

FOOD SECURITY ISSUES: ROOT CAUSES AND DIRECTIONS FOR THE FUTURE

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ABSTRACT

The second United Nations Sustainable Development Goal is Zero Hunger. The issue stems from multiple root-causes that must be recognised and managed, to reduce the consequences of acute hunger and undernourishment. Two closely related topics are food security and food poverty. While the characterisation of these two problems is different, their causes are closely related. Aotearoa, New Zealand is confronting these problems as well, even though the country is exporting a significant amount of food from agricultural production. This paper is a realist review of food security issues in Aotearoa, New Zealand; the method aligns with selected secondary reviews devised for complex policy interventions. The focus is on several interdependent topics such as the living wage, eating habits, and the food system. While income is the most obvious aspect of a living wage, it is important to be aware of many encompassing factors such as eating habits. The food system is directly related to these issues and needs to evolve simultaneously and considerably. Fortunately, Aotearoa, New Zealand is rich in resources and culture; Māori culture influences our food industry. This paper will particularly discuss hāngī (traditional, earth-cooked food) and its connection to agriculture in Aotearoa, New Zealand. The paper outlines an alternative food system as one possible response that can be developed and adopted in the future.

Keywords: food security, living wage, eating habits, food system, hāngī, free lunches

INTRODUCTION

Food security issues have existed for millennia. Aotearoa, New Zealand is an agricultural powerhouse; horticultural, meat, and dairy sectors contribute significantly to the tradeable economy, exploiting 45 percent of our countryside to do so (Child Poverty Action Group –New Zealand (N.Z.), 2019). In Aotearoa, New Zealand, undernourishment, and acute hunger should be a problem with feasible solutions (Manate & Cherrington, 2022). However, statistics show that Aotearoa, New Zealand is struggling with food insecurity and food poverty increasing almost 3 percent in the decade to 2019 (Auckland City Mission, 2019). Despite increasing the minimum wage in recent years, Aotearoa, New Zealand's banking industry was the only industry accredited as living wage employers in 2020; the industry employs more than 25,000 persons (One News, 2020). The message here is: if you work at a bank, even at the lowest level, you will be paid fairly.

Despite calls for the living wage in Aotearoa, New Zealand (Skilling & Tregidga, 2019), 10 percent of the populace is deemed undernourished (Auckland City Mission, 2019). Frameworks for improving food insecurity and food poverty are used by governments to mitigate harmful effects such as malnourishment and hunger, but policies must integrate into social and cultural milieus for such initiatives to achieve broad-based, long-term positive change (Spray, 2020).

FOOD INSECURITY AND FOOD POVERTY

Although the difference between the two issues of food insecurity and food poverty may not be obvious; their root causes are separate. Food insecurity is a "limited or uncertain availability of nutritionally adequate

and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways” (United States Department of Agriculture , 2000, para 4). Food security is achieved when “all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life” (Food and Agriculture Organisation of the United Nations, 2003, para. 22). It is important to remark that many factors contribute to hunger or malnutrition, such as funds, resources, time, and skills to prepare healthy meals, as well as safe storage or preservation of food (Child Poverty Action Group - N.Z., 2019). Food poverty can have similar contributing factors; this can be important because contemporary definitions are more inclusive of various family resources and needs (Wight et al., 2014). Food poverty is often thought of as a lack of food-related resources, but metrics that support policy decisions can shift based on definitional application or factors included (Manate & Cherrington, 2022). Food poverty includes circumstances where there is a lack of resources relating to food and nutritional access, mainly driven by poverty, location, and inequity.

Millions worldwide suffer from hunger, food insecurity, and malnutrition since they are unable to afford the cost of healthy diets. The cost of healthy diets is associated with a rise in food insecurity and the visible signs of malnutrition, such as stunted growth, wasting, obesity, and overweight (FAO, International Fund for Agricultural Development , United Nations International Children’s Emergency Fund, World Food Programme, and World Health Organisation, 2020).

Achieving Zero Hunger requires a paradigm shift. The three disciplines of ecology/agricultural sciences, nutrition/public health, and political economy/policy science can transform our current industrial agriculture style to a broad agroecological systems approach (Frison, 2016). The Zero Hunger configuration may not ideally assist the needed convergence (Dube et al., 2021). A realist view of food insecurity issues may create a pathway, by looking at social and cultural perspectives that ameliorate the most serious consequences of food poverty (Manate & Cherrington, 2022). Research supports place-based, adaptive, participatory solutions within a holistic ecosystem to improve the quality of local diets. Frameworks now exist for activation; a desire to develop a greater food system could inform the development of effective policies (Blesh et al., 2019).

THE CURRENT SITUATION IN AOTEAROA, NEW ZEALAND

A person in a state of food insecurity can refer an individual, whether they are earning money or not. It is highly probable that everyone in the country or even globally has been in that circumstance at some point. Since money is not the only needed resource linked to food insecurity, time to cook healthy food or access to healthy ingredients are issues that need to be more seriously considered. In addition, a dearth of nutritional knowledge and conflicting health messages are a growing concern. The idea that everyone can be affected by these food issues is alarming and must awaken a urgent community response (Dunn et al, 2020).

In Aotearoa, New Zealand one in five children is experiencing food poverty (Child Poverty Action Group – N.Z., 2019). Malnutrition during the growing phase of children can lead to abysmal health outcomes in the future such as obesity, underweight, or nutrient absorption issues is a hidden hunger that could affect personal development. Studies have shown that vitamins and minerals are essential to support the development of the brain and regulate hyperactivity, irritability, and attention deficit (Rucklidge et al. 2009). ‘Spend money now to save money later’ is an idea that deserves serious attention as our children are the future of the country. To ensure children develop in a healthy environment where required nutrients are provided for later health, it is fair to say this is a societal responsibility (Child Poverty Action Group - N.Z., 2019). Women too are more affected by food insecurity than men (Auckland City Mission, 2019). This can be explained by the fact that women are often primary caregivers for children if parents separate, their living costs are proportionally higher than other family group categories, and women are systematically underpaid United Nations Women (2020).

Knowing that Aotearoa, New Zealand produces enough food to feed twice its population, yet an alarming 14 percent of the community is experiencing food security issues (Huang et al., 2020) we must ask the question: how is that possible? Aotearoa, New Zealand food policies must use a long-term vision; currently, policies are more focused on preventing food poisoning than food supply (Child Poverty Action Group - N.Z., 2019). In 2019, the country experienced food price inflation for vegetables and nuts, up from four to nine percent (Child Poverty Action Group - N.Z., 2019), not to mention the contrast between the incredibly high housing costs and the low incomes (Zealand, 2020).

Actions are being taken to counter food poverty; food banks exist so that people in need can get free food. However, it is psychologically difficult to turn to this option as these individuals often feel ashamed to do so (Worsley & Scott, 2000). In addition, food banks are considered as a short-term solution in the fight against food poverty. Some organisations are developing partnered community strategies aiming to reduce household food insecurity. Nevertheless, this issue is too complex for them to be fully efficient; other factors must be carefully studied and managed by businesses, the Government, and even the whole community. The wicked problem is highlighted by the 17 United Nations Sustainable Development Goals that are highly interconnected and require global action, in partnership with the goals, but that stresses the need for local emphasis, refinement and design thinking (Cherrington et al, 2021).

THE LIVING WAGE IN AOTEAROA, NEW ZEALAND

Food insecurity and food poverty are closely related to income (Nino & Cherrington, 2021). In terms of policy, the Living Wage movement is almost a decade old and encompasses diverse organisations, with aims to build people's power and transform workers' lives (McIntyre, 2019). In other words, they seek to reduce the gap between the minimum wage and the real costs individuals are facing in Aotearoa, New Zealand. Real costs comprise more than just the minimum a person needs to survive. The living wage is meant to be enough to allow the individual to get adequate housing, sufficient healthy food but also the possibility to participate in their community. Knowing that mental health is just as important as physical, activities such as socialising in parks, cinemas, or during events is essential. In that light, increasing wages will allow community members to work in more meaningful ways, with more time to take care of their wellbeing. Therefore, the living wage movement releases several reports each year presenting updated living wage rates, which are calculated using multiple factors like health and energy costs or government plans like the Families Package (Boston & Chapple, 2014).

Several arguments support calls for a living wage in Aotearoa, New Zealand (Waldegrave, 2021):

- Government policy should support social order and focus on collective outcomes.
- Inherent dignity and wellbeing of workers and their families must underpin action.
- Organisations have legal obligations and duties regarding health, safety, well-being.

Yet many arguments are made to keep the status quo (Waldegrave, 2021):

- Market signals already have a sufficient and valid role in informing wage decisions.
- Aotearoa, New Zealand lags in gross domestic profit (GDP), competitiveness, and long-term organisational performance.
- Organisations cannot afford a living wage notably post Covid-19 and in low-wage sectors.

Fortunately, the movement has been gradually growing over the years; promoting progressive business practices is a marketing technique and more companies are accredited to be living wage employers (McIntyre, 2019). Over 200 companies are now accredited as living wage employers to indicate that the totality of their workforce is being paid the living wage rate (Cherrington et al, 2021).

From 1 April 2021, the minimum wage in Aotearoa, New Zealand was raised to \$20 per hour. Although

Aotearoa, New Zealand achieved significant increases to the minimum wage in recent years, the cost of living has risen as well, and the living wage rate is now estimated at \$22.75 (Living Wage, 2021). Naturally, increasing the minimum wage leads to an increase in the cost of essential goods. However, the gap between the minimum wage and the living wage has never been so small with a \$3 difference; in 2018, this gap was over \$4 (Moran, 2020). This highlights a perceived endless rising cycle of wages versus cost of living; this depends on how well other co-related factors are managed (Employment New Zealand (2021). It is fair to say that the Government is contributing to the improvements, but more businesses must join the movement to make the difference insignificant. Businesses must pay employees more in tight labour markets, but the living wage movement deserves to be more widely known and recognised as a key driver of equity and fairness for workers in our society.

THE FOOD SYSTEM

Current food systems can be complex, but the process encompasses food production, processing, distribution, and consumption and includes food waste management; home gardens are healthy and simplify the cycle but are an out-of-reach luxury in many urban settings (Figure 1). Food products not consumed often end up in organic waste rather than being re-distributed to those in dire need; this does not add to intelligence towards long-term health and wellbeing aspirations in New Zealand (Sehgal & Cherrington, 2021). Key features that impact complex systems can be targeted to manage these assets and complex food systems multi-faceted data processes (Cherrington et al, 2019, 2019b, 2019c, 2019c).

Figure 1. The Food System Process



Those responsible for population health are increasingly concerned about ultra-processed and nutritionally meagre processed foods produced via our commercial food systems. Expediency and profitability are shifting the burdens of future disease and health system costs to future generations, creating further inequality (White et al., 2020). Producers in the food system need incentives to evolve and invest. For example, businesses that had previously invested in sustainable processes, rode COVID-19 pandemic with a new appreciation for data, information and networks (Cherrington et al, 2021a, 2021b, 2021c). Conceptual frameworks that integrate sustainable risk management and transfer strategies, can proactively change the status quo, and generate cultural shifts for healthier outcomes (Mushtaq et al., 2020). Government policy must be supportive of businesses in the evolution so that they remain competitive and profitable (Henderson, 2020). Leading businesses would then benefit from collaboration with the food industry regarding health priorities. Another issue increasingly stated, is fairness towards workers and producers (Kaiser et al, 2021), as well as consumers wanting to be more informed about their food choices. To these ends, packaging legislation is low-hanging fruit, yielding multi-faceted and positive results (Drew et al., 2020). These imperatives can be integrated into sustainable packaging legislation (Plastic Packaging Masterclass 2020, 2020).

FOOD CONSUMPTION AND EATING HABITS

Nowadays, processed food is so low-priced, transportable, and so easily accessible that it has become part of a regular diet. As a result, our health is greatly affected and a dramatic increase in diseases such as obesity and diabetes has been observed over the years. Despite the impact on our physical condition, the cumulative effect of eating habits has a significant role in food security (Jones, 2021). Thus, it is crucial to learn how to compose a healthy and enjoyable diet to reduce many negative impacts on health and food security.

Healthy menus for a healthy body

The current generation is known to consume too much processed food compared to what an overall healthy diet would necessitate. Even though it is common knowledge that processed foods are often high in fat, salt, and sugar and are not as nutritious as natural foods, it can be difficult to change mindsets and eating habits. However, a growing interest in healthy food using various cooking styles is trending as well. Some people even associate their diet with sustainability, claiming that meals should be mainly plant-based but widely diverse, composed of locally produced items to espouse sustainable practices and lower emissions (Jones, 2021).

Aotearoa, New Zealand is a multicultural country where the indigenous population is Māori. Māori culture is extremely wealthy in knowledge and customs, including having their own traditional medicine called rongoā. Māori also possess a very interesting way of cooking their food called hāngī; food is cooked underground using extremely hot stones to generate heat, creating an oven. Traditionally wrapped in leaves, the food from hāngī is renowned to be exceptionally tasty and healthy (Fiso, 2020). It is ideal for large gatherings and celebrations. Nevertheless, it can be difficult to build a successful business around this traditional method of food preparation and cooking as it requires a significant amount of time and well-trained individuals to prepare a hāngī, who bear the enormous workload. Despite these challenges, with modification and modernisation of methods, it is possible and viable to develop a food business using this traditional cooking practice. Hāngī Master is a business that takes hāngī to the masses; the owner, Rewi Spraggon has built a food business that is profitable, sustainable, and healthy (Lazy Susan, 2021). This case study is interesting, as it relates to Spraggon's journey and the traditional philosophies behind the endeavour; Rewi Spraggon aspires to provide healthy menus to his customers and share Mātauranga Māori (knowledge of Māori) to his employees. His initial objective was to provide hāngī to schools, so at the outset, he created healthy menus that would be appealing to students. While these meals do not contain many greens currently, the intention is to include more vegetable varieties in the future, with the view to improve the eating habits of young people. His next target market is to supply hospitals and supermarkets. As hāngī becomes more popular throughout Aotearoa, New Zealand, it will surely contribute to mitigating the impacts of food security issues. Changing the quotidian diet is an essential part of solving these problems. When healthy and tasty food is more accessible and affordable, surely, it will positively impact our eating habits.

Free meals at school

The Universal Declaration of Human Rights states that every child has the right to adequate nutrition (Office of the High Commission for Human Rights, 2021), yet in Aotearoa, New Zealand, 100,000 children go to school every day without breakfast. The Framework for Food in Schools Programme confirms these food inadequacies and that the "right of every child to a standard of living adequate for the child's physical, mental, spiritual, moral and social development" (Children's Commissioner, p. 11. 2013). The Children's Commissioner (2013) also states that children must be fed sufficiently to attain a range of nutritional, educational, and social intentions and fed irrespective of parental income or status and that breakfast should be made available to schools with decile 1 and 2 primary and intermediate children.

It is well known that the most influential time for a human being to acquire knowledge is during childhood. Several programs are Government funded in an attempt to reduce the percentage of hungry children; one of them aim to provide free lunches at school to children between primary and intermediate age. Since 2020, Aotearoa, New Zealand began to roll out a programme that aims to provide free lunches at school (New Zealand: Free healthy lunches in schools, 2020). Regardless of the clear impact, this programme will have on food security if successful, it could also have a significant influence on the future generation.

Projects such as these are promising and begin to address the United Nations Sustainable Development Goal of Zero Hunger. Yet many of these projects are still in the pilot phase, requiring more data and analysis

for improvement (Swinburn, 2021).

A comparison between the French and American free lunch system at school is thought-provoking because these programmes began decades ago (Cummings, 2019). Their evolution through the challenges they encountered over the years could provide leads and ideas to be implemented in the Aotearoa, New Zealand programme.

France and the United States developed their own meals strategy several years ago. Although the aims initially differed, they are now similar. Despite the difference in the selected menus between the two countries, their current programmes follow the same trends which are guided by sustainability and education. In fact, in addition to providing free meals to children at school, they seek to conceive and produce healthy menus daily with the perspective of educating the palate of children.

The will to use organic and local products has been slowly growing over the years and schools are applying strategies with the aim of cultivating children's minds about nutrition and the worth of exercising (Cummings, 2019). By using seasonal and local produce, preservatives are reduced, and emissions from distribution are lowered; local producers often improve their income opportunities. These free lunch programmes are also designed to develop and diversify children's taste and their ability to appreciate multiple flavours. Some schools have gardens to connect children with healthy food sources. While these strategies still need refinement, their evolution over the years shows that better outcomes are to be expected in the future.

In Aotearoa, New Zealand breakfast programmes can still be considered pilots. Nevertheless, trends such as these are influencing and inspiring schools to enhance student knowledge about healthy and nutritious food. Along with making sure that children have access to adequate meals daily, some schools even have gardens where they can teach the students where their food comes from and how to grow food themselves (New Zealand: Free healthy lunches in schools, 2020). This whole educational process is a long-term one – but so is a healthy lifestyle! The collateral benefits of nutritional eating and education are invaluable in the aim of building the next generation's skills and interests in sustainability, health, and nutrition.

Unfortunately, food insecurity and food poverty are encountered in many countries. The high price of organic products and difficulty in accessing them are some of the issues; of course, this is a consequence of commercialised food systems and consumer alienation from growers and the source of their food. While capitalism is a driving factor aggravating these issues, populations can change and evolve current food systems to reverse negativities and obtain healthy products at a fair price. Consumers play a part and must demand better.

Māori assistance and autonomy

Meals in schools can be useful for the community, yet it is important to note that common eating habits may not be influenced outside of the programme to be suitable for keeping bodies in good health as well as for environmental sustainability (Jones, 2021). Community education and promotion within communities have the aim of evolving mindsets and changing food habits. Can this also sway food producers? Aotearoa, New Zealand owns a unique asset: Māori culture. Iwi (tribes) such as Te Rūnanga O Ngāi Tahu are extremely active to support their people and their unique environment. Ancestral knowledge about hāngī and kaitiakitanga (guardianship) are taken into account to develop/evolve eating habits as well as the food industry, via Ngāi Tahu Seafood and Ngāi Tahu Farming specifically. This example indicates a feasible link to improve the food system in a transformational way.

Similarly, communal gardens can create a new way to purchase or distribute vegetables and fruits. A central Auckland iwi has created Pourewa, as a means of treasuring endemic seeds, educating the community and feeding its people (Pourewa – Ngāti Whātua Ōrākei, 2021). Similar successful initiatives are popping up in the regions; they merit review and promotion to the broader public to cultivate inspiration and consciousness. Food security issues are therefore ruled by multiple factors, each one of them needs to be

carefully investigated and managed to considerably mitigate any negative consequences.

Fortunately, in Aotearoa, New Zealand diverse strategies are being developed by iwi. Autonomous solutions are often interwoven in outmoded systems; the inter-relatedness of asset management must be explored to improve decision-making (Cherrington et al, 2020b, 2020c, 202d). Strategies such as those by Te Rūnanga O Ngāi Tahu to address their issues, which align with mitigating multiple issues in the country.

“What is good for Ngāi Tahu is good for Aotearoa” (Te Rūnanga o Ngāi Tahu, p.3, 2018b)

Proactive and holistic sustainability and climate change mitigation is a foundational aim and it often comes back to traditional practices within a contemporary milieu (Te Rūnanga O Ngāi Tahu, 2018). By looking at the big picture, multiple actions allocated to a variety of different areas such as education, preservation, or innovation can have a multiplicative effect. Many sustainability strategies closely related to food security according to Lisa Tumahai, a member of Te Rūnanga O Ngāi Tahu (Te Karere Television New Zealand, 2019).

Te Rūnanga O Ngāi Tahu, which is one of the largest iwi in the country, also developed the label ‘Ahikā Kai’ to empower their iwi (Barr et al., 2018). While “kai” can be translated as “food”, the Ahikā Kai designation was created with the view of giving more credibility to Māori producers; it can also notify consumers about the use of fair and sustainable practices during the production process and health benefits via labelled products.

Five key principles or pou (pillars) are followed: kaitiakitanga (stewardship), hauora (health), kaikōkiritanga (precautionary care), whanaungatanga (relationship), and tikanga (customary practices) (Rewi, 2012; Barr et al., 2018). An accreditation system was set up and a website was developed to facilitate access to these products. Although the website appears not to be operational anymore, the Ahikā Kai label can be deemed as a pilot to be reactivated and reworked. Empowering Māori producers is a means of providing healthy food as part of wider initiatives that can impact food security. Knowing that eating habits are one of the key drivers to mitigate food insecurity, pushing the community to consume healthy and locally produced food by making them more accessible, appears to be key in an apt success strategy.

Community support agriculture

Whilst the availability of healthy food is important to improving the food system, mindsets and buying habits must evolve simultaneously to improve the food system. Aotearoa, New Zealand is well known as a leader in the agriculture industry. Even though studies about pesticides are in constant evolution, it appears that Aotearoa, New Zealand uses three thousand tonnes of pesticides; half are suspected to be carcinogenic even if recent research is still unable to prove it (Martine’t Mannelje, 2019). From this perspective, communities must decide whether to trust their food producers. With a view to improving the food system, confidence in products from agriculture is crucial. Besides the economic aspect of the consumption habits, consumers are now more mindful of the practices used to produce the food they consume (Savarese et al., 2020).

While community gardens can be a great alternative for individuals who do not have a personal green space to cultivate their vegetables and fruits, Community Supported Agriculture (CSA) is an innovative substitute for the population to get easier access to healthy and safe food. The idea here is to re-connect consumers and producers by building up a relationship based on trust and equity. In this model, customers pay a monthly fee to the producers to have freshly harvested products delivered regularly. Consumers also get the chance to visit farmers and participate in harvests. Consequently, customers tend to feel more comfortable sharing ideas and opinions about practices that could be adopted on farms (Savarese et al., 2020). With trust restored, it is more likely that consumers will rely more on a new, more sustainable model to purchase their weekly groceries. Knowing that the agriculture industry is greatly pressured by price wars, CSA could be a tremendous change for producers that are often pushed to give up the right practices due to excessive production costs. A change of buying habits appears to be a logical next step in the restorative

improvement of eating habits. Changing mindsets and attitudes to purchasing food is a beneficial way to mitigate the realities, impacts, and negative externalities of food security issues.

CONCLUSIONS

Food security is a vast and serious problem that needs to be managed urgently. Multiple root causes outlined in this paper validate how complex this issue is. The living wage is one key concern that must be adopted by more employers; having enough money helps make positive life choices and changes. Evolving eating habits could be supported by education and Government policy. Since the current food system is based more on price rather than the quality of the products, adopting a healthier diet needs collective action. It requires a long-term view; education of the younger generation is the key to positively changing eating habits. Providing knowledge and skills to children and their parents will surely contribute to the call for positive change in the food system. A partnership between consumers and producers should become an essential part of food future systems.

Solving food security issues requires a long-term vision. A complex and articulated strategy where joint efforts from the community are needed. Stakeholders need to work together to overcome or even minimise the impact of food insecurity, but incentives must be well-defined. More research is needed regarding a partnership between producers and consumers to develop a strong plan to improve the food system and simultaneously, the food security situation in Aotearoa, New Zealand.

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