



# Kai Conscious Waiheke: A Community Development Approach to Food Waste Reduction

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## ABSTRACT

*Organic waste, particularly food waste, has been identified as a significant hazardous component of the waste to landfill stream. The waste represents an economic loss as well as an environmental pollutant, which is digested anaerobically to release greenhouse gasses. Moreover, the food wasted has an increasing embedded energy component. As well as the energy expended in its production and distribution, wasted food requires further energy for collection and disposal. To date, much of the effort to reduce food waste to landfill focusses on post-waste solutions such as composting. While these recycling efforts are important, they cannot fully address the economic waste and the embedded energy issues. This presentation reports on a novel collaboration between local government and a grassroots community organisation that adapted community development methodology to learnings from an earlier trial. The Waiheke Resources Trust was supported by Auckland Council and the Blackpool community in launching of Kai Conscious Waiheke, a grassroots food waste reduction project. A baseline and post-project Solid Waste Analysis Protocol (SWAP) contributed quantitative results, while a survey and video footage added colour and introduced a range of place-making outcomes, which build social cohesion and waste-reduction identity for the community.*

## INTRODUCTION

Kai Conscious Waiheke (KCW) is an innovative pilot project focused on reducing household food waste in the Blackpool community. The project has its antecedents in research done for the Ministry of the Environment by Dorte Wray and John Stansfield in 2009. This was followed by some experimental workshops in food waste behaviour change.

The project was undertaken by the Waiheke Resources Trust in concert with the Blackpool residents, and the Blackpool Residents Association during 2013 and 2014. It was also supported by Auckland Council's solid waste team. The community-owned and driven project recognises food waste as a significant and hazardous component of the waste stream, but one that also represents an opportunity for community action.

## THE ACTORS

The Waiheke Resources Trust (WRT) is a registered charitable trust based on Waiheke Island. Its focus is sustainability and community development. The trust was formed in the late 1990s in response to community frustration with a lack of opportunities to develop and practice sustainable approaches to waste.

Waiheke Island has a community of some 8000 people on a picturesque 64km<sup>2</sup> island half an hour by fast ferry from downtown Auckland, New Zealand. During the busy summer months the community population swells to 34,000 as the island is a popular tourist and day-tripper destination; boasting clear waters, sandy white beaches, a thriving arts community, a cafe and bar culture and safe anchorage for the thousands of yachts that flock there.



Blackpool is a small suburban community located adjacent to the main village of Oneroa (see Figure 1. below). It consists of 286 households, almost one third of which are holiday homes, has a small semirural section and is host to the island's marae, Piritahi.



Figure 1.

Auckland Council is New Zealand's first supercity. Created in 2010, it serves a population of 1.5 million and is an amalgamation of six councils and one regional council.

## WHY FOOD WASTE?

Food waste represents an economic loss and is an environmental pollutant when disposed into an anaerobic landfill environment, releasing greenhouse gasses. To date, much of the effort to reduce food waste to landfill focuses on post-waste solutions such as composting.

While these efforts are important, they cannot fully address the economic waste and the embedded energy opportunities available in a waste reduction approach. The Kai Conscious approach is informed by more than fourteen years of successful experimentation in waste reduction and concurs with Vivian Hutchinson (Hutchinson, 2011): 'it is a problem of human behaviour, not an engineering problem and it requires a community development approach to address it.'

The reduction of food waste is an important challenge. The impact of food waste is significant in environmental, social and economic terms. It is noteworthy that since the project's completion, the WRT's predictions that failure to control waste would visit high future costs on

the community have been confirmed with a proposed increase of \$500 per household in waste charges.

Food waste is the subject of an increasing amount of attention both nationally and internationally, with a number of projects aimed at raising awareness of the issue, collecting and analysing data and/or implementing behaviour change initiatives aimed at reducing the amount of food waste produced or going to landfill. Amongst the methods utilised, community development is gaining an increased respect as an innovative and engaging delivery mode. Jim Ife (Ife, 2002) notes that 'community work is potentially one of the most effective ways to develop a more sustainable society'. In addition to the established benefits of financial savings and decreased harm to the environment, KCW shows that food waste reduction has value in terms of resource creation and the building of social capital (see Figure 2. below).

## AIMS

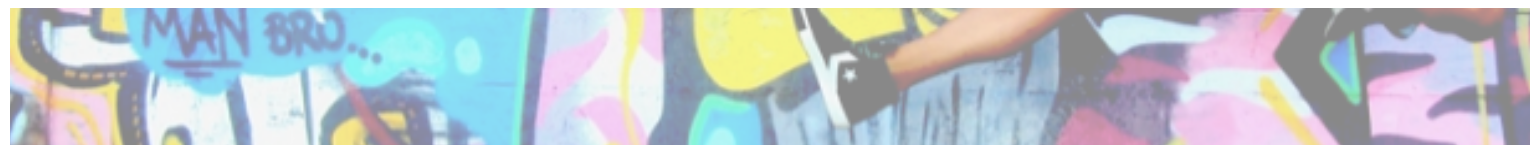
The aims of the Kai Conscious Waiheke project were to:

1. Reduce the generation of food waste at a household level on Waiheke Island;
2. Increase uptake of composting activities in households to see a reduction in food waste to landfill from Waiheke Island households;
3. Develop a comprehensive project 'tool kit' that other organisations can draw on to run food waste reduction projects in their communities;
4. Experiment further with community development as a methodology for solving municipal problems; and,
5. Connect the community.

In line with the waste hierarchy (European Commission, 2008), Kai Conscious Waiheke prioritizes the reduction of food waste, then reuse, and finally recycling. Households are engaged in a series of activities and events aimed to support behaviour change. Simple actions such as



Figure 2.



measuring food waste, meal and shopping planning, portioning, and the correct storage of food are encouraged using a range of support materials known as the 'Kai Conscious Toolkit'. In addition, composting workshops and access to cheap or free composting systems encourage the recycling of food waste and discourage the disposal of it to landfill.

## A COMMUNITY DEVELOPMENT APPROACH

Key features of the project are the use of social innovation and community development approaches, which have resulted in a range of place-making outcomes that build social cohesion and waste reduction identity. Social innovation concerns the application of new ideas and processes or reapplication of existing ideas in new ways to areas of social value and need, and/or with the intention of delivering social impact (NZSIERC, 2013).

Community development is a much more established discipline, and can be described as 'the process of establishing or re-establishing structures of human community with which new ways of relating or organizing social life and meeting human need become possible' (Ife, 2002). Moving away from the 'classic strategy' of investigation, the project team instead employed elements of 'adaptive strategy' particularly the shift from predictions to experiments and the execution from top down to execution from the whole, such as in the co-design of the implementation of the Blackpool project by the project team in partnership with the Blackpool community (The Monitor Institute, 2012).

Tasked with implementing a behaviour change programme across the geographic community of Blackpool, Kai Conscious Waiheke has drawn on various community development and social innovation models, resulting in the broadening of the project aims from a simple educational piece into one that has wider community building effects. Underpinning the project has been a commitment to a number of important principles:

- Investment in relationships;
- Active citizen involvement in public service delivery;
- Asset based development; and,
- The concept that 'whoever it was we were waiting for to solve this problem clearly isn't coming, it's up to us, so it better be fun'.

## COMMUNITY DEVELOPMENT THEMES

### Go Where the Energy is

During an eight-month engagement, the project team remained committed to the concept of co-creation,

whereby the residents of Blackpool have become initiators, designers and implementers of the project. Community events at a local hall formed the heart of the project, where residents were asked questions aimed at establishing where energy already existed in the community, and what their vision for their community was. A desire for both increased food resilience and increased community connection was identified immediately as an important leverage point for the project.

### Engaging Community and Cultivating Shared Vision

Aimers and Walker (2013) emphasise the importance of engaging the community cultivating shared vision and building trust. As community development practitioners, we often find ourselves in conflict with more bureaucratic authorities who fail to recognise the importance of this foundational trust building work. A key principle within this is the notion of 'starting where people are at'. This speaks to giving priority to community identified-needs and aspirations.



**Figure 3.**

Engaging the community can, however, be fraught, as aspirations and needs can be a function of the known or what people believe themselves to be allowed. When the community identified the desire for a local pub, the organisers were initially worried the council funded project was headed for the rocks and potential political scandal. By trusting in the community development principles, however, organisers were able to assist with the development of the monthly neighbourhood get-together, affectionately known as the 'Pop-up Pub'. This became an integral part of the project, a place for discussing composting systems, distributing project materials and 'connecting community' as per the project's aims. It served to show that collective aspirations could be met, and fulfilled one of Craig's (1983) community work principles: 'Be fun to be with and there will always be people with you!'



### Our Heroes are Local

Participant suggestions helped shape the structure of the project, while the participants themselves provided much of the human resource that was needed to implement it. The concept of community champions was mooted and adopted; local people would champion the project and the concept of reducing food waste to their neighbours, bring new people to new events and discuss the things they were doing to reduce food waste in their household (see Figure 4 below).

The concept of locals as the best champions included employing locals as part of the project team, and was one of the key drivers for participation according to the participant surveys and interviews. There is also a great deal of integrity; when we speak of power-sharing, of walking the talk and handing over as much of a project as is practicable when the talent is available.



Figure 4.

### The Community Sector Marches on its Stomach

Community development practice in New Zealand is much influenced by tikanga Māori, and in particular by the importance of the sharing of food when we gather meet and work. The WRT has a long history of bringing a party to its work, and many of its staff and volunteers share a passion for good food and sharing this with good company. It is therefore no surprise that key milestones in the project were both launched and celebrated with the sharing of good food. Again, there is a contrast to more mechanistic and bureaucratic organisational forms, where the importance of this as ritual is underestimated, and the cost of it often the first target to the budget cutters' knife. We in community development, however, understand the peace-making that comes with the sharing of kai. It is truly difficult to enjoy sharing a meal with your enemies, and so compromises are reached, and commonalities rather than

differences are emphasised.

### Keeping things going: communication and facilitation

Lani Evans in Aimers and Walker (2013) reflects:

'How can we work well with people if they can't be open with us, if we can't hear them? How do we actually listen really well? How do we create spaces where people can say what they really need to say? How do we work to get people into the room to really bring themselves?'

This was potentially an elephant in the room. Relations between the former Auckland City Council and the Waiheke community had considerably soured when that council dumped the community's much loved and celebrated social enterprise, Clean Stream Waiheke, the sustainability waste and recycling operator. Clean Stream Waiheke is a wholly-owned subsidiary of the WRT. Major changes foreshadowed in the new Auckland Council (supercity) waste plan recognised the significant opportunities afforded and demonstrated by a social enterprise like Clean Stream. Both the trust and the council needed to model a relationship that would make a future social enterprise a real prospect. During the bitter dispute in which Waiheke lost its social enterprise, community attitudes had hardened and significant trust was lost between the community and its local authority.

From the outset the trust worked with the council and the community. For its part, the council recognised that the project was the brainchild of the trust, and that it was the trust that had the relationship with the community. In a process of co-facilitation, council community development staff rehabilitated the relationship between council and the community through respectful dialogue and evidence of active listening.

### Idea - Values - Action - Identity

KCW is the latest in a number of projects relating to behaviour change and food waste to be undertaken by the WRT. Previous work includes a piece on public attitudes to waste in 2005, a literature review on the issue of food waste in 2009, and the Zero Waste Champions pilot project of 2010. These form the basis of our own theory of behaviour change summarized here: Idea - Values - Action - Identity: Ideas (information) form the basis of our personal values. Values are a key driver of our actions, and our actions help form our identity. Through providing information and opportunities for action, KCW reinforces personal identity, and through the interaction of the community development process, allows us to determine the community's identity as a progressive community with



high sustainability values and a commitment to codetermination and collective action.

## QUANTITATIVE AND QUALITATIVE DATA COLLECTION IN REGARD TO COMMUNITY PARTICIPATION

Information databases were established and maintained throughout the project. These covered data such as numbers of attendees at all of the main projects events, numbers of composting systems distributed and numbers of people who received the project resources.



Figure 5.

### Participant Surveys

Two participant surveys were conducted over the course of the project, one at the end of the initial trial with households from across Waiheke, and the second at the end of the Kai Conscious Blackpool project with households from the Blackpool area. The survey was offered using the online tool *Survey Monkey*, and additionally, in the case of Kai Conscious Blackpool, written versions of the survey were made available at the final celebration event. This survey canvassed respondents on a range of topics under the following headings: About You; Food Waste Behaviour; The Resource Kit; and Connecting Community.

### Interviews

Interviews with three participants of the Blackpool project, and with five members of the project team were completed by Frances Hancock, an independent researcher, engaged by Auckland Council. Informal and formal interviews were also undertaken by members of the project team with project participants throughout the project, and at the conclusion of the Blackpool project.

## DATA ON WASTE OUTCOMES

### Solid Waste Analysis Protocol Audits

Waste Not Consulting external consultants engaged by Auckland Council completed two Solid Waste Analysis Protocol (SWAP) audits of Blackpool's household refuse, both before and after the project's implementation in August 2013 and June 2014.

### Weight and type of waste recorded by case study households

Some participants weighed and conducted a simple analysis of the type of food waste their household produced over two week-long periods - prior to receiving the KCW kit, and six weeks after receiving the kit. This self-reported measurement was completed by ten households, including six in the Waiheke-wide trial phase and four case-study households in the Blackpool phase of the project.

## RESULTS

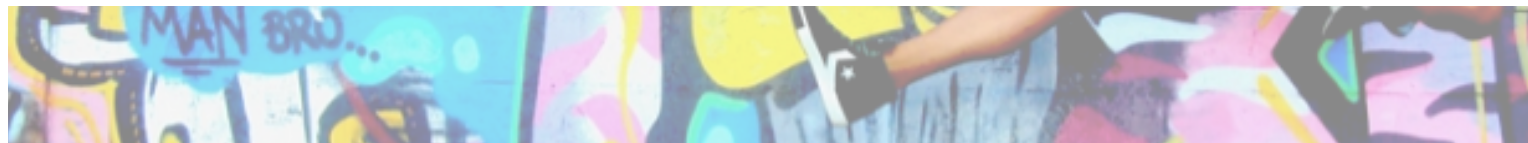
### Quantitative data collection in regard to community participation

Key numbers:

- 220 Blackpool households received the Kai Conscious tool kit;
- Over forty people attended free composting workshops;
- Over thirty households received Bokashi bins and sixteen households received worm farms;
- On average, thirty people attended each event, and over fifty attended the final celebration event;
- Approximately thirty waste champions were actively engaging and involving the community in food waste reduction.

### Participant surveys: Initial Trial results

Twenty-two responses were collected. Respondents reported a positive, but small, change in behaviour in their food waste reduction behaviour. This group was self-selecting in its involvement in the trial, and as such, could be considered as early adopters having existing pro-environmental behaviours. Before their involvement in the project, respondents reported high rates of pro-food waste reduction behaviours such as composting (72%) and feeding food scraps to animals (42%). These behaviours increased after the trial, with composting up to 95% and feeding animals up to 50%). Food waste to landfill as a disposal strategy was reported to decrease from 41% to 23%. All respondents said they made an effort to reduce



food waste since being involved in the project: 45% said they made a lot of effort, 55% said they made some effort. 91% of respondents reported that they felt the Kai Conscious toolkit was effective at helping them to reduce food waste.

### **Kai Conscious Blackpool Results**

18 responses were collected. Similar to the trial, respondents reported an increase in pro-food waste reduction behaviours; for example, composting increased from 72% to 100%, while there was a decrease in the disposal of food waste into the rubbish, from 22% to 0%. Respondents also reported a reduction in the amount of wasted food versus food waste: leftovers and food past its best both dropped to 0% (from 11% and 6%, respectively) as the types of food waste making up the biggest part of the household's food waste. These were replaced by scraps from food preparation and unavoidable food waste.

### **SWAP Audit results**

Of the 106 households that set out refuse for collection in August 2013, there was an overall set out rate of 42%. In June 2014, of the 113 households that set out refuse for collection, there was an overall set out rate of 45%. Organic material was the largest single component of the combined kerbside refuse in both 2013 and 2014, comprising 45-46% of the total. The average weight of kitchen waste per household set out was 25% greater in 2014 (3.15kg) than in 2013 (2.51kg).

### **Weight and type of waste recorded by case study households**

Eight out of ten households achieved a significant decrease in the weight and type of waste produced over the six-week period, wasting up to 60% less in the second reporting period after receiving the KCW toolkit and implementing the suggested food waste reduction strategies.

## **DISCUSSION**

### **'It is my waste and I'm not hiding it'**

In a world where we are bombarded with visual imagery, it is difficult to regularly care about what you cannot see. Increasing a household's awareness of the amount of food waste it is producing, and the reasons for it, was integral to the design of the materials on the Kai Conscious toolkit. These materials include a clear bench top container, a food waste record sheet, a progress tracker and a fridge magnet. The clear bench top container allows food to be seen even once it has been designated as waste. This aims to remove the illusion we see so often in the world of waste - the idea that something goes 'away' when we are finished with it.

Participant responses in interviews and the participant survey support this. One respondent stated:

I think the bench top container is very good. I can clearly see the food waste in front of me. [...] It's a good idea because I see the waste. It is my waste and I'm not hiding it. I've made it and I have to deal with it. It encourages responsibility (Waste Not Consulting, 2014).

Households that weighed and analysed their food waste reported an increase in their awareness of both the amount of food waste produced, as well as how their behaviour and other activities in the household (such as having visitors and household cleaning), affected the amount of food waste produced. This suggests that the visibility of food waste is increased when participants are asked to measure their food waste, and that increased visibility is linked to a decrease in food waste. Further investigation into these links would be useful.

### **Composting as a Distracting Factor**

While general sustainability behaviour change theory suggests initial actions such as composting are a gateway behaviour for other sustainability steps, we found the converse could also be true. One of the biggest barriers identified by the project team to the uptake of the project after the initial engagement was people believing that if they composted then they didn't need to do anything more. A focus on recycling can distract people from the potential behaviour changes that could be saving them money and food, and reducing their resource footprint associated with food waste. There are a number of existing programmes and projects that focus on the recycling of food waste. Because reduction is at the apex of the waste hierarchy, these should be adapted to include a much stronger focus on the importance of reduction as the starting point for change.

### **Are you measuring what you should be measuring?**

Quantitative analysis was contradictory and may require refinement to ensure it is at an appropriate level to pick up small-scale change. Area-wide SWAP analyses may not be the right tool to pick up micro-level changes, as the report from Waste Not Consulting (2014) explains:

At the micro-level, the food waste reduction behaviour change programme is likely to have achieved its objectives for behaviour change for a number of households. At the macro-level, however, there was too much statistical noise in the audit data to be able to judge whether the

programme had any effect on the composition of waste in the overall Blackpool programme area. This noise is likely to be related to the unusual occupancy and residency patterns in the area. In this respect, the methodology did not produce any valid results. (Waste Not Consulting, 2014).

The design of the monitoring programme needs to consider the size and distribution of the target households, as well as things like set out rate of receptacles to be audited, the time of year and number of residential homes versus holiday homes. Self-directed weighing and recording of food waste appears to be both effective in increasing waste reduction behaviours as well as a source of quantitative data. The key to this data remains how to ensure the return of any records kept by participants. The project team is experimenting with the use of prize-draws as an incentive in the next phase of the Kai Conscious Waiheke project.



**Figure 6.**

### **Good things take time**

Of the 220 households that the KCW kit was delivered to, further engagement in the form of event attendance and/or recruitment as community champions with up to seventy-five households was achieved. The results of the SWAP audits indicate that further engagement is necessary

to achieve the change in behaviour across the community that would result in a significant drop in food waste to landfill. Development professionals recognize that community development approaches can be slower to achieve a result, but that once embedded the changes are likely to be sustained for a much longer period. The early assessment of this report is unable to capture this aspect of the approach and further work should be done in the future to test the theory in this context.

### **CONCLUSIONS**

Much has been learned about the reduction of food waste at a neighbourhood scale during the Kai Conscious Waiheke pilot project. Composting activities have increased in households that were previously not composting, and food waste may have reduced by volume in households who are now more actively employing food waste reduction strategies. An effective and comprehensive toolkit has been developed, trialled and evaluated. A community development approach led to a high degree of community engagement and is worthy of further study of impacts. Community connections have been enhanced, community resources developed and community leaders encouraged. A more robust set of conclusions can be developed from further longitudinal study and engagement with the Blackpool community.

Reviewing the project with the benefit of hindsight, KCW missed a number of opportunities to more thoroughly research the behaviour change. KCW also relied far too heavily on its expectations that the SWAP analysis would robustly declare the project a success. Future projects will take greater advantage of the rich data that is created in the process to better inform the results.

*This paper draws heavily on earlier work by Stansfield and Wray presented at the 2014 WASTEMINZ conference.*



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