A GUIDE TO

DISASTER RISK MANAGEMENT IN QUEENSLAND ABORIGINAL AND TORRES STRAIT ISLANDER COMMUNITIES

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- Iama Island Council
- Injinoo Aboriginal Council
- Island Coordinating Council
- James Cook University
- New Mapoon Aboriginal Council
- Northern Territory Emergency Service
- Palm Island Aboriginal Council
- Queensland Department of Aboriginal and Torres Strait Islander Policy
- Queensland Department of Emergency Services
- Saibai Island Council
- Umagico Aboriginal Council
- Warraber Island Council
- Wujal Wujal Aboriginal Council
- Yorke Island Council

Introduction

Aboriginal and Torres Strait Islander Communities are special places. Traditional owners have spiritual and cultural links to these areas. Others who live or visit there may do so for family reasons, for work related purposes or just because they are remote and beautiful places.

On one hand this remoteness is attractive, on the other it creates difficulties in access to many of the benefits and services that people from other areas often take for granted. This is even more so in times of disaster.

As well as this, the wet season can be both a time of renewal and a time of danger. The wet brings storms, cyclones, storm surges and floods. Although direct cyclone hits are rare in the Torres Strait, records show that this area has suffered damage from cyclones in other places on numerous occasions.

After a long wet, people enjoy being able to move around more freely again, but the dry also has hazards such as bushfires, exotic animal disease and transport accidents. The good news is that there are things that can be done to reduce the ill effects of these hazards on Communities. Disaster risk management is simply about thinking of the likely problems before disasters strike and doing something about them.

Councils have an opportunity to make disaster risk management an important part of overall community planning to ensure that Communities are developed in a safe and appropriate manner. Some Communities have already completed or are in the process of completing disaster risk management studies and are working at making their communities safer.

This guide will show ways to carry out disaster risk management studies in Aboriginal and Torres Strait Islander Communities. The risk management processes described are adapted from the Australian/New Zealand *Risk Management* Standard AS/NZS 4360[1] and the Queensland Department of Emergency Services *Disaster Risk Management*[2] publications.

The guide is intended to be of assistance to Community Councils, Local Governments, consultants and disaster management professionals, in undertaking or facilitating disaster risk management activities in Aboriginal and Torres Strait Islander Communities.

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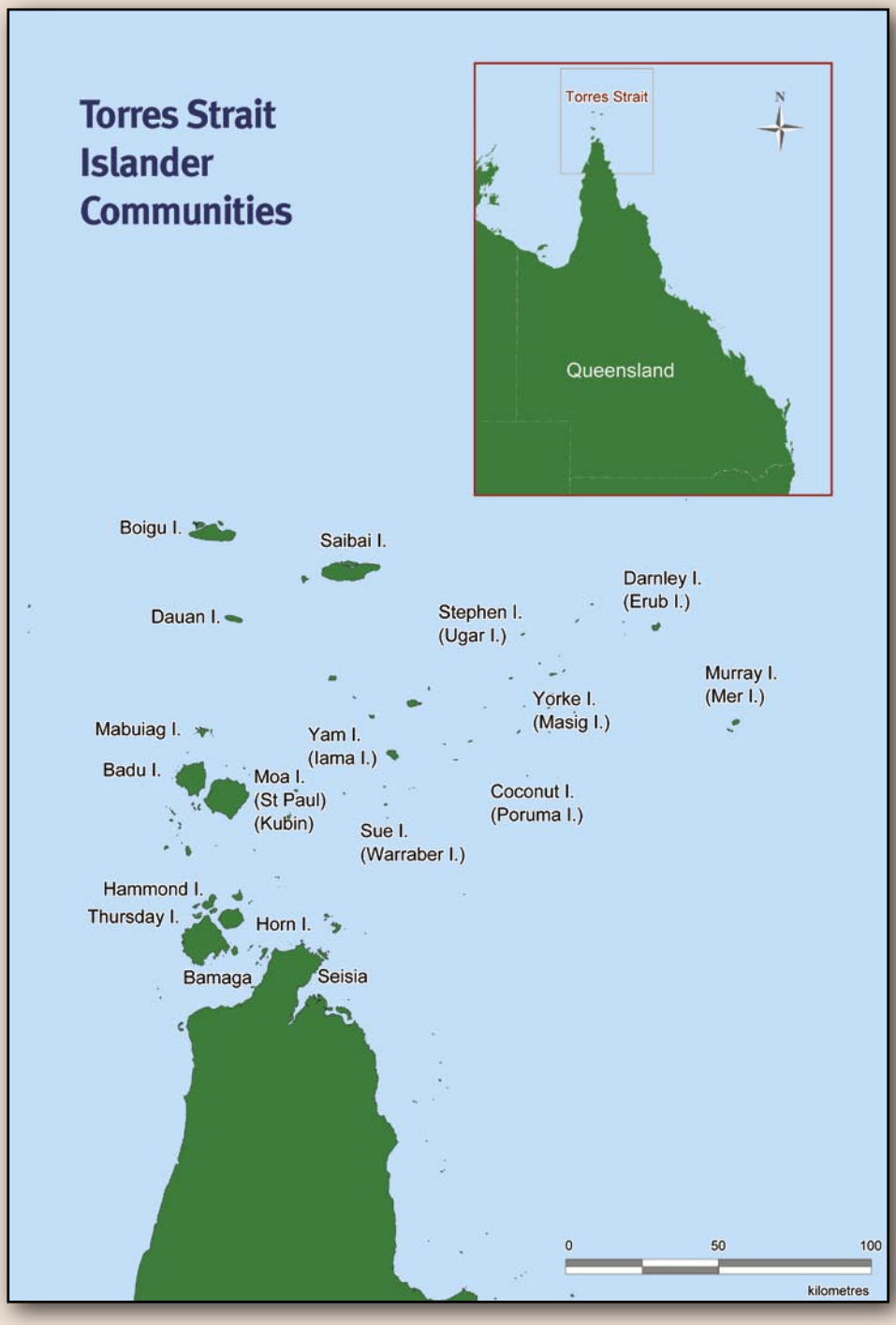
[1] Standards Austarlia, 1999, *Risk Management*, Australian/New Zealand Standard, AS/NZS 4360:1999

[2] Zamecka A, Buchanan G, 1999, *Disaster Risk Management*, and *Disaster Risk Management Guide: A How-to Manual for Local Government*, Queensland Department of Emergency Services

Because different readers have different needs, the guide has been produced in two parts. The first part is printed on coloured paper and is for users who only require an outline understanding of disaster risk management. The second part is aimed at readers who need more detailed knowledge to carry out the process or to oversee work being done by others. Readers seeking even more detailed advice should refer to the Department's *Disaster Risk Management* publications.


Torres Strait Islander Communities
Torres Strait
N
Queensland
Boigu I.
Saibai I.
Darnley I.
(Erub I.)
Dauan I.
Stephen I.
(Ugar I.)
Murray I.
(Mer I.)
Yorke I.
(Masig I.)
Mabuiag I.
Yam I.
(Iama I.)
Badu I.
Moa I.
(St Paul)
(Kubin)
Coconut I.
(Poruma I.)
Sue I.
(Warraber I.)
Hammond I.
Thursday I.
Horn I.
Bamaga
Seisia
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50
100
kilometres

Disaster story

This story is included to show how Communities can be harmed by disasters. Although the story did not really happen in any one Community, many of the events did happen in Communities around Australia. Perhaps a flood like this could not happen in your Community but it would still be a good idea to think about other things like cyclones, storm surges and bushfires and how they may harm your Community.

Each wet season, flooding isolated the Community. The people understood that this was normal and arranged the way they lived to suit. They made sure that they had enough food and other supplies, and used the season to come together to talk about the future and to remember important things from the past. Elders spoke to the young people about their culture and explained how things came about, and the importance of respect for the land and traditions. The land was restored and so were the people.

One day the Councillors were worried and spoke with the people. They warned them that a big flood was coming and that it might be bigger than anyone could remember. They told the people to get ready in case they had to move to high ground until the flood passed.

As the water started to rise, some of the houses and other buildings were flooded. The telephones and the electric power generator stopped working. This meant that the freezers in people's houses and the store also stopped working and the food started to go bad. People from the flooded houses began to move to houses of other family members.

The water still kept getting deeper and just about all the houses were flooded. Most people had now moved to high ground about ten minutes walk from their homes and set up camp there. People were worried about the sick people and the old people.

Early next day, an aircraft flew over the Community and the campsite, but could not land because the airstrip was also flooded. Later that day, a couple of helicopters arrived and a government officer that the people did not know, told everyone that they had to leave because the flood was still getting bigger and that lives may be lost if they did not leave immediately. He told the people that they would be taken to a safe

place and that they would be looked after. Many people were confused and tried to understand what would happen to them, but soon some people decided to leave. The helicopters kept returning until nearly all the people had been taken away. Those that were left did not want to leave and told the officer that they did not want to go. He told them that they had no choice and must leave while they had the chance. Reluctantly, the last people left but felt very sad about leaving their homeland.

The town where the people were taken was about 200 kilometres from their home. All the people were taken to the showground where some people were moved into dongas that had been built to house construction workers in the past. The rest of the people lived in caravans.

Some of the sick people were taken to the hospital. Health workers and community workers visited people to see if they could help them. The Councillors were angry that they were not consulted about important decisions. All the people felt bad about what had happened to them and were worried about their future. Most felt that they would have been better off if they had stayed in their homeland.

Each day people asked when they would be taken back to their homes. They were not sure who was the best person to ask and so they asked many different people in the hope that they might find out. Some people told them that they would return in a few days, others said that it might be weeks and others still said that they did not know. All the people were worried that they were not being given all the facts. Everyone felt confused.

It was seven months before people were taken back to their homes. The houses and other buildings had been repaired and power, phones and other things were working OK, but it was not the same. In the past there had always been someone there to stay on the land and to make sure that proper things had been done. It was different now because the link had been broken and the country now seemed a stranger to them. It could never be the same because some of the old people had died and some of the young people had stayed in town and had turned their backs on traditional life.

The big job ahead was to make peace with the land and traditions.

The Councillors said that this should never happen again and that the Community should think about better ways to do things in future.

Some of the important things in this story are:

- People had not seen such a big flood before
- Important things like electric power and telephones were damaged by the flood
- Houses were built on the flood plain
- People had not thought of what to do if a big flood happened
- Evacuation of the Community probably saved many lives
- People had not thought about cultural issues and big floods
- There was no effective disaster plan in the Community

Disaster risk management is a way for people to think about problems like this before they happen and to do things differently so that their Community is safer. This book shows how to do this.

Managing disasters in Queensland

This chapter explains how disasters are caused and how they are managed in Queensland.

It also explains that not every emergency is a disaster and that these emergencies are managed in other ways.

Every year hazards like cyclones, floods and bushfires hit parts of Queensland. Sometimes they hit places where no one lives and cause no real harm and may even be good for the country. The wet season isolates many Communities but this is not a disaster. Disasters happen when a big hazard like a cyclone, a flood, or a bushfire hits a Community and causes a lot of harm.

Disasters can kill and injure people, destroy their homes and damage things like Community buildings, roads, water supply, electric power and telephones, and cultural sites. Disasters cause a large amount of harm to a Community. The harm done to a Community can last a very long time. If a cyclone hits a big city and wrecks ten houses, it is a serious event, but life in the city will go on normally. If a cyclone wrecks ten houses in a small Community, it may have destroyed half the houses in that Community and this would be a big disaster.

So disasters are measured by what harm they cause to a Community not just by how many things they damage.

To recover from a disaster, many different things need to be fixed and people need a lot of help. Many of these services need to be brought into the Community from outside. There are also people in the Community that will be working hard like Police, Fire and Ambulance Services, health workers and Council workers (including the local SES[3]). All of this needs to be managed by the Council because they know their Community better than anyone else, but they will need help from outside the Community. The Council should be in control in most cases but sometimes this may not be possible because disasters may cause so much damage.

The way disasters are managed in Queensland is governed by the *Disaster Management Act 2003*. The disaster management plans in Queensland expect people to help themselves where possible. The plans also expect Councils to help their Communities as much as they can. Councils can do this by having disaster plans that

[3] SES here means Queensland State Emergency Service local volunteer units.

explain how disasters will be managed and by how communities can be made safer when planning development projects.

Even though the State Government will help Councils when they can no longer give their Communities all the help that they need, Councils should understand that disaster relief only includes essential things like basic food, clothing, medical and shelter items. The State may also need help from the Commonwealth Government.

The Department of Emergency Services has a number of Disaster Managers who can help Councils to plan for and manage disasters, and give advice on how best to apply for disaster relief funding. In the back of this book you will find information about these officers and how you can contact them.

All Councils in Queensland are grouped into Disaster Districts so that help from the State can be given more easily. When Councils need help, they should contact their District Disaster Coordinator. Your Disaster Manager can help you to get to know the District Disaster Coordinator.

Disasters are big events that need a lot of different people working together to help Councils manage them, but there are other emergencies that are managed by Police, Fire and Ambulance services.

Emergency incidents include transport accidents, house fires and missing person searches. The emergency incident manager may sometimes ask the Council for help like support from the SES or use of Council equipment, but even in these cases, the emergency incident manager remains in control. In remote Communities it often makes sense to make the best use of available resources and skills and form multi-skilled Emergency Service Units. The *Disaster Management Act* allows this and Disaster Managers can help Councils form these units.

Disaster risk management: How to do it

This chapter shows the basic steps of disaster risk management.

It shows how to work out what risks there are in a Community and what to do about them.

Understanding the diagram

The small outer circles in the diagram at the start of the chapters show the steps of the disaster risk management process. The process starts at *Deciding How We Are Going to Work* and continues clockwise in the direction of the arrows. The inner circle shows the things that we should think about at every step. At the start of each chapter that explains a step, a diagram is included with the circle showing the chapter title highlighted in white.

Managing disaster risks

There are two ways of managing disasters. The first way is to wait until one happens and then try to do something about it. Doing this can be costly and dangerous. A far better way to manage disasters is to think about them before they happen and to work out ways of making the Community safer ahead of time. A disaster risk management study can help us to do this. Some Councils have either completed studies or are working on them so that they can work out how to make the Communities safer without needing to wait until a disaster hits.

We know now that disasters can happen when a hazard hits a Community. By thinking ahead of time about the risks of hazards harming important things in the Community like people, houses and Community services, we can start to work out how to make these risks less. Disaster risks are the chances of harm happening when a hazard hits important things in a Community. Disaster risks are not the things that will happen, they are the things that could happen. By thinking about each hazard and the important things in the Community that could be harmed, and working out what might happen, we can make a list of the risks to our Community.

We also have to think about the chance of a risk happening and how much harm the risk may cause.

When we are thinking about risks, it is important to talk to other people about what we are doing and ask them how they think about the risks. The Community needs to agree on what risks are important and which ones should be worked on first.

Once we have agreed on this we can start thinking about what can be done to make these risks less. These things are called risk treatments. Sometimes there are numbers of different ways that a risk can be treated. There will be times that we can't fix the risks fully and we may have to learn the best way to live with them. We should think about which is the best way to lessen the risks. In working out how to treat risks we may sometimes need the help of experts like planners, engineers and disaster managers.

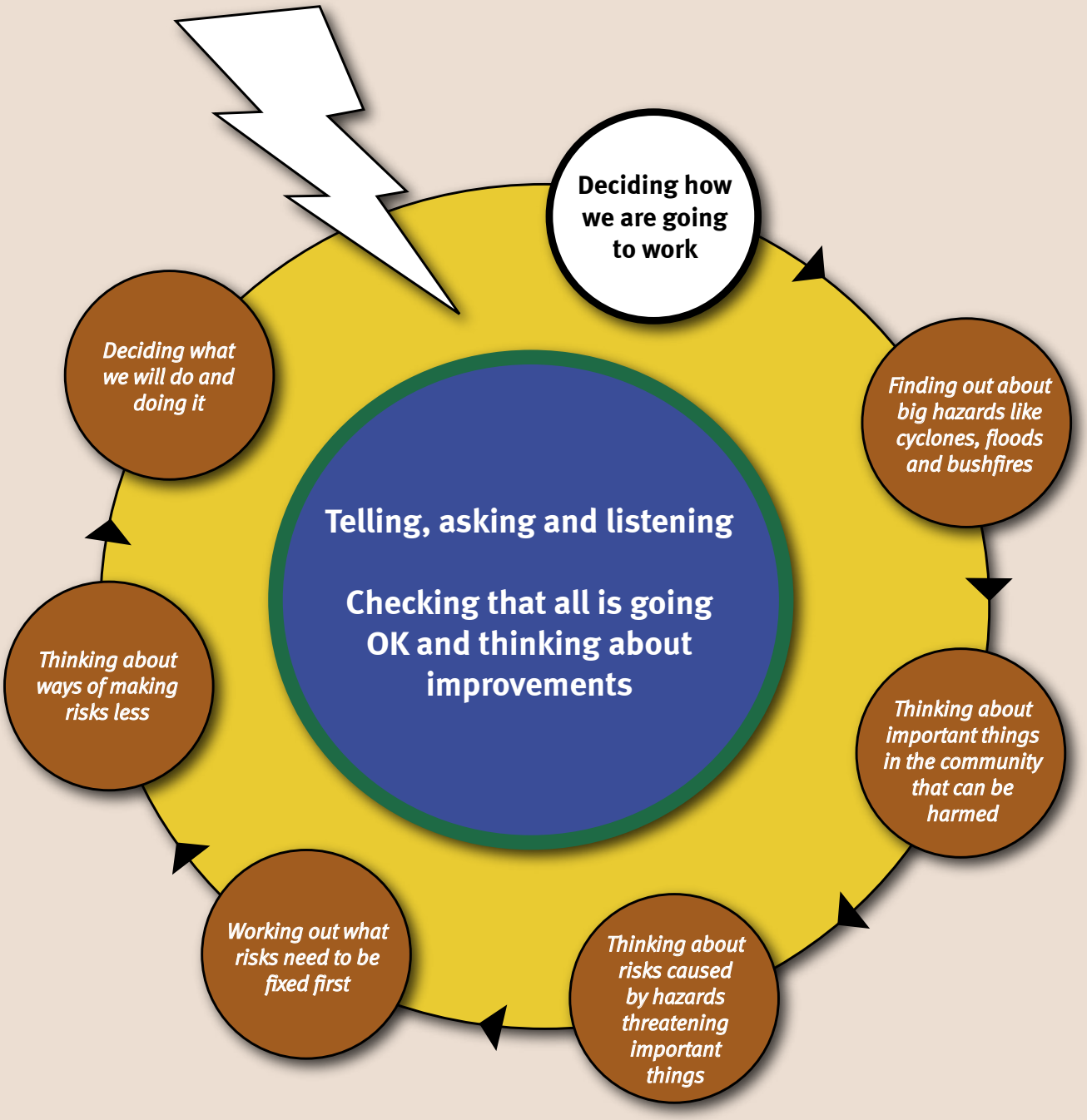
Council needs some idea of how long it will take to treat the risks, how much this will cost and where the funds will come from. Once these things have been considered, Council needs to include this work in their plans. Disaster risk management should be a part of normal Council planning and not an isolated activity.

Disaster risk management is an ongoing process and should be reviewed whenever Council plans are revised or after a disaster has hit the Community. Because of this everything should be written down or recorded properly so that people who may do the next round of the study are able to follow on from our work and not need to waste time.

The next parts of this book will take us through the steps of disaster risk management.

The best time to start disaster risk management is now. Work to make your Community safer as soon as possible because disaster could strike tomorrow.

Deciding how we are going to work



Before we start to think about the risks that may affect a Community, we need to think about how we will manage the whole project.

This chapter explains numbers of things that we need to think about.

When we start a disaster risk management study, we have to decide how we will work so that everything goes OK.

If the study is to work out properly the Council and its management must strongly support it and make it clear that it will do its best to carry out the recommendations that will make the Community safer. If this does not happen then it is probably very difficult to make the study work.

There are a number of reasons why the Council needs to carry out a study and they include:

- Council has a responsibility to make sure that people in the Community are protected from harm;
- Council has a responsibility to try to lessen the damage caused by disasters;
- Council should try to protect Community enterprises from loss;
- The *Disaster Management Act 2003* requires Council to do these things and gives it the power to do them;
- Council needs to make sure that it gets the full amount of natural disaster relief funding[4];
- The study can be used to justify funding for infrastructure projects.

Council may be able to get the funds to carry out a study under the Natural Disaster Mitigation Programme[5]. Council may decide to carry out the study itself or to hire a consultant to help them with the work that needs to be done. Council must stay in charge to make sure that Community interests are recognised and protected. Experience has shown that the best and most useful studies are those where Council has taken a strong leadership role.

Council needs to appoint a study manager to run the project and the study manager needs to appoint other people to help work on the study (the study advisory group).

The study manager should be the Council Chairperson or another senior Council member. The members of the study advisory group should be people that can help make the study work properly and may sometimes be the full Council. These people have strong Community links or special

[4] Commonwealth/State Natural Disaster Relief Arrangements (NDRA) are briefly explained in *Sources of Funds*.

[5] The Natural Disaster Mitigation Programme (NDMP) is briefly explained in *Sources of Funds*.

skills in things like Community planning, management, infrastructure and welfare. Most studies need information from other specialists like engineers, planners and disaster managers. These specialists may not need to be full time members of the study advisory group but they may be able to give useful advice when needed[6].

When the study advisory group is set up, it needs to work out things like:

- The study budget;
- The important steps of the study;
- When the study will be finished;
- How to check on study progress;
- Who needs to know about the study and how they will be told;
- Will Council do the study itself or will a consultant be used;

[6] Information and advice is discussed in *How to get and use Information*.

- Will outstations be part of the study;
- What things have been done in the past to lessen the effects of disasters in the Community;
- When will the study advisory group meet.
- Special things about the Community like people's beliefs, fears, strengths.

When this has been done, we can get on with the job of thinking about the risks and how to lessen them. All of the work must be done carefully and use the best information available. Some of the work that is needed to lessen the risks may be able to be done with funding from the Natural Disaster Mitigation Program but Council should understand that success in getting these funds will depend upon how well the disaster risk management study is run.

Finding out about big hazards like cyclones, floods and bushfires

Before we can work out what risks our Community may face, we need to know about what hazards might hit the Community and cause a disaster.

We also need to understand other things about the hazards like how often they may happen and how bad they may be. This chapter shows some things we need to know about hazards.

Disasters can happen when a hazard hits a Community so we need to find out what hazards are likely to hit our Community and as many other things about them as we can.

By talking to people who know about our Community, we can find out what hazards have hit our Community in the past and how bad they were. Sometimes people know stories about really bad hazards that hit a long time ago and these may be helpful also. Even though this may be helpful, we need to take care how we use this knowledge because people sometimes can't remember what happened properly and make mistakes.

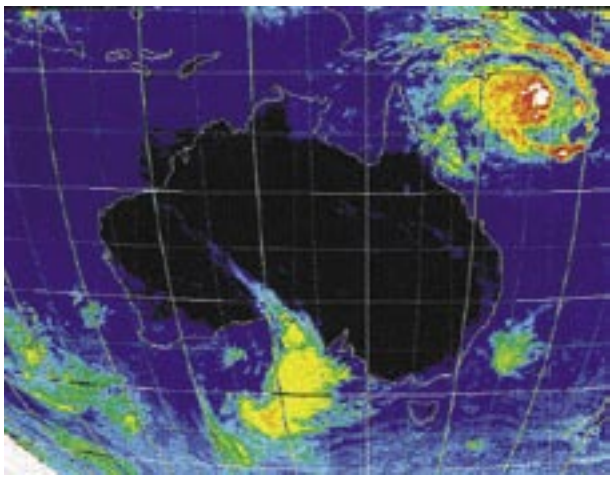
When we think about hazards it is helpful at first to only think about things like, how much warning we may get, how bad could it be, how often may it happen, how long may it last and what parts of our Community

may be hit. It is a good idea to have maps showing what parts of our Community can be hit by the different hazards. Later on we will think about what things in our Community may be harmed by each hazard.

Some people from outside our Community have important information about hazards. They can often tell us things about hazards that the Community has not experienced. For example, people at the Met Bureau[7] know a lot about hazards caused by the weather and can help us to understand a lot more about storms, tropical cyclones, tornados, storm surge and floods.

Figure 1

Hazards that could hit our community	
Storm	X
Cyclone	X
Storm surge	X
Flood	X
Tornado	X
Bushfire	X
Tsunami	
Landslide	
Transport accident	X
Environmental pollution	
Exotic animal (or plant) disease	X



There are other people who also know about some of these hazards and others who can tell us a lot about bushfires, landslides, earthquakes and tsunamis (sometimes called tidal waves).

Some hazards can be caused by actions of people like major transport accidents, environmental pollution and exotic animal (or plant) diseases like foot and mouth. There are people who can help us understand more about these things also.

In the back of this book there is a section called *How to Get and Use Information* and it will give you some ideas about how to do this. Your Disaster Manager may be able to help you also.

This shows how one Community may fill this out. Other Communities may be different.

[7] Correctly known as the Commonwealth Bureau of Meteorology

The next step is to get more information about each hazard like, how much warning time is likely, how bad it may be, how often it may happen, how long it may last and what parts of our Community may be hit.

A lot of information may be needed to get a really good idea of how bad the hazard may be in different parts of the Community area and sometimes this may need a proper engineering study to get a complete picture. The important thing about disaster risk management is not to wait until we get a perfect picture, but to do it now with the best information we can get.

It is also important to make a note of the important things about hazards that we don't know yet because we may want to find out more in the future.

The Example Risk Register in the back of this book shows how this information is used.

Thinking about important things in the community that can be harmed

Disasters can happen when a hazard hits important things in our Community.

Before we can work out what the disaster risks are, we need to think about the important things in our Community that we need and value.

We know that disasters can happen when a hazard hits a Community and we have now worked out what hazards may hit our Community. We also know how bad these hazards may be, what parts of our Community they may hit and many other important things.

Before we can work out what the disaster risks are, we need to think about the important things in our Community that the hazards could harm.

The first thing to do is to make a list of important things in our Community. These should be the things that we need and value (they are sometimes called vulnerable Community elements).

Here is a list of things that may be helpful for us to start to think about.

- People (especially those who may need lots of help like old people, children and sick people)
- The types of houses they live in and their construction and condition
- Personal property (like furniture, TV, fridges, washing machines, cars, boats, kids toys)
- Pets (like dogs and horses)
- Outstations
- Community buildings (like school, Council office, health centre and aged hostel)
- Services (like electric power, telephones, BRACS[8], water supply, sewerage, rubbish disposal, roads, airport, health centres, schools)

[8] Broadcasting for Remote Aboriginal Communities Service

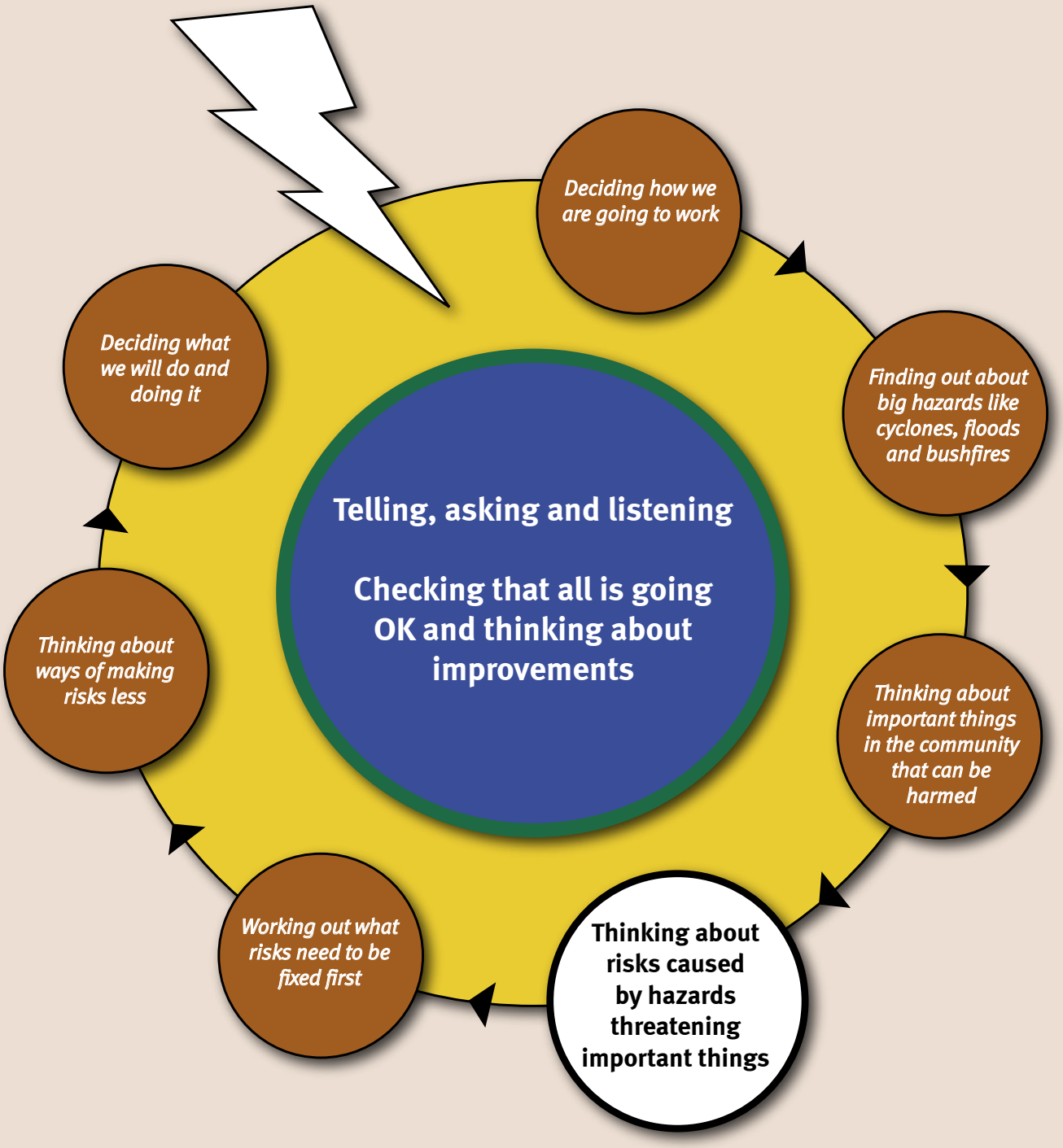
- Community enterprises (like shops/ supermarkets, canteens, fuel outlets, tourism business, livestock, machinery).
- Cultural and heritage items and places (like sites of cultural significance, cemeteries).
- Sensitive ecology (like rainforests, rare plants and animals, coral reefs)

Every Community is different and so each Community needs to make its own list. It is important to ask people in the Community if we have found out all of the important things in the Community.

Many of these important things in our Community can be marked on maps. This will help us later to work out what the risks are, because we can see where the hazard hits our Community and what important things may be harmed. For example, if we have a map showing where floodwaters may go and on the same map we have houses marked, it may help us to think about how many people may be homeless.

The Example Risk Register in the back of this book shows how this information is used.

Thinking about risks caused by hazards threatening important things



Now that we know what hazards may hit our Community and have thought about important things in the Community, we can put the two together and work out what the risks may be.

The first thing to do is to look at a hazard that might hit our Community and to think about the important things in our Community that may be harmed. Then we take the next hazard and do this again. We keep on going until we have thought about what harm all hazards may cause. If we have maps showing where the hazards hit our Community and that show where the important things in the Community are, they will be very helpful to us in working out what the risks are to our Community. Computerised maps can be drawn with GIS[9] and this kind of mapping is available for many Communities.

We can also make up a table from what we have done before (like the one in Figure 2) and this may help us to work out the risks. The way we use this is to put an X where a hazard may harm an important thing in the Community. For example, a transport accident may only cause harm to people and the environment. Each Community will probably be different.

The table below only has a few important Community items to show how to start to working out risks. We can make our job easier if we put in more detail about

Figure 2

Hazards and the important things in our commumity that may be harmed

Community	Hazards							
	Storm	Cyclone	Storm surge	Flood	Tornado	Bushfire	Transport accident	Exotic animal disease
People	X	X	X	X	X	X	X	
Houses	X	X	X	X	X	X		
Personal property	X	X	X	X	X	X		
Pets		X	X	X	X	X		
Outstations	X	X	X	X	X	X		
Community buildings	X	X	X		X	X		
Services	X	X	X	X	X	X		
Community enterprises	X	X	X	X	X	X		X
Culture and heritage			X					
Environment		X				X	X	

[9] GIS means Geographic Information Systems.

important things in the Community, for example, instead of just having people we could also put in children, aged people and sick people because we will have to think about risks to each of these groups. We can do the same thing with the other items listed in the table.

Now we can start to write down the risks and the things that would be likely to happen as a result (these are also known as the consequences). It is important to try to think about the number of things that may be at risk and to use numbers to describe the consequences wherever possible so that we get a good idea of how bad the risks and consequences may be.

For example, there may be a risk that a 3 metre storm surge may destroy 20 houses. The results (or consequences) are that 20 families may be homeless, 20 houses may need to be rebuilt and that 20 temporary houses may need to be provided. If we think about the effect of a storm surge on people, it may be that there is a risk that a 3 metre

storm surge may directly affect up to 80 people. The results (or consequences) are that as many as 80 people could be killed or seriously injured and that most members of the Community may need counselling.

We also need to remember that we are thinking about risks and not hazards alone.

Some risks are not so easy to work out, for example if we think about the effects of a storm surge on the health centre, it may be that the storm surge does not hit the health centre, but there is a risk that the health centre could be so busy that it could not give care to everyone who needs it. The consequence could be that lives may be lost because people cannot get medical help.

We need to keep working our way through all the things marked in the table and come up with a complete set of risks and consequences. This can take a fair bit of time, but it is important to do it properly.

The Example Risk Register in the back of this book shows how this information is used.

When we have done this we need to ask people in the Community if we have worked out all of the important risks to the Community.

Working out what risks need to be fixed first

Now that we have made a list of the risks to our Community, we can begin to work out which are the most important risks to fix first.

The first step is to think how likely it is that these risks could really happen. You can think about this in different ways, but in the end you will have to make a judgement based on your knowledge and the advice of the Community and people who are experts in studying hazards and their effects on Communities.

Some ways of thinking about the likelihood of risks really happening are shown below.

- Could happen at least once each year (1 year)
- Could happen in each generation (about 20 years)
- Could happen in my lifetime (about 100 years)
- Could happen, but probably not in my lifetime (up to 500 years)
- Not much chance that it would ever happen (more than 500 years)

It is important to understand that these risks are likely to happen in the times shown but they could happen on any day and happen again on the next or any other day.

Figure 3

Working out how bad the consequences may be

	Consequences
Slight	Nobody hurt, houses and possession OK, low cost, most services working normally.
Small	A few people need slight first aid treatment, some pets lost, a few personal possessions damaged, slight house damage, a few people may need to move to other houses until the hazard passes, occasional disruption to some services, nearly all things can be handled by the Community and Council.
Medium	Some people need medical treatment for injuries, a few houses have damage that can be fixed within the Community, some services fail, Council enterprises stop working normally, numbers of people are worried.
Large	A few lives may be lost, many serious injuries, numbers of houses badly damaged, many people homeless, large costs, damage to culture and traditions, many Community services not working, evacuation likely, external help needed.
Huge	The Community cannot work properly, many lives lost and many serious injuries, most houses and other buildings wrecked or badly damaged, major failures of Community services, huge costs, people scared and really worried, fear for traditional Community survival, evacuation probable, people may leave the Community for good, long term counselling of the Community membesr needed, massive recovery effort needed. Almost all recovery resources must come from outside the Community.

After we have done this work, we can write down the hazards, the important things in the Community, the risks, the consequences of all risks and the likelihood of them happening.

There are still a couple of things left to do. We have to think about how bad each risk is and work out if we need to do anything about it. We can work out how bad a risk is by thinking about both the consequences and likelihood.

We first need to think about the consequences and how bad they are. We can divide them into different groups. We can break them up as shown in Figure 3, but we may also wish to add to or change some of the consequences to suit our Community.

We can now think about each risk and describe its consequences as shown in Figure 3. This means that we can now make a list showing all the hazards that might hit the Community, the important things that can be harmed, the disaster risks, the likelihood of the risks really happening and the consequences if the risks happen.

The last thing we need to do to properly understand the risks is to work out which are the worst ones so that we can think about which ones need to be fixed first. We know that the worst risks are those that may happen often (likelihood) and cause a lot of harm (consequences). This means we can think about both the likelihood and consequences and work out how bad a risk is.

To help us sort them out we can decide if risks are extreme, high, moderate or low.

- Extreme risks have to be managed immediately.
- High risks need to be managed by the whole Council.
- Moderate risks should be managed by nominated Council officers.
- Low risks should be managed through normal Council programs.

The table in FIgure 4 will help us work them out.

Figure 4

Working out how bad the risks may be

Likelihood	Consequences				
	Slight	**Small**	**Medium**	**Large**	**Huge**
Each year at least	High	High	Extreme	Extreme	Extreme
Each generation	Moderate	High	High	Extreme	Extreme
In my lifetime	Low	Moderate	High	Extreme	Extreme
Not in my lifetime but likely	Low	Low	Moderate	High	Extreme
Not much change	Low	Low	Moderate	High	High

Suppose that each year there is a risk that a bad flood may hit our community. We might have found out that the consequences are that people's lives may be lost and that there is a likelihood that a flood like this may happen at any time in 100 years (it could happen more often than this). The example in Figure 5 shows how to use the table to work out how bad this risk is. We can see that large consequences and the likelihood of this risk happening in my lifetime (nearly) combine to give us an extreme risk.

Figure 5

Working out how bad the risks may be

Likelihood	Consequences				
	Slight	**Small**	**Medium**	**Large**	**Huge**
Each year at least	High	High	Extreme	Extreme	Extreme
Each generation	Moderate	High	High	Extreme	Extreme
In my lifetime	Low	Moderate	High	Extreme	Extreme
Not in my lifetime but likely	Low	Low	Moderate	High	Extreme
Not much chance	Low	Low	Moderate	High	High

With the help of this table we can now sort out the risks in the order we need to work on them.

After we have sorted out the risks, it is important to make sure that we talk to people in the Community about them and check that we have sorted them out properly so that we can fix the worst risks first.

The Example Risk Register in the back of this book shows how this information is used.

Thinking about ways of making risks less

We now understand the hazards that may hit our Community and the important things that can be harmed.

We also know what the risks are and which ones are worst.

We can now work out which risks need to be fixed first and the best ways to lessen them.

Because disasters are caused by hazards hitting Communities, we can lessen disaster risks by doing things that lessen the hazards or by doing things that lessen damage to Communities. Some hazards like bushfire and flood can be lessened, but so far, nothing can be done about others like cyclones and earthquakes. We can usually lessen disaster risks from all hazards by working on things in the Community.

To see how this works we can think about a Community facing risks from bushfires. We can work on the hazard by doing things like burning off or clearing fire breaks. We can also work on the Community by doing things like building houses that are less likely to burn or telling people how to act more safely. In this case it would be best to work on both the hazard and the Community.

Another Community may face risks from storm surge. There may not be much that we can do to stop the storm surge so we must work on the Community. We could move all the houses and other buildings out of the area where storm surges can hit or evacuate the people to a safe place until the surge is over. We can see that some actions are better than others.

We can often do things to prevent disasters from happening. We can prepare for a likely disaster caused by a hazard that is soon to hit our Community. We can respond to a disaster when it happens and we can recover from a disaster after it has happened. The list in Figure 6 shows some things we can do in all of these stages. You may be able to think of more.

Now we can look at our list of risks and think about how to fix each one. We should try to think up a number of ways to lessen each risk (these are known as risk treatments) and use Figure 6 to help us. Once we have done this for all risks, we should think about which risk treatments would be the best ones for each risk. Sometimes there may only be one treatment that we think is useful but sometimes there may be a number of treatments that would be useful to lessen each risk. We should recommend which treatments we think would be best and explain why. It would be helpful if we could find out roughly how much each of these treatments might cost.

Figure 6

Some ways of making disaster risks less	
Prevention	Apply disaster risk management to all Council planning Educate people about the risks and what to do Apply improved building regulations and standards Move unsafe parts of the Community to safe places Regulate land use to avoid areas at risk from hazards like flood, bushfire, landslide, storm surge Reduce or alter hazards (build dams, levees, retaining walls, hazard reduction burning, fire break construction and maintenance) Improve Community development planning Improve essential servicesDevelop disaster plans
Preparation	Warn the Community Educate and inform the Community Evacuate areas at risk Clean up properties Stock up with food, water, fuel Activate disaster management centre
Response	Rescue Medical treatment Issue warnings Provide emergency food, water, clothing and shelter Survey damageTell the Community what is happening
Recovery	Restore essential services Provide temporary housing Provide health and safety services Tell the Community what is happening Activate disaster relief assistance measures Commence counselling programs

We can now make a list of hazards, important things in the Community, risks, consequences and likelihood. We can also sort the risks out according how bad they are, show a number of ways to treat each risk, recommend which treatments we think are best and explain why, and give a rough idea of the cost. This information needs to go to the full Council.

The Example Risk Register in the back of this book shows how this information is used.

We have found out as much as we can about the risks for now. The next thing that needs to happen is for Council to decide what it thinks should be done and when.

Deciding what we will do and doing it

This chapter describes how disaster risk treatments should be included in Council plans.

It also describes some of the other requirements for disaster management planning by Local Governments.

Now that the disaster risks and their treatments have been worked out, Council needs to think about these along with other risks[10] faced by Council and decide what will be done, when it will be done and include this in Council's plans. The disaster risk management study, together with the Council plans about how the approved disaster risk treatments will be carried out form a disaster mitigation plan. When Council plans are reviewed each year it is important to also review what has been done to reduce disaster risks and to work out what will be done in the year ahead. It is also important that Councils think about how disasters would affect all of its plans. For example, a disaster may be so costly to a community that development projects may have to be cancelled.

As Aboriginal and Torres Strait Islander Councils move to full Local Government status there are a number of things that must be done to manage disasters and to ensure that Councils are eligible for full disaster relief funding assistance.

These include:

- Prepare a local disaster management plan[11] that takes into account State disaster management policy and guidelines;
- Review the plan at least once each year;
- Develop corporate and operational plans that include disaster mitigation[12]; and
- Ensure that new development projects comply with the State Planning Policy 1/03 (Mitigating the Adverse Impacts of Flood, Bushfire and Landslide).

Disaster Managers are able to advise Councils about disaster management planning.

[10] Risk Management is a valuable management tool for Councils which allows consideration and management of all types of risks including disaster risks, legal risks, financial risks, political risks, workplace risks and so on.

[11] The *local disaster management plan* includes disaster mitigation plans as well as disaster response plans. See the *Disaster Management Act 2003* especially **s 57 – s 62**

[12] See the *Local Government Finance Standard 1994* especially **s 15 – s 18**

Telling, asking and listening – checking that all is going ok and thinking about improvements

Proper consultation is an important part of disaster risk management studies. Regularly checking study progress and making sure that it is on track is also important.

This chapter looks at these things.

Telling, asking and listening

When Council is trying to work out what disaster risks a Community may face, it is very important to make sure that the whole Community understands what is happening. This is important because their help will be needed in thinking about the risks and what can be done about them.

Every Community has its own ways of discussing things and it is very important that people from outside the Community respect this and understand that these discussions need to be managed by the Council. If this is not done properly then it may be found that the information given may not be accurate, complete or fully accepted.

Aboriginal and Torres Strait Islander Communities are very good at working out Community views. Because the ways these things are done are very thorough, they can often take some time before they are complete and this has to be thought about when carrying out disaster risk management. The opinions, views, experiences and proposals of people in the community should be heard.

A disaster risk management study has a number of steps where it is useful to explain what is happening and to ask Community members about important things that they may have to tell. Some steps may involve the whole Community but others may only need people with special knowledge. Special knowledge includes traditional explanations about hazards and their causes. This may help later in working out the best ways to fix some risks.

The people managing the study need to think about ways that they can help with explaining how disaster risk management works. Things like getting some brochures and posters printed may be helpful and these should be included in study costs if they are needed. Other things like explaining disaster risk management to school children cost nothing but can be useful in helping parents to understand also.

Although the ways that things are explained need to be simple and clear, it is important to make sure that at least some Community members understand risk management

terms in common use so that they can access additional information sources about risk management if they desire. In this way, disaster risk management can also lift Community development skills.

Each Community will work out the best ways of telling, asking and listening and the important thing is not how it is done, but the fact that it is done.

Checking that all is going OK and thinking about improvements

As we are working our way through the disaster risk management study, we need to pause sometimes and think about how things are going. A good time to do this may be near the end of each step.

Some of the things we should think about include:

- Are we giving enough information to people who need it?
- Are we giving them a chance to give us information?
- Are we getting all the information we need?
- Is the study going along with the timetable?
- Are the study costs in line with the budget?
- Is the study doing the things we wanted it to do when we started?
- Is the study telling us more than we knew when we started?
- Is the study likely to help us understand how to make the Community safer?

If the answer to any questions like these is no, we need to work out what we can do to fix this.

It is far better to find out that things are not going well early than to wait till the study is finished. If we find out early enough we can probably make some changes to get things going the right way. The important thing is to check how things are going at each step,

Useful information and where to get it

The following list of publications and web site addresses contains some sources of information about disaster management issues. It should be noted that web sites do not always remain the same. Web site addresses and their contents may change.

- Australian Geological Survey Organisation (AGSO) – Geoscience Australia, *Community Risk in Cairns: A Multi-hazard Risk Assessment, AGSO*, Canberra.
- CSIRO Atmospheric Research, 2002, *Climate Change and Australia's Coastal Communities*, CSIRO Atmospheric Research.
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- Emergency Management Australia, 2002, *Planning Safer Communities – Land Use Planning for Natural Hazards*, Commonwealth of Australia, Canberra.
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- Harper B. A., 1996 'Risk Modelling of Cyclone Losses', *Proc. IEAust Annual Engin Conf.*, Institution of Engineers Australia, Darwin.
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- Queensland Department of Emergency Services, 2000, *Disaster Risk Management Guide: A How-to Manual for Local Government Emergency Risk Management Application Guide*,

Queensland Department of Emergency Services, Brisbane.
- Queensland Department of Emergency Services, 2001, *Natural Disaster Risk Management Guidelines for Reporting*, Queensland Department of Emergency Services, Brisbane.
- Standards Australia, 1999, *Australian/New Zealand Standard for Risk Management*, AS/NZS 4360:1999.
- Standards Australia, 1999, *Construction of Buildings in Bushfire-prone Areas*, Australian Standard, AS 3959:1999.
- Queensland Department of Natural Resources and Mines, 2000, *A Guide to Fire Management in Queensland: Incorporating fire management theory and departmental practice*, Queensland Department of Natural Resources and Mines, Brisbane.
- Queensland Environmental Protection Agency, *State Coastal Management Plan – Queensland's Coastal Policy*, 2001, Queensland Environmental Protection Agency, Brisbane.
- Queensland Government, 2001, *Queensland Greenhouse Policy Framework: A Climate of Change*, Queensland Government, Brisbane.
- Standing Committee on Agriculture and Resource Management (SCRM), *Floodplain Management in Australia: Best Practice principles and Guidelines*, Report 73, CSIRO Publishing.
- Zamecka A., Buchanan G., 1999, *Disaster Risk Management*, Queensland Department of Emergency Services, Brisbane.

Web sites

- Australian Greenhouse Office *www.greenhouse.gov.au*
- Commonwealth Bureau of Meteorology www.bom.gov.au
- CSIRO Atmospheric Research *www.dar.csiro.au/impacts/consult.html*
- CSIRO Marine Research *www.marine.csiro.au*
- Department of Emergency Services *www.emergency.qld.gov.au*
- Department of Transport and Regional Services *www.dotars/naturaldisasters/index.aspx-www.dotars.gov.au/ndr/arrangements.htm*
- Environmental Protection Agency *www.epa.qld.gov.au*
- Geoscience Australia *www.agso.gov.au*
- Rural Fire Service *www.ruralfire.qld.gov.au*

Sources of funds

There are a number of sources of funding for disaster management activities available to Aboriginal and Torres Strait Islander Councils.

Some disaster management initiatives are low cost and may be funded by Councils within the budget set aside for normal Council operations. For example, disaster management planning, Community awareness and education programmes, and land use planning are all things that can make a big improvement to Community safety but may cost very little.

State and Commonwealth Grants and Subsidies offer possibilities for funding disaster mitigation projects. Further information can be found at *www.qld.gov.au/business_and_industry/grants_and_subsidies* and *www.grantslink.gov.au*

Sometimes normal State Government department programmes can contribute to Community safety before disasters happen. Priorities within these programmes may be able to be influenced if it can be shown that they are able to produce additional benefits that may reduce disaster risks. For example, it may be possible to show that construction or repair of some roads may reduce risks in times of disaster because they may provide access to medical assistance, relief supplies or are evacuation routes.

Apart from these funding sources, there are other programmes that can help Councils with disaster management projects.

Special Programmes

The Natural Disaster Mitigation Programme (NDMP) is a Commonwealth initiative that is designed to replace the *Natural Disaster Risk Management Studies Programme* (NDRMSP) and to make funds available for other disaster mitigation projects. NDMP will also eventually incorporate the *Regional Flood Mitigation Programme* (RFMP) which currently provides funds for flood mitigation initiatives.

The NDMP package provides funds for disaster risk management studies by Councils. It also provides funds for treatment of disaster risks identified by disaster risk management studies.

Information about NDMP can be found at *www.dotars.gov.au/naturaldisasters/index.aspx* or by contacting your local Disaster Manager.

Information about RFMP can be found at *www.dlgp.qld.gov.au* under Funding Programs.

Natural Disaster Relief Arrangements (NDRA)

The Natural Disaster Relief Arrangements programme is designed to assist disaster recovery. Within NDRA there are a number of measures that may be of benefit to Communities.

These include:

- Grants for relief of personal hardship and distress;
- Consessional interest rate loans to farmers, small business operators and voluntary non-profit bodies;
- Payments to restore or replace essential public assets; and
- Payments for providing financial and psychological counselling to people

Information about NDRRA can be found at *www.dotars.gov.au/ndr/arrangements.htm* or by contacting your local Disaster Manager who will be able to provide advice about the latest program developments.

Comparing terms

Some of the terms used in the risk management diagrams that appear in this book are variants of those that are employed in the Australia/New Zealand Risk Management Standard AS/NZS 4360: 1999 . Some readers may already be familiar with AS/NZS 4360 and prefer to use the standard terminology. To assist this, Figure 7 shows the terms used in this book compared with the terms used in AS/NZS 4360.

Figure 7

This book	AS/NZS 4360
Deciding how we are going to work	Establish the context
Finding out about big hazards like cyclones, floods and bushfires	Identify risks
Thinking about important things in the community that can be harmed	Identify risks
Thinking about risks caused by hazards threatening important things	Identify risks
Working out what risks need to be fixed first	Analyse risks Evaluate risks Accept risks
Thinking about ways of making risks less	Treat risks
Deciding what we will do and doing it	Treat risks
Telling, asking and listening	Communicate and consult
Checking that all is going OK and thinking about improvements	Monitor and review

Although the terms used to describe consequence and likelihood have been changed from those used in AS/NZS 4360, the terms used to describe the risk rating are identical to those used in the Standard. This means that the end results of a study will be consistent with the Standard.

[13] Standards Australia, 1999, *Risk Management*, Australian/New Zealand Standard, AS/NZS 4360:1999

Definitions

Consequences – are the effects of a disaster on people, houses, services, community enterprises, culture, heritage and all other important things in the community. An example of consequences of a flood in a Community is that some people in the community may become seriously ill after the disaster.

Disaster – is an event when a hazard hits important things in our community. For example, we have a disaster when a big flood hits the community, the water enters buildings and a number of buildings are damaged and many people are homeless. Disasters usually need many different people working together to help Council manage those situations.

Disaster Risk Management – is a special way for people to think about possible disasters before they happen and to do things differently so that their community is safer.

Hazard – is a thing that can cause big harm to the community and environment. A hazard can cause disasters. When a hazard such as a big cyclone occurs far away from the land, it may not cause a disaster. When a big cyclone hits the community and causes a lot of harm then it is a disaster.

Likelihood – is a chance of something happening. For example, if there is a chance that a big flood will almost certainly happen each year, we say that that there is a likelihood of a big flood happening each year.

Risk – is a thing that may happen but it does not mean that it will happen for sure. Most often a risk means that something harmful can happen. For example, there may be a risk that a small fishing boat at sea, far away from the land, could be lost in a heavy storm.

Risk Management – is a thing that may happen but it does not mean that it will happen for sure. Most often a risk means that something harmful can happen. For example, there may be a risk that a small fishing boat at sea, far away from the land, could be lost in a heavy storm.

Treatments – are the ways to lessen or fix risks. For example, a good treatment option may be to educate people about the risks and what to do.

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Example of risk register

Hazard	Important Community item	Risk	Consequence(s)		Likelihood		Risk rating	Possible treatment(s)	Recommended treatment(s)
Flood	People	Every year there is a risk that 150 people may be directly affected by a big flood in the Community	Some people may be injured A few lives may be lost Some people may become sick	Large	Risks from a big flood like this will probably happen at least once in every 100 years. They could happen more than this.	In my lifetime (nearly)	Extreme	Move flood prone parts of the community to high ground. (Good but very costly). Conduct community flood awareness program (good and low cost, about $500) Develop evacuation plan (low cost and effective)	Conduct community flood awareness program Develop evacuation plan
	Houses	Every year there is a risk that 30 houses may be flooded above floor level by a big flood in the Community	30 houses may be damaged or destroyed 150 people may be homeless	Large	Risks from a big flood like this will probably happen at least once in every 100 years. They could happen more than this.	In my lifetime (nearly)	Extreme	Move flood prone houses in the community to high ground. (Good but very costly). Council should not allow new houses to be built on flood prone land (Very effective and low cost)	Council should not allow new houses to be built on flood prone land
Cyclone	Services	Every year there is a risk that Community services will be disrupted by a big cyclone hitting the Community	Telephones may fail Roads may be cut Power may fail	Large	Risks from a big cyclone like this will probably happen at least once in every 100 years. They could happen more than this.	In my lifetime (nearly)	Extreme	Council should negotiate improvements in service reliability with service providers	Council should negotiate improvements in service reliability with service providers

This incomplete example is included to show how information collected during the study can be briefly set out in a Risk Register. Your Community may have better ways of doing this. It is important to understand that this is only a summary of the information used and that full information is included in the study report.

All the Hazards[1] that may hit the community should be shown in the Risk Register and the Important Community Items[2] that may be affected by each hazard are then listed against each hazard. The Risks[3] can then be listed, Consequences[4] and Likelihood[5] be shown and the Risk Rating[6] included. Possible Treatments[7] can then be listed and the Recommended Treatments[8] shown. This then goes to the full Council for approval and inclusion in Council plans.

[1] See *Finding out about big hazards like cyclones, floods and bushfires*
[2] See *Thinking about important things in the community that can be harmed*
[3] See *Thinking about risks caused by hazards threatening important things*
[4] See *Working out what risks need to be fixed first*
[5] As above
[6] As above
[7] See *Thinking about ways of making risks less*
[8] See *Deciding what we will do and doing it*