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Tooty Fruity Vegie Project: process and impact evaluation report

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TOOTY FRUITY VEGIE PROJECT

PROCESS & IMPACT EVALUATION REPORT

JULY 2001

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EXECUTIVE SUMMARY

Aims

This report describes the results and implications of a comprehensive process and impact evaluation of the Tooty Fruity Vegie (TFV) project, a two year, multi-strategic health promotion program aimed at increasing fruit and vegetable consumption among primary school children in the Northern Rivers region of New South Wales. The project aimed to achieve this increase by improving:

- Children's fruit and vegetable knowledge, attitudes, access and preparation skills.
- Parents' fruit and vegetable knowledge and preparation skills and their involvement in fruit and vegetable promoting activities in the schools and elsewhere.
- Teachers' attitudes towards teaching about fruits and vegetables in schools and their skills and confidence in relation to teaching about fruits and vegetables.

Methods

Intervention

In late 1998, 10 volunteer primary schools (1174 students in total) were recruited as intervention schools and another six local primary schools (992 students in total) were recruited to act as demographically and geographically matched controls. The project, which ran during the 1999 and 2000 school years, promoted a whole-of-school approach to implementing a range of classroom, canteen, family-oriented and community-based strategies promoting fruits and vegetables. The strategies were developed from the evidence available at the time and were designed to create a supportive environment by developing, and helping schools to implement, fruit and vegetable promoting educational resources and activities for children, their parents, teachers, schools, school canteens and the broader community.

In order to maximise schools' ownership and the project's sustainability, schools were encouraged to form Project Management Teams to oversee the project's implementation in their school. Membership varied between schools but could include teacher, principal, child, parent, canteen, community nutritionist and Aboriginal Education Assistant representatives. These teams, assisted by a TFV Project Officer, were responsible for choosing the TFV strategies to be implemented in their school, organising their implementation, monitoring the response to them and modifying them as necessary. They also often initiated new, innovative strategies they found or developed themselves. Small grants of AU$270 to AU$750 per year were made available to schools, based on need, to assist with implementing TFV strategies. In line with the aim of creating a self-sustaining program, all intervention schools were encouraged and helped to recruit and train volunteers (mainly parents) to help with implementing many TFV strategies. The TFV Project Officers ensured information about successful strategies were communicated between intervention schools.

Evaluation

The TFV project had a comprehensive process, impact and outcome evaluation plan, of which only the first two are presented here. The latter involved prospective 24-hour food records at the beginning, middle and end of the project, are currently being analysed and will be reported separately.

In order to evaluate the quality of the project's implementation and its success in relation to its broad range of impact indicators, we drafted, pilot-tested, revised and administered surveys to all the children, parents, teachers, principals, volunteers and other health professionals involved in or exposed to the TFV project. In addition, a "Participation Index" was completed by each intervention school's Project Management Team to indicate the reach, frequency and quality of implementation for each key TFV strategy.

Results

Response to this process and impact evaluation was generally good, with completed surveys received from 613 parents (59%), 392 children (65%), 50 teachers (81%), 36 volunteers (34%) all 10 intervention school principals and all three other health professionals invited.

The results showed that the TFV project was well implemented, reached the vast majority of all target groups and was overwhelmingly positively received by them. The project enhanced the quality, diversity and frequency of classroom fruit and vegetable promoting activities, substantially increasing children's involvement in and enjoyment of such activities. It also increased the amount, range and utilisation of fruit and vegetable promoting materials distributed to parents, as well as increasing parental interest and involvement in and enjoyment of fruit and vegetable promoting activities in schools, and beyond. The fun, practical and hands-on nature of many of the TFV strategies, and the parental involvement, seem to have been key factors in the project's success.

The TFV project improved children's fruit and vegetable related knowledge, attitudes and preparation skills and their access to fruits and vegetables at home and in school settings and may have improved their fruit and vegetable eating intentions and actions. Analyses in progress on 24-hour food record surveys will provide more definitive evidence regarding the project's impact on fruit and vegetable intake. Attitudes and home access to fruits and vegetables appear to have improved more for girls and younger children than for boys and older children. Similarly, younger children reported more impact on their fruit and vegetable eating intentions and actions.

Although not affecting teachers' knowledge of daily recommended fruit and vegetable intakes, the TFV project may have promoted more positive attitudes towards school-based fruit and vegetable promotions and improved teachers' perceived skills and support for doing them.

Although nine of the 10 intervention schools will be continuing various TFV activities, they will likely need to have an active recruitment system to increase the proportion of parents involved in order to achieve long term sustainability. This may be achieved by encouraging current volunteers to share their positive experiences of the TFV project, offering transport and childcare and using more incentives. Similarly, some more thought is needed about how to motivate and minimise the burden on TFV Project Management Teams in schools and ensuring the project remains sufficiently relevant to enable other health professionals to participate.

Key lessons learned from the TFV project

- Support from principals and the whole-of-school approach were important in enhancing the project's implementation. The current project performed well in this area and similar techniques will be used in future implementations.
- Adequate planning, training and support for TFV activities was essential in establishing the project in schools. The current project performed well in this area.
- Providing teaching resources addressing curriculum outcome statements was important in addressing the competition with other topics for limited curriculum space. The current project performed well in this area and existing materials need only be professionally produced before future implementations. However, utilisation rates could be improved further by providing copies of all TFV resource materials to all teachers.
- Good communication with schools and support (eg: cooking equipment, teaching resources) from the TFV staff was important in achieving the overwhelmingly positive attitudes towards the project among teachers and principals. The current project performed well in this area and no changes are needed before future implementations.
- Having school TFV Project Management Teams was important for coordinating and sustaining TFV activities. Broad representation on the TFV Project Management Teams was important in maximising the range of TFV activities and minimising the burden on individual members. Some more thought is needed about how to best achieve this, in a sustainable way, before future implementations.
- Committed parent volunteers were an essential part of implementing many key TFV strategies. Although the TFV project increased parental involvement in school-based fruit and vegetable activities, there was still much room for further improvement. Better scheduling of events, improved training, more incentives and offering transport and childcare were suggestions for increasing parental involvement and should be considered further before future implementations. More efforts to improve networking among volunteers from different schools could also improve volunteer numbers and satisfaction.

- TFV activities scheduled to coincide with other school events (eg: sports days) were much better attended than those run alone. Therefore, for maximum impact, future implementations should concentrate on co-scheduling TFV activities with existing school events.
- The fun and hands-on nature of many TFV activities, such as the Kids in the Kitchen cooking classes, food tastings and gardening was important in maximising children's, parents', volunteers' and teachers' enjoyment of and satisfaction with the project. Future implementations should ensure an adequate level of these interactive activities.
- Fruit and vegetable tastings, cooking lessons, gardening and videos and visits to fruit and vegetable growers and markets were consistently considered the most successful activities for improving children's fruit and vegetable knowledge, attitudes and skills and for meeting teachers' curriculum goals. Their fun and practical nature and parental involvement were viewed as key factors in these activities' success. Future implementations should ensure that these activities are included as core components.
- The Kids in the Kitchen cookbook and manual, the TFV "More Teacher Resources for Classroom Activities" folder and the TFV "Gardening Kit" were the most useful classroom resources for the teachers. Future implementations should ensure that these resources are included as core components and are available from the beginning of the project.

INTRODUCTION

TFV Project Aims

The Tooty Fruity Vegie (TFV) project aimed to increase fruit and vegetable consumption by primary school children in the Northern Rivers region. The project aimed to achieve this increase by effecting change in a number of intermediate "process" and "impact" indicators:

- Improving children's fruit and vegetable knowledge, attitudes, access and preparation skills.
- Improving parents' fruit and vegetable knowledge and preparation skills.
- Improving parents' involvement in fruit and vegetable activities in the schools and elsewhere.
- Improving teachers' attitudes towards teaching about fruits and vegetables in schools.
- Improving teachers' skills and confidence in relation to teaching about fruits and vegetables.

TFV Project Overview

The TFV project was a two year, multi-strategy health promotion program undertaken by the Northern Rivers Area Health Service's Health Promotion Unit during 1999 and 2000. In late 1998, 10 volunteer primary schools were recruited as the intervention schools and another 6 local primary schools were recruited to act as demographically and geographically matched controls.

The project promoted a whole-of-school approach to implementing a range of school and community based strategies promoting fruits and vegetables. The project strategies were developed from the evidence available at the time. They were designed to create a supportive environment by developing, and helping schools to implement, fruit and vegetable promoting educational resources and activities for children, their parents, teachers, schools, school canteens and the broader community.

In order to maximise schools' ownership and the project's sustainability beyond the two year intervention period, each school was encouraged to form a Project Management Team (PMT) to oversee the project's implementation in their school. The membership of these PMTs varied between the schools but could include teacher, child, parent, canteen, community nutritionist and Aboriginal Education Assistant representatives. Each PMT included a TFV Project Officer from the Health Promotion Unit during the two year intervention period. These teams were responsible for choosing the TFV strategies to be implemented in their school, organising their implementation, monitoring the response to them and modifying the strategies as necessary. Small grants of $270 to $750 per year were made available to schools, based on need, to assist with implementing TFV strategies.

TFV Strategies

Prior to implementing the TFV project, the TFV staff developed a number of intervention strategies based on existing literature regarding the successes, failures and lessons learned from similar Australian and overseas projects. In addition, the schools, Project Management Teams and teachers developed or found a number of other intervention strategies throughout the two year intervention period. Different strategies were developed for different environments, as described below.

Classroom activities

- All intervention school teachers were offered training via the National Nutrition Education in Schools (NNES) program and given NNES resource materials to enhance their knowledge and teaching skills regarding fruits and vegetables.
- All intervention schools were given Classroom Activity Manuals (one per class) promoting innovative ways of incorporating teaching about fruits and vegetables across all key learning areas – there were three versions of the Manual, each tailored for a different age group (Kindy – Year 2, Years 3 & 4, Years 5 & 6).
- All intervention schools were offered various additional resources (eg: "More Teacher Resources for Classroom Activities" folder, "TFV Gardening Kit") and directed to other available resources to help teachers incorporate fruit and vegetable related learning activities into the curriculum.
- Non-teachers (mainly mothers) were trained to run fun fruit and vegetable cooking classes (Kids in the Kitchen) in the classrooms, with a teacher present. All intervention schools were given a KIK training manual and recipe book. All KIK presenters were also given a specially designed apron and their own KIK recipe book in appreciation.
- All intervention schools were given a poster listing web sites containing fruit and vegetable information or activities relevant to teachers and/or students. They were also given application forms for a free CD-ROM of fruit and vegetable promoting materials.
- Age-specific fruit and vegetable related competitions (eg: painting a fruit or vegetable promoting poster) were run for children across all the intervention schools.

Parent training and resources

- Cooking classes to increase knowledge and strategies for healthy eating were offered to parents.
- All intervention schools were regularly sent fruit and vegetable promoting flyers and newsletter articles, prepared by TFV staff, for distribution to all parents via the school newsletters.
- Where possible, all intervention schools were assigned a local community health professional (eg: nutritionist, dental therapist, nurse or health promotion officer) trained to hold promotional fruit and vegetable tastings for parents – either alone or in conjunction with existing school events (eg: school sports days). Parents were encouraged to participate in the planning and implementation of these events.

- All intervention schools were given various forms of fruit and vegetable promoting merchandise (eg: calendars, fridge magnets) – for distribution to all parents.
- A competition asking parents to send in their handy hints for getting their children to eat fruits and vegetables was run across all the intervention schools.

School canteens

Each of the following strategies were available to school canteens operating for at least 3 days a week only.

- All intervention school canteens were offered help with applying and reimbursement for the costs of joining the NSW School Canteen Association. They were also encouraged to maintain their membership.
- All intervention school canteens received specially developed Canteen Manuals and Workbooks aimed at increasing fruit and vegetable sales. Specific examples of different marketing methods were provided (eg: reducing prices of fruits and vegetables, developing a calendar of promotional events), including material assistance from the Fruit and Vegetable Industry Growers' Association (eg: F & V for me tattoos).
- All intervention school canteens were encouraged to promote food and drink products meeting the NSW Canteen recommendations. Community nutritionists provided support for modifying canteen menus.
- All intervention school canteens were encouraged to network with schools making good profits from healthy canteen sales.
- Opportunities for the recruitment of new canteen workers were created through generating interest in fruit and vegetable promotions via school newsletters and the TFV Project Management Teams.

School environment

- All intervention schools were offered help, including Growers' Starter Packs and other teacher resources, to establish vegetable gardens.
- All intervention schools were encouraged to organise visits to fruit and vegetable growers and markets.
- All intervention schools were encouraged to review policies about food consumption to promote fruits and vegetables, such as using healthier food and drink items (as opposed to chocolates and lollies) for rewards and fund raising.
- All intervention schools were encouraged to implement practices of appraising and giving feedback about the amount of fruits and vegetables packed in children's lunchboxes.
- All intervention schools were encouraged to display promotional materials donated by the Fruit and Vegetable Industry Growers' Association promoting fruits and vegetables as "cool".
- All intervention schools were offered help to provide healthy breakfast programs.
- All intervention schools were encouraged and helped to hold fruit and vegetable tastings at special events.
- Winning entries from the children's fruit and vegetable poster painting competition were reproduced and copies distributed to all schools for display – see logo on this report's front cover.

Utilising volunteers

- In line with the aim of creating a self-sustaining program, all intervention schools were encouraged and helped to recruit and train volunteers to help with implementing many TFV strategies. Most volunteers were parents but people from the Community Development & Education Program (CDEP) and the "Work for the Dole" program also contributed, especially with the cooking classes and establishing fruit and vegetable gardens.

Other health professionals

- All intervention schools' TFV Project Management Teams were encouraged to involve their local Community Nurses, Dietitians, Nutritionists, Health Promotion Officers, School Nurses, Aboriginal Education Assistants and other community health staff, where relevant.

Other environments

- All intervention school communities and TFV Project Management Teams were encouraged to liaise with their local fruit shops, corner stores, after school care services and food outlets associated with children's sporting activities re: promoting fruit and vegetable sales and sponsoring the TFV project locally.

TFV Project Evaluation Plan

The TFV project had a comprehensive evaluation plan comprising the following components:

- ***Process evaluation*** – to explore rates of uptake and quality of implementation of the individual TFV strategies within each intervention school and to explore the children's, parents' and teachers' reactions to both the individual TFV strategies and the overall project.
- ***Impact evaluation*** – to explore the TFV project's impact on relevant interim outcomes, such as children's, parents' and teachers' knowledge, attitudes and behaviours regarding fruits and vegetables.
- ***Outcome evaluation*** – to explore the TFV project's impact on the children's fruit and vegetable consumption levels.

This report presents the methods and results from the process and impact evaluations. The outcome evaluation was conducted by collecting prospective 24-hour food records at the beginning, middle and end of the project and coding the amounts of fruits and vegetables recorded. These data are currently being analysed and will be reported separately.

METHODS

Development of the Data Collection Instruments

In order to evaluate the TFV project's success in relation to its broad range of process and impact indicators, we needed to gather data from all those involved in and those targeted by the project. Given the specific questions to be answered, it was not possible to use existing instruments. Therefore, the authors drafted, pilot-tested and revised each of the survey instruments described below:

Children's survey

A self-completed survey (see Appendix A) assessing both intervention and control school children's:

- knowledge and attitudes regarding fruits and vegetables;
- levels of participation in and enjoyment of fruit and vegetable activities at school;
- perceived efficacy at preparing fruit and vegetable snacks and meals;
- perceived changes in fruit and vegetable attitudes and consumption due to activities at school; and
- awareness of the TFV project and other fruit and vegetable promoting campaigns.

Parents' survey

A self-administered survey (see Appendix B) assessing both intervention and control school parents':

- knowledge about children's required fruit and vegetable consumption levels;
- fruit and vegetable preparation skills and behaviours for encouraging their consumption;
- involvement in and enjoyment of fruit and vegetable promoting activities at their children's school;
- involvement in fruit and vegetable promoting activities in other settings;
- awareness of their children's participation in and enjoyment of fruit and vegetable activities at school;
- perceptions of any changes in their children's fruit and vegetable knowledge, attitudes and consumption due to fruit and vegetable activities at school; and
- awareness of the TFV project and other fruit and vegetable promoting campaigns.

Teachers' survey

A self-administered survey (see Appendix C) assessing both intervention and control school teachers':

- knowledge about children's required fruit and vegetable consumption levels;
- attitudes towards teaching about fruits and vegetables in schools;
- perceived efficacy at teaching about fruits and vegetables;
- utilisation and ratings of the various TFV fruit and vegetable promoting resources;
- utilisation and ratings of various fruit and vegetable promoting activities;
- perceptions of parents' attitudes towards and willingness to participate in fruit and vegetable promoting activities at school; and
- awareness of the TFV project and other fruit and vegetable promoting campaigns.

Volunteers' survey

A self-administered survey (see Appendix D) assessing both intervention and control school fruit and vegetable activity volunteers':

- levels of participation in and enjoyment of fruit and vegetable promoting activities at school;
- reasons for participating in fruit and vegetable promoting activities at school;
- perceptions of the reasons for other parents not participating in fruit and vegetable promoting activities at school;
- perceived success of the various TFV strategies, including the reasons for success;
- perceptions of any changes in the children's attitudes towards fruits and vegetables;
- perceptions of any changes in their fruit and vegetable attitudes, knowledge and preparation techniques; and
- perceptions of teachers' attitudes towards fruit and vegetable promoting activities at school.

Principals' survey

A structured telephone survey (see Appendix E) assessing intervention school principals':

- reasons for participating in, expectations of and satisfaction with the TFV project overall;
- perceptions of the level and acceptability of the TFV project's demands on their own time, other teachers' time, school volunteers and the school community generally;
- perceptions of teachers' and volunteers' reaction to the TFV project;
- perceptions regarding the degree of success of the various TFV strategies in their school;
- perceptions of the degree of success of the TFV project overall at improving children's fruit and vegetable attitudes and consumption; and
- intention to continue with the various TFV strategies and perceived support required to do so.

Other health professionals' survey

A structured telephone survey (see Appendix F) assessing Community Nutritionists' and an Aboriginal Education Assistant's:

- role in the TFV project, including the nature of their interaction with the TFV staff;
- reasons for participating in, expectations of and satisfaction with the TFV project overall;
- perceptions of the pros and cons of their involvement in the TFV project and any ways they would like to change their involvement;
- perceptions of the TFV Project Management Teams' functioning and sustainability;
- perceptions of the use of volunteers in the TFV project and their reactions to it; and
- perceptions regarding which TFV strategies worked and did not work and why.

Participation Index

A structured scoring worksheet (see Appendix G), completed by each intervention school's Project Management Team assessing each of the following, as objectively, consistently and concretely as possible, for each of the key TFV strategies:

- ***Reach*** – the proportion of the target group (eg: children, parents, teachers) exposed to the strategy.
- ***Frequency*** – the number of times in a year the target group were exposed to the strategy.
- ***Quality*** – the quality of implementation of the strategy.
- ***Sustainability*** – whether the strategy was likely to be implemented again in the school.

Data Collection Procedures

Children's survey

During November and December 2000, intervention and control school children (with written parental consent) completed their own surveys during a school class, with step-by-step verbal instructions from fully-trained TFV Data Collectors (with the help of a blown-up version of the survey) and assistance from the class teacher. Due to its self-completion method, the children's survey was to be completed with only the older children (Years 4 - 6) in each intervention and control school. However, due to the practice of having children from different years in the same class, it was also administered to some Year 3 children.

Parents' survey

A TFV Data Collector visited each class in each intervention and control school during November and December 2000 to distribute the parent surveys to be taken home by the children. Each parent survey was accompanied by a letter explaining the purpose and importance of the whole data collection and a consent form for parents of Year 3 – 6 children to indicate their willingness (or otherwise) for their children to be surveyed the following day. The Data Collectors explained this package to the children and stressed the importance of the surveys and, where appropriate, the consent forms being returned the following day (whether parents wished their families to participate or not). The next day, the TFV Data Collectors returned to each class to collect the completed parent surveys and conduct the children's surveys for those with parental consent. Reply paid envelopes were also left with each class teacher so they could send any late-arriving parent surveys back to the TFV project.

Teachers' survey

The TFV Data Collectors distributed the teacher surveys, with self-completion instructions, as they visited each intervention and control school class to distribute the parent surveys. The completed surveys were collected from the teachers on the return visit or were sent back using the reply paid envelopes mentioned above.

Volunteers' survey

To maintain the confidentiality of schools' volunteers' contact details, the intervention and control schools distributed pre-packaged volunteer surveys, with self-completion instructions and reply paid envelopes, to any volunteers involved in fruit and vegetable promoting activities in the school. Parents identifying themselves as doing so in the parent surveys, and consenting to receive an additional survey, were also sent copies of the volunteer survey package. All volunteer surveys were distributed in early December 2000.

Principals' survey

The first author conducted all the principals' telephone surveys, negotiating suitable times with each intervention school principal, during December 2000.

Other health professionals' survey

The first author conducted all the other health professionals' telephone surveys, negotiating suitable times with each respondent, during August 2000.

Participation Index

Each intervention school's Project Management Team completed the Participation Index about the TFV project's implementation in their school during November and December 2000, assisted by their TFV Project Officer, who also looked back over their meeting minutes for any other relevant information to be incorporated.

Data Analyses

Data from the child, parent, teacher and volunteer surveys were entered, cleaned and analysed using the SAS statistical package. Analyses were confined to frequency distributions, calculation and comparison of mean scores and cross tabulations between intervention and control groups. Significance of differences between intervention and control groups in two by two comparisons were tested using two-tailed continuity-adjusted chi squares or Fishers' Exact Tests, depending on sample sizes. For larger tables, standard chi squares were used. Cross tabulations by age group and sex of responses to the children's survey were also conducted for the intervention group. Cell sizes were too small for similar analyses for the control group.

RESULTS: SAMPLE CHARACTERISTICS

Response rates

Schools

Nine of the 10 intervention schools and three of the six control schools agreed to participate in this process and impact evaluation. The three non-consenting control schools felt it would place too much burden on school staff and families. The non-consenting intervention school was very small and felt the nature of the surveys would be inappropriate due to low literacy levels among children and their families. However, the principal of the latter school agreed to participate in the principals' survey. From preliminary analyses of data collected at the beginning of the TFV project, the three participating control schools were representative of all six on a number of demographic, response rate and fruit and vegetable consumption variables.

Individuals

Table 1 shows the number distributed and the response rate for each of the data collection instruments. Overall, completed surveys were received from 613 parents (59%), 392 children (65%), 50 teachers (81%) and 36 volunteers (34%). In addition, all 10 intervention schools participated in the principals' survey and provided completed Participation Indexes. Response rates were generally similar in both the intervention and control groups. However, significantly more intervention than control school teachers participated.

Table 1: Numbers distributed and response rates for each survey instrument

Survey	Intervention Group		Control Group		Overall	
	Total N	% response	Total N	% response	Total N	% response
Children's survey	456	67%	143	59%	599	65%
Parents' survey	781	59%	264	59%	1045	59%
Teachers' survey[a]	47	87%	15	60%	62	81%
Volunteers' survey	100	34%	6	33%	106	34%
Principals' survey	10	100%	not applicable		10	100%
Other health professionals' survey	3	100%	not applicable		3	100%
Participation Indexes	10	100%	not applicable		10	100%

[a] Significantly different between I and C at $p \leq 0.05$.

Demographic characteristics

As the sample sizes involved would have allowed minimal exploration of their impact, few demographic characteristics were explored in any of the surveys. Those that were collected are discussed overleaf.

Children

As shown in Table 2, there were no significant differences between the intervention and control groups in relation to gender balance or proportion enrolled during the intervention period. However, there were significantly more older children in the control group. There were no significant differences in gender within each age group of the intervention group (sample too small to test in control group).

Table 2: Demographic characteristics of the children surveyed

Group	Gender		Year at school[a]		Attended school in 1999-2000	
	Male	Female	Yr 3-4	Yr 5-6	Some	All
Intervention (n = 307)	45%	55%	40%	60%	19%	81%
Control (n = 85)	56%	44%	14%	86%	21%	79%

[a] Significantly different between I and C at $p \leq 0.001$.

Parents and Volunteers

As shown in Table 3, both the parents and volunteers (despite the lower response rate) surveyed provided good representation across all student years.

Table 3: Proportion of parents and volunteers with children in different age groups

	% with children in ...								
	Pre-school	Kindy	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	High school
Parents (n = 613)	32	19	21	22	28	23	25	21	29
Volunteers (n = 34)	38	26	41	15	38	26	21	24	22

NB: Row totals add to more than 100% due to families with two or more children

Teachers

Thirty seven (90%) of the intervention school teachers and all nine control school teachers were teaching at the school throughout all or almost all of the two year intervention period. The teachers surveyed provided good representation across all student years within both the intervention and control schools.

RESULTS & CONCLUSIONS: PROCESS MEASURES

Awareness of the TFV Project Overall

As shown in Table 4, almost all intervention school children, parents and teachers were aware of the TFV project. Both the overall TFV project and the Kids in the Kitchen (KIK) cooking class component were significantly better recognised by intervention school children, parents and teachers than other fruit and vegetable promotions, including the Coles supermarket "7-a-day" campaign which ran across the region throughout most of the TFV project. In addition, the statewide "Rip Its", "Wipe Out" and "F&V for Me" promotions, included in the TFV project, were also better recognised by intervention than control school children. The relatively high recognition of the TFV project among control school children and teachers is likely due to the project's name being used by school staff, despite requests not to, when organising and conducting data collections at the schools.

Intervention school parents were more likely than their control school counterparts to have heard of both the TFV project and the KIK component at school events (55% vs 5%, p<0.00001 and 37% vs 1%, p<0.00001, respectively) and in school newsletters (74% vs 3%, p<0.00001 and 48% vs 1%, p<0.00001, respectively). Among intervention school children, girls were more likely than boys to have heard of the KIK component (89% vs 80%, p<0.05) and older children were more likely than younger ones to have heard of the Rip Its promotion (17% vs 8%, p<0.05).

Table 4: Children's, parents' and teachers' awareness of fruit and vegetable promotions

Fruit & Vegetable Promotion	% aware of the promotion					
	Children		Parents		Teachers	
	I (n = 307)	C (n = 85)	I (n = 458)	C (n = 155)	I (n = 41)	C (n = 9)
Tooty Fruity Vegie	97[a]	47	94[a]	12	98[b]	67
Kids in the Kitchen	85[a]	7	74[a]	12	98[a]	11
7-a-Day (Coles promotion)	19	15	15	12	15	0
Rip Its	14[d]	5	6	3	10	0
Wipe Outs	26[c]	12	10	7	7	0
Charge Through Your Day	9	6	7	6	15	0
F & V for me	29[a]	11	18[a]	5	20	0

[a] Significantly different between I and C at p≤0.001 [b] Significantly different between I and C at p<0.005
[c] Significantly different between I and C at p≤0.01 [d] Significantly different between I and C at p<0.05

Conclusion: The TFV project achieved almost total coverage of all target groups and was significantly better recognised than a number of other statewide fruit and vegetable promotions.

Attitudes Towards the TFV Project Overall

Qualitative information from children, parents, teachers and volunteers

A final open-ended question in the children's, parents', teachers' and volunteers' surveys offered respondents the opportunity to make any other comments they wished about the project, the survey or fruit and vegetables promotion in schools. Substantial proportions of respondents chose to do so (children: I = 47%, C = 14%; parents I = 38%, C = 32%; teachers I = 41%, C = 33%; volunteers: I = 47%, C = 17%), with the following key themes emerging (see Appendix H for a detailed summary of all comments):

- The majority of comments from intervention school parents, children and volunteers were about the TFV project and were overwhelmingly positive, reporting:
    - High levels of enjoyment, particularly with the fruit and vegetable cooking and tasting activities.
    - The project promoted positive attitudes to fruits and vegetables from a young age.
    - Positive outcomes for the parents who participated.
    - A strong desire to continue from all groups.

- Conversely, about a third of the comments from control schools parents complained about a lack of fruit and vegetable activities at school and poor food choices at the school canteen.
- Both control and intervention school parents supported more promotion of fruits and vegetables at school.
- While intervention school children's comments focussed on their enjoyment of the TFV project (including their desire to continue it) and of fruits and vegetables, control school children more often reported wanting to learn more about fruit and vegetables and health at school.
- Although most intervention school teachers' comments about the TFV project were also positive, some commented on the need for more parental interest and participation, better promotion of project materials directly to teachers (rather than to principals) and of pressure to fit many things into teaching programs.

Principals' survey

The principals' opinions of the TFV project overall were equally glowing, with all principals saying it met or exceeded their expectations. They rated the project as excellent or very good in relation to: providing teaching resources and training, teacher motivation, organisation of activities, response to requests, communication promotion to parents and level of funding. Principals acknowledged that organising KIK classes caused some disruption to school schedules and teachers' time, but usually no more than expected. However, three of the principals felt the TFV staff's expectations of the school were too high.

Principals were unanimous that teachers' responded more positively to involvement in the TFV project than to previous health promotion projects in schools. They attributed this to the TFV project's all-of-school approach, provision of concrete objectives for the children, classroom manuals and funding and other support. Principals also found attracting volunteers to participate in TFV activities no more difficult than for other activities. Willingness to volunteer varied between schools and seemed easier for food preparation activities, especially in the second year. Most principals felt the volunteers responded more positively to involvement in the TFV activities than other activities. They attributed this to the training provided for the KIK cooking classes, which improved the volunteers' confidence (particularly among Aboriginal mothers) and gave them a clearly-defined role. They also felt that giving volunteers a TFV project apron was a good incentive.

Conclusion:	**The TFV project was overwhelmingly positively received by all target groups.**

Quality of Implementation of Individual TFV Project Strategies

Using data from the intervention schools' Participation Indexes (see Appendix I for raw data), Table 5 summarises the average implementation levels for each key TFV strategy, in relation to the proportion of target groups reached (reach), frequency of exposure (frequency) and quality of implementation (quality). Overall, most strategies achieved high or medium ratings on each implementation indicator but only two, articles in newsletters and lunchbox feedback, achieved high ratings on all three indicators. However, the KIK cooking classes and the Year 3 – 6 competition both scored high on reach and quality but not frequency. Liaising with local shops and events and using fruit and vegetable fundraisers were the only two strategies achieving consistently low ratings.

Table 5: Level of implementation of key TFV strategies across the 10 intervention schools

TFV Strategy	Level of implementation in relation to:		
	Reach[a]	Frequency[b]	Quality[c]
Classroom-based Strategies			
• Classroom activities	**high**	medium	medium
• Web sites for teachers	low	low	medium
• Web sites for children	low	low	**high**
• F & V competition for Year 3 – 6 children	**high**	medium	**high**
• F & V competition for Kindy – Year 2 children	**high**	medium	medium
• Fruit breaks in class	low	medium	**high**
• Cooking classes (KIK)	**high**	medium	**high**
Family-oriented Strategies			
• F & V promoting activities for families at school	low	medium	medium
• School calendars with F & V recipes	**high**	medium	medium
• F & V promoting fridge magnets	**high**	medium	medium
• F & V competition for parents	low	medium	low
• F & V promoting newsletter articles	**high**	**high**	**high**
School-oriented Strategies			
• Establishing F & V gardens	medium	medium	**high**
• Liasing with local shops/events to promote F & V	low	low	low
• Using F & V fundraisers	low	low	low
• Giving feedback about F & V in lunchboxes	**high**	**high**	**high**
• Visits to F & V growers/markets	low	medium	medium
• Providing F & V platters/tastings	**high**	medium	medium
• Having a TFV Project Management Team	medium	medium	high
Canteen-oriented Strategies			
• Gaining membership of NSW School Canteen Association	medium	**high**	medium
• Canteen promotions of F & V	medium	medium	**high**
• Networking with other profitable, health-oriented canteens	low	medium	medium
• Reviewing F & V content/price on menus	**high**	medium	medium

[a] Reach: High = ≥ ¾ target group OR ≥ ½ schools in any year; Low = ≤ ¼ target group in ≥ ½ schools both years; Medium = other.

[b] Frequency: High = ≥ weekly by ≥ ½ schools in ≥ one year; Low = not at all by ≥ ½ schools in both years; Medium = other.

[c] Quality: High = top rating by ≥ ½ schools doing it; Low = lowest rating by ≥ ½ schools doing it; Medium = other.

As with all process evaluations, we were concerned about getting socially desirable answers from children, parents and teachers. However, as shown in Tables 6 and 7, comparing the results for the different TFV strategies from the Participation Indexes with those from the intervention school children's, parents' and teachers' surveys showed a high degree of consistency across data sources. High levels of reach on the Participation Indexes were usually associated with high reported participation and high levels of quality on the Participation Indexes were associated with high quality measures on the surveys. Similarly, low levels of reach and quality on the Participation Indexes were associated with low levels of reach and quality on the surveys. As frequency measures were not included in the surveys, similar comparisons could not be made on this level.

Table 6: Comparison of strategies' reach levels across the data sources

TFV Strategy	Level of REACH according to …			
	Participation Index[a]	Children's survey (n = 307)	Parents' survey (n = 613)	Teachers' survey (n = 41)
Classroom-based Strategies				
• Classroom activities	**high**	67%	74%	73%
• Web sites for teachers	low	--	--	12%
• Web sites for children	low	--	--	12%
• F & V competition for Year 3 – 6 children	**high**	57%	49%	54%
• F & V competition for Kindy – Year 2 children	**high**	--	49%	54%
• Fruit breaks in class	low	--	--	--
• Cooking classes (KIK)	**high**	87%	83%	83%
Family-oriented Strategies				
• F & V promoting activities for families at school	low	--	--	--
• School calendars with F & V recipes	**high**	--	54%	--
• F & V promoting fridge magnets	**high**	--	66%	--
• F & V competition for parents	low	--	42%	--
• F & V promoting newsletter articles	**high**	--	90%	--
School-oriented Strategies				
• Establishing F & V gardens	medium	50%	38%	44%
• Liasing with local shops/events to promote F & V	low	--	--	--
• Using F & V fundraisers	low	--	--	--
• Giving feedback about F & V in lunchboxes	**high**	--	--	--
• Visits to F & V growers/markets	low	41%	26%	27%
• Providing F & V platters/tastings	**high**	51 – 64%	62 – 75%	85%
• Having a TFV Project Management Team	medium	--	--	--
Canteen-oriented Strategies				
• Gaining membership of NSW School Canteen Association	medium	--	--	--
• Canteen promotions of F & V	medium	73%	68%	76%
• Networking with other profitable, health-oriented canteens	low	--	--	--
• Reviewing F & V content/price on menus	**high**	--	--	--

[a] Reach: High = ≥ ¾ target group OR ≥ ½ schools in any year; Low = ≤ ¼ target group in ≥ ½ schools both years; Medium = other.
-- indicates no relevant data were available for comparison.

Table 7: Comparison of strategies' quality levels across the data sources

TFV Strategy	Level of QUALITY according to ...				
	Participation Index [a]	Children's survey (n = 307)	Parents' survey (n = 613)	Teachers' survey (n = 41)	Volunteers' survey (n = 34)
Classroom-based Strategies					
• Classroom activities	medium	--	--	--	--
• Web sites for teachers	medium	--	--	--	--
• Web sites for children	**high**	--	--	--	--
• F & V competition for Yr 3–6 children	**high**	65% liked/loved	64% liked/loved	50% ↑ interest	--
• F & V competition for Yr K-2 children	medium	--	--	--	--
• Fruit breaks in class	**high**	--	--	55 – 75% ↑ interest/ knowledge	--
• Cooking classes (KIK)	**high**	80% liked/loved	88% kids liked/loved	53 – 75% ↑ skills/interest	87% kids liked/loved
Family-oriented Strategies					
• F & V promoting activities for families	medium	--	--	--	--
• School calendars with F & V recipes	medium	--	--	--	--
• F & V promoting fridge magnets	medium	--	--	--	--
• F & V competition for parents	low	--	28% enter	--	--
• F & V promoting newsletter articles	**high**	--	51% used	--	
School-oriented Strategies					
• Establishing F & V gardens	**high**	68% liked/loved	62% kids liked/loved	55 - 69% ↑ skills/interest	57% kids liked/loved
• Liasing with local shops/events to promote F & V	low	--	--	--	--
• Using F & V fundraisers	low	--	--	--	--
• Feedback about F & V in lunchboxes	**high**	--	--	--	--
• Visits to F & V growers/markets	medium	--	--	69% ↑ interest/ knowledge	--
• Providing F & V platters/tastings	medium	32% liked/loved	75% kids liked/loved	--	--
• Having a TFV Project Management Team	high	--	--	--	67 - 75% enjoy/do again
Canteen-oriented Strategies					
• Gaining membership of NSW School Canteen Association	medium	--	--	--	--
• Canteen promotions of F & V	**high**	54% liked/loved	56% kids liked/loved		--
• Networking with other profitable, health-oriented canteens	medium	--	--	--	--
• Reviewing F & V on menus	medium	--	--	--	--

[a] Quality: High = top rating by ≥ ½ schools doing it; Low = lowest rating by ≥ ½ schools doing it; Medium = other.
-- indicates no relevant data were available for comparison.

Conclusion: Most TFV strategies were at least reasonably well implemented, with newsletter articles, lunchbox feedback, KIK cooking classes and a Year 3–6 competition the best implemented.

Perceived Enablers of / Barriers to Implementing the TFV Project

In trying to develop an intervention to stimulate school and community participation, in order to maximise long-term sustainability, the TFV project relies on contributions from a number of groups. This section discusses some of the perceived enablers of and barriers to such contributions.

Barriers to and enablers of participation in parent activities

Although many parents did participate in the TFV activities in schools, reporting high levels of satisfaction with their participation, the surveys identified a number of perceived barriers to increased participation and some suggestions for overcoming them.

Principals' survey

The main reasons perceived by principals as limiting parent participation in activities at the school were:

- Time limitations / Failure to consider conflicting activities.
- Not a very get up and go community / Takers rather than givers.
- No-one interested in/motivated by the topics of education sessions.

The principals suggested parent participation could be increased by improving publicity and scheduling of TFV events, to avoid clashing with other activities and coincide with days parents would be at the school anyway.

Volunteers' survey

Although they may not be fully representative of all parents volunteering for TFV activities, the 34 volunteers surveyed were asked about their reasons for becoming involved in TFV activities and their perceptions of the barriers to other parents' involvement. As shown in Table 8, the main motivators among the TFV volunteers was enjoyment of the types of activities involved and of working with children generally. Few volunteers participated out of a sense of duty.

Table 8: Volunteers' reasons for becoming involved in TFV activities

Reason for becoming involved in TFV activities	% of volunteers saying (n = 34)	
	Not at all / a little	A fair bit / a lot
I enjoy working with the children	0	99
I like to know what my children are learning at school	18	80
I enjoy cooking or gardening	24	70
I am interested in good nutrition	27	74
I always help with school activities when I can.	38	62
I thought I might learn something	31	62
I enjoy organising things	42	53
I read about it in a school newsletter	55	39
I felt I should do it	61	33
The principal/ teacher asked me personally to help	74	21
I thought I might meet some new people	79	12
I had plenty of spare time and wanted to do something useful	83	12
A friend was involved and asked me to come too	82	12

NB: row percentages may not add to 100% due to missing values

As shown in Table 9, the main reasons perceived by volunteers for other parents not participating were lack of interest, competing work commitments and having small children to care for.

Table 9: Volunteers' perceptions of barriers to other parents' participation in TFV activities

Perceived barrier to parental participation	% of volunteers saying (n = 34)	
	Not at all / a little	A fair bit / a lot
They weren't interested	47	50
They had work commitments	33	64
They had small children to care for	53	41
They thought it would be too hard	71	27
They weren't asked	79	21
They thought they wouldn't be of any help	88	12
They felt uncomfortable at the school	85	12
They didn't know about it	91	6

NB: row percentages may not add to 100% due to missing values

The vast majority of volunteers found participating in TFV activities enjoyable and rewarding and felt their efforts were appreciated by the school, TFV staff and their children. However, some also felt the training, equipment or organisation could have been improved for some activities. Therefore, providing child care, improving training and organisation for some activities and encouraging current volunteers to discuss their extremely positive experiences could help increase parent participation.

Other health professionals' survey

The main reasons perceived by the Aboriginal Education Assistant interviewed for Aboriginal parents not participating were lack of transport, work commitments and caring for small children and the elderly. Therefore, it was suggested that Aboriginal parent participation could be increased by providing transport and child care, as well as incentives for attendance, such as certificates for training. The Community Nutritionists interviewed suggested combining parental TFV activities with existing successful school activities and incorporating the TFV newsletter information into existing school newsletters.

Conclusion: Parental participation in TFV activities could be increased by improved scheduling and training, offering transport and childcare, increased use of incentives or rewards and encouraging current volunteers to share their positive experiences.

Barriers to and enablers of other health professionals' participation

Community Nutritionists

The Community Nutritionists enjoyed being involved in the TFV project because it was well-planned and well-resourced, with clear objectives, target groups and strategies. They found being on schools' TFV Project Management Teams a useful way to liaise with schools and enjoyed networking with other dietitians on a common project. However, they reported frustrations about the low numbers of parents involved and identified a need to restrict their own involvement to their core duties (eg: school canteens) to ensure its sustainability.

Aboriginal Education Assistant

The Aboriginal Education Assistant interviewed felt the TFV project brought parents, teachers and children together and felt teachers and principals supported the project. However, she expressed frustration at being confined by boundaries set by Aboriginal participants and by the project's reliance on goodwill and volunteers.

Conclusion: In order to maintain health professional participation in TFV activities, they need to be relevant to the workers' core duties.

Enablers of and barriers to TFV Project Management Team participation

Most principals felt the PMTs were essential for coordinating TFV activities but the amount of time input by principals and teachers varied. Typically, in smaller schools, principals committed far more time but made the TFV project more of a focus for the whole school community. Some principals and other health professionals reported that attendance at PMT meetings dwindled to only health and education representatives, with student representation 'forgotten' after the first year due to a focus on 'getting things done'.

Conclusion: More thought is needed about ways of motivating and minimising burdens on TFV Project Management Teams.

Perceived Sustainability of the TFV Project

Some principals felt their schools were now well equipped to continue the TFV project without outside support due to the positive experiences of the project, the teaching resources provided, the training and experience of volunteers and the seed funding given for cooking equipment. However, some principals expressed concerns about finding time to fit TFV activities into a full curriculum and maintaining parental involvement. A Community Nutritionist also expressed concern about maintaining the enthusiasm of Project Management Teams. Despite these concerns, principals reported that all but one school planned to continue with the TFV project in some way, with most planning to continue the KIK cooking classes. However, the remaining school planned to continue other fruit and vegetable promoting activities they had been doing before the TFV project began. As will be discussed in more detail in the section about volunteers' participation, the vast majority of volunteers were willing to help with the same activities in the future, especially the cooking, tasting and canteen activities.

As shown in Table 10, most school Project Management Teams reported intending to continue with a number of the TFV strategies, with KIK cooking classes, fruit breaks in class, classroom activities, web sites for teachers, school newsletter articles, fruit platters, school vegetable gardens, lunchbox feedback and canteen menu reviews proving the most popular. However, given the perceived importance of the Project Management Teams in sustaining the project, it is of some concern that only half the schools were considering maintaining one for the next school year.

Table 10: Number of school TFV PMTs (n = 10) planning TFV activities for the next year

TFV Strategy	Planning to implement next year?	
	Yes	Maybe
Classroom-based Strategies		
• Cooking classes (KIK)	9	0
• Fruit breaks in class	5	4
• Classroom activities	5	3
• Web sites for teachers	5	2
• Web sites for children	2	4
• F & V competition for Kindy – Year 2 children	1	0
• F & V competition for Year 3 – 6 children	0	0
Family-oriented Strategies		
• F & V promoting newsletter articles	5	2
• F & V promoting activities for families at school	4	4
• F & V promoting fridge magnets	2	0
• School calendars with F & V recipes	2	0
• F & V competition for parents	0	0
School-oriented Strategies		
• Providing F & V platters/tastings	9	0
• Establishing/maintaining F & V gardens	6	3
• Giving feedback about F & V in lunchboxes	6	3
• Using F & V fundraisers	5	2
• Visits to F & V growers/markets	3	3
• Having a TFV Project Management Team	2	3
• Liasing with local shops/events to promote F & V	2	1
Canteen-oriented Strategies		
• Reviewing F & V content/price on menus	6	0
• Continuing membership of NSW School Canteen Association	5	0
• Canteen promotions of F & V	4	1
• Networking with other profitable, health-oriented canteens	3	0

NB: The remaining of the 10 PMTs were not planning to continue each of the TFV strategies in 2001.

Conclusion: Many key TFV strategies will be sustained in nine of the 10 intervention schools.

Children's Exposure to and Enjoyment of Individual TFV Strategies

Children's survey

As shown in Table 11, intervention school children reported consistently higher involvement in and enjoyment of fruit and vegetable activities at school than control school children. There was some variation between schools but children from intervention schools consistently reported having done more such activities in the last two years: means of 3.3 – 7.7 in intervention but only 1.1 – 2.2 activities in control schools (group means: 5.4 vs 1.8 activities, p<0.001). The most memorable activities for intervention school children were KIK cooking classes, canteen promotions and classroom lessons. The most enjoyed activities were KIK cooking classes, school trips to growers/markets, fruit and vegetable tastings and helping grow fruits and vegetables.

Table 11: Children's recall and enjoyment of fruit and vegetable activities at school in last 2 years

Fruit and Vegetable Activity	% recall doing it		% enjoyed or loved it	
	I (n = 307)	C (n = 85)	I[e]	C[e]
Cooking fruit or veg recipes at school	87[d]	18	80[c]	32
Eating fruit and veg from canteen promotions	73[d]	24	54	38
Classroom lessons about fruit or veg	67[b]	44	42[b]	28
Tasting new fruit or veg at special school events	64[d]	5	67[c]	21
School competitions about fruit and veg	57[d]	9	63[a]	8
Tasting new fruit or veg in class	55[d]	14	67[a]	20
Helping grow fruit or veg at school (eg: in veg garden)	50[d]	18	67	63
Homework about fruit and veg	41[d]	13	35	36
School trips to fruit or veg growers/markets/supermarkets	41[b]	19	79	45

[a] Significantly different between I and C at p<0.01 [b] Significantly different between I and C at p<0.001
[c] Significantly different between I and C at p<0.0005 [d] Significantly different between I and C at p<0.0001
[e] Denominators were the number of children recalling doing each strategy

Among intervention school children, there were no age or gender differences in the overall number of activities recalled but younger children were more likely than older ones to recall doing fruit and vegetable gardening (57% vs 45%, p<0.05) and boys more likely than girls to recall classroom lessons about fruits and vegetables (76% vs 63%, p<0.05). Although most TFV strategies appealed to both boys and girls across all age ranges, girls reported more enjoyment than boys of classroom fruit and vegetable tastings (78% vs 53% "enjoyed/loved", p<0.005), fruit and vegetable homework (50% vs 19% "enjoyed/loved", p<0.001) and school fruit and vegetable competitions (72% vs 54% "enjoyed/loved", p<0.05). However, younger children enjoyed growing fruits and vegetables more than the older children (72% vs 56% "enjoyed/loved", p<0.05).

Parents' survey

In line with these results from the children's survey, intervention school parents were aware of their children doing significantly more fruit and vegetable activities at school than control school parents (mean 5.1 vs 2.0, p<0.0001). As shown in Table 12, parents tended to show higher awareness of the activities reported more

commonly by the children. However, both intervention and control school parents tended to overestimate their children's levels of enjoyment of the various activities, with no significant differences between them.

Table 12: Parents' awareness of their children's participation in and enjoyment of fruit and vegetable activities at school in last 2 years

Fruit and Vegetable Activity	% parents aware of child doing it[a]		% whose child enjoyed/loved it	
	I (n = 458)	C (n = 155)	I[b]	C[b]
Cooking fruit or veg recipes at school	83	32	97	98
Eating fruit and veg from canteen promotions	68	23	91	84
Classroom lessons about fruit or veg	74	28	97	91
Tasting new fruit or veg at special school events	62	30	93	90
School competitions about fruit and veg	49	9	91	87
Tasting new fruit or veg in class	71	28	95	93
Helping grow fruit or veg at school (eg: in veg garden)	38	23	88	95
Homework about fruit and veg	42	19	79	87
School trips to fruit or veg growers/markets/supermarkets	26	10	90	87

[a] All differences in awareness between I and C groups were significant at $p \leq 0.001$, using Chi Square
[b] Denominators were the number of parents aware of their children doing each strategy

Qualitative information from children, parents, teachers and volunteers

In addition, many of the unprompted responses to the final open, qualitative question in the surveys featured spontaneous, positive comments about a number of the TFV activities, especially the fruit and vegetable tastings and the Kids in the Kitchen cooking classes (see Appendix H for the full list of responses).

Conclusion: The TFV project substantially increased children's involvement in and enjoyment of many fruit and vegetable activities at school.

Parents' Recall and Utilisation of Individual TFV Project Materials

Parents' survey

As shown in Table 13, intervention school parents reported consistently and significantly higher recall of receiving and using a number of fruit and vegetable promotional items from schools. Consequently, they recalled receiving significantly more such items in the last two years than control school parents (mean 3.9 vs 0.5 items, $p<0.0001$). The most memorable items for intervention school parents were fruit and vegetable related newsletters, pamphlets and recipes. Most parents receiving materials had, at least, had a good look at them with many reporting using fruit and vegetable recipes contained. Although intervention school parents tended to report more utilisation of the materials received than control school parents, these differences were not statistically significant due to the very small number of control school parents receiving each.

Table 13: Parents' recall and utilisation of fruit and vegetable promotional items from schools

Fruit and Vegetable Promotional Item	% recall getting it[a] I (n = 458) C (n = 155)		% of those recalling it who ....[b]		
			didn't really look at it	had a good look /read only	discussed with child(ren) / used new recipes, other ideas / told other people about it
Newsletters with ideas for increasing children's F & V intake	I	90	4	43	52
	C	14	9	55	36
Pamphlets about eating F & V	I	72	6	50	43
	C	15	8	54	37
F & V recipes / recipe books	I	66	4	33	63
	C	14	9	36	55
School calendars with F & V recipes	I	54	7	35	57
	C	5	14	29	57
			got it but not used/entered		got it and used/entered
F & V fridge magnet	I	66	4		95
	C	5	14		86
F & V ideas competition	I	42	71		27
	C	1	0		100

[a] All recall differences between I & C parents significant at $p \leq 0.0001$ [b] Denominators = N parents recalling receiving each item
NB: row percentages may not add to 100% due to missing values

Conclusions: **The TFV project increased the amount and range of fruit and vegetable promoting materials distributed to parents.**
The TFV project materials sent to parents were well recalled and reasonably well utilised, especially those involving recipes.

Teachers' Use of/Attitudes to Individual TFV Strategies & Resources

Teachers' survey

As shown in Table 14, there were no significant differences in the types of fruit and vegetable promoting activities intervention and control school teachers reported using. However, the lack of significant differences is largely due to reduced power to detect such differences due to the smaller numbers of teachers surveyed. Although not statistically significant, intervention school teachers appeared more likely to report using more "active" activities (eg: food tastings and cooking classes) and control school teachers were more likely to report using more "passive" activities (eg: reading books, watching videos and playing computer games).

As no significant differences were found between intervention and control school teachers' perceived success of the strategies used at increasing children's fruit and vegetable interest, knowledge and skills or at achieving teachers' PD/H/PE curriculum goals, all ratings were combined. The KIK cooking classes were considered among the most successful strategies against all criteria. In addition, fruit and vegetable tastings and visits to fruit and vegetable growers were rated among the most successful strategies at increasing children's interest

and knowledge and at meeting teachers' PD/H/PE curriculum goals; fruit and vegetable gardening was rated among the best at increasing children's knowledge and skills; and fruit and vegetable videos were rated among the best at increasing children's knowledge and at meeting teachers' PD/H/PE curriculum goals.

Table 14: Teachers' usage of and attitudes towards fruit and vegetable promoting activities

F & V promoting activity	% teachers used activity[a]		% I & C teachers using activity who rated its success for ...											
			increasing interest[bc]			developing knowledge[bc]			developing skills[bc]			achieving PD/H/PE goals[bc]		
	I (n = 41)	C (n = 9)	low	med	high	low	med	high	low	med	high	low	med	high
Food tastings	85	56	0	18	75	0	35	55	10	50	28	5	43	43
Cooking sessions	83	67	0	15	75	0	30	48	0	33	53	3	35	48
School canteen promotions	76	67	8	49	32	8	57	16	16	49	19	19	19	19
Activity sheets	73	67	3	72	19	3	50	31	8	69	17	11	56	25
Posters/leaflets	70	44	9	52	33	9	61	15	27	58	9	6	70	18
Integrating nutrition into core curricula	58	78	0	65	26	0	55	26	3	58	19	3	55	29
Competitions	54	22	4	38	50	21	29	21	25	38	25	29	33	25
School gardening	44	33	5	19	71	33	48	19	5	24	57	19	43	29
Reading books	37	67	57	33	10	62	24	14	10	57	14	71	19	10
Visits to growers, markets, supermarkets	27	22	0	8	69	0	15	69	23	31	23	8	23	62
Videos	12	22	0	29	43	0	29	57	0	29	57	0	43	43
Computer-based activities	12	22	0	43	29	0	57	14	0	57	14	0	71	29

[a] No differences between I and C school teachers' usage were statistically significant using Fisher's Exact Test
[b] Totals within sections may be < 100% due to missing responses [c] Denominators = N teachers used each activity

As shown in Table 15, despite the lack of differences in the types of fruit and vegetable activities used, intervention school teachers were significantly more likely than controls to report having used many specific fruit and vegetable promoting resources offered as part of the TFV project. Indeed only one control school teacher reported using two of the 15 resources, most of which are freely available to all school teachers throughout the state. Similarly, intervention school teachers reported having used a wider range of fruit and vegetable promoting resources (2.9 vs 0.2 resources, $p<0.05$). The most used resources were the Kids in the Kitchen cookbook and manual and the TFV "More Teacher Resources for Classroom Activities" folder. These were also among the resources rated the most successful at increasing children's fruit and vegetable interest, knowledge and skills and at achieving teachers' PD/H/PE curriculum goals, along with the TFV "Gardening Kit", the "Colourful World of Vegies" kit and the TFV "Fruit and Veg Websites" poster.

Table 15: Teachers' usage of and attitudes to specific fruit and vegetable promoting resources

F & V promoting activity	% teachers used resource		% I school teachers using activity who rated its success for ...											
			increasing interest[bc]			developing knowledge[bc]			developing skills[bc]			achieving PD/H/PE goals[bc]		
	I (n = 41)	C (n = 9)	low	med	high	low	med	high	low	med	high	low	med	high
"KIK" Cookbook[a]	61	0	4	36	48	12	56	20	8	44	32	4	68	16
TFV "More Teacher Resources for Classroom Activities" folder[a]	56	0	4	65	22	4	74	17	0	74	13	4	74	9
"KIK" Instructor's Manual[a]	41	0	6	47	29	6	53	29	6	65	18	6	77	6
TFV "Gardening Kit" [a]	27	0	0	18	64	9	46	46	0	36	46	9	46	27
TFV "Fruit &Veg websites" poster[a]	22	0	11	44	33	0	44	33	0	44	22	0	67	22
NNES "Fun Activities throughout the KLAs" classroom manuals	17	0	14	43	0	29	57	14	29	29	0	14	43	0
"Blooming Ideas for Schools" resource	12	11	0	40	20	0	40	40	0	40	20	40	40	0
"Sing Along, Move Along" book & tape	12	0	0	60	40	20	40	20	20	60	20	0	80	0
"Wonderful World of Vegies" kit	12	0	0	40	0	0	40	40	0	40	0	0	60	0
"Colourful World of Vegies" kit	10	0	0	25	0	0	25	50	0	25	0	0	50	0
"Tucker Box – connecting text & grammar"	7	11	0	25	0	0	25	25	0	25	0	33	33	0
"2 fruit & 5 veg Every Day" kit	5	0	0	0	0	0	0	50	0	0	0	0	50	0
"Charge Through Your Day" kit	2	0	0	0	0	0	0	0	0	0	0	0	0	0
"Eat Well SA" resource	2	0	0	0	0	0	0	0	0	0	0	0	0	0
"Dole 5-a-day Fruit &Veg CD for Kids"	2	0	0	0	0	100	0	0	100	0	0	0	0	0

[a] Differences between I and C school teachers were statistically significant at $p < 0.05$, using Fisher's Exact Test

[b] Totals within sections may be < 100% due to missing responses [c] Denominators = N I school teachers used each resource

Conclusions: **The TFV project enhanced the quality, diversity and possibly the frequency of classroom fruit and vegetable promoting activities.**

Fruit and vegetable tastings, cooking lessons, gardening, videos and visits to growers were rated the most successful strategies.

Of the classroom resources, the KIK cookbook and manual, TFV "More Teacher Resources for Classroom Activities" folder and TFV "Gardening Kit" were the most useful to teachers.

Giving teachers classroom resources increased their use.

Volunteers' Participation in / Enjoyment of Individual TFV Strategies

Overall, between a quarter and a fifth of intervention school parents reported having been involved in planning and/or doing TFV activities at their children's schools. As shown in Table 16, volunteers (mainly parents) helped in a range of TFV activities and most of them enjoyed or really loved doing each. Over half the total hours contributed went into the KIK cooking classes, with virtually all volunteers involved. This was also the most enjoyed activity and one that most volunteers were willing to help with again. The second most popular activity was the fruit and vegetable tastings at special school events, which most volunteers reported enjoying and being willing to do again. Although involving the least volunteers, school trips to growers/markets were also highly enjoyable and all involved would do them again.

Table 16: Volunteers' levels of involvement in and enjoyment of TFV school activities

TFV Activity	% involved (n = 34)	% enjoyed / loved it[a]	% would do it again[a]	Total hours spent	Mean hours per volunteer[a]
KIK cooking classes for children	91	87	87	429	13.8
TFV special event promotions (eg: sport days)	87	66	86	56	2.4
Parent cooking and tasting sessions	47	69	73	32	2.0
TFV school canteen promotions	44	73	80	81	5.4
TFV School Management Committee	26	67	75	74	8.0
Helping with school F & V gardens	21	57	75	45	5.6
Trips to F & V growers, markets, supermarkets	12	75	100	10	2.5
			TOTAL	**727**	

[a] Denominators were the number of volunteers involved in each activity

As shown in Table 17, almost all volunteers found the TFV activities rewarding; felt their efforts were appreciated by the school, TFV staff and their children; and felt they had made an impact on children's eating habits. However, some felt training, equipment or organisation could have been improved for some activities.

Table 17: Volunteers' opinions about their involvement in TFV activities in schools

Statement	% volunteers saying (n = 34)	
	Agree / strongly agree	Disagree / strongly disagree
My children were pleased I was involved	94	3
I felt appreciated by the TFV staff	94	0
The children enjoyed the activities	91	3
The children seemed to learn from the activities	91	3
I felt appreciated by the principal/teachers	85	9
I feel I've helped make a difference to the children's eating habits	74	15
There wasn't always enough training/equipment to run activities properly	29	62
Some activities seemed poorly prepared and chaotic	15	79
It was a stressful thing to be involved in	9	79
It's put me off getting involved in this sort of thing again	3	88

Conclusion: At least a fifth of parents volunteered for TFV activities, with most finding them very enjoyable, rewarding and appreciated. KIK cooking classes were the most popular volunteer activity.

TFV Strategies Considered Most Successful

Volunteers' survey

Half of the 34 intervention school volunteers surveyed spontaneously nominated the KIK cooking classes as the most successful TFV activity at improving children's knowledge and attitudes towards fruits and vegetables. The fruit and vegetable tastings came in second with seven votes and the fruit and vegetable gardens were third with six votes. The main reasons given for choosing these activities were their fun, creativity and hands-on nature, the parental involvement and the whole-of-school approach.

Principals' survey

School principals also nominated the KIK cooking classes as the most successful TFV activity and for very similar reasons to the volunteers. They also named several other successful activities specific to their school but all involved food tasting and the parents. The vegetable gardens were reported as highly successful in some schools, providing produce for all school families, but not in some others where they were affected by floods or vandals. When principals were asked which they considered the least successful TFV activities, few were named as principals said that they had chosen activities they thought likely to succeed. The few TFV activities named as the least successful were those targeting parents alone, such as a competition and a lunch for parents.

Teachers' survey

In line with the volunteers' and principals' opinions, and as discussed in more detail earlier, the KIK cooking classes, fruit and vegetable tastings, fruit and vegetable gardens and visits to growers and markets were the activities the intervention school teachers rated as most successful for developing the children's interest, knowledge and skills in this area. They were also among those rated as the most successful at achieving the teachers' goals in relation to the PD/H/PE component of the schools curriculum.

Conclusions: **The TFV strategies consistently considered the most successful at improving children's fruit and vegetable knowledge, attitudes and skills were the KIK cooking classes, fruit and vegetable tastings, fruit and vegetable gardens and visits to growers and markets. Their fun and practical nature and parental involvement were viewed as key factors in their success.**

RESULTS & CONCLUSIONS: IMPACT MEASURES

Impact on Children

Children's knowledge about recommended intakes of fruits and vegetables

Children's survey

In their survey, intervention school children were significantly more likely than control school children to know the recommended daily intake of two serves of fruit (67% vs 48%, $p<0.001$). Although more intervention than control school children also identified the correct recommended daily intake of three serves of vegetables, this difference was not significant (30% vs 21%, $p>0.05$). No differences in fruit and vegetable knowledge were found between boys and girls or between younger and older children.

Parents' survey

In their survey, intervention school parents perceived large impacts on their children's fruit and vegetable knowledge, with significantly more intervention than control school parents reporting that, since participating in fruit and vegetable promoting activities at school, their children seemed to know more about fruits (51% vs 28% "a fair bit / a lot", $p<0.0005$) and vegetables (47% vs 21% "a fair bit / a lot", $p<0.00001$).

Qualitative information from children, parents and teachers

In the final open, qualitative question in their surveys, a number of children, parents and teachers commented that they felt the TFV project had increased children's awareness and knowledge about the importance of fruits and vegetables and of nutrition in general (see Appendix H for the full list of comments).

Conclusion: The TFV project improved children's knowledge about fruits and vegetables, including recommended daily intakes for each.

Children's attitudes towards fruits and vegetables

Children's survey

As shown in Table 18, when asked to name their five favourite foods, intervention school children named consistently more fruits, vegetables and meals containing them (mixed meals) than control school children. Among intervention school children, older ones were more likely than younger ones to name mixed meals (73% vs 58% at least one meal, 33% vs 19% more than one meal, $p<0.005$) but younger children were more likely than older ones to name two or more fruits (51% vs 34%, $p<0.01$). In addition, girls were more likely than boys to name two or more fruits, vegetables or mixed meals in their top five foods (93% vs 86%, $p<0.05$).

Table 18: Percentage of children listing fruits and vegetables in their five favourite foods

Group	N .... named in top 5 foods	% children naming ...			
		fruits[b]	vegetables[a]	fruits or vegetables[a]	mixed meals (include F or V)[a]
I (n = 307)	0	27	52	2	33
	1	32	32	7	40
	2 – 5	41	17	90	27
C (n = 85)	0	30	42	2	45
	1	51	49	19	45
	2 – 5	19	8	79	10

[a] Significantly different between I and C at $p<0.01$ [b] Significantly different between I and C at $p<0.001$

As shown in Table 19, intervention school children also showed more positive attitudes on a range of statements about fruits and vegetables than control school children.

Table 19: Children's attitudes towards fruits and vegetables

Statement	% of children			
	Agree a little / a lot		Disagree a little / a lot	
	I (n = 307)	C (n = 85)	I (n = 307)	C (n = 85)
General attitude				
Eating fruit and veg every day keeps me healthy[a]	96	92	3	8
Attitudes to vegetables				
I like trying new veg[d]	75	55	21	45
I hate cooked veg	25	21	72	79
Most veg tastes good[c]	74	58	22	42
I like raw veg	54	45	46	49
My friends eat lots of veg	50	45	42	55
Most of my friends like raw veg as snacks[b]	33	19	59	81
Attitudes to fruit				
I like trying new fruit	87	86	8	14
Most fruit tastes bad	10	15	87	85
My friends eat lots of fruit[a]	68	61	24	39
Most of my friends like fruit as a snack	65	61	25	39

[a] Significantly different between I and C at p<0.05 [b] Significantly different between I and C at p<0.01
[c] Significantly different between I and C at p<0.001 [d] Significantly different between I and C at p<0.00005
NB: row percentages may not add to 100% due to missing values

As shown in Table 20, intervention school children also reported more change in their attitudes towards fruits and vegetables as a result of participating in fruit and vegetable activities at school, although only one of these differences reached statistical significance. Among the intervention school children, the TFV project seemed to have had more impact on the younger ones' attitudes: younger children were more likely than older ones to report "I know that fruit and veg can taste good now" (74% vs 55% "a fair bit / a lot", p<0.001); "I think fruit and raw veg are good for snacks" (61% vs 45% "a fair bit / a lot", p<0.01); "I am interested in trying new fruit" (71% vs 55% "a fair bit / a lot", p<0.01); and "I am interested in trying new vegetables" (51% vs 40% "a fair bit / a lot", p<0.05). In addition, girls were more likely than boys to report "I know that fruit and veg are healthy for me" (93% vs 83% "a fair bit / a lot", p<0.005).

Table 20: Changes in children's attitudes after doing fruit and vegetable activities at school

Attitude	% of children reporting being ...			
	affected not at all / a little		affected a fair bit / a lot	
	I (n = 300)	C (n = 58)	I (n = 300)	C (n = 58)
I know that fruit and veg are healthy for me	9	12	90	81
I know that fruit and veg can taste good now[a]	33	55	66	40
I think fruit and raw veg are good for snacks	46	53	53	40
I am interested in trying new vegetables	54	55	45	38
I am interested in trying new fruit	38	36	61	57

[a] Significantly different between I and C at p<0.001 NB: Row totals do not add to 100% due to missing values

Parents' survey

Intervention school parents perceived that participating in fruit and vegetable promoting activities at school had increased their children's interest in fruits (46% vs 31% "a fair bit / a lot", $p<0.05$) and vegetables (35% vs 23% "a fair bit / a lot", $p>0.05$) more than control school parents, although only the former was significant.

Principals' survey

Most principals thought that the TFV project was very or extremely successful in creating positive attitudes in children towards fruit and vegetables.

Qualitative information from children, parents and teachers

In the final open, qualitative question in their surveys, a number of children, parents and teachers commented that they felt the TFV project had increased children's interest in fruits and vegetables and in nutrition in general. In addition, 10% of intervention school children made spontaneous, positive comments about fruits and vegetables, such as "I like/love fruit and/or vegetables", "fruits and/or vegetables are delicious" and "fruits and/or vegetables are cool". No such comments were made by control school children (see Appendix H for the full list of comments). Similarly, the fact that 47% of intervention school children but only 14% of control school children chose to make any comment on this question further indicates an elevated interest among those exposed to the TFV project.

Conclusions: **The TFV project improved children's attitudes towards fruit and vegetables, especially the latter.**

Participating in TFV activities may have had more impact on the fruit and vegetable attitudes of younger children and girls.

Children's fruit and vegetable preparation skills

As shown in Table 21, intervention school children reported better self-efficacy at preparing fruits and vegetables than control school children. No significant differences were found between the perceptions of boys and girls or between older and younger children.

Table 21: Children's perceived self-efficacy at preparing fruits and vegetables

Statement	% of children			
	Agree a little / a lot		Disagree a little / a lot	
	I (n = 307)	C (n = 85)	I (n = 307)	C (n = 85)
I'm good at preparing fruit and vegetables[b]	74	49	24	49
I can get my own fruit and vegetables snacks at home[a]	93	84	6	13

[a] Significantly different between I and C at $p<0.05$ [b] Significantly different between I and C at $p<0.00005$

Conclusion: **The TFV project improved children's fruit and vegetable preparation skills.**

Children's fruit and vegetable consumption

Children's survey

As shown in Table 22, no significant differences were found between intervention and control school children's responses to statements about fruit and vegetable consumption. Similarly, no significant differences were found between the responses of boys and girls or between older and younger children.

Table 22: Children's reported fruit and vegetable consumption

Statement	% of children			
	Agree a little / a lot		Disagree a little / a lot	
	I (n = 307)	C (n = 85)	I (n = 307)	C (n = 85)
I eat more vegetables now than I used to	73	67	24	32
I don't eat vegetables every day	36	39	62	61
I eat some fruit most days	87	86	12	12
I eat more fruit now than I used to	79	80	18	20

NB: row percentages may not add to 100% due to missing values

However, as shown in Table 23, intervention school children reported more change than control school children in their fruit and vegetable eating intentions and actions as a result of participating in fruit and vegetable activities at school. However, the difference was significant for only one of the statements: asking for more fruit and vegetables at home. The younger children appear to have been more affected by the TFV project, with significantly more younger than older children reporting: "I want to eat more vegetables now" (47% vs 36% "a fair bit / a lot", $p<0.005$); "I want to eat more fruit now" (67% vs 47% "a fair bit / a lot", $p<0.005$); "I ask for more fruit and veg at home" (62% vs 54% "a fair bit / a lot", $p<0.05$); and "I do healthy cooking with fruit and veg more often at home" (50% vs 39% "a fair bit / a lot", $p<0.05$).

Table 23: Children's reported changes in fruit and vegetable eating intentions and actions after participating in fruit and vegetable activities at school

Intention	% of children reporting being ...			
	affected not at all / a little		affected a fair bit / a lot	
	I (n = 300)	C (n = 58)	I (n = 300)	C (n = 58)
I want to eat more vegetables now	59	74	41	21
I want to eat more fruit now	45	45	55	50
I ask for more fruit and veg at home[a]	42	57	57	38
I do healthy cooking with fruit and veg more often at home	56	60	43	33
I get my own fruit or veg snacks at home more often	38	40	62	53

[a] Significantly different between I and C at $p<0.05$ NB: Row totals do not add to 100% due to missing values

Parents' survey

As shown in Table 24, intervention school parents reported more perceived change than control school parents in their children's fruit and vegetable eating intentions and actions as a result of participating in fruit and vegetable activities at school. However, these differences were not statistically significant.

Table 24: Parents' perceptions of changes in children's fruit and vegetable consumption since participating in fruit and vegetable promoting activities at school

Perceived change	% of parents think children are …			
	a little / not at all		a fair bit / a lot	
	I (n = 442)	C (n = 101)	I (n = 442)	C (n = 101)
Eating more vegetables	63	68	33	22
Eating more fruit	50	54	47	36
Asking for more fruit and/or vegetables to eat	57	58	39	32

NB: Row totals do not add to 100% due to missing values

Principals' survey

Although most principals thought the TFV project was very or extremely successful in creating positive attitudes towards fruit and vegetables, responses were more variable as to whether TFV was successful at getting children to enjoy eating fruits and vegetables. Most thought it was successful to varying degrees but one felt it made no difference and another from a large school said he had no idea. Comments were:

- Nothing was left on the plate in the Kids in the Kitchen classes.
- It's hard to change eating habits.
- It hasn't changed the amount of fruit sold in the canteen.
- Children seem more inclined to bring fruit and vegetables.
- Some children will never eat fruits and vegetables even when you put them in front of them.

Qualitative information from children, parents and volunteers

In the final open, qualitative question in their surveys, some children, parents and one volunteer commented that they felt the TFV project had encouraged children to eat healthier, including more fruits and vegetables and increased their willingness to try new fruits and vegetables (see Appendix H for the full list of comments).

Conclusions: **The TFV project may have increased children's fruit and vegetable consumption – results from the outcome analyses (pre-post food record surveys) will clarify this.**

Participating in TFV activities appears to have had more impact on younger than older children's reported fruit and vegetable eating actions and intentions.

Children's access to fruits and vegetables

Children's survey

As shown in Table 25, although the differences were not statistically significant, more intervention than control school children reported positive changes in their access to fruits and vegetables at home and in their parents encouraging them to eat them. Younger children's access seemed more improved, with younger children more likely than older ones to report: "We have more fruit at home now" (68% vs 52% "a fair bit / a lot", $p<0.05$); "We have more veg with our meals now" (68% vs 52% "a fair bit / a lot", $p<0.05$); and "We are growing more veg or fruit at home now" (53% vs 31% "a fair bit / a lot", $p<0.001$). Girls' access also seemed more improved, with girls more likely than boy to report: "We have more fruit at home now" (63% vs 52% "a fair bit / a lot", $p<0.05$); and "We have more veg with our meals now" (63% vs 52% "a fair bit / a lot", $p<0.05$).

Table 25: Children's reported changes in their access and encouragement to fruits and vegetables at home

Perceived Change	% of children reporting being ...			
	affected not at all / a little		affected a fair bit / a lot	
	I (n = 300)	C (n = 58)	I (n = 300)	C (n = 58)
My parents talk to me more about which fruit and veg I like now	73	64	27	24
My parents encourage me to try new fruits or veg at home	46	33	54	55
My parents let me make their own healthy snacks or help with cooking fruit or veg recipes more often	46	42	53	47
My parents tell me fruit or veg are healthy for me more often	41	34	58	53
We have more fruit at home now	40	38	59	50
We have more veg with our meals now	42	36	57	52
We are growing more veg or fruit at home now	60	53	40	34

NB: Row totals do not add to 100% due to missing values

As well as these potential improvements in access at home, intervention school children's access to fruits and vegetables in the school environment also appears to have improved. Significantly more intervention than control school children recalled eating fruits and/or vegetables in school cooking classes (87% vs 18%, $p<0.0001$), from school canteen promotions (73% vs 24%, $p<0.0001$), at tastings at special school events (64% vs 5%, $p<0.0001$) and in classroom tastings (55% vs 14%, $p<0.0001$).

Volunteers' survey

As shown in Table 26, most of the 34 volunteers surveyed reported trying to increase the availability of fruits and vegetables at home and encouraging their children to eat them since participating in the TFV project.

Table 26: Changes in volunteers' promotion of fruits and vegetables at home since participating in the TFV project

Self reported effect of participating in TFV project	% of volunteers (n = 34)	
	Agree / Strongly Agree	Disagree / Strongly Disagree
I encourage my children to try new kinds of fruits or vegetables at home	91	6
I encourage my children to make their own healthy snacks or help with cooking fruit or vegetable recipes more often	82	15
I try to have a greater variety of fruits and vegetables at home	82	15
We are growing more fruits and/or vegetables at home now	53	44

NB: row percentages may not add to 100% due to missing values

Conclusions: **The TFV project increased children's access to fruits and vegetables in school classrooms, canteens and special events and may have improved access at home.**

Access to fruits and vegetables at home appears to have improved more for girls and younger children.

Active parental involvement in TFV activities appears to increase the impact of the project on children's access to fruits and vegetables at home.

Impact on Parents

Parents' knowledge about recommended intakes of fruits and vegetables

In their survey, intervention school parents were significantly more likely than control schools parents to know the recommended daily intakes of two serves of fruit (72% vs 63%, $p<0.05$) and three serves of vegetables (47% vs 28%, $p<0.001$). Active participation in the TFV project may have improved these rates further as knowledge of recommended daily intakes was much higher among the volunteers surveyed (88% correct for fruit and 82% correct for vegetables). However, parents volunteering for TFV activities may have already had better fruit and vegetable knowledge.

Conclusion: **The TFV project improved parents' knowledge about children's recommended daily fruit and vegetable intakes.**

Parents' fruit and vegetable preparation skills and behaviours

As shown in Table 27, although intervention school parents reported slightly higher "ever" and "current" usage of a number of specific ideas to encourage their children to eat more fruit and vegetables, none of these differences were statistically significant differences.

Table 27: Parents' reported usage of strategies to encourage children to eat fruit and vegetables

Strategy	% of parents tried strategy		% of those tried who report …			
			it didn't work / still use it occasionally		still use it fairly often / a lot	
	I (n = 458)	C (n = 155)	I[a]	C[a]	I[a]	C[a]
Increasing the choice of fruit and vegetables at home	92	87	28	30	70	67
Serving fruit and vegetables in different ways	89	86	41	45	57	53
Disguising fruit in other foods	47	46	63	69	32	27
Disguising vegetables in other foods	60	55	60	65	38	31
Serving raw vegetables while children wait for their evening meal	74	68	43	48	54	50

[a] Denominators were the number of parents having tried each strategy
NB: row percentages may not add to 100% due to missing values

Qualitative information from parents

In the final open, qualitative question in their survey, a number of parents commented that they felt the TFV project had made it easier for them to promote fruits and vegetables at home (see Appendix H for the full list of comments).

Conclusion: The TFV project does not seem to have affected the techniques parents use to encourage children to eat more fruits and vegetables but may have increased their confidence in doing so.

Parents' involvement in fruit and vegetable promoting activities

Parents' survey

Significantly more intervention than control school parents reported having been directly involved in planning and/or doing a fruit and vegetable promoting activity at their children's school during 1999 or 2000, including Kids in the Kitchen cooking classes (22% vs 3% involved, $p<0.00001$), canteen fruit and vegetable promotions (21% vs 8% involved, $p<0.001$) and special event fruit and vegetable promotions (26% vs 14% involved, $p<0.005$). Consequently, intervention school parents reported being involved in more fruit and vegetable activities at school than control school parents during the two years (mean 0.69 vs 0.25 activities, $p<0.0001$).

Principals' survey

Nine of the 10 intervention school principals surveyed agreed with the statement that "Parents are keen to help with school fruit and vegetable promotions like cooking classes". The principals reported that attracting volunteers to participate in TFV activities was no more difficult than for other activities. Willingness to volunteer varied between schools and seemed easier for food preparation activities, especially in the second year. Most principals felt the volunteers responded more positively to involvement in the TFV activities than in other school activities.

Teachers' survey

As shown in Table 28, the intervention school teachers also perceived better parental attitudes towards fruit and vegetable promotion in schools and willingness to help with them than control school teachers.

Table 28: Teachers' perceptions about parental attitudes towards fruit and vegetable promotion in schools

Statement	% of teachers			
	Agree / Strongly Agree		Disagree / Strongly Disagree	
	I (n = 41)	C (n = 9)	I (n = 41)	C (n = 9)
Parents are keen to help with school fruit and vegetable promotions (eg: cooking classes) [b]	83	22	10	44
Parents aren't really interested in fruit and vegetables being promoted to children at school[a]	20	44	76	11

[a] Significantly different between I and C at p<0.05 [b] Significantly different between I and C at p<0.01

NB: row percentages may not add to 100% due to missing values

Volunteers' survey

As discussed earlier in detail (see Table 16), the volunteers surveyed reported high levels of enjoyment of the TFV activities and at least three quarters of those involved in each activity reported they would be willing to do it again. In addition, 65% agreed with the statement "I want to be involved in more fruit and vegetable promotion activities at the school". In addition, as shown in Table 29, more than half the volunteers surveyed reported having spread the fruit and vegetable message to other groups outside the primary school, most notably discussing them with friends and family.

Table 29: Volunteers reporting promoting fruits and vegetables elsewhere

Self reported effect of participating in TFV project	% of volunteers (n = 34)	
	Agree/Strongly Agree	Disagree/Strongly Disagree
I talk more to friends and family about ways to encourage children to eat more fruit and vegetables	65	32
I now encourage sporting or social groups I'm involved with to provide more fruit and vegetables in their catering	53	38
I've taken some of the ideas to other schools or preschools I have contact with	26	61

NB: row percentages may not add to 100% due to missing values

Qualitative information from teachers, parents and volunteers

In the final open, qualitative question in their surveys, a number of teachers and volunteers and a few parents commented that they felt the TFV project needed to encourage even more parental interest and involvement in promoting fruit and vegetables generally and in TFV activities (see Appendix H for the full list of comments).

Conclusions: **The TFV project increased parental interest in promoting fruits and vegetables and their involvement in such activities in schools in a way likely to be sustained but this could be improved further.**

The TFV project's fruit and vegetable promoting message has been communicated beyond the schools involved.

Volunteering for TFV activities may have increased parents' motivation and confidence to advocate for more fruits and vegetables at home, at school and in other settings.

Impact on Teachers

Teachers' knowledge about recommended intakes of fruits and vegetables

In their survey, no significant differences were found between intervention and control school teachers' knowledge about recommended daily fruit and vegetable intakes. However, all teachers were more likely to know the recommended daily intake of two serves of fruit (78% vs 73%) than of three serves of vegetables (56% vs 56%).

Conclusion: **The TFV project did not increase teachers' knowledge of recommended daily fruit and vegetable intakes.**

Teachers' attitudes towards fruit and vegetable promoting activities at school

Teachers' survey

As shown in Table 30, although not statistically significant, intervention school teachers reported feeling more motivated to teach about fruits and vegetables and more accepting of this as an appropriate issue for schools.

Table 30: Teachers' attitudes towards fruit and vegetable promotion in schools

Statement	% of teachers			
	Agree / strongly agree		Disagree / strongly disagree	
	I (n = 41)	C (n = 9)	I (n = 41)	C (n = 9)
I'm motivated to teach children to eat plenty of fruit and vegetables	98	78	2	0
I'm irritated about Health Dept agendas in the school environment	20	11	80	67
Encouraging children to eat fruit and vegetables is a family, not a school, responsibility	41	33	56	44

NB: row percentages may not add to 100% due to missing values

Principals' survey

The general attitude of all principals in intervention schools to promotion of fruit and vegetables in schools was very positive: all disagreed with the statement "I'm irritated about Health Dept agendas in the school environment" and all but one disagreed with the statement "Encouraging children to eat fruit and vegetables is a family, not a school, responsibility".

Conclusion: The TFV project may have promoted more positive attitudes among teachers towards fruit and vegetable promotions in school.

Teachers' fruit and vegetable teaching skills

In their survey, five of 41 (12%) intervention school teachers reported having completed the Food and Nutrition in Action nutrition teaching program offered through the TFV project and developed as part of the National Nutrition Education in Schools Project. All rated the training as 'fairly useful'. A further four (10%) had completed other nutrition training, via the TFV project, in the last two years and rated it as a little useful (n = 1), fairly useful (n = 2) and very useful (n = 1). No control school teachers had undertaken any nutrition training in that time. Given the sample sizes involved, these differences were not statistically significant.

As shown in Table 31, intervention school teachers reported feeling more confident in their abilities to teach children about eating fruits and vegetables and feeling more supported in their efforts to do so than control school teachers. However, most of these differences were again not statistically significant due to the small number of teachers involved. Interestingly, the one statement where a significant difference was achieved was in relation to support from external health professionals, suggesting the teachers particularly appreciated the support of the TFV project staff.

Table 31: Teachers' perceptions of their fruit and vegetable promoting skills and support

Statement	% of teachers			
	Agree / strongly agree		Disagree / strongly disagree	
	I (n = 41)	C (n = 9)	I (n = 41)	C (n = 9)
I'm unsure of my ability to teach children to eat plenty of fruit and vegetables	7	11	93	67
The principal supports me promoting fruit and vegetables to children	95	67	5	0
The other teachers support me promoting fruit and vegetables to children	90	78	5	0
I get little support from external health professionals to promote fruit and vegetables to children[a]	10	44	85	22

[a] Significantly different between I and C at $p<0.01$ NB: row percentages may not add to 100% due to missing values

Conclusion: The TFV project may have improved among teachers' skills and perceived support for promoting fruits and vegetables in school.

DISCUSSION

The results described in this report indicate that the TFV project was well implemented, reached the vast majority of all target groups and was overwhelmingly positively received by them. The project also appears to have had at least moderate, and often better, success in improving almost all of its impact indicators. However, a number of potential limitations need to be considered when interpreting these results.

The major limitation of the current evaluation is that similar process and impact indicators were not collected prior to the TFV project starting. Therefore, the post-intervention differences found between control and intervention school respondents' fruit and vegetable knowledge, attitudes, skills and intentions may have existed all along and not as a result of the intervention. However, the high consistency of results (significant and non-significant) across the various survey instruments and the magnitudes of many of these differences make such an explanation unlikely.

Another potential limitation was the less than optimal response rate on some of the self-completed surveys: only 34% of volunteers, 59% of parents, 65% of children and 60% of control school teachers returned completed surveys. However, the latter three response rates are quite reasonable for surveys conducted in this setting. The need for active parental consent contributed to the children's response rate as there were few active refusals but many children could not be surveyed because due to forgotten consent forms. Timing was a major factor in the poor response rate to the volunteers' survey, which could not be mailed out until early December for procedural reasons and a number of parents returned incomplete surveys with apologies. In addition, the volunteers' survey looked similar to the parents' survey, possibly confusing some volunteers into thinking they had already completed it. It is also possible that some parents who only attended TFV events mistakenly reported having helped with them and realised their mistake on receiving the volunteers' survey. Therefore, while accepting that the results presented may be from more fruit and vegetable motivated parents, any effects should at least be similar across intervention and control groups. Consequently, the consistent, and frequently large, differences found are still considered convincing.

Another potential limitation was the lack of prior psychometric testing of the survey instruments and Participation Index, which was not possible within the budget and timeframe of the current project. However, standard best practice survey design techniques were employed in developing the instruments, all were considered to have face validity and pilot-tested to check understanding and obvious gaps. The Participation Index (developed to allow the objective, consistent and concrete assessment of the reach, frequency and quality of implementation of each key TFV strategy) was developed in accordance with principles for process evaluation, giving it content validity [1]. The similarity of results across the different instruments suggests they

have convergent validity. In addition, the consistent differences where they would be expected between intervention and control respondents' answers (eg: regarding exposure to fruit and vegetable promotions), suggest they have concurrent validity. Therefore, we are confident in the results of this evaluation.

Another issue to be considered is other activities that could have contributed to the changes found in fruit and vegetable related outcomes. Tri-annual mailed surveys of community health staff identified minimal nutrition-related health education in intervention schools other than TFV project activities during the intervention period. The only activity reported in one control school was the provision of leaflets and information sheets on school lunches and healthy eating for children. Therefore, we are confident that the changes found are primarily due to the participants' involvement if TFV activities.

Another strength of the current study is the range of different schools involved and the consistently positive reception of the TFV project across them. School sizes ranged from less than 20 to over 350 students, with state and Catholic schools included. Most of the intervention schools were in areas with relatively low socio-economic profiles and three had substantial proportions of indigenous families, which previous studies have found harder groups to target [2].

Confidence in our results is also enhanced by their concordance with those from similar overseas studies indicating:

- Good implementation of and satisfaction with teacher training, curriculum and canteen components [2-4].
- Improved implementation when schools have a sense of ownership of the project [1, 5, 6].
- High recall among children of having done fruit and vegetable activities at school [6].
- High awareness among parents of their children having done the fruit and vegetable activities [4].
- Higher recall and enjoyment of the more hands-on and tasting activities [3, 4, 6].
- The importance and difficulties of achieving high parental involvement [2-6].
- Improved parental involvement by using incentives and by scheduling project activities to coincide with other school activities [2, 4, 5].

Therefore, in conclusion, the TFV project offers an exciting opportunity for successfully improving children's fruit and vegetable related knowledge, attitudes and preparation skills and their access to fruits and vegetables at home and in school settings and, possibly, their fruit and vegetable eating intentions and actions. The latter will be determined by the analyses of the 24 hour food record surveys completed before, during and after the intervention.

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APPENDIX A: Children's Survey Instrument

1. **Which school year are you in?** *(please circle one number)* 3 4 5 6

2. **Are you a boy or girl?** Boy 1 Girl 2

3. **How long have you been at this school?**
   - Less than 6 months 1
   - 6 months – 1 year 2
   - Between 1 and 2 years 3
   - 2 years or longer 4

4. **What are your 5 favourite foods?**

   1.....

   2.....

   3.....

   4.....

   5.....

5. **Do you agree or disagree with these ideas about fruit and veg?**
   Please circle one number for each idea.

Idea	agree a lot	agree a little	disagree a little	disagree a lot
a) I like trying new fruit.	1	2	3	4
b) I like trying new veg.	1	2	3	4
c) Eating fruit and veg every day keeps me healthy.	1	2	3	4
d) Most fruit tastes bad.	1	2	3	4
e) Most veg tastes good.	1	2	3	4
f) I can get my own fruit and veg snacks at home.	1	2	3	4
g) I eat more fruit now than I used to.	1	2	3	4
h) I eat more veg now than I used to.	1	2	3	4
i) I eat some fruit most days.	1	2	3	4
j) I don't eat veg every day.	1	2	3	4
k) I hate cooked veg.	1	2	3	4
l) I'm good at preparing fruit and veg.	1	2	3	4
m) We have more fruit and veg around at home now.	1	2	3	4
n) I like raw veg.	1	2	3	4
o) Most of my friends like fruit as a snack.	1	2	3	4
p) Most of my friends like raw veg as snacks.	1	2	3	4
q) My friends eat lots of fruit.	1	2	3	4
r) My friends eat lots of veg.	1	2	3	4

6. How much fruit should a primary school child eat to stay healthy?
(*One serve equals an apple, an orange, a banana or a cup of chopped fruit.)*
Please circle one number.

At least 1 serve a week	1	At least 1 serve a day	5
At least 2 serves a week	2	At least 2 serves a day	6
At least 3 serves a week	3	At least 3 serves a day	7
At least 5 serves a week	4	At least 5 serves a day	8

7. How much vegetable should a primary school child eat to stay healthy?
(One serve equals half a cup of vegetables.)
Please circle one number.

At least 1 serve a week	1	At least 1 serve a day	5
At least 2 serves a week	2	At least 2 serves a day	6
At least 3 serves a week	3	At least 3 serves a day	7
At least 5 serves a week	4	At least 5 serves a day	8

8. Do you know any of these fruit and veg promotions? If yes, where did you see or hear them?
Please circle as many numbers as you want for each promotion.

Promotion	No, not heard of it	Yes, saw or heard it ...				
		at school	on TV or radio	in a recipe book	in a super-market	from my family
a) Tooty Fruity Vegie.	1	2	3	4	5	6
b) Kids in the Kitchen.	1	2	3	4	5	6
c) 7-a-Day.	1	2	3	4	5	6
d) Rip Its.	1	2	3	4	5	6
e) Wipe Outs.	1	2	3	4	5	6
f) Charge through your day.	1	2	3	4	5	6
g) F & V for me	1	2	3	4	5	6

9. What fruit and veg activities have you done at this school in the last 2 years? And how did you like the activities you did?

Please circle one number for each activity. If you did not do it, circle 1.

Fruit and veg activity	Did not do it in last 2 years	Did it and …..			
		didn't like it	it was OK	enjoyed it	really loved it
a) Classroom lessons about fruit or veg.	1	2	3	4	5
b) Homework about fruit and veg.	1	2	3	4	5
c) Cooking fruit or veg recipes at school.	1	2	3	4	5
d) Tasting new fruit or veg in class.	1	2	3	4	5
e) Tasting new fruit or veg at special school events.	1	2	3	4	5
f) Eating fruit and veg from canteen promotions.	1	2	3	4	5
g) School competitions about fruit and veg.	1	2	3	4	5
h) Helping grow fruit or veg at school (eg: making bean sprouts, working in vegie garden).	1	2	3	4	5
i) School trips to fruit or veg growers, markets or supermarkets.	1	2	3	4	5

If you circled all number 1s at Q9 ö please go to Q12 at the end of the survey.
If you circled any 2, 3, 4 or 5 ö please go to Q10.

10. How have these fruit and veg activities affected you?

Please circle one number for each idea.

	Not at all	A little	A fair bit	A lot
a) I want to eat more fruit now.	1	2	3	4
b) I want to eat more veg now.	1	2	3	4
c) I know that fruit and veg can taste good now.	1	2	3	4
d) I'm more interested in trying new fruit.	1	2	3	4
e) I'm more interested in trying new veg.	1	2	3	4
f) I think fruit and raw veg are good for snacks.	1	2	3	4
g) I know that fruit and veg are healthy for me.	1	2	3	4
h) I ask for more fruit or veg at home.	1	2	3	4
i) I do healthy cooking with fruit or veg more often at home.	1	2	3	4
j) I get my own fruit or veg snacks at home more often.	1	2	3	4

11. And how have these fruit and veg activities affected your mum, dad or other main carers?
Please circle one number for each idea.

	Not at all	A little	A fair bit	A lot
a) They talk to me more about which fruit and veg I like now.	1	2	3	4
b) They encourage me to try new kinds of fruit or veg at home.	1	2	3	4
c) They let me make my own healthy snacks or help with cooking fruit or veg recipes more often.	1	2	3	4
d) They tell me fruit or veg are healthy for me more often.	1	2	3	4
e) We have more fruit at home now.	1	2	3	4
f) We have more veg with our meals now.	1	2	3	4
g) We are growing more veg or fruit at home now.	1	2	3	4

12. We're really interested if you want to say anything else about fruit and veg, learning about them at school or about this survey?

_____

_____

_____

_____

THAT'S ALL THE QUESTIONS.
THANK YOU FOR YOUR TIME AND INTEREST!

APPENDIX B: Parents' Survey Instrument

NB: If you have more than one child at the school, you need only complete this survey once. Please read each question carefully and follow the instructions about answering it.

General Knowledge Questions

1. **How much fruit should a primary school child eat to stay healthy?** (*One serve equals an apple, an orange, a banana or a cup of chopped fruit.) Please circle one number.*

At least 1 serve a week	1	At least 1 serve a day	5
At least 2 serves a week	2	At least 2 serves a day	6
At least 3 serves a week	3	At least 3 serves a day	7
At least 5 serves a week	4	At least 5 serves a day	8

2. **How much vegetable should a primary school child eat to stay healthy?** *(One serve equals half a cup of vegetables.) Please circle one number.*

At least 1 serve a week	1	At least 1 serve a day	5
At least 2 serves a week	2	At least 2 serves a day	6
At least 3 serves a week	3	At least 3 serves a day	7
At least 5 serves a week	4	At least 5 serves a day	8

Questions About Your Child(ren)'s Activities at School

3. **As far as you know, did your child(ren) participate in any of the following fruit and vegetable activities at school during 1999 or 2000? If yes, what was their reaction to each activity?**
Please circle one number for each activity.

Activity	Not aware of them doing it	They did it and they....			
		disliked it a lot	disliked it a little	liked it a little	liked it a lot
a) Classroom lessons	1	2	3	4	5
b) Homework exercises	1	2	3	4	5
c) Classroom cooking activities	1	2	3	4	5
d) Tasting in the classroom	1	2	3	4	5
e) Tasting at special events	1	2	3	4	5
f) Canteen promotions of fruit and vegetables	1	2	3	4	5
g) Competitions	1	2	3	4	5
h) School gardening	1	2	3	4	5
i) Class visits to growers, markets or supermarkets.	1	2	3	4	5

If aware of your child doing ANY activity (ie: at least one 2, 3, 4 or 5 circled at Q3) ö go to Q4.
If aware of NO activity (ie: all "1"s circled at Q3) ö go to Q5.

4. Since doing this activity, does your child(ren):
Please circle one number for each question.

	Not at all	A little	A fair bit	A lot
a) Seem more interested in fruit?	1	2	3	4
b) Seem more interested in vegetables?	1	2	3	4
c) Ask for more fruit and/or vegetables to eat?	1	2	3	4
d) Eat more fruit?	1	2	3	4
e) Eat more vegetables?	1	2	3	4
f) Seem to know more about fruit?	1	2	3	4
g) Seem to know more about vegetables?	1	2	3	4

Questions about Fruit and Vegetable Promotions

5. *Do you know these fruit and vegetable promotions? If yes, where did you see or hear them?*
Please circle as many numbers as you want for each promotion.

Promotion	No, not heard of it	Yes, saw or heard it ...					
		at school events	in school newsletters	on TV or radio	in a recipe book	in a super-market	from my family
a) Tooty Fruity Vegie.	1	2	3	4	5	6	7
b) Kids in the Kitchen.	1	2	3	4	5	6	7
c) 7-a-Day.	1	2	3	4	5	6	7
d) Rip Its.	1	2	3	4	5	6	7
e) Wipe Outs.	1	2	3	4	5	6	7
f) Charge through your day.	1	2	3	4	5	6	7
g) F & V for me	1	2	3	4	5	6	7

6. Did you receive any of the following promotional items from the school in 1999 or 2000? If yes, what did you do with them? *Please circle one number for each item.*

Potential items from the school	Don't recall getting it	Remember getting it and				
		didn't really look at it	had a good look /read but that's all	discussed it with child(ren)	used it for new recipes / other ideas	told other people about it
a) Newsletters with ideas for increasing children's fruit & veg intake.	1	2	3	4	5	6
b) Pamphlets about eating fruit & veg.	1	2	3	4	5	6
c) Fruit & veg recipes/recipe books	1	2	3	4	5	6
d) Fruit & veg calendar	1	2	3	4	5	6
e) Fruit & veg fridge magnet	1	Got it but NOT used it 2		Got it and put it on fridge 3		
f) Fruit & veg ideas competition form.	1	Got it but NOT entered 2		Got it and entered 3		

Questions about Your Experiences

7. How often have you used the following ideas to encourage your child(ren) to eat fruit and vegetables? *Please circle one number for each strategy.*

Idea	Never used it	Tried but it didn't work	Tried it and still use it		
			occasionally	fairly often	a lot
a) Increasing the choice of fruit and vegetables at home.	1	2	3	4	5
b) Serving fruit and vegetables in different ways.	1	2	3	4	5
c) Disguising fruit in other foods.	1	2	3	4	5
d) Disguising vegetables in other foods.	1	2	3	4	5
e) Serving raw vegetables while children wait for their evening meal.	1	2	3	4	5

8. During 1999 or 2000, have you been directly involved in planning or doing any of the following fruit and vegetable promotional activities at your child's school? *Circle one number for each activity.*

Activity	Not involved at all	Involved in planning only	Involved in doing only	Involved in planning and doing
a) Cooking classes for children	1	2	3	4
b) Canteen promotions	1	2	3	4
c) Special event promotions (eg: sport days, fetes, etc)	1	2	3	4

9. If you answered "yes" to any item in Q8, would you be willing to answer a separate short survey about your experiences in planning or doing fruit and vegetable promotional activities at your child(ren)'s school?

Yes 1 ö please provide your details:

Name: _____

Address: _____

_____

No 2 ö go to Q10

Tel number:

Questions About You

10. How many children in each of these age groups live with you? *Please put a number in each box.*

Not yet at school	In kindy	In Year 1	In Year 2	In Year 3	In Year 4	In Year 5	In Year 6	At high school

11. Do you have any other comments to make about fruit and vegetables, their promotion in schools or about this survey?

_____

_____

THAT'S ALL THE QUESTIONS. THANK YOU FOR YOUR TIME AND INTEREST!

APPENDIX C: Teachers' Survey Instrument

General Knowledge Questions

1. **How much fruit should a primary school child eat to stay healthy?** (*One serve equals an apple, an orange, a banana or a cup of chopped fruit.)*
   Please circle one number.

At least 1 serve a week	1	At least 1 serve a day	5
At least 2 serves a week	2	At least 2 serves a day	6
At least 3 serves a week	3	At least 3 serves a day	7
At least 5 serves a week	4	At least 5 serves a day	8

2. **How much vegetable should a primary school child eat to stay healthy?** *(One serve equals half a cup of vegetables.)*
   Please circle one number.

At least 1 serve a week	1	At least 1 serve a day	5
At least 2 serves a week	2	At least 2 serves a day	6
At least 3 serves a week	3	At least 3 serves a day	7
At least 5 serves a week	4	At least 5 serves a day	8

3. **Do you know these fruit and vegetable promotions? If yes, where did you see or hear them?**
   Please circle as many numbers as you want for each promotion.

Promotion	No, not heard of it	Yes, saw or heard it …						
		at school events	in school news letters	from another teacher or in-service	on TV or radio	in a recipe book	in a super-market	from family or friends
a) Tooty Fruity Vegie.	1	2	3	4	5	6	7	8
b) Kids in the Kitchen.	1	2	3	4	5	6	7	8
c) 7-a-Day.	1	2	3	4	5	6	7	8
d) Rip Its.	1	2	3	4	5	6	7	8
e) Wipe Outs.	1	2	3	4	5	6	7	8
f) Charge through your day.	1	2	3	4	5	6	7	8
g) F & V for me	1	2	3	4	5	6	7	8

Attitudinal Questions

4. Do you agree or disagree with the following statements?

Please circle one number for each statement.

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
a) I'm interested in good nutrition for myself.	1	2	3	4
b) I should eat more fruit and vegetables myself.	1	2	3	4
c) I'm irritated about Health Dept agendas in the school environment.	1	2	3	4
d) Encouraging children to eat fruit and vegetables is a family, not a school, responsibility.	1	2	3	4
e) Eating plenty of fruit and vegetables is important for children's health.	1	2	3	4
f) I'm motivated to teach children to eat plenty of fruit and vegetables.	1	2	3	4
g) Parents are keen to help with school fruit and vegetable promotions (eg: cooking classes).	1	2	3	4
h) I'm unsure of my ability to teach children to eat plenty of fruit and vegetables.	1	2	3	4
i) The principal supports me promoting fruit and vegetables to children.	1	2	3	4
j) The other teachers support me promoting fruit and vegetables to children.	1	2	3	4
k) Parents aren't really interested in fruit and vegetables being promoted to children at school.	1	2	3	4
l) I get little support from external health professionals to promote fruit and vegetables to children.	1	2	3	4

Training Questions

5. Have you completed any nutrition training during the last two years? If yes, how useful did you find it in practice?

Please circle one number for each statement.

Training	No, not done this training	Yes, done this training and it was…..			
		not at all useful	a little useful	fairly useful	very useful
a) Food and Nutrition in Action – by National Nutrition Education in Schools (NNES)	1	2	3	4	5
b) Other training:……..	1	2	3	4	5
c) Other training:……..	1	2	3	4	5

Teaching Questions

6. Which, if any, of the following specific teaching resources have you used in the last 2 years to promote fruit and vegetables to children? For each one used, how successful was it for:

- **increasing children's interest in fruit and vegetables,**
- **developing children's knowledge about fruit and vegetables,**
- **developing children's skills for preparing fruit and vegetables,**
- **achieving the overall goals of the PD/H/PE curriculum?**

If you've NOT USED a resource ö please circle the "4" in the 1st column & go to the next resource.
If you HAVE USED a resource ö please circle a "1", "2" or "3" under each of the other 4 columns.

Resource	Not used it	Rating of success for …											
		increasing interest			developing knowledge			developing skills			achieving PD/H/PE goals		
		low	med	high	low	med	high	low	med	high	low	med	high
a) "Sing Along, Move Along " book & tape.	4	1	2	3	1	2	3	1	2	3	1	2	3
b) "Tucker Box – connecting text & grammar".	4	1	2	3	1	2	3	1	2	3	1	2	3
c) "Kids in the Kitchen" Cookbook.	4	1	2	3	1	2	3	1	2	3	1	2	3
d) "Kids in the Kitchen" Instructors Manual.	4	1	2	3	1	2	3	1	2	3	1	2	3
e) "Wonderful World of Vegies" kit.	4	1	2	3	1	2	3	1	2	3	1	2	3
f) "Colourful World of Vegies" kit.	4	1	2	3	1	2	3	1	2	3	1	2	3
g) "Charge Through Your Day" kit.	4	1	2	3	1	2	3	1	2	3	1	2	3
h) "2 fruit & 5 veg Every Day" kit.	4	1	2	3	1	2	3	1	2	3	1	2	3
i) "Blooming Ideas for Schools" resource.	4	1	2	3	1	2	3	1	2	3	1	2	3
j) "Eat Well SA" resource.	4	1	2	3	1	2	3	1	2	3	1	2	3
k) TFV "Fruit &Veg websites" poster.	4	1	2	3	1	2	3	1	2	3	1	2	3
l) "Dole 5-a-day Fruit &Veg CD for Kids".	4	1	2	3	1	2	3	1	2	3	1	2	3
m) TFV "Gardening Kit".	4	1	2	3	1	2	3	1	2	3	1	2	3
n) NNES "Fun Activities throughout the KLAs" classroom manuals.	4	1	2	3	1	2	3	1	2	3	1	2	3
o) TFV "More Teacher Resources for Classroom Activities" folder.	4	1	2	3	1	2	3	1	2	3	1	2	3

Abbreviations: SA = South Australia; TFV = Tooty Fruity Vegie

7. **Which, if any, of the following general teaching activities have you used in the last 2 years to promote fruit and vegetables to children? For each one used, how successful was it for:**
   - **increasing children's interest in fruit and vegetables,**
   - **developing children's knowledge about fruit and vegetables,**
   - **developing children's skills for preparing fruit and vegetables,**
   - **achieving the overall goals of the PD/H/PE curriculum?**

   If you've NOT USED an activity ö please circle the "4" in the 1st column & go to the next activity.
   If you HAVE USED an activity ö please circle a "1", "2" or "3" under each of the other 4 columns.

F & V promoting activity	Not used this	Rating of success for …											
		increasing interest			developing knowledge			developing skills			achieving PD/H/PE goals		
		low	med	high	low	med	high	low	med	high	low	med	high
a) Activity sheets.	4	1	2	3	1	2	3	1	2	3	1	2	3
b) Reading books.	4	1	2	3	1	2	3	1	2	3	1	2	3
c) Posters/leaflets.	4	1	2	3	1	2	3	1	2	3	1	2	3
d) Videos.	4	1	2	3	1	2	3	1	2	3	1	2	3
e) Computer-based activities.	4	1	2	3	1	2	3	1	2	3	1	2	3
f) Food tastings.	4	1	2	3	1	2	3	1	2	3	1	2	3
g) Cooking sessions.	4	1	2	3	1	2	3	1	2	3	1	2	3
h) School canteen promotions.	4	1	2	3	1	2	3	1	2	3	1	2	3
i) School gardening.	4	1	2	3	1	2	3	1	2	3	1	2	3
j) Visits to growers, markets/ supermarkets.	4	1	2	3	1	2	3	1	2	3	1	2	3
k) Competitions.	4	1	2	3	1	2	3	1	2	3	1	2	3
l) Integrating nutrition into core curricula.	4	1	2	3	1	2	3	1	2	3	1	2	3

8. **Do you have any other comments to make about fruit and vegetables, their promotion in schools or about this survey?**

_____

_____

_____

Questions About You

9. **How long have you worked at this school?** [ ][ ] years [ ][ ] months

10. **Which year(s) did you teach….** *Please circle as many numbers as needed for each year.*

This year (2000):	K	1	2	3	4	5	6
Last year (1999):	K	1	2	3	4	5	6

THAT'S ALL THE QUESTIONS. THANK YOU FOR YOUR TIME AND INTEREST!

APPENDIX D: Volunteers' Survey Instrument

Involvement in Tooty Fruity Vegie Activities

1. **During 1999 or 2000, were you involved in planning or doing any of the following fruit and veg promotional activities at your child(ren)'s school? If yes, how many hours did this involve in total?** *Please circle one number **AND** write in the number of hours for each activity involved in.*

Activity	Not involved at all	Involved in			Total no. hours involved
		planning only	doing only	planning & doing	
a) Kids in the Kitchen cooking classes for children at school.	1	2	3	4	
b) Tooty Fruity Vegie school canteen promotions.	1	2	3	4	
c) Tooty Fruity Vegie Special event promotions (eg: sport days, fetes, etc).	1	2	3	4	
d) Helping establish or maintain a school fruit or vegetable garden.	1	2	3	4	
e) School trips to fruit or vegetable growers, markets or supermarkets.	1	2	3	4	
f) Tooty Fruity Vegie School Management Committee.	1	2	3	4	
g) Parent cooking and tasting sessions.	1	2	3	4	
h) ***Other***:	1	2	3	4	
i) ***Other***:	1	2	3	4	

2. **How enjoyable were the fruit & veg promotional activities you were involved in? Would you do them again?** *For each activity, circle 1 if you did not do it **OR** one number for level of enjoyment **AND** another for doing it again.*

Fruit and veg activity	Not involved at all	Did it and …..				Would do again?	
		didn't like it	it was OK	enjoyed it	really loved it	Yes	No
a) Kids in the Kitchen cooking classes for children at school.	1	2	3	4	5	1	2
b) Tooty Fruity Veg school canteen promotions.	1	2	3	4	5	1	2
c) Tooty Fruity Vegie Special event promotions (eg: sport days, fetes, etc).	1	2	3	4	5	1	2
d) Helping establish or maintain a school fruit or vegetable garden.	1	2	3	4	5	1	2
e) School trips to fruit or vegetable growers, markets or supermarkets.	1	2	3	4	5	1	2
f) Tooty Fruity Vegie School Management Committee.	1	2	3	4	5	1	2
g) Parent cooking and tasting sessions.	1	2	3	4	5	1	2
h) ***Other***:	1	2	3	4	5	1	2
i) ***Other***:	1	2	3	4	5	1	2

3. **And do you agree or disagree that your involvement in these fruit and veg activities has affected you in the following ways?** *Please circle one number for each effect.*

	Strongly agree	Agree	Disagree	Strongly disagree
a) I talk to my children more about which fruit and veg they like.	1	2	3	4
b) I encourage my children to try new kinds of fruit or veg at home.	1	2	3	4
c) I encourage my children to make their own healthy snacks or help with cooking fruit or veg recipes more often.	1	2	3	4
d) I try to have a greater variety of fruit and vegetables at home.	1	2	3	4
e) I talk more to friends and family about ways to encourage children to eat more fruit and veg.	1	2	3	4
f) I try to eat more fruit and vegetables myself.	1	2	3	4
g) I've felt a lack of interest from the teachers.	1	2	3	4
h) I've felt a lack of interest from other parents.	1	2	3	4
i) I now encourage sporting or social groups I'm involved with to provide more fruit and veg in their catering.	1	2	3	4
j) We are growing more fruit and/or veg at home now.	1	2	3	4
k) I want to be involved in more fruit and vegetable promotion activities at the school.	1	2	3	4
l) I've taken some of the ideas to other schools or preschools I have contact with.	1	2	3	4
m) My children are getting bored of the "eat more fruit and veg" message.	1	2	3	4

Reasons for Being Involved

4. **How much do each of the following statements describe why YOU became involved in Tooty Fruity Vegie activities?** *Please circle one number for each statement.*

I became involved in the Tooty Fruity Vegie activities at school because:	Not at all	A little	A fair bit	A lot
a) I am interested in good nutrition.	1	2	3	4
b) I always help with school activities when I can.	1	2	3	4
c) I felt I should do it.	1	2	3	4
d) The principal/ teacher asked me personally to help.	1	2	3	4
e) I read about it in a school newsletter.	1	2	3	4
f) I like to know what my children are learning at school.	1	2	3	4
g) I enjoy working with the children.	1	2	3	4
h) I enjoy cooking or gardening.	1	2	3	4
i) I enjoy organising things.	1	2	3	4
j) I thought I might learn something.	1	2	3	4
k) I thought I might meet some new people.	1	2	3	4
l) I had plenty of spare time and wanted to do something useful.	1	2	3	4
m) A friend was involved and asked me to come too.	1	2	3	4

5. **Do you agree or disagree with the following statements about your experience of being involved in Tooty Fruity Vegie activities at school?** *Please circle one number for each statement.*

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree	Not applic-able
a) I felt appreciated by the principal/teachers.	1	2	3	4	5
b) I felt appreciated by the Tooty Fruity Vegie staff.	1	2	3	4	5
c) It was a stressful thing to be involved in.	1	2	3	4	5
d) I feel I've helped make a difference to the children's eating habits.	1	2	3	4	5
e) There wasn't always enough training/equipment to run activities properly.	1	2	3	4	5
f) Some activities seemed poorly prepared and chaotic.	1	2	3	4	5
g) The children enjoyed the activities.	1	2	3	4	5
h) The children seemed to learn from the activities.	1	2	3	4	5
i) My children were pleased I was involved.	1	2	3	4	5
j) It's put me off getting involved in this sort of thing again.	1	2	3	4	5

6. **How much do you think each of the following statements describe why other parents didn't become involved in Tooty Fruity Vegie activities?** *Please circle one number for each statement.*

	Not at all	A little	A fair bit	A lot
a) They didn't know about it.	1	2	3	4
b) They weren't asked.	1	2	3	4
c) They weren't interested.	1	2	3	4
d) They had small children to care for.	1	2	3	4
e) They had work commitments.	1	2	3	4
f) They felt uncomfortable at the school.	1	2	3	4
g) They thought it would be too hard.	1	2	3	4
h) They thought they wouldn't be of any help.	1	2	3	4
i) ***Other***:	1	2	3	4
j) ***Other***:	1	2	3	4

7. **Which of the Tooty Fruity Vegie activities do you think were the most successful at improving the children's knowledge and attitudes towards fruit and veg? And why?**

_____

_____

_____

_____

_____

General Knowledge Questions

8. **How much fruit should a primary school child eat to stay healthy?** (*One serve equals an apple, an orange, a banana or a cup of chopped fruit.)*
   Please circle one number.

At least 1 serve a week	1	At least 1 serve a day	5
At least 2 serves a week	2	At least 2 serves a day	6
At least 3 serves a week	3	At least 3 serves a day	7
At least 5 serves a week	4	At least 5 serves a day	8

9. **How much vegetable should a primary school child eat to stay healthy?** *(One serve equals half a cup of vegetables.)*
   Please circle one number.

At least 1 serve a week	1	At least 1 serve a day	5
At least 2 serves a week	2	At least 2 serves a day	6
At least 3 serves a week	3	At least 3 serves a day	7
At least 5 serves a week	4	At least 5 serves a day	8

Questions About You

10. **How many children in each of these age groups live with you?** *Please put a number in each box.*

Not yet at school	In kindy	In Year 1	In Year 2	In Year 3	In Year 4	In Year 5	In Year 6	At high school

11. **Do you have any other comments/suggestions to make about involving parents in school activities to promote fruit and vegetables or about this survey?**

_____

_____

_____

Thank you very much for your time and help – with both the Tooty Fruity Vegie activities and with this survey.

Please return this survey to us using the reply paid envelope enclosed.

APPENDIX E: Principals' Survey Instrument

School:
Principal's name:
Date of interview:

Good afternoon/morning. My name is Margaret Miller. I have been contracted by the Northern Rivers Health Promotion Unit to conduct an independent evaluation of how schools responded to the Tooty Fruity Vegie Project. I would like to ask you some questions about Tooty Fruity Vegie activities conducted in your school. The interview will take about 20 minutes. Can I make a more convenient time to call back?

Time……

1. To begin, can I ask, what motivated you to allow your school to become involved in the Tooty Fruity Vegie Project?

2. What were your expectations of being involved in the Tooty Fruity Vegie Project?

2a. Were your expectations met completely, partly or not at all?

2b. If not, why not?

3a. In your opinion, what was the most successful TFV 'activity in your school?

3b. What made it successful?

4a. What do you think was the least successful TFV activity that your school attempted?

4b Why do you think this activity was not so successful?

4c What would have made it work better?

5. Are there any F&V promotion activities that you are likely to try or continue in the school next year?

6 What would make it easier for the school to implement TFV activities in 2001?

7 What will make it hard for the school to implement TFV activities in 2001?

8 Would you be able to continue without input from the TFV team?

9 Did the school form a TFV Project Management Team for the TFV?
Yes No
If it did:

9a How many hours/month or per week of your time did the PMT require?

9b How many hours/month or per week of other teachers time did the PMT require?

9c How valuable do you think the PMT is to carry forward a project like this in schools?

10 Do you think that you will maintain a TFV PMT at the school next year?

Thinking now about the Area Health Service TFV Project team . Jillian, Libby, Anna

11 How would you rate the level of input that you received from TFV team in each of the following areas:

a Provision of teaching resources? Do you think level of input was…
Excellent, very good, mediocre or poor?

b Teacher training? Do you think level of input was …
Excellent, very good, mediocre or poor?

c Teacher motivation? Do you think level of input was….
Excellent, very good, mediocre or poor?

d Promotion to parents? Do you think level of input was ….
Excellent, very good, mediocre or poor?

e What about funding? Excellent, very good, mediocre or poor?

f Communication? Excellent, very good, mediocre or poor?

g Response to requests? Excellent, very good, mediocre or poor?

h Organising activities? Excellent, very good, mediocre or poor?

12 How would you rate the Project Team expectations of the school? Were they too high, about right or lower than what could be achieved?

13. Implementation of some TFV activities relied quite a bit on volunteers.
How difficult was it to attract volunteers to participate in TFV activities?
Was it more difficult than usual, about the same as usual or easier than usual?

14. Did involvement of volunteers in TFV activities reduce their availability for other activities in the school?

15. As far as you are aware, was the reaction of volunteers to involvement in the TFV project more positive than usual, about the same as usual, less positive than usual or is it too hard to tell?

16. Do you have any comments on the involvement of volunteers in TFV project?

17. As far as you are aware, and compared to other health promotion projects in schools, was the reaction of teachers to involvement in the TFV project more positive than usual, about the same as usual, less positive than usual or is it too hard to tell?

18. Do you have any comments on the involvement of teachers in TFV project activities?

19 How would you rate the impact of TFV activities on school schedules? Was it higher than expected, as expected, lower than expected?

20. How would you rate the impact of TFV activities on teachers' time? Was it higher than expected, as expected, lower than expected?

21. How would you rate the impact of TFV activities on your time? Was it higher than expected, as expected, lower than expected?

22. How successful do you think that the TFV project has been in terms of creating positive attitudes in children towards fruit and vegetables? Do you think it has been extremely successful, very successful, somewhat successful, made no difference, or created negative attitudes towards fruit and vegetables?

23. How successful do you think that the TFV project has been in getting children to enjoy eating fruit and vegetables? Do you think it has been extremely successful, very successful, somewhat successful, made no difference, or reduced enjoyment of eating fruit and vegetables?

24. Do you have any other comments on the effect of TFV activities on children?

25. Do you strongly agree, agree, disagree or strongly disagree with the following statements?

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
a. I'm interested in good nutrition for myself.	1	2	3	4
b. I should eat more fruit and vegetables myself.	1	2	3	4
c. I'm irritated about Health Dept agendas in the school environment.	1	2	3	4
d. Encouraging children to eat fruit and vegetables is a family, not a school, responsibility.	1	2	3	4
e. Eating plenty of fruit and vegetables is important for children's health.	1	2	3	4
f. Parents are keen to help with school fruit and vegetable promotions like cooking classes.	1	2	3	4
g. The teachers support me promoting fruit and vegetables to children.	1	2	3	4
h. Parents aren't really interested in fruit and vegetables being promoted to children at school.	1	2	3	4
i. I get little support from external health professionals to promote fruit and vegetables to children.	1	2	3	4

26 And finally, do you have any other comments that you would like to make about the Tooty Fruity Vegie Project or this interview?

Thank you very much for your time today.

APPENDIX F: Other Health Professionals' Survey Instrument

Name:
Position/occupation:

1. Please describe your role/involvement in TFV project.
2. Who are the key people you work with on the project?
3. How do you interact with the TFV project team?
4. Are the expectations of the team of your role reasonable?
5. What is your main motivation/expectations for involvement?
6. How well have your expectations been met?
7. Perceptions of TFV school project management teams?
8. Perceptions of use of volunteers?
9. What works and why?
10. What doesn't work and why?
11. What are the positives/negatives?
12. How would you change your TFV project involvement/activities ?

APPENDIX G: Participation Index Instrument

Participation Index – Scoring Worksheet

School: _____ (_____children, _____ families)

To be filled in by Project Officer from own knowledge OF YEAR 2000 with reference to minutes and taken to School Project Management Team to ratify and fill in gaps.
Circle the number which most closely matches the circumstances: For many of the Reach and Quality categories this will mean "rounding" to the nearest classification.

	Reach (how many)	Frequency (how often)	Quality (how good)	Comments on school implementation	Do it 2001?
1. Classroom environment					
1A Classroom activities relating to fruit and vegetables	Received F&V class material 0 = no children 1 = 1/4 children 2 = a half 3 = ¾ 4 = all	Per child: ____ times per year (every week = 40 times, every day = 200)	1 = PD/H/PE material only 2 = PD/H/PE plus 50% more 3 = double or more PD/H/PE reqs for F&V coverage 4 = double PD/H/PE plus "incidental" promo of F&V		1 = yes 2 = maybe 3 = no
1B Web sites: for teachers	Accessed web site: 0 = no access 1 = ¼ Teachers 2 = a half 3 = ¾ 4 = all	Per teacher: ____ times per year (every week = 40 times, every day = 200)	0 = not used 1 = reading only 2 = using ideas 3 = downloading material for use		1 = yes 2 = maybe 3 = no
1C Web sites: for students	Accessed web site: 0 = not accessed 1 = ¼ children 2 = a half 3 = ¾ 4 = all	Per child: ____ times per year (every week = 40 times, every day = 200)	0 = not accessed 1 = accessed sites 2 = interactive use 3 = interactive and download		1 = yes 2 = maybe 3 = no
1D NNES Core Activity Comp (yrs 3 - 6) 1999	0 = no Yrs 3 – 6 children invited to participate 1 = 1/4 Yrs 3-6 2 = a half 3 = ¾ 4 = all Yrs 3 - 6	Per child: 0 = not done 1 = once	0 = no entries 1 = a quarter of children 2 = a half 3 = ¾ 4 = all Yrs 3 – 6 entered		1 = yes 2 = maybe 3 = no

	Reach (how many)	Frequency (how often)	Quality (how good)	Comments on school implementation	Do it 2001?
1E Poster Comp (Yrs K – 2) to promote F&V as "cool" 1999	0 = no Yrs K – 2 children invited to participate 1 = 1/4 Yrs K - 2 2 = a half 3 = ¾ 4 = all Yrs K - 2	Per child: 0 = not done 1 = once	0 = no entries 1 = a quarter of children 2 = a half 3 = ¾ 4 = all Yrs K – 2 entered		1 = yes 2 = maybe 3 = no
1F Have fruit breaks in class	0 = no children doing 1 = 1/4 children 2 = a half 3 = ¾ 4 = all	Per child: ____ times per year (every week = 40 times, every day = 200)	0 = not done 1 = adhoc only 2 = planned		1 = yes 2 = maybe 3 = no
1G Cooking program (KIK) for school children suitable to be run by non-teacher or Aboriginal Education Assistant	0 = no children doing 1 = ¼ children 2 = a half 3 = ¾ 4 = all	Per child: ____ times per year (every week = 40 times, every day = 200)	0 = not done 1 = watching only 2 = some doing, some watching 3 = all doing (hands on)		1 = yes 2 = maybe 3 = no
2. Families					
2A Fruit and veg promotion activities for families (stand alone or piggybacked activities influencing families to provide more F&V in children's diets)	0 = no families doing 1 = ¼ families 2 = a half 3 = ¾ 4 = all	Activities held at school: ____ times per year (every week = 40 times, every day = 200)	0 = not done 1 = watching only 2 = watching and tasting 3 = at least some preparing food 4 = all preparing food		1 = yes 2 = maybe 3 = no
2B School calendars for families Term 1, 2000	0 = no families received 1 = ¼ families 2 = a half 3 = ¾ 4 = all	Per family: ____ times per year (every week = 40 times, every day = 200)	(see Parent Survey Q6d) 0 = average 1 1 = average 1.01 – 2 2 = average 2.01 – 3 3 = average 3.01 – 4 4 = average 4.01 – 5 5 = average 5.01 – 6		1 = yes 2 = maybe 3 = no
2C Fridge magnets for families Term 2, 2000	0 = no families received 1 = ¼ families 2 = a half 3 = ¾ 4 = all	Per family: ____ times per year (every week = 40 times, every day = 200)	(see Parent Survey Q6e) 0 = average 1 1 = average 1.01 – 2 2 = average 2.01 – 3		1 = yes 2 = maybe 3 = no

	Reach (how many)	Frequency (how often)	Quality (how good)	Comments on school implementation	Do it 2001?
2D Parent Comp, re: ideas for feeding children F&V Term 3, 2000	0 = no families invited to participate 1 = ¼ families 2 = a half 3 = ¾ 4 = all	Per family: ____ times per year (every week = 40 times, every day = 200)	0 = no entries 1 = a quarter of families 2 = a half 3 = ¾ 4 = all		1 = yes 2 = maybe 3 = no
2E Articles in school newsletters to increase knowledge and positive attitudes to eating F&V	0 = no families receive 1 = ¼ families 2 = a half 3 = ¾ 4 = all	F&V Articles occurred: ____ times per year (every week = 40 times, every day = 200)	F&V articles were: 0 = not about F&V 1 = brief and or tangential eg: TFV in title 2 = good promoters of F&V		1 = yes 2 = maybe 3 = no
3. Other environments incl. School environment					
3A School communities establish vegetable gardens	0 = no children doing 1 = ¼ children 2 = a half 3 = ¾ 4 = all	Per child: ____ times per year (every week = 40 times, every day = 200)	0 = not done 1 = watching only 2 = some watching, some doing 3 = all doing (hands on)		1 = yes 2 = maybe 3 = no
3B Liaise with other environments e.g. fruit shops and corner stores to promote f&v sales and to sponsor TFV in local schools, and at local sports events	0 = no children doing 1 = ¼ children 2 = a half 3 = ¾ 4 = all	Per child: ____ times per year (every week = 40 times, every day = 200)	0 = not done 1 = tentative or small promotion 2 = good promotion, well implemented		1 = yes 2 = maybe 3 = no
3C Use F&V items for fundraising	0 = no families exposed 1 = ¼ families 2 = a half 3 = ¾ 4 = all	____ times per year (every week = 40 times, every day = 200)	0 = no F&V in fundraisers 1 = ¼ fundraisers are F&V 2 = ½ are F&V 3 = ¾ are F&V 4 = all fundraisers are F&V		1 = yes 2 = maybe 3 = no
3D Provide positive feedback on F&V in lunchboxes	0 = no children had opportunity 1 = ¼ children 2 = a half 3 = ¾ 4 = all	Per child: ____ times per year (every week = 40 times, every day = 200)	How delivered: 0 = none or neg feedback given 1 = acknowledge F&V only 2 = acknowledge and praise		1 = yes 2 = maybe 3 = no

	Reach (how many)	Frequency (how often)	Quality (how good)	Comments on school implementation	Do it 2001?
3E School communities visit f&v growers and markets	0 = no children doing 1 = ¼ children 2 = a half 3 = ¾ 4 = all	Per child: ____ times per year (every week = 40 times, every day = 200)	0 = not done 1 = watching only 2 = some watching, some doing 3 = all doing (hands on)		1 = yes 2 = maybe 3 = no
3F Provision of F&V at school e.g. fruit platters	0 = no children doing 1 = ¼ children 2 = a half 3 = ¾ 4 = all	Per child: ____ times per year (every week = 40 times, every day = 200)	___ points (give a point each for : • Variety of F&V within a platter • Variety of F **&** V across platters • Popular with kids • F&V info given with F&V)		1 = yes 2 = maybe 3 = no
4. Canteen					
4A Member of the NSW School Canteen Association and gain accreditation	0 = no 1 = yes	____canteen held times per year (every week = 40 times, every day = 200)	0 = neither member nor accredited 1 = member but no accreditation 2 = merit 3 = bronze/ silver 4 = gold		1 = yes 2 = maybe 3 = no
4B Canteen promotions of f&v	0 = no children exposed to promo 1 = ¼ children 2 = a half 3 = ¾ 4 = all	____ times per year (every week = 40 times, every day = 200)	0 = not done 1 = tentative or small promotion 2 = good promotion, well implemented		1 = yes 2 = maybe 3 = no
4C Encourage canteen workers to network with schools who make good profits from healthy canteen sales	0 = no workers networked 1 = ¼ workers 2 = a half 3 = ¾ 4 = all	Per worker: ____ times per year (every week = 40 times, every day = 200)	0 = no contact 1 = talked only 2 = received ideas 3 = implemented ideas		1 = yes 2 = maybe 3 = no

	Reach (how many)	Frequency (how often)	Quality (how good)	Comments on school implementation	Do it 2001?
4D Canteen menu review which results in more and competitively priced F&V, and or more F&V offered for sale	0 = no children exposed to new menu 1 = ¼ children 2 = a half 3 = ¾ 4 = all	Menu review: ____ times per year (every week = 40 times, every day = 200)	___ points (give a point each for : • more F&V on menu • cheaper F&V • hidden F&V)		1 = yes 2 = maybe 3 = no
5. Whole of School Commitment					
5A project management team	1 = one member only 2 = moderate representation (1-3 members) 3 = good representation (>3 members)	Meets how often? ____ times per year (every week = 40 times, every day = 200)	Overall functioning of PMT: 1 = low 2 = moderate 3 = high (most decisions made at meeting, good communication & members do implementation)		
5B children's recognition	CQ8 a, b - mean % heard of <u>at school</u> 0 = 0 – 12.5%, 1= 12.6 – 37.5%, 2 = 37.6 – 62.5%, 3 = 62.6 – 87.5%, 4 = 87.6 – 100%				
5C Children's recall of activities	CQ9 – mean N activities done per child (range = 0 – 9) – rounded to nearest whole number				
5D Teachers recognition	T Q3 a, b – mean % heard of <u>at school / in school newsletters / other teacher / inservice</u> 0 = 0 – 12.5%, 1= 12.6 – 37.5%, 2 = 37.6 – 62.5%, 3 = 62.6 – 87.5%, 4 = 87.6 – 100%				
5E Teachers training	T Q5 a - % done 0 = 0 – 12.5%, 1= 12.6 – 37.5%, 2 = 37.6 – 62.5%, 3 = 62.6 – 87.5%, 4 = 87.6 – 100%				
5F teachers use of TFV resources	T Q6 – median N materials used per teacher (range = 0 – 15) – rounded to nearest whole number				
5G Teachers implementation	T Q7 – median N strategies used per teacher (range = 0 – 12) – rounded to nearest whole number				
5H Parents awareness of activities	PQ3 – mean N strategies aware of kids doing per parent (range = 0 – 9) – rounded to nearest whole number				
5I Parent recognition of project activities	PQ5 a, b – mean % heard of <u>at school / in newsletter / from family</u> 0 = 0 – 12.5%, 1= 12.6 – 37.5%, 2 = 37.6 – 62.5%, 3 = 62.6 – 87.5%, 4 = 87.6 – 100%				
5J Parent recall of material	PQ6 – mean N items recall getting per parent (range = 0 – 6) – rounded to nearest whole number				
5K Parent reported involvement	PQ8 – mean N activities involved in per parent (range = 0 – 3) – rounded to nearest whole number				

APPENDIX H: Spontaneous Comments On Open Survey Question

Question: **Do you have any other comments to make about fruit and vegetables, their promotion in schools or about this survey?**

Comments Made (C = children, P = parents, T = teachers, V = volunteers)		Intervention		Control	
		n	%	n	%
Comments about the TFV Project - positive					
• It's a great project / it's wonderful / best ever promo / fun way to promote F&V / congratulations / I enjoyed learning about F&V • I/kids/parents liked/loved the program • Thanks for doing it / being interested / your support • Keep up the good work	P	48	10%		
	T	3	7%		
	V	4	12%		
	C	30	10%		
• Needs to continue / kids want it to • Successful promos take > 1 year • I want to learn more about F&V / TFV	P	8	2%		
	V	2	6%		
	C	9	3%		
• It will/has increase(d) kids' awareness of importance of nutrition / healthy lifestyle / interest in F&V • I know more about healthy foods / F&V now / it's increased kids' knowledge about F&V / nutrition	P	24	5%	1	1%
	C	5	2%		
	T	2	5%		
• It's getting more parents to encourage their kids to eat F&V • It's good it targets parents as well • The FRS made me think about our diet	C	1	<1%		
	V	2	6%		
	P	4	1%		
• It's started the cycle to increase kids' F&V consumption / targeting at the right age • I/kids like F&/orV more now	P	4	1%		
	C	7	2%		
	T	1	2%		
• It's helped / reinforced F&V messages at home • It's made it easier for parents to promote F&V	P	12	2%		
• It's encouraged kids to eat healthier / more F&V • It's made kids more willing to try / interested in more F&V • I'll be/am eating / trying more F&V now • Kids no longer teased for taking F&V to school instead of junk foods	P	21	4%		
	V	1	3%		
	C	9	3%		
• It's increased my F&V preparing / serving skills / given me new ideas • I do more F&V cooking at home now / It's teaching kids real life skills	P	3	1%		
	C	2	1%		
• I/kids like F&V Break • F&V Break seems best way to increase kids' F&V intake • Kids upset when no F/V to take into school	T	1	3%		
	P	6	1%		
	C	2	1%		
	V	1	3%		
• I liked / want more F&V competitions / poster competitions	C	5	2%	1	1%
• I/kids liked the recipe books / want more healthy recipes • Ideas for disguising F&V were good	V	1	3%		
	P	4	1%		
	C	1	<1%		
• I/kids liked / want more cooking classes/KIK	P	3	<1%		
	C	16	5%		
• Calendar is useful / practical / fun • Kids liked the calendar recipes	P	1	<1%		
	V	1	3%		
• I/kids liked the gardening / want to do more • School gardens a good idea • All school should have F&V gardens / more fruit trees	P	3	1%	1	1%
	C	6	3%		
	V			1	50%

Comments Made (C = children, P = parents, T = teachers, V = volunteers)		Intervention		Control	
		n	%	n	%
• I/kids liked the concert	V	1	3%		
	C	1	<1%		
• I/kids liked tasting new F&V / want more tastings • Should have more tastings at parents' events • I/kids liked TFV days at school	C	19	6%		
	P	7	1%		
	V	1	3%		
• I/kids liked the canteen promos • Canteen choices are excellent • Canteen promos good as volunteers already there	P	2	<1%		
	V	1	3%		
• Want more school trips to F&V markets / organic growers	P	2	1%		
	V	2	6%		
• Kids liked the classroom activities	V	1	3%		
Comments about the TFV Project – negative					
• Should educate parents more / encourage more parental involvement • It's hard to motivate some parents • Teachers' enthusiasm is dampened by parents' lack of interest	P	3	1%	3	2%
	V	6	18%		
	T	2	5%		
• Could promote resources to teachers more	T	2	5%		
• Need better communication with volunteers	V	1	3%		
• Felt pressured by the program	T	1	2%		
• Canteen stuff not very useful for learning about F&V	C	1	<1%		
• It hasn't increased kids F&V intake / willingness to try • It's made the kids more reluctant to eat F&V • Seen little change in lunchtime eating habits	P	3	1%		
	T	1	2%		
• Could be negative for kids already eating lots of F&V	P	1	<1%		
• F&V Break led to kids skipping breakfast as "TFV at 10am"	P	1	<1%		
• Don't want to do any more TFV / Don't like TFV	C	3	1%		
• Disappointed with some recipes' use of marg/white bread/etc	P	1	<1%		
Comments about the TFV Project – neutral					
• Parental involvement is important	V	1	3%		
• Hands on approach is important • Practical activities important to back up classroom lessons	P	3	1%		
	T	1	2%		
• Could promote frozen fruits in summer	P	1	<1%		
• Could getkids to do assignments on a fruit or veg	P	1	<1%		
• Already done similar stuff elsewhere	C	1	<1%		
Comments about fruit & veg / nutrition - positive					
• Need this sort of program to counteract increase in processed / junk foods	P	4	1%		
	V	1	3%		
• Need to start even earlier / promote F&V in preschools/daycare	P	2	<1%		
• F&V make cheaper snacks than junk foods / need to promote this	P	1	<1%		
	V	1	3%		
• Good to see F&V being promoted in school / happy for kids to do F&V promoting activities at school • F&V / good nutrition is important issue / as important as 3Rs • F&V are good for me	P	52	11%	9	6%
	T	4	10%		
	V	1	3%	1	50%
	C	13	4%	2	2%

Comments Made (C = children, P = parents, T = teachers, V = volunteers)		Intervention		Control	
		n	%	n	%
• Need to educate kids more about F&V • Need more F&V promos in school	P	4	1%	17	11%
	C			3	4%
• I like/love F&/orV • F&/orV are delicious / cool	C	32	10%		
	P	1	<1%		
Comments about fruit & veg / nutrition - negative					
• It's hard to get kids to eat F&V / I wish the kids would eat more F&V • I/kids don't like F&/orV	P	6	1%	1	1%
	C	4	1%	1	1%
• Heard of kids throwing away F&V at school / need to watch to see if it's eaten	P	1	<1%	1	1%
• Not aware of kids doing much about F&V at school	P			15	10%
• F&V is too expensive	P			2	1%
• Dentist said acids in many F&V damages kids' tooth enamel	P	1	<1%		
• Most people are too lazy / too fussy to eat F&V	P	1	<1%		
Comments about fruit & veg / nutrition - neutral					
• Kids already/always had good attitudes to / consumption of F&V • I always liked / ate F&V - not increased because of TFV • Parents always encouraged me/kids to eat F&V	P	32	7%	16	10%
	C	13	4%		
	V	2	6%		
• I prefer raw F&V (to cooked)	C	1	<1%		
• Message needs reinforcing at home • Home = main impact on kids' eating habits / need to start before school / Kids' diets = parents' responsibility	V	1	3%		
	P	5	1%	1	1%
	T	1	2%		
• Expect kids will grow to eat everything	P	1	<1%	1	1%
• Why do some of my kids love F&V and others hate them?	P	1	<1%	1	1%
• Need to promote organic F&V more	P	1	<1%		
Comments about schools - negative					
• There's a high burden of things to promote / hard to find time to do it	T	3	7%	1	11%
• Need more / better presented F&V / less junk food in school canteen • Should give kids more F&V at school	P	3	1%	13	8%
	C	5	2%		
	V	2	6%		
• Schools should do more about health	C			1	<1%
Comments about health / lifestyle/ wellbeing - positive					
• Prevention is better than cure	T	1	2%		
• Kids health / wellbeing is very important	P	1	<1%		

APPENDIX I: Raw Participation Index Scores

This table shows the percentage of the 10 intervention schools implementing each TFV strategy at each level of REACH, FREQUENCY and QUALITY.

	Reach (how many)	1999 %	2000 %	Frequency (times per year)[a]	1999 %	2000 %	Quality (how good)	1999 %	2000 %	Do it again?	
Classroom-based Strategies											
Classroom activities	No children receiving	0	10	<10 activities	40	50	PD/H/PE only	0	10	Yes	50
	A quarter	10	0	10-19	40	20	PD/H/PE + 50%	20	10	No	20
	A half	10	10	20-39	10	0	Double + more	60	50	Maybe	30
	¾	10	0	40+	10	30	PD/H/PE reqs for F&V coverage	20	30		
	All	70	80								
Web sites for teachers	No teachers accessed	100	70	0	100	70	Not used	100	70	Yes	50
	A quarter	0	20	2	0	20	Read only	0	0	No	30
	A half	0	10	5	0	10	Using ideas	0	10	Maybe	20
	¾ - All	0	0				Download material for use	0	20		
Web sites for students	No children accessed	100	80	0	100	80	Not used	100	80	Yes	20
	A quarter	0	10	4	0	20	Accessed only	0	0	No	40
	A half	0	10				Interactive	0	0	Maybe	40
	¾ - All	0	0				Interactive and download	0	20		
F & V Competition for Year 3 – 6 children (1999 only)	No Yrs 3 – 6 done	40	100	0	40	100	No children entered	40	100	Yes	0
	A quarter	10	0	1	60	0	A quarter	20	0	No	100
	A half - ¾	0	0				A half - ¾	0	0	Maybe	0
	All Yrs 3 – 6	50	0				All Yrs 3 – 6	40	0		
F & V Competition for Kindy -Year 2 children (1999 only)	No Yrs K – 2 done	0	80	0	30	80	No children entered	30	80	Yes	10
	A quarter	20	0	1	70	20	A quarter	30	0	No	90
	A half	20	0				A half	0	0	Maybe	0
	¾	0	10				¾	10	10		
	All Yrs K – 2	60	10				All Yrs K-2	30	10		
Fruit breaks in class	No children done	90	40	0 fruit breaks	90	40	Not done	90	40	Yes	50
	A quarter	0	20	<10	0	20	Adhoc only	0	10	No	10
	A half	0	20	10-39	0	10	Planned	10	50	Maybe	40
	¾	0	0	40-99	10	10					
	All	10	20	100+	0	20					

	Reach (how many)	1999 %	2000 %	Frequency (times per year)[a]	1999 %	2000 %	Quality (how good)	1999 %	2000 %	Do it again?	
Cooking program (KIK)	No children done	0	10	0 classes	0	10	Not done	0	10	Yes	90
	A quarter	10	0	1-2	50	30	Watch only	0	0	No	10
	A half	10	10	3-6	30	30	Some doing,	10	10	Maybe	0
	¾	0	0	11-26	10	20	All doing (hands on)	90	80		
	All	80	80	50+	10	10					
Family-oriented Strategies											
F & V promoting activities for families at school	No families done	10	10	0 activities	10	10	Not done	10	10	Yes	40
	A quarter	50	60	1	40	30	Watch only	10	20	No	20
	A half	20	0	2-5	40	50	Watch/taste	50	50	Maybe	40
	¾	20	30	11	10	10	Some prepare food	20	20		
	All	0	0				All prepare food	10	0		
School calendars with F & V recipes (2000 only)	No families received	70	10	0	70	10	Not recalled by parents	NA	10	Yes	20
	A quarter - ¾	0	0	1	30	90	Recalled but not really looked at		10	No	80
	All	30	70				Looked at but that's all		50	Maybe	0
							Used it		30		
F & V promoting fridge magnets (2000 only)	No families received	100	10	0	100	10	Not recalled by parents	NA	10	Yes	20
	A quarter - ¾	0	0	1	0	90	Recalled but not really looked at		10	No	80
	All	0	90				Looked at but that's all		50	Maybe	0
							Used it		30		
F & V competition for parents (2000 only)	No families invited	100	40	0	100	40	No families entered	NA	50	Yes	0
	A quarter	0	20	1	0	60	A quarter		50	No	100
	A half - ¾	0	0				A half - all		0	Maybe	0
	All	0	40								
F & V promoting newsletter articles	No families received	0	10	0 articles	0	10	Articles not really about F&V	0	10	Yes	50
	A quarter - ¾	0	0	10-19	30	20	Brief F & V articles	0	0	No	30
	All	100	90	20-30	30	20	Good promoters of F&V	100	90	Maybe	20
				80+	40	50					
School-oriented Strategies											
Establishing F & V gardens	No children done	40	30	0	40	30	Not done	40	30	Yes	60
	A quarter	10	30	1-9	30	20	Watch only	0	0	No	10
	A half - ¾	0	0	10-19	10	10	Doing/watch	10	10	Maybe	30
	All	50	40	20-39	10	20	All doing (hands on)	50	60		
				40	10	10					

	Reach (how many)	1999 %	2000 %	Frequency (times per year)[a]	1999 %	2000 %	Quality (how good)	1999 %	2000 %	Do it again?	
Liaising with local shops/events to promote F & V	No children done	60	60	0	60	60	Not done	70	70	Yes	20
	A quarter	10	0	1-2	30	30	Small promotion	20	30	No	70
	A half	0	0	40	10	10	Comprehensive promotion	10	0	Maybe	10
	¾	0	20								
	All	30	20								
Using F&V fundraisers	No families exposed	60	50	0	60	50	No F&V fundraisers	60	50	Yes	50
	A quarter	0	0	1-2	20	40	¼ F&V	20	30	No	30
	A half	0	10	40	10	0	½ F&V	10	20	Maybe	20
	¾	10	20	200	10	10	¾ F&V	10	0		
	All	30	20				All F&V	0	0		
Giving feedback about F&V in lunchboxes	No children received	40	20	0	40	20	No feedback	50	20	Yes	60
	A quarter	10	20	40	10	10	Acknowledge F&V only	0	0	No	10
	A half	10	0	100	20	30	Acknowledge and praise	50	80	Maybe	30
	¾	0	0	200	30	40					
	All	40	60								
Visits to F & V growers / markets	No children done	60	60	0	60	60	Not done	60	60	Yes	30
	A quarter	10	40	1	30	40	Watch only	0	0	No	40
	A half - ¾	0	0	2	10	0	Do/watch	40	20	Maybe	30
	All	30	0				All doing (hands on)	0	20		
Providing F&V platters / tastings	No children done	20	10	0	20	10	O points[b]	0	10	Yes	90
	A quarter	0	0	1-5	40	50	1 point	10	20	No	10
	A half	10	10	10-25	10	0	2 points	30	50	Maybe	0
	¾	0	0	40	10	30	3 points	30	20		
	All	70	80	80	0	10	4 points	10	0		
Canteen-oriented Strategies											
Gaining membership of the NSW School Canteen Association	No children exposed	50	50	0 canteens held	50	50	Not member or accredited	50	50	Yes	50
	All	50	50	40	0	10	Member but not accredited	20	20	No	50
				80	20	0	Accredited – Merit level	0	0	Maybe	0
				120	0	10	Accredited – Bronze/ silver	20	20		
				180	10	10	Accredited – Gold	10	10		
				200	20	20					

	Reach (how many)	1999 %	2000 %	Frequency (times per year)[a]	1999 %	2000 %	Quality (how good)	1999 %	2000 %	Do it again?	
Canteen promotions of F & V	No children exposed	50	50	0	50	50	Not done	50	50	Yes	40
	A quarter - ¾	0	0	4	20	10	Small promotion	10	20	No	50
	All	50	50	10	20	20	Comprehensive promotion	40	30	Maybe	10
				20	0	10					
				40	10	10					
Networking with other profitable, health-oriented canteens	No workers networked	70	70	0	70	70	No contact	70	70	Yes	30
	A quarter	30	20	2	10	20	Talked only	0	0	No	70
	A half	0	10	3	20	0	Got ideas	10	20	Maybe	0
	¾ - All	0	0				Implemented ideas	20	10		
Reviewing F & V content / price on menus	No children exposed	60	30	0 reviews	80	40	0 points[c]	70	30	Yes	60
	A quarter - A half	0	0	1	10	50	1 point	10	30	No	40
	¾	0	10	2	10	10	2 points	0	0	Maybe	0
	All	40	60				3 points	20	40		
Whole of School Strategy											
Having a Project Management Team	One member only	30	20	0 meetings	0	10	Low functioning	30	20	Yes	20
	1-3 members	40	50	4	20	20	Moderate	20	20	No	50
	>3 members	30	30	5-7	50	40	High (most decisions made at meeting, good communication & members do implementation)	50	60	Maybe	30
				8	30	30					

[a] 40 times = weekly, 200 times = daily

[b] Given a point each for: Variety of F&V within a platter, Variety of F & V across platters, Popular with kids, F&V info given with F&V

[c] Given a point each for: More F&V , Cheaper F&V, Hidden F&V