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Learnings and Insights from a Sample of Projects Supported by the Nutrition Fund in Counties Manukau

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SUMMARY REPORT

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Prepared for: Let's Beat Diabetes



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Executive Summary

This report presents a summary of the findings from an evaluation of a sample of initiatives in five schools that are supported by the Nutrition Fund in Counties Manukau. The evaluation aimed to provide a snapshot of the implementation, progress and outcomes of five initiatives supported by the Nutrition Fund in primary and secondary schools in Counties Manukau, to showcase as exemplar initiatives for other schools looking to apply for a grant from the Nutrition Fund.

The key findings of the evaluation across the five schools are presented under key headings below, followed by a set of recommendations for engaging in school-based health initiatives.

Need for Nutrition Fund supported initiatives

The evaluation highlighted the need that is within schools for Nutrition Fund supported initiatives such as those that have been profiled in this evaluation, as well as ongoing evaluation for students and parents. This was evident in:

- The lack of knowledge among students and parents regarding nutrition
- The data which suggested that students' consumption of healthy foods and water was inadequate
- Surveys with the students also suggested that while the 5+ fruit and vegetables per day message appears to be getting through to students, this knowledge does not appear to be reflected in some students food choices.
- When identifying the need for nutrition-related initiatives within schools, it is important to prioritise; some schools were overly ambitious in what they set out to achieve given the level of internal support that was available to support the development and implementation processes. Enthusiasm on behalf of the students needs to be balanced with realism as to what can be achieved within the given time frame and with the resources and support available within the school.
- It is also important to note that all of those schools considered in this evaluation are located in areas of high deprivation; given that cost is a big driver of food choice, this warrants further investigation.

Consultation and whānau engagement

The evaluation also highlighted the need for an extensive consultative process from the outset, with both students and parents/whānau, to support implementation of the initiatives.

- Students and staff have embraced the various Nutrition Fund initiatives, with a demonstrably high level of ownership of the more successful projects among students and staff.
- The various initiatives appeared to have had relatively less success, however, in engaging with whānau, and securing their commitment to participate in the development and implementation process.
- Engagement of parent/whānau, while a challenge, is an important factor for success. Without this, the messages that students receive in relation to food and nutrition in the home and school settings are not consistent.

- The evaluation also highlighted the potential to consider extended family such as grandparents who were most likely to have vegetable gardens and may have more time to spend teaching children if retired.

Implementation

The evaluation highlighted several factors that enabled or supported the implementation of Nutrition Fund supported initiatives, and several factors that hindered implementation, as follows:

- Key enablers to the successful implementation of initiatives that were identified included:
 - Guidance and support from the DHB through Health Promoting Schools and public health nurses;
 - A high level of student involvement in the project;
 - Planning over time and setting goalposts;
 - Consultation with parents and whānau;
 - Gradual change;
 - Identifying choices or modes of implementation that suit students' tastes and lifestyles;
 - Support of the school principal and staff;
 - Drive, commitment and enthusiasm from all those involved in the project; and
 - A whole-school approach.
- Key barriers to the successful implementation of initiatives that were identified included:
 - Limited whānau engagement;
 - Financial constraints;
 - Difficulties in securing and financing adequate facilities/resources and supervisory support;
 - Unforeseen circumstances e.g. staff issues and delays in getting things set up; and
 - Competing (curricular) demands.

Outcomes

The evaluation highlighted the following key outcomes from the five Nutrition Fund supported initiatives selected for this evaluation. These initiatives have resulted in:

- Increased availability of healthy food choices in schools
- A high level of student engagement, which in turn suggests an impact on student knowledge and attitudes (e.g. a school with 2 gardens already in place at the time of the evaluation had much higher baseline scores than a school with gardens yet to produce vegetables)
- Schools being able to further their vision for a healthy school environment that supports the notion of providing students with the greatest opportunity to learn
- Many schools linked the funding application process and identifying need for an initiative to student projects, and thus supported the development of other student skills (e.g. numeracy, literacy, leadership)
- Given the early stage of many of the initiatives presented in this report at the time of the evaluation, further evaluation at a later date will be required to document:
 - The extent to which the learnings of the project are taken on-board by students and retained over time;

- The extent to which these learnings are shared with whānau; and
- The extent to which these learnings affect attitudes and behaviours across settings.
- Further evaluation would also be useful to explore sustainability of initiatives as the current evaluation is slightly limited due to lack of outcome data available from some schools.

Recommendations for engaging in school-based health initiatives

Based on the evaluation findings the following recommendations are made:

- Prior to the application process, it is important to ensure adequate internal support/buy-in within the school.
- A whole school approach appears to be crucial to the success and sustainability of an initiative.
- Consultation with students and parents/whanau is vital. Initiatives that are student led and supported from home appear to have the greatest traction in terms of implementation and uptake. Subsequently,
 - Projects should be student-driven with a high level of student, staff and, importantly, whānau engagement, and to external agencies from the outset.
 - Initiatives should seek to engage whanau, including extended whanau such as grandparents.
- When identifying the need for nutrition-related initiatives within schools, it is important to prioritise; student/school enthusiasm needs to be balanced with the realities of what can be achieved within the available resources and timeframes. This should reduce burden and burnout of staff and students supporting implementation.
- Nutrition education should be an ongoing process for both students and parents to support engagement in the schools initiatives.
- Change, particularly to food supplies, should be gradually introduced.
- Initiatives should be linked to the curriculum and development of other student skills.
- Communication between schools that are developing or implementing Nutrition Fund initiatives should be encouraged. This could identify models that work, and ensure that the expertise is shared across the school community, perhaps through Nutrition Fund Newsletters.
- The Nutrition Fund administration should further support schools by providing clear guidance as to what is expected of them throughout the process, particularly in relation to evaluation, reporting and feedback required. This process is currently being supported by the development of evaluation tools and feedback forms designed to make this process easier for the schools, and more accurate in terms of data collection.

1. Introduction

This report presents a summary of the findings from an evaluation of a sample of initiatives in five schools that are supported by the Nutrition Fund in Counties Manukau. The evaluation was commissioned by the Counties Manukau District Health Board “Lets Beat Diabetes” programme of action, and undertaken by the Centre for Health Services Research and Policy from the School of Population Health at the University of Auckland.

The evaluation aimed to provide a snapshot of the implementation, progress and outcomes of five initiatives supported by the Nutrition Fund in primary and secondary schools in Counties Manukau, to showcase as exemplar initiatives for other schools looking to apply for a grant from the Nutrition Fund. Further, this would lead to the development of a set of recommendations to promote the continued development and implementation Nutrition Fund supported initiatives in schools.

1.1 Background

Physical activity and nutrition have a number of interrelated and complex implications for children’s physiological, behavioural, psychological and social health and wellbeing, all of which can influence their ‘opportunity to learn’ (Clinton, Rensford & Willing, 2007). This combined with current trends in obesity has resulted in a high level of interest within New Zealand in increasing efforts to improve the health and wellbeing of children. Many children and young people in New Zealand are suffering from the effects of poor nutrition which can severely affect children’s brain development, brain function, behaviour, psychological and social functioning, and, ultimately, their opportunity to learn (Clinton, et al. 2007). These trends are worrying as poor diet is a key risk factor for obesity, as is physical inactivity (MOH, 2003). In New Zealand, one third of all children are either overweight (21%) or obese (10%; Ministry of Health, 2003), with our Maori and Pacific peoples the most affected. Further to this, overweight and obesity are major risk factors for most serious chronic diseases, including Type II Diabetes, cardiovascular disease, stroke and common cancers.

1.2 Nutrition Fund

Given the aforementioned trends and the documented links between the health and wellbeing of children and their opportunity to learn, targeting the school environment has been identified as a key priority area by the Ministry of Health, under the Healthy Eating Healthy Action – Oranga Kai – Oranga Pumau (HEHA) strategy. In Counties Manukau, activity is being driven through initiatives such as Let’s Beat Diabetes and the Nutrition Fund, reflecting the increased focus on providing students with access to environments that support healthy food choices to increase their opportunity to learn.

The Nutrition Fund for Counties Manukau offers \$268,000 per year to support professional development for schools and ECEs services so they can better *establish sustainable healthy eating environments* where children and young people are *offered only healthy food and drink*. The Nutrition Fund also aims to encourage children and young people to make their own healthy choices. The initiative is designed to encourage early childhood education services and schools to think about their whole school environment, work alongside other schools, and involve students in planning and decision-making. The Nutrition Fund builds on existing initiatives in the school and early childhood settings including Health Promoting Schools and Fruit in Schools.

Applications to the Nutrition Fund are assessed against criteria developed nationally and interpreted locally for the Nutrition Fund. In Counties Manukau, an inter-sectoral Nutrition Funding panel (representing the school and ECEs sectors health and nutrition interests) considers applications according to established criteria. In Counties Manukau the funding priority is given to initiatives that:

- Involve high need ECES and/or schools (i.e., reducing inequalities in health outcomes by prioritising Maaori, Pacific and low-income population groups)
- Support sustainable change;
- Demonstrate links to the community;
- Have a whole ECES/ school community approach;
- Are student-led;
- Are innovative; and
- Support and promote the Food and Beverage Classification System.

2. Evaluation Methods

A mixed method design was selected for the evaluation. Mixed methods inquiry deliberately pulls together different research methods designed to collect different kinds of information; it utilises both qualitative and quantitative methods of data collection and analysis in parallel (Greene & Caracelli, 1997). This enables the consistency of the findings obtained through different methods to be tested and clarified ensuring that the richness and detail of an evaluation are enhanced.

Selecting Schools

The five schools that participated in this evaluation were selected by the DHB to reflect the different types of Nutrition Fund initiatives, at different stages of implementation within different school types (Table 1).

Table 1: Participating Schools

School	School Type	Type of Initiative	Grant Received	Nutrition Fund Supported	Initiative Status
Primary School A	Roll: 503 Decile: One	Purpose-Built Lunchroom	\$5220	Kitchen utensils	Completed
Primary School B	Roll: 260 Decile: One	Vegetable Garden and Mini Orchard	\$1850	Plants, gardening equipment, fertiliser	Being Implemented
Primary School C	Roll: 921 Decile: One	Vegetable Garden	\$8040	Timber, plants, fertiliser and topsoil, labour	In Development
Intermediate School A	Roll: 256 Decile: One	Upgrade of Water Fountains	\$7500	Pedestal fountains, drinking taps, hose tap, and associated installation costs	Completed
Senior School A	Roll: 692 Decile: One	Breakfast Club, Nutrition Education and Edible Garden.	\$5000	Utensils and equipment	Being Implemented

2.1 Data Collection

In line with a mixed methods approach a variety of data sources were used to inform the evaluation. Where schools had already received and implemented the Nutrition Fund, the evaluation team was dependent on existing data, as well as student and teacher experiences and perceptions of the implementation and impact of the Nutrition Fund in their school. Where schools had not yet implemented the grant, the evaluation team supported the schools to collect baseline data.

The evaluation team utilised a variety of different data sets that the schools had collected over the course of the initiative. These included survey data, food sales data, student participation data, as well as invoices, photographs and other documentation which detailed the progress of the initiative over time.

To supplement the existing data, the evaluation team developed data collection tools in consultation with the schools to support the collection of additional data. This included a survey to identify children's awareness of common fruit and vegetables. Further, the evaluation team conducted a number of site visits to observe discussions led by the student health councils and project leaders regarding their Nutrition Fund project, and to note any changes in the progress of the initiative.

2.2 Data Analysis

Any existing documentation outlining each school's Nutrition Fund initiative, its implementation, its progress and outcomes that was made available to the evaluation team was analysed by way of a documentary analysis, a systematic process that can identify the individuals and activities involved in an initiative (Garman, 1982). Documentary analysis was used in the current evaluation to identify recurring themes across the five schools. Numerical data sources, such as results from the baseline survey and food order data, were analysed using simple descriptive statistics.

A full description of the evaluation methods and analysis are provided in the full evaluation report (Clinton, Appleton and Cairns, 2008; Appendix 1).

3. Results

3.1 Primary School A

SCHOOL PROFILE	
School Type	Coeducational state primary school
Roll	503 pupils
Decile	One
Ethnic Makeup	Nearly two thirds Pasifika, one third Māori, and the remainder other ethnicities

3.1.1 Initiative: Outfitting a Purpose-built Lunchroom

Primary School A used the Nutrition Fund grant to outfit a purpose-built lunchroom with equipment to support more healthy lunch provision in the school. The grant covered the cost of kitchen utensils for the new lunchroom.

The lunchroom allows for the on-site preparation of a wider variety of healthy lunch foods; the availability of which is especially important given the close proximity of a dairy and takeaway bar, and the high proportion of students who purchase their lunch at school each day (approximately one fifth of students). It was envisaged that by preparing the food on-site, costs could be kept to a minimum, and the menu could be modified to ensure it contained the affordable, healthy options that whānau and students had indicated they would like to see.

3.1.2 Initiative Development

Some of the key issues that identified the need for the initiative included:

- The large number of children who ordered unhealthy food from school for lunch.
- The close proximity of a dairy and takeaway bar to the school (just outside the school gates).

The school underwent an intensive consultation process in order to determine what new foods should be offered on the new lunch menu. This included:

- A student and parent survey.
- A tasting session with student council.

3.1.2.1 Student and parent survey

The school conducted a survey, designed and collated by members of the student council. This survey was distributed to the entire student body and to parents. Parents and whānau were included in the consultation process; this was in recognition of parents and whānau

responses to a previous ban on pies without consultation. The project leader suggested that a graduated approach, where less healthy foods are slowly phased out (as exemplified by their lunchroom initiative), could prove more effective and acceptable.

3.1.2.2 Tasting session with student council

A tasting session was also held with the student council. Students sampled healthier lunch options, including muesli bars, muffins, yoghurt, pizza bread, potato top pies, and fruit drinks, and then rated the foods according to which ones tasted the best. Further, when making their selections for the lunch menu, the children were encouraged to think about appropriate portion sizes, cost-effectiveness and environmentally-friendly packaging.

3.1.3 Initiative Implementation

The school received the grant at the end of 2007. The funds were used to purchase utensils and equipment such as cutlery, knives, microwaves, chopping boards, a hot plate, and commercial-grade saucepans, bake ware and storage containers. In addition to the Nutrition Fund grant, the school applied to the Lion foundation for whiteware to equip the new lunchroom, while the capital costs of the construction and wages for the lunchroom employee have been covered by the school.

3.1.3.1 Student Leadership

In keeping with the school's focus on student-centred practice, there was a high level of student involvement in the project from the outset. The project team, which consists of student councillors and staff, have worked alongside the DHB with the support and guidance of Health Promoting Schools representatives and Public Health Nurses throughout the development and implementation of the initiative.

On Thursday 6th March the new lunch menu was made available to students, with parents/whānau notified of the changes through the school newsletter. This involvement of parents/whānau and students was considered to be critical to the success of the changes to the school menu.

3.1.3.2 Sustainability

The project team have taken steps to ensure the sustainability of the initiative by providing for ongoing professional development for staff, ongoing health education and promotion within the classroom, as well as ongoing education for parents and whānau in the form of information that goes out in newsletters, is displayed on notice boards around the school, and is conveyed via presentations to students and parents.

3.1.4 Preliminary Outcomes

This section explores the outcomes of the Nutrition Fund supported initiative using data provided by the school, as well as additional data collected to identify the perceptions and experiences of the teachers and students involved with the project.

The implementation of the Nutrition fund at Primary School A has resulted in:

- Increased access to a wide range of healthier lunch options, some of which are prepared on-site in the purpose-built lunchroom.
- A new lunch menu that complies with the new Food and Nutrition guidelines, although the pricing of some foods was considered to be slightly too expensive by some students.
- A reduction in the amount of plastic that is used to wrap the foods, to support the school's environmental policy.

3.1.4.1 Analysis of lunch orders

An analysis of the lunch orders showed that:

- The most popular food item, of those available from Monday-Thursday was the Hawaiian Pizza Bread and Go Gurt combination, followed by Juice, and Filled Rolls.
- The least popular items were the Chicken Wrap and Muffin combination and the Lamb Roti and Go Gurt combination.
- On Fridays, children have the option of purchasing a more limited range of food items. The food item of the least nutritional value, the Hot Dog, was the preferred lunch item on a Friday.

These findings suggest that limiting the unhealthy options on school lunch menus can encourage the purchase of healthier choices, although increasing children's knowledge and awareness of why they should choose a healthier option should also not be overlooked.

3.1.4.2 Teacher Feedback

Key comments from staff involved with the initiative identified the following barriers and enablers to implementation:

- Student and whanau engagement is critical to success
- Foods sold in the lunchroom need to be not only healthy, but also the kinds of foods that students are prepared to eat
- Changes need to be implemented gradually
- Education for staff and students is important
- Having staff as role models supports change in behaviours
- Identifying foods that are healthy and popular with students should be an ongoing process.
- Changes in staff in the lunchroom were noted to have caused disruption to the implementation of the initiative.

3.1.4.3 Student Feedback

The key feedback from members of the student council identified the following key outcomes for students:

- Students are more aware of the elements that make up a healthy lunchbox
- Senior students are acting as role models for the younger students in the school by making healthier food choices.

Key enablers that supported the implementation of the initiative included:

- Teamwork amongst students
- Teacher support
- Committed and capable lunch-lady.

The students said they would recommend having a healthy lunchroom to other schools because:

- It provides students with the option to be healthy;
- It is cost effective;
- It is a clean, hygienic food environment;
- Students can buy tasty, healthy food from school instead of the dairy; and
- It has the potential to lead to a healthier, more active student body.

3.1.5 Future Direction

- The next step for Primary School A is to expand the range of items that are available from the lunchroom and to buy in fewer items prepared off-site.

3.1.6 Recommendations for Future Evaluation

- A reanalysis of food order data at a later stage may be beneficial to identify whether students' preferences for healthy choices are being impacted by the new lunch menu.
- A survey of parents and students at a later date should be used to identify the extent to which this learning has been transferred to parents and whānau, and the wider community, and whether this learning reliably translates into behaviour change.

3.2 Primary School B

SCHOOL PROFILE	
School Type	Coeducational state primary school
Roll	260 pupils
Decile	One
Ethnic Makeup	26% Maori, 49% Pacific, 25% NZ European or other ethnicity

3.2.1 Initiative: ‘The Good Food Garden’

Primary School B used the Nutrition Fund grant to establish vegetable gardens and a mini-orchard in the school. The aim was to increase children’s exposure to healthy foods, giving the student’s and their families an opportunity to taste fruit and vegetables which they might not have tasted before. It was anticipated that these tasting sessions would encourage families to prepare and eat a wider range of healthier foods at home on a regular basis.

Further, it was anticipated that teachers would incorporate lessons into their classroom programmes in order to build students’ confidence in their ability to grow and prepare healthy foods. The lessons included how to build and maintain gardens, as well as how to prepare the foods that are grown in the garden.

3.2.2 Initiative Development

Some of the key issues that identified the need for the initiative included the following:

- Through participation in the Fruit in Schools programme, it became evident that many of the students had not tasted certain fruits and vegetables before.
- The school noted that a large number of students were coming to school with no lunch. The school saw the vegetable garden and the mini orchard as a means of providing healthy lunches to those children who would otherwise go without.
- A health promotion survey was conducted that indicated that most parents/whanau were concerned with their child’s diet, and would like to see the provision of greater education around healthy eating.

The school recognised that the initiative needed to target not only the students, but the whole school community, parents and wider whānau in order to have a significant and sustainable impact on practices and behaviour around nutrition.

3.2.3 Initiative Implementation

The school received the grant at the end of 2007. Although it was initially envisaged that the construction of the garden and mini orchard would begin in early 2008, this was delayed due to the need to raise funds to provide for the construction of the garden (for example, the

raising of the vegetable garden including edging, fill and labour costs). An opportunity arose during the holidays between school terms one and two, which meant that the student body were unable to be involved with this aspect of the initiative as planned.

3.2.3.1 Student Leadership

Although the students were not involved in the building of the vegetable garden, they were involved in the planting process, as were staff and whānau. The high level of student and staff involvement from the outset was designed to secure the support of the school community and maximise their sense of ownership of the garden/ mini orchard. Prior to the planting of the gardens, the students had 2 weeks of lessons around growing produce and active maintenance of gardens, as well as how to prepare the foods that are cultivated in the gardens. On World Environment Day, the school planted their vegetables; each class (12 in total) chose a vegetable to plant. Parents and whānau were also invited to participate. During this ceremony the garden was blessed by the schools Kaumatua.

Updates are published in the school newsletters to promote ongoing whānau engagement. Parents will also be consulted for advice based on their own horticultural experiences, and will be invited to attend Home School Partnership meetings regarding the Good Food Garden.

3.2.3.2 Sustainability

During the planning days for 2008, staff were consulted on how to incorporate the key learning objectives for the project into the classroom programmes. It was intended that the learnings from the project be covered by all curriculum areas, so that the learning is ongoing and occurring at a deeper level. There is a committee dedicated to the initiative that has a representative from each classroom, as well as a teacher from each syndicate, so that the junior, middle and senior schools each have a point of contact and someone to push the project along. This whole-school approach is thought to enhance the sustainability of the initiative.

3.2.4 Preliminary Outcomes

This section explores the outcomes of the Nutrition Fund supported initiative using data provided by the school, as well as additional data collected to identify the perceptions and experiences of the teachers and students involved with the project.

Presented below is a selection of photographs documenting the growth of the Good Food garden mini orchard.



3.2.4.1 Teacher Feedback

According to school staff, the implementation of the Nutrition fund at Primary School B has resulted in:

- Students active involvement and engagement in maintaining the garden; monitoring the growth of their vegetables, weeding the garden, and writing in a plant diary.
- Students' engagement has supported the retention of the information and key healthy eating messages delivered alongside the initiative.
- Students' consistent involvement in the project has resulted in greater interest from students.
- Staff engagement and enthusiasm for the project supported implementation.
- Parents/whānau had a considerable wealth of gardening expertise that can support the school.
- Support with application for funding from the Nutrition Fund Project manager at the DHB also helped make the initial idea a reality.
- Implementation was slowed down by the time it took to get the garden beds set up, and as such it may be necessary to procure some additional funding at a later stage.
- These delays also hindered initial student engagement in the implementation of the initiative.

3.2.4.2 Baseline survey

The students completed a survey assessing their knowledge of vegetables, gardening and more general nutrition. This will act as a baseline that will allow for a comparison of students' knowledge when the garden is well-established.

Access to a Vegetable Garden

- Of those students surveyed (n=201), 73% reported that at least one member of their extended whānau had a vegetable garden (the gardens most commonly belonged to grandparents, Mum/Dad, and Aunty/Uncle).

Growing Plants

- Students were given a list of six elements (some correct and some incorrect) and were asked to indicate which of these were essential for plant growth.
- 52% of students could correctly identify the three listed elements that are important for plant growth (water, sunlight and soil), 21% correctly identified one element, and a further 19% could identify just one element. 7% were not able to correctly identify an element necessary for plant growth. This knowledge varied with age, with older students (aged 9-13 years) having a more comprehensive knowledge of these requirements than younger students (aged 4-9 years).

Knowledge of and Preferences for Vegetables

- Most students reported that they preferred to eat vegetables in the form of sandwiches, salads and soups (46%, 44% and 55% respectively). This was followed by roast and boiled vegetables, stir-fried vegetables, raw vegetables, and vegetable quiche.
- On average, students were able to correctly identify approximately 6 vegetables out of a list of 12 given pictures, although again this knowledge varied as a function of age, with older students more adept than those younger students.

Knowledge of Main Food Groups

- Children were asked how many servings of each of the four groups would make up a healthy diet. Although students appeared to have a reasonable knowledge of the recommended number of servings of fruit and vegetables per day, they had more difficulty with the three other main food groups.

The survey highlighted some interesting findings among the students and lends support to the schools drive to increase their students' knowledge and awareness of healthier food choices. It will be particularly interesting to repeat the survey and identify whether the initiative has impacted on children's gardening and nutrition knowledge.

3.2.5 Future Direction

- The school is currently developing a long term plan for the garden, and are evaluating the feasibility of building an on-site test kitchen to prepare the produce that is grown.
- The sustainability of the initiative has been prioritised throughout the development and implementation processes; there is a committee dedicated to its ongoing development and maintenance, with representation from staff and students from all syndicates.

3.2.6 Recommendations for Future Evaluation

- Given the early stage of the initiative, only baseline data was collected to inform this evaluation. A follow-up survey with students should be used to identify whether the initiative has impacted on children's gardening and nutrition knowledge.
- The extent to which the initiative has reached parents/whānau, and the wider community should also be further explored.

3.3 Primary School C

SCHOOL PROFILE	
School Type	Coeducational state primary school
Roll	921 pupils
Decile	One
Ethnic Makeup	40.2% Pasifika, 52.3% Māori, 2.4% NZ European, 5.1% other ethnicities

3.3.1 Initiative: Establishing Vegetable Gardens

Primary School C intends to use the Nutrition Fund grant to establish vegetable gardens throughout the school (one per classroom). In 2007, the school received a grant of \$600 from the Manukau City Council which was used to establish 3 large vegetable gardens. These gardens were considered a huge success, with children collecting and preparing vegetables from these gardens to cook in the classroom. The school intends to use the Nutrition Fund grant to establish vegetable gardens for each classroom within the school.

The idea behind this initiative is that through students' participation throughout the development and implementation of the project, students' awareness of, and exposure to, different types of vegetables (and healthy eating in general) will be increased, and that these learnings and skills will translate to the home setting where they can be shared with whānau.

3.3.2 Initiative Development

In 2008, a core group of staff involved with the Health Promoting Schools programme and the student health team, decided to prioritise nutrition within the school community. Given the success of the previously established gardens, the school decided to apply for funding from the Nutrition Fund to further extend the vegetable garden initiative so that each classroom within the school (11 in total), is able to cultivate their own garden box.

The Nutrition Fund grant provided for the following items:

- Timber for garden boxes;
- Fertiliser and topsoil;
- Plants and bulbs; and
- Labour.

3.3.3 Initiative Implementation

The school received the grant on the 24 June 2008. Consequently, at the time of this evaluation, implementation of the initiative had not yet begun. Teachers comments indicated

that, in terms of planned implementation, the three large gardens that were established previously are to be divided in half so that each of these gardens will cater to two classrooms.

3.3.3.1 Student Leadership

It is envisaged that the project will be entirely student-led, with students involved in each of the following stages of development:

- Developing an action plan- where will the gardens be planted? When is the optimum time to plant?
- Selecting which vegetables will be planted
- Learning what is required to build and maintain a vegetable garden
- Sourcing materials and building and painting the structures to house the gardens
- Planting and growing produce
- Tending the gardens
- Preparing and tasting vegetables in the classroom which have been grown in the school vegetable gardens (e.g. making sandwiches or filled rolls from the vegetables in the gardens).

Parents and whānau are also to be involved with the project as:

- Some produce will go home with the students allowing families to prepare and taste a wide range of vegetables;
- Cooking demonstrations will be given at school; and
- Reports and updates will go out to parents via the school newsletter.

It is intended that involving parents and whānau throughout the process will encourage them to uptake the key messages about healthy eating, and promote ongoing whānau engagement with respect to their child's health and wellbeing.

Further, it is intended that teachers would link the lessons on how to grow produce and active maintenance of gardens, as well as how to prepare the foods that are grown in the garden, into their classroom programmes within the science, mathematics, writing and health curriculum areas. It is hoped that this knowledge base and skill set will then trickle out to students' wider communities.

3.3.3.2 Sustainability

It is envisaged that regular evaluations will be conducted by the school at the end of each term to monitor the progress of the gardens and the students' involvement in the maintenance of these gardens, with a view to enhancing the sustainability of this initiative. The school will endeavour to share the success of the initiative with the wider community via contact with other schools, local newspapers, school newsletters, and sharing their experiences on local radio stations.

3.3.4 Preliminary Outcomes

This section explores students' baseline knowledge of the concepts related to Primary School C's Nutrition Fund supported initiative using data provided by the school, as well as additional data collected to identify the initial perceptions and experiences of the teachers and students involved with the project.

3.3.4.1 Baseline survey

In order to assess the impact of the gardens on student knowledge of vegetables and gardening, a survey was distributed to students from each year level within the school prior to the implementation of the garden. This provided the evaluation team with a measure of the students' baseline knowledge, and will allow for an assessment of change in children's knowledge after implementation of the Nutrition Fund and the wider school approach.

Access to a Vegetable Garden

- Of those students surveyed, 71% reported that at least one member of their extended whānau had a vegetable garden (belonging most commonly to grandparents, Mum/Dad, and Aunty/Uncle)

Growing Plants

- Students were given a list of six elements (some correct and some incorrect) and were asked to indicate which of these were essential for plant growth.
- 74% of students could correctly identify the three listed elements (water, sunlight and soil), 12% correctly identified two elements, and a further 12% could identify just one element. 2% were not able to correctly identify an element necessary for plant growth. This knowledge varied with age with older students (aged 9-13 years) having a more comprehensive knowledge of these requirements than younger students (aged 4-9 years).

Knowledge of and Preferences for Vegetables

- Most students reported that they preferred to eat vegetables in the form of salads, soups and sandwiches (55%, 53% and 53% respectively). This was followed by stir-fried vegetables, roast vegetables, boiled vegetables, raw vegetables, and vegetable quiche.
- On average, students were able to correctly identify approximately 8 vegetables out of a list of 12 pictures, although again this knowledge varied as a function of age, with older students more adept than those younger students.

Knowledge of Main Food Groups

- Children were asked how many servings of each of the four groups would make up a healthy diet. Although students appeared to have a reasonable knowledge of the recommended number of servings of fruit and vegetables per day, they had more difficulty with the three other main food groups.

The survey highlighted some interesting findings among the students and lends support to the schools drive to increase their students' knowledge and awareness of healthier food choices.

3.3.5 Future Direction

- The early stage of this initiative means that the school has a number of strategies designed to support the implementation of the gardens.
- It is envisaged that the implementation of the initiative will be well supported through the student leadership and engagement, which is a key focus of this initiative.

3.3.6 Recommendations for Future Evaluation

- Given the early stage of the initiative, only baseline data was collected to inform this evaluation. A survey of students at a later date should be used to identify any changes in gardening and nutrition knowledge.
- As the initiative is implemented, the engagement of parents/whānau and the wider community should also be explored.
- The strong student leadership component of this initiative will also warrant evaluation at a later stage in the implementation of the initiative.

3.4 Intermediate School A

SCHOOL PROFILE	
School Type	Coeducational state intermediate school
Roll	256 pupils
Decile	One
Ethnic Makeup	14.5% Pasifika, 64.1% Māori, 15.2% NZ European, 6.2% other ethnicities

3.4.1 Initiative: Upgrading the School's Water Fountains

Intermediate School A used the Nutrition Fund grant to upgrade the school's water fountains, with the intention of encouraging students to drink more water, more frequently throughout the school day.

The Nutrition Fund grant covered the costs of replacing the remaining fountains, including the supply of the pedestal fountains, drinking taps, and a hose tap, and the associated installation costs.

3.4.2 Initiative Development

This initiative developed out of a student council project; the student council noted that the school did not have enough working water fountains to cater for the whole school. In November 2006, it was noted that only seven fountains on the school grounds were working. Comments from teachers also noted that some of the existing pedestal fountains were broken (e.g. mechanisms had been removed which are now obsolete or expensive to replace); some were not functioning properly which lead to hygiene concerns (e.g. the taps leaked causing students to place their mouths over tap to avoid spillage); and others were rusty, impacting negatively on the quality of the water they provided.

Data from a survey conducted by the student council identified the following issues in terms of students' water consumption:

- 130 out of the 230 students surveyed (over 50%) reported having had nothing to drink at all that day, from the school fountains or otherwise.
- Students did not like drinking from the water fountains, because the water that came out was dirty and unpleasant tasting.

Accordingly, the council then took several steps, as outlined below:

- Presented the Board of Trustees with the issue, who could not fund the upgrade;
- Obtained water samples from the fountains;
- Met with two water companies and Frucor, to discuss fountain options as well as beverage and bottled water options;

- Visited three other schools to look at their school fountains and discuss these with each schools respective caretaker;
- Weighed the positives and negatives of the various fountain options;
- Requested a quotation for the total cost (fountains and installation) of the upgrade; and
- Prepared a proposal to submit to the Nutrition Fund.

3.4.3 Initiative Implementation

The school, after careful consultation, decided upon a company to supply and install the fountains, citing the following reasons:

- The company came recommended, and has extensive experience in supplying schools after frequent jobs repairing sub-standard water fountains on school grounds;
- The fountains are vandal-proof;
- They are resistant to wear-and-tear; and
- They have features designed to comply with health and safety standards.

The Nutrition Fund grant was received in late 2007, and the fountains installed shortly thereafter.

3.4.4 Preliminary Outcomes

This section explores the outcomes of the Nutrition Fund supported initiative using data provided by the school, as well as additional data collected to identify the perceptions and experiences of the teachers and students involved with the project. It is important to note that the project was developed and led by the student council in 2006/2007.

As a result of the Nutrition Fund supported initiative:

- Intermediate School A is now able to supply clean, fresh drinking water to its students.
- In addition, children who attend Saturday morning Music School, and other visitors to the school also have access to fresh water.
- Teacher comments also indicated that the new positioning of the fountains nearer to classrooms has also improved classroom management as students do not need to walk as far to fill their water bottles.
- Results from a survey conducted by the student council with the teachers from Intermediate School A estimated that 70% of the students now use the drinking fountains.
- Teachers report that there has been a significant increase in the number of students' regularly drinking water at school since these fountains were upgraded.

3.4.5 Future Direction

- A site visit and inspection of the new fountains by a member of the evaluation team revealed that the fountains appear as-new some months post-installation, and provide water that is palatable. Demonstrating support for the sustainability of the initiative.

- However, it is not clear from the information that was made available to the evaluation team how water consumption is promoted to students.

3.4.6 Recommendations for Future Evaluation

- Further evaluation at a later stage would be useful to identify how water intake is encouraged by the school. A follow-up survey should have also asked students rather than teachers about their water consumption and this is something that should be considered by future evaluations. The snap-shot focus of this evaluation, meant that further data collection was not possible.

3.5 Senior School A

SCHOOL PROFILE	
School Type	Coeducational state secondary school
Roll	692 pupils
Decile	One
Ethnic Makeup	78% Pasifika, 14% Māori, 1% NZ European, 7% other ethnicities

3.5.1 Initiative: Establishing a Breakfast Club

The initiative for Senior School A was a student led breakfast club project, nutrition education and training for parents and students from a dietician (using a train-the-trainer model of delivery), and the establishment of an edible garden.

3.5.2 Initiative Development

The school identified the need for this initiative within its school community by conducting a survey. The results of the survey indicated that a large proportion of the student body were not eating breakfast prior to arriving at school, with reasons cited including running out of time to prepare breakfast and/or being too busy in the mornings. Most students purchased a pie and fizzy drink en route to school. Students reported that they would be prepared to come to school earlier to participate in a breakfast club, and this was identified as a means of supporting the students to get the best out of the school day.

The Student Health Council was very involved in the initiative from the outset. Prior to the initiatives conception, they surveyed staff and students to ascertain what kinds of things they wanted to see being implemented in the school. This consultative process was designed to create interest, buy-in, enthusiasm, and expand student skills in relation to strategic planning and communication.

Students from Year 9 completing the Health Curriculum subjects were also involved in generating ideas for health-based initiatives for the school.

3.5.3 Initiative Implementation

3.5.3.1 Establishing a Breakfast Club

To date, a portion of the funds have been used to purchase utensils, equipment and resources to support the ongoing running of a breakfast club. This included bowls, plates, tea towels, serving utensils, table cloths, storage containers, fruit baskets, toasters, cutlery and knives,

glasses and electric jugs. The Sanitarium Food Company also agreed to supply the school with a year's supply of breakfast cereals. The costs of providing staff time for weekly training, meetings and support with the student health council, and the development of a sheltered student seating area between the cafeteria and the gymnasium have been covered by the school.

At the end of 2007 the breakfast club was still in the concept stage; however by the beginning of 2008 the Student Health Council was meeting regularly to progress the initiative further. The breakfast clubs were promoted in the school notices, and sports teams were also invited to attend. The clubs run from 6.50am until approximately 7.50am. The clubs originally ran on Tuesdays and Thursdays, however the Thursday club was discontinued after week seven due to insufficient attendance. A typical club session begins with students and staff getting active together, and then celebrating with healthy breakfast foods. There is an emphasis on social connection and fun as well as physical activity and nutrition. The breakfast clubs also serve as a vehicle for celebrating positive changes.

The initiative was supported by a number of different groups, both within and external to the school community. The Student Health Council held weekly meetings with project staff to ensure a smooth and coordinated roll out of the project. During these meetings various obstacles to the project were discussed, including procuring sufficient sponsorship, preparing the activities, and securing a venue, and corresponding solutions brainstormed. Southern Cross was also involved in guiding the students with the initiative, and the students commented that this input had been highly valuable.

3.5.3.2 Nutrition Education Sessions

The funding received was also designated to support nutrition education sessions for students and parents, using a "train-the-trainer" model to provide for the sustainability of the initiative. However, running these sessions within the stated timeframe did not prove to be feasible due to over-commitment of both students and other sources of support within the school. A nutritionist is scheduled to support selected students to deliver these sessions in the spring school holidays.

3.5.3.3 Establishing an Edible Garden

The school had also applied for funding to establish an edible garden to increase students' awareness and skills with regards to garden planning, identifying differences between natural and artificial foods, and growing planting and identifying fruits and vegetables. However despite the enthusiasm of the students, as with the aforementioned initiative the establishment of a vegetable garden within the stated timeframe did not prove to be feasible due to over-commitment of both students and other sources of support within the school. As such, this initiative is still in the planning stages. More recently the school caretaker has expressed interest in supporting this initiative.

3.5.4 Preliminary Outcomes

This section explores the outcomes of the Nutrition Fund supported initiative using data provided by the school, as well as additional data collected to identify the perceptions and experiences of the teachers and students involved with the project. Given that the nutrition education sessions and edible garden initiatives are still in the planning stages, outcomes are only reported for the breakfast club initiative.

3.5.4.1 Participation Data

There was some variation in student participation at the breakfast club over the ten week period evaluated; participation started out reasonably high, peaked in week four, and then slowly began to decline in the weeks that followed. Consultation with the project leader revealed that this drop in participation at breakfast clubs was largely a function of the onset of winter; at this time in the morning it is cold, dark and wet and the students were thus discouraged from coming along to the breakfast club. The student health council subsequently reviewed the delivery of the clubs, and decided to postpone the recommencement of the clubs until the onset of spring at the beginning of Term 3. Additional sponsorship has been secured, and the students are confident that there will be an equally positive response to the clubs as was seen in the first few weeks of implementation.

3.5.4.2 Student Feedback

The students of the Student Health Council identified a number of benefits derived from participation in the breakfast clubs. These included:

- Increased energy levels and fitness;
- Improved concentration in class;
- Encouragement to step outside the students comfort zone in a safe environment;
- The social aspect of the clubs;
- The clubs have helped to forge and strengthen student-teacher and peer relationships;
- The clubs demonstrate to their community the schools commitment to being healthy; and
- Getting students used to rising early in the mornings was seen as a positive step in preparing them for employment, particularly for the Year 13's.

In addition, all students reported that running the club gives the students a good feeling, because they are helping not only themselves, but also the school and wider community.

3.5.5 Future Direction

- The students identified the following as outcomes they would like to see occurring in the near future as a direct result of the breakfast clubs:
 - Having a ripple-like impact on the wider community;
 - Seeing an increase in participation numbers;
 - Having compulsory attendance at breakfast clubs, 5 days a week;

- Other schools using the model and applying it within their school community; and
 - Having the breakfast club sustained over an extended period of time.
- To achieve the above the students suggested that it would be important to involve the younger students, so that when key people involved with the project leave the school the clubs are able to continue to function in their absence. Consequently, it was suggested that juniors (Year 9 & 10) should be involved in the health council, to ensure the sustainability of the clubs, long-term.
- The student council will continue to link regularly with other schools, and intends to share the success of the breakfast club at Senior School A with these schools, and encourage them to adopt similar programs.
- The school is looking at sourcing additional adult support to progress the edible garden and nutrition education initiatives.

3.5.6 Recommendations for Future Evaluation

- Further evaluation at a later stage in the initiative will be beneficial to identify the sustainability of the initiative, as well as the challenges and successes of implementing the garden and nutrition education initiatives.

4. Discussion and Recommendations

This section presents an overview of the key findings identified in this evaluation, followed by a set of key recommendations based on these findings.

4.1 Summary of Key Findings

The key findings of the present evaluation across the five schools are presented under four key headings as follows: Need for Nutrition Fund supported initiatives; Consultation and whānau engagement; Implementation; and Outcomes.

Need for Nutrition Fund supported initiatives

The evaluation highlighted the need that is within schools for Nutrition Fund supported initiatives such as those that have been profiled in this evaluation, as well as ongoing evaluation for students and parents. This was evident in:

- The lack of knowledge among students and parents regarding nutrition
- The data which suggested that students' consumption of healthy foods and water was inadequate
- Surveys with the students also suggested that while the 5+ fruit and vegetables per day message appears to be getting through to students, this knowledge does not appear to be reflected in some students food choices.
- When identifying the need for nutrition-related initiatives within schools, it is important to prioritise; some schools were overly ambitious in what they set out to achieve given the level of internal support that was available to support the development and implementation processes. Enthusiasm on behalf of the students needs to be balanced with realism as to what can be achieved within the given time frame and with the resources and support available within the school.
- It is also important to note that all of those schools considered in this evaluation are located in areas of high deprivation; given that cost is a big driver of food choice, this warrants further investigation.

Consultation and whānau engagement

The evaluation also highlighted the need for an extensive consultative process from the outset, with both students and parents/whānau, to support implementation of the initiatives.

- Students and staff have embraced the various Nutrition Fund initiatives, with a demonstrably high level of ownership of the more successful projects among students and staff.
- The various initiatives appeared to have had relatively less success, however, in engaging with whānau, and securing their commitment to participate in the development and implementation process.
- Engagement of parent/whānau, while a challenge, is an important factor for success. Without this, the messages that students receive in relation to food and nutrition in the home and school settings are not consistent.

- The evaluation also highlighted the potential to consider extended family such as grandparents who were most likely to have vegetable gardens and may have more time to spend teaching children if retired.

Implementation

The evaluation highlighted several factors that enabled or supported the implementation of Nutrition Fund supported initiatives, and several factors that hindered implementation, as follows:

- Key enablers to the successful implementation of initiatives that were identified included:
 - Guidance and support from the DHB through Health Promoting Schools and public health nurses;
 - A high level of student involvement in the project;
 - Planning over time and setting goalposts;
 - Consultation with parents and whānau;
 - Gradual change;
 - Identifying choices or modes of implementation that suit students' tastes and lifestyles;
 - Support of the school principal and staff;
 - Drive, commitment and enthusiasm from all those involved in the project; and
 - A whole-school approach.
- Key barriers to the successful implementation of initiatives that were identified included:
 - Limited whānau engagement;
 - Financial constraints;
 - Difficulties in securing and financing adequate facilities/resources and supervisory support;
 - Unforeseen circumstances e.g. staff issues and delays in getting things set up; and
 - Competing (curricular) demands.

Outcomes

The evaluation highlighted the following key outcomes from the five Nutrition Fund supported initiatives selected for this evaluation. These initiatives have resulted in:

- Increased availability of healthy food choices in schools
- A high level of student engagement, which in turn suggests an impact on student knowledge and attitudes (e.g. a school with 2 gardens already in place at the time of the evaluation had much higher baseline scores than a school with gardens yet to produce vegetables)
- Schools being able to further their vision for a healthy school environment that supports the notion of providing students with the greatest opportunity to learn
- Many schools linked the funding application process and identifying need for an initiative to student projects, and thus supported the development of other student skills (e.g. numeracy, literacy, leadership)
- Given the early stage of many of the initiatives presented in this report at the time of the evaluation, further evaluation at a later date will be required to document:
 - The extent to which the learnings of the project are taken on-board by students and retained over time;

- The extent to which these learnings are shared with whānau; and
- The extent to which these learnings affect attitudes and behaviours across settings.
- Further evaluation would also be useful to explore sustainability of initiatives as the current evaluation is slightly limited due to lack of outcome data available from some schools.

4.2 Recommendations for Engaging in School-Based Health Initiatives

Based on the evaluation findings the following recommendations are made:

- Prior to the application process, it is important to ensure adequate internal support/buy-in within the school.
- A whole school approach appears to be crucial to the success and sustainability of an initiative.
- Consultation with students and parents/whanau is vital. Initiatives that are student led and supported from home appear to have the greatest traction in terms of implementation and uptake. Subsequently,
 - Projects should be student-driven with a high level of student, staff and, importantly, whānau engagement, and to external agencies from the outset.
 - Initiatives should seek to engage whanau, including extended whanau such as grandparents.
- When identifying the need for nutrition-related initiatives within schools, it is important to prioritise; student/school enthusiasm needs to be balanced with the realities of what can be achieved within the available resources and timeframes. This should reduce burden and burnout of staff and students supporting implementation.
- Nutrition education should be an ongoing process for both students and parents to support engagement in the schools initiatives.
- Change, particularly to food supplies, should be gradually introduced.
- Initiatives should be linked to the curriculum and development of other student skills.
- Communication between schools that are developing or implementing Nutrition Fund initiatives should be encouraged. This could identify models that work, and ensure that the expertise is shared across the school community, perhaps through Nutrition Fund Newsletters.
- The Nutrition Fund administration should further support schools by providing clear guidance as to what is expected of them throughout the process, particularly in relation to evaluation, reporting and feedback required. This process is currently being supported by the development of evaluation tools and feedback forms designed to make this process easier for the schools, and more accurate in terms of data collection.

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