A Monitoring and Evaluation Framework for Disaster Recovery Programs

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A Monitoring and Evaluation Framework for Disaster Recovery Programs

1. A Monitoring and Evaluation Framework for disaster recovery programs

Australia is subject to a wide variety of disasters. A 'disaster' for the purposes of this Framework is defined broadly, in line with the *Community Recovery Handbook* (2011: 17–18), as having two key elements: "they are *unexpected* and they *disrupt* individuals, households, livelihoods and communities." These disasters vary in terms of their intensity, location, scale, and the extent to which they are human-made or natural.

Federal, state and local governments invest heavily to respond to these disasters. This includes efforts to prevent and mitigate disasters, emergency response and relief when a disaster happens, and recovery programs to rebuild affected communities. This Framework relates specifically to recovery from disaster events.

Purpose of this Framework

To date, evaluations of disaster recovery efforts have been haphazard. When they have been conducted, they have tended to focus on the *process* of disaster recovery, rather than *outcomes*, and are not consistent in their broad approaches.

A Monitoring and Evaluation (M&E) Framework will ensure that disaster recovery programs can be evaluated for their effectiveness, and that these evaluations are undertaken in a consistent way. By improving the quality of disaster recovery evaluations, governments will be able to improve subsequent disaster recovery programs, to the extent that the learnings from these evaluations are incorporated into program design and delivery.

This Monitoring and Evaluation Framework has been developed in response to recommendation 6(a) of the *Review of Commonwealth and State/Territory Relief and Recovery Payments: Report to COAG/SCPEM from the National Emergency Management Committee Recovery Sub-Committee* (2012), which was endorsed by COAG in 2012. Among other gaps and issues, the report highlighted that "jurisdictions and the Commonwealth do not measure or report on the effectiveness of their [disaster assistance] programs". Similarly, the *National Strategy for Disaster Resilience* (NSDR, www.coag.gov.au/node/81) highlights the increasing incidence and cost of disasters in Australia. In order to better deal with the increasing incidence of disasters, the NSDR affirms a cooperative response that emphasises shared responsibility, empowering communities.

This M&E Framework provides a consistent approach that can be taken in the evaluation of any individual disaster recovery program. Its use will allow the lessons learned from each program evaluation to feed into an evidence base that will improve subsequent disaster recovery programs. To achieve this, the M&E Framework provides:

- a common understanding of the meaning of 'disaster recovery';
- a common understanding of what successful disaster recovery 'looks like';
- a high level program logic for how successful recovery can be achieved;
- an evidence base for understanding and achieving disaster recovery;
- a list of key evaluation questions that can be addressed in any disaster recovery evaluation;
- a guide for the source, collection and use of key data to assess recovery; and
- a guide for disseminating the findings from recovery program evaluations.

What is evaluation?

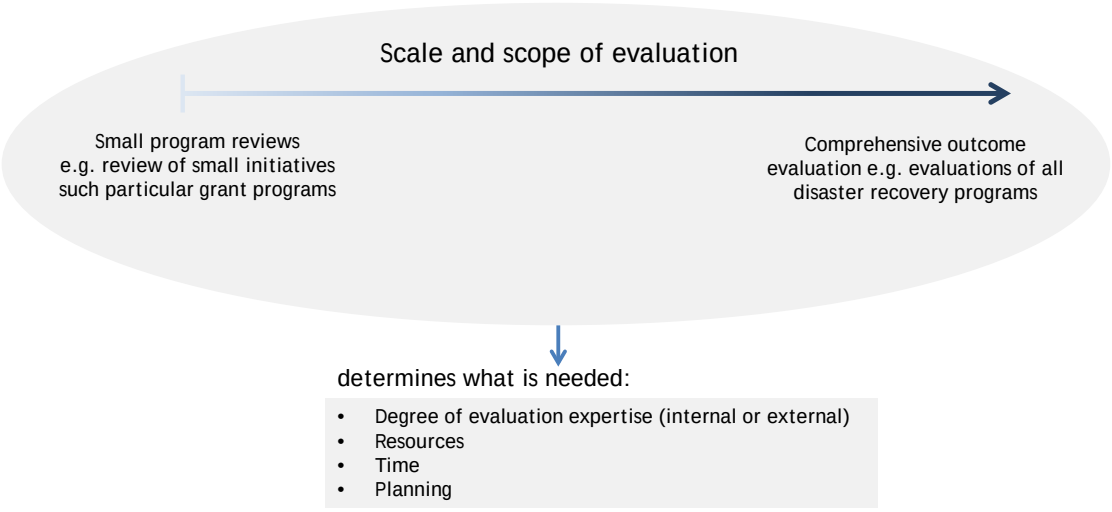
For the purposes of this Framework, *evaluation* is any structured evidence-based analysis that draws together data (quantitative and/or qualitative) to answer questions about the effectiveness, efficiency, appropriateness, and implementation of disaster recovery programs, using clear criteria and standards for assessing the 'success' of the program against particular desired outcomes.

This is a broad definition that covers a range of evaluative activity. At one end of the scale are *internal program/project reviews*. These are small-scale reviews that primarily assess the main features of disaster recovery programs in relation to high-level outcomes, using existing data sources only.

At the other end of the scale are detailed *whole-of-program outcome evaluations*. These will usually require substantial evaluation expertise and involve the construction of detailed program logics that illustrate the complexities of the program, the capture of primary data, substantial community participation and consultation and a regular monitoring process. Depending on where on the scale evaluative activity sits, there will be implications for the degree of evaluation expertise required, the resources to conduct the evaluation, the time period within which it can be concluded, and the degree of planning required.

The scale of evaluative activity is illustrated in Figure 1:

Figure 1: Scale of evaluative activity



In between the extremes in Figure 1 sit a variety of evaluative activities that may:

- focus on a subset of outcome domains:
- focus on processes rather than outcomes; or
- focus on particular components of the interrelated set of recovery programs.

Some factors that help determine the evaluation focus and scale are:

- *The audience for which the evaluative activity is conducted.* If the staff delivering a recovery program need to assess how the program is tracking in the early stages of implementation, then the scale of evaluative activity will probably be small and highly focussed. If, on the other hand, the audience is major funders who require a comprehensive assessment of the program over its lifecycle, then a major evaluation will be needed.
- *Scope of the program.* Some recovery programs may be targeted at a small set of outcomes (rather than the full set listed in Chapter 3), which then allows for a narrower focus in evaluative activity.
- *Type of disaster*. Some disasters may be chronic, where recovery occurs over a long period, and evaluation timing will have to change accordingly. Some disasters, like bombings or terrorism, may impact particular aspects of the community's functioning, such as the built environment, more than others.
- *Community data collection capacity and capability.* Larger communities tend to have better data collection systems already in place, and/or are better able to build systems specifically for monitoring disaster recovery progress. Similarly, disaster-affected communities that align with the boundaries of existing 'statistical areas' tend to have an advantage in terms of data collection, as they are able to draw more neatly on government and other publicly available data sources.
- *Timing of evaluation*. For example, where some sense of progress needs to be made in a very short time-frame, a more focussed and internally conducted review may be sufficient.

The disaster recovery evaluation process

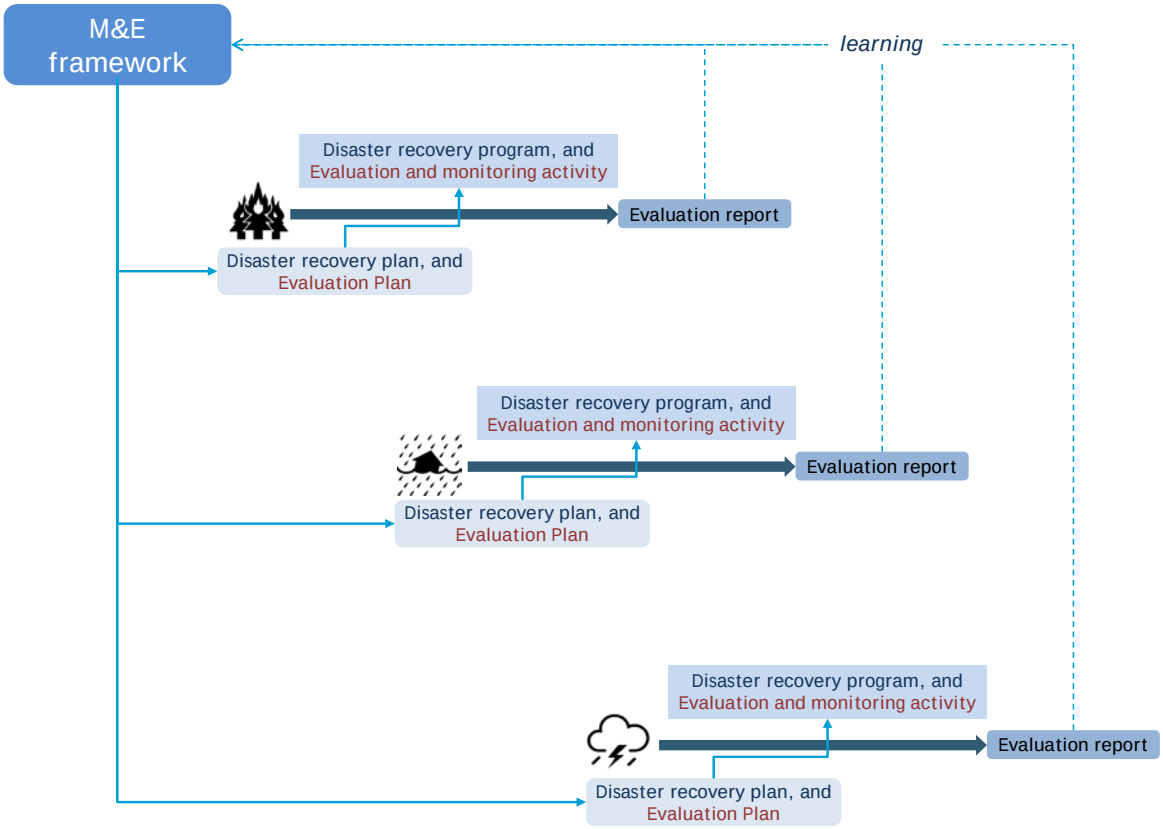
The M&E framework is part of a broader set of disaster-specific evaluation activity. The elements of the disaster recovery evaluation process, as depicted in Figure 2, are:

- **Monitoring and evaluation framework.** Provides high-level guidance to ensure the key elements of evaluation plans are consistent and that knowledge transfers from one disaster recovery to subsequent ones.
- **Evaluation plan.** A document that details how a specific disaster recovery process will be evaluated. An evaluation plan ensures that key evaluation questions are properly answered in the evaluation report, and that standards of success are established prior to evaluation activity being undertaken. *The evaluation plan should be developed in conjunction with, or as part of, the disaster recovery plan*. This will ensure that evaluative thinking is built into

program design, regardless of whether the evaluation activity actually takes place.

- **Evaluation activity.** The collection of information to answer evaluation questions and to make a judgment about the 'success' of disaster recovery programs. For any given disaster there may be multiple evaluations: for example there may be an early formative evaluation to assess whether immediate outcomes are being achieved, and another outcome evaluation some years later to assess whether long-term outcomes have been achieved. Similarly, specific recovery agents involved in the recovery process (such as NGO's) may conduct their own evaluations to assess and strengthen the contribution of their activities to the disaster recovery outcomes. As discussed earlier, the *scale* of evaluative activity also needs to be proportionate to the scale of the disaster and other resource considerations. Evaluation activity may include 'internal' program reviews undertaken by program staff; it should not be automatically assumed that external consultants must undertake all evaluation activity.
- **Community Recovery Progress Reports.** These provide public information on a regular basis about progress to date and future plans for meeting disaster recovery outcomes.
- **Evaluation report.** This is a document that presents the findings and recommendations from a disaster recovery program evaluation. Documenting the lessons learned from the evaluation strengthens the evidence base to improve future disaster recovery programs.

Figure 2: Disaster recovery evaluation process



Who will use this Framework?

This Framework will support the work undertaken by a wide variety of people and institutions involved in disaster recovery.

Governments at all levels
This Framework should help facilitate planning and coordination for disaster recovery at all levels of government and to ensure that public resources are used effectively.

Staff involved in the design of recovery programs
The ultimate test for this framework is whether it leads to better recovery programs. Over time, recovery programs should achieve their desired outcomes in more effective and efficient ways. This will happen through the feedback between the knowledge gained from past recovery evaluations and the delivery of future recovery programs. The *Evidence Base*, discussed in detail in Chapter 4, is the key tool through which this knowledge is captured and made available to help those involved in disaster recovery program design.

Moreover, program staff must have the capability for *evaluative thinking* when designing recovery programs, so that activities and resources are aligned with recovery outcomes, program logics are established as planning tools, and data collection and monitoring is facilitated through 'up-front' evaluation planning. In others words, even if an evaluation is not actually conducted for a particular disaster recovery program, that program will be more successful if evaluative thinking is incorporated into the design and implementation phase.

The obligation to use evidence and think in an evaluating manner applies to both government and non-government bodies involved in the delivery of recovery programs. Government staff should also be mindful of the requirements for evaluation planning and program design specified in their respective whole of government guidelines, which are listed in Appendix 1 of this Framework.

Disaster recovery practitioners who commission evaluations
Providers of recovery programs will be able to commission rigorous evaluations of their programs, through more focused tender briefs and clearer understanding of evaluation needs.

Evaluators
Skilled evaluators will often undertake the evaluation of disaster recovery programs. In many instances these will be independent consultants or universities contracted by a government agency. Ideally, these evaluators will be involved in the upfront planning of the evaluation, as well as the conduct and reporting of the evaluation. It is also expected that evaluators will add their findings and information to the *Evidence Base* so that it continues to grow and inform future disaster recovery programs.

NGO's who might want to evaluate their programs
The delivery of recovery programs is not always done by government agencies; non-government organisations also play a crucial role. These NGO's, whether funded by government or through their own resources, will also be interested in assessing the effectiveness of what they do and this should be consistent with the principles laid out in this framework.

The research community
Interest in the effectiveness of disaster recovery programs extends beyond those immediately involved in funding and delivering the programs. A broader community of people exists, such as academics, who are interested in understanding the process of recovery and the factors that govern it. The M&E Framework can provide topics of interest to guide basic and applied research into the area of disaster recovery and, through the *Evidence Base*, provide material to support this research.

The affected communities
The Framework can help affected communities hold the government accountable for delivering recovery outcomes by clarifying what these outcomes are and how they can be identified. The Framework can also signal to the community the various ways they can be involved in the recovery process.

What is disaster recovery?

The objective of disaster recovery programs is to help communities reach a point where they are sustainable and resilient. By achieving these outcomes the government can withdraw from the recovery process and allow the community to manage its own recovery.

The terms 'sustainable' and 'resilient' have been used widely in the recovery literature, but not always with the same meaning. For the purposes of this Framework, we define these terms in the following way:

- **A sustainable community has the capability and capacity to manage its own recovery**, without government disaster-related assistance. In other words, if government disaster-related programs are withdrawn, the recovery process in a sustainable community will continue; it will not stop or reverse the gains achieved during the government-assisted phase.
- **A resilient community is better able to withstand a future disaster.** A successful recovery process "promotes practices that minimize the community's risk to all hazards and strengthens its ability to withstand and recover from future disasters, which constitutes a community's resiliency" (FEMA 2011, *National Disaster Recovery Framework*, 11). An example of disaster resilience is illustrated by the Queensland Government's response to Tropical Cyclone Oswald, which included programs to reduce the impact of future floods on soil erosion (see www.youtube.com/watch?v=syplVTHjuRU for a presentation of this example).

Resilience and sustainability are separate objectives of disaster recovery programs. They may overlap in someaspects, but they may also not be achieved at the same time or in some instances have to be balanced against each other. For example, in order to become more resilient a community may have to compromise on its economic sustainability by relocating some industries to locations that are safer but slightly more remote.

All recovery program outcome evaluations will address this definition of successful recovery through the same fundamental question:

> *Did the government assistance program(s) allow communities to reach sustainability and resilience as effectively as possible?*

Some other aspects of disaster recovery are also worth noting:

- Recovery continues even after communities become sustainable and resilient, and the government is no longer involved in any substantial way. Government assistance is not aimed at restoration or returning communities to 'normal activity' or a 'pre-disaster' state but working with communities so they can continue the recovery processes themselves.
- There is not a sharp transition between the government assisted recovery phase and the phase where recovery continues without government assistance.
- The government-assisted phase of recovery is a complex process that may be broken down into sub-phases when devising evaluation plans for specific recovery programs.
- Disaster recovery might provide the opportunity to help communities extend beyond sustainability and resilience. The extent to which this happens can be an evaluative criterion for 'successful' recovery. Evaluations might investigate whether the government assisted the community to go beyond recovery, but this will not usually be an evaluative judgment.

To establish sustainable and resilient communities, disaster recovery efforts must include efforts to build the capacity and capability of communities to manage the recovery process. *Capability* refers to skills and knowledge possessed by members of the affected community, such as awareness of disaster risks and appropriate disaster mitigation strategies. *Capacity* refers to system-level factors that allow community members to apply these skills and knowledge to bring about disaster recovery, such as health, education, and mutual support systems.

For example, a community can become more resilient if community members are better able, in the event of a future disaster, to meet their own needs, and to support other members of the community. This can be achieved by members of the affected community preparing a 'documented emergency plan' (*Queensland Community Preparedness Survey November 2013 – Household Preparedness for Natural Disasters*, 2013: 24, www.disaster.qld.gov.au/Disaster-Resources/Documents/Queensland-Community-Preparedness-Survey-November-2013-Survey-Full-Report.pdf). These documented emergency plans (DEP's) are not 'done by

government' for households, they are 'completed by households for themselves. To prepare such emergency plans however, the community must possess certain capabilities, such as an understanding of the need for these emergency plans and what should be taken into account in constructing these plans. Government activities should be directed to developing these capabilities (e.g. through information sessions and samples of DEP's). Government assistance may also build capacity by providing templates of DEP's available to the whole community that households can use to develop their own. After a sufficient number of community members have developed the capability for developing DEP's they can then act as a community resource to help others do the same so that government programs can be withdrawn. The objective is to get to a point where the special government programs, such as information sessions, can be withdrawn and households continue to develop DEP's without this aspect of the recovery program. The extent to which these government efforts at building capability and capacity for disaster resilience increase the number of households with DEP's will be the subject of evaluative activity. These distinctions are summarized in Table 1.

Table 1: An example of capacity and capability building for community resilience

A resilient community …	is better able to respond to future disasters i.e. community members are able to respond to their own needs, and to support the other members of the community, in the event of a disaster.
A community led approach to resilience …	involves households writing DEP's for themselves rather than governments providing them.
To establish a community led approach …	• community members have the capability to write their own DEP's e.g. knowledge of what goes into a DEP and an understanding of why it is important; • the community has the capacity to provide support to households e.g. a common template is available and community members can assist each other to complete these templates.
A government assisted approach to resilience …	involves government activities, as part of a disaster recovery program, building this capability e.g. holding community information sessions; and capacity e.g. by providing blank templates and guides for writing DEP's.
Evaluation of the disaster recovery program …	assesses whether the recovery program did in fact create the necessary capability and capacity for households to have DEP's in place.

What is a disaster recovery program?

A 'program' is a set of activities that deploy resources with the aim of achieving a specific set of objectives and outcomes. Thus a disaster recovery program is one that is aimed at achieving disaster recovery. These activities are (1) above and beyond the usual services that government would provide to similar communities that are not affected by disasters, and (2) specifically focused on getting affected communities to

a point where they can continue the recovery process on their own terms. Even though other government programs may contribute indirectly to successful disaster recovery, this Framework only applies to programs that specifically have disaster recovery as their core objective. The word 'program' is sometimes used interchangeably with other terms such as 'project' or 'effort'; in this Framework we will exclusively use the word program whenever we talk about a set of coordinated activities that have disaster recovery as their key objective.

The focus of this Framework is on *government* sponsored recovery programs, recognising that such programs may be implemented by a variety of organisations. Government recovery programs may include any activities that are 'sponsored' by government agencies, even where these activities are delivered by non-government organisations (NGO's).

Recovery programs may operate at different scales. The broadest scale is the entire set of activities that help affected communities recover. This set may itself be made up of more discrete programs that focus on particular aspects of the recovery process. For example, some programs may focus on economic recovery, or particular groups of people within the community. Evaluation can focus on programs at any (or all) of these levels, but it must be made clear at what level the evaluation will focus. For example, the report by the Virginia Horticulture Centre, South Australia, *Gawler River Flood Recovery Program 2005-2007* (2008) only evaluated the horticulture recovery program rather than the entire flood recovery program.

Given that a broad recovery program will encompass a number of more targeted programs within it, it is likely that more than one evaluation may be conducted in relation to a single disaster.

What is 'the community'?

The affected community is not always coincident with a clear geographic area, such as the region physically impacted by the disaster. It can also include people outside the impact region such as people who are bereaved due to loss or emotional attachment with the affected area. As the *Community Recovery Handbook* (2011: 67-68) states:

> When identifying disaster-affected communities or parts of a community, it is also important not to be restrictive in how affected communities are defined. Caution needs to be exercised so that the process does not alienate people who, although not appearing to be obviously affected, may be experiencing consequences from the disaster. These people may include those who have witnessed an event, helped others affected, become distressed by hearing information about the emergency or felt they were at potential risk of the emergency (even if that risk did not eventuate).

Evaluators should draw on the guide for identifying the relevant community in the *Community Recovery Handbook* (2011: 67–68) when developing Evaluation Plans.

Disaster recovery as an evaluation problem

Disaster recovery is both a 'complicated' and 'complex' problem (see Rogers 2008 for a detailed discussion of this issue). Disaster recovery is *complicated* because it involves multi-agency coordination and governance; there are many causal paths that lead to recovery; and the nature of these paths will partly depend on specific context. It is also a *complex* problem because each recovery process is unique; there are feedback effects between recovery program components and recovery outcomes; and, most importantly, some outcomes are emergent and as such cannot be fully specified or anticipated in advance.

This conceptualisation of disaster recovery as complicated and complex is important for understanding the development of recovery outcomes and the need to be flexible and adaptable to how these are approached in an evaluation process.

2. A program logic for disaster recovery

A program logic provides a 'map' of the key elements that constitute the program, and how they contribute to the intended outcomes. For the purpose of the M&E Framework, given that disaster recovery is a complex problem, the program logic for disaster recovery must operate at a very 'high' level. The program logic captures, at a highly aggregated level, the major outcomes and the broad factors that will contribute to the achievement of these outcomes, regardless of the specific disaster recovery program being evaluated.

Theory of change

A program logic captures in a diagrammatic form some underlying understanding about what it takes to achieve 'successful' recovery. This understanding of the key causal relationships that will bring about recovery is a *theory of change*. Based on the principles in *Community Development in Recovery from Disaster* (Emergency Management Australia 2003) and the *National Principles for Disaster Recovery* (www.dss.gov.au/our-responsibilities/communities-and-vulnerable-people/publications-articles/national-principles-for-disaster-recovery), the theory of change that guides this program logic can be summarised **as community led/government-assisted recovery**. The essential element of this theory of change is that recovery is an ongoing process that is managed by the affected communities. By placing affected communities at the centre of the recovery process, the role of government takes on a specific meaning. In particular, it highlights that government activities support and facilitate recovery by building community capacity and capability, and that there will be a stage at which recovery can continue without government assistance.

This theory of change is captured in the *National Principles for Disaster Recovery*, which place the community into the centre of the recovery process. These principles underpin recovery programs so that they are community-led. In particular, the *National Principles* state that:

> "Successful recovery relies on:
>
> - *understanding the context*. Successful recovery is based on an understanding of the community context.
> - *recognising complexity*. Successful recovery acknowledges the complex and dynamic nature of emergencies and communities.
> - *using community-led approaches*. Successful recovery is responsive and flexible, engaging communities and empowering them to move forward.
> - *ensuring coordination of all activities*. Successful recovery requires a planned, coordinated and adaptive approach based on continuing assessment of impacts and needs.
> - *employing effective communication*. Successful recovery is built on effective communication with affected communities and other stakeholders.

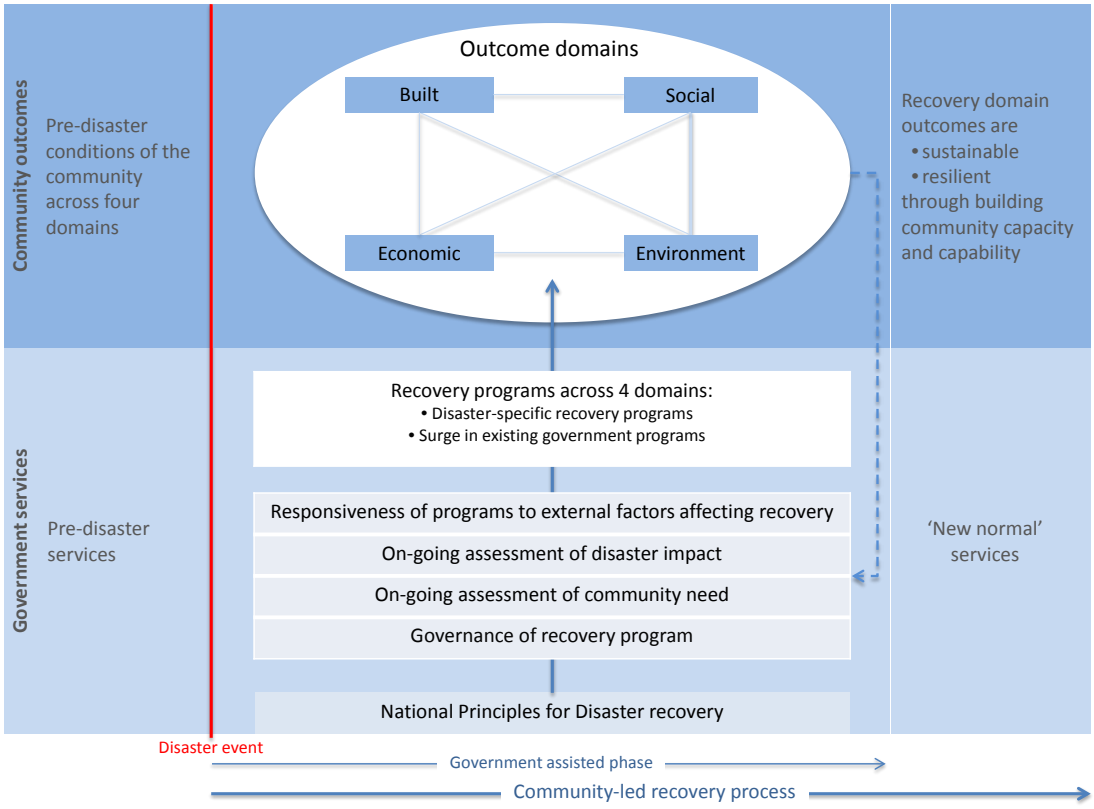
- *acknowledging and building capacity*. Successful recovery recognises, supports and builds on community, individual and organisational capacity."

From an evaluation perspective, this theory of change implies that a central question to be addressed by recovery program evaluations is whether the program has been effective in terms of helping communities reach a point where they manage the recovery process without government support (beyond the level of government support that any similar community would normally expect). Disaster recovery programs must contribute to the building of a community's capacity and capability to manage the recovery process once the government assistance has been withdrawn, and it is the extent to which the program activities have developed capacity and capability that will be the benchmark for judging their success.

A program logic for the M&E Framework

There has already been a considerable amount of work undertaken to develop a program logic for this framework (especially Ryan et al, 2015). This program logic draws on these efforts to construct a single 'map' of disaster recovery. Some consistent themes have emerged from these efforts, which are captured in Figure 3.

Figure 3: A high-level program logic for disaster recovery



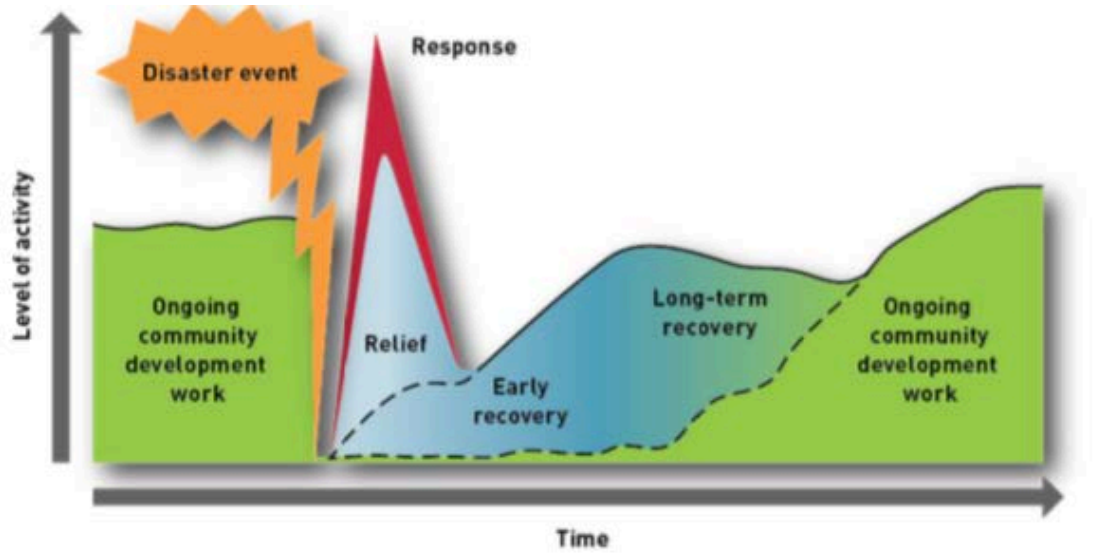
Disaster affected communities functioned in a particular way prior to the event, and this may include how they responded to previous disasters. It also includes the

community's pre-disaster capacity and capability to manage its development, as this will determine the extent and focus of subsequent government programs.

Following a disaster, and once response and relief efforts have dealt with the immediate emergency situation, recovery programs will be designed and implemented with the ultimate aim of building the community's capacity and capability to manage its own recovery process. The *National Principles for Disaster Recovery* will guide how the program is constructed. This will include a governance structure to oversee the government-assisted phase of recovery that involves the community in the decision-making process.

In response to the changing nature and extent of the disaster, and also in response to changes in the external environment affecting the community, disaster recovery programs will be designed and re-assessed to ensure they are delivering the desired outcomes across four domains: economic, social, environment, and built; and that these outcomes 'work together' to ensure that the community is sustainable and resilient. For many recovery programs, the government-assisted stage might itself be broken down into distinct but overlapping phases. For example, it is not uncommon to delineate an early recovery phase where there is particular emphasis on the transition from response to recovery efforts, such as Figure 4, from the *Community Recovery Handbook* (2011: 29).

Figure 4: Effect of disaster on ongoing community development and interface with relief and recovery



If these outcomes are achieved, so that the community can manage its own recovery, government services can return to a 'new normal' level. The term 'new normal' has been used in slightly different ways in the past (e.g. Ellis et al 2004: 176; Winkworth 2007: 81; Archer et al 2015: 31; Ryan et al 2015b: 18), all of which emphasise the idea of government services operating at a level that is consistent with a similar community not affected by disaster. In other words, 'surge' activity, whereby pre-disaster services are expanded to meet recovery needs, and disaster specific recovery programs, are no longer necessary for the community to function.

There may be limited disaster recovery activities that persist even after the government-assisted phase has finished, for example, to deal with chronic health problems for a small segment of the community. But overall, the type of government programs that are available to the community as 'new normal' will not be characterized by the needs of disaster recovery.

These 'new normal' services may be different in type and level to the services that were in place before the disaster. The aim is not to 'restore' the community to where it was before the disaster, nor to necessarily use the recovery context to 'build back better' (although that may be something that governments want to do). As the *NSW Emergency Management Plan* states, recovery is about "returning an affected community to its proper level of functioning" (2011: 32), and it might be appropriate for the community to operate at some other level or in a different way than that which existed prior to the disaster. The principal aim is to equip the community and identify a point where it can manage the continuing recovery process without the need for special services or increases to services that previously existed.

Some specific features of the program logic in Figure 3 are worth pointing out in more detail that will help the development of specific program logics for individual disaster recovery programs:

- There are four domains of recovery outcomes that must be evaluated in terms of sustainability and resilience. These are the nationally accepted recovery domains of social, built, economic, and environment. While these four domains are not presented in any hierarchical fashion in Figure 3, program logics for specific disasters should assess whether in a particular disaster context, a sequential ordering of these outcomes domains is appropriate. Unfortunately this has not been done for the few evaluations that have been completed for past disaster recoveries to provide some guidance.
- Disaster recovery programs should, where possible, promote the interaction among these domains where relevant, and one of the *Key Evaluation Questions* that evaluation plans should address is the extent to which program activities and resources effectively deal with the interaction among these domains (see Chapter 5).
- The process of achieving the community-led recovery outcomes is not linear; there must be an iterative process of program redesign as the recovery process unfolds. Some outcomes may be achieved earlier than others, or may in fact be enablers that are preconditions for the achievement of other 'ultimate' outcomes. In other words, there may be distinct 'peaks' and 'troughs' in the level of disaster recovery programs as community needs change and evolve. One of the Key Evaluation Questions that follows from this is the extent to which recovery activities were responsive to the sequence of outcomes achieved, to changes in the nature and scope of the disaster impact, and to external factors that might affect the recovery process (e.g. general economic conditions, microeconomic conditions in specific markets, demographic changes, technological changes, government policy and climate and weather patterns).

- The element of this program logic that makes the recovery process community-led is the *National Principles for Disaster Recovery*. By adopting these principles in the design of the recovery program, a community's capability and capacity can be strengthened to bring about successful recovery outcomes. In other words, it is the element of the program logic that represents the theory of change underpinning the design of recovery programs. A key evaluation question therefore is whether recovery activities were designed according to these principles.
- Two types of recovery programs are separately identified. One is the set of activities that are specifically designed to assist the community to recover (disaster-specific). The other set comprises existing programs that are provided to the community but which receive extra ('surge') resources or functions so that they can contribute to the recovery process.
- Governance of a recovery program is itself a key activity that must be examined as part of an evaluation. Part of this will include the extent to which the community has been involved in governing the recovery program, and also the coordination of the response efforts with recovery
- The coordination and communication between recovery and relief efforts will be a major element affecting the success of recovery efforts.

A program logic at this level of abstraction is not a prescription for how disaster recovery programs are to be designed. The program logic in this M&E Framework is an *archetype* that articulates nationally agreed, consistent and high-level disaster recovery outcomes, as well as the key activities designed to achieve these outcomes. The specific way in which individual programs are designed to achieve these outcomes, for any disaster, cannot be prescribed in advance.

Evaluation plans for assessing individual recovery efforts should articulate how the specific set of activities and resources that define a given recovery program will achieve the recovery outcomes, using a tailored and more detailed individual program logic. In the language of evaluation principles, the program logic in this national M&E Framework articulates the theory of change, whereas the program logics contained in individual evaluation plans will articulate the theory of action illustrating how this theory of change is operationalised in specific disaster recovery programs.

Developing specific program logics to guide actual disaster recovery programs and their respective evaluations is a skill that requires some expertise, and program staff should refer to Appendix 1 of this Framework for starting points. An example of a disaster specific program logic that details how activities and interventions are intended to lead to very specific outcomes can be found in UNICEF, 2009, *Children and the 2004 Indian Ocean Tsunami: Evaluation of UNICEF's Programmes in Aceh*, Indonesia. Child Protection Report, www.unicef.org/evaldatabase/index_59604.html (for a more general and very accessible guide for developing program logics, people involved in disaster recovery should consult Funnell and Rogers (2011) and the resources available at betterevaluation.org.

3. Domains of disaster recovery

Some key terms need to be defined before we can detail the outcomes that disaster recovery programs try to bring about. In particular, we need to be clear about the difference between *activities*, *outputs*, *outcomes* and *outcome indicators*. Table 2 defines these terms and illustrates them using the example in Table 1 for disaster resilience.

Table 2: Evaluation terminology: Some definitions

Term	Definition	Example
Activities	Things the program does with available resources to meet its objectives	Construct templates of documented emergency plans; organize information sessions and material
Outputs	Direct products of the program's activities; evidence that the program was actually implemented	Templates available on websites for download; number of information sessions held; information sheets distributed for completing DEP's
Outcomes	Changes in participants' knowledge, behavior, skills, status, and level of functioning, or changes to an institution such as environmental conditions and organizational capacity, as a result of the program	Community members are able to respond to their own needs, and to support the other members of the community, in the event of a disaster
Outcome indicator	Identify and measure, either quantitatively or qualitatively, the state of an outcome	Households with DEP's completed to an appropriate standard; community members that can help other households complete DEP's

These distinctions may seem semantic, but they do have practical consequences. For example, recovery programs may complete particular activities and produce identifiable outputs, but if these are not done well, or directed toward a specific need, may not produce outcomes in terms of improving community sustainability and resilience. In fact, a review of past disaster recovery evaluations (Appendix 3) found that a lack of clarity about what were disaster recovery outcomes resulted in these evaluations being process orientated; they focussed on the outputs government assistance produced rather than the impact of these outputs on the affected communities.

This section of the Framework therefore begins by detailing the outcomes for disaster recovery programs. It draws together the lessons from past evaluations of disaster recovery programs, the feedback from recovery agents, and official guidelines for designing recovery programs, to define what resilience and sustainability 'looks like' for each of the major outcome domains.

Clear statements about disaster recovery outcomes will:

1. assist the *design* of recovery programs through a clear and consistent understanding of what disaster recovery programs should achieve.
2. focus the *evaluation* of recovery programs around common notions of success and the types of activities that will help achieve it.

It is important to note that the list of outcomes for each domain will have to be structured for particular recovery plans. This structuring will involve determining which outcomes apply to a particular recovery, and also whether there is a hierarchy to the outcomes: are there some immediate or intermediate outcomes that then enable final outcomes to be reached? This structuring and ordering of outcomes, and the associated activities that are intended to bring them about, should be captured in the program logics developed for that specific disaster recovery evaluation. It is also important to note that some of the markers of sustainability are also markers of resilience, e.g. individuals having access to employment/income security, adequate economic diversity.

The following tables of outcomes across the four domains are *descriptive*: they identify what each of these outcome domains 'look like'. Once this descriptive picture is presented, we then discuss what considerations are involved in creating the *evaluative criteria* that will be used to assess whether these outcomes have been effectively reached.

Vulnerable groups in disaster recovery

The specific outcomes within each outcome domain listed below do not necessarily refer to specific vulnerable groups, and how disaster recovery should address their needs. However, The *Community Recovery Handbook* (2011) emphasises that for each outcome the **needs of vulnerable and diverse groups in relation to disaster recovery are specifically addressed**. It is therefore essential that in applying these outcomes to specific disasters, they are recast, where relevant, to identify any vulnerable groups that have been affected by the disaster. A detailed but not exhaustive list of groups that are "potentially at risk or potentially vulnerable" is provided in the C*ommunity Recovery Handbook* (2011: 36–37; for more detailed guidance on how to assess recovery outcomes for vulnerable groups, the *Vulnerable Sections of Society (an emergency management perspective)* report, www.emv.vic.gov.au/our-work/reports/vulnerable-sections-of-society, should be consulted).

Some overarching outcomes

There are a number of outcomes and activities that cannot be identified directly with a single domain, but rather are essential to all of them.

Sustainability

- Displaced populations are able to return to the community if they prefer to return.
- The needs of vulnerable groups are addressed in disaster recovery.

- The community is aware of the disaster recovery processes.
- The community can express its changing disaster recovery needs.
- Government, private sector and civil society and organisations are engaged in plans for mitigation and management of the recovery.

Resilience

- Community members are aware of the risks of future disasters.
- The community has access to insurance (covering lives, homes and other property) through insurance markets or micro-finance institutions, where appropriate and viable.

Four outcome domains

There are four specific outcome domains: Economic, Social, Built, and Environment. For each of these domains, we identify *high-level outcomes* that identify at a very broad level the effect on the community that is desired. Each of the high-level outcomes is then broken down into a set of *mid-level outcomes* that identify what the high-level outcomes means for specific groups or types of effects. It is expected that particular evaluation plans will further break down these mid-level outcomes into very specific forms that are relevant to the type of disaster and affected community that will be the subject of the evaluative activity.

Built environment as an outcome

"The built environment is broadly defined as those human-made assets that underpin the functioning of a community" (*Community Recovery Handbook*, 2011: 89).

Economic recovery

The local economy is the system whereby the affected community's material and service needs are met through appropriate labour and employment, business development, land use, financial resources, and interaction with the broader economy. It sustains the livelihoods of the members of the community and contributes to the broader economy.

Economic outcomes can relate to economic actors at different levels, including individuals, households, small and large businesses, industries, and the broader economy.

Social recovery as an outcome

The social domain is defined by "relationships and connected by networks of communication ... [it] consists of individuals, families and common interest groups that form whole communities" (*Community Recovery Handbook,* 2011: 73).

According to the *Community Recovery Handbook* (2011) recovery activities and services in the social environment are developed in the following categories:

- safety and security
- shelter, including accommodation in the short, medium and long term

- health, including medical, allied health and clinical services, public health (water, sanitation, hazardous materials, food security, mental health support and health promotion activities)
- psychosocial support, including individual and community activities and services
- personal self-sufficiency and autonomy

Environmental recovery as an outcome
The environmental domain encompasses the natural and heritage resources of the community.

Components of the natural environment that may be affected by a disaster include air and water quality, land (through degradation and contamination), plant and wildlife damage/loss, public parks and cultural heritage sites and assets (*Community Recovery Handbook*, 2011: 110).

The following tables provide, for each of the four domains respectively, a list of the outcomes for achieving disaster recovery.

Table 3: Built environment recovery outcomes

High-level outcomes	Mid-level outcomes
Sustainability	
Infrastructure that relates to the provision of services to the community by infrastructure owners/operators including water, sewerage, electricity and gas, transport, telecommunications.	• Provide infrastructure that delivers essential services to the community. • Infrastructure is built in accord with changing recovery needs. • Local infrastructure is appropriately integrated with wider state and Commonwealth infrastructure.
Infrastructure that relates to education, health, justice, welfare and any other community infrastructure/buildings that support the community (private or public owned assets).	• Infrastructure is built in accord with changing recovery needs.
Private infrastructure including residential, commercial/industrial and rural assets.	• Infrastructure is built in accord with changing recovery needs.
Resilience	
Infrastructure is rebuilt to reduce to a reasonable degree the impact of future disasters on communities.	• Infrastructure is built with regard to local disaster risks. • Infrastructure is built in accordance with current knowledge and practices for mitigating disaster impact.

Table 4: Economic recovery outcomes

High-level outcomes	Mid-level outcomes
Sustainability	
Economy as a whole.	• Local business networks foster growth. • Economic activity is appropriately diverse. • Key industry sectors for the community are restored.
Community members are able to meet their material and service needs and participate in the economy.	• Households have access to an adequate range of goods and services. • Individuals and households have sufficient financial security to allow them to take advantage of economic opportunities. • Community members have access to banking and financial services. • Vulnerable groups are not further disadvantaged by the impact of the disaster, in terms of their ability to participate in the economic system (e.g. employment prospects, accessing credit).
Businesses and industries in the local economy are able to operate and trade in line with broader economic trends.	• Consumer and business confidence levels support business operations (both within and outside of the community). • Business models are appropriately adaptive to market conditions and fluctuations. • Local businesses have information they need to continue recovering from the disaster. • Early-stage and small businesses have the capacity to continue operation. • Businesses and not for profit's can access or attract appropriately skilled workers. • Business and not for profit's have access to critical banking and financial services. • Not-for-profit community service organisations can continue to provide regular services. • Businesses have secure and stable access to supply chains and networks (including markets, physical infrastructure and assets, as well as telecommunication networks).
Resilience	
Business and not for profits have in place adequate mitigation practices for risks and threats.	• Businesses and not-for-profit's have business continuity plans and dynamic organisational resilience practices that address relevant risks and threats. • Business insurance is accessible where viable. • Businesses and not-for-profit's know and understand the risks and threats of operating in the area.
The economy is sufficiently flexible and adaptable to shocks.	• Economic activity is appropriately diverse. • The workforce has transferable skills.

Table 5: Social recovery outcomes

High-level outcomes	Mid-level outcomes
Sustainability	
Adequate housing is available to community members at appropriate times in the recovery process.	• Community members have access to appropriate and affordable housing in a timely manner.
Community members have access and are able to meet health needs (including mental health) arising from the disaster.	• Community health levels are appropriate for the community profile. • Existing health clients receive continuity of their care e.g. pharmaceutical supplies. • Community members have the knowledge, skills, and resources for dealing with health issues related to the disaster experience. • Community members can access appropriate services to deal with health needs. • The community is not experiencing excessive stress and hardship arising from the disaster. • The community has access to clean drinking water and basic food supplies. • The community has access to adequate sewerage and sanitation services.
Community members have access to psychosocial support.	• Community members have social networks to support each other. • Cultural and racial diversity is respected. • The community can express its diverse spiritual composition. • The community has opportunities for creative expression that help the community recover from disasters. • Leisure, sport and artistic activities are part of the fabric of the community.
Households, families, and individuals can act autonomously to contribute to the recovery process.	• Households, families, and individuals have the information needed to make decisions. • Households, families, and individuals are enabled to affect their own recovery through appropriate income sources.
Community members have access to education services.	• Community members receive continuity in the education services they need.
Community members have access to appropriate and coordinated social services.	• Community members receive appropriate social services. • Displaced populations are reconnected with essential health and social services.
Community members feel sufficiently safe and secure following a disaster to engage in social activities and interactions with other members of the community.	• Possibilities for crime and social disorder as a result of the disaster are minimized. • Community members are able to manage their own safety.

Resilience	
The community has improved capacity and capability to respond to future disasters.	• Community members are aware of each other's potential needs from future disasters through formal and informal networks and plans (i.e. social connectedness). • Community members are able to respond to their own needs and to support the other members of the community. • Mutual assistance systems, social networks and support mechanisms are capable of adapting to emergencies when these occur. • Community members have the knowledge, skills, and resources, for dealing with disaster related health risks (e.g. hygiene, sanitation, nutrition, water treatment).

Table 6: Environmental recovery outcomes

High-level outcomes	Mid-level outcomes
Sustainability	
The environment has returned to pre-disaster state, or to a state that is acceptable to the community.	• The community's exposure to environmental health risks and public health risks is minimized. • The natural environment operates to maintain healthy biodiversity and ecosystems. • Cultural heritage sites or assets of importance are restored, where possible, in a way that provides these values to the community.
Resilience outcomes	
The risk of adverse impacts of future disaster on the environment is minimized.	• The impact of future disasters on biodiversity and ecosystem is minimized. • The community is aware of the risks of future disasters to natural and cultural heritage assets. • The community understands the characteristics and functioning of local natural environment and ecosystems.

Outcomes, Indicators, and standards of successful recovery

For each of these outcomes a number of indicators have been developed so that progress in achieving these outcomes can be measured and assessed. These indicators come from three sources:

1. past evaluations of disaster recovery;
2. official statistics such as ABS publications;
3. input from specialists in the field of disaster recovery and related expertise.

The mapping of indicators to outcomes is contained in the *Evidence Base*. When completed, each disaster recovery evaluation will add the indicators it uses into the

Evidence Base so that it grows over time from the accumulated experiences of real-world disaster evaluations.

It needs to be noted, though, that the list of indicators is not complete; they are ones that are sufficiently general in nature that they might be commonly used across a variety of disaster recovery programs. But each recovery program is also unique, and it is expected that other indicators will also be used where relevant to a specific context. It should also be stressed that while these indicators lend themselves to quantitative measures; qualitative measures for some indicators will usually be required to fully capture the complexity of the disaster recovery process.

These indicators on their own cannot be used to assess whether successful recovery is occurring or has occurred. For example, while the number of households with DEP's is a desired outcome, the specific proportion of households that need to have DEP's in place before we can declare a community to be resilient cannot be determined in advance. This is the process of 'standard setting'.

Such standard setting will not be part of this M&E Framework; it is the function of Evaluation Plans to identify which indicators are relevant for the outcomes that are desired, and the 'values' these indicators need to attain before we can specify that recovery is happening or has finally been achieved. Many of these outcomes use words such as 'adequate' and 'appropriate'. Such words are deliberately vague because there cannot be a predetermined and universal standard of success that applies for all recovery programs. This framework, therefore, will not specify the exact way in which successful recovery will be measured, but will provide guidance on a range of indicators across the outcome domains upon which individual recovery program evaluations can draw. In other words, specific recovery Evaluation Plans will decide what is 'adequate' and 'appropriate' in their circumstances, but we identify the following guiding principles for establishing these standards:

- *Pre-disaster state*. The pre-existing state of affairs prior to the disaster will act as a reference point for setting standards. For example, a community may not have been very resilient or sustainable prior to the disaster, possibly as a result of previous disasters. It should be noted, however, that it is not the main purpose of disaster recovery to redress non-disaster related problems that existed prior to the disaster, except in so far as these may impact on the sustainability and resilience of the community.
- *Disaster impact*. The pre-disaster state of affairs also needs to be coupled with the nature, severity, and extent of the disaster. In some circumstances it may not be reasonable or necessary to expect disaster recovery to achieve pre-existing levels of community functioning. Recovery may become sustainable and resilient before these levels are achieved. There are a range of possible sources of impact measures, such as state and territory damage, loss and impact assessments, and the National Impact Assessment Model (NIAM), which can help inform 'reference' measures for many outcomes, against which recovery can be assessed.

- *On-going community needs assessment*. This will help establish the time-frame over which it is reasonable to expect the desired outcome 'targets' to be reached.
- *Comparison with generally recognised standards* e.g. safe levels of air pollution; safe levels of asbestos risk.

As a consequence of these considerations, the indicators in the *Evidence Base* do not suggest what the appropriate comparison or form of change that needs to occur. For example, whether a change in median income needs to be referenced to pre-disaster levels or to similar communities that have not been affected by a disaster will be determined within the context of a specific disaster recovery situation.

Outcomes, indicators, and methodologies for data collection

The mapping of outcomes to indicators in the *Evidence Base* is a starting point for constructing a data collection plan. However, evaluators should not feel restricted to this list. They should also be open to forms of data collection and associated indicators that are emerging. In particular, the following approaches to data collection and measurement should be considered:

- *Most Significant Change* (MSC). This is a methodology that explores the important outcomes and how they are identified, through a qualitative approach to community values. MSC can be used to construct the specific program logic for a given disaster recovery process, based on a structured feedback process that engages the community and other stakeholders. But it can also be used in conjunction with quantitative measures to assess movement toward community outcomes such as disaster recovery; for example, to uncover important outcomes that were not identified in the Evaluation Plan. It is important that qualitative indicators be used in conjunction with the quantitative indicators listed in the evidence base to ensure a 'complete' picture of recovery is presented. MSC, among other techniques, provides a useful way of doing this (useful guides for using this technique are Dart and Davies (2003), and Davies and Dart (2005)).
- *The Australian Regional Environmental Accounts*. The Wentworth Group of Concerned Scientists has recently trialled a system for measuring the state of environmental assets at any given point in time, and over time. The further development of these Accounts should be assessed: if they are conducted nationally and at regular intervals they will provide an invaluable source of secondary data for measuring environmental recovery outcomes. If this does not happen, the methods developed for constructing these accounts can still be used to gather primary data, where appropriate, for disaster recovery (wentworthgroup.org/programs/environmental-accounts).
- *Innovations in data collection using digital and other tools*. For example, developments in geospatial imagery and the use of satellite data may provide tools that can capture in great detail changes in a community's structure and assets (Brown, et al 2011). The scope for using such innovations in collecting

monitoring and evaluation data needs to be constantly assessed, and the experience gained by using such innovations fed back into the *Evidence Base*.

- *Innovations in the use of social media*, and drawing community involvement through other qualitative methods such as ethnographic studies.

4. The Evidence Base for disaster recovery evaluations

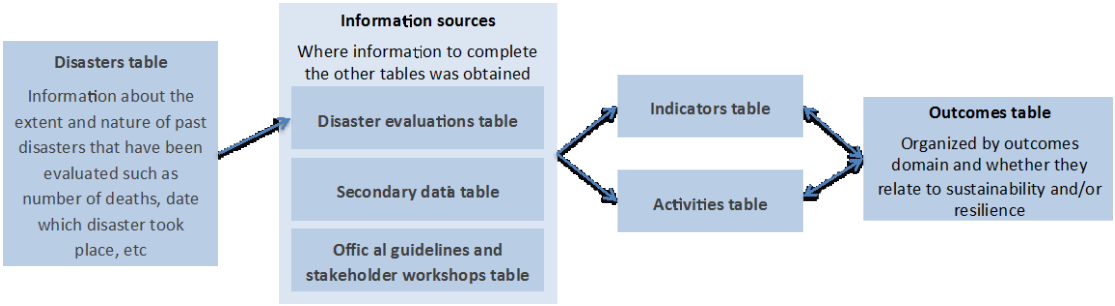
A relational database has been constructed as part of this Framework, and can be accessed through the Australian Disaster Resilience *Knowledge Hub* (www.emknowledge.org.au). This *Evidence Base* captures the important learning from past disaster recovery programs in a way that will facilitate better program design and program evaluation in the future. The *Evidence Base* will be the cornerstone for ensuring that recovery evaluations are not isolated reports, but instead contribute to a growing foundation of knowledge that will be applied in successive recovery programs.

The database is made up of the following tables:

- *Disasters*. A list of disasters for which evaluations have been undertaken, with information about their scale and impact.
- *Outcomes*. The outcomes listed in the Domains of disaster recovery.
- *Indicators*. A comprehensive list of indicators mapped to at least one outcome, and linked to a specific source. The sources of these indicators come from (1) past evaluations; (2) secondary data/official statistical agencies, such as the Australian Bureau of Statistics; (3) overarching guidelines that provide guidance in particular areas; and (4) feedback from key stakeholders who attended the series of workshops held as part of the development of this framework.
- *Activities*. These are the program components that have been used in the past to achieve at least one outcome, and also those suggested as part of the M&E Framework workshops.

The structure of the tables that make up *Evidence Base* is illustrated in Figure 5.

Figure 5: The structure of *Evidence Base*



By linking each of the tables as a relational database it is possible to query the elements in each of these tables as required. For example, all indicators used in past evaluations for a specific outcome can be quickly generated. This list can also be limited by type of disaster or scale of impact and/or by source of data.

By linking these tables, the *Evidence Base* can be tapped in a number of ways:

- Program designers can identify activities that have been used in the past to target specific outcomes.
- Evaluation plans can draw on these to identify how outcomes will be measured. For example, the official statistics can be used to provide reference points to compare outcomes over time and can also provide questionnaire items that could be included in community surveys.

Further development

The *Evidence Base* must be a 'living resource' that is updated with each evaluation. This will happen by:

- disaster recovery program designers updating information about activities and resources (both planned and actual) and their link to disaster outcomes; and
- evaluators updating the information about indicators and measures and their relationship with disaster recovery outcomes.

This *Evidence Base* can be further developed by adding indicators from administrative data that are collected by government agencies, particularly as governments create 'big data' systems for linking these data sets across agencies and jurisdictions. Drawing on other official statistical services, such as those provided by the World Health Organisation, the World Bank and the Organisation for Economic Co-operation and Development (OECD), can also extend the *Evidence Base*. Other possible developments include reviewing data collections conducted for other purposes by private organisations, but which could be used to inform progress toward disaster recovery.

It is recommended that resources be allocated to a review of all relevant sources of information that can help build the *Evidence Base*. It is also recommended that robust procedures for updating and maintaining the *Evidence Base* will need to be drawn up, providing clear ownership, maintenance, and procedures for ensuring data integrity.

Limitations

The database does not contain all the grey literature on disaster recovery evaluations, and is influenced by the evaluations and disasters studied by Ryan et al (2015) in *Review of Evaluation Practice Material*. It is likely that there are past evaluations that are not publicly available, or have been removed from the relevant agencies' websites.

As established by literature reviews of disaster recovery, there are few outcome-based evaluations that have been undertaken in the past. Therefore, the *Evidence Base* (as of writing) contains a range of reports, communications, statements and documents related to disaster recovery that are not strictly 'evaluations'. However, it is expected that moving forward, more evaluations will be undertaken which will be added to the current database.

5. Key evaluation questions

We summarised the learnings from past evaluations and key official documents, and from these developed the following broad set of Key Evaluation Questions (KEQ) that should be addressed in specific disaster recovery evaluations. KEQ's are very broad statements, and will be elaborated in more detail for specific program evaluations, depending on the exact nature of each program.

Effectiveness

- To what extent did the disaster recovery program produce a sustainable community?
- To what extent did the disaster recovery program produce a resilient community?
- Was there any trade-off between achieving resilient outcomes and sustainable outcomes? If yes, how was this negotiated?

Efficiency

- To what extent did the program achieve the right balance between centralisation of some activities to achieve economies of scale while at the same time being responsive to local needs and conditions?
- Did the program prevent price escalation stemming from the level of demand and competition between organisations?
- How well did the program balance the need to optimise between cost of restoring essential public assets and the cost of delaying such projects?
- How appropriate were the price benchmarks used to evaluate service providers?

Implementation

- Was the recovery program consistent with the *National Principles for Disaster Recovery*?
- To what extent has the program been implemented according to the recovery plan? In cases where activity has departed from the recovery plan, how was this managed and what were the implications?
- Did the speed of the recovery process compromise quality?
- Did the recovery program meet community needs as they changed over time and in response to changes in disaster impact?
- To what extent did program activities and resources effectively encourage interaction between outcome domains (for example, did the restoration of cultural assets also promote economic tourism)?
- How well did the program respond to changing community needs?

- Where disaster recovery involved a number of separate programs, how well coordinated were these with each other? If each of these programs were evaluated separately, did these evaluations draw common conclusions?
- To what extent was the recovery process affected by external factors that may have had an impact on the community's ability to recover?

Governance of the recovery process

- How appropriately did the governance process draw from the community to ensure the community was integral to the recovery process?
- What impact did the governance arrangements have on the recovery process?
- How well coordinated were response and relief efforts with the recovery process so that the two 'worked together'?

6. Monitoring disaster recovery

Disaster recovery is an on-going process. It is also an iterative process whereby programs are adapted, as community needs change and the impact of the disaster changes in scope and intensity. The progress toward sustainability and resilience cannot therefore be captured retrospectively or at a single point in time; some monitoring of outcomes, and how program activities are delivering those outcomes, must take place.

This regular and planned monitoring of disaster recovery outcomes will help ensure that:

- programs are adapted to emerging needs;
- resources can be redirected to meet other outcomes as early outcomes are achieved;
- an early warning system is in place to identify outcomes that are not responding to recovery efforts;
- progress toward successful recovery is communicated to the community and other relevant stakeholders;
- all the groups involved in the delivery of recovery programs are accountable for their respective performance.

Monitoring should happen through the periodic publication of *Community Recovery Progress Reports* (CRPR). Such Reports should be completed according to a timetable set out in the Evaluation Plan, but it is envisaged that these Reports should occur at least annually, and, in the early recovery phases, on a more regular basis such as quarterly. The outcomes that are monitored will be specified as part of the Data Plan included in the Evaluation Plan, a template for which is available below.

CRPR's must be more than periodic 'newsletters' or information leaflets. These types of publications tend to focus on 'good news' stories and also tend to focus on individual case studies, rather than providing a comprehensive assessment of progress toward recovery outcomes.

To provide this comprehensive assessment, CRPR's should include sections that:

- report on key outcome indicators that are considered significant 'markers' of progress for a particular recovery program (rather than reporting on all the indicators that might be relevant). In selecting the indicators that will be included in the Reports, consideration needs to be given to any ethical issues related to gathering and reporting the data, ease of data collection, the extent to which the community can be involved in reporting on these indicators, and the range of disaster recovery outcomes that they cover;
- provide appropriate qualitative assessments of recovery progress;
- summarise the key activities that have been undertaken in the reporting period;

- summarise the key activities that will be undertaken in the next reporting period and the outcomes that they are expected to achieve;
- identify where progress has not met expectations and discuss the reasons for this and the responses that will be taken for future progress;
- identify the ways in which the community has been involved in the recovery process.

This Framework does not specify a particular format or mode of distribution for presenting these monitoring reports. The media and format for reporting will depend on the nature of the community and other audiences to whom these reports are directed. Indeed, the same report may be presented in multiple formats to suit the needs of different audiences. The relevant forms of reporting should be specified in the Evaluation Plan, but also be adapted to suit changing needs. To assist in the development of CRPR's, we cite the following two examples:

- The Greater Christchurch Earthquake Recovery includes a Monitoring and Reporting Plan (cera.govt.nz/sites/default/files/common/monitoring-and-reporting-plan-june-2013.pdf) that provides an overarching guide for monitoring activity, with specific and regular monitoring reports organised around the main outcome domains, such as the Canterbury Wellbeing Index (cera.govt.nz/sites/default/files/common/canterbury-wellbeing-index-june-2014-full-document.pdf).
- The *New Orleans Index* provides an international example from a very wide scale disaster, which has been published annually (see for example www.datacenterresearch.org/reports_analysis/new-orleans-index-at-ten/). Significantly, the community has been heavily involved in developing this index through the Greater New Orleans Data Center.

A template for a Disaster Recovery Data Collection Plan that will identify the outcomes that will be reported in CRPR's is provided in **Appendix 4: Disaster recovery data collection plan template**.

7. Disaster recovery governance and community engagement

Governments at all levels implement a number of programs which include coordinated activities delivered with disaster recovery as the objective. A governance structure needs to be in place to ensure these programs are delivered appropriately.

It is generally recognised that the system which is established to manage and provide oversight to the delivery of recovery programs is itself an important element in achieving recovery objectives. This is because governance arrangements are needed to ensure that interventions are timely and efficient, and because governance is crucial to engaging the community, key stakeholders and agencies. By bringing community members into the decision-making processes about how disaster recovery programs will operate and be implemented, capability and capacity of the community can be improved. Central to the theory of change guiding this framework is that the governance arrangements are understood as critical activities for achieving community-led recovery.

Some of the specific ways in which governance arrangements can help achieve disaster recovery outcomes, and which can be the subject of evaluations, can be grouped under **general governance** issues and **community involvement in the recovery process**.

General governance

Governance structures can help achieve recovery outcomes by:

- taking a long-term perspective on outcomes and impacts of recovery and recognizing the complexity of the process;
- ensuring recovery programs are monitored on a regular basis;
- ensuring programs are adaptive to changing needs and impact;
- ensuring recovery plans clearly define roles and responsibilities for disaster recovery;
- ensuring governance procedures conform to legislation, polices, and plans;
- establishing community-managed funds and other resources for disaster recovery;
- having a shared understanding among stakeholders regarding disaster recovery responsibilities, authority and decision-making;
- ensuring information is developed and disseminated in multiple media, multi-lingual formats, alternative formats, is appropriate to a diverse audience, user-friendly, and is accessible to under-served populations;
- ensuring governance is transparent and accountable;
- ensuring disaster response efforts are coordinated with recovery activities; and
- managing unintended consequences that might flow from recovery activities.

Community involvement in governance

If the disaster recovery process is to be community-led, the affected communities must be involved in the governance of the recovery programs. This will include:

- stakeholder/community engagement in a timely and on-going way that provides adequate representation of community views;
- establishing a shared vision of a prepared and resilient community that is understood by the community;
- joint planning between community actors and emergency teams and structures;
- ensuring organisations have capacity to develop and manage community volunteers for disaster recovery;
- ensuring recovery plans are developed through participatory processes;
- ensuring that the community has the capacity and formal avenues to lobby and challenge external agencies on disaster recovery plans, priorities, and actions;
- the inclusion/representation of vulnerable groups in community decision-making and management of disaster recovery;
- ensuring agreed plans and management arrangements are well understood by the community and all disaster management agencies;
- ensuring community members have information they need to continue recovering from the disaster;
- evolving community needs are assessed and prioritized during the recovery process to inform recovery activities;
- ensuring governance processes are appropriately inclusive and representative of the affected community; and
- ensuring the community has knowledge relevant to their ability to manage disaster recovery.

8. Publication, dissemination, and learning from evaluation findings

Evaluations of disaster recovery programs are not undertaken for their own sake; they must contribute to the improvement of that recovery effort (if it is ongoing) and subsequent recovery efforts. In other words, while program evaluations are important to ensure accountability (e.g. that funds have not been misspent; programs have been delivered as planned), they are also important to ensure learning takes place and is incorporated into program design.

A balance needs to be struck between making these finding accessible to the affected communities and to the broader public, and the need to be sufficiently comprehensive to inform decision-making. This can be addressed by using multiple forms of publication to suit the needs of specific audiences. An example from the US is provided by FEMA at www.fema.gov/recovery-lessons-learned-information-sharing.

In deciding what elements of an evaluation report need to be published and publicly available, the requirements specified by each jurisdiction's whole-of-government evaluation guidelines need to be followed (see the **Resources for disaster recovery evaluation** section for a list of these guidelines).

As noted earlier, regardless of any other form of publication, the *Evidence Base* must also be updated with each evaluation.

9. Using this framework: A guide for evaluators and disaster recovery practitioners

This chapter draws together key issues identified in the development of this Framework so that evaluators engaged in assessing specific disaster recovery programs can ensure they are meeting the objectives of this Framework. This chapter also will help those commissioning evaluations to identify the minimum requirements from evaluation teams that they oversee or commission. These guidelines should be used in conjunction with relevant jurisdictional guides for public sector evaluations where relevant, listed in Appendix 1 of this Framework.

Determine the evaluation focus and scale

Evaluations of a disaster recovery programs can take a number of forms depending on their respective focus and the scale at which they are undertaken. Deciding on the focus and scale of the evaluative activity will affect the resources that need to be devoted to it and the extent to which it can be done internally by government agencies, or by external evaluation consultants.

Developing Evaluation Plans

1. Provide a definition of the community or communities targeted by the programs to be evaluated, in terms of geographical spread and population make-up to which the recovery outcomes apply, and drawing on the guide provided by the *Community Recovery Handbook* (2011: 67–68).
2. Provide a detailed Program Logic that specifies the particular set of outcomes that will be targeted by a disaster recovery program, including the expected sequence of outcomes. (For example, it may be the case that an enabling outcome needs to be achieved to create the conditions for other outcomes to follow.)
3. Identify the focus of the evaluation (e.g. process or outcomes), and articulate the Key Evaluation Questions that will be addressed.
4. Choose appropriate indicators from the *Evidence Base*. It is possible that relevant indicators for your evaluation might not have been used in other evaluations, and are therefore are not in the Evidence Base. In this case, be sure to add them to the list for the benefit of future evaluations.
5. Identify the benchmarks and criteria by which success for each outcome will be assessed. Indicator benchmarks for comparisons are set with respect to:
   - the pre-disaster state of the community;
   - community needs;
   - the impact of the disaster over time; and
   - other government objectives and policies. For example, specific government agencies will have appropriate standards or targets for water quality and asbestos risks that need to be taken into account when setting recovery standards in these areas.
6. Include a data collection and monitoring plan.

Conducting evaluations

1. Draw on relevant methods that include the community in the evaluation process.
2. Communicate progress toward key outcomes through periodic Community Recovery Progress Reports.
3. Be sensitive to ethical issues and the context in which the community is operating when gathering evaluation evidence.
4. Ensure that the evaluation is conducted independently through appropriate governance and review processes.

Presenting and communicating evaluation findings

1. Discuss how factors external to the recovery process may have had an impact on recovery outcomes.
2. Ensure that the findings are communicated to the relevant communities and stakeholders, noting that there may be need for different reporting mechanisms for different audiences.
3. Ensure that the findings and approach of the evaluation are included in the *Evidence Base* to inform subsequent evaluations.

Community involvement in the evaluation process

As part of the community-led approach to disaster recovery, the community needs to be involved in the evaluation process. There are a number of ways to involve the community, including:

- Two-way communication through social media and other tools to assess needs and priorities.
- Participatory evaluation methodologies that draw on the experience of the community and engage the community in sense-making and deliberation, such as the Most Significant Change approach.
- Drawing on the community involvement where appropriate to assist with data collection. Different communities have different capacities to collect data, however this can be built as part of the recovery (e.g. the Community Data Center in New Orleans after Hurricane Katrina) either formally or informally.

10. Governance and review of the M&E Framework

The existence of an M&E Framework for disaster recovery on its own will not ensure that it is implemented. A governance structure needs to be put in place so that:

1. Disaster recovery programs are evaluated in terms of outcomes, and that evaluative activity follows this framework. To assist, process evaluators should refer to Chapter 9. Process evaluations will also be undertaken, but only as a component for a broader outcomes-focussed approach to evaluation.
2. The key findings from each disaster recovery evaluation are incorporated into the Evidence Base that will inform subsequent disaster recovery programs.
3. The M&E Framework itself is reviewed and revised. This can only be done after a sufficient period of time has elapsed and experience using the framework has accumulated (for an example of how this can be done see the Case studies section of Twigg, 2009). It is anticipated that a review of this Framework will be undertaken every 3–5 years.
4. Evaluation capability among the various groups that might be involved in implementing this Framework is developed. For example, program design staff will have to have some working knowledge of how to design program logics and how to commission evaluations that will satisfy the requirements of this Framework. This will not be the same set of capabilities that might be expected of the team of people who will actually undertake the evaluations.
5. The indicators chosen have been informed by previous recovery evaluations and stakeholder input, but these need to be systematically reviewed and updated as part of the *Evidence Base*.
6. The information added to *Evidence Base* undergoes some form of 'quality control'.
7. State and local government tools for disaster recovery planning (e.g. www.business.qld.gov.au/business/running/risk-management/developing-recovery-plan) reference the M&E Framework to ensure that it is adequately taken into account when designing recovery programs.

It is therefore proposed that a Steering Committee be established to provide oversight for the implementation and review of the framework. This committee should include a range of key stakeholders, external experts in the field of disaster recovery, and experts in the field of evaluation.

It is also proposed that this M&E Framework be 'tested' against a real disaster and reviewed against the findings of this test.

After a sufficient body of disaster recovery evaluations have been conducted this Framework itself should be reviewed. This will include the extent to which the community-led/government-assisted logic that guides this framework is appropriate for designing recovery programs. It should also involve a meta-review of evaluations to assess the extent to which they met the requirements of the Framework and whether they lead over time to improved program delivery.

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Appendix 1: Resources for disaster recovery evaluation

Disaster recovery literature reviews

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Data collection and methodological literature

Brown, D, K Saito, R Spence, T Chenvidyakarn, B Adams, A McMillan, and S Platt, 2011, *Indicators for Measuring, Monitoring and Evaluating Post-Disaster Recovery*, tlc.unipv.it/6_RSDMA/Finals/4.3%20-%20Brown.pdf

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Funnell, S and Rogers, P, 2011, *Purposeful Program Theory*, Josey-Bass, San Francisco.

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Australian Government Attorney-General's Department, 2011, *Community Recovery Handbook 2*, Australian Emergency Management Handbook Series, www.ag.gov.au/EmergencyManagement/Tools-and-resources/Publications/Documents/Handbook-series/handbook-2-community-recovery.pdf

Council of Australian Governments, 2011, *National Strategy for Disaster Resilience,* www.coag.gov.au/node/81

Emergency Management Australia, 2003, *Community Development in Recovery From Disaster*, September, www.ag.gov.au/EmergencyManagement/Tools-and-resources/Publications/Documents/Manual-series/manual-29-community-development-in-recovery-from-disaster.pdf

NSW Recovery Plan, www.emergency.nsw.gov.au/publications/plans/supporting-plans/recovery.html

NSW Ministry for Police and Emergency Services, 2012, *NSW State Emergency Management Plan, (EMPLAN)*, December, www.emergency.nsw.gov.au/media/admin/262/_/7a9tjyhcxjh44kw8c8/EMPLAN_20121201.pdf

Emergency Management Victoria, www.emv.vic.gov.au

Emergency Management Victoria, 2015, *Vulnerable Sections of Society (an emergency management perspective)*, www.emv.vic.gov.au/our-work/reports/vulnerable-sections-of-society/

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FEMA, 2011, *National Disaster Recovery Framework: Strengthening Disaster Recovery for the Nation*, September, www.fema.gov/media-library-data/20130726-1820-25045-5325/508_ndrf.pdf

Whole of Government evaluation guidelines

Commonwealth Department of Finance, Public Governance, Performance and Accountability Act, www.finance.gov.au/resource-management/ performance/

New South Wales Government, 2016, *Program Evaluation Guidelines*, January, www.dpc.nsw.gov.au/programs_and_services/policy_makers_toolkit/evaluation_in_the_nsw_government

Queensland Government, 2014, *Program Evaluation Guidelines*, November, www.treasury.qld.gov.au/publications-resources/qld-government-program-evaluation-guidelines/index.php

Western Australia Government, 2015, *Program Evaluation*, www.treasury.wa.gov.au/Treasury/Program_Evaluation/Program_Evaluation/

Appendix 2: Glossary

Activities
Things the program does with available resources to meet its objectives.

Built domain
"Those human-made assets that underpin the functioning of a community." (*Community Recovery Handbook*, 2011: 89).

Capability
Skills and knowledge possessed by members of the affected community, such as awareness of disaster risks and appropriate disaster mitigation strategies.

Capacity
System-level factors that allow community members to apply their skills and knowledge to bring about disaster recovery.

Community
"A social, religious, occupational, or other group sharing common characteristics or interests and perceived or perceiving itself as distinct in some respect from the larger society within which it exists." *Community Recovery Handbook* (2011: 67–68)

Community Recovery Progress Reports.
Documents that monitor and report on a regular basis progress and future plans for meeting disaster recovery outcomes.

Disaster recovery program
A set of activities that deploy resources with the aim of achieving disaster recovery outcomes. Disaster recovery programs can range from small programs targeted at a particular outcome or outcomes, or towards overall community recovery.

Economic domain
The system whereby the affected community's material and service needs are met through appropriate labour and employment, business development, land use, financial resources, and interaction with the broader economy.

Environmental domain
Encompasses the natural and cultural resources of the community.

Evaluation
Any structured evidence-based analysis that draws together data (quantitative and/or qualitative) to answer questions about the effectiveness, efficiency, appropriateness, and implementation of disaster recovery programs, using clear criteria and standards for assessing the 'success' of the program against particular desired outcomes.

Evaluation plan
A 'document' that sets out in detail how evaluation activities will be conducted to ensure that key evaluation questions are properly answered in the evaluation report, and that standards of success are established prior to evaluation activity being undertaken.

Evaluation report
The 'document' that presents the findings and recommendations from a disaster recovery program evaluation.

Government assistance for disaster recovery
Any activities that are 'sponsored' by government agencies, even when these activities are delivered by non-government organisations (NGOs). This includes activities that are (1) more than the usual level and type of government services that would be provided to similar communities that are not affected by disasters, and (2) whose aim is to get affected communities to a point where they can continue the recovery process on their own terms.

New normal government services
Government services provided to a community after disaster recovery that are consistent with a similar community not affected by disaster.

Outputs
Direct products of the program's activities; evidence that the program was actually implemented.

Outcomes
Changes in participants' knowledge, behavior, skills, status, and level of functioning, or changes to an institution such as environmental conditions and organizational capacity, as a result of the program.

Program logic
Captures in a diagrammatic form some underlying understanding about what it takes to achieve 'successful' recovery.

Resilient community
A community that is better able to withstand a future disaster.

Social domain
The "relationships and connected by networks of communication ... [it] consists of individuals, families and common interest groups that form whole communities" (*Community Recovery Handbook*, 2011: 73).

Sustainable community
A community that has the capability and capacity to manage its own recovery, without government disaster-related assistance.

Appendix 3: Our approach to developing this Framework

This Framework was developed through a number of related processes.

Meta-review of previous literature reviews

This M&E Framework is informed by a number of reviews of the literature on disaster recovery. These are not extensively cited within this Framework, but we acknowledge the contribution that each has made to the development of this Framework:

- Archer, F, McArdle, D, Spencer, C and Roberts, F, 2015, *Literature Review: What Does Good or Successful Recovery Look Like?* Monash University Injury Research Institute.
- Regional Australia Institute, 2013, *Domestic and International Practices in Long-Term Economic Recovery: Literature Review*, Regional Australia Institute. inform.regionalaustralia.org.au/rai-research/item/domestic-and-international-practices-in-long-term-economic-recovery-literature-review.
- Regional Australia Institute, 2013, *From Disaster to Renewal: The Centrality of Business Recovery to Community Resilience*, www.regionalaustralia.org.au/wp-content/uploads/2013/08/From-Disaster-to-Renewal.pdf.
- Ryan, R, Wortley, L, O'Shea, É, Molloy, L, and Campbell, N, 2015, *Review of Current Evaluation Practice Material*, Centre for Local Government, University of Technology, Sydney.
- Winkworth, G, 2007, *Disaster Recovery: A Review of the Literature*, Institute of Child Protection Studies, Australian Catholic University.

Meta-review of official disaster recovery guidelines

Australian disaster recovery guidelines, as well as disaster recovery guidelines from other English-speaking countries, were collected. These official disaster recovery guidelines served as an important base to establish common meanings of disaster recovery, an understanding of disaster recovery concepts and to begin conceptualizing the program logic for disaster recovery.

Review of past evaluations

Past evaluations were collected and guided by the grey literature accumulated by Ryan et al (2015). From these evaluations, we were able to understand how disaster recovery has been evaluated in the past, source common activities undertaken in disaster recovery, as well as how success was measured quantitatively and qualitatively. The activities and indicators were entered into a database, which forms the *Evidence Base* for future evaluations of disaster recovery.

There is a variety of reports that assess disaster recovery programs: formal inquiries or reviews, academic papers, consultant reports, agency evaluations and community reports. We identified five approaches that were commonly used in the grey literature:

Process-descriptive (What did we do?)
These evaluations describe activities that were undertaken but do not assess the effectiveness of these activities in recovery. An example of this is *Flood Relief and Recovery: Victorian Auditor-General's Report*.

Process-evaluative (Did we do what we did well?)
These evaluations both describe activities that were undertaken in the recovery process and assess whether these activities were implemented well. These evaluations are generally more concerned with how smoothly programs were run and focus on complaints related to the processes than the impact of those processes on outcomes. These reports also offer lessons for future recovery. An example of this is *Port Recovery in the Aftermath of Hurricane Sandy: Improving Port Resiliency in the Era of Climate Change*.

Good vs. bad (What went well? What went badly?)
These evaluations generally garner perceptions of what went well and what went badly during the recovery process and do not distinguish between activities and outcomes. These evaluations tend to be simple and done at a local government or council level. An example is *Lessons learned by Community Recovery Committees of the 2009 Victorian Bushfires: Advice we offer to communities impacted by disaster*.

Community progress (How is the community recovering?)
This is a "dashboard" approach where indicators of community recovery are listed and monitored, but are not linked to specific recovery activities or programs. An example of this is the *New Orleans Index at Eight* report by the New Orleans Data Center, which looks at indicators of New Orleans' recovery eight years after the hurricane.

Program evaluations (How did our program impact community recovery?)
These evaluations link specific recovery programs to relevant outcomes or indicators, usually based on a pre-determined framework. Two examples of these evaluations are *Evaluation of the NHS Trauma Response to the London Bombings: Final Report to the Department of Health,* and *Children and the 2004 Indian Ocean Tsunami: Evaluation of UNICEF's Programmes in Aceh, Indonesia.*

Facilitated workshops with ongoing expert review

Four workshops were held to seek the Recovery Sub-committee's feedback in developing various parts of the framework. Experts were also enlisted during this process to attend workshops and provide continuous feedback as the framework was developed.

- 27 October 2015: To discuss elements of outcome domains and a high-order program logic.
- 27 November 2015: To review the outcomes and activities for each domain as well as the draft program logic.
- 9 December 2015: Discussing outstanding issues with governance of the framework and suggesting indicators for outcomes.
- 4 February 2016: To discuss monitoring framework, *Evidence Base* and any final issues with the framework.

Peer-review

Evaluators experienced in disaster recovery were engaged to provide feedback on the first draft of the framework and the *Evidence Base* from a practical evaluation perspective.

Appendix 4: Disaster recovery data collection plan template

Outcome	Indicators	Data collection method	Responsibility for collection	Baseline measure	Interim reporting requirements	Desired change in measure and date
Selected from the Evidence Base across the four domains	Selected from Evidence Base and any others that are appropriate			Where appropriate, this should be pre-disaster measures, or comparison measures from similar unaffected communities	Indicate whether this will be included in Community Recovery Progress Report	At least specify date at which outcome is expected to be reached and the desired level/change that will define success
Outcome 1						
…						