Council's aims of reducing emissions, energy and water; going out and communicating and connecting with the people. The Rose Bay Sustainability Centre was an opportunity to bring people to the council. The centre is open 4 days a year that are attached to global events, such a world water day, earth hour, world wetlands day, and used as part of the eco-catchment tours.

The whole site, including the house, has strategically placed communications that are integrated with energy water and nature, and the eco-catchment tours.

Eco-Catchment Tours and Learnscapes

The Eco-catchment Education Tours offer schools and the community a chance to follow the water cycle from catchment to reef and integrates essential infrastructure with the local natural environment. People are given insight into the hidden world of energy and water flows in Townsville the city's biodiversity hotspots. Participants are involved in a wide range of activities, including treatment plant and infrastructure interpretative tours, water quality monitoring, aquatic flora and fauna sampling, and thematic interpretation of local wetlands and waterways.

The Learnscapes start at the dam at the top of the catchment as it flows throughout the city and includes the natural and human made systems of both water and energy flows. There are strategic locations scattered throughout the city and are designed to suit whatever it is that the person/group is interested in. At the end of each tour the group is taken to the house at the Rows Bay Sustainability Centre. In doing so the house brings all the information back into the home. In this way, the Learnscapes introduce and connect the built environment and surrounding natural habitats that may otherwise go unnoticed. The 'caretaker's cottage' is a theme used throughout the tours and people are asked to find out who the caretake is, in the end finding a mirror.

All elements of the Eco-catchment Education Tours tie in with Queensland State Government education curriculum key learning outcomes and are certified by Tourism Australia.

Integrated Sustainability Model

All the projects came out of processes from the Integrated Sustainability Model which is a design system for change and is also part of the hub.

First, *Thematic Communication* is a strategic approach to teach communication to your audience. Developed by Professor Sam Ham, two-day workshops are run to craft your messages to interest, influence and inspire long-term behaviour changes around energy usage and sustainability. Used for the Solar City project, Thematic Communication was incorporated to transform the way visitors think about and use energy, now and into the future. For example, the Community Engagement team implemented a pilot program at One Bright Point on Magnetic Island aimed at influencing visitor's behaviour regarding energy use and waste in a way that would resonate in the long-term. Thematic communication concepts had been rolled out to develop sustainable behavioural change. The behaviour of visitors to Magnetic Island and specifically One Bright Point was thoroughly researched, and it was found that people would turn on the air-conditioning and leave doors and windows open and run the clothes dryer and dishwasher during peak hours. The data from the research was used to develop strategies, the theme; 'I helped Keep Maggie Beautiful', was used to reinforce a message of conserving energy, especially during the all-important peak demand period. The 'I helped Keep Maggie Beautiful' theme was rolled included bumper stickers, postcards, light dangles, children's activity sheets and incorporated prompts and tools such as messaged dish liquid and laundry powder. Each piece of communication material was carefully designed to gain buy-in from the audience. The thematic communication efforts, in addition to energy assessments, smart metering and technology interventions are part of an effort to significantly reduce energy consumption at the holiday destination.

Collective social learning is another method used. Pioneered by Professor Valerie Brown, collective social learning is a problem-solving process. A workshop will start with a question such as, how can we collaborate to get a sustainability centre in the region? A broad question allows for more creativity. The process is then in four steps:

1. What should be? This is a visioning exercise – when everything is put on the table – round tables, butchers' paper, lots of coloured pencils and no scribe - everybody is equal, and everybody contributes pictures and then the visions are shared.
2. What Is? This part of the process brings the visions back into reality – on the paper the enablers (factors helping you get to the vision) and the disablers (what is inhibiting to get to the visions)
3. What are the could be's? This stage the tangible project opportunities that can be implemented are explored. Project ideas that could enhance the enablers or overcome the disablers or could be just whatever people come up with. And it can also be an opportunity to get people in the community to talk to each other because they are working together and hear what people want and may be able to facilitate it etc. So that's where the projects get developed and the
4. What Can Be? This is where everyone makes a small commitment to action. The key is it's got to be small and within your capacity and you hold yourself accountable. And it is what is going to get the project going. One builder who did one of these workshops committed to do a 10-star home – he went from building average homes but was so inspired that he now builds 10-star home in Townsville which is astounding.

All projects that has been done in Townsville are started with one of these workshops.

Community Based Social Marketing (CBSM) this was pioneered by Dr Doug McKenzie-Mohr. CBSM is a way of identifying behaviour looking at the barriers and benefits and incentives to overcome the barriers and enhance the benefits and then integrate the outcomes into normal business. The focus was on energy and water and energy behaviours you can do at home to reduce your energy load.

The impact versus the likelihood of energy use versus the likelihood of people doing that behaviour was explored and then focused on the points that were reasonably high impact and reasonably likely to do. This process identified the resolutions for retrofitting the caretaker's cottage; painting the roof white, replacing the hot water system and putting shade trees on the western wall, as well as the ideas around creating the white roof painters' network which helped implement the white roof project.

Experiential Learning and Systems Thinking - Rowe's Bay Sustainability Centre and the Eco-Catchment Tours previously mentioned.

The Power of Networks is a focus on building networks across the city, one of which is the Environmental Services Network. Sustainability in this instance is seen as a market place; if you create a market opportunity you will get a market entrance. By creating a market for white rooves and solar a lot of companies entered the market. To regulate the market and make sure the businesses provided environmentally sound products, a need for a network of local tropicalised products and services businesses was identified. Through the collective learning workshops collaborations were made with businesses which created the network.

Smart technology integration is the use of technology to enhance the other parts of the system.

The Integrated Sustainability Model is used for funding and project applications. And using the model affected change for Townsville and is key to how they are managing their environment, developing policy and strategies into the future.

Desktop case study examinations

CERES Community Environment Park – Melbourne

CERES (Centre for Education and Research in Environmental Strategies) pictured in Figure 12 is an award winning, not-for-profit, sustainability centre located on 4.5 hectares on the Merri Creek in East Brunswick, Melbourne. It is a not-for-profit community business that runs environmental programs, urban agricultural projects and green technology demonstrations. They also have social enterprises including a market, grocery, café, community kitchen, organic online supermarket and nursery. CERES promotes sustainable living via community-based learning and action with the aim to 'create environmentally beneficial, socially just, economically satisfying, culturally enriching and spiritually nurturing ways of living together' (CERES 20117).



Figure 15: View of CERES <https://ceres.org.au/>

Established in 1982 CERES from a wasteland area of Brunswick, the centre is an example of a successful social enterprise which is managed by a board and employs paid staff, volunteers and labour market programs. The site attracts around 400,000 visitors, whilst providing opportunities for

community to come together as volunteers, community programs, venue hire, a place where community groups meet, and site events. They have school programs which extend across Melbourne and into rural Victoria. Online platforms; social media and a website, provide further community engagement and access to a portal for people to access education resources and information re their program. CERES has also incorporated a global outreach with its 'CERES Global', in which group trips are taken to India, Indonesia, Cuba and Aboriginal communities.

CERES is an accredited training centre and offers a range of courses and workshops. The courses run at the centre are: Permaculture Design; Landscaping and Gardening; Complete Urban Farmer; Horticultural Therapy, Special Events and Courses, such as in spiritual ecology retreats; accredited training in horticulture and kitchen operations; Sustainable Gardening; and Environmental Education. Workshops include a range of classes relating to gardening, sustainability, cooking and food, and craft.

The Coal Loader – Sydney

The Coal Loader is managed and operated through the North Sydney Council. Located on the Waverton waterfront, the Coal Loader provides a range of facilities open to the public with sustainability as its core focus. A wide range of sustainability programs are delivered on the site as well as providing a place in which people can visit to be inspired to make change for sustainability in their lives. It is a community meeting point and hub for Council's extensive range of environmental and sustainability programs. The site also captures its history, indigenous and as ex-industrial coal bunkering site on Sydney Harbour whilst displaying best-practice sustainable technology, community gardens, native bush nursery, food gardens, regenerated parklands as well as a café. The Coal Loader facilities offer education and showcasing sustainability in a range of ways for the public to engage



Figure 16: The Coal Loader Cafe



Figure 17: The Coal Loader Platform

(https://www.northsydney.nsw.gov.au/Waste_Environment/The_Coal Loader/The_Coal Loader_Platform)

Genia McCaffery Centre: Retrofitted historic building to demonstrate a range of sustainability concepts including stormwater harvesting, energy and water-saving technology, best-practice architectural refurbishing, use of solar power, low environmental impact materials and recycled materials throughout. Provides information on 'greening up your life'. Has a book swap. A recycling depot for batteries, compact fluorescent lightbulbs, toner cartridges, corks, soft plastics or mobile phones and their accessories. Council staff are also on hand to show people around the building during opening hours.

Coal Loading Tunnels: Some of the tunnels are open to the public to explore. Two other tunnels are currently closed to the public with one being home to threatened micro-bats which roost in the alcoves in the ceiling. The other tunnel is lined with 50 rainwater tanks that store water that falls on the platform and is used for re-irrigation above.

Bushland Community Nursery: The community nursery is a vital component in Council's Bushcare program which protects and rehabilitates our local bushland. Community volunteers work with Council to propagate local native plants with seedlings being grown for bushland rehabilitation, green corridors and home habitat gardens. Pop in on a Wednesday or Thursday to chat to our

Nursery Coordinator, Helen, about growing local native plants. The nursery does not sell plants to the public.

Aboriginal Bush Foods Garden: The 'bush foods' garden has a variety of edible and otherwise useful native plants from the local area.

Aboriginal Rock Engraving: Aboriginal rock engravings, thought to be thousands of years old, are on view for the public.

Space for the community: The Coal Loader is the base for many of North Sydney Council's sustainability programs and workshops. The Mess Hall and Genia McCaffery Centre are available to the community for hire for meetings and events.

Foreshore Park and Walks: The 2.8ha site features a native havens demonstration garden (habitat for fauna), wetlands, picnic areas, and foreshore walk. The parklands have been developed using best practice sustainable design and construction. There are interpretive signs that give information about the site's heritage and sustainable transformation.

Studio Space: North Sydney Council annually invites an artist to work at the Coal Loader Centre for Sustainability for a ten-month period, with lease. The selected artist will be passionate about creating works using sustainable methods and must be willing to share their creative insights with the community via workshops and regular interaction with site visitors. This low-cost studio program has been supporting local artists since 2007.

The Coal Loader Café: Open Wednesday to Sunday, 7am to 3pm.

Chook Run: People can learn how to keep chooks at home by joining the Coal Loader Community Garden to be part of a group caring for the chickens.

Blacktown City Council – Sustainability Hub

This hub is an environmental education centre focused on education programs about sustainable living. This sustainability hub is staffed, open one day a week and has guided tours for schools etc and workshops. Workshops include how to live healthy, save money, learn new skills and tips on how to reduce impact on environment. TAFE also run courses there, including horticulture and eco-living, developing micro-businesses from garden, conservation and land management. Community working bees where the public can get hand's on experience across the site are also run out of the hub.



Figures 18 and 19: The Blacktown Sustainability Hub

<https://www.blacktown.nsw.gov.au/Community/Sustainable-living/Sustainability-Hub>

The Sustainability Hub is spread over 5,000m² of landscaped gardens and features:

- An outdoor classroom constructed with reused timbers and recycled materials

- Bush tucker and native medicinal herb garden
- TAFE horticulture and eco-skills training garden
- Living classroom gardens including raised beds
- Chicken coop and run
- Workshop and demonstration spaces.

The council also runs a newsletter, community gardens, Bushcare, and an Adopt-a-park program within their 'sustainability' profile.

Sustainability Institute – South Africa

The Sustainability Institute (SI) was established in Lynedoch Ecovillage west of Cape Town, South Africa, in 1999, pictured above, to provide a space for people to explore an approach to creating a more equitable society. The Sustainability Institute focuses on finding ways of living that sustain rather than destroy the eco-system within which all society is embedded. The SI is an international living and learning centre that provides learning experiences in ecology, community and spirit. Our emphasis is on food systems, social innovation, resource flows and transformative learning from birth, which is supported by meaningful partnerships. The centre has a multipronged approach to sustainability.



Figure 20: The Sustainability Institute - <https://www.sustainabilityinstitute.net/>

- *Education* is a significant priority of the Sustainability Institute and starts with early childhood education baby centre and crèche, and parent programmes on nutrition and maternal health, a primary school and afterschool care. Vocational training is also catered for with sustainable farming training. A partnership with the School of Public Leadership at the University of Stellenbosch also provides Masters and PhD programmes in Sustainable Development.
- The partnership with the University of Stellenbosch has also established a *research and consultation* practice run out of the institute. They offer expertise in areas such as, cities and infrastructure, renewable energy, corporate sustainability and governance, sustainable food systems, social entrepreneurship, and alternative economics. Their consultation services include sustainability strategies, capacity building and research.
- *iShak* is a project run by the Sustainability Institute using solar electricity to demonstrate how 'green' technologies can be used appropriately to incrementally upgrade informal settlements and slums and at the same time build local enterprising capacity and resilience within the community. This enterprise development model recognises the significant existing social, human and physical capital in these communities which can be leveraged for sustainable development.
- Community connection through gardens, café, catering and tours.

The Sustainability Institute has also a range of values which are integrated into its day-to-day practices. Firstly, the space is important in that it enables contextual learning. Secondly,

transformation through learning is facilitated by active involvement in education so that learners move from passive recipients of knowledge to deeply engaging with intellectual, spiritual, activity and heart possibilities to find answers to complex solutions. Thirdly, renewing creativity enables less obvious forms of learning such as, participation, conversation, art, time for silence, being in nature. Fourthly, nature-based learning connects people with their natural environment which stretches people’s way of knowing.

Nudge Sustainability Hub – Netherlands

Based in the Netherlands, Nudge Sustainability Hub is a social enterprise and a B Corporation, and an online platform that seeks to provide ‘good news and initiatives on sustainability for everyone’. It is an initiative that disseminates global stories of sustainability to the global community. The site is open to anybody to contribute and share positive, sustainable, and innovative news.

The goal of the Nudge Sustainability website is to connect people and organisations with information about alternative, often bottom-up, initiatives that bring positive and durable change to societies around the world. Their goal is to build a repository for people to publish work about sustainability issues, as outlined in Figure 21. Contributors are from all over the world and can put up a profile and links to their publications. The site aims to act as a platform for a global community of ‘nudgers’ to share, co-create, support and act upon ecological, economical, and social initiatives both big and small.

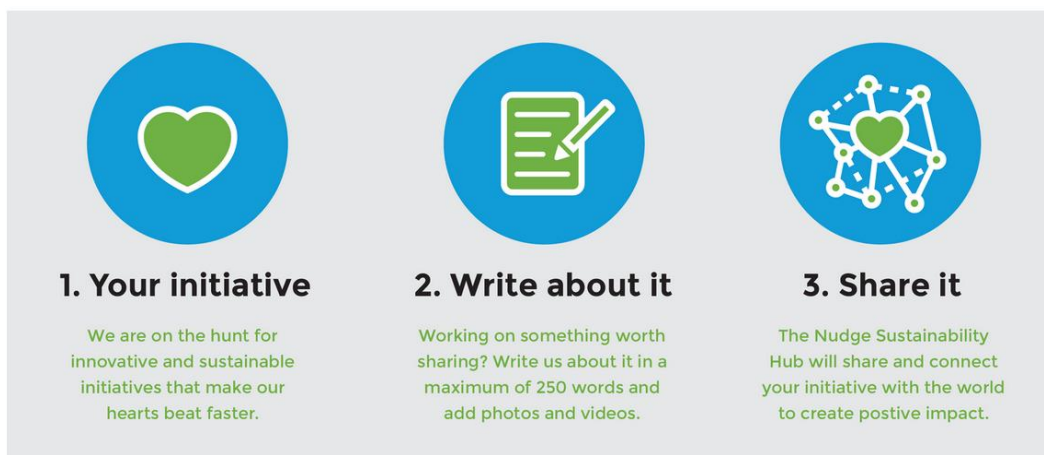


Figure 21: The framework for participating in the Nudge Sustainability Hub <http://www.nudgesustainabilityhub.com/>

Issues explored are:

- Consumerism
- Design
- Energy
- Food
- Waste
- Urbanism
- Transportation
- Ports
- Industry
- Water

Sustainability Hub – Norway

The Sustainability Hub, or S-HUB, based in Norway, is the leading platform and community for sustainability professionals in Norway, a non-profit association existing to advance the field of sustainable business and leadership in Norway. Still in its start-up phase, S-HUB facilitates individuals, organisations and businesses in building relationships, information and tools they need to create actionable change and accelerate Norwegian sustainability initiatives. The aim of the hub is to help increase the general knowledge level, connect existing initiatives, and attract new players to the field.

The S-Hub run events such as seminars and conferences that provide build an interdisciplinary community in collaboration with leading organizations and companies in Norway to increase awareness, share knowledge and coordinate initiatives, events and people working towards similar goals. The goal is to create a culture focused around cooperation and sharing, where the participants and members actively contribute and focus on taking action towards sustainability. Through their events S-HUB seeks to help lift companies, talented people, and good initiatives up onto the national sustainability stage.



Figures 22 and 23: Examples of conferences and seminars run by the S-Hub
<http://www.sustainabilityhub.no/>

The S-HUB provides a partnership building platform. In this capacity, organisations can contribute strategically and actively in the building of S-HUB whilst also actively and visibly reinforcing a sustainability agenda through the partnership.

There is also an opportunity to pay for membership to the S-HUB which has a range of benefits. The membership benefits include: free and priority access to S-HUB events such as conferences, seminars and more; access to S-HUB Circles; smaller group sessions around specific topics, and other member-only events; the option of joining a community of like-minded professionals and collaborate with companies working on similar challenges within sustainability; exclusive access to research reports and whitepapers answering to the needs for greater sustainability knowledge; and the opportunity to publish relevant content on the S-HUB website and in the newsletter.

Worcester Sustainability Hub – US

The Worcester Sustainability Hub is an interactive learning facility that serves as an outreach location for a 'smart grid' pilot initiative, the Smart Energy Solutions program. The program aims to provide the community with a place to learn about grid modernization, environmental sustainability, and the Smart Energy Solutions program in New England, US. The Sustainability Hub is a space where community and customers can connect under one roof to provide interactive education about energy efficiency.



Figure 24: The Worcester Sustainability Hub - <https://www.nationalgridus.com/new-energy-solutions/Community-Projects/Worcester-Sustainability-Hub/>

The Worcester Sustainability Hub began with the 2008 Green Communities Act, which required all investor-owned utilities to submit smart grid pilot proposals to the Department of Public Utilities with a goal of reducing load on the electric grid by 5% state-wide. In response to this requirement, National Grid co-hosted the 2011 Green2Growth Summit, during which residents expressed the need to have a community centre to learn about the Smart Energy Solutions program and home energy conservation. The centre would also serve as a venue where our customers could give us feedback throughout the two-year duration of the Smart Energy Solutions program. In collaboration with the community, business leaders, and the State, the Sustainability Hub was built in 2011.

This innovative facility features:

- Interactive exhibits that showcase smart grid technologies
- Hands-on demonstrations of smart meters and how they interact with home appliances
- Energy efficiency tips and a showcase of “home of the future” appliances and technology
- A community space for meetings and learning events
- Full community participation with student ambassadors from Clark University and Worcester Polytechnic Institute on staff

Conclusion

The case studies above demonstrate that sustainability can be put into practice in many and varying ways; whether through community-led programs, through council and government agency policy and projects or through online or corporate initiatives. What is clear, however, is that sustainability hubs or centres are portals for education and building knowledge about sustainability, adaption, and climate change. In doing so, sustainability hubs are important mechanisms for providing knowledge and experiences for people to learn, and to build community, around the concept of sustainability as a way of addressing climate change.

Sustainability in Clare and the Mid North

The region of Clare and the Mid North demonstrates active efforts towards sustainability; from sustainable agricultural and business practices to individuals and community groups undertaking sustainable activities, for instance through water and waste management and reducing their carbon footprint. Sustainability practices are also adopted through technology, such as renewable energy capture and practices that reduce or reuse waste, or water capture because it makes business more efficient and economically sustainable. The following will provide some examples of sustainability practice in the region that are useful in putting into context of the extent of sustainability already in existence, but will also provide a platform, or foundation to build ideas for a sustainability hub in Clare.

The Green Team

The Green Team is a sub-group of the Clare Lions Club. The founding project of the group was the establishment of the Gleeson Wetlands. The restoration of an old effluent into a wetlands and public park was taken on by the Green Team with the support of the Clare and Gilbert Valleys Council in 2014. The project involved an extensive volunteer effort to plant more than 4,000 native plants, control weeds, landscaping, building a bird hide, and general maintenance of the site. Multiple working bees, school group outings and fundraising activities have funded the project. The Gleeson Wetlands project is a successful public space that is well-used and provides important habitat for local flora and fauna.



Figure 25: The Gleeson Wetlands - <https://ramblingsdc.net/LionsGW.html>

The success of this project inspired the Green Team to move to other 'green' activities, and as a result started the Recycle Group that is looking at ways the Clare community can be supported to reduce, and reuse waste. With this initiative, the group has approached businesses to provide alternatives to products such as straws and takeaway coffee cups for more sustainable options.

The Green Team and the Recycle Group also provide community education through their fundraising activities, the encouragement of community participation in their events, and encourage feedback for further ways in which they could work towards sustainability in the future. The group demonstrates that there is a desire of the local community to bring sustainability to the forefront in Clare, and the members of the Green Team are passionate, not only about sustainability and addressing climate change, but to bring the Clare community along on the journey towards sustainability.

The Green team are very interested in being part of a sustainability hub, whether it be as an extension of what they are already doing, or as a new and different existence.

Bungaree Station

The ways sustainability is put into practice in farming is soundly demonstrated at Bungaree Station located 12 kilometres north of Clare. The motivations are not directly about being 'green' per se, but that it is important to respond to the environment and climate to get the best out of the farm.



Figure 26: Bungaree Station homestead - <http://bungareestation.com.au/>

The family has been on their property for 177 years and diversification is key to their approach, and so they evolved to have several different enterprises on the property. In relation to climate change, they have been recording rainfall in the area since 1860 for the Bureau of Meteorology and they have anecdotally noticed changes in rainfall, not in the amount, but when it falls, which impacts the seasons from a pastoral and cropping perspective.

There are efforts towards revegetation, fencing off vegetation corridors and preserving native grasslands to assist with biodiversity and erosion control. They have also improved pastures by using perennial pastures. Cropping; they are concerned about the impacts of climate change and work closely with an agronomist and look to long-term forecasting to inform their decision-making on what to plant and when, as well as minimising herbicide and pesticide usage. However, understanding the factors around rain events, such as, where the water flows and frost impacts also inform landscape management and cropping.

Along with cropping and stock, the property also has hospitality with accommodation and function facilities. From this aspect of the business, they try to minimise their use of resources as well as mitigating their impact. Regarding water they use ground water in a sustainable way and minimise irrigation, particularly with the garden and orchard. Recycling is also a consideration in their hospitality business. They provide information about waste minimisation for guests and as such see that they have a role in educating and empowering people to change their behaviour. Their own produce is used for catering including honey from the two bee keepers working on the property.

Although these practices are sustainable in nature and respond to climate and the natural environment, they are also considered best farming practice and environmental management.

Little Bunyip

Little Bunyip is a small farm business in Watervale, South Australia run by Chris Nuss and Ella McHenry. Rather than based on principles of sustainability per se, this farm was established on the principles of regenerative farming.

Regenerative agriculture, or farming, is guided by four principles that are uniquely applied to each specific climate and bioregion: (i) progressively improve whole agroecosystems (soil, water and biodiversity); (ii) create context-specific designs and make holistic decisions that express the essence of each farm; (iii) ensure and develop just and reciprocal relationships amongst all stakeholders, and (iv) continually grow and evolve individuals, farms, and communities to express their innate potential. From these four principles regenerative agricultural practices are:

1. No-till farming & pasture cropping
2. Organic annual cropping
3. Compost & compost tea
4. Biochar & terra preta
5. Holistically managed grazing
6. Animal integration
7. Ecological aquaculture
8. Perennial crops
9. Silvopasture
10. Agroforestry

(<http://www.regenerativeagriculturedefinition.com/>)

Therefore, the values that Chris and Ella have is about connecting the practice of growing food by developing the land in a way that they can work with natural. They want to put into practice working with the resources and systems available to them to make a living and provide for their family.

The project has been hugely successful in that they have won awards and grown a respectable market for their produce. The business is based on micro-greens, featured in Figure 26, and they have recently moved away from mushrooms. The decision to leave the mushroom side of the business, although on some levels personal, was also based on costs in terms of resources; water, plastic and bleach against the income, and because the realities of growing them was outside their principles of working with the resources available to them and reducing their footprint, and an

overarching belief that ‘healthy food for humans comes from a healthy landscape and healthy plants and animals’.



Figure 26: A trolley paddock of microgreens at Little Bunyip - <https://www.instagram.com/p/BwX-8DiDiBi/>

Microgreens, as a quick turnaround crop is working for them to further establish how they will use their land to put further into practice regenerative farming. They are finding it challenging to access financial support for their small business to grow. This is a problem because they are a small farm without the assets that larger farms have. They are also keen to see their products used closer to home and in so reducing the impact transport. A sustainability hub for Chris and Ella could mean local support for their business and other small farming businesses like theirs to strengthen the food production industry in the area.

Rebecca Sullivan

Rebecca Sullivan has recently bought a property in the Clare region after working for many years internationally specialising in sustainable food systems and as youth ambassador for the Slow Food Movement amongst others. Rebecca is passionate about sustainability, which is central to each of her enterprises, consultancy, writing books, her Granny Skills project and her native food business.

Rebecca completed her Masters in International Rural Development And Sustainable Agriculture with a focus on food security and a sustainable food future. She is now undertaking another Masters in Food History at the University of Adelaide.

Rebecca is establishing a name around preserving the heritage, knowledge and skills of our elders – Granny Skills. Through this program Rebecca is bringing together women from multicultural Australia to share their skills that have been taught through the generations, such as soap making, brewing stock, making cleaning products or jam and basket weaving to name a few.

Rebecca has also started a business with her partner, Damien Coulthard, selling Australian native foods. Wandu, the name of the business, means ‘good’ in the Adnyamathanha language. The ingredients are sourced from locations such as Outback Pride, a Western Australian organisation developing the native food industry, and in doing so supports Indigenous Australians with jobs and training within horticulture and food industry. Wandu is also an avenue for Rebecca and Damien to promoting Aboriginal heritage and contribute to Indigenous health in the future.

Rebecca’s passion for sustainability is measured in her work. Regarding the Clare district, Rebecca and Damien are keen to develop a place on their property where they can consolidate their businesses and draw in the public with a continued focus on sustainability. Rebecca would be very interested in participating in a potential sustainability hub. She has a clear vision of what a sustainability centre could look like and would be happy to help with the design.

Clare and Gilbert Valleys Council

The Clare and Gilbert Valleys Council does not have a 'sustainability' agenda; however, sustainability measures occur incidentally, mostly through cost driven measures mostly seen through waste and water management, but also as an extension to building practices and planning. Resourcing is an issue because the funds are not available, however, there are also no 'Green' agendas politically in the region. There is presently an investigation into having solar on council buildings, this decision is driven by high energy prices, and is therefore about reducing costs.

All new houses must have a 6-star energy rating because the building code requires it. The building requirements are designed around keeping heat in and so focusing on winter focus in terms of energy efficiency – although this measure ignores that Australia is a very hot country and energy efficiency has very different requirements in hot summer periods. People in the region do focus on having their homes warm in the winter and cool in the summer, however, are not seeking to exceed the 6-star rating. There is a considerable uptake of solar in the region which is comparable to the metro areas; it is the drivers behind the up take that differs. In metro areas, sustainability is more often to be a driver of purchasing solar, whereas in the Clare and Gilbert Valleys region it is to bring down costs.

In terms of water the region is sustainable because it is a limited resource. There has been a drying trend and water is an issue people are concerned about; their access to it. Most people would have a water tank, many people have large tanks. Most people, particularly those out of townships, do not have access to water and so rely on their own water resources, such as bore water and tank, and as a result there are many bores in the region, which can be quite salty. Murray River water is also available; however, this option is expensive. The water allocation for the subterranean water resources in the region is at capacity, and therefore, vineyards are not able to expand without accessing Murray water, or dry growing. The localised nature of the aquifers means that it is not possible to buy somebody else's water.

The community is adapting to the change in water availability. Vignerons are keenly aware of the water issue because the Murray water is very expensive and often not an option, they are as water efficient as they can be. Indeed, many vineyards are dry grown comparable to other wine regions.

The Council has recycling services, however, at this stage no green bin, although this is being investigated now. Waste is expensive, so in terms of cost, a green bin is a cost-effective solution to green waste. People in their homes are also keenly aware of waste because of the cost. Another anomaly is that farmers often do not throw things away to save money, and so the reuse aspect of sustainability is very much part of life.

More broadly, the agricultural landscape is more understood by the people that live and work on/with it which means that whatever practices are undertaken need to be sustainable. Inputs, such as crops, fertilisers and herbicides, are also very expensive and so the use of those products are used at a minimum and finding ways to work with the environment is more of a priority. In this way sustainability is often at the heart of rural communities without consciously being so. The council has 14 towns and villages but only 9,000 people, in an area an equivalent size of metro Adelaide. Much of the work on the landscape is done by farmers who work hard towards getting good crops, keeping their soils working and healthy, and so putting much of their resources and knowledge into sustainability.

Regarding the windfarms in the region, there was an initial community backlash over the development, but is now in many ways a part of the landscape. The benefits are perhaps not widely known but there are jobs in the industry that do bring and help keep people in the towns with good incomes.

Another renewable energy initiative is a 300-hectare 150-megawatt solar farm in Mintaro which is still in planning permission application stage. This has drawn criticism from locals and farmers are against the development because it is argued that it will increase the frost risk and change wind patterns during frost events. The company researched this claim and agreed that under the solar panels it would be colder, but that out from under the panels there would be no variances. A brief study of the literature also found no evidence of this claim, however there is a likelihood of structural problems for the solar panels; however, nothing suggesting issues for surrounding farmers. Despite this, a pertinent issue is taking 300 hectares of prime, food production land for a solar farm when Australia has an abundance of sun-drenched land to choose from. The location is close to a substation and a gas fired power station, being able to tap into the substation the motivation for the site.

Mid North Sustainability Community Forum

On Saturday 6 April 2019 at the Brick Pavilion Clare Showgrounds a community forum was organised as a community engagement effort to get community input into a possible sustainability hub in the region. The event provided an opportunity to inform people more about the project, hear from local sustainability projects and enterprises, and to contribute to the open forum session. The event coincided with the South Australian Autumn Garden Festival the following day.

Presenters:

Simon Millcock CEO Legatus Group - Project background

Bridie Meyer-McLean – Project update and key points

- Clarity on what the strategic direction is
- Leadership and facilitation required
- Community driven
- Part of broader network across SA
- Social enterprise

Warrick Duthy - Ethical Epicurean Experiences

- Growing and sourcing food
- Know your environment and the resources that you have
- Catch and store energy
- Leave a legacy – making it a better place is key tole and organic learning – practical
- Economically sustainable an eco-tourism experience

Patrick Williams - Clare Lions Green Team

- Portfolio was started 5 years ago – Gleeson wetlands example planting over 7,000 seedlings
- Recycling program – undertaken to lift profile of the Lions Club but also provide valuable resource to the community
- People are interested in sustainability but not sure how to do it
- Connect with global initiatives

Amanda Reynolds – Green Platypus Gardens

- People want to know
- Work out what the problem is
- Who are doing the actions, and link with them
- Understand the environment
- Give a vision
- Demonstration site
- Community builders

Attended by more than twenty people, the forum, consisted of a Collective Social Learning styled problem-solving process. The participants were formed into two groups around round tables and with butchers' paper and coloured markers, like the process mentioned above. The questions were: What are you looking for from a hub? Who is it for? and What could it look like? The process resulted in a collaborative effort with which a range of ideas were presented. The findings for that process are presented in Box 5.

Box 5: Questions and Answers from workshop

What are you looking for from a hub?

Bringing people together

Workshops – 10-week courses to raise awareness get support, change behaviour, break habits – sustained networking

Repair centre – repurposing – teaching skills

Community Garden (both groups mentioned)

Old TAFE site makes sense as existing agencies already there

Local register of expertise (University of 3rd Age)

Connection with schools – education from junior school through until higher ages – keep momentum going after school

Coordinate and stimulate local groups – work together – think differently

One place public is aware of what is available

Information

Place for schools to access

Needs location – physical presence

Coordinate workshops – initiate special interest groups – support them

Café – using produce grown on site – interactive space – family friendly

Somewhere that can assist with grants

Practical projects

“Building” design reflects sustainability practices

Who is this for?

Schools want to be involved

Involvement from councils

Engage with other local groups – students (eco warriors)

Old and young people gathering place for inter-generational

What could it look like?

Needs resourcing – employing person to run it

Coordinate what is wanted from greater community consultation

Needs financial viability

Community Support

Central hub (eg TAFE site) but as spoke and wheel across different locations interconnected

Challenge to think differently e.g. men's shed = repair centre

Hub with spokes

Physical space – organic – café (social enterprise)

Coordinator / facilitator

Building on green team

Hub for combined groups

Series of centres that are linked with different foci

Education

Example

Provides venue for key coordinator

Research driver

Utilise service clubs Water re-use / trees / solar Long term community involvement Hub meeting place – cross fertilisation of ideas – connect likeminded people
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Conclusion

Although a small sample, the information presented in this section clearly indicate that there is sustainability agenda in the region. Because of the scarcity of water and the drying trend in the region, whether climate change is of concern or not, there are factors driving sustainable decisions. However, it is also important to note that there is also a growing passion for sustainability in the area which could be a solid foundation for building a sustainability hub. As it is well understood in the literature, community is integral to sustainability initiatives, and in the Clare region there is certainly enough momentum in the sustainability space to build on.

Discussion

The evidence presented above tells a story about how sustainability can be disseminated in a way that is meaningful and transformative. The narrative is not clear-cut but the report provides an extensive range of material to inform decision-making, and because the concept of a sustainability hub is not straightforward the many factors above will help shape a sustainability hub for Clare and the Mid North.

The ambiguity of the meaning of sustainability is a foundational challenge. If the hub will be based on the word sustainability, there will need to be a clear idea of what that means for the Clare and surrounding region; something that resonates with the local community to aspire to that will make the region a better place (Madhavan et al. 2013). It will be the word underpinning the hub and will importantly express what it is that the hub wants to achieve. It is important to appreciate the work already been done, with the vulnerability assessment and the processes undertaken for the GLSH that has established a strong idea of sustainability for the region. Indeed, the vulnerability assessment report remains an important document because it raises issues relative to the region that continue to need to be addressed to this day. It is also important to note that the desire of a hub to overcome these vulnerabilities remains.

The Goyder's Line Sustainability Hub was initiated because of a gap identified between what was being researched in relation to regional sustainability and climate change adaptation and what was reaching the community. The importance of recognising the role of research in addressing the climate change vulnerabilities in the region was not lost then, but also continues to be relevant today. However, factors inhibiting the progression of the hub also need to be considered. A clearer overarching vision of the hub and defined leadership are key starting points to strategy building, establishing funding and partnership opportunities, and to proceed with a foundational project to build the name and momentum of the hub on. In this way, the GLSH presents a good case study in the feasibility of a future hub in the region.

A clear vision will come from defining sustainability in the beginning. As mentioned above, it will represent the region, will be meaningful for the community and will define the structure of the hub (Dollery et al. 2008; Ripple 2012). When exploring the various sustainability hubs and centres online and through interviews, each had a clear vision from which they were built on. For example, the Mount Pleasant Natural Resource Centre's focus is the role of human consumption in influencing climate change and addressing that on a local level through waste management. For Townsville Council sustainability means managing water and energy consumption and uses education and community-based programs to shift people's behaviour. CERES in Melbourne also use educational

techniques through their education and training programs, showcasing urban agriculture and green technology and through their community-building with their market, café and nursery. Contrastingly, the Sustainability Hub in Norway focuses on transforming the corporate world to be more sustainable in their business dealings by providing a platform for conferences and networking opportunities. These, and the many other examples, demonstrate that although they all function under the banner of sustainability, their visions, who their target ordinance is, and how they operate vary.

For sustainability to be contextual, there are a range of issues that can be addressed. For the region, issues around water and landscape management, energy and building efficiency and waste are all pertinent. However, also pertinent are issues around agriculture and farming and climate change adaptation, which was an important focus of the GLSH, and continues to be relevant today. The literature review established that sustainability is indeed relevant in all these areas. Also demonstrated above, these issues around sustainability are already becoming a concern for the Clare and the Mid North community which provides a substantial platform to build a vision for the hub.

Another key finding of the study was that each case study was that management structures are key to success. The Adelaide Sustainability Centre example demonstrated the importance of clarity in this area. The Natural Resource Centres in the Adelaide and Adelaide Hills regions are all managed by a funded coordinator who then is responsible for the running of the project and volunteers. In Townsville the sustainability hub is integrated into the workings of the Council and is thus managed by the varying 'teams' working within the Council structures. The many examples of management structures available, such as, management/advisory boards or committees, not-for-profit organisation, community-run and operated, or government agency-run will need to consider the needs of the local community, the availability of resources and the desired outcomes and vision of the hub.

Correspondingly the case studies demonstrated clear funding structures. From the business ventures such as cafes and workshop programs, to providing functions and conferences, or relying on grants. Each of the funding models are factors in shaping the hub, however, diversification in funding was found to be integral to many of the examples. For example, although community-led operations rely on government or other types of grant funding, income from workshops and other types of enterprises, such as a shop or nursery or farmers market, all of which are integral to each site's funding model. In the case of the Sustainability Hub in Norway, their funding model includes having paid membership, payment for services and seeking sponsorship with industry and government. Townsville and the Worcester Sustainability Hub are run within the organisation and therefore come within their budgets.

Each of the case studies have defined spaces in which their hub or centre is based. In Townsville the boundaries are not clearly defined, especially when explored on line, however because the notion of sustainability is being integrated into the workings of Council the sustainability hub is complex and abstruse; a series of mechanisms and structures known as systems, or systems within systems – ecosystems. Otherwise, the centres work from a clearly defined physical or virtual space, such as the Nudge Sustainability Hub operated out of the Netherlands.

Community is integral to each of the examples above. Whatever the targeted community, community participation is central to the visions and mechanisms of the hubs or centres. Many rely on volunteer support. However, the study also found that community input is often integral to program design. The NRM centres in Adelaide and the Adelaide Hills region, not only use the guiding principles of their centres in designing their programs but are also guided by community input from

feedback surveys and other responses from participants and the community more broadly. Townsville have an extensive community participation process included in their Integrated Sustainability Model. In these ways, community acts as more than an end user of the centre, but also within decision-making processes as well.

The success of the case study examples above are the clearly defined projects that explain and characterise the hub or centre. All the in-depth case studies demonstrated that an initial project started the hub and gave it a reputation and something to build on. Moreover, they all evolved over time and responded to the needs of the community, and the local environment, to become what they are; not one is the same as when they started.

Recommendations

A sustainability hub in Clare and the Mid North is feasible on the basis that there is a desire to use this platform to address identified vulnerabilities to climate change in the region. However, there are several points needing consideration. The following recommendations address the findings from the study and adopting these will ensure that the hub is itself sustainable and evolving into a space that is practical, functional and services this community's needs. Also, the recommendations are not mutually exclusive but work together to develop a framework from which to build the hub on.

Set out to clearly define sustainability in/for the context of the hub

A sustainability hub that represents the Clare and the Mid North region and its community and that characterises the values and aspirations will ultimately deliver the local perspective which will make it relevant to the community. Also, defining sustainability for the context of the hub will help with establishing the vision because it will form the principles of its foundation.

Outline a vision for the hub and outcomes that the hub wants to achieve

Having a clear vision for the hub will be pivotal in the success of a future hub in Clare. In stating this, the decisions about what the hub is to achieve and why, and who it is for need to be established. Clarity with these issues will aid in defining what the structure of the hub will be. There are many ideas in the working group, all of which are pertinent, however together they are complex and are not necessarily along the same lines but are important starting points. The GLSH also brought to light important concepts and ideas which are also worth considering.

Decide on a management structure for the hub – including who will oversee the decision-making and who that person will answer to.

For the hub to be successful there will need to be at least one person who is paid to oversee the project. Without this focus the hub will not be a priority and will lose any momentum gained. However, an organisation who oversees the hub in some capacity will also need to be established. This will provide stability, help with funding and provide support for the person/s managing the hub. Further to this, to establish the overarching structures of the hub a decision will need to be made as to whether it is an incorporated or hosted organisation.

Find and decide on a funding base

The hub will not be viable without funding. There are many options, some of which are demonstrated in the report; however, a business case will be an important step forward. Whatever the course of action, there is the potential for the hub to be an enterprise which may cover some of the costs, however establishment costs and securing ongoing costs will need to be ascertained.

Decide on a space for the hub

The study found that there was ambiguity over a specific site for the hub. Although there the NRM buildings at 155 Main North Road, Clare are a strong contender for the hub site, the space within that site will need to be defined because, as it is already working on many levels as a hub already, it will need to be established how the sustainability hub will fit in. There are also other opportunities within the township which could complement, or work together with, or be chosen above the NRM site. Vision and outcomes for the hub will help frame the space required for the hub.

Include community in decision-making and in the background processes of the hub

The study revealed the importance of integrating community into the process of developing the hub; to have the hub successfully integrated into a community, the community need to be involved. Involving the community provide wonderful opportunities for creating a hub that will be sustainable itself into the future. The community forum that took place in April and the people who participated in interviews exemplified the interest already existing in the region and demonstrated that the community has a lot to offer in the sustainability space.

Decide on a preliminary project which will define the hub and provide the resources to keep it going

The initial project of the hub will be a determining factor in the hub's success. The project will need to be framed by the original vision and engage the community to establish a positive reputation. An initial project needs to be attainable with resources available, enough to build a reputation and have flexibility to evolve.

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