

# Spinning Rubbish into Gold; A Community Development Route to Environmental Social Enterprise.

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## **Ki te kahore he whakakitenga ka ngaro te iwi**

*Without foresight or vision the people will be lost*

In this case study I introduce a social enterprise in waste and recycling using community development methodology. The study draws on my personal experience as an activist insider and islander, the records of our social enterprise and the extensive public record in the community media.

Rachel Carson's (1962) seminal work *Silent Spring* was a clarion call to environmental concern which drew a sharp focus to the poisoning of the planet. Today's environmentalism poses a powerful critique and in the contemporary lens of sustainable development addresses social and economic as well as environmental concerns. The separation of people from planet as a locus of concern has not served either well. Nor are the realms mutually antagonistic or exclusive (Bradshaw and Winn, 2000). The bringing together of these two themes is evident from the time of the Brundtland Commission (1987) and thereafter through the major international governance conferences and resolutions such as Agenda 21 in 1992, and the Kyoto Protocol in 1997. In this case study I will relate how an enterprising community achieved social, economic and environmental goals building their community capacity and having a lot of fun in the process.

### **Context:**

Waiheke Island (pop 9,000), the jewel in the crown of the Hauraki Gulf, lies just 35 minutes by fast boat from Auckland, New Zealand's largest city. The community, in common with other islands has a strong sense of place or what we now call "islandness" (Conkling, 2007).

Until 1989 Waiheke was locally governed by the Waiheke County Council. To the chagrin of Islanders, it was amalgamated to Auckland City Council. The first thing the good burghers of Waiheke could tangibly see changing was the loss of their fledgling recycling scheme. The tip, or transfer station, a favourite scavenging point was declared off limits to the public and ever-increasing volumes perfectly reusable material were consigned to landfill.

Waihekeans in common with many island communities are sensitive to loss of sovereignty (Prescott, 2003), were demanding a bit more say over the place in which they live. This desire for self-determination is a recurrent theme throughout the island's history and many of the problems experienced in Government relations can be sheeted home to this value. This makes for fertile ground for community development and the forging of common identity. (Dalby *et al.*, 1997)

### **Organising and Learning:**

With the City Council now in charge, the recycling scheme was abandoned. The islanders renowned talent for protest was exercised colourfully and seemingly, publicly at least, died

away and the community began to organise. Informally a group formed to pursue the community's interest in sustainable waste management. The [Waiheke Waste Resources Trust, \(WRT\)](#) was later incorporated and thrives twenty years on. The first thing WRT did was recognise a need to learn a great deal more about waste, waste economics, and waste in the environment. They developed a Wānanga or study group and got together every few weeks to share research and learnings. Convivial meetings always centred around a shared "pot luck" meal, reinforcing local community development lore and our first community development principle for this case study

*"the community sector marches on its stomach".*

The meetings were also useful opportunities to recognise expertise and try out working with each other. The organisation had high ambitions and would need a seasoned crew.

During this period, WRT was informed by meetings with

- Other communities and organisations concerned about waste.
- Community waste operations such as the [Kaitaia Community Business and Environment Centre CBEC](#)
- Community waste campaigners and experience from as far afield as Scotland and Wales
- Dr Google and social media groups.

#### **Consolidating learning and building constituency:**

Over the period of about 18 months the trust gave itself a Masters level education in sustainable waste management (Seadon, 2010) and developed its key principles and strategies for the road ahead. Central to this was the development of a community consensus on a "Waiheke way" in which Waiheke could manage the waste stream and use the enterprise to provide sustainable jobs, an improved environment and investment in waste reduction through innovation and public education.

Building that consensus involves a range of creative strategies to inform and engage community members (Eichler, 2007). In this case extensive use of visiting local groups, holding stall at the local markets, feeding local media and events and [stunts](#), such as the shopping trolley dolly entry to the local Santa parade (see link) to draw attention to the issue of waste and an island approach. These speak to the second principle of Waiheke community development.

*"If you are fun to be with, there will always be people with you".*

The first lucky break was the adoption of a new law which required Local Councils to consult with communities in developing local waste management plans. In its usual fashion Council arranged for a couple of consultants to talk to the community of Waiheke at a public meeting. A process that had been budgeted to take two hours then ensued over the coming six weeks. The well-informed and articulate advocates of the WRT were successful in advocating for a radical waste plan which strongly reflected the community consensus developed over the previous 18 months. This plan was then adopted by Council and formed the basis for new tenders in waste contracting for Waiheke. The strategy was to set the bar for environmental performance high so that groups with strong environmental credentials could compete with the waste Moghuls.

#### **An enterprise of our own:**

In 2000 the WRT began meeting with the Kaitaia group [CBEC](#) to plan a joint bid for the waste contract. The WRT partner had significant knowledge of the challenges of Island logistics, fragile roading system and precarious infrastructure as well as a strong support

from the local community, CBEC had several years' experience both contracting with Council and delivering curb side waste collection and recycling. The parties came together incorporated as Cleanstream Waiheke Ltd and developed the successful bid for the contract. The company was incorporated in May 2001 and commenced operations on July 1, 2001.

The day before operations were due to commence, with all the contracts having been executed' the directors were aghast to find the council was requiring a further hundred-thousand-dollar bond in addition to all of the bank and personal guarantees which had already been supplied. The company had never operated and had very modest capital. Seeing no other options, the directors, all volunteers, took personal loans against their homes, and in one case against his parents' home, to ensure the operation could start on time.

This was a terrifically exciting time with a very steep learning curve for involved. The company commenced operations with an experienced community waste operator managing operations and a board with both commercial and community development experience. The first big surprise was how jubilant the community were at having regained control of their waste stream. The second was how little Council really understood about the operation. For example, Council had been relying upon the previous operator to faithfully record the tonnage of green waste converted to [mulch and compost](#). This was sold at the gate and, as the transactions were largely cash and there was no audit process there may have been some under reporting. Council estimated process and sales to be up to 200 ton p.a. of green waste was, in fact, over 800 ton in the first year rising in year 6 to over 2000 tons.

As soon as operations commenced WRT started to get real and reliable data on waste volumes. In the first-year refuse volumes dropped by 250 t, recycling was up by 530 tons and all this looked like good news. However combined weights were increasing and, with the construction boom and growing local industry, an impending rubbish explosion loomed. In response, the company which had been severely undercapitalised and scrambling to keep on top of unpredicted volumes, invested in its parent organisation, WRT, and developed a waste education and community engagement programme. They backed community development to reduce the problem ahead of expensive plant to manage it. WRT engaged a pair of local community development educators to build a volunteer army fit for the task.

The waste education team had some highly innovative strategies for community engagement and were constantly challenging the company to innovate further than the waste stream. For example, the [successful biodiesel plant](#), which harvested 25,000 L of waste cooking oil and converted this to diesel fuel which ran the company's trucks and machinery. This was the result of a small piece of research conducted by the waste educators and a successful partnership with the University of Auckland Engineering School, Engineering Projects in Community Service (EPICS).

The education team developed the much-loved annual festival [Junk to Funk](#) which showcased the island's creative talent and producing wearable art from the waste stream. This event involved 1200 in a population of just 4000 at the time.

The team also used opportunistic strategies where existing events, such as the local market and the music festivals, provided opportunity for community engagement. These events were the forerunners of the sustainability festival which most recently saw 10 days of sustainability focus and over 50 events and involving many other clubs and environmental organisations.

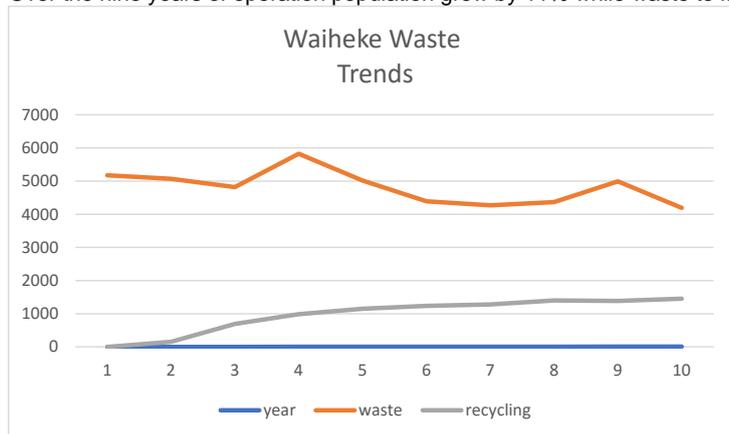
Another initiative of the team, which has now gone Auckland wide, is the zero-waste (Song, Li and Zeng, 2015) approach to large community events. From the environmental disaster of previous years, a crowd of 5000 at the [Onetangi beach races](#) can now produce as little as 20 litres of waste to landfill. Half a dozen community groups staff many waste reduction stalls with volunteers growing engagement and earning grants for their clubs. The undeniable

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success of this program, which vastly outperformed both commercial and Council events, has now become mainstream. In its later years the WRT and company were contracted by commercial event organisers and zero waste events are now part of the Waiheke way.

The company won awards for innovation both nationally, from the glass packaging Council, and internationally, at the Green Globe awards. It had a strong research and development ethos which informed its innovations. In the case of glass, changes in the New Zealand economy meant the glassworks were flooded with clear glass and the market price plummeted from \$78 a tonne to just \$12 a tonne. Freight costs alone were \$60 a tonne and it was clear the company would need to develop either a higher value product from the glass or find ways of using it domestically. Investigations with the engineering school led us to explore glass processing options and eventually import specialised machinery from United States. This gave a domestic aggregate at \$35 a tonne with no freight cost (downcycling) and some much higher value products for export to the mainland (upcycling).

Over the nine years of operation population grew by 11% while waste to landfill fell by 20%.



This experience prompted us to develop our own model of waste management

**Learnings from the front line of the waste war**

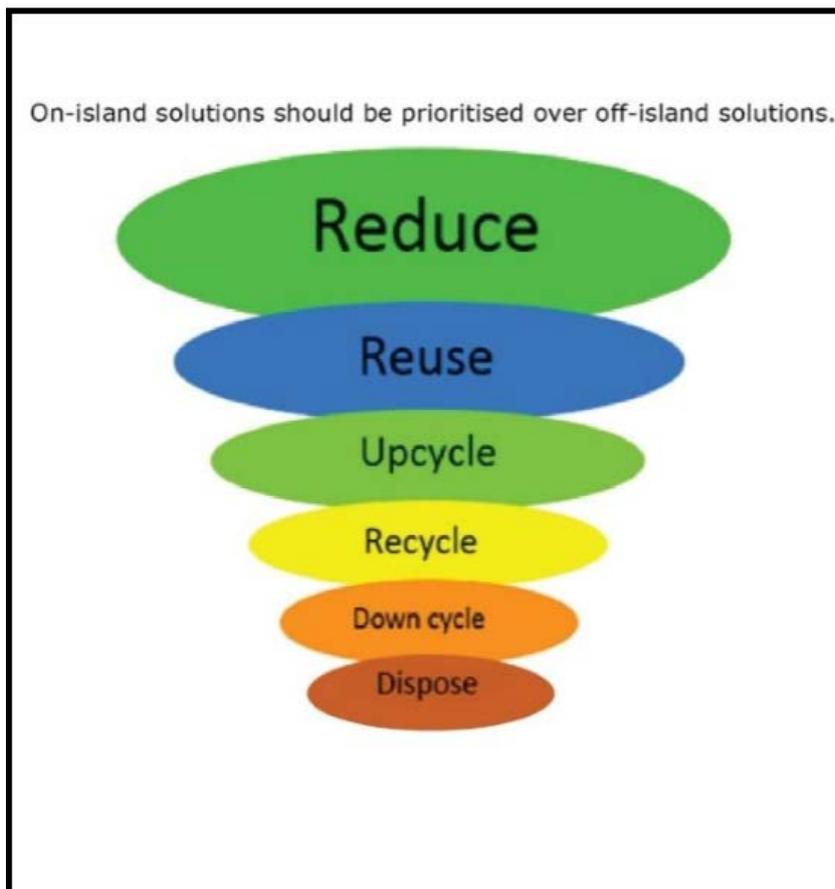
**Waste operations are a transport business:**

Waste operations are transport businesses. Most of the big waste companies have grown out of the transport industry. This is because most of what they do is not transforming waste or influencing in any way how much waste there is. It is the much simpler task of picking up waste from one place and taking it to another. There is nothing inherently evil about a transport business, but we need to understand the limitations of its world view. It understands that its job is to put things in trucks and drive them around, and that it makes the most money by driving the most stuff for the biggest distance.

This is not a world view which has any sense of the waste hierarchy (DEFRA, 2011) and the need to reduce waste. Waste education, where it is conducted by the big waste companies, is not sophisticated. The real innovators in the waste sector around the world have been small committed communities that are values driven. These communities understand that we are on trajectory of completely unsustainable in unaffordable waste practices.

A more sophisticated approach to waste begins with the waste hierarchy and while everybody understands it, it is seldom at the forefront of operational design. While the hierarchy identifies *reduce and reuse* as the highest order actions it is *dispose and mitigate* which receive all the resources. Unsurprisingly then waste volumes grow and little real attention is paid to *reduce and reuse*.

#### The Waiheke Way



There are some things about Waiheke and transport which are unique. We are a small island surrounded by an expensive piece of sea. Our roading network is narrow fragile and expensive to maintain. Big trucks might be efficient to cart waste however their impact on quality of life and the fragile roading system must be considered. Savings by using big trucks accrue to the waste operator but the burden of road repair costs and decreased quality of life become the burden of the residents.

#### **Given the consistent opportunity people will do the right thing:**

The Community development approach used by the WRT and Cleanstream emphasise the importance of the relationship with households in the community because no sustainable

change can be made without the primary work being done at household level. This is our third community development principle.

*Trust the people, only the community can make real and lasting change.*

Sometimes this approach brought WRT into conflict with Council. When it began in 2001 WRT instituted curb side collection of recyclables and then demanded that recycling bins were placed alongside public litter bins wherever they appeared. Council disagreed, they did not use public recycling bins in Auckland until 2008. WRT insisted and went ahead arguing that you must give the public a consistency of opportunity if you are going to make sustainable long-term change (Hargreaves, 2011). You cannot, for instance, train people to do one thing at home in another thing when they are out because the dissonance this causes has a corrosive effect on a commitment to sustainable waste practices. The company's investment in community engagement and community waste education built a consistency of approach the constituency which enabled real conversations about long-term change. WRT's not-for-profit status and visible investment in their own community gave it a legitimacy that private sector operators and Council would struggle to achieve.

### **Waste is not an engineering problem it is a problem of human behaviour**

This is a most important lesson because, although the company invested in all kinds of clever engineering innovations, the biggest changes are made at household level (Tonglet, Phillips and Bates, 2004). If you can't make sustainable changes at household level, you cannot affordably solve it through engineering. The late George Blanchard a long-time WRT board member who was himself a senior lecturer in engineering once told us as a board "I love machines. I've spent my life around machines they have been my life work, yet I can tell you, as proficient as I am in the world of machines, there is no machine built which can outperform the human ability to learn and adapt and change processes." The very best performance internationally, in communities whose demographics and density resemble ours, are systems where the householder is the primary sorter and the secondary sorting happens at a curb side vehicle. These are very low-tech solutions but they are enormously flexible. They can for instance add a new product to the recycling stream with minimal re-engineering and, with good measurement and appropriate communications, can build success and share this with the communities' which enable this success. One of the real failures of the typical industrialised system is that it does not report to households or acknowledge their place in the system. Waste reduction is an ideal community development project because community developers know this communication is their most powerful tool.

#### **Its all about the sorting:**

In the materials flow economy the first thing we do to add value to a commodity is to sort and grade it. I learned this is a very young boy helping on a tomato farm. A case of tomatoes would be worth so many shillings a pound, and my job was to sort these into four grades. The lowest grade struck the rate per pound of the entire case and every grade higher attracted a premium. It's pretty much the same with rubbish. One of the problems with the co-mingled collection system is its outcome is a bigger problem than its inputs. Picture this, I have on one hand an empty egg carton and in the other hand a used sauce bottle. They are separated I now put them into a single receptacle so they can be carted first to the industrialised Materials Recycling Facility (MRF) where a machine separates them, sometimes successfully, one from the other. We have taken what was separate, mingled it, compressed it, carted it, and we are now processing it to re-separate it. That is engineering madness. There are other problems with a centralised co-mingled system. Principal amongst these is that, to achieve the transport efficiencies required, the co-mingled recycled material is compacted at a higher than ideal density and the glass tends to shatter. Glass slivers then contaminate the cardboard and paper which can then no longer be recycled in New Zealand. Moreover, machinery is not available to sort the small particles of glass into the constituent

colours and the material is unsuitable for remanufacturing. This means it must be down cycled to aggregate.

### **The Waste Hierarchy:**

It may be time to revisit the waste hierarchy. A more sophisticated waste management system must now identify opportunities for up-cycling materials as well as down-cycling. However, the basic principle of the waste hierarchy is very sound and is largely ignored. Reduce is at the apex of the hierarchy, followed by re-use, and third is recycling. The point of the hierarchy is that we only recycle materials which we have failed to reduce and failed to reuse. There has been too much celebration about the increased recycling volumes particularly where the result is degraded materials with limited markets and are essentially down cycled. The only sustainable long-term solution to reducing Waiheke's waste costs is to reduce Waiheke's waste. This means the waste operation must be governed by an organisation which is committed to waste reduction first, reuse second and thirdly recycling. Given the transport costs islanders face, recycling is appropriate only where it is unfeasible to reduce and reuse. This freight cost creates a tariff barrier which means as freight costs increase local reuse becomes increasingly attractive.

### **The winning formula:**

Above all WRT learnt in its island environment, given the transport problems and costs' the rule is;

"We should never move anything away from the island until as it is at its highest value, greatest density and we have extracted from it is much as we can use or earn locally."

An examination of the domestic refuse found that, after removal of organics, various non-recyclable plastics, multimedia plastics and waste fibre constitute around 60% of the waste stream. Research and development initially with the University developed a prototype plastic fibre composite board made entirely from waste materials. This was then further refined with a private sector partner and an [engineered composite board \(ECB\)](#) was developed. This board has the capacity to utilise a significant part of the waste stream which is destined to landfill and to incorporate waste, including hazardous, fibre such as chipped treated timber which cannot be burned nor buried because of the included toxins. ECB was developed into domestic and building products. Both the process and business plans for the product were refined by two further university studies and the initiative gained international recognition in the Green Globe awards.

The Company employed, along with the Trust, up to 26 workers at its peak, many staff had suffered from long term unemployment or irregular work. Intensive training and a "skills" based pay system was introduced and workers were encouraged up a promotion path and into qualifications. Two positions were created for severely disabled workers and work flows adjusted to meet their health and rehabilitation needs. The company earned most of its money off island and spent almost all its money on island. The manual sorting system was more labour intensive than the City plant but produced much better quality and higher earning recyclables. These better-quality recyclables continued to find markets during the Global Financial Crisis when poor quality recyclables from the city machine sorted plant became valueless. Most importantly jobs were created in a community which needed them, Capital is not always the answer.

The sharing of opportunities has been a deliberate strategy to broaden the WRT base and has resulted in its gradual ascendancy to the most prominent of the islands NGO's frequently acting as mentor and umbrella to other organisations. Its waste project supported

community gardens, childcare centres, adult literacy, the schools, local environmental restoration initiatives, our local marae and many other community causes.

**Key outcomes:**

- Improved training and employment for locals
- Improved environmental outcomes
- Strengthened community organisations
- A strong sense of local ownership, community capability and connectedness
- Strengthened community identity and civic pride

**Prologue:**

In 2009 the WRT lost the contract for rubbish and recycling services to a multinational firm now owned by the investment arm of a Chinese municipality. By 2015 waste to landfill had increased by over 30%, the support of community organisations had shrunk as had the workforce. I am tempted to offer a fourth community development principle

*No good deed goes unpunished*

But I am a believer and am sure the community will rise again to recapture its rubbish after all as the WRT leaders are wont to say “controlling the rubbish is an imperative, we have to grab all the rubbish for the poor before the rich find out how valuable it is!

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#### **Community Development & Social Enterprise Resources:**

**Organisation:** <http://www.wrt.org.nz/>

**Engagement:** <https://www.youtube.com/watch?v=KDT3FsZIKkI>

<https://www.youtube.com/watch?v=TyY7Ko5SZaQ>

**Innovation:** [https://www.youtube.com/watch?v=5HUAJDT\\_Yyc&t=89s](https://www.youtube.com/watch?v=5HUAJDT_Yyc&t=89s)

<https://www.youtube.com/watch?v=hZINKFrw4>

[http://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=10464715](http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10464715)

#### **About the author:**

John Stansfield (b.1958) is a serial social entrepreneur and Senior Lecturer in Community Development at Unitec Institute of Technology in Auckland, New Zealand. John has worked extensively in the NGO sector in advocacy and leadership positions and has campaigned on sustainable development issues for several decades. He is currently vice president of the International Association for Community Development, IACD, and its director Oceania, and is the President of the Aotearoa Community Development Association, ACDA. He is Deputy Editor of Whanake, The Pacific Journal of Community Development. John holds a Master in International and Intercultural Management (MIIM, 1999) from SIT Vermont, USA, with a major in sustainable development; a Postgraduate Diploma in NGO Management and Leadership (NLM, 1997) from SIT, BRAC Bangladesh, and a Bachelor of Social Work and Social Policy (BSW, 1983) from Massey University, Palmerston North, New Zealand.