

Fire Research Report

Evaluation of the NZFSC Programmes, Promotions and Research for Maori

Massey University
Te Ropu Whariki Research Group

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In an effort to address fire-related injury and death disparities amongst Māori, the New Zealand Fire Service runs a number of fire safety education programmes aimed at promoting awareness and knowledge around fire safety in Māori communities. This research investigates the effectiveness of these programmes. The programmes assessed are *Te Kotahitanga*, a community based fire safety project aimed at educating 'at risk' households to be 'fire safe', *Protecting marae from fire: Ngā whakatūpato ahi mō te marae*, a marae fire safety project; and *Māui Tinei Ahi*, a school project for Kōhanga Reo and Kura Kaupapa Māori.

Interviews, document review, media review, telephone survey; street based 'intercept survey' and an online survey were conducted and results assessed.

All implemented programmes were found to be adequately resourced, were achieving good community penetration in targeted areas and had achieved good community awareness of relevant messages. In addition, research in areas of relevance to Maori was assessed and found to be useful but somewhat dated. Recommendations are made as to how each programme could be improved or extended.



**Evaluation of the
New Zealand Fire Service Commission
Programmes, Promotions and Research
for Māori**

Process and Impact

Evaluation Report

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Pai tū, pai hinga, nā wai, nā oti
(One may work properly, another may act,
yet the sum total is the completion of the work)

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Executive Summary

In an effort to address fire-related injury and death disparities amongst Māori, the New Zealand Fire Service Commission (NZFSC) runs a number of fire safety education programmes aimed at promoting awareness and knowledge around fire safety in Māori communities. Current projects include: *Protecting marae from fire: Ngā whakatūpato ahi mō te marae*, a marae fire safety project; *Māui Tinei Ahi*, a school project for Kōhanga Reo and Kura Kaupapa Māori; and *Te Kotahitanga*, a community based fire safety project aimed at educating ‘at risk’ households to be ‘fire safe’.

As part of its strategic planning for 2005-2010 and commitment to ‘better work practices’, the NZFSC decided that an evaluation be undertaken of their research and current educational and promotional activity in relation to Māori. Te Rōpū Whāriki (Whāriki Research Group) - a Māori research centre based in Central Auckland and hosted by Massey University - was contracted by the NZFSC to provide evaluation support.

Evaluation Results

Developmental and progress ratings for both process and impact evaluations were made based on rubrics developed in conjunction with the NZFSC. Assessments were based on analysis of data from interviews, document review, media items, a short telephone survey; a street based ‘intercept survey’ and a small online survey.

Te Kotahitanga (TK)

- **Coordination and implementation of TK project**

Developmental stage: *Established*; Level: *Good*

Project has been refined to meet the specific needs of at risk households in response to collective staff experience. Staff exchange information across regions to strengthen the project. The project is promoted regularly; key collaborations are established and delivering support in cash or kind.

- **TK project resources**

Developmental stage: *Established*; Level: *Good*

TK project resources have been refined to meet the needs of at risk households.

- **At risk households have increased knowledge and awareness of best practice fire safety actions and systems**

Level: *Good*

Most at risk households know the primary fire risks for their household.

- **At risk households have increased awareness of the TK project**

Level: *Very Good*

Awareness of the TK project is high in regions where the project has high coverage

- **More at risk households are participating in the TK project**

Level: Very Good

High risk regions are implementing the TK project with most at risk households.

- **More at risk households implement and use best practise fire safety actions and systems**

Level: Very Good

Most at risk households in high coverage regions implement fire safety actions and fire safety systems.

Māui Tinei Ahi (MTA)

- **Coordination and implementation of MTA**

Developmental stage: Implemented; Level: Acceptable

Project staff have received training and begun to visit Māori language schools. Schools visited have completed the project and been documented. MTA has been promoted in media, hui and events that reach Māori language schools and key collaborations have been strengthened.

- **MTA resources**

Developmental stage: Implemented; Level: Acceptable

Project staff know how to use MTA resources. Resources are affordable and accessible to schools.

- **Kura/Kōhanga have increased knowledge and awareness of best practice fire safety actions and systems**

Level: Very Good

Most Kura/Kōhanga have a thorough knowledge of fire safety issues for Māori children.

- **Kura/Kōhanga have increased awareness of MTA**

Level: Good

Awareness of MTA is high in some Kura/Kōhanga in regions where the project is operating.

- **More Kura/Kōhanga are participating in MTA**

Level: Good

High input fire regions are implementing MTA with most Kura/Kōhanga in their region.

- **More Kura/Kōhanga teach and practice fire safety knowledge and systems with their students**

Level: Good

Many Kura/Kōhanga that have received MTA instil fire safety knowledge and systems.

Marae Fire Safety (MFS)

- **Coordination and implementation of MFS**

Developmental stage: *Implemented*; Level: *Good*

Project staff have received training and begun to visit marae and other sites. Marae visited have received the project and this has been documented. The MFS project has been promoted in media, hui and events and key collaborations have been strengthened.

- **MFS project resources**

Developmental stage: *Implemented*; Level: *Good*

Project staff know how to use MFS project resources. Marae have access to the resources.

- **Marae have increased knowledge and awareness of best practice fire safety actions and systems**

Level: *Good*

Many marae know their primary fire risks and key measures to minimise them.

- **Marae have increased awareness of the MFS project**

Level: *Good*

Awareness of the MFS project is high among some marae in regions where the project is operating.

- **More Marae are participating in the MFS project**

Level: *Very Good*

High activity regions are implementing the MFS project with many marae.

- **More Marae implement and use MFS best practise fire safety actions and systems**

Level: *Good*

Many marae that have participated in MFS, install fire safety systems and implement fire safety actions.

NZFSC fire safety promotions for Māori

- **Coordination and implementation**

Developmental stage: *Implemented*; Level: *Good*

Fire safety promotions for Māori are operational in multiple media. Key staff have experience in media work. Collaborations e.g. with iwi radio have been strengthened.

- **Increased awareness of NZFSC fire safety promotions for Māori**

Level: *Good*

Many Māori amongst groups targeted for promotions and in regions with high dosage of NZFSC promotions for Māori are aware of a NZFSC programme or promotion for Māori.

- **NZFSC fire safety promotions for Māori are achieving high uptake, coverage and reach in Māori communities**

Level: Good

Awareness of the NZFSC fire safety programmes is high in regions where programmes are operating.

NZFSC research in relation to Māori (no rubric rating)

There is a considerable volume of research commissioned by NZFSC that has been important to the development of the Māori fire safety projects evaluated in the current project. The diversity of research investigations, both generic and targeted to Māori issues and situations, is a great strength but the age of particular projects and the dearth of quality evaluation research looking at the effectiveness of the programmes is a considerable problem.

Recommendations

Te Kotahitanga

- Improve regional access to the national TK database so that information can be used to refine the TK project.
- Provide or fund more location specific research to inform and ground the TK project and resources in the local context.
- If TK is to be a national project then further resources are needed to improve coverage of the project within each fire region.

Māui Tinei Ahi

- Further investments are required in recruitment and training to build staff capability and capacity.
- More opportunities to share information and experience among regions are needed.
- MTA staff need to collaborate strategically with other health promoters to avoid clashes over access to busy Kura and Kōhanga.
- Regular activities that both target and utilise schools and Māori community networks and organisations are required to improve and maintain awareness of MTA and increase the likelihood of the project being delivered in schools on a regular basis.
- Further research and development is required to tailor resources and the project to the different age levels targeted.
- Further investment in kaiako (e.g. training; regular contact) is required to ensure effective delivery of MTA.
- A strategy around ensuring that fire safety information reaches the whānau of tamariki is needed.

Marae Fire Safety

- Further investment in recruitment and training are required in order to build project staff numbers for the MFS project.
- Dedicated FTEs are required so that project staff have the capacity to deliver the project.
- Regular opportunities need to be provided for project staff to share information.
- Technical specifications for detection and prevention systems for marae should be provided and promulgated.
- Further investment in a robust national database of marae locations and contacts is required.
- Continue to support and encourage marae to upgrade to the detection prevention and protection measures they can afford.
- Secure funding support for the capital works involved in upgrading marae to meet the recommendations of the MFS project.
- Investigate the role of local volunteer fire brigades in the promotion of marae fire safety.
- Face to face communications about the issues are crucial and this avenue needs to be developed and resourced to optimise outcomes.

NZFSC fire safety promotions for Māori

- Develop and resource a unified evidence-based media strategy for communicating fire safety messages to Māori.
- Carry out more focussed research into the effectiveness of mass media promotions with Māori.
- Investigate ways in which the interpersonal communications pattern can be better put to use to get the fire safety messages into Māori communities.

NZFSC research in relation to Māori

- NZFSC should review its research needs with a view to updating and evolving the understanding of how its projects can best serve Māori.
- Efforts should be made to disseminate research in accessible formats to staff so that they can use data in refining their work.

Introduction

Māori have been identified as a group particularly at risk of fire-related injury and death (Duncanson et al., 2000a, 2001a, 2001b, 2001c). In an effort to address fire-related injury and death disparities amongst Māori, the New Zealand Fire Service Commission (NZFSC) runs a number of fire safety education programmes aimed at promoting awareness and knowledge around fire safety in Māori communities. Current projects include *Te Kotahitanga*, a community based fire safety project aimed at reducing fire related harm in at risk households; *Protecting Marae from Fire: Ngā Whakatūpato Ahi mō te Marae*, the Marae Fire Safety project; *Māui Tinei Ahi*, an educational project for Kōhanga Reo and Kura Kaupapa Māori; and *Te Kotahitanga*, a community based fire safety project aimed at reducing fire related harm in at risk households (New Zealand Fire Service Commission, 2003c). In addition, a year long print advertising campaign was conducted in two national Māori publications and a national iwi radio station campaign was run for several months.

As part of its strategic planning for 2005-2010 and commitment to “better work practices”, the NZFSC decided that an evaluation be undertaken of their research and current educational and promotional activity in relation to Māori and fire. Te Rōpū Whāriki (Whāriki Research Group) - a Māori research group based in Central Auckland and hosted by Massey University - was contracted to carry out the evaluation.

Background

The NZFSC has a statutory duty to promote fire safety, enhance fire fighting practices and improve fire management. This requires that it supports research into a range of different approaches to improve fire safety practises and ways to reduce fire related harm and damage. To these ends the NZFSC has funded a variety of research projects that have sought to examine the factors that contribute to elevated levels of fire related harm among Māori and to determine more effective fire safety strategies and interventions for Māori (Thomas et al., 1999, Duncanson et al., 2000a, 2001a, 2001b, 2001c, 2001d, 2002, McDermott Miller Ltd, 2001, Hoskins et al., 2001). In addition, Māori were the target audience in the report *Determining Effective Fire Safety Strategies for Māori* and the *Auahi Whakatūpato* smoke alarm installation project (McDermott Miller Ltd, 2001, Duncanson et al., 2000a, Thomas et al., 1999). The NZFSC have also appointed a number of Iwi/Cultural Liaison Officers in key fire regions (McDermott Miller Ltd, 2001, Duncanson et al., 2000a, Thomas et al., 1999).

The *Te Kotahitanga*, *Māui Tinei Ahi* and *Marae Fire Safety* projects have been running for up to eight years. Promotional activities have included fire safety advertisements in two national Māori publications, a national iwi radio station campaign that ran for several months, and numerous locally based fire safety promotions and initiatives.

Aims and Objectives

The overall aims and objectives for this evaluation have been developed in response to the NZFSC's decision that an evaluation be undertaken of their research and promotional activities in relation to Māori communities. The evaluation includes the following key aims and objectives:

1. To evaluate the effectiveness of NZFSC's fire safety education programme and promotional activities in relation to Māori communities. Specific projects evaluated are:
 - Te Kotahitanga
 - Māui Tinei Ahi
 - Marae Fire Safety
 - NZFSC Fire Safety Promotions for Māori
2. To evaluate the quality and utility of the NZFSC's research outputs in relation to Māori communities. This will include:
 - Identifying any barriers to the uptake and utility of currently available research commissioned by the NZFSC
 - Identifying any gaps and providing any necessary updates to the research

Methodology

Evaluation Workshop

Whāriki evaluators Sandy Kerr and Hector Kaiwai conducted a two day evaluation workshop for the NZFSC Māori fire safety personnel on the 22nd and 23rd of May 2007. Project delivery teams were given an opportunity to ask questions and provide critical feedback on the evaluation design and methodology. This was also an opportunity for the evaluators to work in collaboration with the project delivery team to develop a programme logic model for each project and determine process and impact indicators.

Development of Programme Logic

NZFSC staff discussed, debated and reviewed evidence with the evaluators to develop programme logic models for each of their projects, namely; Te Kotahitanga (TK) Māui Tinei Ahi (MTA), Marae Fire Safety (MFS) and the fire safety promotions for Māori.

Programme logic describes the way that the project components – goals, aims, objectives, strategies, activities and other inputs – link together and how the project is expected to work. A programme logic can also help to determine what is needed for a project in order for it to achieve its goals, why the project did what it did and what this was expected to achieve or work towards.

The evaluators met with the National Māori Advisor (Te Pou Herenga) at the Hamilton Fire Station on 6th August 2007 to finalise the programme logic models for each of the fire safety projects to be evaluated. From these initial models a generic

programme logic model for NZFSC's fire safety programmes, promotions and research for Māori (Diagram One) was also developed.

The logic models on pages 13, 38, 55, 70, and 79 are designed to be read from the bottom level upwards. The bottom row of boxes shows NZFSC activities in relation to Māori with the immediate level above depicting the short term outcomes expected from these activities. Upward movement in the model indicates the outcomes that can logically be expected to occur over time if the NZFSC are running quality programmes and promotions.

In discussion with the NZFSC, the logic models were used to guide the selection of specific evaluation components. Discussions focussed on the selection and prioritisation of activities and outcomes to be evaluated for each of the fire safety programmes. Selections were based on:

- Utility of information from the evaluation, to the NZFSC.
- How central selected activities and outcomes were to the overall quality, success and effectiveness of the specific NZFSC projects.
- The strength of the relationship between the quality of activities and successful outcomes.
- The contribution of these activities to any macro level strategic goals of the NZFSC.

Accordingly, it was decided that the following activities and outcomes would be evaluated (activities to be evaluated have been highlighted in yellow; outcomes have been highlighted in green on pg 13):

New Zealand Fire Service Commission (NZFSC) Programmes, Promotions and Research for Māori

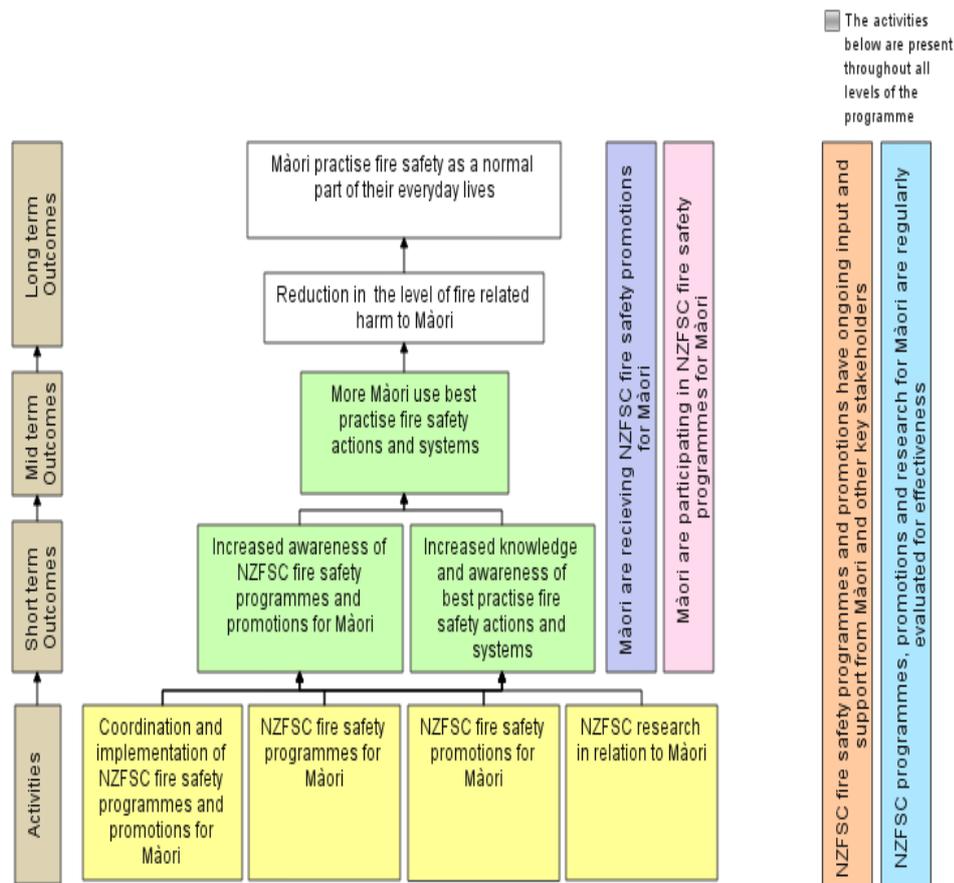


Diagram One: Logic Model for New Zealand Fire Service Commission (NZFSC) programmes and promotions for Māori (NB Only activities and outcomes in coloured boxes (yellow and green) were evaluated as part of this project).

The above logic model (and preceding logic models on pages 13, 38, 55, 70, and 79) was developed in line with the New Zealand Fire Service Commission's evaluation framework diagram (see *New Zealand Fire Service Commission Statement of Intent 2006/09* pg 13) which reads from bottom to top. At the foundation level the logic model lays down the key elements of its programme for Māori in two substantive action modules (programmes and promotions), supported by management functions and research information gathering. The elements at this level combine to produce successive layers of Māori knowledge and behaviour change in relation to fire risk and protection. In the ultimate layers of the schema outcomes of harm reduction and the development of a Māori culture of fire safety achieve a self-sustaining change in Māori attitudes and practices around fire. The progression is endorsed and encouraged by multiple other key stakeholders and the resourcing and policy structures of NZFSC. From this logic model it was agreed that the programmes, promotions and research should all be evaluated at both process and impact levels (although the research module is an exception as process evaluation is not particularly useful in this case).

At the request of the National Māori Advisor, another logic model was developed by the evaluators, showing the progress of NZFSC fire safety programmes, promotions and research for Māori moving left to right, rather than in the more hierarchically

based bottom to top models (Diagram Two pg 15). This logic model thus treats 'development' as a continuum and movement towards the acquisition of knowledge, represented in the use of the arrow design (based on tukutuku patterning) and enhanced by dark to light colouring (symbolised in the maxim *i te kore, ki te po, ki te ao marama* (from the nothingness, to the night, to the world of light)).

New Zealand Fire Service Commission (NZFSC) Fire Safety Programmes, Promotions and Research for Māori

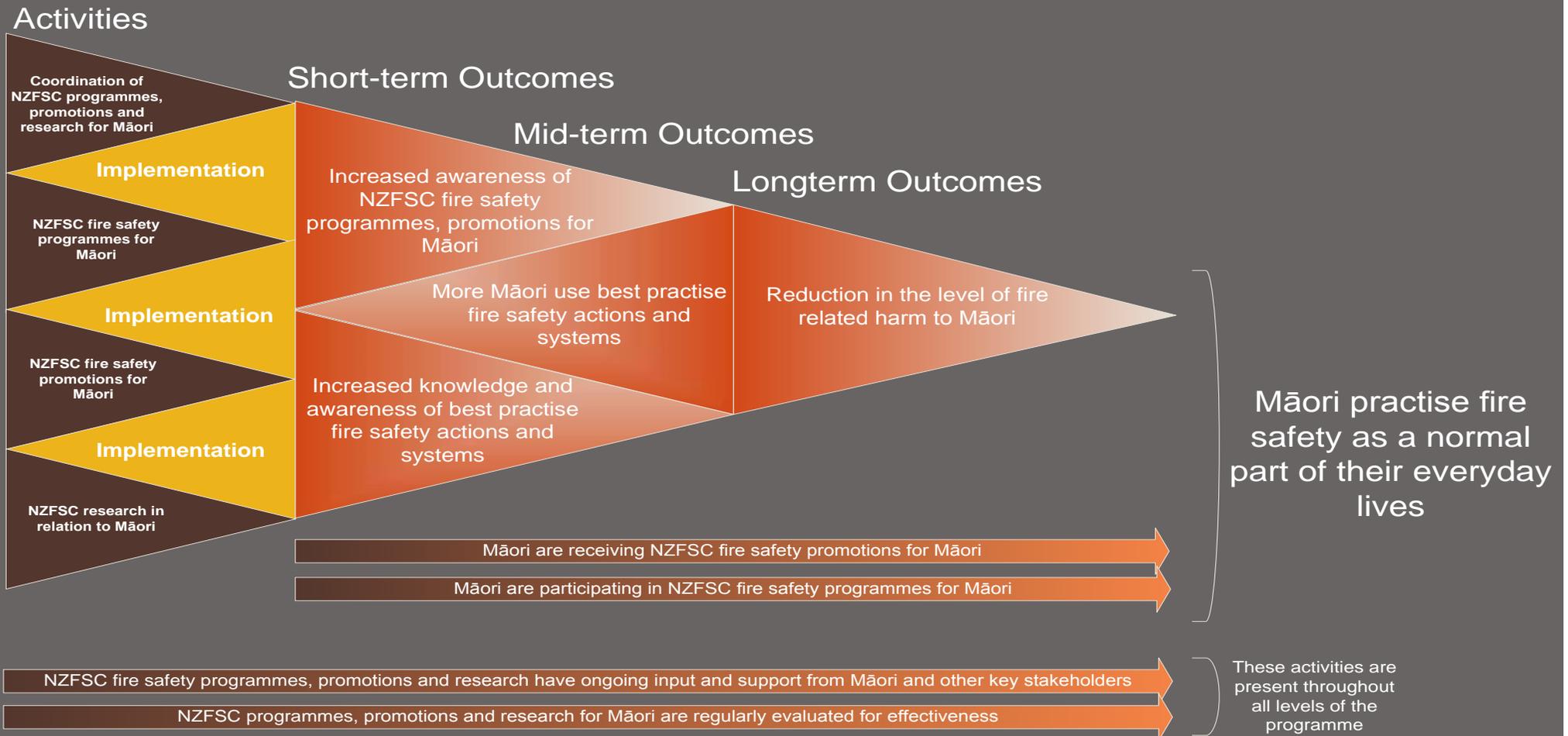


Diagram Two: Logic Model for New Zealand Fire Service Commission (NZFSC) programmes and promotions for Māori

Data Collection

The process evaluation utilised qualitative methods including document analysis, qualitative interviews, media items and a small online survey. A total of 15 in-depth qualitative interviews were conducted with NZFSC staff involved in the delivery, co-ordination and management of projects and activities. It is important to note that while the main focus of this evaluation has been identifying the needs of the Māori delivery team it was necessary, in some instances, to include staff outside the core Māori delivery team in order to provide a context for some project activities.

For the impact evaluation we combined a further 24 in-depth qualitative interviews with NZFSC staff and 26 individuals who had participated in the three main projects (8 for TK; 10 for MTA and 8 for MFS). In addition we carried out a supplementary descriptive telephone survey with 90 individuals, 10 for each project to broaden the qualitative database from those with direct experience of the projects. A street incept survey included an additional 30 individuals.

In all, data was collected from 185 individuals and we also incorporated data from NZFSC records and internal databases, from media reports and independent research reports.

Development of Rubrics

Once the programme logic models had been finalised and activities and outcomes prioritised, evaluation criteria and indicators were developed into separate sets of rubrics for the process and impact evaluations. The purpose of these rubrics was to provide a guide for determining the quality (process rubrics) and success (impact rubrics) of project activities and they were circulated to key NZFSC personnel for feedback and critique prior to application.

Developmental rubrics (Davidson, 2005) for the process evaluation were generated using indicators and criteria gathered from project documentation and qualitative interviews with NZFSC staff. This information was used to determine the expected development of each project over time from initial concept stage to actual implementation and establishment.

As most of the projects have been in existence for a period of between three to eight years, a time scale of 10 years was adopted as a basis for the process evaluation. There is emerging evidence from studies in the United Kingdom that long term investments of 10 years are “seen as an entirely appropriate time scale if decades of relative decline are to be reversed” (Christina et al., 2008:36). It is also expected in the lifecycle of a programme that it will reach certain ‘developmental stages’ within a certain timeframe, and that a set of progress indicators (referred to as ‘levels’ in the process and impact evaluation) can be applied to track progress and assist in planning and ongoing development.

For the impact evaluation the rubrics were derived directly from the programme logic as it applied to each specific project. Again the purpose of the rubrics was to provide explicit standards against which outcomes of specific projects could be assessed. However, developmental rubrics were not required as change over time is inherent in the outcome levels of the logic model (i.e. the outcome levels nearest the bottom of the diagram are the short term outcomes, leading to mid term at the next level up and on to the ultimate long term outcome at the very top of the logic model) and due to the relative lack of baseline data from which each project could be measured.

Te Kotahitanga

Project Description

Te Kotahitanga (TK) is a community based fire safety project that has been running in the Te Taitokerau (Northland) region since August 2001 and was originally developed in response to the high levels of fire related mortalities that occurred in the area during the 1997-2001 period (New Zealand Fire Service Commission, 2008b). The project also draws some of its inspiration from the Auahi Whakatūpatō project that was run in the Bay-Waikato Region where smoke alarm ‘installation teams’ visited households between November 1997 and September 1999 (Duncanson et al., 2000a).

The TK project has sought to educate at risk households about fire risks in the home, fire detection (via maintained smoke alarms), best practice behaviours in case of fire and making and practicing evacuation plans. Since its inception, the TK project has developed from a solely fire safety focus to now incorporate “multiple support services in addition to the NZFSC plan to educate low-income/at-risk groups” (New Zealand Fire Service Commission, 2008b). One of the key, and innovative, features of the project is its use of multi-agency, multi-sector community based collaborations and partnerships to deliver the installation of smoke alarms and fire safety advice. The TK project has been run primarily in the Northern, Bay-Waikato and Eastern Fire Regions with various iterations in the Western and Transalpine Fire Regions (e.g. CLASP in Christchurch; Waitara Home Smoke Alarm Project).

As part of the project, Home Fire Safety Advisors (HFSA) visit at risk households and provide and install smoke alarms. A risk assessment of each home is carried out, the homeowner is advised on any potential fire risks and recommendations are made on how households can become more fire safe. Advisors sit down with homeowners to provide educational material, fire safety advice and assist in the development of an evacuation plan.

Te Kotahitanga Evaluation Design

The process evaluation builds from the programme logic to measure the quality of the implementation and coordination of the TK project and its resources. Rubrics to measure these activities are developmental, in that a project can reasonably be expected to develop within certain timeframes from early design through implementation to becoming securely established. Developmental rubrics for the process evaluation of the TK project show the expected movement over a 10 year period as: initiated, developed, implemented, established and optimised. The levels and timeframes for change were developed by the evaluators based on their programme evaluation experience and were circulated to key NZFSC staff for review.

The first developmental rubric which assesses the coordination and implementation of the TK project to date, seeks to answer the question “How well coordinated and implemented is the TK project given the length of time it has been operating?”

The second developmental rubric focuses the evaluation assessment on answering the question “What is the quality of the TK project resources?” There is an assumption

inherent in the rubric that resource quality should increase over time in response to feedback from the project operation and from research and evaluation evidence.

This impact evaluation design also builds from the programme logic, to understand the awareness of, engagement with and uptake of the TK project by at risk households. In parallel to this it studies the NZFSC efforts at delivery of the project within its operational regions and nationally. Rubrics to measure each of these aspects are linked in a developmental sequence from understanding of risk through to full adoption of the TK project recommendations.

The first impact rubric is guided by the central question “What do Māori households know about their fire risks?”, examines awareness of fire issues for Māori households. A second rubric, built on the question “Who knows about this programme?”, examines awareness of the TK project’s range and reach among at risk Māori households. The question “What is the plan for TK coverage of at risk households?”, gives rise to the third rubric that explores the participation of households in the TK project. The final rubric asks “Are Māori households implementing all aspects of the TK project?”, and seeks to understand uptake of the TK messages by Māori households. Each rubric is set up to a progressive four point scale with descriptive levels of attainment.

Data that can inform judgement of the TK project against these rubrics is sourced from NZFSC records, staff experience, Māori households, and media reports. A total of 18 in depth interviews from both households and NZFSC personnel, a short descriptive survey of 30 at risk households and an ‘intercept’ survey provided the bulk of the data (also 30). NZFSC document analysis and examination of media items supplemented these data for this segment of the evaluation. Analyses synthesise insights from these multiple sources to build a multilayered understanding of the processes and impact of the TK project.

Assessments against each of the six rubrics for the TK project and justification of each assessment follow:

Process Evaluation Results

Coordination and implementation of the TK project

Developmental Stage: Established

Level: Good

Developmental stages	Description
Initiated	NZFSC and key community stakeholders come together to discuss high fire mortality in homes.
Developed	TK strategy has been developed by NZFSC in conjunction with key community stakeholders. Criteria are set for identification of at risk households. Funding is provided and project staff are appointed. Collaborations have been initiated.
Implemented	Project staff have received training and begun to visit at risk households. Households visited have completed the project and been documented. The TK project has been promoted in media, hui and events and key collaborations have been strengthened.
Established	Project has been refined to meet the specific needs of at risk households in response to collective staff experience. Staff exchange information across regions to strengthen the project. The project is promoted regularly, key collaborations are established and delivering support in cash or kind.
Optimised	Regular opportunities have been provided for staff to share information to strengthen the project. Evidence-based research guides the implementation and development of the project across all NZFSC regions.

Level	1-3 years	3-5 years	5-9 years	10+ years
Initiated	Poor	Poor	Unacceptable	Unacceptable
Developed	Acceptable	Poor	Poor	Unacceptable
Implemented	Good	Good	Acceptable	Poor
Established	Excellent	Very Good	Good	Acceptable
Optimised		Excellent	Excellent	Excellent

Key Question: How well coordinated and implemented is the TK project given the length of time it has been operating?

Justification

The TK project has a fulltime National Coordinator based in the Northern Fire Region (Whangarei) who oversees coordination, delivery and implementation of the TK project around the country. This includes liaising with and supporting regional teams with administrative structures (contracts, payroll, resources), linking with volunteer fire brigades, organising training of project staff, and maintaining the national TK database. The National Coordinator also works closely with the Northland Regional Supervisor who is responsible for recruiting and training Home Fire Safety Advisors (formerly referred to as Ambassadors) and implementing, delivering and promoting the TK project in the Northland Fire Region. The position of Regional Supervisor in the Northern Fire Region is unique in that it is a permanent position. In all other regions the role of Regional Supervisor is usually fixed term and mainly administrative (i.e. data entry etc). Funding and communications for the TK project are administered from the national office in Wellington.

The main site for coordination, implementation, promotion and delivery of the TK project is at the regional level and is usually supported by the National Coordinator (TK project), the National Māori Advisor and Iwi Liaison Officer (although not in all cases). Regional teams are normally made up of local Fire Safety Officers (FSOs), volunteers, support officers, local administration people and fire chiefs.

Although coordination and communication is generally good, some regional staff feel disconnected from the wider project and are unsure of the positioning of the project within the NZFSC. Some Māori staff thought the project should come under the authority of the National Māori Advisor and noted that neither the Corporate Communications Manager nor the National Coordinator were Māori.

Although all NZFSC staff were clear that the project targets at risk households be they Māori or otherwise, it was less clear how the Te Kotahitanga project was expected to cater to everyone and yet still be Māori. Several respondents felt that the initial project was clearly Māori but that the Māori structure and processes of the early times had undergone administrative changes that moved away from Māori ways of operating the project. One example cited was the introduction of quotas for home visits. This was seen as a “*Pākehā system of number counting that doesn’t work with Māori.*” Others argued that a Māori based project works with non-Māori too, but when it includes “*working with whānau and in people’s communities and sharing cups of tea and kai, that fosters trust. That can’t be done quickly or to a quota.*”

Local FSOs are usually responsible for the recruitment of Home Fire Safety Advisors (HFSAs) in their area. Two of the main criteria for selecting HFSAs are that they are sourced locally and are part of the WINZ’s Taskforce Green programme. Other criteria include having good interpersonal skills; being able to work co-operatively with others and be part of a team, being passionate about the TK project, having a full driver’s licence and having local knowledge of the community and area in which they are working. All HFSAs also receive a police screening.

While most of these criteria are based on meeting the requirements of the TK project and other organisational objectives, many of the project staff have developed and refined some of their own criteria based on their track record with the project and extensive experience in recruiting Advisors:

... I look into the person and look at their personality. And if I think that they have the right personality, like, they’re out there or they’re not shy or if they are shy maybe we can get that out of them... we’ve picked up some really good ones like that...

... its quite difficult trying to get the kind of person you would like to have... [so you] have to have a really good judge of character... you just get a feel for people.

The training of the HFSAs is usually done over a 3-4 day period. Advisors are given background information on the project, its aims and objectives. Also discussed are statistical information as it relates to the risks and harms of fire, some of the major causes of fire in the home, information about those groups that are most at risk and selection of focus locations. Additionally, other organisations with a vested interest in

the TK project are invited to talk about some of the work they do and in the past this has included groups like Energy Safety Service and Housing New Zealand. Advisors are also taken through some of the NZFSC key promotions (e.g. C'mon Guys, Get Firewise), developing home escape plans, and information about the best places and ways to install smoke alarms in homes. Potential situations that Advisors may face when approaching homes are enacted through role plays and strategies for dealing with these situations are discussed. On the last day trainers take the Advisors out into the field to practise filling out their job sheets and installing smoke alarms. First Aid and extinguisher training is also provided.

From an array of media reports, primarily in the NZFSC magazine (New Zealand Fire Service Commission, 2002, 2005) and local media (New Zealand Fire Service Commission, 2008a), it is clear that the workforce for the TK project are trained, skilled and enthusiastic in their efforts to increase their coverage. The approach of 'employing local' fire safety advisors has helped ground the project delivery in appropriate knowledge, styles and issues. The issue of tailoring resources to audiences is taken care of, at least in part, in this way.

In most instances, the TK project is run in locations for a period of six months and Advisors are employed for the same period of time before they are required to move on to other employment or training under the Task Force Green programme. However, an exception has been made in the Bay-Waikato region where Advisors were employed for a period of two years. One project staff member mentioned that this short term commitment came at a cost:

By in large it was a good programme... [but] its not consistent... because its dependent on funding. The Fire Service will do it one year... we promote all our stuff, then there's a huge eight year gap... and our messages get lost in the community...

However, one staff member mentioned that attempts were being made in their region to engage with communities through the local volunteer fire brigades and to use galas and 'telethon' type events to try and build community ownership of the project.

Resources for the TK project mainly consist of smoke alarms and NZFSC fire safety information pamphlets. In the past, all households received a generic information pack but with experience this approach was revised:

We found that we were giving them [at risk households] information, leaving information with them that covered everything, and people were becoming very disinterested and binning it...

Households are now given what project staff referred to as 'core information' (e.g. information about smoke alarms; maintenance of smoke alarms and escape plans) and then more specific information depending on the composition of the household (e.g. whether the household is a rental or has children etc) and the main sources of energy (i.e. electric, gas, wood or open flame). Educating and providing households with this information was considered by staff to be important to the success of the project:

... the emphasis is on education being the most important thing... the smoke alarms are the bonus...

It is also important to note that the HFSAs were considered by NZFSC staff to be a vital project resource, as they do much of the tailoring of the resources. As well, the fact that Advisors are local people and are often known by the communities has helped to alleviate any doubts or trust issues that households may have about officials entering their homes.

When asked about how at risk households were identified and targeted all project staff mentioned using the NZ Deprivation Index as their main point of reference and the 'resultant maps' based on this information. Project staff were aware of the groups that were most at risk from fire-related harm, and local knowledge of areas was also an important factor in selecting and targeting locations in which to deliver the project:

I knew my patch quite well, so I knew where the at risk areas were...

Important collaborations include the contributions from Task Force Green (WINZ), which has been paying half salaries for the HFSAs whilst Housing New Zealand (HNZ) and the Accident Compensation Corporation (ACC) have also been strong supporters of the project (Housing New Zealand, 2008, Accident Compensation Corporation, 2008b). The partnerships and collaborations between the NZFSC, ACC, HNZ and WINZ are well established and have been operating since the inception of the project. Project staff have also mentioned forming or establishing working relationships with local community groups and organisations and The Northland Fire Region website lists a number of community collaborations and partnerships including People Potential, Northland Injury Prevention, State Insurance, and Mitre 10. Additionally, Northland staff mentioned having strong working relationships with local groups like the Deaf Association, Home Help, Rural Housing (part of HNZ), councils, rūnanga, and local hauora service providers. Grey Power, the Energy Safety Service, iwi groups, local volunteer fire brigades and hauora providers were also cited as having varying degrees of involvement in the Bay-Waikato and Eastern fire regions.

Promotion of the project is mainly done via 'word of mouth' and through HFSAs visiting peoples homes. In the Northland Fire Region, events like Waitangi Day, the Ngā Puhī Festival and Field Days (held in Dargaville) are typical of the regular events in which the TK project is promoted. Staff in the Bay-Waikato have also promoted the project at similar events including the Tuhoe Ahurei, and at local Kōhanga Hākinakina days (sports days).

References to the project can also be found in the NZFSC magazine (New Zealand Fire Service Commission, 2001, 2002, 2005), websites (Waatea Blogspot, 2008, Ministry of Social Development, 2008, Hoskin and Carter, 2008, New Zealand Fire Service Commission, 2003a, 2008b, Accident Compensation Corporation, 2008b), local newspapers (New Zealand Fire Service Commission, 2008a) and iwi radio (Waatea Blogspot, 2008). The project has also won a number of awards (Accident Compensation Corporation, 2008b, New Zealand Fire Service Commission, 2004).

There also seems to be high levels of communication and regular information sharing opportunities among project staff in and across certain regions, via the National Coordinator, National Māori Advisor and Cultural/Iwi Liaison Officers (ILOs). Records are kept of the coverage of the project although access to these once it has been entered into the national database seems to be limited. Staff reported getting information back from Wellington about the project in their regions but it was not necessarily the data that would be most useful to them or in a usable form. In response to this feedback some changes to data collection forms have been made. For example, the Bay- Waikato forms were altered to include at risk categories of households visited. One at risk criteria is 'Māori' so in this way, staff can now see how many Māori households have been visited. However, once this information is input into the computer database it is not necessarily collated or analysed and fed back to the regions.

The knowledge and experience of staff has been used to refine and enhance the TK project over the years. This is probably most evident in the way that resources are now tailored to the specific needs of each household, rather than the generic approach that was used initially. Most project staff also have a long standing history with the project and are able to use these experiences to inform their recruitment processes, selection of areas in which to implement the project and which local media, hui and events to use to target and promote the project.

At the regional and local level, HFSAs are given regular opportunities to provide feedback particularly around any issues they have encountered while visiting homes. Regional teams are also required to report back to their local commander. Media exposure of the project, particularly through internal communications (e.g. NZFSC magazine) also offers the opportunity for staff within and across regions to share their experiences and knowledge for the betterment of the project. Data (for example GPS location) about houses which have been included in the project has been entered into a national database and this information is currently being used to design subsequent activities to increase the project's coverage in a district.

Interview data also indicates that while there is anecdotal evidence of follow-up occurring, resource and capacity constraints have led to the decision in most regions, not to replace batteries of smoke alarms or to check whether households have maintained smoke alarms and other TK fire safety recommendations:

It is something we have talked about and is something we have wanted to do is to actually revisit the database... [but] our database is massive... very rural based... they [staff] can drive for hours to get out to one little settlement... our funding is limited...

Included on the HFSAs' job sheet is a section where households can give permission for NZFSC staff to come and do a follow-up, although it is unclear at this point how many follow-ups have occurred. According to the Corporate Communications Manager, follow-up visits only occur in response to requests, however, the National Coordinator is targeting all at risk homes in Northland for follow-up visits six months after the initial visit. This is a development that has occurred relatively recently and implementation as yet is patchy with little data available on the frequency or coverage. In other regions such as the Bay-Waikato, some 'high risk' areas within the

region received follow-up visits within twelve months of the initial visit. Again, data on exactly how many homes were revisited is difficult to obtain.

An even more recent development is a proposed move towards a new dissemination process for the TK project in the Bay-Waikato region. If approved, the TK Project will employ a ‘train the trainer’ model for home fire safety dissemination. One person will be employed full time to train home visitors from a variety of agencies (for example plunket) in fire safety. These people will then pass the information to the homes they visit. According to NZFSC staff, resource constraints have forced the changes as the previous system was unsustainable given reduced funding for TK in the region.

TK project resources

Developmental stage: Established

Level: Good

Developmental stages	Description
Initiated	NZFSC and key community stakeholders agree to create the project.
Developed	The project, based on NZFSC best practise fire safety actions and systems, is developed with expert design input.
Implemented	Project staff know how to use TK project resources. Resources are affordable and accessible to households.
Established	TK project resources have been refined to meet the needs of at risk households.
Optimised	TK project resources are regularly evaluated for effectiveness and refined as required.

Level	1-3 years	3-5 years	5-9 years	10+ years
Initiated	Poor	Poor	Unacceptable	Unacceptable
Developed	Acceptable	Poor	Poor	Unacceptable
Implemented	Good	Good	Acceptable	Poor
Established	Excellent	Very Good	Good	Acceptable
Optimised		Excellent	Excellent	Excellent

Key Question: What is the quality of the TK project resources?

Justification

Resources for the TK project consist of smoke alarms and NZFSC fire safety information pamphlets. NZFSC staff who manage the project and the Home Fire Safety Advisors are also crucial project resources. TK Project staff have a thorough knowledge of the TK project resources and how to use them. TK project resources have been further refined to meet the needs of at risk households and regular opportunities have been provided for project staff to share information (particularly around resource related innovations). Project resources are also strongly aligned with available research evidence (Duncanson et al., 2001a, 2001b, 2001c, 2001d, 2002, Hoskin and Carter, 2008) and NZFSC branding criteria (i.e. red and blue; NZFSC logo etc).

Since its inception, there has been a constant process of refinement to ensure TK project resources are meeting the needs of at risk households. This is most evident in the tailoring of fire safety information resources to the specificities of individual households. As part of their training, HFSAs are required to consider the composition of a household, its occupants and the types of energy sources present in the house. All households are given what project staff referred to as ‘core information’ about smoke alarms, maintenance of smoke alarms and developing an escape plan. HFSAs are then asked to consider the layout of homes (e.g. whether it is single storey or multi-level), the main sources of energy (i.e. electric, gas, wood or open flame), the location of the home (i.e. rural, urban) and whether they fit any of the established at risk criteria:

- Low income
- Māori/Pacific peoples
- Elderly
- Young
- Physical/sensory disabilities
- Rural

Once this determination has been made, resources are tailored so that households receive the most relevant information. For example, if the household contains children then parents/caregivers are given information on the dangers of leaving cooking unattended, developing an escape plan, FAIP (Fire Awareness Intervention Programme), lighters and matches, how to dial 111, keys and deadlocks and some relevant ‘case study’ information. Households that have open flame energy sources are given information on spark guards and the ‘Heater Metre’ rule. In some cases, households will fall under a number of criteria (e.g. low income, with children and rural) so information is adjusted accordingly.

Project staff observed that HFSAs are essential to the process of tailoring not only TK project resources to the needs of each household, but tailoring presentations in a way that ensures effective uptake of fire safety information. For example, one HFSAs commented that she was disseminating information on the safe use of candles in response to news of imminent power cuts:

With the warning of power cuts on the TV and radio I have been giving everyone the information on how to be safe with candles and matches...

According to media reports, there is a strong sense that the project staff are working efficiently to deliver materials; advice and the interview data concur (New Zealand Fire Service Commission, 2002).

Interview data indicates that the HFSAs are a key project resource in that they are able to use their local knowledge and their community connections to identify at risk households. In addition, they generally have the ability to relate and put householders at ease, and to ensure the project reaches the target homes. Of householders interviewed in the Bay/Waikato region, all gave very positive responses when asked if they thought the home visits were a good way to receive fire safety information. Most sung the praises of the HFSAs.

“They were excellent.”
“Couldn’t fault them.”
“They were brilliant.”
“Great – excellent – when are they coming back?”

The generally positive attitude towards HFSAs is perhaps best illustrated by the fact that four of the people who declined to take part in the telephone interviews about the TK project nevertheless wanted it noted that they thought the people that visited them did an excellent job.

The smoke alarms and fire safety information resources are affordable and accessible as they are provided free and are available either from the local fire service or from the local HFSA. Unfortunately the supply of smoke alarms for the project is reportedly patchy and on occasion NZFSC staff have had to limit visits to at risk homes because of lack of resources.

Initially the project provided replacement batteries for smoke alarms but no longer does this. Interview data with NZFSC project staff revealed that requests for new smoke alarm batteries are frequent and that there is some confusion about why the service no longer provides batteries. Staff give anecdotal evidence that the withdrawal of the provision of replacement batteries has, on occasion, caused hostility toward them when batteries have not been supplied. HSFAs also report that follow-up visits frequently reveal that smoke alarms are not functioning because the batteries have not been replaced.

Formal evaluation of the TK project by NZFSC is limited to the current Whāriki process and impact evaluations. The only research on sustaining gains from the approach is contained in the *Follow-up survey of Auahi Whatatupato smoke alarm installation project in Eastern Bay of Plenty*, which found that approximately 30% of smoke alarms were no longer functional two and a half years after installation. One study by Hoskin and Carter (2008) involves a small survey (N = 98) of households that have received the TK project in three locations; Northland, Waitara and Christchurch, shows low response rates. Thirty-one percent of respondents had functional evacuation plans, 10% had modified their home to make it easier to evacuate, 14% had adopted better practices such as vigilance when cooking, and 12 % had done nothing in response to the project. Given that the estimate of households reached in the Northland Region alone is in the order of 50,000, the sample is much too small to provide any reliable indication.

Impact Evaluation Results

At risk households have increased knowledge and awareness of best practice fire safety actions and systems

Level: Good

Level	Description
Poor	Many at risk households do not know the fire risks for their household
Good	Most at risk households know the primary fire risks for their household
Very Good	All at risk households know the fire risks for their household and key measures to minimise the risks
Excellent	All at risk households know their fire risks and have a thorough knowledge of how to minimise them

Key Question: Do project participants know the risks for their households and how to minimise them?

Justification

From the telephone survey we found that the majority of respondents could name one or more fire risks in their home and only about a quarter felt there was no risk. Most concerns centred on stoves, fireplaces and heaters with other factors such as cigarette smoking, faulty wiring and escape access also mentioned. We interpret these findings as showing high levels of awareness of fire risk in at risk households but note that these respondents had all received the TK project and were in that sense primed to risk awareness. Even so the survey did show that a quarter of households felt there was no risk which may be an indicator of complacency about fire that seems to resonate with other data.

From the interview data, a majority were aware of fire risk with six out of eight respondents naming fire risks for their homes. Risks identified included leaving appliances such as heaters or cookers operating, unattended cooking, open fires and dirty chimneys. Respondents who identified fire risks for their homes were aware of how to minimise risks, identifying solutions as well as barriers to implementing good fire safety practices.

The street intercept survey was conducted with 30 Māori in Whakatane; an area considered to have received good coverage by the TK project. It showed that more than half of the respondents (23 out of 30) were sure they knew what the fire risks were for their household but only half (15 out of 30) could name at least one risk. Risks named were consistent with those in the interviews and telephone survey including open fires, electrical wiring, cooking appliances and unattended cooking. Also cited as risks were cigarette smoking, matches and cigarette lighters and lack of suitable avenues for fire escape.

Only one entrance and it's a small two bed granny flat. My mum and uncle are usually staying there and they couldn't get out the window if the fire was

between them and the door. It's a worry because the mostly likely place for a fire to start is the kitchen and you would have to go by there to get out. We don't have batteries in all the smoke alarm – but two do.

Most respondents who identified risks were also able to identify strategies to minimise the risks such as never leaving cooking unattended, checking electrical appliances are switched off, keeping lighters and matches out of the reach of tamariki having fire extinguishers and using fire and heater guards. Smoke alarms (21/30), and evacuation plans (9/30) were most commonly cited as helpful in minimising the fire risks.

The latest Fire Knowledge Survey for the country shows 40% of the population can be described as “committed to a fire safe lifestyle”, 25% are “available” (meaning moving towards this goal), while 29% are “ambivalent” and 6% are “unavailable” (Sargentina, personal communication, 2008). We interpret these figures as cause for concern since combining the last two categories shows that almost as many people are uninterested in fire safety as are committed to it. Given that it is a population survey as distinct from a survey of at risk households, it is likely that such households are strongly over-represented in the disinterested groups and that projects like TK can be used successfully to improve fire safety awareness amongst at risk groups.

At risk households have increased awareness of the TK project

Level: Very Good

Level	Description
Poor	Awareness of the TK project remains largely with the NZFSC and their current collaborators
Good	Awareness of the TK project is moderate in regions where the project is operating
Very Good	Awareness of the TK project is high in regions where the project has high coverage
Excellent	The TK project is widely known and requested by at risk households in all fire districts

Key Question: Who knows about this project?

Justification

The TK project is a national initiative that has been implemented in four of the eight fire regions. The project duration, dissemination and reach has varied in each region and interviews’ including the street intercept survey indicate that recognition of the project is high in regions where the project is operating regularly with high coverage of at risk households.

However, while interview data and various references in the NZFSC magazine (New Zealand Fire Service Commission, 2001, 2002, 2005), websites (New Zealand Fire Service Commission, 2004, Waatea Blogspot, 2008, Ministry of Social Development, 2008, Hoskin and Carter, 2008, New Zealand Fire Service Commission, 2003a, 2008b, Accident Compensation Corporation, 2008b) and other publications (New

Zealand Fire Service Commission, 2008a) produces a reasonable list of locations, there seems to be no ‘definitive’ information as to which districts have adopted and implemented the TK project or much in the way of details about exactly what has been done where.

The TK project and various iterations of the project, have been run in a number of locations throughout New Zealand including Waitara (Western); Christchurch (Transalpine); Whakatane, Tauranga, Rotorua, Matamata, Huntly and Ngaruawahia (Bay-Waikato and Eastern). The highest levels of saturation ‘seem’ to have been achieved in the Northland Fire Region where the project has been running the longest:

Interviewer: ... so it's not like randomly going to someone's place and knocking on their doors...

Interviewee: ... at first it was, just to get the area covered. But now we've blanketed the areas and we're finding that the people that we missed in the last few years are actually calling us...

Eastern and Bay-Waikato Fire Regions also seem to have attained good levels of saturation in some areas, particularly around the Eastern Bays area (Cape Runaway through to the Matatā Straights down to Kaingaroa). One would expect these regions to have high awareness of the project and evidence shows this to be so.

It should be noted, that whilst knowledge of the project is high, recognition of the project name is low. Sargentina (personal communication, 2008) noted that for the high coverage regions, “people would be aware of the programme but not necessarily the TK name” and that outside of Northland, Bay Waikato and Eastern location the name would be unfamiliar. The name ‘Te Kotahitanga’ is perhaps more relevant in the Northland region as the project was named after the well known marae in Northland where it was launched. Northland based staff note that name recognition is higher in areas in close proximity to Te Kotahitanga Marae.

In Kawakawa, Kaikohe and Kaitaia they would know it as Te Kotahitanga because there are more Māori and the people are used to Māori names and many know the Marae called Te Kotahitanga in Kaikohe that the programme was named after...

Northland staff also report being asked questions about the name by people who know of or are affiliated to Te Kotahitanga Marae. For example they have been asked if they know what that name *really* means; what the connection is with the marae; and by what authority they use the name. Staff from other regions did not report undergoing the same degree of interrogation around the name of the project.

Northland staff thought that most people in Whangarei, by contrast, would not know that the project was called Te Kotahitanga but would recognise it as the ‘*smoke alarm project*’ or something similar. The comment was made that “*In Whangarei we do mostly old people, and they aren't usually Māori*” and it was noted that the car used in Whangarei does not have Te Kotahitanga written on it.

Our telephone survey, conducted with project participants in Northland and the Bay/Waikato regions showed that only 4 of the 30 respondents knew that the name of the project by which they had received smoke alarm installation and safety briefings was Te Kotahitanga. The survey is too small to verify whether name recognition is stronger in Northland than other regions, but it does indicate that name recognition is generally very low.

While our telephone survey is descriptive only, the findings concur with those of the street intercept survey and interviews conducted for the evaluation and NZFSC expectations about the profile of the project. Most of our respondents knew that they had received a project but the name simply had not registered. In the street intercept survey conducted with Māori in Whakatane, only three out of 30 people recognised the name. Those who did not recognise the name were then asked, *“Have you heard of the project where the fire service visit homes and provides fire safety information?”* Most were still unable to recognise the project. Finally they were asked, *“have you heard of the project where the fire service install smoke alarms in homes?”* All respondents who had not recognised the project by either its name or the home based delivery of fire safety information were aware of the project that installed smoke alarms in homes.

This finding is coupled with very low awareness of media promotions or messages about Māori fire safety among respondents. We interpret this to mean that while awareness of the TK project per se is high in areas that have received high coverage, it is strongly linked to the installation of smoke alarms, not to the name of the project. Although it raises question about the suitability of Te Kotahitanga as a nationally applied project name this is nevertheless a very good result for project awareness.

Whilst awareness of the TK project is high in targeted regions there is no evidence to suggest that the TK project is widely known and requested by at risk households in areas other than those where coverage is already high.

More at risk households are participating in the TK project

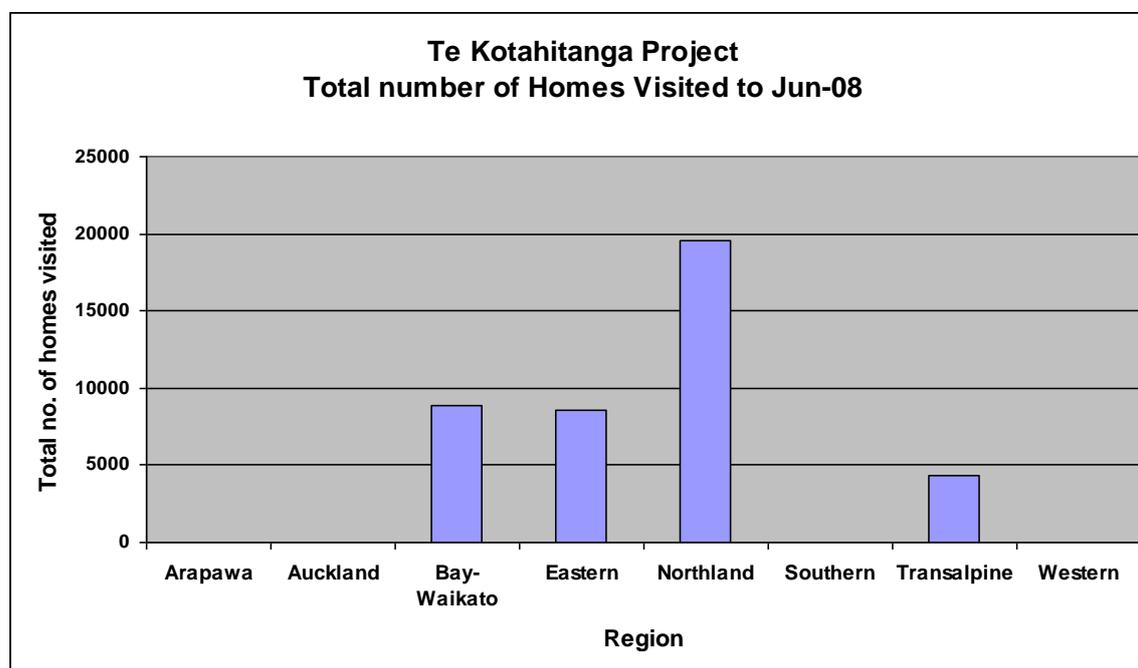
Level: Very Good

Level	Description
Poor	High risk regions are implementing the TK project with few at risk households
Good	High risk regions are implementing the TK project with some at risk households
Very Good	High risk regions are implementing the TK project with most at risk households
Excellent	All fire regions are implementing the TK project with at risk households

Key Question: What is the plan for TK coverage of at risk households?

Justification

Officially the TK project is a national project targeting at risk homes using the following criteria: Low income; Māori/Pacific peoples; Elderly; Young; Physical/sensory disabilities; Rural. By these criteria, at risk homes exist in large numbers in every fire region. The table below shows that only four of the eight regions have received the project and the NZFSC communications manager confirmed that “only Northland, Bay Waikato & Eastern” Regions have the Te Kotahitanga project currently in operation (Sargentina, personal communication 2008).



Clearly Northland has received the highest coverage. According to the NZFSC central database, 30% of homes in the Northland Region have been visited and received the project while in the Bay Waikato Region Huntly and Ngaruawahia have been completed and in the Eastern region, Maraenui is complete. The project has targeted at risk homes so the saturation of these districts can be taken as a proxy for coverage of such dwellings.

Interviews with NZSFC staff reveal two reasons for the concentrations of the project in these areas. Firstly, Northland and Bay-Waikato Regions were targeted in response to the high number of fatal fires in rural Māori households in Northland in early 2000 and in the Bay-Waikato region in the late 1990s. These regions along with the Eastern Region were identified as having large numbers of homes with multiple risk factors – Māori, low income, rural with elderly and/or young residents.

The second reason for a region having the TK project was the presence of a person within the NZFSC with the passion for the TK project and for fire prevention.

TK happens in the regions where there is someone with a passion to have it – that is where it also survives. It is usually the fire chief in an area that has a particular passion for fire prevention.

First of all the leadership. Whose managing that area and whether they've got the interest, time or money to start something. But the other thing we usually look at is the deprivation index...

Where the project is located is largely related to the areas where there is someone who wants it – often the local Fire Chief or someone similar who has a passion for fire prevention and wants TK. Those areas get it.

The TK Project is unlikely to expand to cover all at risk households in all fire regions as there is no plan at this time to extend the Project. The National Coordinator would like to develop the project to target at risk homes in other regions but recognises the need to tailor the project to suit new contexts and resourcing constraints.

There is no official plan to extend the TK project although I would like to see it extended all over NZ. I would especially like to get into South Auckland.

There are problems with South Auckland though because people are more cautious about who they let in to their homes – and may also react badly to the uniforms. They are also less likely to personally know the HFSA or their whānau. People in Northland have gotten used to seeing the cars and the uniforms and know what the project is about.

Staff also felt that the presence or lack of a person to advocate for the project at higher levels within the fire service is a key driver or inhibitor of the project.

Either willingness or lack of interest at the higher levels of the NZFSC has grown the programme and has restricted it. It depends on who is at the head, their passion for TK and their ability to obtain resources and funding for the programme

The reach of the project has varied across the four TK regions as have the goals for implementation. In Northland the project has been ongoing and targeted all at risk households in the entire region. In all other regions, one or more communities, areas or districts with a high percentage of at risk homes have been selected and every

home visited. In these regions only at risk homes in the selected areas have received the project.

The main strategy for ensuring the implementation of the project is the use of Local Home Fire Safety Advisors to disseminate fire safety information and install free smoke alarms in at risk households. Interviews with staff and project participants indicate that the process of training and releasing HFSA to work with their whānau and in their own communities first and then move in to other neighbourhoods is effective in gaining entry to at risk homes.

We start with our own whānau (and that's ok with the NZFSC) because they tell us if we get it wrong and we can tell them off too...

They [whānau] are our toughest critics and we are tougher on them too but we get to practice with the people that are most important to us...

In Northland the HFSA visit as many at risk households in their area as possible during the six month period that they are employed. They use their local knowledge to identify the at risk homes.

We pretty much know where all the most at risk homes are – and we are usually aware of the real remote places too and try to get to them – especially if we know the team before us hasn't visited there.

Data on coverage is collected by all TK regions and it is entered into the national database. Access to the database is through the NZFSC Communications Manager and the National Māori Advisor. This information is currently being used to design subsequent activities to increase the project's coverage in a district. The New Zealand Deprivation Index and maps based on this information are used to check that HFSA's are targeting communities most in need of assistance to address their fire safety issues. The National Coordinator reports that maps of TK implementation align closely with the deprivation index maps. This suggests that the strategy of using HFSA's local networks and knowledge of their area is working well to ensure appropriate dissemination of the project.

HFSA used a variety of methods to promote and increase dissemination rates for the service but cold calling at homes was the most successful. All the HFSA agreed that face to face at the door was the best way to get people to agree to be a part of the TK project.

We have more than 80% response to cold calling – probably more. Actually only two people have refused when we have turned up at the door.

HFSA's said that there were no households they wouldn't visit except those where they weren't wanted. They stressed that the number of houses that refused entry to the project was extremely small. If it was a bad time for the householders, then the HFSA's would arrange another time to visit.

We don't go in to the houses where we aren't wanted. But even if it's obviously a bad time, we try to arrange another time that suits people and then come back at that time.

Although many at risk homes in high risk regions have received the project, the TK National Coordinator indentified a number of barriers to higher coverage. The barrier of most concern is the six monthly turnover for HFSA (in all regions except Bay-Waikato) which is considered inefficient.

Just get people trained and skilled in what they are doing and then they have to move on. We then have to train a new crew

We would like to keep our HFSA for one year of more - that would be better – more efficient and not mean that we were always putting so much in to training and just when people were getting confident and had learned the job really well, they had to leave.

In addition, with the move towards a six month follow-up visit in Northland, HFSA are finding that people seem to want the HFSA that visited them initially to do the follow-up. This is not possible within the six month employment period.

Since beginning the TK project, the Bay-Waikato region has been the only region to successfully keep their HFSA for longer than six months. In Bay-Waikato they were employed for two years. Other regions want to know how they were able to do this but it is unlikely that Bay-Waikato will be able to advise the other regions as they do not have a current TK project in operation and the design of their proposed new iteration looks extremely unlikely to utilise HFSA's in any capacity. Funding/resourcing constraints were cited as the reason for the planned changes.

The intermittent and sometimes scant supply of smoke alarms is the other serious barrier to greater implementation of the project. NZFSC staff and HFSA's from several regions reported having to slow down on first time visits because of a lack of smoke alarms. When HFSA's generally only have six months within which to visit as many at risk homes as possible, a shortage of smoke alarms is a serious impediment to the project implementation.

More at risk households implement and use best practise fire safety actions and systems

Level: Very Good

Level	Description
Poor	At risk Māori households lack awareness of fire safety risks and fire safety systems
Good	Most 'at risk' Māori households in high coverage regions implement at least one key fire safety actions or fire safety systems
Very Good	Most 'at risk' households in high coverage regions implement fire safety actions and fire safety systems
Excellent	Most 'at risk' households implement fire safety actions and fire safety systems and review them at least periodically

Key Question: Are at risk households implementing all aspects of the TK project?

Justification

Operational smoke alarms and an evacuation plan are the basic fire safety actions and systems expected in homes that have received the TK project. Evaluation data indicates that most at risk households that have received the project have at least one functioning smoke alarm and a simple evacuation plan. A small minority of households have also implemented other fire safety actions and systems and regularly review them.

From the interview data and telephone survey we found that all of the respondents had smoke alarms installed (at least one with hard-wired detectors) and that more than half had some form of evacuation plan. Additional safety measures mentioned included the purchase of a closed log-fire and in one instance fire-screens. One respondent mentioned that they are very aware of the dangers of smoking in the bedroom and no longer smoked in the house at all. Another was in the process of having old wiring replaced and one respondent spoke of having the gas heater checked, and chimney cleaned annually.

For the street intercept survey, the presence of smoke alarms was extremely high with only one household being without an alarm. This is to be expected in an area of high TK project coverage. Twenty seven households of the total 30 had received smoke alarms through the TK project. Respondents from three of these households admitted to having non operational alarms due to flat batteries and one had removed the alarm batteries complaining that "*the alarm was noisy and went off every time we cooked.*"

Just less than half of the respondents had any form of evacuation plan (13/30) and of these, many indicated that the extent of the escape plan was to get out quickly however and wherever possible.

"Get out fast."

"Our escape plan is to use the nearest door or window."

"Out the window."

"It's a small house with lots of exits so we can get out OK"

A small minority (8/30) had given the evacuation plan some consideration and an even smaller number (3/30) had endeavoured to involve all whānau and household residents in the development of the plan or advised them of the escape route in event of a fire. We felt that these results confirm high levels of basic action on fire safety among the 'at risk' households that have received the TK project.

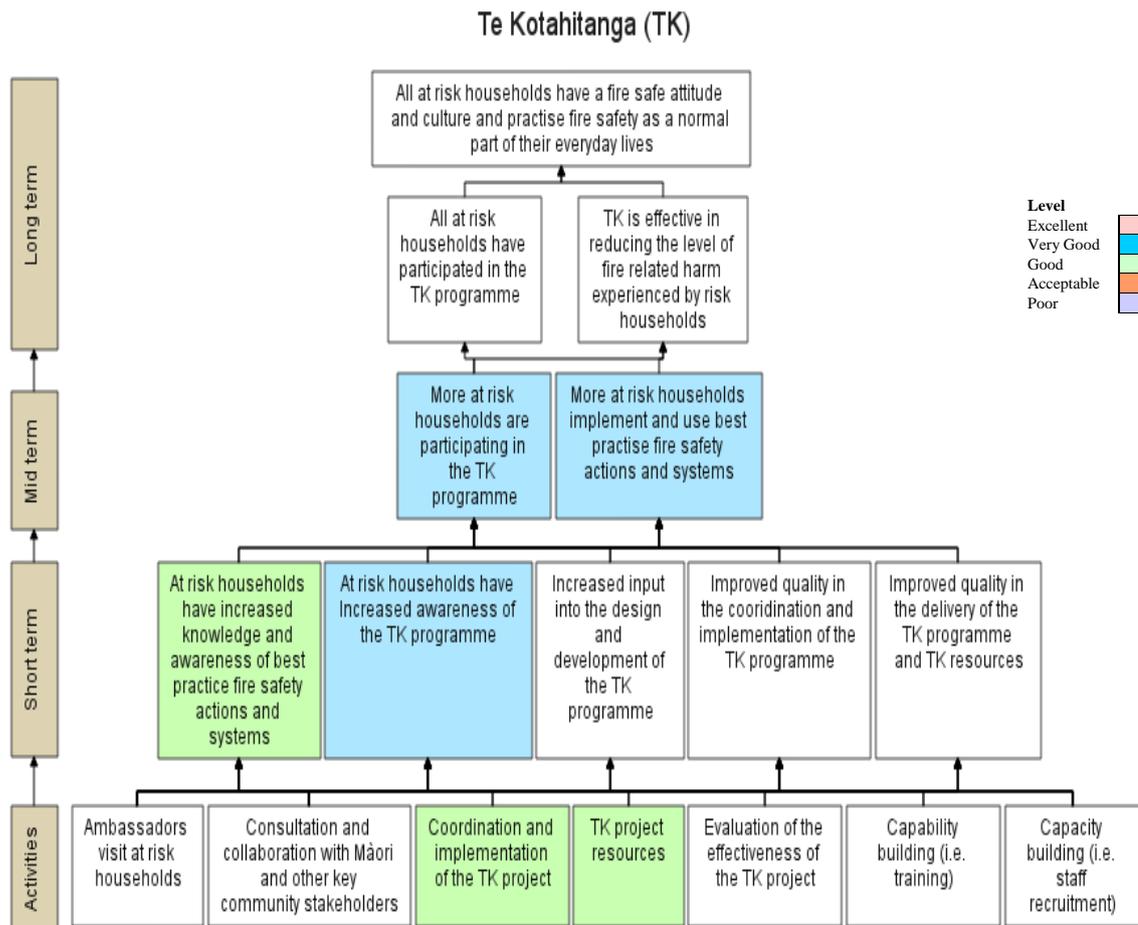
Whilst project staff are aware that the dissemination of fire safety information is key to the project, recognition of the TK project for most people is clearly based upon the service providing and installing free smoke alarms. The free smoke alarms have allowed the HFSAs to get a foot in the door and to ensure that households also receive fire safety information. However the provision of free alarms and replacement batteries was seen to be creating barriers to increased uptake of fire safety systems and actions by fostering a dependence on the fire service and the provision was withdrawn. Lack of money to replace batteries in smoke alarms was reported by many respondents as a barrier for some households despite the project now advising people to budget for them and continuing to offer free installation of replacement batteries. Two respondents surveyed, suggested that electric smoke alarms would eliminate the need for batteries citing the United States and Australia as countries where these are installed free.

Other barriers to the implementation of fire safe practices related to rural locations. One survey respondent from a rural location said that they always try to put fires out first and foremost as they know the fire brigade will not arrive before "it's burnt to the ground". Another suggested the installation of fire hoses in their little village as garden hoses were inadequate to keep fires at bay until the fire brigade arrived. The lack of chimney cleaning services in rural areas was also cited as an issue by one respondent who was afraid that they weren't doing it properly and that it was a potential fire hazard.

Increasing the uptake of fire safety systems and practices of 'at risk' households means wider coverage and more follow-up visits. Interviews with staff revealed their belief that one visit is unlikely to be enough to ensure fire safety actions and systems are implemented in all 'at risk' households. For example, it appears that in a recent fatal house fire, smoke alarms had been installed by the TK project service but a new tenant had not received fire safety information and had no evacuation plan in place. It is possible that this fatality may have been prevented by a TK project follow-up visit. Northland has a plan in place to target all households with a six month follow-up visit but it is not yet established as a regular feature of the project and has had limited or no application in other regions.

We were unable to locate data to show how many lives have been saved due to the implementation of fire safety actions and systems by the TK project. We do know that although there are some barriers to increased implementation, most at risk households that have received the TK project are implementing at least basic fire safety systems and practices and that the overall household fire fatalities have been reduced in all fire regions receiving the project. This is a very good result.

Discussion



(NB Only activities and outcomes (short term and mid-term) in coloured boxes were evaluated as part of this project)

The evaluation shows that the TK project is a good project that is achieving high coverage of ‘at risk’ households in some regions and very good outcomes in ‘at risk’ homes where it has been implemented. The levels of activity in particular regions such as Northland strongly suggest that the appropriate developmental strategy has been followed in this and similar locations. The use of HFSAs local knowledge and connections along with the New Zealand Deprivation Index and maps based on this information have been critical in ensuring appropriate targeting of households and communities most in need of assistance to address their fire safety issues.

Funding and staff are in place to a greater or lesser degree in different locations but there is a long way to go before TK can be described as a national project. Without specific planning and resourcing the project will not reach all ‘at risk’ homes across all fire regions and the current pattern of concentration in areas where there is a person with a passion to operate the project will persist. The proposed Bay-Waikato model does offer a less resource intense alternative for home fire safety information dissemination. If implemented, the new delivery process should be closely monitored for effectiveness before being considered as a potential model for use in other fire regions.

It should be noted that the use of HFSA is quite resource intensive but it has been effective in reaching target homes and has had some major unexpected impacts for the HFSA's and their communities. Most HFSA's have gained significant skills and experience and moved on to full time employment and perhaps more importantly for the fire safety objectives of the TK project, the HFSA's continue to be advocates for fire safety in their communities long after they have completed their term as HFSA's.

Data collection methods have adapted with the project but access to data is difficult for regional staff to obtain once entered into the national database. Improved access to data in a usable form might assist the ongoing development of the TK project at the regional level. Updated and location-specific research would assist in tailoring the project to the needs of particular communities and locations. For example consideration should be given to the project name in regions outside Northland as Te Kotahitanga is clearly not memorable as a name for this fire safety project when applied in other communities. Another example is the degree to which the project is tailored to Māori within specific communities. It would also be beneficial if staff at the regional and local levels were clear about the position of the project in relation to Māori at the national level.

Overall it is clear that to build comprehensive coverage of Māori communities and families by this successful, life-saving, property-protecting project, significant new investment is required. Not only is funding required for the project to expand into new fire regions, but also to ensure sustained gains in regions where fire related harm and fatalities have already been successfully reduced. While the capabilities and commitment of the Māori NZFSC involved are strongly evident, advancing the programme will require determination and advocacy at the highest levels of the organisation.

Recommendations

- Improve regional access to the national TK database so that information can be used to refine the TK project.
- Provide or fund more location specific research to inform and ground the TK project and resources in the local context.
- If TK is to be a national project then further resources are needed to improve coverage of the project within each fire region.

Māui Tinei Ahi

Project Description

Māui Tinei Ahi (MTA) is an education based fire safety resource kit, developed for Year 1 & 2, Year 7 & 8, te Kōhanga Reo and Kura Kaupapa. The project was launched by the New Zealand Fire Service in 2000 and is designed to be used with the Health and Physical Education school curriculum in New Zealand.

The project was developed by members of the New Zealand Fire Service and Kōhanga Reo and Kura educators. The resource kit is equivalent to the mainstream Firewise project and is produced in Māori and contains a teacher's guide, a range of illustrated books and activities for children to complete with their parents and caregivers.

Māui Tinei Ahi (MTA) Evaluation Design

The process evaluation builds from the programme logic to measure the quality of the implementation and coordination of MTA and its resources. Rubrics to measure these activities are developmental, in that a project can reasonably be expected to develop within certain timeframes from early design through implementation to becoming securely established. Developmental rubrics for the process evaluation of MTA show the expected movement over a 10 year period as: initiated, developed, implemented, established and optimised. The levels and timeframes for change were developed by the evaluators based on their programme evaluation experience and were circulated to key NZFSC staff for review.

The first developmental rubric which assesses the coordination and implementation of MTA to date, seeks to answer the question "How well coordinated and implemented is MTA given the length of time it has been operating?" The second developmental rubric focuses the evaluation assessment on answering the question "What is the quality of MTA resources?" There is an assumption inherent in the rubric that resource quality should increase over time in response to feedback from the project operation and from research evidence.

MTA has sought to educate young Māori children at Kura and Kōhanga about fire risks, best behaviours in case of fire and making evacuation plans especially for the home. This impact evaluation design builds from the programme logic, to understand the awareness of, engagement with, and uptake of MTA by Kura and Kōhanga. In parallel to this it studies the NZFSC efforts at delivery of the project in these institutions. Rubrics to measure each of these aspects are linked in a developmental sequence from understanding of risk through to full adoption of MTA recommendations.

At the most basic level the rubric, guided by the central question "Do Kura/Kōhanga have a thorough knowledge of fire safety issues for Māori children?", examines awareness of fire issues for Māori children among teachers and educators. A second rubric, built on the question "Who knows about this project?", examines awareness of

MTA for its range and reach among Kura and Kōhanga teachers. The question “Are all Kura/Kōhanga actively engaging with MTA?”, gives rise to the third rubric that explores the participation of schools in the MTA. The final rubric asks “Are Kura/Kōhanga instilling fire safety knowledge through MTA?”, and seeks to understand uptake of the MTA messages by Māori children. Each rubric is set up to a progressive four point scale with descriptive levels of attainment.

Data that can inform judgement of MTA against these rubrics is sourced from NZFSC records, staff experience, personnel at Kura and Kōhanga, and media reports. A total of 16 in depth interviews with both schools and NZFSC personnel, the survey, document analysis and media research constitute data base for this segment of the evaluation. Analyses synthesise insights from these multiple sources to build a multilayered understanding of the impact of MTA.

Assessments against each of the four rubrics for MTA and justification of each assessment follow:

Process Evaluation Results

Coordination and implementation of MTA

Developmental stage: Implemented

Level: Acceptable

Developmental stages	Description
Initiated	NZFSC and key community stakeholders come together to discuss high level of fire related harm amongst tamariki/rangatahi Māori.
Developed	NZFSC in conjunction with educators have developed MTA for tamariki/rangatahi Māori. Funding is provided and project staff are appointed. Collaborations have been initiated.
Implemented	Project staff have received training and begun to visit Māori language schools. Schools visited have completed the project and been documented. MTA has been promoted in media, hui and events that reach Māori language schools and key collaborations have been strengthened.
Established	Project has been refined to meet the specific needs of schools in response to collective staff experience. Staff exchange information across regions to strengthen the project. The project is promoted regularly, key collaborations are established and delivering support.
Optimised	The project is delivered biannually to all participating schools. Regular opportunities have been provided for staff to share information to strengthen the project. Evidence-based research guides the implementation and development of the project across all NZFSC regions.

Level	1-3 years	3-5 years	5-9 years	10+ years
Initiated	Poor	Poor	Unacceptable	Unacceptable
Developed	Acceptable	Poor	Poor	Unacceptable
Implemented	Good	Good	Acceptable	Poor
Established	Excellent	Very Good	Good	Acceptable
Optimised		Excellent	Excellent	Excellent

Key Question: How well coordinated and implemented is MTA given the length of time it has been operating?

Justification

The main site for coordination, implementation, promotion and delivery of MTA is at the regional level, although national, regional and district level input and discussions are used to inform processes around selecting project staff, locations for implementing MTA, promoting and delivering the project and connecting with communities. In Bay-Waikato and Eastern fire regions, project staff report back to the Iwi Liaison Officer (ILO) and provide details about which schools they made contact with, any feedback about particular schools and ensure information has been documented. It is unclear at this stage whether this process is followed in other fire regions. Currently there are no fulltime MTA staff.

Project staff mentioned MTA as being highly specialised and requiring a unique set of skills in order for it to be implemented and delivered effectively.

One of the main criteria in selecting project staff is that they are Māori and fluent in tikanga Māori and Te Reo Māori:

When it comes to doing delivery to Māori, the person to talk [to them], we've known this a long time, are Māori. Māori talking to Māori...

Fluency in Te Reo is particularly important as some Kōhanga and Kura Kaupapa are staunch about delivery being done in Te Reo Māori (Thomas, 2003). However, in some instances, staff have been able to negotiate around delivery options:

I always ask them how they want the delivery. Some say Māori, in Te Reo, some say "you can come and do it..." Some of the kaiako have said "you say what you have to say and we'll translate". It just a matter of working in with what they want... Whatever keeps them happy...

The project also requires that staff have a good grasp of the project and its resources, particularly when engaging with schools and explaining the MTA resource pack to kaiako/kaiāwhina. The project also requires that staff have a good rapport with tamariki/rangatahi and are able to adjust their presentation style to suit both preschool (Kōhanga) and intermediate aged children (Kura Kaupapa). Passion for the project was also an important factor:

... [having a passion for the project], that's quite important. You can sense when somebody, that thing where its just being a job rather than having that passion for it. That's one thing that I liked about [name], [name] had that passion for it.

While it is noted that the bulk of the project is delivered by schools (16-20 hours of teaching time), the small pool of fluent Māori speakers within the Fire Service meant most staff had limited capacity to deliver the project:

One of the main issues is the requirement for programme staff to be able to speak Māori. ... that is the problem with Māui Tinei Ahi. The lack of fluent speakers.

... problem we have with Māui Tinei Ahi is the lack of Māori speaking presenters. So that's why there is only a very select few of us who are actually doing the programme.

This has also meant that both delivery and follow ups were sporadic in most areas and highly dependent on staff schedules:

We're not getting the coverage we really want.

... you look at [name], they can only do a lot of the background work and administration work when they're on day shift so that's 2 days in 8 that they can do it, then they're on nightshift...

Delivery of MTA in schools is further complicated by project staff needing to work around school schedules and curriculums as well as, 'competing' with other safety projects for school time:

... it's a bit of a goodwill thing that they [schools] do take it [the MTA programme] up. Most schools are very enthusiastic about fire safety... [however] schools also have road safety, water safety, burn safety... you know, all those sorts of programmes they have to try and fit into their curriculum... and most schools all want to squeeze you into the one section of the curriculum which is normally health... or health and safety. So that's when they try to general cover the whole emergency service theme...

One of the hard things is actually getting into the schools. We're competing with the Police for the school time... DARE, seatbelts, road safety...

... we can only offer the programme, we can't force it on to anyone...

We tell them what the programmes all about... the bigger the school the further out you got to plan for this, you get what I mean... at the end of one year of school, they've already planned their year ahead. So it's a matter of trying to time it when they're doing their planning so that they can schedule it in...

The MTA pack is available to schools free of charge and includes:

- A Smoke alarm
- A teaching ideas book with lesson plans and activities
- A set of 6 A4 picture cards for classroom discussion
- Māui Tinei Ahi-Firewise certificates for children
- Te pukapuka rapurapu mo te arai ahi (Discovery booklet)
- Tiakina ngā mea e whakaaronuitia ana e koe: Kia tūpato i te ahi (Home fire safety booklet)
- Kia tūpato ki te ahi (A large picture book for story time or for children to read themselves, which focuses on home fire safety)
- A3 sheets of cut outs for a shadow puppet show

In most cases, project staff delivered the MTA resource pack in person. This gave staff a chance to sit down with kaiako/kaiāwhina and go through it to ensure they were receiving the right resources and discuss the best use of the resources. Project staff also provided kaiako/kaiāwhina with advice on age appropriate ways to use the resources. At the end of 16-20 hours of class time, project staff return to schools to ensure that key information has been covered and key messages were reinforced:

We tailor the programme for the age of the children... i.e. the Kōhanga Reo children. Personally I just try to promote to them the getting down, getting low, getting out and staying out. That's to me, as much as they need to learn. For the primary school children, we tailor it a

bit more and add a bit more in where we give them the tools to use i.e. we will go through an evacuation plan with them... explain that they need two exits from each one. And again, the smoke alarms. We'll drill them harder on safe meeting places... and try and get out of them the correct information that they need to give to the telecom operators when they ring... you know... do they realise they are going to be talking to an operator before they speak to a fire fighter...

However, it is important to note that the way this is done and any development of resources is mainly left to the discretion of individual project staff.

Promotion of the project is mainly through word of mouth. Staff also mentioned going to the local *Purapura* hui to promote the project. Kaiako/kaimahi at Purapura were also able to provide further information and contacts about other Kōhanga and Kura Kaupapa in their area. In the Bay-Waikato area, project staff collected names for 59 Māori language schools and contacted each one. However, there were concerns from some staff that there was probably a lack of 'internal' awareness about the availability of MTA:

To tell you the honest truth, the majority of people wouldn't have a clue... unless there's a Māori Fire Fighter in a crew...

The project is also promoted in the NZFSC magazine (New Zealand Fire Service Commission, 2003b) with items on MTA to specific schools and featuring the energy and commitment of staff delivering the project. The project is also promoted in a number of education related publications and newsletters (e.g. the Education Gazette) and various websites (Tihewa Mauriora, 2008, Accident Compensation Corporation, 2008a). Interviewees speak of the development of a certain amount of collaboration with schools (e.g. Purapura (clusters of Kōhanga Reo) but other partnerships are not specified.

Resourcing MTA was also an issue:

... the Māui Tinei Ahi programme is a poor cousin to the Firewise programme, specifically because they'll come out with a brand new version of Firewise Years 7 and 8 and then we got to fight to get one for Māui Tinei Ahi...

... [with the Firewise programme] we had the manpower it was delivered on a very large scale and so with that, the messages were definitely getting out there. At the moment we're just hitting sporadically here and there... so it's extremely hard to know if we're getting anywhere with it...

MTA project resources

Developmental stage: Implemented

Level: Acceptable

Developmental stages	Description
Initiated	NZFSC and key educational stakeholders agree to create the project.
Developed	The project, based on NZFSC best practise fire safety actions and systems, is developed with expert educational input.
Implemented	Project staff know how to use MTA resources. Resources are affordable and accessible to schools.
Established	MTA resources have been refined to meet the needs of tamariki and rangatahi at different age levels.
Optimised	MTA resources are regularly evaluated for effectiveness and refined as required.

Level	1-3 years	3-5 years	5-9 years	10+ years
Initiated	Poor	Poor	Unacceptable	Unacceptable
Developed	Acceptable	Poor	Poor	Unacceptable
Implemented	Good	Good	Acceptable	Poor
Established	Excellent	Very Good	Good	Acceptable
Optimised		Excellent	Excellent	Excellent

Key Question: What quality are the MTA Resources?

Justification

This current evaluation is the only formal review of the materials although interview data suggest that staff have been involved in refining the presentation of the resource. While MTA is subject to continuous improvement, this is in the hands of staff who are involved in the co-ordination and presentation of the resources.

Correspondence between a regional commander and a Māori fire fighter key to the delivery of MTA in Auckland describes a workshop of peers that reviewed and critiqued MTA resources. Various shortcomings of the resources (e.g. need for a unified PowerPoint presentation for MTA classroom use, ideas and usage of Te Reo that was beyond their knowledge) and delivery (pitching delivery to different age groups; guidance for kaiako) were noted and considerable enthusiasm for addressing them was expressed.

Clearly staff are increasingly comfortable with the presentation of MTA although there are significant issues around capacity (there being so few Māori staff in NZFSC) and capability (especially in terms of Te Reo and possibly tikanga). Media coverage (mainly through NZFSC channels) reports on the work of specific officers at particular schools and interviews indicate knowledge exchanges among staff responsible for delivering MTA, but these tend to be opportunistic rather than regularised. The extent of Māori awareness of the MTA is not known and there are no available data on the levels of requests for information and resources arising from MTA.

MTA has been developed in line with NZFSC best practice guidelines and adapted for use within Māori school contexts. Although MTA resources are basically a translation of the Firewise resources, modifications to project delivery have been made to ensure their salience for Māori children and families. The activity books associated with MTA are appropriately worded and built around images likely to appeal to Māori children.

Impact Evaluation Results

Kura/Kōhanga have increased knowledge and awareness of best practice fire safety actions and systems

Level: Very Good

Level	Description
Poor	Some Kura/Kōhanga have a little knowledge of fire safety issues for Māori children.
Good	Many Kura/Kōhanga that have received MTA have a thorough knowledge of fire safety issues for Māori children.
Very Good	Most Kura/Kōhanga have a thorough knowledge of fire safety issues for Māori children.
Excellent	All Kura/Kōhanga have thorough knowledge of fire safety issues for Māori children and teach them through MTA.

Key Question: Do Kura/Kōhanga have a thorough knowledge of fire safety issues for Māori children?

Justification

All school staff who participated in in-depth qualitative interviews had a thorough knowledge of best practise fire safety knowledge for Māori children, with all being very concerned for the general safety of their tamariki. Knowledge of fire safety issues for Māori children and how to reduce fire related harm amongst tamariki in this group consisted of a combination of MTA, having compulsory fire safety measures in place as part of running their school and personal knowledge and experience from working with tamariki on a daily basis.

All Kōhanga and Kura Kaupapa school staff mentioned that tamariki tended to be 'haututū' at this age so the main fire risks were around lighters, matches, candles and anything that was either a heat or fire source (e.g. heaters or stoves). A number of staff had also observed that tamariki, particularly the younger ones, were often frightened by the sound of the fire alarm during fire drills so would try and hide away. In these cases, staff would work closely with these children to build up their confidence and ensure that tamariki knew to exit the building and meet at a predetermined 'safe location' when they heard the fire alarm. A number of kaiako were also aware of fire incidents where tamariki had died in fires because they had either tried to hide away in cupboards or had gone back inside the burning building. Thus, kaiako were careful to ensure that their tamariki knew to get out and stay out. All staff also mentioned that getting fire safety information back to homes and

whānau was vital, but only two out of 10 staff who participated in in-depth interviews felt confident that the messages were getting back home.

According to our phone survey, 20 out of 30 schools had or were using MTA to teach their tamariki about best practise fire safety actions, as with the in-depth qualitative interviews, staff knowledge of fire safety issues for Māori children and how to reduce fire related harm amongst tamariki consisted of a combination of MTA, having compulsory fire safety measures in place as part of running their school and personal knowledge and experience from working with tamariki on a daily basis.

Again, staff mentioned the following fire risks for tamariki:

- Lighters, matches candles and other heat and fire sources (e.g. stoves, heaters, fire places)
- Tamariki being “haututū” at this age
- Tamariki knowing what to do when there is a fire (get down, get low, get out, stay out; meeting at a safe place; not to hide when they hear a smoke alarm or if there is a fire)

Ways to reduce fire risk to tamariki included:

- Ensuring that fire and heat sources are out of the reach of tamariki (e.g. cords and heaters are up high; kitchens are locked; safety plugs)
- Tamariki know to tell an adult if they see a potential heat or fire risk
- Ensuring tamariki know what to do when there is a fire (get down, get low, get out, stay out; meeting at a safe place; not to hide when they hear a smoke alarm or if there is a fire)
- Getting whānau involved and ensuring that fire safety measures are being implemented in households
- Regular fire drills and maintenance of fire safety measures in the school

Kura/Kōhanga have increased awareness of MTA

Level: Good

Level	Description
Poor	Awareness of MTA remains largely with the NZFSC and project participants.
Good	Awareness of MTA is high in some Kura/Kōhanga in regions where the project is operating.
Very Good	Awareness of MTA is high in regions where the project is operating.
Excellent	MTA is widely known and requested and taught by Kura/Kōhanga in all regions.

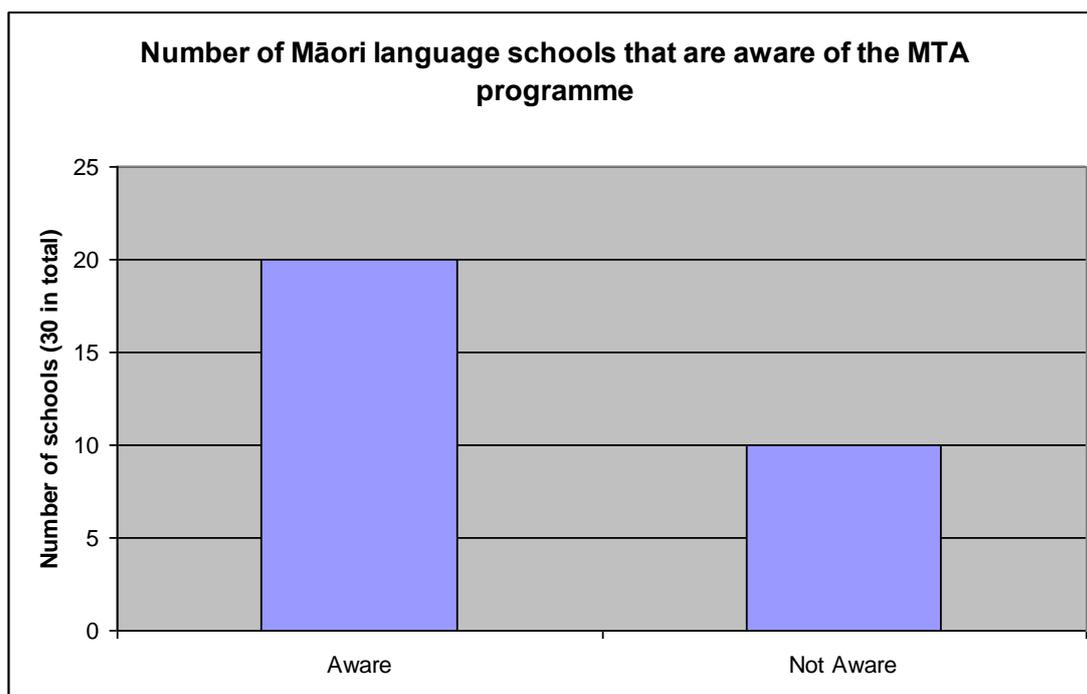
Key Question: Who knows about MTA?

Justification

All school staff who participated in in-depth qualitative interviews mentioned being aware of MTA. The two main ways that school staff found out about MTA was either through school networks, for example other school staff/colleagues or through local Purapura and/or local principal clusters who met on a regular basis. The other main way school staff found out about MTA was through staff (often family/friends/parents) who worked at the local fire station. A couple of participants also mentioned finding out about the project through local events that had been held in their community, for example, local community ‘hauora’ events and a school gala.

Most school staff mentioned that using school networks such as Purapura or local principal clusters was one of the best ways for schools to find out about MTA. A number of Kōhanga staff also mentioned that using the Te Kōhanga Reo National Trust would also be another excellent avenue for disseminating information about the project. Other suggestions included:

- That NZFSC staff bring the pack out to the schools and sit down with school staff and step them through the resource (kānohi ki te kānohi)
- Target the person who is responsible for health and safety at each school
- Send out information via fax and emails
- Leave information with local community groups and/or organisations, for example hauora Māori



Based on telephone survey data, awareness of MTA amongst Māori language schools was at a good level with 20 out of the 30 schools surveyed being aware of the project.

More Kura/Kōhanga are participating in MTA

Level: Good

Level	Description
Poor	High input fire regions are implementing MTA with a few vulnerable Kura/Kōhanga.
Good	High input fire regions are implementing MTA with most Kura/Kōhanga in their region.
Very Good	All fire regions are implementing MTA with all Kura/Kōhanga in their region.
Excellent	All fire regions are implementing MTA with all Kura/Kōhanga in their region twice per year.

Key Question: Are all Kura/Kōhanga actively engaging in MTA?

Justification

All school staff who participated in in-depth qualitative interviews mentioned using MTA to teach their students about fire safety. However, there was quite a lot of divergence around the way and the degree to which each school used MTA.

Only two of the ten school staff who took part in in-depth qualitative interviews regularly incorporated MTA into their teaching curriculum, one using it yearly and one using it biannually (both of these were Kōhanga). Most schools had last done the project around 2-3 years ago.

Most Kōhanga mentioned that MTA required around 6-10 hours teaching time. Class time for staff teaching at years 7-8 ranged from 10-16 hours.

Staff using MTA at the Kōhanga level mainly focused on doing escape plans (i.e. get down, get low, get out, stay out, meet at a safe place), smoke alarms (i.e. what to do when they hear the smoke alarm) and educating their tamariki, particularly the older ones, on what to do if they see a potential fire or heat risk. Kaiako made good use of the A4 picture cards, the large A3 booklet called “Kia Tūpato ki te Ahi” and the A3 cut outs for the puppet show to teach tamariki the risk from things like heaters, stoves, lighters, matches and candles and what to do if they observe a potential fire or heat risk around the Kōhanga (i.e. to alert an adult). A couple of kaiako mentioned engaging parents and whānau of tamariki although staff mentioned having varied success with this approach and most weren’t sure if the information was making it home. A number of Kōhanga staff also mentioned that they usually only taught the older tamariki the procedure around 111 emergency calls as they thought this was a little too advanced for the younger ones. Two out of five Kōhanga staff interviewed handed out the *Te pukapuka rapurapu mo te arai ahi* (Discovery booklet) to their tamariki. In most cases, Kōhanga felt that the book was a little too advanced for tamariki at Kōhanga:

Tino pai [ngā rauemi] engari pai ake ngā tau e kura ana
[The [resources] are very good but better for kura level]

Similarly, staff teaching at Kura Kaupapa and Rumaki Reo covered this basic information but tended to spend a little more time on the ‘preventative’ aspects contained in the MTA teachers guide (particularly making sure that your home is fire safe), the 111 emergency procedure, what to do if you get burnt and how to use the discovery booklet.

All staff mentioned incorporating some form of traditional knowledge, which included *pakiwaitara* (stories) like Mahuika and Māui, ngā atua (The gods. For example, Mahuika and Ruaumoko), and traditional uses of fire by Māori (e.g. to warm the whare and lighting; hāngi etc).

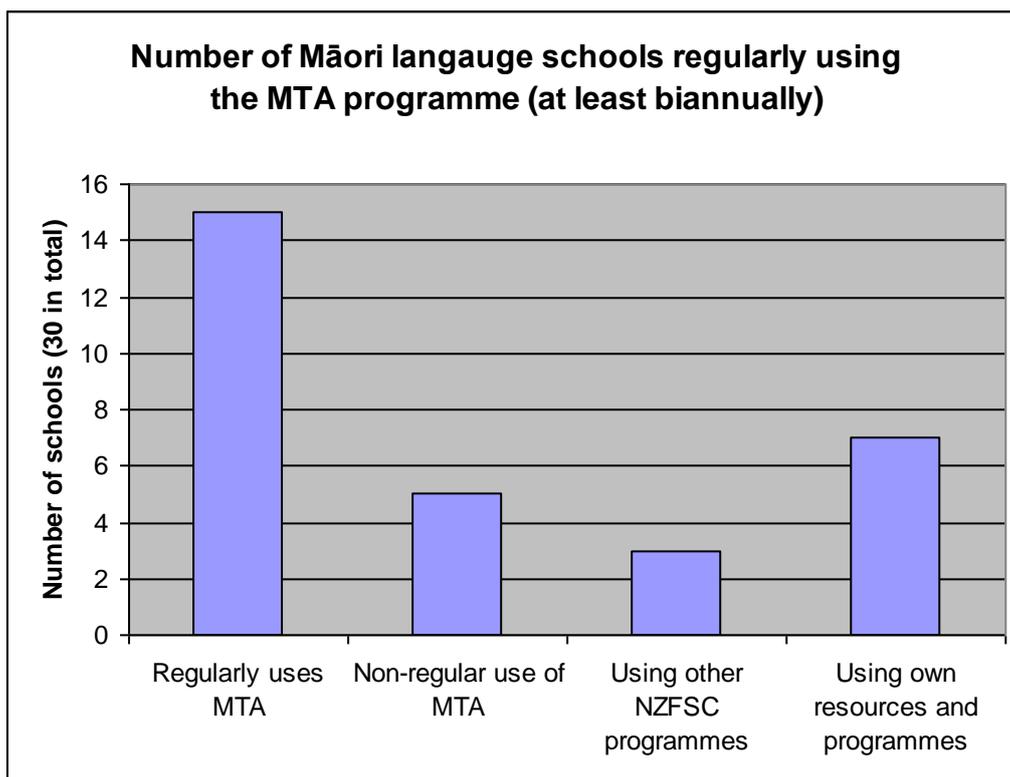
Five out of the ten school staff who participated in in-depth qualitative interviews mentioned combining fire safety with other parts of their curriculum or other safety messages. For example Kōhanga mentioned that part of their curriculum covered what was referred to as “people in the community”. This usually included the Police, ambulance and fire fighters. Accordingly, Kōhanga staff normally combined these three aspects and included fire safety under the general theme of ‘safety.’ Kōhanga staff also incorporated fire safety messages in art, drama and *waiata*. Kura Kaupapa mentioned teaching fire safety and earthquake safety together. All staff mentioned that fire safety was a matter of course in all schools as they are required to do compulsory fire drills and maintenance checks (e.g. fire hoses; extinguishers and smoke detectors). In most cases, someone from the fire service would go to their school to observe trial fire evacuations and perform maintenance checks.

As mentioned above, most schools (8 out of 10) weren’t regularly revisiting the project. When asked why this was, most schools mentioned that it was a matter of ‘out of sight, out of mind’. That is, ‘personal contact’ and proper guidance on how to

deliver the project effectively was needed on a regular basis, otherwise resources tended to end up sitting in back cupboards ‘collecting dust’. Staff turnover, the fact that MTA isn’t compulsory and the changes that can occur within a school in the space of a year were also factors that impacted on the frequency with which the project was delivered at schools.

Both Kōhanga and Kura Kaupapa staff felt that it was important that NZFSC staff worked in better with schools. For instance, regular promotion of the project at Purapura and local principal clusters and working in with school planning cycles (usually at the end of the year) would increase the likelihood of schools doing the project. Timing promotion of the project at ‘high risk’ times of the year was also seen as important (e.g. winter when people are using fires/summer when people are using BBQs)

Working in with school planning cycles was particularly important for Kura Kaupapa who often had numerous other organisations competing for their time (e.g. burnwise; water safety; road safety; DARE; local hauora etc). While all Kura Kaupapa were supportive of any ‘kaupapa Māori’ initiative, the projects and/or organisations that tended to be successful in getting into schools were usually those who maintained regular and personal contact with school staff and sat down with kaiako to firstly ‘sell’ the project and secondly step staff through effective ways in which to deliver the project (i.e. provide training). A number of staff also saw some value in NZFSC staff working in with other health promoters, local hauora and community groups and targeting health and safety staff at schools or in the community in order to increase awareness of the project and increase the likelihood of the project being delivered in schools. A number of rurally based Kōhanga and Kura Kaupapa felt that their schools tended to miss out on regular visits from the fire service and access to fire safety facilities and equipment due to their isolation (e.g. no access to fire trucks or demonstration trailers which the kids would love). Other suggestions for increasing usage of the project included making the project more age appropriate, less time intensive, more interactive, including more games, having a CD of waiata, a DVD, and doing something similar to the road safety project which uses fun 5 minute games that kaiako can implement into their daily routine to teach tamariki about road safety.



Based on a telephone survey of 30 Māori language schools, 15 were using MTA on a regular basis (defined as doing the project at least every two years), 5 were doing it on a none regular basis (defined as having done the project 2+ years), 3 were using other NZFSC related projects (all were Kōhanga and were using the resource known as “Get Out, Stay Out”) and 7 (all Kōhanga) had developed their own fire safety resources and projects. In all cases, schools were involved in regular trial evacuations and subject to regular fire safety maintenance checks.

More Kura/Kōhanga teach and practice fire safety knowledge and systems with their students

Level: Good

Level	Description
Poor	Kura/Kōhanga lack knowledge and awareness of fire safety knowledge and systems.
Good	Many Kura/Kōhanga that have received MTA instil fire safety knowledge and systems
Very Good	Most Kura/Kōhanga instil fire safety knowledge and systems based upon MTA.
Excellent	Most Kura/Kōhanga instil fire safety knowledge and systems based on MTA and review them at least periodically.

Key Question: Are Kura/Kōhanga teaching fire safety knowledge and systems through MTA?

Justification

According to qualitative interviews with NZFSC and school staff, knowledge of fire safety issues for Māori children and how to reduce fire related harm amongst tamariki tended to be a combination of MTA, having compulsory fire safety measures in place as part of running their school and personal knowledge and experience from working with tamariki on a daily basis.

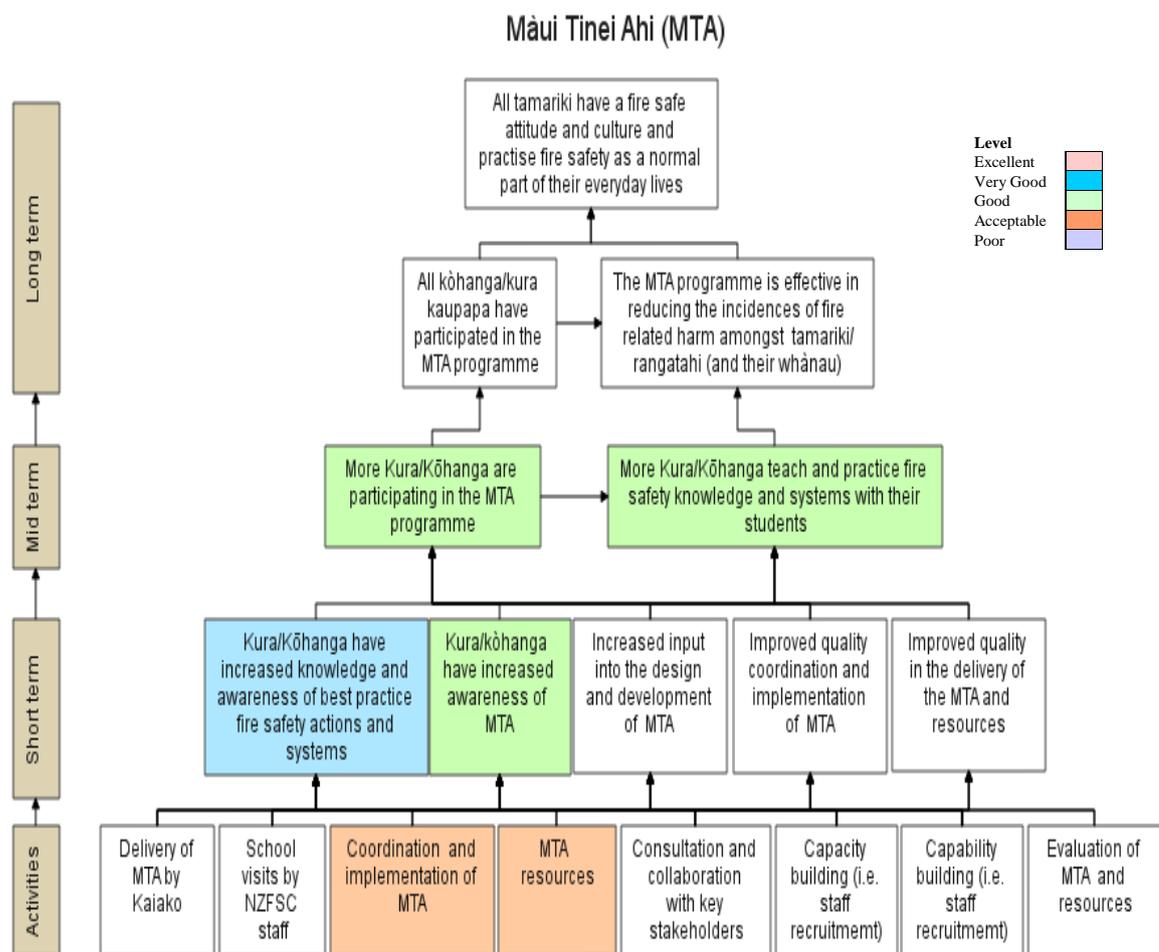
To reduce the fire risk to their tamariki all Kōhanga and Kura Kaupapa held regular fire drills at school, had a number of fire safety precautions in place (e.g. guards for fire places; heater and cords out of reach; kitchens locked) and had regular maintenance checks of their smoke detection systems, extinguishers and fire hoses. All staff had sat down with their tamariki to develop escape plans; teach them what to do when they heard a smoke alarm; and the dangers of lighters, matches and candles and other fire and heat sources although only two did this on a regular basis. Four out of ten staff sent pānui to parents and whānau to let them know that their children were doing fire safety at school. Parents were also asked to be involved and told that their tamariki will be bringing information home about fire safety and creating an evacuation plan. However, only two school staff felt confident that the information was making it home. Only one staff member (at a Kura Kaupapa) felt it was important to teach tamariki how to put fires out (e.g. not to throw water on oil and how to use an extinguisher).

Kaiako had a number of ways for determining whether tamariki knew what to do when there was a fire and what to do if they saw a potential fire or heat risk, In some cases, kaiako would kōrero with their tamariki about what they had learnt; some tamariki would act out what they had learnt. Some tamariki would kōrero about the fire risks they observed in pictures or would draw their own picture and/or write about what they had learnt. One Kōhanga used role plays where the tamariki would be the kaiako and would teach the rest of the class about what they learnt or tamariki would *whakapai* the room to make it more fire safe. In a number of instances, kaiako mentioned that tamariki would often let them know if they saw cords in the way or if they wanted the heater moved. Once kaiako mentioned that after she had talked about

safety with electric blankets, one tamariki went home and told their parents that it was important that they turned off the blanket before they went to bed. One kaiako also said that one of the tamariki had told his mum to smoke outside of the home as her cigarette was seen by the child as a potential fire risk.

Based on telephone survey data, all schools did regular fire drills, had fire safety measures in place, and had regular maintenance checks. Twenty-three out of 30 schools had access to MTA or other related NZFSC fire safety projects (i.e. Get Out, Stay Out). What could also be gathered from the survey data is that at least half (15 out of 30 schools) were practising this on a regular basis. As mentioned above, 7 out of 30 schools had developed their own projects and resources. Based on what could be garnered from telephone survey data, schools which had developed their own projects used a combination of personal experience, what they had learnt from having to have compulsory fire measures in place (e.g. regular fire drills; having to have fire safety measures in place to protect their tamariki) and other information they could find (e.g. what they could gather on the net).

Discussion



(NB Only activities and outcomes (short term and mid-term) in coloured boxes were evaluated as part of this project)

Staff involved in the delivery of MTA are thorough and professional in this activity but as the interview data confirms, there are many tensions and conflicts for them in this work. Foremost is the capacity/capability issue with a number of them being fulltime in other roles. Potential synergies from sharing experiences are not being realised; within one region there has been one designated peer meeting but otherwise exchanges are via stories in the NZFSC newsletter/website or informally.

There are a tiny number of Māori with the skills in Te Reo and tikanga to try to reach large numbers of kura and kōhanga. However, the NZFSC have made attempts in the past to address this issue (New Zealand Fire Service Commission, 2003b). We have seen evidence of the implementation of MTA in the Northland, Eastern, Bay-Waikato, Western, Arapawa, Transalpine and Auckland fire regions but interview data suggests that in these areas coverage is patchy. Interview data speaks of the struggle to obtain the time and money to release staff to deliver the project.

The issues around the tailoring of MTA to the needs of specific schools has appeared in our data sources and there is discussion of the need to make the resource more age appropriate. The fact that the bulk of the project is delivered by classroom teachers means project staff have little control over when and the frequency with which schools deliver the project. Consequently, it is likely that whole cohorts of students will pass through schools without receiving the project.

Most school staff mentioned that regular visits to Purapura or local principal clusters by NZFSC were the best way to increase awareness of the project and the likelihood of the project being delivered in the schools on a regular basis. Working in with school planning cycles was particularly important for Kura Kaupapa who often had numerous other organisations competing for their time (e.g. burnwise; water safety; road safety; DARE; local hauora etc). School staff also mentioned that the projects and/or organisations that tended to be successful in getting into schools were usually those who maintained regular and personal contact with school staff and sat down with kaiako to firstly 'sell' the project and secondly step staff through effective ways in which to deliver the project (i.e. provide training). A number of staff also saw some value in NZFSC staff working in with other health promoters, local hauora and community groups and targeting health and safety staff at schools or in the community. As well, a number of staff members felt that the NZFSC could learn from other projects like road safety which used easy and innovative 'games' that could be easily implemented into a daily school routine.

Recommendations

- Further investments are required in recruitment and training to build staff capability and capacity.
- More opportunities to share information and experience among regions are needed.
- MTA staff need to collaborate strategically with other health promoters to avoid clashes over access to busy Kura and Kōhanga.
- Further research and development is required to tailor resources and projects to the different age levels targeted.

- Regular activities that both target and utilise schools and Māori community networks and organisations are required to improve and maintain awareness of MTA and increase the likelihood of the project being delivered in schools on a regular basis.
- Further investment in kaiako (e.g. training; regular contact) is required to ensure effective delivery of MTA.
- A strategy around ensuring that fire safety information reaches the whānau of tamariki is needed.

Protecting Marae from Fire - Ngā Whakatūpatō Ahi Mō te Marae

Project Description

The Marae Fire Safety project (MFS) was launched in December 2003 by the NZFSC and was developed to ‘preserve and protect marae’ from the devastating consequences of fire (New Zealand Fire Service Commission, 2003d). NZFSC statistics show that approximately five marae are destroyed by fire each year (New Zealand Fire Service Commission, 2003d:1, New Zealand Historic Places Trust, 2003). With well over 1000 marae nationally, (Te Puni Kokiri, 1997) including many in remote locations where fire services and even basic amenities such as mains water supply are distant, the MFS project is a huge challenge. This massive case-load falls primarily upon the shoulders of the four regional Cultural/Iwi Liaison Officers employed nationally. Additional issues include the wide variations of marae settings and conditions, the intermittent tenure of marae facilities, the financial viability of marae committees, and the fact that arson is a frequent cause of marae fires.

One of the main goals of the project involves “working with communities to protect what they value” (New Zealand Fire Service Commission, 2003d:3) and it recommends that marae implement a combination of fire safety systems and actions. These include the use of ‘hard-wired’ smoke detectors and the installation of automatic sprinkler systems to give early warning and save lives and property. An evacuation plan to ensure orderly exit from buildings in the event of a fire is essential and practices to ensure the protection of *taonga* are strongly indicated (New Zealand Fire Service Commission, 2003d, New Zealand Historic Places Trust, 2003). The project suggests that *haukainga* secure taonga in a fire proof safe and that any important pictures (particularly photos of tīpuna who have passed on) or important documentation (especially if it’s of historical significance) be copied and stored in another location.

Information about possible funding sources (e.g. Lotteries Grants Board) and ‘who to contact’ if advice is wanted on the best ways to incorporate fire safety features into marae is also included as part of the resource. Where possible NZFSC personnel invite other potential stakeholders (e.g. TPK, DIA) and funders to talk about any relevant services they may provide.

Marae Fire Safety Evaluation Design

The process evaluation builds from the programme logic to measure the quality of the implementation and coordination of the MFS project and its resources. Rubrics to measure these activities are developmental, in that a project can reasonably be expected to develop within certain timeframes from early design through implementation to becoming securely established. Developmental rubrics for the process evaluation of the MFS project show the expected movement over a 10 year period as; initiated, developed, implemented, established and optimised. The levels and timeframes for change were developed by the evaluators based on their programme evaluation experience and were circulated to key NZFSC staff for review.

The first developmental rubric which assesses the coordination and implementation of the MFS project to date, seeks to answer the question “How well coordinated and implemented is the MFS project given the length of time it has been operating?” The second developmental rubric focuses the evaluation assessment on answering the question “What is the quality of the MFS project resources?” There is an assumption inherent in the rubric that resource quality should increase over time in response to feedback from the project operation and from research evidence.

This impact evaluation design builds from the programme logic, to understand the knowledge about marae fire risk, and the awareness of, engagement with and uptake of the MFS project. Rubrics to measure each of these aspects are linked in a developmental sequence from understanding of risk through to full adoption of the MFS project recommendations.

At the most basic level the rubric, guided by the central question “Do marae functionaries know fire safety risks and their implications?” examines awareness of fire risk for marae among marae communities. A second rubric, built on the question “Who knows about this project?”, examines awareness of the MFS project for its range and reach into marae communities. The question “Are marae actively engaging with the MFS project?” gives rise to the third rubric that explores the engagement of marae with the MFS project. The final rubric seeks to understand uptake of the MFS recommendations by marae that have received the project. Each rubric is set up to a progressive four point scale with descriptive levels of attainment.

Data that can inform judgement of the MFS project against these rubrics was sourced from NZFSC records, staff experience, marae personnel and media reports. A total of 13 in depth interviews with both marae spokespeople and NZFSC personnel and a short descriptive telephone survey of 30 additional marae spokespeople provided the bulk of the data. Analyses of NZFSC databases and documents, and examination of media items supplemented these data for this segment of the evaluation. Insights from these multiple sources were synthesised to build a multilayered understanding of the impacts of the MFS project.

Assessments against each of the process and impact rubrics for MFS and justification of each assessment follow.

Process Evaluation Results

Coordination and implementation of the MFS project

Developmental stage: Implemented

Level: Good

Developmental stages	Description
Initiated	NZFSC and key stakeholders come together to discuss the risk and harms of fire to marae and haukainga.
Developed	NZFSC in conjunction with key stakeholders has developed MFS for marae and haukainga. Collaborations have been initiated.
Implemented	Project staff have received training and begun to visit marae and other sites. Marae visited have received the project and this has been documented. The MFS project has been promoted in media, hui and events and key collaborations have been strengthened.
Established	The MFS project has been refined to meet the needs of marae in response to collective staff experience. Staff exchange information across regions to strengthen the project. The project is promoted regularly. Key collaborations are established and delivering support for installation of detection and prevention systems.
Optimised	The project has been delivered to all marae nationally. Regular opportunities have been provided for staff to share information to strengthen the project. Evidence-based research guides the implementation and development of the project across all NZFSC regions.

Level	1-3 years	3-5 years	5-9 years	10+ years
Initiated	Poor	Poor	Unacceptable	Unacceptable
Developed	Acceptable	Poor	Poor	Unacceptable
Implemented	Good	Good	Acceptable	Poor
Established	Excellent	Very Good	Good	Acceptable
Optimised		Excellent	Excellent	Excellent

Key Question: How well coordinated and implemented is the MFS project given the length of time it has been operating?

Justification

The operation of the MFS project is focussed at the regional level although national, regional and district level input and discussion is required. The Iwi/Cultural Liaison Officers in all regions are responsible for the regional coordination of the MFS project and overseeing the implementation, promotion and delivery of the project in their region. District level input is particularly important around selecting project staff, choice of locations for implementation of the project and connecting with communities.

Selection of NZFSC staff to coordinate, deliver, implement and promote MFS happens at a number of levels and in a variety of ways. One of the main criteria for selecting project staff is whether they have local connections and/or knowledge of the

tikanga/kawa of the area in which they intend to deliver the project. Having a genealogical link through *whakapapa* and having connections with, and an understanding of, the local people was considered to be an important factor in connecting with local *whānau*, *hapū*, *iwi* and *marae* networks, promoting the project and engaging the community:

... there are two fire fighters from [place]... [They] both helped me with the Ngāti Kahungunu [engagements] because they are Ngāti Kahungunu so it was really easy once we had them on board...

A number of other criteria mentioned by project staff included being passionate about the MFS project and its *kaupapa*, having time to attend training and meetings and being able to work out of one's normal area and hours of work. Project staff also mentioned that there is a certain amount of 'self selection' with staff putting their names forward to take some responsibility for MFS.

Implementation, promotion and delivery of the MFS project also takes on different forms in different fire regions, depending on factors such as regions having their own targets and priorities, leadership styles, and the communities project staff are working with:

... in some regions, iwi are happy to come along if the Fire Service call the hui. In other regions it needs to be more iwi driven. We just work with whatever dynamic goes with particular iwi or hapū.

There is no one size fits all... you know, the Kahungunu model worked so well... I was really confident that I could take Kahungunu's model and plop it in Tūranganui-a-Kiwa and I would be away with those lot and it fell on its face badly. Its not the way the people of Gisborne wanted to work and in fact they rejected it... They wanted to be in total control of the process...

Accordingly, the MFS project consists of a number of delivery options, which can include visiting individual *marae* (particularly if *marae* have requested the project) or utilising local networks such as *rūnanga*, *hauora* or *kaumātua* committees. Some fire regions have also run 'marae fire safety hui' and workshops where *marae* and other interested parties have been invited to both participate and contribute. Most project staff utilised established community networks, both as a way of promoting the project and to ensure that the project is being delivered to as many people as possible in the most timely and cost effective way.

For the majority of project staff, training in MFS was relatively informal and based on a *Tuakana-Teina* mentoring model whereby new staff would observe an actual presentation of the project at a *marae* or *hui* by an experienced staff member. The National Māori Advisor and all *Iwi/Cultural Liaison Officers* are able to deliver the project. Four of the other NZFSC staff interviewed as part of this evaluation had also delivered the project. It is not known what the total number of staff able to deliver MFS is, but based on available documentation and qualitative interviews; it seems that the pool (already within a relatively small overall Māori staff) is quite small.

While capability and passion for MFS did not seem to be an issue, most staff mentioned having limited capacity in terms of allocated hours in which to do the work. This was largely due to their frontline responsibilities and other roles outside those of the MFS project. For example, a number of the project staff interviewed are Operational Fire Fighters, which required them to be on call for fire emergencies. In a number of these cases, staff needed to find people to cover their shift or *pūtea* was needed to pay any ‘overtime’ and related travel expenses, particularly where MFS took them beyond their usual locations and hours of work. One participant also mentioned that Fire Safety Officers are required to meet their own individual targets, which often impacted on the time they could give to the MFS project. Currently, there are no staff who work on the MFS project fulltime.

Some fire regions have been working to develop ways to overcome some of the capacity issues associated with delivering MFS by focussing on engaging local iwi, community leaders and the large number of volunteer fire brigades in various fire districts:

... That’s why I created those Māori focus groups. Those staff in those areas. They live and work in those areas and I can’t be everywhere. They’re my conduits to the community that help me get out and engage with them. With their own people...

Participants mentioned relying on various methods to identify potential marae/groups or organisations for the MFS project. A national database of marae, which lists information on more than 1000 marae nationally has been constructed from multiple sources, including existing databases, internet and local informants. The record is incomplete and in need of robust checking to fill gaps, avoid duplications and keep up to date with contacts. However local knowledge and networks is probably the main way in which contacts are forged and MFS is disseminated.

The MFS package consists of verbal and video presentations, discussion of issues arising, clear recommendations for action and providing attendees with marae fire safety booklets. Marae are urged to implement a combination of fire safety practices and systems as outlined above. However, as one staff member mentioned, while there are standard project recommendations, the way in which this information is conveyed tends to be left to individual staff.

Despite the best of intentions and the quality and commitment of personnel to MFS, it seems that the cost of installing a sprinkler system, one of the central safety systems recommended by the project, was often beyond the financial resources of most marae:

... because that’s always an issue is funding. Funding’s an issue for marae. You know a lot of them are quite pōhara...

There also seemed to be some disagreement around the model and type of sprinkler systems that should be ‘standard’ in marae. However as one staff member mentioned:

There’s a bit of to-ing and fro-ing and arguing over sprinkler systems in marae. But a lot of it is what’s “standard” or what type of sprinkler

you put into it. To me, its like a smoke alarm. Anything is better than nothing.

Marae can be advised on a number of ‘cheaper’ options depending on their particular needs, which usually included the installation of some sort of smoke detection system (e.g. domestic smoke alarms or type 2 hard wired smoke detectors) and an evacuation plan or scheme.

I talk to them [marae]... and get them to decide whether the most important thing [to them] is to protect lives or save property, save the building... that would be a sprinkler system to save the building but to save people you need to wake people up... a good smoke detector system... and of course that's coupled with a plan to get people out and to meet at a [safe] location.

However, for a number of staff, the MFS project needed to stay focussed on protecting and preserving marae and ensuring that marae were installing systems that were effective in preventing or reducing property damage:

With Marae Fire Safety, the way I see it anyway, they say it's about saving lives and that sort of thing... but to me it's about saving the taonga, you know, what's inside the wharenui. All the carvings photos, those sorts of things. Once they're gone, they're gone. When I've spoken to groups, that's the angle I go from. Off the top of my head I can't think of a time when somebody has actually died as a result of a fire on a marae...

Another staff member also felt that sprinkler systems in marae were an ‘essential’ project resource:

... install[ing] sprinkler systems and hard wired smoke detectors, that's our ultimate, and to do that they [marae] need money... its like giving them the boiled water without giving them the cup to put it in and tea and coffee... you need to try and put it all together... when I go and talk to marae, I invite funding providers...

This key barrier to the uptake of the full MFS recommendations remains as the major challenge to the goal of protecting all marae in the country from fire.

MFS project resources

Developmental Level: Implemented

Level: Good

Developmental stages	Description
Initiated	NZFSC and key community stakeholders agree to create the project.
Developed	The project, based on NZFSC best practise fire safety standards, is developed with community input.
Implemented	Project staff know how to use MFS project resources. Marae have access to the resources.
Established	MTA resources have been refined based on experience to meet the needs of marae.
Optimised	MFS project resources are regularly evaluated for effectiveness and refined as required.

Level	1-3 years	3-5 years	5-9 years	10+ years
Initiated	Poor	Poor	Unacceptable	Unacceptable
Developed	Acceptable	Poor	Poor	Unacceptable
Implemented	Good	Good	Acceptable	Poor
Established	Excellent	Very Good	Good	Acceptable
Optimised		Excellent	Excellent	Excellent

Key Question: What quality are the MFS resources?

Justification

The main resource, the booklet *Marae Fire Safety: Ngā whakatūpato ahi mo te marae* is a joint production with the Historic Places Trust and the Energy Safety Service. The book is available on the internet free of charge and it and other elements such as the DVD/video (i.e. Te Arai I Te Atu: Fire Safety for Marae) and a marae fire safety checklist are available via NZFSC staff. Staff interviews also make it clear that the presentation of MFS materials is at a high level of proficiency indicating an excellent grasp of the central messages and resources of the project.

The NZFSC has commissioned research on fire safety in heritage and non-residential buildings including marae (Pishief, 2005) and there seems to be strong alignment between this research and the recommendations in the MFS booklet and related resources. The book and accompanying video presentation have been written for Māori institutional audiences (e.g. Marae committees, Iwi authorities) with appropriate language including Te Reo, and related imagery.

While the resources have remained relatively static since the inception of the project, the Bay-Waikato and Eastern Fire Districts have recently adopted the use of a PowerPoint presentation, which was developed in collaboration with project staff in the Bay-Waikato, Eastern Fire regions and the National Māori Advisor. Potential funding partners who may support the installation of costly equipment, like sprinkler systems in marae, are also invited along as part of presentations. A number of the project staff in other fire regions also expressed strong interest in adopting the

PowerPoint presentation. There have also been further discussions around improving on the PowerPoint presentation and making it more professional through the use of a new software package called “Flash Media”.

Impact Evaluation Results

Marae have increased knowledge and awareness of best practice fire safety actions and systems

Rating: Good

Level	Description
Poor	Many marae do not know their fire risks.
Good	Many marae know their primary fire risks and key measures to minimise them.
Very Good	Most marae (with few exceptions) know their fire risks and key measures to minimise them.
Excellent	All marae (with few exceptions) know their fire risks and have a thorough knowledge of how to minimise them.

Key Question: Do marae communities know the risks for their marae?

Justification

From the in depth interviews with marae spokespeople a number of additional risks were highlighted. More global issues raised included planning and finances with fire safety measures beyond the means of marae committees, isolation from fire services, and lack of mains water supply all of which increased the risk of fire and harm from it.

What committee is going to first of all spend a lot of money on their fire safety when they can't even pay for the water rates... power and the gas

The sense of frustration at being unable to address issues clearly within the responsibility of marae authorities was palpable!

The telephone survey shows high levels of awareness of marae fire safety issues throughout the country. The combination of the MFS project, other fire service activity outside of MFS and direct or network experience of loss of marae to fire, means that marae spokespeople had no difficulty in naming the risks for their marae. These included primary risks such as reliance on naked flame heat sources for cooking, water heating and warmth, the dangers inherent in other systems such as electricity and gas, as well as broken appliances and fittings and substandard wiring. Many participants also raised other dangers including, human factors such as careless use of amenities, cigarette smoking and arson, and other problems such as overgrown vegetation.

NZFSC participants were of mixed opinion as to whether marae communities were particularly aware of the risks on their marae. Some reported a certain disinterest

while others noted that a tragedy such as the loss of a marae in a region tended to increase the demand for the presentations and advice. Another point that was made is that the MFS project worked well with clusters of marae where the messages about risk could be more widely spread and absorbed.

Marae have increased awareness of the MFS project

Level: Good

Level	Description
Poor	Awareness of the MFS project remains largely with the NZFSC, their current collaborators and project participants.
Good	Awareness of the MFS project is high among some marae in regions where the project is operating.
Very Good	Awareness of the MFS project is high among many marae in regions where the project is active.
Excellent	The MFS project is widely known and requested by most marae in all regions.

Key Question: Who knows about this project?

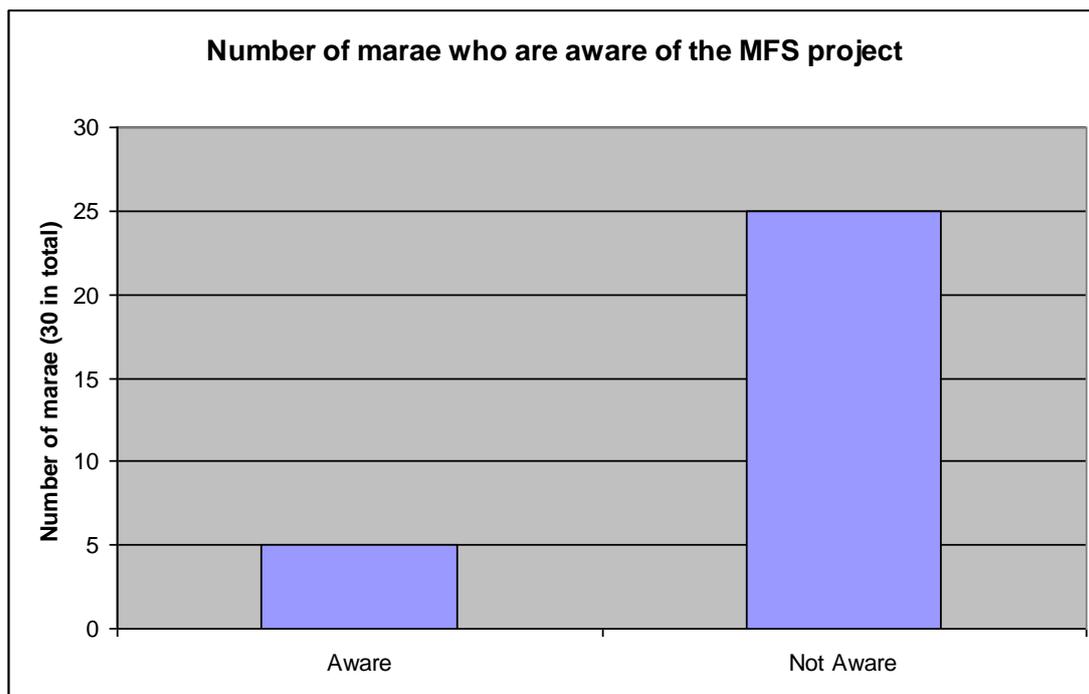
Justification

All marae spokespeople (seven in total) who participated in in-depth qualitative interviews were aware of MFS and appreciative of what it had to offer. The common ways of coming in contact with the project were via the ILO for their district, although two mentioned the National Māori Advisor as well. Other sources of information included local fire brigades, councils, DIA, TPK, the Māori Land Court rūnanga and other marae.

Interviews with ILOs suggest that in particular locations, the ‘kumara vine’, kānohi ki te kānohi, presence at community events had generated demand for MFS but that there was concern, on the part of both the ILOs and the marae communities, at the high cost both of taking on board of the full recommendations. Participants explained that they used a number of means of promoting MFS including rūnanga networks and newsletters, NZFSC personnel presence at community events such as Ngā Puhī Festival, Kai Tahu sports days and kapa haka, Hui a Iwi and hui a Tau. When asked what they thought was the main way in which people found out about MFS, most project staff believed it was a combination of the above:

I think it's a combo really... You know, people will be watching Te Karere and catch Piki... Sometimes it will be word of mouth by people who have heard us, you know, tap someone on the shoulder and they make contact. And other times it is because we are actually a part of a hui that is happening and they get a pānui about it. So it's a range of things.

It was also noted that awareness was raised through the work that the National Māori Advisor carried out on radio and television.



Five out of the 30 marae spokespeople interviewed as part of the telephone survey were aware of the Marae Fire Safety project. Of those who were aware of the project, most have received the MFS presentations from NZFSC personnel or had heard of it from other sources.

More Marae are participating in the MFS project

Level: Very Good

Level	Description
Poor	High activity regions are implementing the MFS project with a few vulnerable Marae.
Good	High activity regions are implementing the MFS project with the most vulnerable marae
Very Good	High activity regions are implementing the MFS project with many marae
Excellent	All fire regions are implementing the MFS project with most marae.

Key Question: Are Marae actively engaging with the MFS project?

Justification

Information from the regions bears out the capacity limitations and specific foci signalled from the process evaluation above. In the Transalpine Fire Region the Iwi Liaison Officer (ILO) reports having delivered MFS to twelve of the approximately 30 marae in his area, concentrating on urban locations on the basis that these are most widely used. The ILO in the Western/Arapawa Region has worked with 25 marae out of more than 100 in his jurisdiction. In the case of the Auckland/Northland Regions where the ILO knows of in excess of 200 marae, target coverage allows for 6 per year but the reality is about half this level. Within the Bay/Waikato and Eastern Regions it

appears that a number of mid-North Island locations have been well served. Marae including Ngāti Kahungunu, Tainui, Whānau-ā-Apanui, Tūranganui-a-Kiwa, and Tauranga Moana have been covered, some to high levels of saturation (e.g. one staff member mentioned that Kahungunu was “90% covered”).

Several participants mentioned that their target was all marae in their district but they were realistic enough to know that this could remain as an aspiration only for some time to come. While it is clear that the MFS project has been delivered in all Fire Regions, high level coverage is limited to a small number of locations within particular regions.

Data from the telephone survey indicates that only four of the 30 marae spokespeople we contacted have made use of the MFS project. In the vast majority of cases (25 out of 30), marae had adopted a range of relevant measures at their own initiative. Two of the marae that were interviewed had put in sprinkler systems, hardwired smoke detectors and had an evacuation plan. Three marae had a combination of hardwired smoke detectors, extinguishers, fire hoses and an evacuation plan. Another three marae had domestic smoke alarms, fire extinguishers, fire hoses and an evacuation plan. 2 just had fire extinguishers and an evacuation plan. The majority of marae (nine) all had fire hoses and extinguishers, although three out of the 10 didn't have an evacuation plan, one had a marae that was made of fire retardant material and one marae had copied all the pictures in their whareniui. Only five of the 30 marae we talked to had little to no fire safety measures in place.

More Marae implement and use MFS best practise fire safety actions and systems

Level: Good

Level	Description
Poor	Marae lack knowledge and awareness of fire safety systems and fire safety actions.
Good	Many marae that have participated in MFS, install fire safety systems and implement fire safety actions.
Very Good	Most marae in high impact regions install fire safety systems and implement fire safety actions.
Excellent	All marae install fire safety systems, implement fire safety actions and review them at least periodically.

Key Question: Are fire safety systems and practices being adopted as a result of the MFS project?

Justification

The in depth interviews show great concern about the issue of fire safety and a strong sense of frustration that the full MFS recommendations are so expensive. Most participants mentioned that they had seen the MFS presentations and a risk assessment but that they had only been able to partially address the suggestions, primarily because of the costs involved. As a result there is talk about a number of features of risk management that marae have put in place. For example several participants made mention of upgrades to amenities (especially in the kitchens), wiring, fire fighting equipment and detection systems.

The telephone survey shows very similar patterns with a marae spokesperson reporting a range of different contexts throughout the country and the solutions that marae have adopted for their fire risks. As mentioned above, 29 of the marae we interviewed (four who had done the MFS project and 25 who hadn't) had some form of fire safety measure in place. These include those who have only the most basic measures such as hoses and extinguishers in place to those that have sprinkler and alarm systems, as well as evacuation plans and safe storage for taonga. A number of participants reported that they have alarm and other safety systems and that these are monitored annually by private contractors. A number reported one off interactions with NZFSC personnel but no-one said that they had any kind of regular contact.

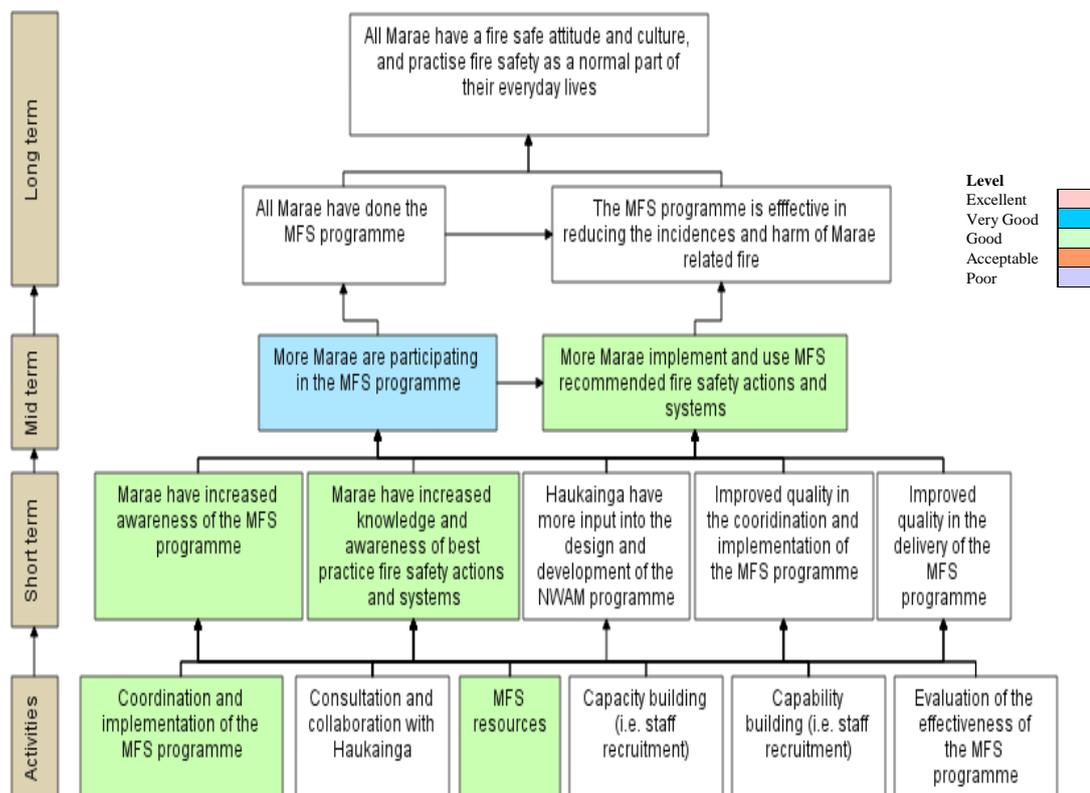
NZFSC staff explained that they had seen a wide range of reactions to the MFS presentations including doing nothing but also adopting partial measures where a full suite of changes was beyond reach. As one participant stated that at least eight marae had gone for full sprinkler options in her area and that these initiatives were at least in part an outcome of the project. Another explained that more modest uptake was commonplace and that this was a reality that he was inclined to work with.

A way to make people more proactive is to put forward ideas that they can do. Give them goals that they can achieve. And do it at minimum cost.

Staff also reported that they encountered resistance which sometimes seemed to arise from a lack of concern but was probably a reaction to the high cost of compliance. Despite these and other barriers and difficulties the goal of the MFS project is get full implementation of the recommendations in all marae nationally.

Discussion

Marae Fire Safety: Ngā Whakatūpato Ahi mō te Marae (MFS)



(NB Only activities and outcomes (short term and mid-term) in coloured boxes were evaluated as part of this project)

Project staff members were well connected, highly competent and enthusiastic in relation to the MFS project but faced a number of capacity issues, particularly when it came to finding time and resources to deliver the presentations. Efforts to standardise the MFS presentation have been made, but for much of the country, regional variations in delivery remain.

A national database of marae has been developed but this is in need of robust maintenance to retain its value to the project. Project staff organised or attended multiple hui and other gatherings to promote MFS and provide marae with fire safety information, achieving good levels of saturation in some areas. There is little evidence of systematic checks to see if haukainga are actually using the information

from MFS to make their marae more 'fire safe'. Based on interview data, overall coordination and implementation of the MFS project is at a good level, although this varies from region to region.

MFS is operating as well as it can in certain districts but is far from a national initiative. Resource decisions and policy advocacy from the highest levels of NZFSC is vital to realise the greater goal.

There is much evidence of a keen sense of concern about fire safety throughout the country. Our key data sources cover marae from the Cape Reinga to Invercargill, the most remote (Chatham Island) to large city locations and a range of small town and rural settings as well. The overall picture is that despite some bluster (most likely due to frustration about the cost of upgrades) marae communities are very keen to do the best they can to protect their amenities. A number, both directly and indirectly as a result of MFS, have gone for the greatest protection they can installing alarm and sprinkler systems, preparing and practicing good evacuation procedures and protecting taonga. Others struggle to move beyond basic detection, first response systems (hoses, extinguishers, blankets) and struggle on with hazardous equipment and conditions.

A number of participants reported that they had made major advances in fire safety in spite having no input at all from NZFSC that they were aware of, although several mentioned positive roles on the part of local volunteer brigades. The measures taken were often integral to major upgrades to facilities that the community has determined to enact. It is noteworthy that there is some evidence of private sector involvement in the form of monitoring companies and insurance companies requiring installation and maintenance of prevention and protection systems.

While it is clear the NZFSC ILOs and Te Pou Herenga have a major commitment and energy for the project and some major achievements in some regions, there is still much to be done. It is hoped that the next five years of operation of the project can cement in the existing gains, extend the coverage and up the ante on the uptake of the components of MFS.

Recommendations

- Further investment in recruitment and training are required in order to build project staff numbers for the MFS project.
- Dedicated FTEs are required so that project staff have the capacity to deliver the project.
- Regular opportunities need to be provided for project staff to share information.
- Technical specifications for detection and prevention systems for marae should be provided and promulgated.
- Further investment in a robust national database of marae locations and contacts is required.
- Continue to support and encourage marae to upgrade to the detection prevention and protection measures they can afford.
- Secure funding support for the capital works involved in upgrading marae to meet the recommendations of the MFS project.

- Investigate the role of local volunteer fire brigades in the promotion of marae fire safety.
- Face to face communications about the issues are crucial and this avenue needs to be developed and resourced to optimise outcomes.

New Zealand Fire Service Commission Fire Safety Promotions for Māori

Project Description

NZFSC fire safety messages and other NZFSC promotions for Māori have featured at a range of hui and events throughout the country as well as in print media (especially *Mana* and *Tū Mai* magazines), radio and television.

Key messages focus on three main themes – fire prevention, fire detection and escape behaviour and there are Māori versions of the Pākehā initiatives that are running at any particular time. Fire safety messages were also run on iwi radio (Ngā Reo Irirangi) over a six month period from October, 2003 to March 2004, concurrently with the print media campaign.

High profile events are also targeted for promotion of NZFSC fire safety campaigns in relation to Māori. Events used to promote NZFSC fire safety campaigns varied from large national gatherings such as Waitangi Day to very local events selected by staff at the local fire district level. In addition Te Pou Herenga selects and handles a range of comments and press releases on relevant incidents and events in ways that enable the highlighting of important Māori fire safety messages.

NZFSC Fire Safety Promotions for Māori Evaluation Design

The process evaluation builds from the programme logic to measure the quality of the implementation and coordination of the Promotions project. Rubrics to measure these activities are developmental, in that a project can reasonably be expected to develop within certain timeframes from early design through implementation to becoming securely established. Developmental rubrics for the process evaluation of the Promotions project show the expected movement over a 10 year period as, initiated, developed, implemented, established and optimised. The levels and timeframes for change were developed by the evaluators based on their project evaluation experience and were circulated to key NZFSC staff for review.

The developmental rubric which assesses the coordination and implementation of the MFS project to date, seeks to answer the question “How well coordinated are the NZFSC promotions for Māori?”. There is an assumption inherent in the rubric that resource quality should increase over time in response to feedback from the project operation and from research evidence.

The impact evaluation design works from the programme logic, to understand the knowledge about marae fire risk, and the awareness of, engagement with and uptake of the MFS project within Māori communities. Rubrics to measure each of these aspects are linked in a developmental sequence from some recall of Māori fire safety messages through to full uptake of Promotions project messages.

The initial rubric, guided by the central question “Do Māori communities know of the NZFSC promotions for Māori?”, examines awareness of promotions project messages within Māori communities. A second rubric follows up with the question “To what

extent are Māori communities taking on board the Promotions project messages?” and explores uptake of the messages in Māori communities. The final rubric seeks to understand the dissemination of information about Māori community awareness of fire safety. Each rubric is set up to a progressive four point scale with descriptive levels of attainment.

Data that can inform judgement of the Promotions project against these rubrics was sourced from NZFSC records, staff experience, Māori communities and media reports. A total of 45 in depth interviews that included questions about the Promotions projects, with both Māori community people and NZFSC personnel were carried out. In addition the descriptive telephone surveys and an intercept survey on the other specific Māori fire safety projects, asked generic questions about the Promotions of 120 people. Analyses of NZFSC databases and documents, supplemented these data for this segment of the evaluation. Insights from these multiple sources were synthesised to build a multilayered understanding of the impacts of the Promotions projects.

Assessments against each of the process and impact rubrics for MFS and justification of each assessment follow.

Process Evaluation Results

Coordination of NZFSC fire safety promotions for Māori

Developmental stage: Implemented

Level: Good

Developmental stages	Description
Initiated	NZFSC and key stakeholders come together to discuss the promotion of Māori fire safety.
Developed	NZFSC in conjunction with Māori media networks and other key stakeholders have developed fire safety promotions for Māori. Collaborations have been initiated.
Implemented	Fire safety promotions for Māori are operational in multiple media. Key staff have experience in media work. Collaborations e.g. with iwi radio have been strengthened.
Established	Regular and frequent fire safety promotions for Māori are operational in multiple media. Key staff have received training in media work. Promotions are tailored to specific audiences, projects or contexts. National media strategy is developed.
Optimised	NZFSC promotions and projects for Māori are a common feature in the media. Promotions are regularly evaluated for effectiveness. A national media strategy based on evidence is operational.

Level	1-3 years	3-5 years	5-9 years	10+ years
Initiated	Poor	Poor	Unacceptable	Unacceptable
Developed	Acceptable	Poor	Poor	Unacceptable
Implemented	Good	Good	Acceptable	Poor
Established	Excellent	Very Good	Good	Acceptable
Optimised		Excellent	Excellent	Excellent

Key Question: How well coordinated are the NZFSC promotions for Māori?

Justification

NZFSC fire safety messages and other NZFSC promotions for Māori, feature at a range of hui and events throughout the country as well as in print media, radio and television (briefly). The selection of appropriate fora for national media releases and promotions of fire safety messages for Māori occurs through the National Māori Advisor (Te Pou Herenga Māori). The National Māori Advisor possesses knowledge and expertise that provide a key resource in the coordination and implementation of NZFSC fire safety promotions for Māori. The combination of experience and mana in Te Ao Māori, overview of the NZFSC and connections at the national, regional and district levels of the NZFSC and in Māori communities uniquely equip him for the role:

There is hardly a Māori in this country that would not know or have seen Piki Thomas and associate him with the New Zealand Fire Service you know, he's

synonymous with Māori. Māori click to him like “yeah, there’s Piki, he’s the fire service...”. He’s the Māori identity of the fire service...

The National Māori Advisor is responsible for nationwide promotion and programmes for Māori, although the overall selection and planning of specific regional and local promotions lies with selected Māori staff at the regional and local district level. The choice of media mix for the national promotional campaigns is based on knowledge of Māori audience ratings. Selection criteria also include the requirement for national distribution. For the print media campaign, Mana and Tū Mai magazines were chosen and full page glossy promotions ran on the back page of these publications. In these vehicles, messages are in both te reo and English and use Māori images and pictures. The key messages focus on three main themes – fire prevention, fire detection and escape behaviour and are Māori versions of the Pākehā initiatives that are running at any particular time. The National Māori Advisor also believed that the advertisements would build the credibility and profile of the Fire Service in Māori communities and some campaigns have focussed on Māori recruitment to the NZFSC.

Iwi radio (Ngā Reo Irirangi) met the selection criteria and fire safety messages have been broadcast on iwi radio over a six month period (October, 2003 – March, 2004) concurrently with the print media campaign. Research conducted in the Bay-Waikato region found that 70% of Māori participants thought iwi radio would be one of the best ways to receive fire safety messages (Thomas et al., 1999).

For the radio campaign, the National Māori Advisor worked with Mana Media Network who were able to link with the individual iwi stations. In terms of the print media, the programme leader works alongside a graphic designer who is external to the New Zealand Fire Service to give it a āhua Māori flavour (including Māori faces, kupu Māori and Māori graphics). These messages were in Te Reo and English. Māori messages were direct translations of the Pākehā messages for the same campaign. The fire safety messages are categorised into five primary themes – Escape plan, Winter fire safety tips, ‘Be Firewise on Guy Fawkes Night’, Daylight Saving and Alarms. The messages were packaged into seasonal variants for summer, winter, spring, autumn.

High profile events are also targeted for promotion of NZFSC Safety campaigns in relation to Māori. These are selected at the national and local levels with the simple criteria being high numbers of Māori attending. Events used to promote NZFSC fire safety campaigns varied from large national gatherings such as Waitangi Day to very local events selected by staff at the local fire district level. At the local level, any local events where there is expected to be large numbers of Māori are used as a promotional platform annually (e.g. Ngā Puhi Festival; Tuhoe Ahurei).

The key messages promoted at all levels in NZFSC fire safety messages and promotions for Māori are related to mainstream NZFSC promotions to ensure that a consistent message is broadcast to the New Zealand public. To ensure the promotions are accessible to Māori, mainstream NZFSC promotional materials are translated into Te Reo Māori where appropriate and in print media, Māori images such as faces and items, symbols and logos are included. Again, the National Māori Advisor is responsible for deciding which national promotional materials will be translated, and works with the designer to tailor them for Māori.

At the regional level, project staff ensure that messages are appropriately pitched for the media, hui or event at which they are being promoted. There are quite strong local initiatives operating within the Eastern and Bay–Waikato regions, Auckland and Northland.

A number of resources have been developed by a senior fire-fighter in Gisborne to be distributed to Kōhanga Reo within the community. The resources are part of a broader programme to develop young children’s knowledge, understanding, skills and attitudes needed to keep them safe from preventable injuries. These particular resources focused on fire safety self care skills and include puzzles, books, a radio programme, a soft kotuku toy that speaks and a CD comprising of songs and stories. All resources are available in both Māori and English.

The local work supports the work at the national level but there is no evidence suggesting whether programme staff have regular opportunities to share information.

No evaluations have been undertaken for the print media or radio campaigns. Anecdotal evidence from the National Māori Advisor suggests that Māori in the community are becoming more literate in fire safety approaches. Because the iwi radio campaign was the only initiative targeted at Māori, there is some likelihood that communities were receiving their fire safety information from the radio campaign although further evidence is required. The National Māori Advisor has expressed a desire to have any future campaigns evaluated.

Impact Evaluation Results

Increased awareness of NZFSC fire safety promotions for Māori

Level: Good

Level	Description
Poor	Māori are largely unaware of the NZFSC’s promotions and programmes for Māori, even in fire regions receiving a high dose of promotional material
Good	Many Māori amongst groups targeted for promotions and in regions with high dosage of NZFSC promotions for Māori are aware of a NZFSC programme or promotion for Māori
Very Good	Many Māori across all fire regions are aware of NZFSC promotions or programmes for Māori
Excellent	High Māori awareness in all fire regions of NZFSC promotions and fire safety programmes for Māori

Key Question: Do Māori communities know of the NZFSC promotions for Māori?

Justification

The in depth interviews with community people showed that only a minority were aware of specific Māori promotions and projects from the NZFSC. Of those who had come across promotions material by far the largest proportion had received information directly from NZFSC personnel (e.g. HFSAs or ILOs) rather than through media channels. Recall of actual messages or campaigns was not strong and there

was a better recall of ‘mainstream’ messages (e.g. ‘don’t drink and fry”, the promotion ‘about the speed of fire) than any of the specific promotions around the Māori fire safety projects. Participants cited the ‘heater metre rule’, information on the speed of fire and the Marae fire safety project as examples of promotions they remembered.

The telephone and intercept surveys showed similar levels of awareness, with about a quarter able to remember that they had seen any promotion or knew of any Māori fire safety project. The same conclusions about the relevance of media apply. Small numbers of participants could name magazines (e.g. Tū Mai, Mana) or electronic media in which they had encountered ads. A majority of participants particularly those from rural settings, commented that they did not read magazines, implying that they were too expensive, inaccessible or not appealing to them. A minority of participants particularly from urban settings said they did not listen to Iwi radio.

Higher recall of messages promoted at specific events such as kapa haka, sports days and specific NZFSC visits, than for mass media, was reported. Particular messages that were noted included a reminder about batteries on smoke alarms, the ‘heater meter rule’, multiple plugs per socket, the ‘drink and fry’ ads and the speed of fire spread information.

NZFSC fire safety promotions for Māori are achieving high uptake, coverage and reach in Māori communities

Level: Good

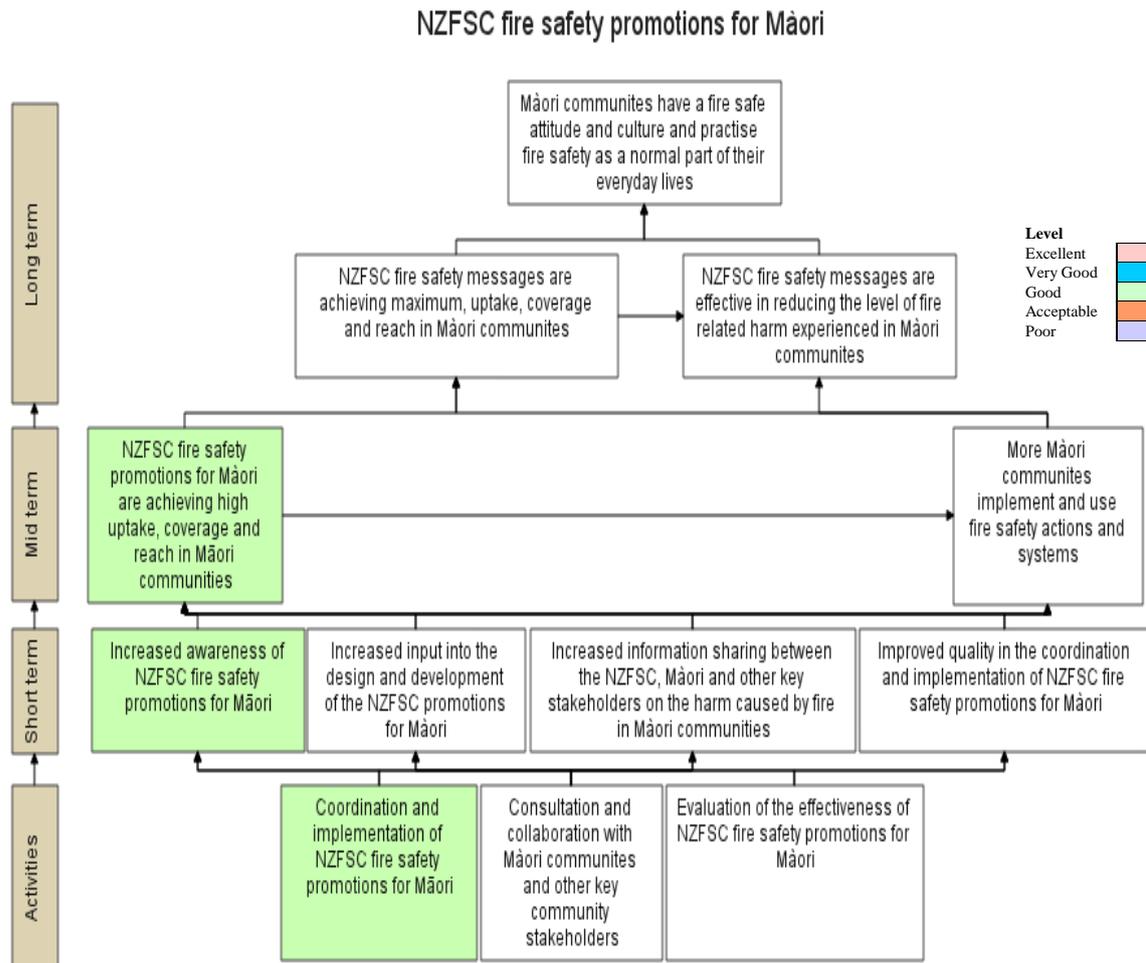
Level	Description
Poor	Awareness of the NZFSC Māori fire safety programmes remains largely with the NZFSC, their current collaborators and project participants
Good	Awareness of the NZFSC Māori fire safety programmes is high in regions where programmes are operating
Very Good	Awareness of NZFSC Māori fire safety programmes is high in regions
Excellent	Awareness of NZFSC Māori fire safety programmes is high in all fire regions

Key Question: To what extent are Māori communities taking on board the Promotions project messages?

Justification

While the evidence relating to the impact of the Promotions project shows it is having only modest effects through specific media promotions, the combined effect particularly through the efforts of NZFSC staff suggest that this work is valuable. A feature of promotions work mentioned by many participants who had either delivered or received information on Māori fire safety projects was the importance of the ‘kumara vine’, word of mouth, the personal contact between information sharers. As to uptake of the messages, it is impossible to tell what proportion of the movement shown in the project rubrics above arises from media and other information campaigns. Clearly exposure to and recall of messages is not high but there is also definite evidence of both.

Discussion



(NB Only activities and outcomes (short term and mid-term) in coloured boxes were evaluated as part of this project)

Questions must be asked about the effectiveness of mass media promotions of Māori fire safety messages. Currently, responsibility for national level fire safety promotions for Māori are with the National Māori Advisor. ILOs are also involved with promotion of fire safety messages, mainly in the role of supporting and facilitating any district level activities and ensuring that the NZFSC has a presence at any regionally based events where there is a high likelihood of Māori participation.

While the aim has been to ensure that Māori promotions are consistent with, and support, mainstream fire safety messages, there is some scope for the development of more targeted fire safety messages and promotions.

Evidence shows there is a need to focus less on mass media strategies that change awareness and more on research into messages tailored to each target audience to change behaviour. In particular there was a strong belief from both fire service personnel and from Māori communities that the best forms of communication of fire safety messages was by interpersonal contact. The 'kumara vine' and kānohi ki te kānohi are repeated many times over as the way to get the messages about Māori fire

safety out into Māori communities. Fire safety education should draw on general educational theory that emphasises that to be effective education must be focussed, reinforced, appeal to multiple senses and be supported by people close to the student or target audience.

The media work is not evaluated and although there is expert input at the national and local levels the campaigns are not necessarily linked with evidence for effective promotions.

Undoubtedly, there are a number of resource issues that will need to be considered, and time will be needed to develop targeted programmes. It is clear that certain staff have particular talents and passions for certain projects and these interests should be ‘tapped into’ developed and utilised.

Recommendations

- Develop and resource a unified evidence-based media strategy for communicating fire safety messages to Māori.
- Carry out more focussed research into the effectiveness of mass media promotions with Māori.
- Investigate ways in which the interpersonal communications pattern can be better put to use to get the fire safety messages into Māori communities.

New Zealand Fire Service Commission Research in relation to Māori (Process evaluation only and no rubric rating)

Introduction

The New Zealand Fire Service Commission (NZFSC) has created an impressive research portfolio over the last decade, with contributions from a wide range of well-established New Zealand social science research providers, primarily through the use of public tenders to a well-publicised 'Request for Proposal' (RFP) process. This has seen a combination of fundamental and applied projects which have provided a strong philosophical and practical basis for the development of a range of fire-safety and related programmes for Māori, built on a foundation of empirical evidence. This section provides a process evaluation of the role, influence and contributions that research has made to the five components of the NZFSC Māori Fire Safety project, to offer recommendations on gaps in the research base and barriers to the best utilisation of the evidence.

NZFSC Research for Māori

Te Kotahitanga

This intervention was introduced firstly in the NZFSC Northern Region in 2001 and later expanded to other localities including Eastern Bay of Plenty (2002) and East Coast (2003).

A number of research projects contributed relevant evidence prior to the inception of Te Kotahitanga. FRR 2 which was conducted in the Bay/Waikato Region in the late 1990s, found elevated levels of fire risk in Māori families and communities. For example use of naked heat and light sources, fires from cooking (and how to with them), children's access to fire sources, smoke alarm use, fire safety equipment and emergency planning, were all reported as cause for concern. Other issues, such as best channels of communication with Māori, use of Te Reo, and lifestyle factors were also investigated and appear to have influenced the development of Te Kotahitanga as a project.

FRR 5 reported from the literature that absence of smoke detector correlates with risk of fire fatality. FRR 7 provided a follow-up on an initial smoke alarm installation/education programme in the Bay/ Waikato Region and found that after two and a half years only about 70% of the installed alarms remained functional. They reported that 7% of those visited had experienced warnings from alarms in situations that were potentially highly likely to result in serious fires.

At the time of launch of Te Kotahitanga, FRR 13 reviewed a decade of data from hospital records and found that Māori children were at elevated risk for hospitalisation due to such injury. FRR 30 showed absence of smoke alarms in high proportions of fires that caused deaths of children. FRR 31 examined fire risk among elderly people

and reported that elderly Māori were over-represented in fire fatality and injury. In 2007, FRR 71 a second study of impacts on older people, confirmed these findings.

Location specific research on Māori fire safety knowledge seems only to be available from the original research carried out in the Bay/Waikato Regions (Thomas et al., 2000, Duncanson et al., 2000b). While there are some outcome data available for Te Kotahitanga in the Northland Region – over 100,000 smoke alarms installed, more than 30,000 household provided with fire safety education – they do not appear to be derived from formal research projects.

Māui Tinei Ahi

This project was launched by the New Zealand Fire Service in 2000 as a companion to its Firewise programme. It targets Year 1 & 2 (te Kōhanga Reo) and Year 7 & 8 (Kura Kaupapa) schools.

Several research projects have contributed to the development of this project. A report by Thomas et al. (2000) which established the high number of Māori children and the interest in Māori delivery of services (e.g. using Te Reo, on marae) Māori in the Bay/Waikato Region in 2000 provided a basic rationale. New Zealand Fire Service Commission Research Report Number 3 (2000) showed that 45% of Māori and 47% of younger people nominated schools as the best channel for receiving communications about fire safety and fire prevention. Chalmers (2000) reviewed international literature on child fire risk showed pre-school children to be at higher risk than others, a higher proportion of child fatalities arising from children playing with fire and parental supervision as a crucial preventative measure. Kool (2001) showed the differential fire fatality rates for Māori children. Duncanson et al. (2001b) established that fire risk harm is disproportionate for Māori children and that it is related to unsupervised access to fire sources. Duncanson et al. (2001d, 2002) found that the highest rates of hospitalisation for non-fatal injury were among Māori children under 5, young adults and elderly people. There appear to be no formal evaluations of MTA available to date.

Ngā Whakatūpato Ahi Mō te Marae

This project was launched in conjunction with the Historic Places Trust late 2003 with a booklet that emphasised the importance of comprehensive installation of fire detection, sprinkler systems and evacuation plans.

Fire Research Report Number 48 (Pishief, 2005) includes marae among the heritage buildings for which it develops guidelines for managing fire risk. The NZFSC website (including the coverage of the launch of *Ngā Whakatūpato Ahi Mō te Marae*) carries a number of references to dealing with about four marae fires per annum (including arsons). Although marae were not specifically mentioned, Ballingall and Duncan (2004) examined regulations around fire protection in non-residential buildings and found that the existing regime was “light-handed”.

NZFSC fire safety promotions for Māori

The Māori Fire safety project overall has made strong use of media messages to raise awareness of specific campaigns and target Māori audiences.

A number of the NZFSC reports examine the potential and value of using media to improve outcomes around fire risks. New Zealand Fire Service Commission (2000) found that the public are “eager for more fire safety information” and argues that media and other forms of promotion are critical pathways for addressing this need. It recommends that use of television and other media, via both advertising (including of smoke alarms) and programming, as appropriate channels for risk groups such as low income households, as well as schools and workplaces. In a study of the parameters involved in improving fire safety knowledge and practices, Chalmers (2000) acknowledges the value of media work but notes the importance of the use of positive and appropriate messages. McDermott Miller (2001) is a scoping study of the possibilities of the use of social marketing for fire safety and clearly recommends the use of media as a key tool in the delivery of such programmes. Against the backdrop of a trebling of NZFSC expenditure on ‘publicity and advertising’, it presents a theoretical analysis of how a social marketing programme would utilise the funds, and a schema for the reallocation of the existing resources. It cites the Otago University research (Duncanson et al., 2000d, 2000b) as justifying targeted media campaigns utilising about 50% of the available budget (approximately \$2M).

It appears that no formal evaluations of the media promotions around the Māori fire safety programmes have been carried out.

Research in relation to Māori

As noted above the process that NZFSC has adopted of contestable research funding has delivered a strong body of quality data and analysis around issues for Māori whānau and communities around fire from many excellent Māori and non-Māori providers. The service funds up to 10 projects per year from a budget of \$500,000 and the current project has been commissioned through this process.

Since 2000, there have been more than 70 substantial national and local research contracts on both generic and specific topics. There is a good mix of theoretical and applied, qualitative and quantitative, Māori-focussed and general population studies. There is a research strategy development (Warren, 2003), methodological development work within projects (Duncanson et al., 2001a, 2001b, 2001c), literature review (Duncanson et al., 2000c, Kool, 2001), theoretical studies (Lloyd and Roen, 2001, Roen and Lloyd, 2002) as well as the substantive studies.

Many of the whole population studies include Māori concerns, samples or participants (eg. Duncanson et al., 2000b, Chalmers, 2000, Kool, 2001, Duncanson et al., 2001d, 2001a, 2001b, 2001c, Warren, 2003, TNS, 2006, Miller and Davey, 2007) in ways that have identified or justified issues for more detailed examination in Māori contexts. For example FRR 5 shows elevated incidence of fire fatality in low decile meshblocks where disproportionate numbers of the Māori population dwell, and concludes that there are socioeconomic determinants at work. Duncanson et al. (2000d) elaborates on these findings to place fire fatality disparities geographically by TLA district, identifying high incidence locations many of which have high Māori

populations and some of which appear as locations for focussed study in subsequent research. In a different domain Chalmers (2000) examined fire safety knowledge and practices among ‘vulnerable’ groups and include high proportions of Māori as participants. Key conclusions therefore reinforce the understanding that Māori rate highly among those more at risk of fire-related harm, and justified further investigation of Māori-specific factors.

The Māori specific research began with Fire Research Report Number 2 (Thomas et al., 2000) which examined the causes of Māori fire fatality disparities in the Bay-Waikato Fire Region using a large data set of qualitative interviews on fire safety knowledge and social factors with Māori. The research also gathered qualitative data and compared these with equivalent regional data for non-Māori.

A second project (Duncanson et al., 2000b) while not specifically Māori-focussed provided a follow up to the Kawerau Fire District’s Auahi Whakatūpato smoke alarm installation project in multiple Māori communities within their jurisdiction. The research provided critical information on both the rate of loss of functioning alarms over a one year period and the incidence of successful activation of alarms.

The final project (Hoskins et al., 2001) in this cluster seeks to place NZFSC Māori strategy within a Treaty framework that recognises the role of the Service as a Crown agency. This entails building a partnership approach from within and constituting relevant infrastructure such as the development of a Fire Service Treaty policy, a national Māori Advisory Body and regional multi-agency Task Force, Māori Fire Safety Educators, and Fire Service Whānau liaison. Other critical recommendations include the re-orientation of research focus to encompass environmental as well as behavioural perspectives, the use of a Māori Fire Risk Template and efforts to understand and limit the use of naked heat and light sources.

Together these research projects provide a great deal of knowledge that has invaluable informed the development of the Māori programmes that feature in this evaluation. It is notable that Māori-focussed research makes up only three of the large body of studies, that for the most part it is geographically circumscribed and that from what is seen of the research that follows on from Hoskins et al. (2001), few of the recommendations seem to have been taken on board. Locational specificity is critical to nuanced and realistic understandings of all social phenomena and fire safety is no exception to this. The convergence of risk and prevalence data with cultural and locational features should be a prompt to further location specific studies into the particular needs of Māori communities.

We carried out a small descriptive online survey of key Māori personnel at NZFSC to determine their knowledge of, utilisation of and needs in terms of research. Awareness of specific pieces of research was low with only two (Thomas et al., 2000, Duncanson et al., 2000b) of 11 key reports on fire issues for Māori, reported as known by more than half of the respondents. Only one report (Duncanson et al., 2000b) had actually been used by more than half of respondents. Those who were aware of or had used reports were reasonably happy with their accessibility, rated the data easy to use and considered findings valuable. Despite some comments to the effect that information on the reports was disseminated to all personnel, there were repeated requests for more information about them and how to access them. Other criticisms

included the observation that the material was in some cases quite dated, the need for stronger links between research findings and recommendations on how to use them, and the importance of quality evaluation research on all projects. Aside from the NZFSC commissioned research, respondents reported the use of annual fire awareness surveys and Dr John Broughton's work (based at Otago University) as useful.

Discussion

There is a considerable volume of research commissioned by NZFSC that has been important to the development of the Māori fire safety projects evaluated in the current project. The diversity of research investigations both generic and targeted to Māori issues and situations, is a great strength but the age of particular projects and the dearth of quality evaluation research looking at the effectiveness of the projects is a considerable problem. Another issue is the need for location specific research and evaluation as contextual variables can be crucial to the success of projects. The key barrier that we have observed in relation to the uptake of research is designated time in which NZFSC staff can read the research reports. There is possibly also an issue of practical accessibility and readability of materials that could be alleviated by the use of summary bulletins to keep personnel up to date.

Recommendations

- NZFSC should review its research needs with a view to updating and evolving the understanding of how its projects can best serve Māori.
- Efforts should be made to disseminate research in accessible formats to staff so that they can use data in refining their work.

References

- Accident Compensation Corporation (2008a) Child safety organisations – Fire safety. Available at http://www.acc.co.nz/injury-prevention/schools/child-safety-organisations/WCM2_023267 [accessed 23 May 2008].
- Accident Compensation Corporation (2008b) Northland Fire Safety Programme Recognised In National Awards. Available at http://www.acc.co.nz/about-acc/news-information/DIS_CTRB097042 [accessed 23 May 2008].
- Ballingall, J. & Duncan, I. (2004) *Fire Safety Regulation for Non-residential Buildings*, Research Report Number 52. Wellington. New Zealand Fire Safety Commission.
- Chalmers, A. (2000) *Improving the Fire Safety Knowledge & Practices of Vulnerable Groups*, Research Report Number: 8. Wellington. New Zealand Fire Service Commission.
- Christina, B., Foden, M., Lawless, P. & Wilson, I. (2008) *New Deal for Communities: A Synthesis of New Programme Wide Evidence: 2006-07 NDC National Evaluation Phase 2*, Research Report 39. London. Centre for Regional Economic and Social Research, Sheffield Hallam University.
- Davidson, E. (2005) *Evaluation Methodology Basics: The Nuts and Bolts of Sound Evaluation*. Thousand Oaks, Sage.
- Duncanson, M., Lawrence, K., Simpson, J. & Woodward, A. (2000a) *Follow-up survey of Auahi Whakatupato smoke alarm installation project in the Eastern Bay of Plenty*. Wellington. New Zealand Fire Service Commission.
- Duncanson, M., Lawrence, K., Simpson, J. & Woodward, A. (2000b) *Follow-up survey of Auahi Whatatupato smoke alarm installation project in Eastern BoP* Research Report Number 7. Wellington. New Zealand Fire Service Commission.
- Duncanson, M., Ormsby, C., Reid, P., Langley, J. & Woodward, A. (2001a) *Fire incidents resulting in death of New Zealanders aged 15-64 years 1991-1997*, Research Report 31. Wellington. New Zealand Fire Service Commission.
- Duncanson, M., Ormsby, C., Reid, P., Langley, J. & Woodward, A. (2001b) *Fire incidents resulting in deaths of New Zealand children aged under 15 years 1991-1997*, Research Report 30. Wellington. New Zealand Fire Service Commission.
- Duncanson, M., Ormsby, C., Reid, P., Langley, J. & Woodward, A. (2001c) *Fire incidents resulting in deaths of New Zealanders aged 65 and older 1991-1997*, Research Report Number 32. Wellington. New Zealand Fire Service Commission.
- Duncanson, M., Reid, P., Langley, J. & Woodward, A. (2001d) *Overview of fire-related mortality data for New Zealand*, Research Report Number 29. Wellington. New Zealand Fire Service Commission.
- Duncanson, M., Reid, P., Langley, J. & Woodward, A. (2002) *Hospitalisation for non-fatal injury as a result of unintentional domestic fire incidents: Aotearoa New Zealand 1996-2000*. Wellington. New Zealand Fire Service Commission.
- Duncanson, M., Woodward, A. & Reid, P. (2000c) *Social & economic deprivation and fatal unintentional domestic fires in NZ 1988 - 1998*, Research Report Number 5. Wellington. New Zealand Fire Service Commission.

- Duncanson, M., Woodward, A. & Reid, P. (2000d) *Where in NZ have fatal domestic fires occurred? Descriptive analysis of data 1986 - 1998*, Research Report Number 6. Wellington. New Zealand Fire Service Commission.
- Hoskin, K. & Carter, E. (2008) *Working with the Community*. Available at http://www.risksociety.org.nz/file-uploads/Hoskin&Carter_paper.pdf [accessed 23 May 2008].
- Hoskins, R., Smith, L., Santolo, J. D. & International Research Institute for Maori and Indigenous Education (IRI) (2001) *Interventions in Maori House Fire Mortality Rates through Innovations in Healthy Maori Housing Solutions*, Research Report Number 14. Wellington. New Zealand Fire Service Commission.
- Housing New Zealand (2008) \$300,000 to Te Kotahitanga fire safety programme. Available at <http://www.google.com/search?hl=en&rls=GGLD,GGLD:2007-20,GGLD:en-GB&q=te+kotahitanga+nz+fire+service&start=10&sa=N> [accessed 23 May 2008].
- Kool, B. (2001) *Unintentional Fire-Related Child Injuries in Auckland 1989-1998*, Research Report Number 13. Wellington. New Zealand Fire Service Commission.
- Lloyd, M. & Roen, K. (2001) *Fire Safety as an Interactive Phenomenon*, Research Report Number 9. Wellington. New Zealand Fire Service Commission.
- McDermott Miller Ltd (2001) *Scoping a Social Marketing Programme for Fire Safety Research in the Community*, Research Report Number: 12. Wellington. New Zealand Fire Service Commission.
- Miller, I. & Davey, J. (2007) *The Risks, Perceptions and Experiences of Fire Among Older People*, Research Report Number 71. Wellington. New Zealand Fire Safety Commission.
- Ministry of Social Development (2008) Northland Regional News - Fire Fighter Rewarded. Available at <http://www.msd.govt.nz/documents/publications/newsletters/2002/northland-december-2002.pdf> [accessed 23 May 2008].
- New Zealand Fire Service Commission (2000) *A strategy for developing greater responsibility for fire safety and prevention*, Research Report Number 3 Wellington.
- New Zealand Fire Service Commission (2001) ACC, Fire Service launch fire safety push for Northland. *STAR*, 60, 3-4, 8.
- New Zealand Fire Service Commission (2002) Profile – Northland Te Kotahitanga Strategy - Fire safety's frontline. *STAR*, 67, 13-17.
- New Zealand Fire Service Commission (2003a) *Annual Report 2003*. Wellington.
- New Zealand Fire Service Commission (2003b) Firefighters band together to deliver fire safety to Maori in Auckland. *STAR*, 86, 9-11.
- New Zealand Fire Service Commission (2003c) *Partners in Community Safety*. Wellington. New Zealand Fire Service Commission: Ma te kotahitanga, ka ora ai te iwi whanui.
- New Zealand Fire Service Commission (2003d) *Protecting marae from fire: Ngā whakatūpato Ahi mō te marae*. Wellington.
- New Zealand Fire Service Commission (2004) Kudos for Te Kotahitanga. Available at http://northland.fire.org.nz/about/About_Us/te-kotahitanga.htm [accessed 23 May 2008].
- New Zealand Fire Service Commission (2005) Eastern ambassadors are smokin'! *Fire and Rescue: The New Zealand Fire Service Magazine*, 9, 8.

- New Zealand Fire Service Commission (2008a) Te Kotahitanga Project Maraenui-Napier. *He Ngakau Hou: A New Heart*. Napier.
- New Zealand Fire Service Commission (2008b) Te Kotahitanga Smoke Alarm Project 2006, Northland. Available at http://northland.fire.org.nz/promotions/Te_Kotahitanga.htm [accessed 23 May 2008].
- New Zealand Historic Places Trust (2003) *Plan to Stop 'Devastating' Loss of Marae*. Retrieved May 31, 2008, from http://www.historic.org.nz/news/MEDIA_RELEASES/2003_12_05.htm.
- Pishief, E. (2005) *Guidelines for Identifying and Preventing Fire Risks to Heritage Buildings and Collections*, Research Report Number 48. Wellington. New Zealand Fire Service Commission.
- Roan, K. & Lloyd, M. (2002) *Vulnerability And The Translation Of Safety Knowledge*, Research Report Number 25. Wellington. New Zealand Fire Service Commission.
- Te Puni Kokiri (1997) *National Survey of Marae*. Wellington.
- Thomas, P. (2003) In the Hot Seat. *STAR*, 80, 7.
- Thomas, P., Rayner, K. & Moroney, M. (1999) *Determining Effective Fire Safety Strategies for Maori: New Zealand Fire Service Bay-Waikato Region Maori Fire Study*. Wellington. New Zealand Fire Service.
- Thomas, P., Rayner, K. & Moroney, M. (2000) *Determining Effective Fire Safety Strategies for Maori: New Zealand Fire Service Bay-Waikato Region Maori Fire Study*, Research Report Number 2. Wellington. New Zealand Fire Service Commission.
- Tihewa Mauriora (2008) Project K. Available at http://www.tihewapho.org.nz/10525/index.html?*session*id*key*=*session*id*val* [accessed 23 May 2008].
- TNS (2006) *Fire Knowledge Research Qualitative Research Report*, Research Report Number 61. Wellington. New Zealand Fire Safety Commission.
- Waatea Blogspot (2008) Fire Safety Programme Working In North. Available at http://waatea.blogspot.com/2007_03_25_archive.html [accessed 23 May 2008].
- Warren, J. (2003) *A Framework for Social Research funded through the New Zealand Fire Service Research Fund*, Research Report Number 42. Wellington. New Zealand Fire Service Commission.