

BUSINESS RESPONSIBILITY IN VULNERABLE COASTAL REGIONS

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Abstract

Natural hazards can cause substantial direct and indirect losses to businesses and result in the financial failure of many. These losses become more severe the more extensive the effects of the event and the less resilient the community of which the business is part. Indirect losses caused by impacts on key infrastructure, suppliers or customers can often be greater than the direct losses on buildings, stock and equipment.

There is limited scope for governments to reduce the impacts of natural hazards and insurance can only mitigate some of the losses. Research shows that those businesses with plans to deal with disruptions and damage caused by natural and other events are best able to minimise their losses.

Most businesses are unaware of the risks that natural hazards pose and do not have the time, financial or technical resources to prepare continuity plans. Nevertheless, there are many simple things businesses can do to make them more resilient. This has been demonstrated in a Business FloodSafe toolkit developed by the NSW State Emergency Service.

There is scope for government, business groups, insurance companies and financial institutions to increase the awareness of natural hazard risks to business and to encourage businesses to take actions to reduce those risks.

Introduction

Research from the United States suggests that more than 40% of businesses never reopen after a disaster and approximately 30% more close within three years (Gissing, 2003). Australian research shows that business losses in floods can be reduced by about 80% if businesses have and implement flood action plans (Gissing, 2003). In any 10 year period there is a 10% chance that a business will be hit by a 1 in 100 natural hazard or bigger.

Taken together, these statistics suggest that vulnerable businesses should be motivated to include natural disaster response in their contingency planning but research shows that businesses are generally not aware of their risks and are poorly prepared. This paper uses flooding as the principal example of the types of business risks that natural hazards pose in coastal cities and the range of strategies which can be used to manage those risks.

Vulnerability

There is no accurate information on the number of businesses which are at risk from natural hazards in Australia. Arguably every business is at risk from wind and storm damage but within cities only those businesses in a bushland setting are likely to be at risk from bushfire. Flooding and coastal inundation risks on the other hand are directly related to where the business sits in the landscape.

It is estimated that there are 170,000 residential properties in Australia which are at risk from riverine flooding up to a 1 in 100 chance per year (Leigh and Gissing, 2006). About 22% of these are in Brisbane, Ipswich and the Gold Coast, 6% in Sydney, and 3% each in Melbourne, Adelaide and Mackay. In other words about 40% are in major coastal cities which would include many businesses. Add to this the fact that more than 200,000 addresses (including commercial and industrial addresses) are vulnerable to coastal inundation from tsunami and storm surge

(Chen and McAneney, 2006) including some of those that are exposed to flooding.

Awareness

Despite the large numbers of vulnerable businesses, it would appear that few are aware of the chance of disaster striking nor the risks that natural hazards pose to their business.

Businesses in Kempsey and Wagga Wagga (Molino and Gissing, 2005) were surveyed about their perceptions of flood risk and their business preparedness. These two locations were chosen because they have hundreds of businesses below the 1 in 100 flood level (many as low as the 1 in 20 flood level) but Wagga Wagga had not experienced a major flood since 1956 while Kempsey business district was extensively flooded in 2001.

The results showed that flood experience had a significant influence on flood risk awareness. In Wagga Wagga, 39% believed their business could flood while 94% believed so in Kempsey. In Kempsey those who did not believe they could be flooded were above the 2001 flood level.

The reality is that every one of the businesses surveyed could flood with risks ranging from a 1 in 20 chance per year to a 1 in 100 chance per year depending where they sit within the landscape. More than half in Wagga Wagga and about one third in Kempsey did not understand that the chance of them being flooded was greater the longer they stayed in a flood-prone location. On average these businesses had been in the one location for about 20 years. The reality is that a business sitting at the 1 in 20 flood level has a 2 in 3 chance of being flooded in any 20 year period and a business at the 1 in 100 level has a 1 in 5 chance of being flooded in that same time.

Furthermore, a substantial number of respondents did not think a flood would have severe financial implications. About half the businesses thought one week's closure because of flood would have little or no financial impact. Few if any thought that the business would have to close permanently. This compares to overseas research, which suggests over 40% of businesses fold after a major natural disaster (Gissing, 2003).

Most thought fire posed a greater financial risk to their business despite it being less likely to occur and being readily insurable, unlike floods.

Potential Impact on Businesses

Natural hazards can impact on businesses in several ways and the magnitude of the impact will depend on the size of the event, the interaction with the business, the interaction with the community, the resilience of the business and the resilience of the community.

Direct

Any natural hazard has the potential to directly impact on a business. The extent of impact will depend on how the hazard interacts with the business premises.

In addition to any physical damage to buildings, plant and stock, two significant potential losses, which are often overlooked, are records and personnel.

The research in Kempsey and Wagga Wagga showed that 25% of businesses back up computer data less often than weekly, if at all and of those that do back up regularly about 40% store the backups on site. That means that more than half of these businesses have a high risk of losing extremely valuable customer, supplier, accounting and business management information in the event of a natural disaster (even more are at risk if they are storing them at a location which is at risk from the same natural hazard).

Also, despite 70% having documented OHS procedures, virtually none had procedures for dealing with floods even when business owners acknowledged floods were a known hazard. Moving stock before or during a flood increases the risks of lifting and slip injuries as does cleaning up in wet and muddy conditions. Often electrical circuits remain live. Furthermore, debris can include sharp objects, toxics, pathogens and venomous animals.

It generally takes at least a week to clean up after a flood during which time it is difficult, if not impossible, to trade. Down time can be even longer if buildings need to be repaired or there are delays in getting replacement stock or equipment.

Local Indirect

In addition to the direct losses there can indirect impacts on a business from a natural hazard even on businesses not directly affected by the event.

Loss of utilities such as electricity, gas, water and telephone often occur when natural disaster strikes. Temporary loss of these services may result in premises being unable to open or function fully.

It may be that when roads or telephone services are temporarily cut it will prevent purchases being made until those services are restored. Or it may be that stock cannot be supplied or staff cannot get to work. This may cause a postponement of transactions which will have cash flow implications.

More significant to a business would be customers not making purchases because of the loss of access, temporary closure of the business or because they themselves are dealing with the aftermath of the event. This particularly happens with discretionary purchases. For example, after the 1990 Nyngan flood it was reported that the hairdressers and cafes experienced a significant downturn in business (Water Studies, 1990).

There was an upside to this for businesses such as the hardware store and builders who did a roaring trade.

Such short term transfer of expenditure can hurt a business but even more significant can be the long term loss of trade which can result. If a competitor is able to be more accessible and provide a better service during and after a natural disaster, even long term customers may switch their loyalty.

Regional Indirect

Some natural disasters are of such a scale that entire communities and regional economies are affected. These effects can sometimes be felt nationally and internationally as happened with Cyclone Larry and banana supplies and Hurricane Katrina and oil supplies.

Businesses that are most vulnerable are those where most, if not all, of their customers or suppliers are severely affected by the event. Also a business can be vulnerable if a critical supplier is affected, particularly if there are no alternatives.

This can often be a problem with utilities. Electricity supply is probably the most critical because there is only every one supplier to a region and every business is reliant upon electricity to some extent. If that supply is

unavailable for an extended period it can have serious ramifications for a business.

Surprisingly, many utility organisations and other critical service providers do not take proper account of the consequences of service failure from a natural hazard. For example, hospitals in New Orleans had emergency power supplies and floors with beds and theatres remained above the flood waters. Unfortunately, four hospitals stored all of their medical supplies in their basements.

In the Hawkesbury Nepean Valley in Western Sydney, all zone and regional substations are built above the 1 in 100 year flood level. However, a larger flood, such as the one that occurred in 1867, would cripple these substations and up to 50,000 premises outside the flood zone, including many businesses, could be without electricity for several weeks.

Risk Management Strategies

Over the last century there seems to have been a shift in society from accepting many events as "acts of God" to attributing them to "negligence of people". This may be in part to the fact that it is easier to sue people but also because as knowledge and technology increase there is an expectation that something can be done to reduce personal and business losses.

More often than not that expectation to do something is laid at the feet of others.

Government

Usually the first port of call is government. There is an expectation that government should do something to stop the impacts of natural hazards.

What governments can do is actually quite limited. They certainly cannot prevent natural phenomena and even activities such as controlled burns for bushfires or structures such as levees for floods only affect the behaviour of the most frequent of events by shifting the impacts in time or space.

Governments actually more effectively reduce the impacts of natural hazards by changing human behaviour. Planning controls keep people and assets out of high hazard areas and building controls ensure that built assets have an acceptable risk of damage.

At least that is the theory. In the case of floods only planning controls are used as there is no building code for flood resistance. For example most councils stipulate that the floor level of a residential building has to be above the 1 in 100 flood level. Yet if a contemporary brick veneer home were to have only a few hundred millimetres of water over the floor, it is conceivable that the whole house would have to be demolished (Molino Stewart, 2005). That same house will have been built to Building Code of Australia requirements to resist wind speeds that have somewhere near a 1 in 10,000 chance of occurring.

It should also be remembered that planning and building controls are not retrospective and so any particular building may be more vulnerable than contemporary standards would allow. This was apparent during Cyclone Larry where many buildings in Innisfail were badly damaged yet Engineers Australia reported that those buildings built to contemporary standards looked "no worse than any house that has been through a heavy rainstorm" (Institution of Engineers Australia, 2006).

Insurance

Insurance was established in recognition that damage from natural hazards cannot be eliminated and is a means by which society shares the losses.

As observed earlier in this paper, storms can strike anywhere and bushfires are not the only cause of building damage by fire. Not only is there randomness as to where they strike but even within the impact zone there is a randomness of damage.

Floods on the other hand will impact a defined topographic location and all buildings within that location will be damaged.

Insurance companies, as brokers of that loss sharing within the community, have found it difficult to financially justify a product which is only of benefit to some and to them it is of greater benefit to those lower in the landscape.

For this reason there is very little flood insurance offered or taken up. Yet there is an expectation by those who suffer flood losses that their insurance should cover these costs as evidenced by community reaction following the 1996 Coffs Harbour and 1998 Wollongong Floods.

The business research in Kempsey and Wagga showed that between 20% and 40% of businesses believed that they were insured against flooding. It is likely that few, if any of them had flood insurance.

Business insurance policies for other natural hazards certainly cover the direct losses but the extent to which they foresee and cover the indirect losses will depend on the policy.

I expect that the more extensive the indirect losses which are covered, the more expensive the premiums will be. It would be hard to sell the extended coverage policies to businesses if they do not understand the potential magnitude of the indirect losses and the ramifications for their business.

Business

So if governments and insurance companies have limited scope for reducing businesses losses from natural hazards is there anything further that businesses can do? The answer is yes, particularly in the case of floods where the government and insurance measures for reducing the impacts on business are most limited.

Direct losses can be reduced by locating the business where there is a lower risk from natural hazards. The extent to which this is possible will depend on the nature of the business, the commercial criticality of business location and the actual premises available. When estimating the costs of premises which have the greatest benefit to the business, the losses caused by a natural hazard and the chance of those being realised over the life of the business need to be explicitly taken into consideration.

Many Kempsey businesses did so after the 2001 flood. When Kempsey was first established, the main commercial precinct was a strip along high ground on either side of the Pacific Highway which followed a natural levee. As the town expanded, commercial land was developed further and further downslope.

In the 1990s a new commercial development including a shopping centre and the closure of a street to create a pedestrian mall saw the retail hub of Kempsey move to some of the lowest land in town. Businesses along the Highway experienced a downturn in business while those at Clyde Street Mall thrived. Many

Highway shops relocated to the Mall for commercial reasons.

In 2001 the Mall went under a couple of metres of water while the Highway remained largely high and dry. By 2004 many businesses had relocated to the old commercial precinct which is once again the commercial hub of town and there remained many vacant premises in Clyde Street.

For some businesses however the impacts of flooding are such that there is little value in relocating. As the owner of the vehicle radiator supplier said "I hosed out the radiators, hosed out the premises and was back in business the next day".

Having waterproof fixtures and fittings, storing stock and equipment off the floor or having strategies for moving stock and equipment in advance of a flood are all means of reducing direct losses. It was estimated that the 2001 flood losses in Kempsey could have been reduced by \$2.5million if all businesses had undertaken such actions (Gissing, 2003). This would have resulted in up to an 80% reduction in losses for many businesses.

The Clyde Street Mall bakery has such plans and when warned of the impending flood used heavy lifting equipment to move all of its ovens off site. It was trading again within days of the flood.

With regard to other natural hazards it is building design rather than location which is more critical. Buildings complying with the latest wind, fire and earthquake codes will be the least susceptible.

For any business it is important to have continuity plans in case of business disruption. While some aspects of these need to be specific to known high risk natural hazards such as flooding, many will cover all sort of disruptions.

Most businesses need contingency plans for dealing with loss of on-site data or records, failure of computer systems, failure of telephone systems and failure of power systems. Others may also need to consider the implications of water supply or transport system failures.

Some of the solutions can involve back up systems on site and others may be off site solutions including temporarily relocating operations. The extent to which these plans need to be developed and documented is a

commercial decision taking into account the likelihood and the consequence of the disruption. Planning them beforehand reduces the costs in the event of a disruption.

Other issues to be considered are the ability to contact business owners, managers and staff when they are not on site. Many business premises are unoccupied 60% of the time.

A businesses exposure to indirect impacts can be reduced by diversifying suppliers and customers but the extent to which this is possible will depend on the nature of a business and its markets. Having alternative supply arrangements can mitigate impacts.

Help and Encouragement

Research suggests that there are diverse barriers to businesses preparing continuity plans. In Kempsey and Wagga Wagga between 20 and 30% of businesses had not heard of the concept of continuity planning. Of those who had but had done nothing about it, 43% cited lack of time, 35% other priorities, 30% risk too low, and 32% not knowing how to do it amongst their reasons.

The first barrier to be overcome therefore is getting businesses to understand the need for and benefits of such plans. The second barrier to overcome is making the preparation of such plans possible within their available time, financial and technical resources.

The Kempsey and Wagga Wagga research found that those businesses which were branches of a large company, were part of a business chain or were franchises were often better able to deal with the disruptions and losses caused by flooding.

This was because one or more of the following applied:

- There were documented business procedures which included managing risks;
- The business was covered by a broader, organisation wide continuity plan;
- Additional people, money or stock could be directed to the affected business to speed recovery; or

- Trade could be managed by another branch while the affected business was re-established.

Nevertheless, even smaller businesses that frequently deal with floods have not only prepared appropriate plans for their businesses but some have reciprocal arrangements with similar businesses in nearby towns so that they can help each other if they are not all affected by the same event.

The work in Kempsey and Wagga Wagga was part of a pilot study which Molino Stewart conducted for the NSW State Emergency Service. The outcome was the production of a toolkit to help businesses develop flood plans for their business. This was designed to reduce the time, money and expertise that businesses need to prepare such plans.

This toolkit is not being rolled out across NSW to businesses which have a high risk of being flooded. In most locations this is being done with the assistance and support of the local council and the local chamber of commerce or business chamber.

Use of the toolkit has varied with the best response coming from districts which have been flooded in the last few years.

While the SES, and the chamber of commerce can encourage such plans, some councils now require those businesses in flood prone areas to develop such plans as a condition of consent.

It is my view that financial institutions could also have a role to play in encouraging businesses to have continuity plans for natural hazards and other contingencies. They should request to see such plans when providing business or property finance in locations of known high hazard. This would not only increase the awareness of the business owner of the hazard and the need to plan for it but would be in the interests of the financial institution which are best served by clients whose businesses continue to operate and prosper.

It is also in the interests of insurance companies to encourage the preparation of such plans where they are likely to have an impact on insured losses.

To date, Workcover, as the OH&S regulator, has not shown an interest in making the preparation of such plans mandatory with

regard to personnel safety or even highlighting the obligations of employers in these areas.

Conclusion

Natural hazards pose significant risks to businesses, particularly those that are located in coastal cities. Business failure is a real risk for businesses hit by a natural disaster. Research suggests that most businesses are not aware of their risks let alone prepared.

It is unreasonable for businesses to expect governments or insurance companies to reduce the impacts of natural hazards to financially manageable levels. Businesses can significantly reduce their losses by having business continuity plans which cover the most likely natural hazards as well as other potential disruptions to business.

Local councils, emergency service organisations, business groups, financial institutions, insurance companies and OH&S regulators should encourage businesses to prepare such plans.

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