

FIRE NOTE

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BUSHFIRE COMMUNITY EDUCATION PROGRAMS

HOW WELL DO THEY WORK AND HOW BEST TO ALLOCATE COMMUNITY SAFETY RESOURCES?

SUMMARY

Fire and land management agencies have long recognised that there must be a 'shared' responsibility in preparing for and responding to bushfires. While the agencies have their most obvious roles to play in the management of fire, well-informed and well-prepared individuals and communities offer a vital way to minimise harm to people and property.

The agencies have a responsibility to communicate with the community, while community members also have a responsibility to seek information about the matters that affect them. With changes in Australian society, and particularly in the rural/urban interface in recent years, bushfire related community education programs are becoming increasingly important.

With many programs now operating around the country how do agencies judge the effectiveness of these programs?

A key element of the Bushfire CRC's Evaluating Bushfire Community Education Programs Project is the development of an evaluation framework for bushfire community safety programs. The framework has been developed using an approach known as program theory. It has so far been used in several evaluations and workshops with agencies to gain a deeper understanding of what can be expected from a program and to determine what programs work, for whom and in what contexts.

The successful application of this approach has led to the development of a program theory evaluation workshop designed to give agencies the necessary information to evaluate their own community safety programs.

This *Fire Note* provides background on the way the Evaluating Bushfire Community Education Programs research team has progressed and some of the key findings to date.

In recent years there has been an increasing number of programs designed and developed by fire and land management agencies across Australia to enhance community safety in bushfires. These programs are intended to increase awareness, preparedness and self-reliance among communities in high bushfire risk areas.

To date, information about whether these programs are working has been largely confined to measuring outputs (e.g. the number of community meetings held) rather than by gaining a deeper understanding of how a program works and the outcomes achieved. At the same time, there is an ever increasing need in all aspects of emergency management to establish the evidence-base that underpins current practice.

With the growing number and diversity of community safety programs in operation it is becoming paramount that evaluations of such programs examine outcomes and processes rather than simply measuring outputs.

A program theory approach helps to provide a deeper understanding of what can be expected from a program, and more reliable information for agencies to base decisions on how best to allocate community safety resources for bushfire.

Often the focus of program planning and development has been on the observable aspects of a program such as the activities, resources, funding and practicalities of delivery with little attention being paid to how the program actually works to achieve the intended outcomes. Lipsey and Pollard (1989) refer to this as the 'black box' model of a program, that is, how the program works remains hidden.

Without an explicit understanding of how a program is expected to work it is likely to be difficult to determine whether it has worked or, if it has not, why not? Improving program delivery also becomes problematic if program processes are poorly understood or articulated. Similarly, without an understanding of how a



program works it may be difficult to determine whether it can be transferred successfully to another location or meet the needs of a different group. Understanding how programs work, for whom, and in what circumstances is critical to effective program development and management.

The Evaluating Community Bushfire Education Programs project (C7) has adopted the program theory approach to evaluating community safety programs for bushfire and is working in partnership with fire and land management agencies on a number of evaluations. Project C7 is also committed to working collaboratively with agencies to provide the necessary techniques and support for them to conduct their own evaluations using the program theory approach.

RESEARCH QUESTIONS

This project is addressing three research issues:

1. What are the best ways of evaluating and improving community safety activities and programs for bushfire?
2. What activities and programs work best, for whom and in what organisational and local settings?
3. What are the best ways to support agencies in the development and improvement of community safety programs?

The program theory approach offers an answer to the first of these questions. Several evaluations have already been undertaken using this approach with useful results in terms of the appropriateness and acceptability to agencies.

In addition, a workshop for constructing the logic and theory of a community safety program has been developed and successfully trialled.

The program theory approach addresses questions such as:

- What problem is being addressed or what need is being met by the program?
- What is the program intended to achieve?
- How does the program work?
- Where and when does the program work most effectively?
- How do we monitor the implementation and outcomes of the program?
- How do we know whether the program will work in different situations?

Using the workshop method and/or interviews with program staff, a theory of how the program is supposed to work can be developed.



Definition of terms

Program – an intervention intended to bring about change in some social condition or issue. Where there is an unmet need amongst a group of people, or a social problem that a community wants addressed, organisations often initiate programs that involve activities and the allocation of resources that are intended to address the need or ameliorate the problem.

Program logic – a simplified picture of how the objectives of a program could be achieved through a series of outcomes. These are often represented in the form of a hierarchy of intended outcomes.

Program theory – an extension of the ‘program logic’ that helps to link intended outcomes of a program to the program activities and the

underlying assumptions about how a program works. It helps to explain how the program elements are related and how they might work together to bring about the effects of a program. This is often usefully expressed in the form of a ‘program logic’ matrix.

Program Theory Matrix – a combination of a hierarchy of intended outcomes with the ‘program theory’ approach which highlights success criteria for outcomes, internal and external factors that influence the success of an outcome, and the activities that make up the program. The version this project is using is a modified version of Sue Funnell’s program logic matrix (2000) designed to focus more specifically on context and mechanisms.

RESEARCH OUTCOMES

The program theory approach has been successfully trialled on several bushfire community safety programs. The results of these evaluations highlight some important issues relating to how programs work and their effectiveness. These include:

1. Complexity of programs: community safety programs for bushfire cover a broad and diverse range of interventions with varying objectives and reach. The program theory approach has provided a consistent way to look at the various aspects of a program. Many of the programs are inherently complex as they are designed to achieve a variety of outcomes in diverse settings. Several of the evaluations highlighted that there was a lack of clarity about the nature of the problem being

addressed and how the intended outcomes would ameliorate that problem. Developing a program logic with a hierarchy of intended outcomes helps to clarify what could actually be achieved through the program. The work undertaken by this project provides a useful basis to assess the logic of particular programs against a more generic model of community safety outcomes.

2. Role of mechanisms: Mechanisms are the processes activated by a program that bring about change in people’s reasoning, choices and use of resources. Often these processes are poorly articulated and understood. The program theory approach identifies mechanisms and enables the program to be redefined so that critical processes necessary to achieve outcomes are activated. For example, often programs rely on disseminating

information and this is assumed to lead to changed behaviour. In fact the successful mechanism may actually be peer influence resulting from the interaction between people participating in a neighbourhood bushfire safety program.

3. Importance of context: Whether a program 'works' depends on the context in which it is implemented. Program mechanisms are only likely to be activated if the conditions are appropriate. These conditions might relate to attributes of the audience, the geographical location or the characteristics of the community in which the program is implemented.

4. Unintended outcomes: program theory workshops have helped to draw attention to where a program is not conforming to its intended outcomes hierarchy. These can either be positive or negative outcomes of a program that were not considered or planned for in the scope of the project. Agencies may discover unintended outcomes through the program theory approach, and are therefore in a better position to refine their programs or consider modifications.

The initial outcomes of the research show that the use of a program theory approach can lead to program improvement.

HOW THIS BUSHFIRE CRC RESEARCH IS BEING ADOPTED

The following examples illustrate some of the different ways that researchers have been able to use the program theory approach:

- Street FireWise (SFW): a program theory evaluation was carried out with the NSW Blue Mountains Rural Fire Service (RFS) Brigades of their street meeting program. (See also table at right).

The evaluation adopted an interview approach to developing the program logic. A wide range of agency personnel involved with the development and delivery of the program was interviewed along with participants in the program.

The report on the findings of the evaluation highlighted the importance of context in the implementation and success of this program. It helped to clarify where SFW was likely to achieve its intended outcomes and also highlighted some of the unintended outcomes of SFW. An example of an unintended outcome is program adaptation by individuals who have identified ways to enhance community involvement in SFW with largely

positive results. However, if the individual leaves the area, issues can emerge about the sustainability of the adapted program and can present succession planning dilemmas.

One of the most significant outcomes of the evaluation was the identification of the "middle" region of the Blue Mountains as the most suited to the street meeting format. The combination of small and medium sized settlements, local volunteer brigades actively delivering community education, and communities with strong local ties and some level of bushfire awareness provided the best context for achieving initial and intermediate outcomes.

Through the elaboration of the basic outcomes hierarchy into a program logic matrix, the mechanisms that were enabling these outcomes to be achieved also became more evident. Recent fire experience and peer influence were two of the most significant success related factors.

The Blue Mountains RFS developed a response to the report which used the program logic matrix as a framework for future development and planning of SFW. It has also helped the RFS to devise more effective ways of monitoring the program in future and in identifying where alternative strategies are required to achieve successful community safety outcomes.

- Tasmania Fire Service's Prepare to Survive DVD: a program theory workshop was run with the TFS to develop a clearer picture of how the Prepare to Survive DVD package is supposed to work and to identify key evaluation issues for further investigation.

The workshop drew on the knowledge and experiences of the program designers and community education facilitators to develop a comprehensive program theory matrix for the DVD. The process of developing the program theory proved very beneficial for the participants in terms of articulating the range of intended outcomes and corresponding activities and resources required to deliver them. It also highlighted a range of important causal processes such as reinforcement of key messages and the confronting nature of the fire footage. In addition, some important context factors including the targeting of the DVD in appropriate high-risk interface areas became evident.

The end product of the workshop, a comprehensive program theory matrix, provided the TFS with a detailed picture of how they see the program operating and some initial success criteria for the attainment of each level of outcome. It has also enhanced the knowledge base on how this type of mass-media, technology driven approach to community education for bushfire works, to whom it is most suited and what it can

| HIERARCHY OF INTENDED OUTCOMES FOR STREET FIREWISE | |
|--|---|
| Ultimate Outcomes | <i>A reduced impact from bushfires on communities in the Blue Mountains. (Fewer lives and houses lost)</i> |
| | <i>Formation of neighborhood networks.</i> |
| Intermediate Outcomes | <i>Residents use awareness and understanding to develop a realistic survival plan, decide whether to stay and actively defend or leave early and adopt appropriate preparations around their property. That is, they become self-reliant.</i> |
| | <i>Residents gain an increased awareness and understanding of bushfire risk and how it applies to their own specific context.</i> |
| Initial Outcomes | <i>SFW meetings are positively received by residents.</i> |
| | <i>Targeted residents hear about meeting, are motivated to attend and do so.</i> |
| | <i>Brigades must actively participate in SFW by targeting high-risk communities and running meetings.</i> |
| <p>Hierarchy of intended outcomes for Street FireWise</p> <p>The logic of the program moves from initial outcomes, at the bottom of the hierarchy, through to intermediate and ultimate outcomes. Each outcome is a precursor to the next being achieved.</p> <p>The 'program theory' evaluation identified that in appropriate contexts initial and intermediate outcomes were being achieved.</p> | |



realistically be expected to achieve. In addition, the knowledge gained contributed towards the development of a survey targeting residents in fire affected areas of North East Tasmania.

- Workshops: a program theory workshop was held at the 2006 Bushfire CRC/AFAC Annual Conference in Melbourne. The workshop outlined a simple process for developing an understanding of how community safety programs work. The interest that this generated amongst agency participants made it clear that the approach was in tune with the thinking of many people involved in community safety programs for bushfire.

It also highlighted the potential for 'technology transfer' of the program theory approach through future workshop participation. The program theory workshop is now a major product developed by this project.

FUTURE DIRECTIONS

Future program theory evaluations and workshops have been planned for the next phase of the project. These include the Bushfire Ready Action Groups program run by FESA in Western Australia. An initial program theory workshop has been held with the intention of following this up with a more comprehensive

case study of a couple of established groups. In addition, it is anticipated that workshops will be undertaken with the Bushfire Prepared Communities Program (QFRS) and the MFB have expressed an interest in participating in a training workshop that may include this approach. The program theory approach continues to inform the thinking of all aspects of C7's research, not least the intensive work being undertaken in South Australia in collaboration with the CFS in two interface areas and one agricultural setting. This work is helping to amplify our thinking about contextual differences.

All these projects are providing opportunities to expand the range of community safety programs evaluated and are supporting agency capacity building for the future.

The program theory approach is described further in a chapter of the soon to be released Bushfire CRC book:

Rhodes and Gilbert (2008) 'Using program theory in evaluating bushfire community safety programs', in Handmer and Haynes (eds), *Community Bushfire Safety*, CSIRO Publishing: Australia.

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The Bushfire CRC has also produced several related publications including:

- Fire Note 6: Shifting Risks and Responsibilities – The Balancing Exercise (this Fire Note explores AFAC's 'Stay and Defend or Go Early' policy);
- Fire Note 9: Understanding Communities Living with Bushfire – the Thuringowa Bushfire Case Study;
- Fire Update 15: A Legal Look at 'Stay and Defend or Go Early'; and
- Fire Update 21: Resilience at the Urban Interface.

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AFAC is the peak representative body for fire, emergency services and land management agencies in the Australasia region. It was established in 1993 and has 26 full and 10 affiliate members.