The i-button approach – engaging a small rural community in climate change adaptation

Authors

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Abstract

The purpose of this research project was to investigate methods to engage a Victorian rural community to implement practical strategies to reduce the health impacts of climate change. This specifically focussed on reducing the impact of rising temperatures and increasing energy prices by engaging the community in increasing the energy efficiency of their home.

A community development approach was adopted in addition to health promotion frameworks, behaviour change and social learning theories. A temperature data logger (an i-button) was used as the catalyst for creating community linkages and discussion about home energy efficiency. 15% of the community participated, with 88% of survey respondents making changes to improve their home's energy efficiency. Of the 25 households who participated, 8 were climate sceptics prior to the project. This was reduced to 4 after the project and all others self-assessed as having a high awareness of and interest in climate change. Regardless of their level of interest in climate change, 22 households made changes, with at least 1 of the remaining climate sceptics having a high interest in energy efficiency and had made significant changes.

A community arts project was also used within the community development approach to build connections between the researcher, local services and the community. This built on and created new networks which supported the overall project reach.

The project demonstrated the effectiveness of a community development approach and identified that climate change adaptation projects can be successful in a town where there is limited interest in climate change and a high level of scepticism.

Introduction

The impetus for this research was the request by local health and community services in late 2007 for the SGG PCP to assist them in how to plan for and respond to the broad health impacts of climate change from a health promotion perspective. This required an analysis of what the impacts would be and who would be most impacted, including a literature review and discussion with an Expert Panel of academic and policy leaders in Victoria.

The literature at the time focussed on the direct health impacts of climate change, including infectious and respiratory diseases, thermal stress and injury/mortality from extreme weather events[i] . There was no literature about the potential indirect health impacts, such as the mental health impact of rising food and utility prices, shortage of water and degradation to gardens. Some of these mental health effects have since been documented in research conducted by Maller[ii] identifying the vital role nature plays on human health, wellbeing and development. Climate Change would potentially amplify these impacts due to its global and temporal scale resulting in heightened community anxiety.

In December 2007, the Victorian Council of Social Services (VCOSS 2007)[iii] published work that explored the impact on the most vulnerable groups to climate change in Australia. This work identified that rising utility costs, thermal stress and water shortages would have the greatest impact on the elderly, chronically ill, the socially and economically disadvantaged and those with poor access to essential services such as good housing and adequate fresh water. Research by the World Health Organisation (2000)[iv] provided evidence that these disadvantaged groups have poorer physical and mental health compared with communities of higher socio-economic advantage. It was apparent that climate change had the potential to amplify existing disadvantage, further exacerbating the health inequality of disadvantaged groups.

The SGG PCP applied this evidence to its local context, publishing *Climate Change Adaptation: A Framework for Local Action*[v] in August 2008. The framework identified priority issues and local actions including household energy; household water use; transport; affordable food supply and community strength and resilience.

The next step was to commence taking action. Funding was sought from the Victorian Department of Health and Human Services and from the Handbury Research Fellowship through RMIT University (Hamilton campus) to undertake a community demonstration pilot to research whether a community could be assisted to increase their resources to adapt and hence develop resilience to climate change. Areas of disadvantage were identified in the SGG PCP catchment using data from the Department of Primary Industries on rural adjustment[vi] and local knowledge. Merino, a small

community located between Hamilton and Portland in South West Victoria was selected for the research project.

Background

Merino is a small rural community with a population of 183 at the 2006 census[vii]. The population has been in steady decline since 1981 where the population was recorded as 298. Situated in Victoria between Portland and Casterton, and approximately 350 kilometres west of Melbourne in the Glenelg shire, the small community of Merino has a Consolidated Primary School, a General Store, Hotel and a District Nursing Centre.

Community development and behaviour change theories were explored in developing our approach to this demonstration pilot, particularly the importance of social connection and learning from each other. Bandura's[viii] famous *Bobo Doll study* began social learning theory, the basis of which is that people learn through observing others' behaviour, attitudes and outcomes of those behaviours. Bandura's study suggests the importance of social relationships in behaviour change.

Health literature often refers to the transtheoretical model of change – the stages of change theory. Prochaska[ix] in his investigation into smoking cessation recognised that patients moved from pre-contemplation (uninterested, unaware and even unwilling to make change) through contemplation (considering the change) to deciding to prepare and make change (preparation and action). Rotter[x] also believes patients feel they have no control or there is nothing they can do to facilitate change (the external lotus of control). Relative to locus of control, there are many who consider the development of self-efficacy to be necessary for behavioural change, including Bandura's[xi] Social Learning Theory and Ajzen's[xii] Theory of Planned Behaviour. According to such theory, people cannot be expected to engage in a behaviour, or to even form intentions to engage in a behaviour, unless they believe they have the necessary skills and abilities to perform the behaviour. Research based in social marketing examines the diffusion of innovation theory whereby ideas are spread throughout groups of people. Rogers[xiii] reinforces the idea that adoption of a new idea is caused by human interaction through interpersonal networks. The Ottawa Charter[xiv] for health promotion creates an ideal framework to plan a behaviour change program which essentially advocates building public policy, creating supportive environments, strengthening community actions, developing personal skills and reorienting health services.

The pilot was designed to augment the health promotion framework of the Ottawa Charter with tools from social learning theory, transtheoretical theory, the locus of control and supportive group action.

Project Aims/Hypothesis

1. To increase resilience to climate change by increasing home energy efficiency

2. To increase resilience to climate change by increasing access to information resources

3. To discover the reach of a community engagement project by connecting people in the community with others engaged in the project

3. Methodology.

Approach 1 - Community Development

Skinner[xv] (1997) defines community development as development of work that strengthens the ability of community organisations and groups to build their structures, systems, people and skills so that they are better able to define and achieve their objectives and engage in consultation and planning community projects and take part in partnerships and community enterprises.

Using this approach, a Community Development Worker was used at the Merino Bush Nursing Centre with the aim to build capacity for the project by gradually building relationships with community members. The project plan was not predetermined but evolved as community connections were made. Stakeholders both within Merino and outside the community were engaged to develop the project plan. Stakeholders within the Merino community included the District Nurse, Planned Activity Group Co-ordinator, Lions Club members, Merino Youth Group, Merino Consolidated School, Merino Public Hall Committee, Hotel Publican, General Store Proprietor, local artist and photographer and individual community members. Stakeholders outside the Merino community included health and wellbeing professionals, community artists, environmental experts, health promotion experts, sustainability groups and universities. The project aimed to focus on the community issues that had an everyday impact on residents (household energy use) rather than a focus on climate change.

Approach 2 - Involvement in Energy Efficiency

Temperature data loggers (the i-button, see Appendix 1) were used as the key tool to engage the community in the energy efficiency component of the project. Eight i-buttons were distributed throughout the community in 2008/2009, with participants asked to place one in their home for a week and then to pass it on to a neighbour or friend. The i-buttons were used to assess the temperature variance between the participant's home and the external air temperature pre and post home efficiency intervention. Using the community participants to distribute the i-button, aimed to create a community conversation about the i-button, issues about home temperature and comfort thereby increase awareness, participation and reach of the project (especially with those who may be uninterested in energy efficiency).

Participants were provided with an information pack outlining the project objectives and instructions about where to place the i-button in the home, how to pass the i-button on and contact numbers for support and information.

Each week a member of the SGG PCP would contact i-button hosts and ask them to pass the i-button on while gathering a small amount of baseline data including house construction materials, presence of insulation, heating and cooling options and current energy efficiency practices as well as who they plan to pass the i-button onto. This also created further dialogue about the project and a valuable opportunity for community members to ask questions. One i-button was located outside the Merino Hotel to collect the Outside Air temperature (OAT). Data from i-buttons was downloaded into a graph with comparisons to OAT and standard human comfort zones.

I-button hosts were personally invited to an energy efficiency workshop held in Merino at the Merino Lions Clubrooms in August 2009. The workshop was also open to members of the general

public who had not hosted an i-button via fliers displayed in public places and in community newsletters.

Support was provided to community members after the workshop to help them make change in their home. This included assistance for Merino community members to be aware of and access a number of state and federal government programs, including:

- Federal Government insulation program – information was provided by word of mouth and fliers available at the Merino General Store. The home insulation rebate (officially ceased by the federal government in Feb 2010) allowed householders to install insulation and receive a $1600 rebate.
- Federal and Victorian Government solar hot water rebate – promoted at the workshop and via information at the Merino General Store.
- Federal Government *Greenloans* scheme – i-button hosts were advised they were eligible to use their audit report to apply for a *Greenloan* to support changes in their home. This scheme was introduced by the Federal Government that involved a trained assessor conducting a household audit and recommending changes to increase efficiency and reduce emissions.
- Victorian Government through the Victorian Energy Efficiency Target (VEET) light globe changing projects conducted by envirosaver and then by Bendigo Bank and Hamilton Apex Club. This was promoted through personal contact with i-button hosts as well as advertised through the local school newsletter and general flyers.
- State Government Water and Energy Taskforce Projects – SGG PCP developed a local partnership with Western District Employment Access who were facilitating local Water and Energy Taskforce projects in Southern Grampians Shire. The Taskforce projects aim to retrain long term unemployed in practical work skills by conducting audits and sustainability retrofits on homes of people on low incomes. The SGG PCP's involvement enabled the Merino community to access support under this project. This was achieved after extensive consultation and negotiation to overcome the Task Force's limitations to work in Merino, just outside the Southern Grampians Shire municipal boundary.

Approach 3 - Community Connection

An exciting opportunity arose to work with a renowned international community artist, Mr Ian Pidd, to involve Merino in a community arts project. SGG PCP has a strong commitment to the arts based on the evidence that access to and participation in the arts has positive influences on health and wellbeing. Ian Pidd worked closely with a local community artist, Trevor Flinn from Dunkeld, to build a community arts project relevant to the people of Merino. This involved liaising with the youth group, older citizens in the community and the school to find out what is important to Merino, who had the capacity and enthusiasm to be involved in the project and what skills lay within the community. It soon became evident that history was important to Merino. At the time of consulting with the community, there was an extensive collection of historic photographs in the public hall and the Merino Consolidated school were involved in a history project through the curriculum corporation – The learning Federation.[xvi]

Initially the artists worked with the senior members of the community and the Merino youth group who had skills and interest in film making. Social history shared by senior members of the community were translated by the youth using animation to produce two short films: *The Tractor* http://www.youtube.com/watch?v=lWvwvpatUjI and *You Went with Gus You Didn't Know What You Were Going To Be Doing Next* http://www.youtube.com/watch?v=Jepjyw6n9K8

The artists then worked with the students at the Merino Consolidated School (Primary) to discuss ideas to showcase the town and its history as well as show the films made by the youth group. The students were very interested in recreating Merino through models as well as investigating the future of Merino. The school students were also very interested in film making.

Trevor Flinn worked with the school students over several weeks to recreate Merino via models made from recycled materials as well as short films using the models. Younger students also worked with a local photographer to look at the future of Merino and to photograph students modelling their future careers to create a 'future tree' display of photographs.

Approach 4 - Health Service Access

Access to comprehensive health services is a common issue for small rural communities. Merino residents have access to a variety of services delivered by different providers, either locally or in nearby towns. This includes a Merino community health facility with a District Nursing Service delivered by Western District Health Service's campus, located in Coleraine. GP and Allied Health services visit from Coleraine, Casterton and Heywood. Residents access other health services from Coleraine, Casterton, Hamilton, Heywood, Portland and Mt Gambier. Just preceding the implementation of this project, the visiting GP service was interrupted due to relocation of the existing doctor. SGG PCP facilitated a meeting of health service providers from across the area to discuss solutions to health service access for residents of Merino. Fourteen different health services were represented at the meeting.

Approach 5 - Social Network Analysis

A survey was administered to the community to gather social networking information. Four questions were related to information services including where participants gather general, health and energy efficiency information. Two questions asked about their behavioural and environmental change to improve energy efficiency. There were also questions relating to their level of climate change interest and belief. The survey was administered in 2011 by a student working with SGG PCP. Participants were contacted personally and invited to participate in the survey either in person at the Merino Community Centre or via post. Twenty one interviews were conducted with the student at the Merino Community Centre.

4. Results

4.1 Energy Efficiency Awareness and Behaviour Change

Stakeholders engaged in the project were listed and their relationship both to the Merino Community and the SGG PCP was analysed and presented in Table 1. Results indicate an increase in both internal and external partnerships for both the Merino Community and SGG PCP as a result of the project. An increase in the reach of the partnerships is also indicated with local sustainability networks, state-wide organisations, universities, service group, community organisations and artists. An early example of the success of the project is evident from the Project Officer's journal entry whereby she was asked to step in and lead the walking group after only 3 weeks in the community.

Table 1 – Stakeholder relationship matrix, pre and post project

Table 1 Stakeholder Analysis

Stakeholder	Connection with Merino community		Connection with PCP	
	Pre	Post	Pre	Post
Merino Community Health centre	√	√	√	√
Glenelg Shire Sustainability officer	×	√	×	√
Merino Planned Activity Group	√	√	×	√
Merino Walking Group	√	√	×	√
Merino Consolidated School	√	√	√	√
Merino Hotel Publican	√	√		√
Merino Public Hall Committee	√	√	×	√
Merino Lions Club	√	√	×	√
Merino General Store	√	√		√
Merino Electrician	√	√	×	√
Merino Community members	√	√	×	√
Catchment Heath	×	√		√
Energised Homes	×	√	×	√
Portland Sustainability Group	×	√	×	√
Water and Energy Task Force	×	√	×	√
Bendigo Bank	×	√	×	
Hamilton Apex Club	×	√		
Sustainability Victoria	×	√	×	√
University of Melbourne	×	×	√	√
VCOSS	×	×	√	√
RMIT	×	×	√	√
Deakin University	×	×	√	√
Victorian Commissioner for Environment and Sustainability	×	×	×	√
Environmental Health Unit Department of Health	×	×	√	√
Warrnambool Smart Living	×	×	×	√
Glenelg Shire Sustainability Officer	×	√	×	√
Southern Grampians Shire Sustainability Officer	×	√	×	√
Trevor Flinn (Dunkeld Artist)	×	√	√	√
Cathy Mabon (Cavendish Artist)	√	√	×	√
Ian Pidd (Community Artist)	×	√	√	√
Jessica Still (Hamilton Artist)	×	√	×	√

Two energy efficiency experts (from 'Catchment Health' and 'Energised Homes' consultancies) supported the program, assisting with program design, advice and workshop presentations. Both were surveyed post program to identify any development in their capacity. Results indicate an increase in their self-assessed capacity to work with the community particularly at a "grassroots" level. Both commented that they had increased confidence and understanding of community needs and have been integral to future projects with SGG PCP and in the community since the Merino pilot.

From the eight i-buttons distributed throughout the community, 31 households (representing 15% of the population), the Consolidated School and Merino Hotel participated in hosting an i-button. Thirty six people attended the workshop conducted in August, ten of these had participated as a host in the i-button project and 5 workshop attendees took up the i-button as a host after attending the workshop.

In January 2010, 25 participants were surveyed to identify changes made to their home or behaviour after participation in the project. The time frame enabled participants to experience
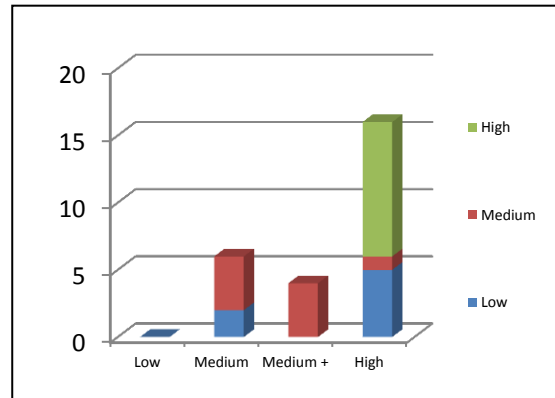

Figure 2 - Extent of changes made after the project by participants who self-assessed as 'low', 'medium' and 'high' energy savers prior to the project.

seasonal conditions, including heatwave conditions in January and February 2009. Of the 25 households who responded to the survey (telephone interview), 88% (n=22) reported making some changes (Figure 1).

Of the seven participants who initially reported to be 'low energy savers', all reported making some change, with 5 reporting a high level of change. Changes included installation of insulation (this was supported by the Federal Government's energy efficiency scheme that allowed up to $1600 of insulation installed to be installed at no cost); draught proofing (including window replacement and installation of a new porch/veranda); changing light globes and turning off appliances.

Of the participants surveyed, eight initially reported to be 'medium energy savers' and of these three reported making no changes. Two took up the i-button after the energy efficiency workshop, demonstrating an investment in change. One installed insulation while others invested in light globes and some minimal draught proofing. Most reported some behavioural change.

Nine participants self-assessed as 'high energy savers' and, as expected, only a small proportion of these made some change (n=2). These changes included turning off a second fridge and disposing of an old appliance, installation of energy efficient light globes and behavioural change.

The Water and Energy Task Force visited 12 homes in Merino. Three of these had participated in the i-button project.
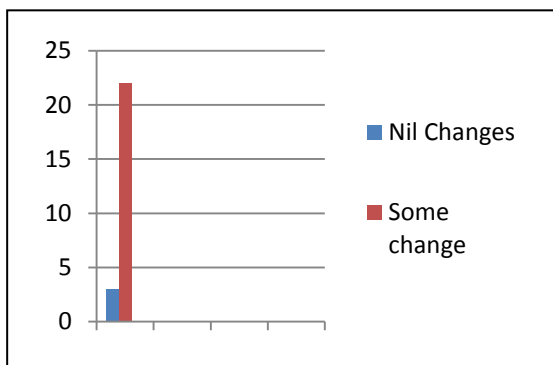

Figure 1 – Total households who made home modifications and/or behavioural changes as a result of the project.

Social Network Analysis

Social Network Analysis was used to evaluate changes in behaviour change and connections to people and organisations providing information about energy efficiency used by the community as a result of the project. This analysis was conducted by Dr Cynthia Webster (Macquarie University - Sydney) based on the results of a community survey. Twenty one households who hosted an i-button completed the survey. (A full copy of the Social Network Analysis report is available on

request from the authors).

Results show significant behaviour change with many more participants valuing more of the available information sources of energy information after the i-button project. (The density of information networks increased from 42% to 73%). The analysis also demonstrated an increase in community capacity with an increase from four to eleven participants referred to as central points of information. Interestingly seven of these eleven participants were 60 years or older. Also of significant note was that no one was disconnected from an information source after the i-button project according to this analysis.
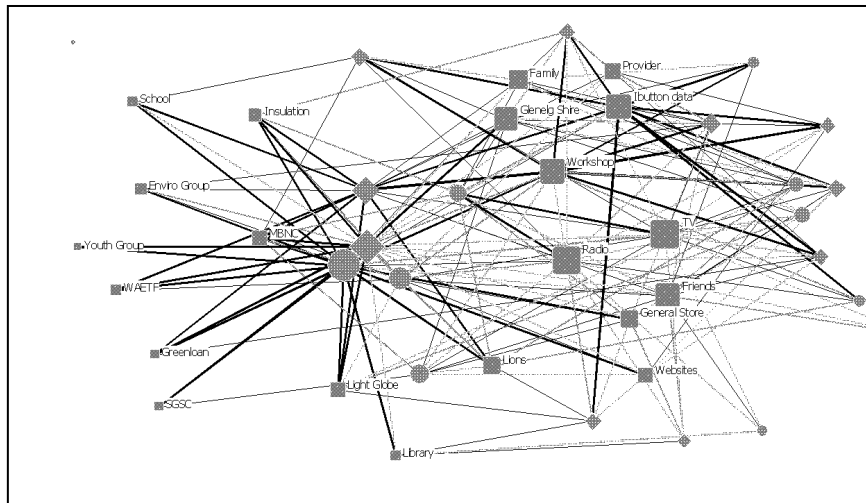

Figure 3: Valued sources for Energy Efficiency information BEFORE the i-button project

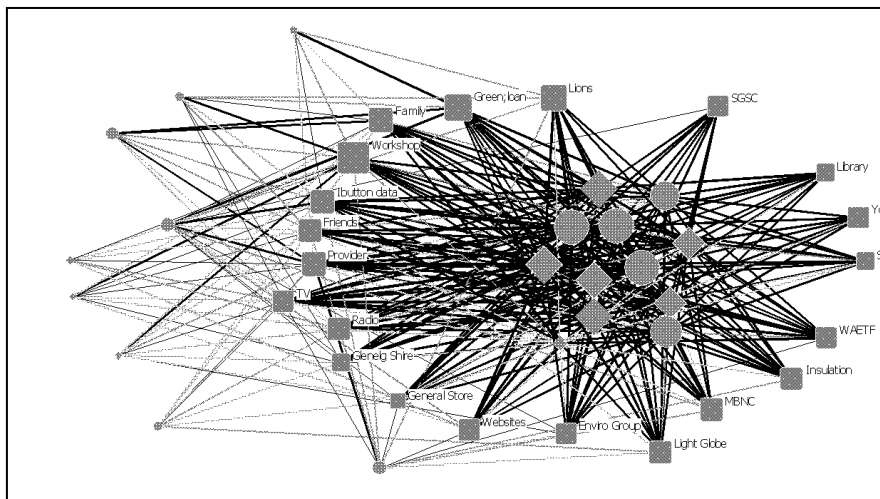Figure 4: Valued Sources for energy efficiency information AFTER the i-button project

The social network analysis reveals increases in both energy efficiency awareness and behaviour change. All but two respondents reported high to very high awareness after the intervention, compared with 10 participants (52%) before. After the intervention all respondents indicated high to very high levels of behaviour change.

This project chose to focus on energy efficiency rather than climate change. Results of the social network analysis indicated that the majority of participants (n=16, 72%) were not interested in climate change prior to the i-button project whereas after the project, eleven participants (50%) reported having high to very high levels of interest. Interestingly the analysis revealed eight self-assessed climate sceptics before the i-button project which reduces to four after the project. Dr Webster notes that one reported sceptic continues to remain a sceptic after the project but reports many high levels of energy efficiency awareness and behaviour and shows interest in additional projects.

The survey also asked the participants to list prime sources of general information. Results show a cluster of general information sources very central to the network. These were:

- 'Family, Friends (local), TV, Radio, Town Newspaper, General Store, Clubs, Glenelg Shire and the Merino Bush Nursing Centre.

Sources that were less frequently accessed were:

- the Southern Grampians Shire, government, the library and the internet. However, the internet is frequently used by five participants with four of the five participants being 60 years of age and older.

3.2 Community Engagement via Arts

The models, films and photographs developed through the arts project were collated and displayed at a public event *Mini Merino* held in the Merino Public Hall on November 21 2009. The display also included a re-creation of the Merino Butter Factory (which closed in the late 1960s) in the form of a cake iced at the event and cut in celebration by a senior community member. The Merino Lions club hosted a free BBQ in support of the event.

Sixty Five people attended the major display and arts event 'Mini Merino' held in the Merino Public Hall in November 2009. Visitors to the exhibition were invited to sign a guestbook and comment on the event. An evaluation was mailed to all attendees with twenty returned. Ninety percent of respondents thought the model of Merino was very good to excellent, while seventy percent thought the films were very good to excellent and ninety five percent thought the cake recreation was very good to excellent. Respondents made the following comments: *"Great for children to get involved in learning about their town"* (Female aged 55), *"Thoroughly enjoyed it, brought back memories. As a youngster I lived about 3 miles from the factory"* (Female aged 65+), *"Good to have some community activity in Merino"* (Male 65+*), "An excellent example of living history involving the community, extending children's education and pride in their environment especially the built environment with an understanding of human impact on resources both natural and processed"* (Male aged 55-64), *"Fantastic opportunity for all those involved. My kids had a ball and loved the whole project – especially the old stories of the town and its buildings"* (Female aged 25-34).

Local artist, Trevor Flinn, identified this project and his connections with SGGPCP as playing a significant role increasing his confidence and capacity to work in a community setting. Trevor has since led a range of community arts projects including Lounge Around – wishes from a travelling chair, The Cook and the Woodcutter, The Dunkeld Scone off and has instigated the opening of an arts space at the old Railway Station in Dunkeld.

3.3 Health Service Access

Throughout this project SGG PCP maintained contact with the Merino District Nurse via frequent visits and liaison. SGG PCP continued to disseminate information about the project to partner agencies and advocate increased access to health services. Heywood Rural Health has begun an outreach clinic at the District Nursing Centre including access to dietician, diabetes educator and other allied health services. Visiting GP services have returned to Merino. A new Community Health Centre has been built and its more prominent locality and modern buildings have seen an increase in community participation.

4. Discussion

This project was very complex with a multi faceted methodology. It is hard to consider the results of each component in isolation. Each facet of the project will have impacted upon the other.

Using the community development principles was a significant factor in project design. This enabled the project to evolve rather than implementing a pre-determined program 'on' the community. Extensive consultation with stakeholders, from both within the Merino Community enabled time to build the project and ascertain community needs. These needs were then linked with the broader stakeholder analysis to refine the project. Using the principle '*working where the community are at'* enabled the project to be built around current identified needs around energy use and heatwave initially. The success of the Community Development approach is demonstrated by the work of community artist, Ian Pidd. Ian met with some senior members of the community to present an idea for an arts project. The small group were offended by the proposed idea and there was potential for total disengagement from the project. Instead, Ian was able to work with the small group to develop some alternative ideas which they owned and were enthused by. A large community gathering may not yielded similar results and would have been a high risk of failure. This example highlights working with the community to develop ideas rather than implementing (or even inflicting) projects onto the community.

A number of challenges arose using a community development approach. Initial responses by the project officer reflect the challenges of engaging with a community as an outsider, around a potentially controversial issue (climate change), with a disadvantaged community and without a predetermined plan of action. The project officer describes the "*60 kilometre sign syndrome*" when arriving in the township as an outsider. The questions arise: How will we engage the community? How do we approach the reason for being here based on disadvantage without offending the community? Will using the terms *climate change* disengage people? What will we tell people we are doing here? These challenges were overcome by using the District Nursing Centre as a base from which to slowly meet local community members. Engagement was successful by gradually building community relationships while concurrently working with stakeholders to develop a plan to engage the sub-communities to create enabling environments. As already noted, trust was demonstrated after only 3 weeks with the project officer asked to assist with running a one-off walking session.

The i-button appears to be the major enabler for this project. It acted as a practical conversation starter and effective "hook" or "trinket" for involvement. It may have increased access and awareness of energy efficiency by creating personal relevance through translation of data into graphs and charts. This data was effective in moving participants through contemplation to action and then considering the importance of social learning by passing the i-button along. Passing the i-button around in the community had many other advantages such as enabling opportunities for participation and broadening the reach of the project, creating further discussions about either the i-button or energy efficiency thus increasing awareness of energy costs and efficiency within the

community. This technique may have strengthened community relationships creating more support for community action. The workshop created a chance to increase personal skills to further support participants to make change. Consultation with participants after the workshop indicated their increased knowledge and desire to increase their home energy efficiency as a result of the workshop. The Project Officer identified that participants would benefit from further linkage and support to assist them to make changes.

Links to other programs, however were not as smooth as originally anticipated. The Federal Government's insulation program provided an ideal opportunity for residents to have insulation installed at no cost. The rebate was claimed by the installer and if the home insulation costs were below $1600, then no cost was passed onto the consumer. According to Sustainability Victoria, insulation is the most effective way to improve the energy efficiency of a home. Insulation of the building envelope helps keep heat in during the winter, but enables heat to be released during summer to improve comfort and save energy. Insulating a home can save 45–55% of heating and cooling energy.[xvii]
http://www.sustainability.vic.gov.au/resources/documents/eshousingmanualch07.pdf

A number of homes reported installing insulation which was mainly completed by a travelling work crew from interstate. Many home owners commented, however, that they had little trust in the work crew as they had no local reputation or credibility. The crews used cold calling and a "hard sell" which turned people off installing insulation. Those who did install the insulation with out of state crews, commented that they checked that the insulation bats met with Australian standards, inspected the roof space after installation and asked others in the local community for feedback and advice to check. Residents who did take up installation with outside providers used local networks to increase confidence. Other residents commented that they attempted to have insulation installed by contractors from Hamilton or Portland but most of the time these contractors had sufficient work in the larger towns and were reluctant to travel to a rural community which was not economically viable.

The insulation scheme was discontinued by the Federal Government is 2010 and there was considerable controversy. The *Greenloans* scheme was promoted to the community as a means of obtaining a free energy audit and a vehicle for potential adaptation. *Greenloans* assessors, however, were either unable due to funding restraints, sufficient work in their own locality or philosophy to travel to Merino.

Lightgobe changing projects also met with challenges. Some community members did not want to participate in these projects as they did not like the low wattage of the bulbs or had negative experiences with new light globes. Although a member of the *envirosaver* project from Warrnambool took on the project, light globes were not delivered to participants. Fortunately, the SGG PCP project was able to extend a program supported through Bendigo Bank and Hamilton Apex Club to deliver light globes to Merino community members.

The Water and Energy Taskforce was being facilitated from Western District Employment Access and was originally defined to localities outside Merino. The Water and Energy Taskforce work crews were also finding it difficult to successfully promote and recruit low income households for the home audit and retrofit. SGG PCP were able to negotiate for the project to work outside of their original boundaries and promote the project in Merino.

The above examples amplify the challenges of rural living. Merino was a community with highlighted vulnerability yet programs designed for assistance could not be accessed due to the rurality of the location. Strong advocacy and development of supports and partnerships played a major role in linking people with these Government support initiatives. Lack of access to Government initiatives reinforced a lack of confidence in some of the government or community projects by some residents and, as such, posed a risk to the credibility of the SGG PCP pilot project.

The social network analysis revealed interesting results regarding climate change interest, scepticism and behaviour change. It appears that a climate change adaptation project can be implemented in a community where there is not only little interest in climate change, but also a high level of scepticism. Of specific interest was the significance of the self reported climate change sceptic who was heavily involved in the project and sought further supportive actions to be more energy efficient.

The other interesting observation via results of the social network analysis was that residents over 60 years of age named the web as a more important source of information than younger residents. This was not expected and needs to be considered when agencies and others are planning information and communication to such communities. It reinforces the need to understand your audience and not assume that older members of the community are not technology proficient.

There was a significant increase in the access to health services over the time of the pilot project. It is hard to identify how much of the increased health service access would have occurred without the project. Clearly the new Community Health Facility would have been built. The SGG PCP's advocacy, however, appears to have assisted with health service managers prioritising Merino for outreach health service delivery.

Limitations

The evolving nature of the project although successful in a number of respects was also limiting and somewhat drawn out over the timeframe. The action research approach meant that strategies were being evolved as new opportunities and information became available. This is the very nature of a demonstration project and was supported by funding agencies. This would not have been possible in a prescribed funding model with limited project timeframes, eg. 12 months. The project began as a short term project in 2008 and continued well into 2010.

A more extensive social network analysis could have been conducted to map the connection between individual community members. This was initially considered but not conducted due to the concern for the privacy of residents. The community development approach had built up a rapport and respectful relationship with the community. It was thought that further analysis and data collection may have compromised this trust.

Outcomes since the project

The i-button model has been further extended through the SGG PCP partner agencies supported by Sustainability Victoria with funding of $154,000 over 3 years.

A post card to celebrate the community arts event was distributed throughout the community and photo books published for the school, lions Club and public hall to celebrate the event. The films

produced by the youth group were entered into a local film festival and another film made by the youth group won a major prize. The youth group approached the owner of an empty shop in the town and with support of the local policeman are in the progress of retrofitting and renovating the building. The group have extended their membership and developed their own corporation.

The wave of interest created by this project created a vehicle for partnerships between Heywood Rural Health and the Merino District Nursing Centre to be strengthened. Transport options were highlighted and expanded with a subsidised taxi link to local bus services implemented in Merino as a trial. Transport challenges are now on the agenda with a range of solutions being considered but important linkages and partnerships established.

The Merino Consolidated School established a kitchen garden program with support from the Stephanie Alexander Kitchen Garden Project. When funding ceased at the end of 2010, the school worked with SGG PCP and partner agencies as well as the local community to investigate opportunities to continue the project within the school. This working group is continuing to look for further options.

The capacity of SGG PCP and partner agencies has been extended though work on this project. The project process and outcomes have been shared at a number of state and local conferences and forums enabling development of further partnerships and networks.

Recommendations

The pilot has been a valuable action research project with a number of recommendations noted:

- The positive outcomes of the community development approach reinforces the success of working where people are at, and working on projects 'with' rather than 'on' the community.
- Use of a catchy or interesting tool to highlight the relevance of an issue for the community, such as the i-button, should be considered in program design.
- Funding opportunities that are flexible to support the community development approach may have better outcomes for community action.
- Consider the current capacity within the community and build on these strengths. In this project building on the strengths of the youth group and their interest in film making provided a framework for the arts project.
- Engage communities in practical climate change adaptation without trying to shift their belief in climate change.
- Strong community partnerships and community consultation enables a base for community action. Working with environmental experts, health promotion practitioners and community members enabled this program to use and build everyone's capacity.
- Strong advocacy for rural communities is essential in ensuring access to support for adaptation. This project was innovative in increasing awareness and motivation to participate in broader projects (like insulation, Greenloans, Water and Energy Taskforce) but faced many barriers to participation mainly based on locality.
- Use the key sources of information for community engagement. The use of family, neighbours and friends is a key source, in addition to the internet – even for older people in small rural areas with relatively poor access to the internet.

Conclusion

The pilot project in Merino enabled SGG PCP to investigate methods to work with a community on practical climate change adaptation and to build on these results to inform future work. By using a community development methodology the project was able to focus on community need, create ownership and maintain a strong relationship with stakeholders.

Excellent outcomes were achieved through the use of the i-button, with 15% of the community involved and 88% of respondents making positive changes to their homes. Of the 25 households who completed the survey, 8 were self-assessed climate sceptics prior to the project. This was reduced to 4 after the project and all others self-assessed as having a high awareness of and interest in climate change. Regardless of their interest, 22 made changes, with at least 1 of the remaining climate sceptics having a high interest in energy efficiency and making significant changes.

The use of community arts; advocacy for access to Government energy efficiency initiatives and advocacy for health service access all contributed to strong community engagement to support change.

The project demonstrates that climate change adaptation projects can be successful in a town where there is limited interest in climate change and a high level of scepticism.

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