

Māori women leading local sustainable food systems

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Abstract

The article explores how Māori women in *Aotearoa* (New Zealand) are defining their own food system and the values of the women at the heart of their community food initiatives. Using a blend of participatory and *kaupapa Māori* (*Māori* principles) research methodologies, the study took place over the course of 3 years, involving four women or case studies who manage community food initiatives, with three located in the North Island and one in the South Island of New Zealand. The article discusses the benefits of community gardens and farms, noting how they are counteracting food poverty through promoting access to local food while bringing more attention to the essential role that Indigenous women play in addressing food security issues. The case studies exemplify how Māori women are leading the way within their own *whānau* (families) and communities, promoting local solutions to global food issues, solutions based on their own knowledge and Māori cultural values.

Keywords

Māori women, Indigenous people, community gardens, agro-ecology, food sovereignty, participatory research

Introduction

The article explores how Māori women in *Aotearoa* (New Zealand) are defining their own food system and that values of the women are at the heart of their community food initiatives. The research contextualizes local food struggles within the framework of food sovereignty in the sense that the women are actively involved with defining their own food system through community or *mārae* (sacred meeting area) gardens and small farms. Through these case studies, we can better understand the many manifestations of “food sovereignty” in practice. The initiatives highlight a variety of sustainable approaches to growing food, emphasizing community control of local food to address food poverty along with growing inequality and climate change. There needs to be additional research on the design of successful community-based initiatives with Māori women leaders that combine food production, biodiversity protection and cultural rejuvenation (Symonds, 2003). Research on such initiatives yields important lessons.

The context

When looking at food poverty issues, food scarcity is not actually the problem; rather, it is the lack of access to healthy and nutritious food and the inherent lack of democracy in the food system (Lappe & Collins, 2015). Māori are disproportionately impacted by food poverty (Tassel & Flett, 2005). Within *Aotearoa*, low-income households are more likely to have diets high in fat, salt and sugar and low in vegetables, fruits, lean meat and dairy products (Ministry

of Health, 2003). Close to half of Māori households (45.2%) buy low-quality processed foods due to the lack of money for healthy alternatives (Parnell, Scragg, Wilson, Schaaf, & Fitzgerald, 2003). The most common difficulty among Māori women related to dietary change in consuming more fruits and vegetables is that they “cost too much” (Tassel & Flett, 2005). It has been found that food security improves when fruits and vegetables, as well as low fat, high fiber foods, are more widely available and affordable (Hackwell, 1998).

Gardens are emerging as a key response of Indigenous communities on a global level to food crisis, in particular, in Canada (Rudolph & McLachlan, 2013). Research by Turner (2011) supports the emphasis on community building through the gardens, growing food, thus facilitating inter-generational knowledge exchange, educating around growing food, achieving a sense of empowerment and social change. Not only do the food and medicinal plants grown provide nutritional benefits and act as a potential source of income, but the “gardens are important social and cultural spaces where knowledge related to agriculture is transmitted” (Galluzzi, Eyzaguirre, & Negri, 2010, p. 3635). The

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transmission of knowledge from the elders to the youth surrounding traditional practices related to the land is essential for “Indigenous cultural regeneration” (Corntassel, 2012, p. 97). Transmission of knowledge typically occurs on the land, between the elders and youth, with environmental dispossession decreasing the opportunities for intergenerational knowledge exchange (Tobias, Richmond, & Luginaah, 2013). The gardens represent a space for reclaiming the ways of the ancestors, as the “actions of the ancestors constitute ethical precedents for one’s behaviour” (Patterson, 1992, p. 81).

When looking at local food systems, Grey and Patel (2015) bring attention to access to traditional foods among Indigenous communities. Lawn and Harvey’s (2004) research supports that food maintains connections to culture and traditions, including the traditional practice of food sharing which is being lost along with traditional foods. For Indigenous peoples,

the revaluing of our traditional knowledge has to begin in our own communities and among our own people, not only because we are the major holders of the knowledge and the major impetus for decolonization begins there, but also so that we can prevent that knowledge from being appropriated by the colonial system. (p. 362)

Within a New Zealand context, research has identified community gardens and increasing access to traditional Māori foods as potential solutions to food poverty (Bidwell, 2009; Bowers et al., 2009; Stevenson, 2011). In addition, gardening is seen by Māori as a culturally relevant response to food insecurity due to strong cultural and spiritual connections with the land (Bowers et al., 2009). Community gardens may be a means to reinvigorate and develop traditional Māori skills in working with the land (Bowers et al., 2009). Research by Moeke-Pickering, Heitia, Heitia, Karapu, and Cote-Meek (2015) found Māori food sovereignty “encourages Māori communities to revive traditional kai [food] access and use, become more knowledgeable about nutrition and health, and to revitalise wellbeing” (p. 38). This process of reclaiming the traditional ways of the ancestors is important for many reasons. According to Wilson (2004),

the recovery of Indigenous knowledge is deeply intertwined with the process of decolonization because for many of us it is only through a consciously critical assessment of how the historical process of colonization has systematically devalued our Indigenous ways that we can begin to reverse the damage wrought from those assaults. (p. 72)

Ruwhiu (1999) recognizes the integral role that Māori women play in resisting colonialism through carrying on traditional practices and ways of their *tūpuna* (ancestors). Indigenous women in particular are in a unique position to offer solutions, given their influence in the *whānau* (family) and as *whare matauranga* (repositories of knowledge) (Ruwhiu, 1999). The *whānau* is a strong element of Māori philosophy, values and practice and is also a recognition of *whānaungatanga* (kinship obligations), which is an aspect

of *kaupapa Māori* (Māori principles) (Smith, 2012). *Whānaungatanga* is often described as kinship, relationships or connectivity (Bishop, 1996; Bishop, Berryman, Powell, & Teddy, 2005; Durie, 1998). The *whānau* principle is an important element of Māori values and practices, as “the family is the core social unit and remains a persistent way of living and organising one’s social world” (Smith, 2012, p. 189). In addition, consideration of future generations is a strong Māori principle related to sustainable environmental management (Durie, 1998). Youth need to have experiences in community gardens, learn about growing and harvesting food and ask older people about the traditional ways of cultivating food so that it is passed down to the next generation (Baskin, 2008).

The connection people have to land and to people (*whakapapa*—genealogy) is important for maintaining good health (Mark & Lyons, 2010, p. 1762). The Māori word for land also means placenta; *whenua* as placenta sustains life—the connection between the fetus and the placenta is through the umbilical cord—a sort of metaphor for *whenua* as the land sustains us through our food produced (Mead, 2003, p. 269). Research shows a strong spiritual component to gardening through connection to the land and soil (Kidd, Pachana, & Alpass, 2000). A study by Moeke-Pickering et al. (2015) found well-being, meant a healthy holistic lifestyle in touch with one’s culture and spirituality, as “healthy kai is medicine, good for the spirit and body, a vital connection to history, ancestors and the land” (pp. 35–36).

Indigenous beliefs and teachings surrounding *kaitiakitanga* (guardianship of the land) and sustainability refer to the guardian role of Māori as *kaitiaki* (stewards) of the land (Marsden, 2003). However, as Shirley (2013) states, “if Māori do not have power over their land and food, they are unable to act as *kaitiakitanga* and guard the natural elements” (p. 60).

Traditional agro-ecosystems had high levels of agrobiodiversity, contributing to the “conservation of agricultural heritage systems” (Altieri & Kooahfkan, 2013, p. 56). As Endres and Endres (2009) point out, the “typical monocropping, coupled with reliance on fossil fuels and long range transportation networks, create a complicated and inflexible system that lacks resiliency” (p. 406). Crop and species diversification is an important farm strategy to minimize risk (Altieri & Kooahfkan, 2013).

Agro-ecology is based on local, traditional agriculture which is environmentally safe, culturally significant and sustainable (Schanbacher, 2010). Agro-ecological strategies such as promoting seed diversity, crop rotations, cover crops, intercropping and crop and livestock mixing require a low level of inputs while minimizing risks, boosting yields and increasing profits (Altieri & Kooahfkan, 2013). Agro-ecological techniques are sustainable, help to regenerate the land and promote conservation for future generations (Schanbacher, 2010).

According to Pimbert (2008), autonomous food systems based on local knowledge and cultures are a solution to many of the problems we currently face. The needs of women and small-scale farmers or food growers must be

prioritized if sustainable and equitable development is to be achieved (McIntyre, Herren, Wakhungu, & Watson, 2009).

Participatory and *kaupapa Māori* research methodologies

A unique blend of participatory and *kaupapa Māori* research approaches informed the study. Participatory research focuses on collaboration, shared learning and horizontal knowledge exchange. *Kaupapa Māori* is an Indigenous methodology which is context specific and based on Māori cultural principles. While participatory research and Indigenous research methodologies are distinct, “they share a common language” (Brown & Strega, 2005, p. 23). Participatory methodologies can be viewed as an ally to Indigenous methodologies: “gaining a level of control within the research process is critical for Indigenous Peoples (IP) in decolonization” (Brown & Strega, 2005; Kovach, 2005). Participatory research was initially developed in resistance to traditional research practices, often perceived as colonizing (Kemmis & McTaggart, 2000). *Kaupapa Māori* focuses on issues that directly impact Māori. According to Graham Smith (2012), “lately a focus on food security, poverty and health has come to surpass a focus on language, culture and even the environment” (p. 14). Smith (2012) asserts that there is a need for *kaupapa Māori* “to speak to the pressing daily issues of our people, like food production, unemployment and the access to resources” (p. 14). The political nature of both participatory research and *kaupapa Māori* make these methodologies the most suitable.

The study took place over the course of 3 years and involved four Māori women or “case studies,” who were leading local food initiatives, with three located in the North Island and one in the South Island of New Zealand. The four “case studies” were selected using purposeful sampling. All of the women were selected given their knowledge of running a community initiative, growing food and Māori culture. Due to the small sample size, the results of the study are not intended to be generalizable to the general population but rather offer insights into how a particular group of people perceive a problem along with their opinions and ideas for solutions.

It is important to note that from the initial stages and continuing throughout the research process, considerable time and effort was taken in developing such sincere and respectful relationships. Relationship building throughout the research process was a priority as it forms the basis of sound, valid and reliable research. A detailed essay containing further reflections on working with Māori women within a research context (including the challenges and tribulations that were overcome, as well as how *kaupapa Māori* expands on participatory research) has been reported on elsewhere (Stein, Mirosa, & Carter, 2017).

The study included in-depth interviews, conversations, observation and face-to-face meetings with the women. Participant observation included working together with individual women or initiatives through assisting with grant writing and helping in the gardens. Interviews and discussions were the primary source of research data. The women

contributed multiple hours of their time on multiple days for discussion. Interviews lasted between 1.5 and 3 hr, which also increased the richness of the data obtained. Audio recording was utilized during in-depth interviews and discussions. Interviews were transcribed and given to participants for additional feedback. The cyclical nature of data collection ensured an in-depth comprehensive analysis, collecting data to confirm, challenge or expand findings. Thematic analysis, including the six-step process as described by Braun and Clarke (2006), was used to analyze the data and come up with the seven primary themes discussed later in the article. The research was approved by the Ngāi Tahu Research Consultation Committee, as well as the University of Otago Human Ethics Committee. Participants agreed to be identified.

Parihaka Community Garden, Parihaka and Charissa Waerea

Parihaka was a pacifist haven and a symbol of protest against British colonizers taking Māori land. Parihaka was established in 1866 by tribal, political and spiritual leaders Te Whiti o Rongomai and Tohu Kakahi—from Te Āti Awa and Taranaki (Buchanan, 2009). The *māra* (garden), at the entrance to the Parihaka *pa* (Māori village), is a symbol of peace and historical significance. It is a symbol of culture, history and land occupation. Currently, the *pa* is working toward self-sufficiency, weaving traditions with present day needs. Charissa Waerea is one of the organizers at the community garden, and she has five *tamariki* (children).

Awhi Farm, Turangi and Lisa Isherwood

Awhi means to cherish, embrace and care for in *te reo Māori* (the Māori language). The farm is located on land that is owned by Ngāti Tūwharetoa’s Kawakawa Trust. The once degraded land is now a thriving permaculture farm promoting self-sufficiency and agro-biodiversity. The mission of the farm is to inspire people to make changes on the path to sustainable practice. It is influenced by permaculture practices and demonstrates organic agriculture, waste reduction, sustainable building and alternative energy practices. Lisa is of Tuwharetoa descent, lives on site and manages the farm. She has three children, is a self-proclaimed “solutionist” and believes in like-minded people from different countries, cultures and backgrounds coming together and working toward common solutions. Lisa is also concerned with the impact of fast foods on Māori communities and believes education of the youth is key, as well as promoting access to organic fruits and vegetables.

Motueka Community Garden, Motueka and Ellen Baldwin

The Motueka Community Garden began in 2010 by a group of local people who wanted to share the benefits of growing food. A charitable trust, which is run voluntarily, makes

Table 1. Themes related to food sovereignty.

Summary of themes (listed in order of importance)	How themes relate to food sovereignty
1. Community or <i>iwi</i> (tribe) or <i>hapū</i> (sub-tribe)	Exercising right of communities and tribes to control their food system
2. Traditions and <i>tīpuna</i> (ancestors)	Women defining their own food system based on their cultural and spiritual values, including reviving traditions, such as <i>tikanga</i> and <i>rongoā</i>
(a) <i>Tikanga</i> (Māori cultural protocol)	
(b) <i>Rongoā</i> (Māori traditional medicine)	
3. <i>Whānau</i> (family) or <i>ngā whakatūpuranga</i> (future generations)	Improving access to healthy foods for their families while ensuring environmental sustainability for future generations
4. Gardens, health and well-being	Ensuring physical and spiritual health through the act of gardening itself, as well as through collective health and well-being
5. Natural and agro-ecological food cultivation	Main pillar of food sovereignty and representing a form of sustainable food production as practiced by their ancestors
6. <i>Ngā tāke</i> or <i>ngā putaketanga</i> (issues or obstacles) and solutions	Environmental degradation, resource depletion and economic inequalities impacting access to healthy, sustainable and culturally appropriate food
7. <i>Tino rangatiratanga</i> of <i>māra kai</i> (self-determination with regard to food)	Cultural revitalization and a focus on community food self-sufficiency contributing to self-determination

collective decisions regarding the management of the garden. Ellen Baldwin, a Māori elder, is one of the original founders of the community garden and is currently a trust member. Ellen is originally from Te Kuiti in the North Island. She is 71 years old and is of the age group that participated in the traditional ways. As a child, she and *whānau* were brought up on a farm and lived off the land. According to Ellen, “there were acres and acres of food for *whānau*—now, the current generation has lost their knowledge.” The idea with gardens is to keep that memory alive.

Aunty's Garden, Waipatu Marae, Hastings and Hanui Lawrence

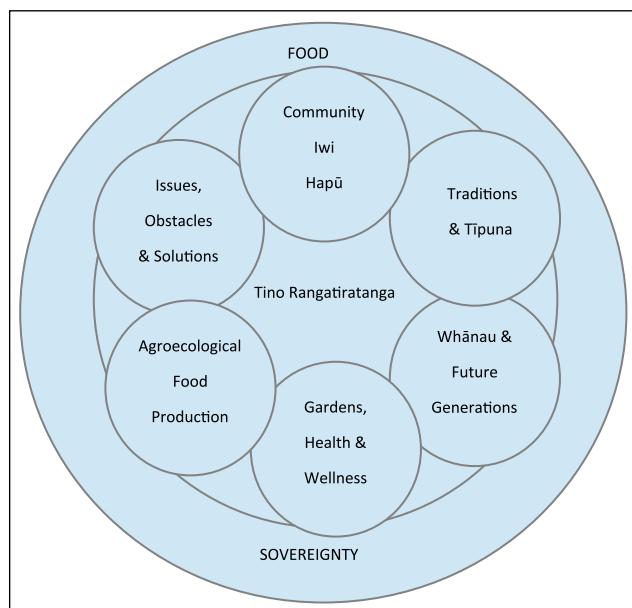
Aunty's Garden is located at Waipatu Marae in Hastings. Its principal *hapū* (tribe) are Ngāti Hāwea, Ngāti Hinemoa and Ngāti Hori of Ngāti Kahungunu *iwi* (sub-tribe). The 0.8 ha garden was established in the spring of 2010 with its unique pathways for *whānau*. It is located next to the *marae* and the *kohanga reo* (Māori language immersion family program). One of the goals of the garden is to establish healthy eating for Māori, as well as encourage Māori to get back to the land and grow food for their community, food that is clean, pure and good for the soul. It is open to all of the community, where they can pick vegetables, fruits and herbs in season for a small *koha* (donation). Arohanui (Hanui) Lawrence was one of the drivers behind the establishment of the garden.

Results

In analyzing the data gleaned from in-depth discussions and field observations, seven themes emerged (see Table 1) (Figure 1) that were associated with *māra kai* (food gardens) and community gardens.

Community, *iwi* (tribe) and *hapū* (sub-tribe)

This refers to a strong sense of community and connection to *marae*, *hapū* and *iwi*. Linkages were diverse including

**Figure 1.** Pictorial diagram of how themes are interrelated.

community groups, local schools, universities and Māori-focused horticultural groups. Community gardens and small farms educate the youth while providing healthy affordable *kai*, building community resiliency and local economies. Gardens provide a platform for sharing knowledge between youth and elders and generate a sense of pride and empowerment while enabling people to learn about food and mobilizing social or political action.

All of the gardens network with and are connected to a variety of community groups and schools. For example, Parihaka Community Garden has begun a *te reo* course around *māra kai* and *tikanga* (Māori cultural protocol) in the garden. Awhi Farm hosts visiting school groups. Aunty's Garden at Waipatu Marae in Hastings has hosted a variety of community events, including cooking competitions and cooking lessons for youth. In the past, sustainable lifestyle courses were held at Aunty's Garden, and today a horticulture course is based there.

All of the initiatives are open to anyone and promote community food access and support the consumption of local, healthy food. Locals, international tourists and Willing Workers on Organic Farms volunteer their time at Awhi Farm. In Parihaka, fresh *kai* that is harvested is left out for community members to pick up for a *koha*. As with Aunty's Garden, a sign reminds visitors what is ready for taking. Hanui talks about how the gardens are open for everyone:

It's open [the garden] to anyone who wants to come. It's a community garden. It's not a commercial garden. It's for families. Initially for our own Marae families around here, it's for all of them, and we're all Aunties. That's why we call it Auntie's Garden.

Through gardens and small farms, the women are raising awareness within their *whānau* and community around sustainable agriculture and healthy living. People and communities are more involved in growing their own food through volunteering, or they come and pick their food themselves for a small *koha*. In all cases, food is being made more widely available to all while encouraging people to get in touch with where their food comes from. The gardens or farms enhance food security and contribute to the local economy. Key to such community-based solutions to food insecurity is community control over locally grown food and defining food systems on their own terms.

Traditions and tīpuna (ancestors)

Māori women are retaining traditions and the ways of their *tīpuna*. The act of gardening represented a chance to return to the land and the ways of the ancestors, including taking care of the environment and reviving traditions, such as traditional foods, *rongoā*, and *tikanga*. *Māra kai* were grown by their parents, their families and their ancestors. The importance of *tīpuna* cannot be ignored in Māori culture.

Lisa from Awhi Farm stated that "we've got to get back and use our land the way our ancestors really did, in this region anyway. So that's another barrier we have to overcome." Charissa from Parihaka Community Garden has a clear vision of the community becoming food self-sufficient motivated by historical injustices and cultural values. Parihaka has a strong history of self-reliance, food cultivation and farming as a means of peaceful protest. Charissa stated,

Part of my vision here, living in Parihaka with successive children that are going to inherit what we leave them is actually reliving or trying to reintroduce the old way of gardening that they had here that sustained big numbers. As in, you wouldn't need any other source of food in order to live here that you could sustain 3-400, up to 1000 people in this little village with what was grown here. So that's what I'm really passionate about, being a part of trying to get that back. How you do that without that kind of will amongst the ones that live here is quite difficult, but I think that *tino rangatiratanga* [self-determination] is also leadership. So, it might only take a small group of five to start something and then once people start to

see food delivered to their door, or in their plate, or in the pot, they realize oh look, I've just been given a whole lot of *kai* here, that I didn't have to pay for, then you often get buy in from the families that live here because they've been affected by the history here.

For the older generation of women, Hanui and Ellen, growing food is what they have always known. They were brought up in a time where they lived off the land, rurally, where their family farmed for their livelihood. Their world, though changing due to the impacts of colonization, is true to the Māori way of living. This is important for many reasons, one being that the elders serve as role models for the younger generation. Ellen explained where her passion for gardening comes from:

I was very young when my parents made gardens for ourselves and they provided for the Chinese green grocers in Te Kuiti. They grew veggies and stuff on our farm. I was very little but I still took notice of little things. That's why I like gardening I think because I used to see my mom and dad do it, like how they stored things . . . There were no tractors in those days. Dad had work horses, which were similar to Clydesdale, and they would plough the ground you see, because dad would have to do all that, plough al the ground up, plus my brothers and sisters helped. Mom would grow, grow the veggies. I think they all did, because I'm one of 12 children . . . when it comes to gardening it's been something I've been really, really passionate about from a little girl.

The women are all involved in various ways in reclaiming their traditional knowledge. According to Charissa Waerea, succession of knowledge is *tino rangatiratanga* (self-determination) that though agro-ecological methods are important so also is succession of knowledge:

Knowledge for me is *tino rangatiratanga*, it's having that matauranga [knowledge] that comes [from], and often for me, is passed down through generations and practice—if grandmother practiced it or if your mother practices it. Even my sons are watching me or my daughters are watching me. "Why does mom put kawakawa in our bath?" you know. Sometimes I do that if they've got hives or an allergic reaction to a certain food. So yeah, you learn by practice and you learn by word of mouth and that is *tino rangatiratanga* to me. It's that transmission of knowledge to make sure that the future generations will know that this is a plant we've always used and this is how we use it.

For Charissa, it is a key reason she does what she does, learning about the natural farming methods of the ancestors and passing this knowledge down to future generations. Māori, as with most Indigenous Peoples, have a strong connection to their ancestors and the land, connecting them with their ancestors through the land. Lisa explained, "I listen to my inner self, and I feel connected to the spirit, my ancestors, and when I'm very connected, I can feel them around me." The recovery of Indigenous knowledge and values surrounding the land are critical for solving issues impacting Indigenous communities as well as global problems related to climate change and alternatives to industrial agriculture.

Whānau (family) and ngā whakatūpuranga (future generations)

Food production and gardening also represented an opportunity to put into practice cultural ideals with regard to *whānau* and *ngā whakatūpuranga*, including intergenerational knowledge exchange. *Whānau* plays a primary role in Māori culture and values. Charissa explained that in Māori culture, women are the pillar that hold the family together; if the woman is not healthy, then the family is not healthy. She is the mother of five *tamariki* and is concerned about what her *whānau* put into their bodies:

From a whānau perspective, because our perspective is always from that point of view . . . the way I see tino rangatiratanga around food and food sovereignty is not introducing the foods that you don't want them to get used to as much as you possibly can. Because you're teaching them to control, the tikanga and the tika [right/correct], what they think is right and what they think is wrong, and then the values around why that's right and why that's wrong. My children don't have a lot of sugary food. I've tried to keep them away from packaged food as much as I can. Socially, it's very difficult. In groups of people, it's a bit difficult.

A focus on future generations is also important in Māori culture. For Ellen it is “important to get the younger generations involved.” As with Hanui, their children and grandchildren work in the gardens with them. The past plays a significant role in what Charissa envisions for the future. According to Charissa, the gardens are about knowledge transmission and future generations as much as they are about agro-ecological and sustainable food production. With reference to the knowledge transmission, Lisa stated,

Especially our elderly, they loved it [a food forest project]. They remember the amount of food that was here because every marae, e-v-e-r-y marae, had a massive orchard and massive food production . . . Ultimately, I think our older generation, they know. They can remember, but they haven't been able to pass it down, and that's fine. Because with the permaculture, with, you know, organic gardening and other groups around, we'll get there.

Ellen (Motueka Community Garden) spoke about the important role her mother played in influencing her and her *whānau*, growing food for the family and storing or preserving food. The women, through reviving traditional, natural and agro-ecological farming methods, are reconnecting with the ways of their ancestors, their mothers and their grandmothers.

Gardens, health and well-being

All of the women expressed their passion and love for gardening. They all strongly believe in its healing effects. The act of growing food itself enhances one's health, wellness and connection to the land. Research confirms that spending time in the garden has mental health benefits because microbes in soil enhance immunity and nutritional value of food (Matthews & Jenks, 2013). These women are reconnecting with the land and the soil and are teaching their children about their culture, their heritage and where their

food really comes from. Charissa spoke about her deep spiritual connection to the land and gardening:

So for me, it's more about the total ecological system, not just gardening. But it's also our connection to the earth by putting your hands in the soil you're reconnecting with our creators. Most activities would do these days, there's often synthetic material or business that prevents the contact we need to actually be having on a regular basis. So there's a lot of healing in that connection.

Hanui has a strong connection to the land where she and her family grew up growing their own food:

Where we live, it's called wairua, of the heart, of the spirit or between two rivers. So that's where we were born and brought up and still live there today. So we were brought up growing things, and for me, it's criminal if you do not plant something because it's a gift from God, and it's just a pleasure.

The women see themselves as caretakers of the land. In two of the four cases where the gardens are located on their tribal lands (Hanui and Lisa), it is the land of their ancestors, which entails the responsibility to protect and look after the land and natural resources for future generations to inherit in a good state and not to exploit it. For Charissa, who still has a deep connection to the land, the gardens are located on the tribal lands of her partner. Charissa explained the idea of *kaitiakitanga*:

See, ownership is not a concept that we [Indigenous Peoples] even understand. We're not owners of land, none of us are. We have *ahika*. *Ahika* (keeping the home fires burning) means we have *kaitiakitanga* to that area and our job is to maintain, sustain, protect what's there, but we don't own it. See, that concept was really, actually quite different, owning property, property that actually belongs to someone. We just care for a patch of land. And all we are doing is succeeding it to the next generation who will take it over, but we don't own it and we never will. Indigenous Peoples around the world do think like that, but that's another value that has been lost. It's our job just to protect it [the land], maintain it, look after it, leave it in a better state than what we received it, and then ensure that it's passed on to the next generation with the knowledge that they need to be able to do the same job. That's *rangatiratanga* (self-determination), that's what it is to me in a nut shell. It's not actually protesting and getting out there and saying I'm fighting for my rights. That's part of it, for sure, but the biggest part of it is knowledge transmission and the protection of land. And if I really think that *Papatūānuku* (Earth Mother) is my mother, you'll do whatever you can to ensure that she lives. Same with Ranginui (Sky Father)—you'll do whatever you can to ensure that the water that falls down is clean.

Gardening and food cultivation has an important spiritual component, strengthening the connection to the environment and *Papatūānuku*.

Natural and agro-ecological food cultivation

Māra *kai* and community gardens were also associated with agro-ecological and natural farming methods; all the initiatives have natural cultivation or ecological farming

techniques in common with agro-ecology and Indigenous values including respect and reciprocity for *Mother Earth* and nature. Agro-ecological farming techniques are essentially natural ways of farming whose basis is promoting biodiversity and sustainability to achieve a balanced ecosystem. The modern, industrial agricultural system lacks inherent stability, while the focus on biodiversity of traditional agro-ecological farming systems enhances environmental resilience, essential in the face of climate change. Inputs, such as agro-chemicals and machines, are minimized, and local resources and closed system loops are maximized. Agro-ecology is a primary pillar of food sovereignty.

In addition, agro-ecology fits well with Indigenous values through a focus on community involvement, sustainability, supporting women, and enhancing nutrition for *whānau* and children.

Ngā tāke or ngā putaketanga (issues or obstacles) and solutions

Participants in the study were concerned with how processed foods and foods grown with pesticides were impacting their health. The women reported many problems with the industrial food system, the introduction of cheap processed foods and the unsustainable nature of conventional agriculture, including an overreliance on chemical pesticides and fertilizers. Similar to food sovereignty discourse, the women defined the issues impacting Māori communities as having to do with environmental degradation, resource depletion and economic inequalities impacting access to healthy, sustainable and culturally appropriate food (Kamal, Linklater, Thompson, Dipple, & Ithinto Mechisowin Committee, 2015). For each of the women, their *mahi* (work) related to growing food brought much satisfaction, good health and well-being, although there were always challenges to overcome.

Tino Rangatiratanga of māra kai (self-determination with regard to food)

The gardens represented a chance to define one's own food system including the promotion of self-determination. Lisa spoke about how food sovereignty in practice means sustainable food to her:

I've got a few things in my garden that are new to *Aotearoa* so that's another thing too, bringing in that seed, bringing in that sustainable food, things that we don't really know about yet, perennial food and thinking about the next 100 years.

Hanui had issues with the traditional definition of sovereignty which to her meant control. She preferred to define her actions as follows:

I would define it as good food, good food for the soul, that's how I would say it, not like sovereignty. We grow good food, it grows well, and our growing practices are great. Nothing is sprayed. It's all natural and good . . .

In Parihaka the political nature of food sovereignty resonates particularly strong given the historical and cultural history of the *pā*. The gardens play a role in resisting the loss of land and are related to *ahika*, as a symbol of land occupation.

Conclusion

The results of the study generated a rich understanding of what *māra kai* and food sovereignty means to Māori women who are defining community food systems, exemplifying ideas and practices that ensure cultural sustainability and continuance of knowledge regarding the importance of sustainable, natural food production. At the same time, they are promoting good health and reconnecting with the land and *Papatūānuku*.

Results resonate with research by Moeke-Pickering et al. (2015) that found that "Māori food sovereignty endorses the continuity of a positive, vibrant and healthy ecosystem for growers, gatherers and consumers" (p. 38), proving true for other geographic regions of *Aotearoa* and among Māori women in particular. These initiatives, like others internationally, address disparities and promote social justice through a focus on the common good and welfare of the community, on values and principles based on economic, social, cultural and environmental sustainability (Masioli & Nicholson, 2010).

Results confirm that community gardens are an effective strategy for improving access among families and communities to culturally appropriate and ecologically produced fresh fruit and vegetables. This is especially important in addressing disparities in access to nutritious foods while also bridging barriers of isolation and social inequity among vulnerable groups. The research also provides insight into how Māori women are promoting agro-ecological farming practices as practiced traditionally and by their ancestors. These women are strong role models and through bringing back the ways of old are developing new models of sustainable living, part of what Dann (2012) refers to as a "home/community gardening renaissance that's possibly bigger than one happening among non-Māori" (p. 48). In this sense the women are practicing "food sovereignty" with communities taking a leadership role in devising their own solutions (Holt-Giménez & Patel, 2012). Food sovereignty study emphasizes gender equity, women's leadership and access to or control over productive resources (Desmarais, 2015). Indigenous sovereignty and autonomy are interconnected with the relationship to the land (Kamal et al., 2015). While food sovereignty is appearing on the Indigenous anti-colonial agenda, the "explicit link to regaining or redeveloping women's traditional knowledge and provisioning role is rare" (Grey & Patel, 2015, p. 439). Status of women eroded as Māori came into contact with Europeans and rigid systems of patriarchy (Hall & Fenelon, 2009, p. 42). Grey and Patel (2015) claim that the "enclosure of land and the forced relocation onto marginal lands, along with the uptake of a commodifying attitude and the adoption of European-style agriculture, circumvented women's teachings around the conservation of and respect for food and

plants" (p. 438). In addition, research by Kuhnlein, Erasmus and Spigelski (2009) recognizes the "underlining common struggle to protect indigenous cultures and emphasizes the need to conserve those ecosystems that contain the food resources necessary for community health" (p. x). This emphasizes the important role that these women play within the *whānau* and community, as well as the broader Indigenous rights, women's rights and environmental and food sovereignty movements.

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