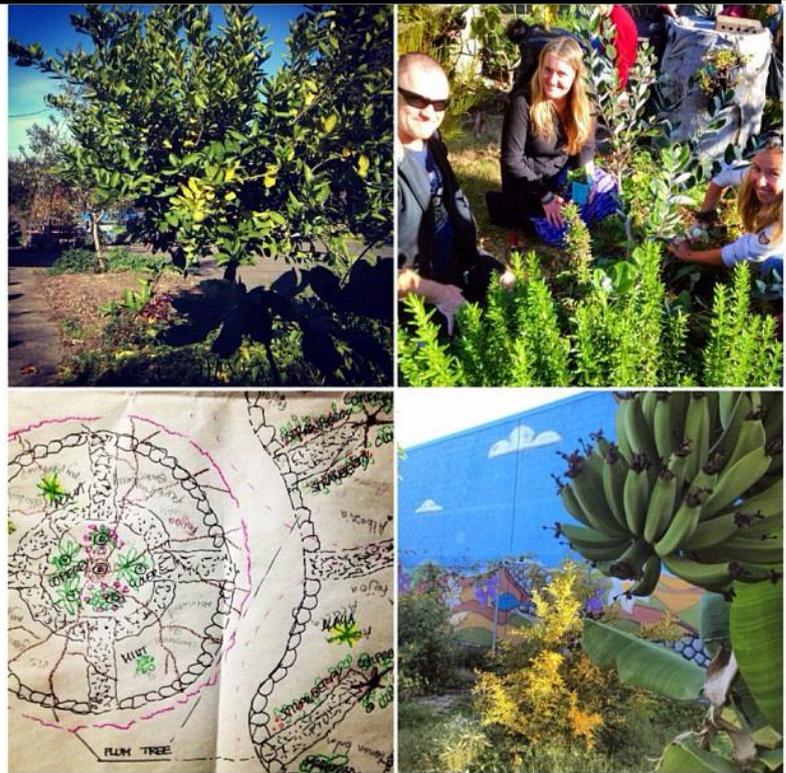


2015

# Greening Deakin, Greening Communities: Setting up university community gardens.



Health, Nature and  
Sustainability Research Group  
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## 2 Aims of research

The purpose of this research is to investigate the feasibility of establishing a community garden on the Burwood Campus, Deakin University. It is envisioned that the garden could provide a range of opportunities for staff and students, for example, enhance teaching and learning, research, community involvement and provide a space where staff and students can have contact with nature for health and wellbeing. There are also a number of health benefits that may be derived from participating in community gardening; ranging from food security to opportunities for community development through education, skills and training (Firth, Maye & Pearson 2011). The Australian City Farms and Community Gardens Network (2012) further suggests that community gardens address key health promotion goals such as strengthening communities, creating supportive environments and developing personal skills.

This project has been divided into 3 phases. This report will be discussing the results in relation to phase 1 of this project.

Phase 1:

Conduct a feasibility study in relation to establishing a community garden on the Burwood Campus.

Phase 2:

Build the garden, which will then be used to investigate the associated health and environmental benefits of the garden to the Deakin community, including staff, students and the wider community. Evaluate the potential of partnerships that can result with the use of the garden and consequently highlight the outcomes of The Deakin Promise.

Phase 3:

To promote sustainability on campus and beyond, in keeping with the Talloires Declaration. This can be achieved with short courses, which will be open to Deakin students and staff as well as community members and local government employees and other interested parties. The community garden can thus showcase strategies in urban food production.

## 3 Research design and methods

A mixed methods approach consisting of an online survey and interviews was undertaken to investigate the opportunities and barriers for developing a community garden on Deakin University's Burwood Campus. According to Hesse-Biber (2010), there are a number of benefits in undertaking a mixed methods approach. Firstly, the convergence of data collected by multiple methods increases the credibility of research findings. This is particularly important in a university setting where the implementation of sustainability policy and practice is slow (Del La Harpe & Thomas 2009; Velazquez 2006). Due to their highly complex governance structures which differ from other corporations, such as 'competing research, education and service outcomes, management challenges akin to small cities and new domestic competition from education for-profit enterprises which may result in campuses less likely to move forward on sustainability if programs and revenues are shrinking' (Krizek et al. 2011, p. 20). According to Del La Harpe and Thomas (2009), there are a number of ways to overcome these challenges including the collection and identification of evidence which may

create less resistance. A mixed methods approach is also useful when trying to understand social phenomena. Phenomena can be understood in greater detail through mixed methods analysis by generating more meaning and allowing for thorough interpretation of the results. Mixed methods data analysis can be more comprehensive than using quantitative or qualitative analysis alone (Onwuegbuzie & Teddlie, 2003).

Ethics approval was sought for this project and obtained (HEAG-H 91\_2014). An online survey was emailed to all on campus staff and students at Deakin University's Burwood Campus. Approximately 23,500 students and 1,385 staff were either studying or employed during the time of this study. Faculties and Divisions were contacted to obtain approval for the dissemination of the survey. The survey was disseminated on Monday 11 August 2014 and remained available to staff and students for 4 weeks (Monday 1 October 2014).

Data from the surveys were transferred into statistical software SPSS for analysis. Before analysis began, the data was cleaned – in this instance the researchers decided that participant responses would be removed if it was clear that they had ticked the box to imply consent and exited the survey or if there was extensive data missing in the responses (Punch 2003). This reduced the dataset from 698 responses to 532 which is usually considered low in quantitative research, however, according to Oppenheim (1992, p. 43), a sample's accuracy is more important than size where a properly drawn sample of fewer than 2000 adults can provide more reliable estimates than a large sample that is poorly drawn.

A code book was then developed which assisted with creating a unique variable name for each response with the purpose for providing clarity in SPSS (Pallant 2005). For the community gardens study descriptive level analysis was the main method used to interpret the data and to answer the research questions, this included undertaking frequency calculations.

Interviews were also undertaken with a selected sample of 6 key informants who are or have been involved in community gardens from a range of organisations. Interviews were undertaken to ascertain a range of factors such as: type of community garden and its purpose, the logistics of setting up a community garden, the cost associated with a community garden in both the setup and its maintenance, the barriers commonly found with setting up a garden and the opportunities.

Participants were interviewed for approximately 45-60 minutes (either face-to-face or via telephone) about their perceptions of the barriers and critical success factors in establishing community gardens. Interview participants were recruited via purposive and snowball sampling methods. Initially participants were identified through existing contact lists that the researchers have obtained through practice in the field. Potential participants were then contacted via email and invited to participate. A follow-up phone call was made 1 week after the initial email. Participants that agreed to being interviewed were also asked whether they knew of other relevant people who may be interested in participating. An interview guide was used that consisted of a short list of themes and open-ended questions.

Qualitative data generated from the interviews were transcribed verbatim and thematically coded to analyse the views of participants in relation to the research questions. The data was then analysed using a rapid assessment process. 'Rapid assessment is defined as intensive, team-based qualitative inquiry using triangulation, iterative data analysis, and additional data collection to quickly develop a

preliminary understanding of a situation from the insider's perspective' (Beebe 2004, p.1). Rapid assessment is 'based on small multidisciplinary teams using semi-structured interviews, direct observation, and other techniques to collect information with the entire process being completed in less than 6 weeks' (Beebe 2004, p.2). The method has increased over the years as resources, timeframes and funding to conduct long-term qualitative studies have decreased, thus encouraging the use of rapid research methods (Beebe 2004). Given the short timeframes and small allocation of funding (\$5k) the researchers decided that rapid assessment was appropriate for the study.

Although rapid research methods can be criticised for their short time-frames and turnaround as well as the methodological rigour and legitimacy of methods there are a number of processes that researchers can implement to ensure that high quality data is produced (Beebe 2004; Ridge & Murphy 2003). In addition rapid assessment typically uses multiple methods and data sources to increase the validity and defensibility of the results (Trotter et al. 2001). This allows both qualitative and quantitative samples to be appropriately and simultaneously collected as part of the assessment process (Trotter et al. 2001, p. 141).

To ensure that the study produced high quality data within the constrained timeframes of a small research grant, all interviews were conducted by 2 researchers for approximately 1 hour. One researcher would conduct the interview, while the other researcher would be transcribing the data while the interview was conducted. Transcribing the interviews involved typing interviewees' responses directly into AudioNote, a computer program that enables the researcher to audio record and transcribe data simultaneously. The other benefit of the program is that it assists the researcher to find the corresponding audio recording when notes are tapped, taking the researcher instantly to what they want to hear.

The same two researchers who conducted the interviews were also involved in the analysis of the data which according to Ridge and Murphy (2003) data can be debated and meanings clarified more consistently, while each researcher has a different vantage point providing a basis for a more comprehensive analysis of the data. Punch (1998) and Barbour (2001) also support this idea where qualitative approaches encompass a 'changing and contested field' in which different ways of looking at the same issue are thought to increase understanding of complex phenomena.

The interview schedule was also prepared and adapted by the research team to ensure that the questions were at an appropriate level intended for the participants and would cover the research questions developed. Participants for the study were specifically selected based on their expertise in community gardens to ensure full depth and breadth of the topic in question (Trotter et al. 2001).

## 4 Research Questions

Aim: Is it feasible to establish a community garden on the Deakin Burwood Campus?

1. What are the facilitators to establishing and maintaining a community garden in a university setting?
2. What are positive aspects of current community gardens in Australia?
3. What are the possibilities for community gardens in a university setting?
4. What are the barriers to establishing and maintaining a community garden in a university setting?

## 5 Results

### 5.1 Surveys

An online survey was emailed to all on campus staff and students at Deakin University's Burwood Campus. Approximately 23,500 students and 1,385 staff were either studying or employed during the time of this study. A total of 532 staff and students on the Melbourne Burwood Campus took part in the survey. The results are discussed in the following section.

#### 5.1.1 What are the possibilities for community gardens in a university setting?

##### 5.1.1.1 Demographics

The data in Figure 1 demonstrates that 39.2 percent of survey participants consisted of staff and 57.2 percent were students. More females than males took part in the survey which is consistent with other studies which find that females are generally more interested in participating in research than males (Turner & Henryks, 2012; Curtin et al. 2000; Moore & Tarnai 2002). Figure 1 demonstrates that 78.9 percent of female staff and 82.8 percent of female students participated in the study.

Figure 1: Gender

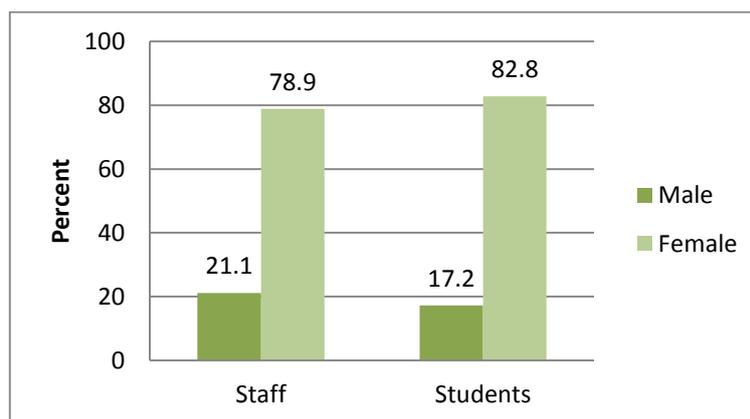
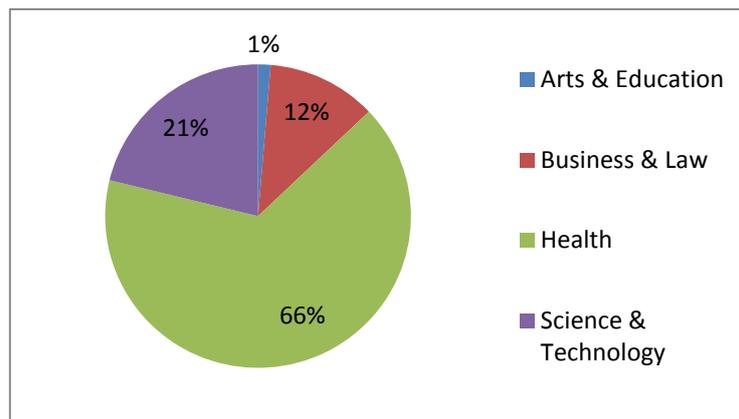


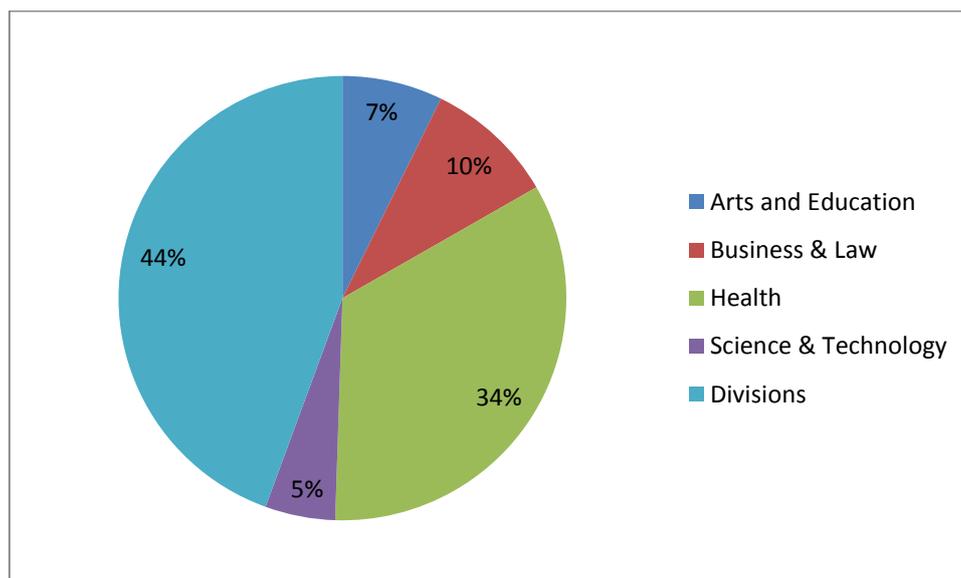
Figure 2 demonstrates that the majority of students who participated in the survey were from the Faculty of Health (66%).

Figure 2: Faculty (students)



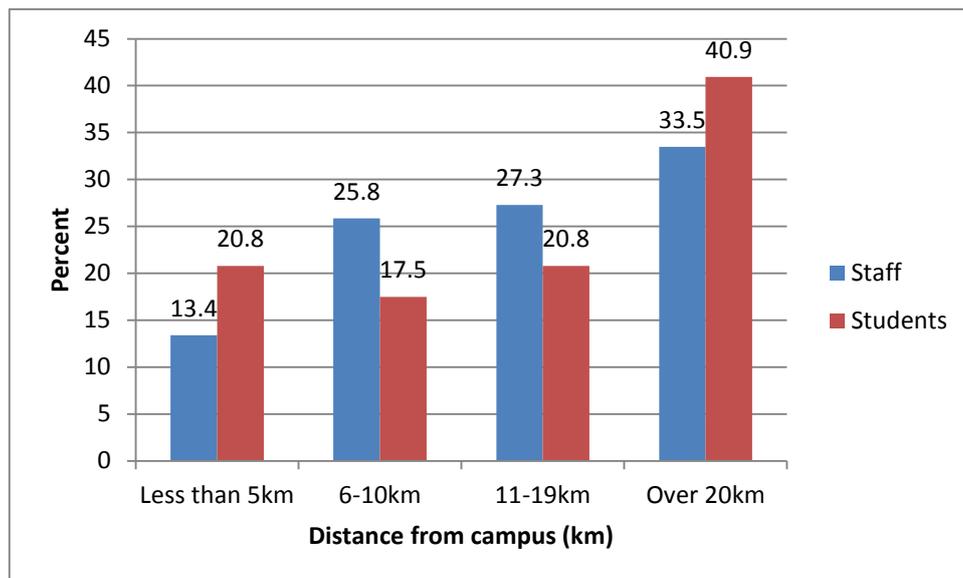
Similar to students, Figure 3 demonstrates that the majority of staff that took part in the survey were from the Faculty of Health (34%). A large proportion of staff that took part in the survey were also from the divisions (44%).

Figure 3: Faculty or division (staff)



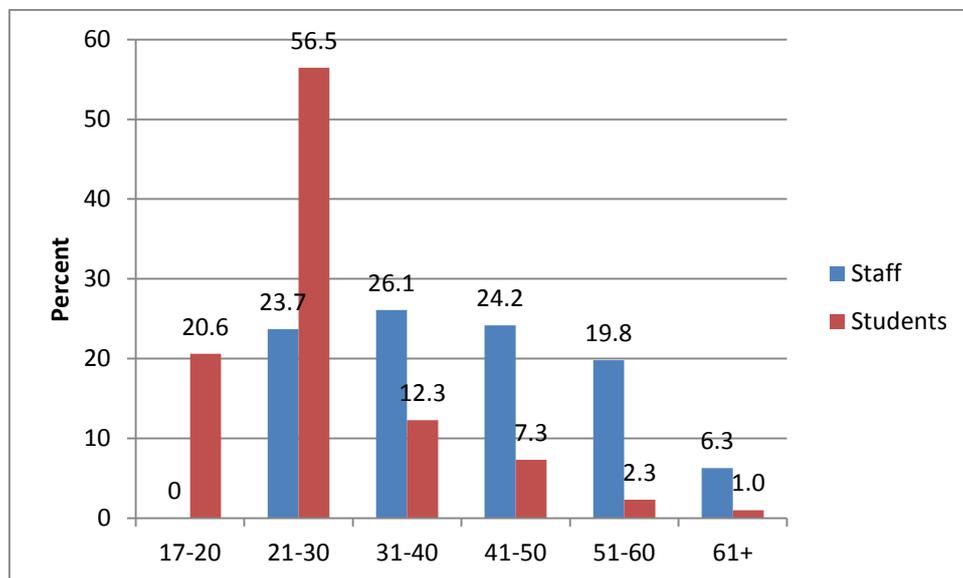
Distance is often a key factor for participation in a community garden, with higher participation rates when participants live within close proximity (Giles-Corti et al. 2005). The data in Figure 4 demonstrates that most respondents live over 20km from campus (33.5% staff and 40.9% students) which is not necessarily ideal for participation, however, the data also shows that over one-third of staff and students live less than 10km from campus (39.2% staff and 38.3% students).

Figure 4: Distance from campus



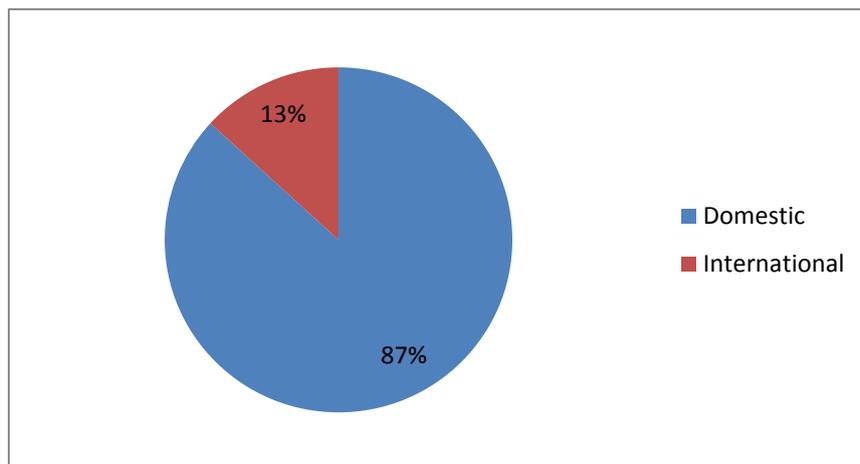
The data in Figure 5 demonstrates that most students were in the 21 to 30 age range while staff numbers were spread on average quite evenly between the ages of 21 and 50.

Figure 5: Age range of staff and students



The data in Figure 6 demonstrates that more domestic students than international students participated in the survey, however, this merely reflects the number of students from each cohort that are currently enrolled at Burwood, rather than actual interest in a garden. A chi-square significance test was undertaken to determine whether there was any difference between groups regarding interest and there was not ( $p > 0.05 = 0.976$ ).

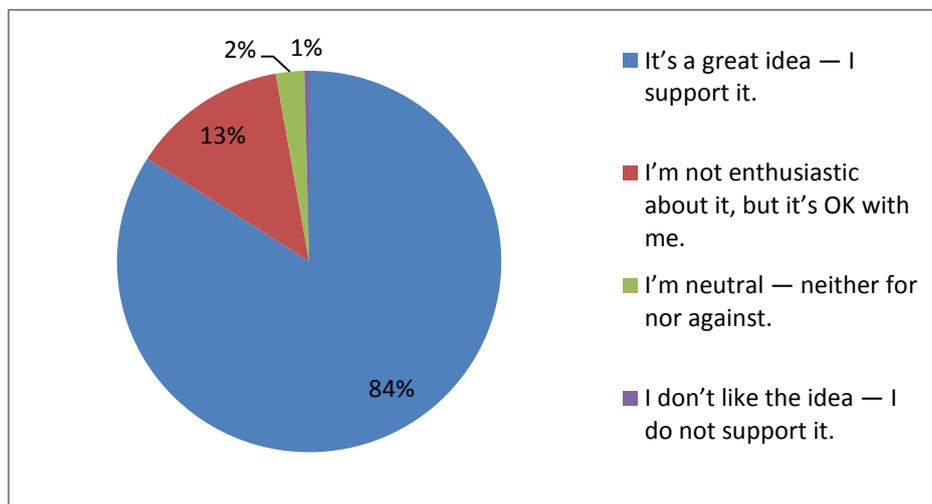
Figure 6: Student type



#### 5.1.1.2 Interest and participation

The following section presents the findings in relation to student and staff support and interest in a community garden at the Melbourne Burwood Campus. Students and staff were asked whether they would be interested in participating in a community garden where edible and ornamental plants were grown. Figure 4 demonstrates that 84 percent of staff and students in this sample support the development of a community garden on campus.

Figure 4: Community Garden Support



There are many activities that can be undertaken in a community garden, some of these can include education, research, a place for social gatherings, relaxation and reflection, contact with nature, and a food source. Students and staff were asked to rate whether these various activities were appealing and to what extent. Table 1 demonstrates that all of the activities were either appealing or extremely appealing to staff and students.

Table 1: Level of appeal of various activities in a community garden

Activity	Not at all appealing	Somewhat appealing	Moderately appealing	Appealing	Extremely appealing	N/A
Community engagement activities within the garden for the wider community, e.g. local community centres involved with cultural awareness week through planting indigenous plants etc.	3.5%	12.9%	17.1%	<b>39.5%</b>	26.5%	0.6%
Buying community garden produce at Deakin food outlets.	1.3%	7.9%	8.6%	33.7%	<b>48.3%</b>	0.2%
Buying community garden produce at an on-campus farmers market	1.2%	6%	7.1%	30.4%	<b>55.2%</b>	0.2%
Participate in research opportunities in community garden, e.g. pest control, social inclusion etc.	8.5%	14.1%	17.9%	<b>34.7%</b>	23.7%	1.2%
Community garden used as a setting for teaching and learning, e.g. nature as inspiration for creative writing/dance etc.	7.1%	13.8%	16.9%	<b>31.2%</b>	28.5%	2.5%
Community garden used in the curriculum, e.g. nutrition & food studies, human movement & physical activity, business models & enterprise, environmental sustainability, health promotion etc.	2.1%	6.5%	8.3%	35.9%	<b>44.7%</b>	2.5%
Community garden used as a method for learning, e.g. inquiry based learning, experiential learning, transformative learning, systems thinking etc.	6.9%	11.1%	15.2%	<b>37.8%</b>	26.1%	2.9%
Short courses on growing, harvesting and preparing food, e.g. permaculture design certificate, composting etc.	3.3%	4%	10.2%	34.9%	<b>47.1%</b>	0.6%
The community garden used as a place for contact with nature.	2.3%	6.1%	8.4%	35.7%	<b>47%</b>	0.4%
The community garden used as a place for rest, relaxation, reflection	1.3%	5.2%	8.7%	35.1%	<b>49.7%</b>	0%
Community garden produce exchanged for labour or gold coin donation	2.7%	8.8%	14.5%	34.8%	<b>38.4%</b>	0.8%
Community garden used as a means of reducing food miles and carbon footprint.	3.5%	6.7%	7.9%	29%	<b>52.2%</b>	0.8%
Community garden used for action on climate change	5.6%	7.9%	11.5%	30.4%	<b>42.5%</b>	2.1%

Respondents were given the option of commenting on their level of interest and appeal of a community garden. A significant number chose this option (n=81) and comments were overwhelmingly in favour of the establishment of a community garden at Deakin University. Numerous comments were also offered on how a community garden could be inclusive of communities within and external to Deakin.

*“Using the community garden as a link with the local community - another strategy in linking Deakin Burwood with the local community. Including students living on campus to create a sense of community for rural and international students - could also supplement their diets particularly if they have low financial resources” (Staff)*

*“Potentially using the garden as a research tool within the wider community to see if it's use in the university can validate extending the project from the university into other surrounding suburbs (or suburbs where a majority of involved students would like to participate and promote a similar project) It would be good for both the university and the community if Deakin could collaborate with many smaller 'guerrilla' gardeners who are doing this kind of work within their area but without a lot of support other than from non-profits - Deakin could provide this support and resources” (Student)*

*“I would envisage a food garden with seasonal fruit trees and herbs that could be harvested by those who participate in the 'garden club'. A small joining fee (\$5 per year) could be asked for; to buy materials and help with maintenance. It could also include a seed bank I also like the idea of the 'farmers market' as I am sure that many staff would have extra produce or even eggs/cheese that they make at home and may like to barter/sell. This could include bakery goods too. I would assume it would be chemical free and in 7 years declared organic if the good practices continue” (Staff)*

*“Absolutely fragilistic expialidociosly wonderful idea. The bigger the better” (Staff)*

Comments also elucidated the profile of Deakin University as a “welcoming” university with a commitment to sustainability principles. This was regarded as both a marketing advantage for Deakin University, and a draw card for an increasingly environmentally aware student population.

*“It'll give Deakin more of a 'name' in the sustainability world. At the moment to be perfectly honest Deakin has not really stepped up as much compared to other uni's to be 'eco conscious' (maybe more so in the last year or 2 but it took a bit longer) This will be important to their image when competing with other uni's which offer environmental courses. it'll also create a campus which people can feel more connected to and make them feel more welcome, especially those with an existing interest in being outside, and those who are new to Melbourne and the university is one of the only places they know well (i.e. international students who often are probably not as involved as they could be) It's also useful, why own that much land and not utilise it? It's practical, efficient and an obvious way to use the healthy soil, water and space us Australians take for granted. It will also attract some more interesting wildlife other than pigeons or mynahs, and then perhaps some education surrounding native wildlife could be included in the project. It would be so exciting if this went ahead and was successful!! It would be good to do education programs in as well, like for primary and secondary school aged people who are going to be facing some crazy environmental problems when they hit working age. There is an endless amount of programs which could be implemented, look at CEREs and what they have accomplished” (Student)*

*“This concept appeals to me because it shows that Deakin is leading by example and is applying research in public health in a practical way. It will also demonstrate to other universities what can be done and how, and hopefully this will result in them also following suit” (Student)*

A small minority of respondents questioned the concept and viability of a campus community garden as the best fit for a tertiary institution. Instead they offered alternative formats for inclusion of garden/nature within an urban campus context. For example: Pollinating Pathways which includes a system of “linked” up green corridors between nature reserves/parkland.

*“Universities should be working towards something a little more sophisticated than growing a few vegetables. I think you propose the right project for the wrong place and the wrong target audience. Have a look at the following site for a more appropriate inspiration on how to interface concepts on connectedness with our outdoor spaces.  
<http://www.pollinatorpathway.com> Local communities have formed for this purpose, one of which I am involved with: <https://www.facebook.com/BrunswickC4N> A community garden would only be appropriate for resident students, but they are temporary accommodation, and 18-20 years olds are the least likely to be interested in this project. Please think instead about how to connect with the existing parkland along the campus, draw inspiration from La Trobe Uni's wildlife park, and try and propose a well thought, sustainable, cost-effective concept which would actually work within the existing social and economic constraints of campus” (Staff)*

*“I don't find the idea of growing fruit and produce exciting or something I expect/want from a University. I do like the idea of having more plantation and natural stuff around campus. It all feels very “modern design” and I would love more of a nature feel” (Student)*

Students and staff were then asked to rate their likelihood of participation in each of these activities if they were to be established in a community garden at Deakin. The responses varied with some activities rating quite highly, these include: the purchasing of produce at a farmers market or Deakin food outlet, running short courses at the garden, community garden used in the curriculum, a place for contact with nature, rest and reflection, garden produce exchanged for labour or gold coin donation and the garden being used as a place to reduce food miles. The responses are outlined in Table 2.

Table 2: Level of participation of various activities in a community garden

Activity	Extremely unlikely	Unlikely	Neutral	Likely	Extremely Likely	N/A
Deakin community engagement activities within the garden, e.g. Anti-Cancer Council's Daffodil day, ethnic food celebration, community kitchen etc.	3.9%	11.4%	22.1%	<b>47.1%</b>	13.4%	2.1%
Community engagement activities within the garden for the wider community, e.g. local community centres involved with cultural awareness week through planting indigenous plants etc.	4.5%	20.4%	28.8%	<b>32.3%</b>	11.9%	2.1%
Buying community garden produce at Deakin food outlets.	2.5%	5.3%	13.5%	38.1%	<b>38.5%</b>	2.1%
Buying community garden produce at an on-campus farmers market	2.1%	5.7%	9.6%	35.4%	<b>45.5%</b>	1.8%
Participate in research opportunities in community garden, e.g. pest control, social inclusion etc.	8.6%	22.8%	20.4%	<b>28.7%</b>	15.7%	3.7%
Community garden used as a setting for teaching and learning, e.g. nature as inspiration for creative writing/dance etc.	12.3%	25.2%	<b>26.4%</b>	16.2%	13.7%	6.3%
Community garden used in the curriculum, e.g. nutrition & food studies, human movement & physical activity, business models & enterprise, environmental sustainability, health promotion etc.	6.1%	15.8%	18.8%	<b>29.1%</b>	23.8%	6.4%
Community garden used as a method for learning, e.g. inquiry based learning, experiential learning, transformative learning, systems thinking etc.	8.2%	18.6%	<b>28.7%</b>	22.9%	14.1%	7.6%
Short courses on growing, harvesting and preparing food, e.g. permaculture design certificate, composting etc.	5.1%	11.3%	18.5%	<b>32.7%</b>	29.4%	2.9%
The community garden used as a place for contact with nature.	2.7%	6.1%	17.5%	<b>37.6%</b>	33.9%	2.2%
The community garden used as a place for rest, relaxation, reflection	2.5%	5.1%	14.5%	<b>38.4%</b>	37.8%	1.6%
Community garden produce exchanged for labour or gold coin donation	4.7%	10.4%	17.2%	<b>36.2%</b>	29%	2.5%
Community garden used as a means of reducing food miles and carbon footprint.	3.3%	9%	17.2%	32.4%	<b>33%</b>	5.1%
Community garden used for action on climate change	5.3%	8.5%	23.6%	<b>28.7%</b>	27.2%	6.7%

### 5.1.1.3 Training and Information

While community gardens are often used as sites for education, research and community engagement, staff and students may lack knowledge and skills in utilising a community garden space using these ideas. Questions were asked to ascertain the likelihood of staff and students attending professional development workshops or training to increase their knowledge and skills in this area. The results are outline in Table 3.

Table 3: Likely participation in training and information programs

	Extremely Unlikely	Unlikely	Neutral	Likely	Extremely Likely	N/A
Training and information on community gardens as curriculum.	13.7%	15.6%	24.8%	<b>27.1%</b>	14.1%	4.7%
Training and information on community gardens as pedagogy.	12.2%	17.5%	<b>31.2%</b>	22.7%	9.8%	6.7%
Training and information on community gardens as research.	11.3%	18.2%	25.2%	<b>27.5%</b>	13.9%	3.9%
Training and information on community gardens as facilitators of community engagement.	9%	11.8%	22.6%	<b>35%</b>	19.1%	2.6%
Training and information on the links between food, health, nature and sustainability.	6.8%	7.2%	14.8%	<b>36.9%</b>	30.5%	3.7%
Training and information on the links between environmental sustainability and community gardens.	7.2%	8.2%	21.3%	<b>33.7%</b>	26%	3.5%

The data in Table 3 demonstrates that staff and students would be interested in attending training and information around community gardens. There was strong interest around the links between food, health, nature and sustainability with 36.9 percent of respondents stating that they would likely attend training and information and a further 30.5 percent stating that this would be extremely likely.

This positive trend was reflected in respondents' comments with a significant number of respondents posting comments on their interest in both using the gardens as educational settings and learning in a community garden setting.

*"I think it would be a great way for staff and students to learn about different plants and how to grow their own. It would also be a great way for researchers and staff from different schools to meet one another and even collaborate together on future projects. I also think having a garden would emphasise Deakin's commitment to being a sustainable workplace. We already have a great reputation in being forward thinking and innovative with health, it would be great to extend this towards sustainability as well. It would really set Deakin apart from other Uni's" (Staff)*

*“I mentioned earlier that it would be great if this initiative could host nutrition student placements, and I wonder if students could research some of these topics (namely link between food, health, nature & sustainability) and help run such training & information programs?” (Staff)*

*“The importance of training children in city schools about the importance of the environment and where food comes from. Also, in terms of research, it would be a great opportunity to discover ways to reduce the use of pesticides and GM foods as seen in countries such as France” (Student)*

*“I had discussed this idea a number of years ago with the Whitehorse Council as they have a Community Garden in the Wattle Park housing area and were looking for student volunteers to assist them in the garden and build connections with Deakin, it may be worth contacting the area of Council who looks at Food Security / Community Gardens. The garden in the Wattle Park area is located in one of the lowest SES areas within Whitehorse and I am sure they would welcome discussions to work with Deakin” (Staff)*

### 5.1.2 What are the barriers to establishing and maintaining a community garden in a university setting?

Respondents were asked to comment on any barriers that might prevent their participation in a community garden. Of the 529 comments almost 99 percent mentioned limited time as their biggest barrier.

*“Limited time on campus is definitely a major barrier. I live far away from campus and tend to only be on campus when I have class or a meeting of some kind. However, it is highly likely that I would spend time relaxing in the garden in between classes etc.” (Student)*

Other comments identified weather, tools, appropriate clothing and lack of expertise:

*“If not using community tools, I could not bring my own due to public transport use. I would also like a place to change clothes and leave clothes so as I don't dirty my work clothes” (Staff)*

*“Knowledge of how / when I could be useful. If there were people who were in charge of rosters, and info on what needed to be done, would consider participating. Not an experienced gardener, but would like to learn” (Staff)*

In response to the question “what can assist in overcoming possible barriers to participation?” respondents were very creative in their suggestions and included accessing tools, flexible hours and better public transport:

*“Allowing people to participate for short time” (no answer)*

*“Have it so the community garden is open a majority of the day, at least five days a week. Maybe have it how the club rooms run and open 9-7 on weekdays so that all people have access to it. Try and schedule programs and classes involving the garden at all times of day over the week so a majority of people interested have the ability and chance to attend” (Student)*

*“Disability friendly” (Staff)*

*“I would be much more enthusiastic if there was an active group, point of call or a person I could speak to so I could communicate my availability and "get up to speed" with what was needed doing in the garden. My time is precious so I would prefer to use it wisely. I would like to receive regular emails, or join a Facebook page and keep up to date on what was happening in the garden. Being paid in produce for my efforts would entice me or work in exchange for workshops would appeal. Workshops that included a learning aspect to include young family members would encourage me to drive to campus on weekends!” (Student)*

*“Encourage staff members to group their 15minute breaks to x1 30minute breaks where they can assist with the gardening each day for 20minutes (est. travel time (return) 10min including preparation etc.)” (Staff)*

*“Better public transport connections” (Student)*

*“Appropriate wind breaks and shaded areas \* A central, accessible location \* Education around appropriate use of the space - sharing, division of labour, respect \* Appropriate wind breaks and distance from road and parking areas, creating raised garden beds with clean topsoil, location clear of direct water runoff from road or garbage areas \* Topsoil, garden beds, stakes and large tools provided \* A rainwater tank” (Staff)*

## 5.2 Interviews

Phase two of the study was to interview staff who either manage or coordinate a community garden at their organisation. Interviews were undertaken to ascertain a range of factors such as: type of community garden and its purpose, the logistics of setting up a community garden, the cost associated with a community garden in both the setup and its maintenance, the barriers commonly found with setting up a garden and the opportunities. The information provided will assist with the development of a community garden at Deakin's Burwood Campus through the provision of information and resources from best practice.

Interviews were undertaken with four participants from community related organisations that were located in Victoria, in addition, site visits were undertaken with four of these organisations to supplement the interviews. A further four interviews were undertaken with participants from Australian Universities with site visits undertaken at two universities. For the purpose of this study and to retain confidentiality of participants the gardens based in local communities will be coded as follows Community Garden 1 (CG1), CG2 etc, while community gardens based at universities will be coded University Garden 1 (UG1), UG2 etc.

Interviews will assist with answering the following four research questions

1. What are the facilitators to establishing and maintaining a community garden in a university setting?
2. What are positive aspects of current community gardens in Australia?
3. What are the possibilities for community gardens in a university setting?
4. What are the barriers to establishing a community garden in a university setting?

### 5.2.1 Typology of gardens

#### 5.2.1.1 *When did these gardens begin?*

Most community gardens (n=5) have been established for a few years (2007-2010), while 1 campus community garden began towards the end of 2012. Only one community garden had been established for over 33 years. One community garden is no longer in operation, however, the participant for the research provided valuable insight and knowledge into community gardens in a university setting. These are outlined in Table 4.

Table 4: Community Garden and year established

<b>Community Garden</b>	<b>Year established</b>
CG1	1981
CG2	2009
UG1	2008
UG2	2010
UG3	2012
UG4	2010

### 5.2.1.2 What are the gardens used for?

The interviews provided insight into the gardens and what they are predominantly used for. There were varied responses including:

1. Gardens are to encourage community participation and demonstrate environmental sustainability;
2. Gardens are for the community and residents living in the area for food production and community participation;
3. To provide students with a place based practicum (Public Health Nutrition and Occupational Therapy) in the garden;
4. Gardens were used by community based organisations in the region that work with humanitarian migrants; and
5. Garden is primarily a place for like-minded students to grow vegetables and have social contact.

### 5.2.1.3 What do the gardens look like?

Participants were asked to provide a description of the community garden within their organisation or university, including the size of the gardens, type of garden – whether they are private, communal or a combination and what was grown in the garden. These are outlined in Table 5.

Table 5: Community Garden Features

Community Garden	Features of Garden
CG1	<ul style="list-style-type: none"> <li>• CG1 is a large site (9.8 acres) with 53 private community garden plots that are leased to residents in the area. The site is a mixed use space with enterprises such as: bike shed, farmers market and training programs in horticulture, sustainability and hospitality. There are six different disability groups that visit the gardens each week.</li> </ul>
CG2	<ul style="list-style-type: none"> <li>• CG2 has 40 private plots that have been built in 3 sizes (large, medium and small). The majority are small plots (2x3m in size) and enough for a couple. There are fewer medium plots and only 3-4 large plots. These are leased to residents in the area. There is signage to inform public to not enter and take food.</li> <li>• There are also communal areas that include a sensory garden, espaliered fruit trees, a communal garden bed, an olive grove and small orchard on the nature strip for the community and residents.</li> <li>• Section of garden behind gates (low in height), these are private plots. Some communal space outside of main space, encouraging passers-by to eat food in garden.</li> <li>• There is also a dedicated children's corner that has raised beds and a sensory garden for young children to use. The garden consists of principally herbs and plants at kid's height, i.e. 2-4 year olds, e.g. cherry tomatoes, broad beans, herbs.</li> </ul>
UG1	<ul style="list-style-type: none"> <li>• UG1 had 50 individual plots that were 2x10m in size, bordered but not raised, a herb spiral also existed with a few plants. UG1 also had a big communal plot 20mx20m as a micro enterprise using fully organic methods.</li> </ul>
UG2	<ul style="list-style-type: none"> <li>• UG2 have 4 large raised garden beds as well as ground level garden beds. The area is equivalent to a small back garden in size.</li> </ul>

UG3	<ul style="list-style-type: none"> <li>• UG3 has three no dig gardens and three raised beds using eco wood. There is also a fenced shade house.</li> <li>• Part of garden dedicated to uni food outlets. Part of garden dedicated to volunteer use.</li> </ul>
UG4	<ul style="list-style-type: none"> <li>• UG4 have 10 -14 garden beds that are 12mx8m in size. Currently seeking approval for a Permaculture garden. There are Australian plants growing in the garden in addition to vegetable gardens to recognise Indigenous people in the area. The garden also has a picnic table and chairs and big lawn areas surrounding the site.</li> </ul>

5.2.1.4 *Photos of community gardens*



Image 1 and 2 (above): Community Garden 1 (CG1)



Image 3 and 4 (above): University Garden 4 (UG4)



Image 5 and 6 (above): University Garden 2 (UG2)



Image 7 (above): Community Garden 2 (CG2);

Image 8 (above): University Garden 1 (UG1)

## 5.2.2 Facilitators to establishing and maintaining a community garden

Participants discussed the facilitators and enablers to establishing and maintaining a community garden within their community or university. The most common responses included: Funding, availability of land for the garden, having a formal governance structure, community interest, volunteers and in-kind support. These are demonstrated in Figure 5 and will be discussed below:

Figure 5: Facilitators and enablers for the establishment and maintenance of a community garden



### 5.2.2.1 Funding

Most participants (n=5) stated that funding was a key facilitator for the establishment of their community garden. Funding sources varied and were either provided internally or were received through external grants. These have been divided into 2 categories below.

Gardens that received internal funding for their establishment:

- Community garden received 2 rounds of \$20,000 from the Vice-Chancellors office (Total \$40k). The funds also enabled the employment of a Permaculture consultant to assist with selection of vegetation in garden (UG3).
- All funding was raised by the University from the facilities and grounds budget. Estimated figure for cost to date around \$25k (UG2).

Gardens that received external funding for their establishment:

- Community garden received funding from FACSIA (Family and Community Services and Indigenous Australians) and a small grant from council to come up with the design. FACSIA funding also paid for some of the infrastructure (CG2).
- Received funding from community renewal program and money through Department of Employment and Industrial Relations. They helped to fund the tools, equipment, borders for

garden beds, water tanks. On-going funding for the maintenance and extension of garden activities is also a key facilitator. Again funding is provided internally or received through other sources such as grants and membership support (UG1).

Participants also stated that on-going funding for the garden's maintenance was a key facilitator, as well as funding to extend the activities within the garden. Again funding was provided either internally or externally. This is demonstrated below.

Gardens that received internal funding for their maintenance and garden activity extension:

- Community garden generates 75 percent of its own income through retail shop, nursery, onsite café, and educational workshops. Community garden plots cost \$50 per year (CG1)
- Funding for community garden activities, courses and paid maintenance workers (paid student) through University Green Innovation Fund (UG2)
- Funded through membership fees which vary from plot to plot. Small plot \$120, Medium \$180, Large \$240 per year. Concessions are \$40, \$60, \$80 respectively. Membership structure for those who want to be involved in garden but don't want their own plot.
- Membership fees incorporated in that so plot holders don't have to pay for membership fees as well (CG2)
- Introduced a plot fee later down the track \$100 per plot to assist with funding (CG1)
- One participant stated that committee members chip in to buy seedlings (UG4)

Gardens that received external funding for their maintenance and garden activity extension:

- Community garden depends on membership base, donations and partnerships (CG1)
- Office of Engagement grant (external to Uni) received to investigate capacity building of community gardens across the region, this helped to facilitate further activities within the garden (UG3)
- Funding from QLD health helped to build 2 toilets (male and female with disabled access) and a kitchen in community garden: sink, bench, some power to have a fridge and store equipment Received further funding from Department of Immigration and Citizenship for 3 years to run nutrition and food workshops for recently settled migrants and to run permaculture classes for gardeners. Settlement and skills building activities. Funds for a project officer 1-2 days per week 5-6 hours per week (UG1).

### *5.2.2.2 Availability of Land*

Three participants stated that available land was a facilitator for the establishment of their garden. For example, one community garden was built on a decommissioned rubbish tip that was once a bluestone quarry (CG1). Comments from participants include:

“Unusable piece of land amongst a housing estate. It has high density housing and the corner block couldn't be used because of power lines going across the top” (CG2)

“[The] campus had potential space for a community garden. [University] already had cows on campus. Large tract of land available on the [name] campus, wasn't boxed in. Garden was a large space where you could have meetings at one end, a children's playground at the

other end. Toilets located near existing sewerage drain. Garden also adjacent to lake on campus, facilities helped to install a pump to get water – no drawing on mains” (UG1)

Other community garden sites had limited land availability, nevertheless a site was found for the garden (CG3, UG2).

### 5.2.2.3 Formal Governance Structure

Participants stated that a formal governance structure was a key facilitator for the establishment and maintenance of the garden (n=5). This involves having a steering committee to oversee the planning and design of the garden within its development stage, and a maintenance committee to oversee the everyday running of the garden. Governance for each garden is provided in Table 6.

Table 6: Governance of Garden

Community Garden	Day to day management
CG1	<ul style="list-style-type: none"> <li>• Site group agreement</li> </ul>
CG2	<ul style="list-style-type: none"> <li>• Garden is an incorporated entity and is reported to consumer affairs Victoria every year to maintain incorporation.</li> <li>• Have a governance committee to maintain incorporated entity: president, vice-president, treasurer and membership (community members) who meet monthly to oversee financial and operational aspects of garden. All volunteers.</li> <li>• Active gardening policy – quite a structured approach for how people should manage their gardens, e.g. one plot becomes overgrown and weeds – email sent to remind people to manage it or to give up their plot if they no longer want it as there is a waiting list).</li> <li>• Active gardening guidelines and if people don't respond repeated emails are sent to ask if people need support before asking them to give up their plot. Never been in a situation to ask someone to surrender their plot.</li> <li>• Have an annual plot renewal time in October that where people can make the decision to continue for 12 months or give up their plots. This is a good opportunity to give up plots and create turnover.</li> <li>• Have a website where people can apply for a plot or register as a member.</li> <li>• Structured committee and they meet once a month for 1-1.5 hours to discuss garden management. The committee is quite structured and each person has a role or responsibility. All plot holders know who the committee members are and when meetings are held in case they would like to contribute something. Decisions are made during these meetings.</li> <li>• Annual general meeting in Aug/Sept.</li> <li>• Garden is based on organic growing methods and this is clearly outlined in policy and guidelines.</li> <li>• Public liability insurance obtained through horticultural society and covers anyone who enters the garden, e.g. members and non-members.</li> </ul>
UG1	<ul style="list-style-type: none"> <li>• Non-existent at the beginning which caused a number of issues. Management structure eventually put in place.</li> <li>• Had an Administration Group and a Strategic Management Group with key stakeholders, including funders: members from community renewal,</li> </ul>

	<p>Access Inc, Multilink, staff/students, Department of Employment and Industrial Relations, local TAFE to make decision around funding etc.</p> <ul style="list-style-type: none"> <li>• Had an operational group: about day to day functioning of garden, what issues have to be raised. Reps from different garden groups: students, African and Pacific Islander migrants and other. They would meet and talk to their community in garden to find out what was required, what was lacking, e.g. gypsum, lime, fertiliser, hoses, wheelbarrows.</li> </ul>
UG2	<ul style="list-style-type: none"> <li>• Sustainability Officer manages garden as part of their role, this includes the governance and maintenance of garden. Officer provides progress reports to the university's board.</li> </ul>
UG3	<ul style="list-style-type: none"> <li>• Steering committee very enthusiastic and consists of staff and students from around the University including: Sustainability Officer; Facilities Management, 2 x Engineering Lectures; HR – Health and Safety Manager; Occupational Therapy; Sustainability Lecturer; Volunteers Leader; Indigenous representation.</li> <li>• Sustainability Advisory Committee has a rep who is on the Community Garden Steering committee and they report back to the VCs office.</li> <li>• Possibility of charging a small fee to students to become members of the community garden – rationale is that people are more committed if there is a financial outlay.</li> </ul>
UG4	<ul style="list-style-type: none"> <li>• Student led committee maintains the garden – about 10 regular members complete maintenance. A sustainability officer provides some assistance.</li> </ul>

#### 5.2.2.4 Community Interest

Interest from the community is also a facilitator for the establishment of a community garden. One participant stated that the residents in the local area petitioned council to turn an unused block into community gardens. The founding group worked closely with council and negotiated with them (CG2).

Another participant stated that their university community garden was initially facilitated by a staff member that had an interest in community gardens. This person was already undertaking research in the area and was involved in [name] Community Garden in the area. There was also interest from staff and students (UG1). UG1 also stated that migrants who had recently moved into the area had an interest in gardening or had a garden/farm back at home and were interested in a community garden because they live in rental accommodation with no land or are not allowed to cultivate land.

UG2 stated that the community garden at their university was primarily a student led initiative, the Environment Society also showed interest (UG2). UG2 also stated that more and more people have shown interest in the garden since its establishment and that their Sustainability Manager is also supportive of the initiative.

CG1 stated that there is ongoing interest in the community with different group's visiting the space each day, e.g. mothers with prams and babies use café, play space and nursery. Disability groups, schools from all over Melbourne.

### 5.2.2.5 Volunteers

Participants also stated that volunteers were a key factor for the establishment and maintenance of the community garden. Details of the number of volunteers and who volunteers are provided in Table 7.

Table 7: Volunteers

Community Garden	Volunteers
CG1	<ul style="list-style-type: none"> <li>• Has a few hundred volunteers each week to maintain the entire site, including the gardens and propagate seedlings for the nursery.</li> <li>• The community gardens have regular working bees and social BBQs.</li> </ul>
CG2	<ul style="list-style-type: none"> <li>• Every month there is a working bee on a sat or sun for a few hours to work on shared spaces, e.g. mulching, weeding, turning compost etc</li> <li>• Volunteers run structured activities every month in the garden, e.g. 2nd Sunday every month veg in veg out (propagation group) who propagate seeds into seedlings for private plot holders. They also run propagation workshops as well as workshops on organic pesticides. Promoted on Facebook page and email list.</li> </ul>
UG1	<ul style="list-style-type: none"> <li>• Success on garden is based on willingness of people to volunteer in garden.</li> </ul>
UG2	<ul style="list-style-type: none"> <li>• Students volunteer in gardens. Initially held working bees to establish garden, however, students couldn't initially build it, they had to watch as uni grounds people built it. They organised a grand opening party and maintain Facebook page. They also run workshops, e.g. seed raising.</li> </ul>
UG3	<ul style="list-style-type: none"> <li>• Students lead maintenance of garden and they are all volunteers (120)</li> <li>• Students maintain the garden, including watering and other activities such as events and notifications, they initiated a Facebook Page.</li> </ul>
UG4	<ul style="list-style-type: none"> <li>• Student led committee maintains the garden – about 10 regular members complete maintenance. A sustainability officer provides some assistance.</li> </ul>

### 5.2.2.6 In-kind Support

In-kind support also helped to establish the gardens and maintain them. The following comments provide examples of the type of in-kind support that their gardens receive.

- Marketing and communications were involved to promote the garden, they helped to provide pop up gardens in O-week. Facilities management also provide in-kind support (UG3)
- [Name] council helped to dig trenches for sewerage. Community also helped out with digging trenches for watering system and to get power to toilets. University saw electricity, pipework to kitchen, plumbing, repairs etc as an extension of the campus grounds. They also emptied bins and cleaners helped (UG1). UG1 also stated that they were the main contact person for the garden to oversee activities etc.

### 5.2.2.7 Paid Position

Universities discussed having a paid position to coordinate garden activities and ensure smooth operations of the community garden as a facilitator. The paid position was usually part-time.

Examples of comments include:

- [We] have 1 paid student who works around 3 hours per week on a Friday to actively maintain the garden. They are paid through the Green Innovation Fund. They are also paid to run courses through it and coordinate student volunteers (UG2).
- Funds for a project officer 1-2 days per week 5-6 hours per week (UG1).
- Have a permanent part-time Permaculture consultant to maintain garden and organise activities (UG3).

#### *5.2.2.8 Other facilitators and enablers*

One participant stated that their university has a commitment to sustainability where Sustainability and interdisciplinary thinking are Graduate Attributes. The interdisciplinary thinking crossed over to the establishment of the community garden with many faculties involved. There is also strong staff and student collaboration in the garden, including international student involvement (UG3)

UG3 also stated that their community garden is linked to teaching and learning and this is a key facilitator. The garden is embedded into the curriculum in a number of units, e.g. Work integrated placements for nutrition students, and research projects are also undertaken within the garden.

For UG1 the formation of strong partnerships and collaborations was a key facilitator for their garden. After 1-2 years there was growing interest in the garden, especially from external groups, strong partnerships with Access Inc. groups and Multilink. Different populations were coming on campus that normally wouldn't, partnerships growing with different staff members. UG1 stated that their university has a strong ethos around community engagement so the garden worked around this. The VC enjoyed taking part in promoting the garden to the community. The garden ended up on the University's map. It was also recognised as best practice with the federal government with humanitarian communities and resettlement.

CG2 stated that their garden is lovely and get lots of positive responses from people when they walk past. The aesthetics of the garden is a facilitator for the gardens continued existence. The garden always looking lush and green, always something growing there. What was once an unused piece of land is now an attractive, green and productive space.

### **5.2.3 What are positive aspects of current community gardens in Australia?**

#### *5.2.3.1 Mental health*

Some participants discussed the mental health benefits of their community garden. CG1 stated that the gardens are a counter for Nature Deficient disorder in children. UG4 stated that were mental health benefits for the students within the garden and that the garden was also a positive mood enhancer. While CG2 stated that they had not undertaken an official study on the mental health and well-being benefits of their community gardens, however, anecdotally it was apparent.

#### *5.2.3.2 Physical health*

Community gardens provide physical health benefits to participants through hands on gardening (CG1). UG1 stated that the gardens were beneficial for the migrant groups that typically didn't undertake physical activity through the week.

### *5.2.3.3 Social connections with others*

Community gardens are also places where social connections are made with other people with similar values. For example, CG2 stated that their garden brought like-minded people together who are interested in community development and community organisations as well as community gardens. People join for the opportunity not just to grow food but to get connected. Many plot holders are new parents whose babies are now toddlers, really safe place for them to be. So parents can garden and have their kids with them. This is attractive and functional and parents can get of house (CG2).

These are great opportunities for gardeners to mingle, share freshly grown produce, swap seeds and pitch in to help maintain the site (CG1)

UG4 and CG2 also stated that the gardens provided opportunities for people to make friends. UG4 stated that mature students have made new friends in the campus community garden.

### *5.2.3.4 Garden as food source*

Two participants stated that community gardens are also important spaces for food production, this was particularly important for migrant groups at UG1 who had recently settled in Australia, it also provided them with a cultural status symbol. UG4 also stated that it was a nice feeling to grown own food (UG4).

### *5.2.3.5 Garden as interface with migrant communities*

UG1 stated that the community garden provided an ideal interface with humanitarian communities and was recognised as best practice with the federal government with humanitarian communities and resettlement. The refugee council of Australia recognised it too. The gardens provided an interface with populations you usually don't get the change to mix with.

## **5.2.4 What are the possibilities for community gardens in a university setting?**

### *5.2.4.1 Space for reflection and relaxation*

Community gardens can provide a space on university settings for reflection and relaxation. UG3 stated that people can relax in the garden, while UG4 stated that the garden is a place where students and staff can find peace and quiet. UG2 stated that staff go there for a bit of peace of quiet, calming effect. That it provides a whole lot of benefits. Students also use it as a social space.

### *5.2.4.2 Teaching, learning and research*

Community gardens are effective sites for teaching, learning and research opportunities. Campus gardens were often used as sites for student placements, honours projects and other university projects. UG3 provided examples of the different disciplines undertaking projects within the garden, such as: public health and nutrition students undertaking 6 week placements in the garden; an engineering student undertaking their honours project investigating the degradation of bamboo. UG3 also stated that the garden has also attracted Dietetics Masters Students looking at the volunteering aspects to community gardens, while Marketing and Communication students designed a logo and marketing strategy for the garden. Occupational Therapy students connected gardens with mental health services and use the sensory garden and walking paths. UG3 also stated that the garden provides action on sustainability, and that in the future they hope to use the garden as a

teaching tool and use the site for outdoor classes. It is also envisioned that there will be Indigenous cadetships on bush tucker gardens and on-going research into the efficacy of the community garden.

UG1 stated that public health nutrition students would undertake a placement in the garden for 6 weeks and that these students worked with recently settled migrants to create food sessions in the garden. UG1 stated that it was an eye opener for students. It shifted their ideas about public health nutrition and they received a better understanding of the difficulties these groups have and how to work with people with limited literacy and English skills. Students also worked with low Socio-Economic Status (SES) groups and developed projects around needs assessments for different groups. It helped to build their skill set as well as being a fantastic experience for them.

While UG2 have not currently linked teaching and learning to the community garden, they could see the benefits, stating that sustainability units could be taught in the garden. UG4 shared similar sentiments stating there is definitely potential to use the garden for curriculum.

Gardens can also be used for research, this is demonstrated by CG2 who stated that they had undertaken a study within their community garden. A [name] university student was interested in community engagement and developed an online survey and hard copies which were sent out in the local area. Results indicated that the garden had brought lots of awareness, with people valuing seeing something flourishing, productive and thriving 365 days per year, the greenness of it, sensory nature of it (smell, see, access to fresh food available to everyone) people saw it as a space to gravitate towards whether they were members or not.

Participants also stated that community gardens were ideal sites for running workshops for the local community. UG4 stated that the workshops in their community garden are for everybody, not just the students, everybody in the local community. CG2 stated that some workshops are led by [TAFE] or [university] students who volunteer regularly in the garden, they run workshops such as organic pest control and composting. While CG1 runs specialist tours for school groups and tertiary students on a variety of topics including: food, community food systems, organic food markets and food based social enterprises. They also organise workshops on a variety of topics such as: gardening (permaculture, backyard beekeeping, edible weeds, medicinal herbs, organic veggie gardens, organic propagation) as well as short courses on site including: Permaculture Design Certificates, The complete urban farmer and sustainable gardening.

#### *5.2.4.3 Food Production and Food Security*

Community gardens in a university setting can be used for food production and addressing food security issues. UG1 stated that their garden was used for small scale food production and to reconnect people (migrants) with food grown back at home and for people to connect with likeminded individuals. CG2 stated that the gardens have the possibility of addressing food security. While UG4 stated that students grow food for their own use such as: carrots, onions, snow peas, beet root, and herbs, such as borage which is good for fertiliser.

#### *5.2.4.4 Facilitating partnerships*

Community gardens could be useful in fostering relationships with staff, students and people running the garden. UG2 stated that their garden helps to foster links with the surrounding [suburb] community as well as the [suburb] housing flats which have community gardens.

UG4 stated that the gardens encourage more people from different cultural groups to participate in the garden. Once there are bigger numbers of people UG4 also anticipate having a ceremony with an elder as [suburb] is a very multicultural uni. While CG2 have been approached by organisations with intellectual disabilities and they've been very open to partnerships with these groups.

#### *5.2.4.5 Positive public engagement*

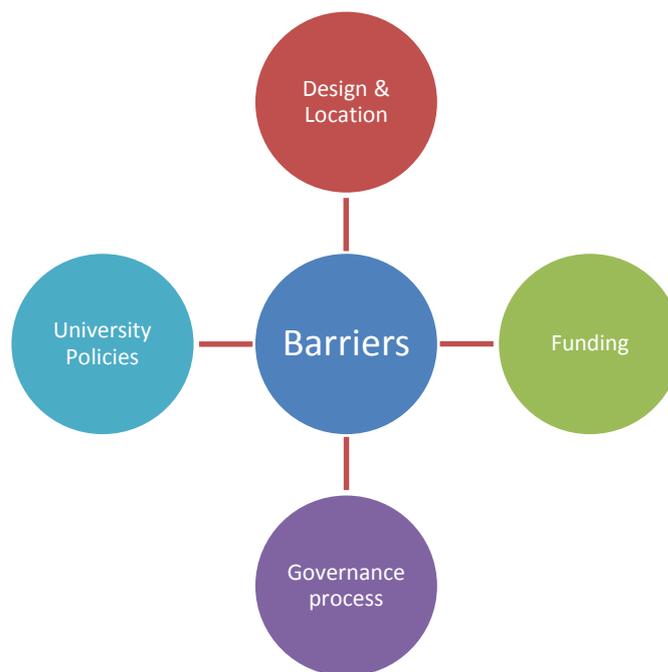
University gardens can also provide positive public engagement. UG1 stated that their garden would link with the humanitarian migrants from the area who wouldn't usually come to university (literacy and language skills are low in English), so this is a good way to engage with them on campus, exposing them to the university. It becomes exciting for the university as does capacity for the VC to say that the community garden is vibrant and we are engaging with people who don't usually come to uni. The university benefits by exposing different groups to a uni environment and they realise it's not so scary. It broadens community connections, community outreach, status and media attention via local papers.

CG2 stated that it provides public demonstration of a community garden, while CG3 run children's activities within the garden which helps to connect parents with other people and provide them with social contact.

### 5.2.5 What are the barriers to establishing and maintaining a community garden in a university setting?

Participants discussed the barriers they encountered when establishing and maintaining community gardens. The information provided by participants served to assist with planning and maintaining a community garden for the Burwood campus. Figure 6 outlines the barriers and includes: ensuring that the design of the garden is well thought out and a location established in a prominent location; that funding to establish and maintain the garden is secured; a governance process is put in place from the onset of the garden to ensure best practice; and that succession planning of volunteers is put in place.

Figure 6: Barriers to establishment and maintenance of community gardens in university settings



#### 5.2.5.1 *Design and Location of the garden*

Three participants stated that the design and location of their garden pose barriers to student, staff and community engagement. CG1 stated that their garden has health and safety issues regarding the condition of the paths between the beds. The narrow design of the paths also means that they are not disability accessible. The garden design has also seen individual plots being gated and fortified by plot owners which is not open and welcoming to non-users.

UG3 stated that the location of their garden meant that it was at least a 300 meter walk from the central activity hub of the campus. The university also had concerns with the community garden being in a prominent site in case if it became an unruly vista. UG2 expressed similar concerns regarding finding the right location of the garden. The garden is in-between buildings, out of sign and out of sun, which is not ideal. The garden is a significant distance from where students walk past which can pose barriers for student engagement in the garden. While UG1 stated that having only individual plots was not ideal for students as they are transitory.

#### *5.2.5.2 Funding*

Three participants discussed a lack of funding as a barrier to the maintenance of their community garden. UG3 and UG2 both expressed concerns regarding on-going funding opportunities and support to maintain their university community garden. UG1 stated that federal funding and cutbacks to their community garden saw the gradual decline of their garden. UG1 stated that university community gardens require at least 5-10K per year to be maintained appropriately and that a project officer should be employed part-time in addition to this funding. UG1 stated that campus gardens also require start-up funds for tools, signage, seating area in garden where people can congregate and other infrastructure such as BBQs to facilitate partnership development between different groups.

#### *5.2.5.3 Lack of Governance*

A lack of formal governance procedures and policies can pose significant barriers to the establishment and maintenance of community gardens. UG1 stated that they did not have a management process of the garden – that this evolved organically, however, this caused administrative issues and was limited function wise. UG1 recommended the need of a structure in place to have order, stating, “you need rules and order to function”. UG1 also stated that a lack of governance and management process made it difficult to split up who gets what plot and how many, with 15-20 families with too many plots amongst each other. Over time processes were created where families were limited to 2 plots each to increase diversity.

UG1 also stated that there was no risk management process in place. Basic safety issues were apparent and community gardeners need a basic induction process so that they will wear boots, a hat and will follow rules of the garden. In this particular region there are many snakes, therefore training around management of snakes was required. Facilities management also had an issue people coming to the garden that were unregulated. UG1 also recommended that all infrastructure meets university regulations and OHS.

A lack of succession planning with regards to volunteers and staff was also a barrier (UG1). This was also expressed by UG2 and UG4. UG4 stated that students are prepared to come on weekends but not during exam time, their participation can fluctuate so it’s hard to have the consistency.

UG1 stated that the main staff members who were overseeing the garden moved to other campuses, which made it difficult for them to be the main lead. Employment of a project officer was recommended, someone with status and access to the university system and who understands the system etc.

UG1 stated that someone has to do maintenance of shared areas, e.g. BBQ, children’s playground, undercover area, shed. Need general maintenance to be kept up as no one wants to maintain the communal areas.

#### *5.2.5.4 University Policies*

Two participants stated that their universities policies meant that at times it posed barriers to the maintenance of their community garden. UG3 stated that their university’s policy around biodiversity and native plants were at times to be in conflict with the aims of the community garden. UG4 also stated that their university supported the garden in some aspects, however, this depended on whether it worked with the university, stating “[university] can be a bit of a hindrance to it”.

## 6 Recommendations

### 6.1 *Design and Location*

- Ensure appropriate design and location of a community garden to facilitate staff, student and community engagement.
- Walking paths should be OHS compliant and be accessible for a variety of groups, e.g. students or staff with disabilities.
- The location of the garden should be considered within the University's Master plan and be in a centrally located and preferably prominent location where staff and students can either find the garden or see it as they walk through the campus grounds.
- Ensure a diversity of garden beds designs to meet the different needs and interests of students, staff and the community, e.g. individual plots, shared communal areas, raised beds.

### 6.2 *Funding*

- Community gardens require funding for their establishment and also for on-going maintenance to be successful.
- University community gardens require base funding for their initial establishment, this includes funds for garden beds, tools, shed, water tanks and signage as well as funds for social activities within the garden such as seating, shelter/shade and BBQs.
- University community gardens require at least 5-10K per year to be maintained appropriately.
- Employment of a part-time project officer is recommended to work in the administration of the garden, 1-2 days per week for approximately 5-6 hours per day. This person is ideally someone with status and access to the university system and who understands the system.

### 6.3 *Governance*

- Community gardens require a formal governance process and management structure to ensure that it runs fluidly and problems are addressed early. Governance makes it easier to resolve problems when they come up.
- Risk management processes and procedures are also required in the garden to ensure the health and safety of gardeners and visitors.
- Succession planning of volunteers and also for staff/student management and governance committees should be considered to ensure consistency.
- General maintenance of shared areas is required within a community garden. This helps to maintain aesthetic appeal of the garden.

### 6.4 *University Policies*

- University community gardens are more successful when they are supported by a strong set of policies. Policies should encourage the maintenance of the garden as well as further development within the garden.

## 7 References

- Barbour, R.S. (2001), 'Checklists for improving rigour in qualitative research: A case of the tail wagging the dog?', *British Medical Journal*, vol. 322, pp. 1115-17.
- Beebe, J (2004), 'Rapid Assessment Process', *Encyclopedia of Social Measurement*, vol. 00, pp. 1-7.
- Curtin, R., Presser, S., & Singer, E. (2000). The effects of response rate changes on the index of consumer sentiment. *Public Opinion Quarterly* 64: 413–428.
- De La Harpe, B. & Thomas, I. (2009), 'Curriculum Change in Universities: Conditions that Facilitate Education for Sustainable Development', *Journal of Education for Sustainable Development*, vol. 3, no. 1, pp. 75–85.
- Giles-Corti, B., Broomhall, M.H., Knuiaman, M., Collins, C., Douglas, K., Ng, K., Lange, A., and Donovan, R.J. (2005). 'Increasing Walking: How important is distance to, attractiveness, and size of public open space?' *American Journal of Preventative Medicine*, vol. 28, no. 2S2, pp. 169-176.
- Hesse-Biber, S.N. (2010), 'Mixed Methods Research: Merging Theory with Practice', The Guilford Press, New York.
- Krizek, K. J., Newport, D., White, J. & Townsend, A.R. (2011), 'Higher education's sustainability imperative: how to practically respond?', *International Journal of Sustainability in Higher Education*, vol. 13, no. 1, pp. 19-33.
- Moore, D. L., & Tarnai, J. (2002). Evaluating nonresponse error in mail surveys. In: Groves, R. M., Dillman, D. A., Eltinge, J. L., and Little, R. J. A. (eds.), *Survey Nonresponse*, John Wiley & Sons, New York, pp. 197–211.
- Onwunegbuzie, A.J. and Teddlie, C. 2003. Chapter 13: 'A Framework for Analyzing Data in Mixed Methods Research', in A.Tashakkori, and C.Teddlie. (Eds) *Handbook of Mixed Methods in Social and Behavioral Research*. Sage Publications: Thousand Oaks, pp351-384.
- Oppenheim, A.N. (1992), 'Questionnaire Design, Interviewing and Attitude Measurement, Printer Publishers, London.
- Pallant, J. (2005), 'SPSS Survival Manual: a step by step guide to data analysis using SPSS', Allen and Unwin, NSW.
- Punch, K.F. (1998), 'Introduction to Social Research: Quantitative and Qualitative Approaches', Sage Publications Ltd, London, pp. 198-238.
- Ridge, D. & Murphy, B (2003) 'Most useful': A rapid qualitative approach to mapping young peoples' issues and programs in Vietnam', *Development Bulletin*, no. 62, Canberra.
- Trotter, R.T., Needle, R.H., Goosby, E., Bates, C. & Singer, M. (2001), 'A Methodological Model for Rapid Assessment, Response, and Evaluation: The RARE Program in Public Health', *Field Methods*, vol. 13, no. 2, pp. 137–159.

Turner, B & Henryks, J. (2012), 'A Study of the Demand for Community Gardens and their Benefits for the ACT Community', Faculty of Arts and Design, University of Canberra.

Velazquez, L., Munguia, N., Platt, A. & Taddei, J. (2006), 'Sustainable University: What can be the matter?' *Journal of Cleaner Production*, pp. 1-10.