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Economic Cooperation**

Building Natural Disaster Response Capacity – Sound Workforce Strategies for Recovery and Reconstruction

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Executive Summary

This report examines and compares case studies of labour market policy responses in APEC economies to natural disasters. It first reviews the policies and practices within APEC economies and internationally in managing the labour market effects of natural disasters. By using comparative case studies, the report then compares recent disaster events in the Asia-Pacific region, including:

- the June 2013 Southern Alberta floods in Canada;
- the 2010 and 2011 Queensland floods in Australia;
- the 2010 and 2011 Canterbury earthquakes in New Zealand;
- the 2011 Great East Japan Earthquake and Tsunami in Japan; and
- the 2008 Wenchuan earthquake in China.

A disaster differs from other shocks and disturbances to a local economy and workforce. This report identifies patterns of impact that disasters have on the workforce, and labour market issues that emerge during recovery. Common disaster effects on labour markets included: job and worker displacement; loss of income; disruptions to workers' livelihoods; and creating additional participation barriers, particularly for females, youth, and individuals with lower skill sets.

Comparison of different disaster events reveals insights into how disasters can change labour market structures post-disaster. General economic conditions, sectoral structure, as well as business and individual coping mechanisms all influence the outcomes for an affected labour market. Other factors, such as institutional arrangements, networks, administrative capacity, and fiscal space, impact the ability of individual economies to deliver assistance.

Case study economies responded to disaster in different ways. Scale of the event, demographics of affected labour force and availability of resources were key considerations for the scope, form and duration of their labour market response. Well-established employment and social measures enabled some economies to respond quickly with existing programmes, while others relied on discretionary labour market policy measures.

Good practice presented by case study economies highlighted the importance of a multi-faceted approach to post-disaster labour market response by combining short-term job creation with longer-term skills development, and combining short-term job protection with longer-term economic promotion strategies. Central to this approach is a drive to integrate post-disaster labour market response in the framework of regional disaster recovery, as well as in the regional workforce development agenda, with emergency preparedness at its core.

A multi-faceted approach to post-disaster labour market response



Social protection in general acted as a ‘shock absorber’, together with active labour market programmes, to cushion the blow of income and job losses caused by disaster effects. Most economies increased their coverage of social safety nets and introduced new initiatives to lessen the hardships of income loss experienced by those individual workers and businesses. Case study economies also have so-called ‘automatic stabilisers’ in their tax and benefit systems, as well as support for labour demand by means of increasing public works and creating temporary jobs.

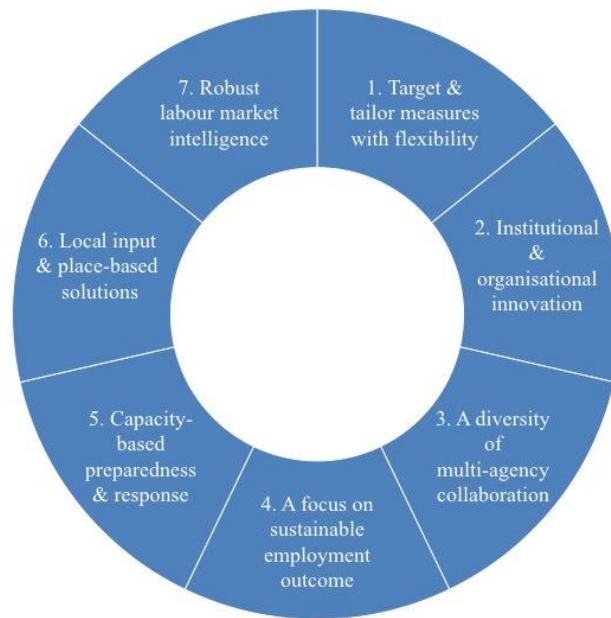
Business support across case study economies was concentrated on helping small businesses, primary producers and other major income-generating sectors to restore their capacity and regain business viability. Greater priority was given to short-term business assistance in order to retain people in jobs, with a few exceptions focused on developing resources that proactively assist small to medium enterprises to build resilient, sustainable businesses.

In terms of **labour market programmes**, case study economies increased capital stimulus and multi-agency collaboration to improve their labour market prospects. These efforts were mainly targeted to a specific group of people in areas of training, public employment services and skills development. The objective was to address the labour shortages for reconstruction and the mismatch between jobs and skills following the disaster. Comparative analysis shows that the critical elements that have enabled the effectiveness of labour market policies included:

- **collaborative partnership** either between public sectors or through a diversity of public and private partnerships;
- **flexibility** to redirect funding and develop additional initiatives;
- a greater level of **local inputs and engagement**;
- **labour market intelligence**; and
- **institutional capacity** to administer new programmes and/or increase the scope of existing programmes, using prevailing networks.

Common building blocks of ‘best practice’ for developing sound workforce strategy for APEC economies managing post-disaster labour markets are illustrated below.

A framework of principles for sound workforce strategies following natural disasters



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Acronyms

AGDRP	Australian Government Disaster Recovery Payment
ALMPs	Active Labour Market Programmes/Policies
APEC	Asia-Pacific Economic Cooperation
BCPR	Bureau for Crisis Prevention and Recovery (within UNDP)
BLS	Bureau of Labor Statistics (US)
BNPB	National Disaster Management Agency (Indonesia)
CBD	Central Business District
CBRT	Calgary Business Recovery Taskforce (Canada)
CCIQ	Chamber of Commerce and Industry Queensland (Australia)
CDC	Canterbury Development Corporation (New Zealand)
CECC	Canterbury Employers' Chamber of Commerce (New Zealand)
CERA	Canterbury Earthquake Recovery Authority (New Zealand)
CESB	Canterbury Employment and Skills Board (New Zealand)
CFS	Child Friendly Space
CSEH	Canterbury Skills and Employment Hub (New Zealand)
CFW	Cash for Work
CNCIDR	Chinese National Committee for International Disaster Reduction
DEEWR	Department of Education, Employment and Workforce Relations (Australia)
DEEDI	Department of Employment, Economic Development and Innovation (Queensland, Australia)
DHS	Department of Homeland Security (US)
DoL	Department of Labour (New Zealand)
DUA	Disaster Unemployment Assistance (US)
EAST	Education and Skills Training
EASP	Employment Adjustment Subsidy Programme (Japan)
EDMH	Extreme Disaster Management Headquarters (Japan)
ELS	Employment, Labour and Social Affairs (within OECD)
EMA	Emergency Management Australia
EMO	Emergency Management Office (China)
E-SIYB	Emergency Start and Improve Your Business
ESS	Earthquake Support Subsidy (New Zealand)
FAO	Food and Agriculture Organization of the United Nations
FEMA	Federal Emergency Management Agency (US)
FRTF	Flood Recovery Task Force (Canada)
GDP	Gross Domestic Product
GFDRR	Global Facility for Disaster Reduction and Recovery
HFA	Hyogo Framework for Action
HLFS	Household Labour Force Survey (New Zealand)
HRDWG	Human Resources Development Working Group (APEC)

IDMC	Internal Displacement Monitoring Centre
IFRC	International Federation of Red Cross and Red Crescent Societies
ILO	International Labour Organization/Office
IRP	International Recovery Platform
KSAS	Kongres Saudagar Aceh Serantau (Indonesia)
MBIE	Ministry of Business, Innovation and Employment (New Zealand)
MCA	Ministry of Civil Affairs (China)
MCDEM	Ministry of Civil Defence and Emergency Management (New Zealand)
MDGs	Millennium Development Goals
MHLW	Ministry of Health, Labour and Welfare (Japan)
MoHRSS	Ministry of Human Resources and Social Security (China)
MSD	Ministry of Social Development (New Zealand)
NDDRA	Natural Disaster Relief and Recovery Arrangements (Australia)
NWCCW	National Working Committee on Children and Women (China)
NZMEA	New Zealand Manufacturers and Exporters Association
OECD	Organisation for Economic Co-operation and Development
PESOs	Public Employment Security Offices (Japan)
PPP	Public-Private Partnership
QRA	Queensland Reconstruction Authority (Australia)
RDOs	Regional Development Organisations
SMEs	Small and Medium Enterprises
SVA	Student Volunteer Army (New Zealand)
UI	Unemployment Insurance
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UN/ISDR	United Nations International Strategy for Disaster Reduction
VBRRRA	Victorian Bushfire Recovery and Reconstruction Authority (Australia)
VET	Vocational Education and Training

APEC Natural Disasters Workforce Project Background

The Asia-Pacific region is vulnerable to natural disasters. Amongst 21 APEC members, at least 11 economies¹ directly sit on the Pacific Ring of Fire where a large number of earthquakes and volcanic eruptions occur. Floods, typhoons, hurricanes, tornadoes and wildfires are also common hazards that strike most APEC economies (APEC TFEP, 2008b).

Developing economies in the APEC region, particularly China, Indonesia and the Philippines, are disproportionately affected by natural disasters. However, recent examples, such as Hurricane Katrina in 2005 (the United States), the 2010 and 2011 Queensland Floods (Australia), the 2010 and 2011 Canterbury earthquakes (New Zealand), and the 2011 Great East Japan Earthquake and Tsunami (Japan), have sent a clear message that industrialised economies are also vulnerable to severe events.

Natural disasters can have significant impacts on the workforce in affected regions. There are often widespread disruptions to labour supply due to displacement of people from their jobs, either by disrupting their place of work or by disrupting a worker's ability to attend work. Damage to physical and social infrastructure as well as damage to business premises can create additional barriers to labour supply. Businesses may have to close or relocate. Even businesses that get through the initial impact caused by a disaster can face difficulties operating due to disruptions to their supply chain and customer base.

Disasters can impact on the mix of people, businesses and industries, potentially leading to fluctuations in demand for different types of skills. Some industries may experience a demand surge whilst others experience a decline. Skills shortages often co-exist with low employment in the aftermath of a disaster.

Some economies' labour markets have shown that they can absorb the effects of natural disasters well, quickly returning to pre-disaster conditions and delivering the workforce needed for reconstruction. However, in other economies, natural disasters can be major shocks for the workforce, with the events resulting in prolonged unemployment, loss of housing and skill shortages. Therefore, there is great value in having policy settings and options available to support employment and social cohesion in these circumstances, thereby sustaining the capacity to trade and attract investment.

Aligning workforce policy processes with national and regional disaster risk reduction interests enables collaboration between the sectors of emergency preparedness and human resource management. The APEC 'Building natural disaster response capacity – sound workforce strategies for recovery and reconstruction' Project² (APEC Natural Disasters Workforce Project) aims to analyse the job and training strategies followed by member economies in response to recent natural disasters, taking a case study approach. This project addresses priorities set out in the *Yokohama Vision 2010*³ and the *Human Resources Development Ministers' Action Plan for 2011-2014* (APEC HRDMM Secretariat, 2010).

¹ Canada; Chile; Indonesia; Japan; Mexico; New Zealand; Peru; the Philippines; Russia; Chinese Taipei; the United States , , , , ,

² The APEC 'Building Natural Disaster Response Capacity – Sound Workforce Strategies for Recovery and Reconstruction' Project, http://hrd.apec.org/index.php/APEC_Natural_Disasters_Project

³ http://www.apec.org/Meeting-Papers/Leaders-Declarations/2010/2010_aelm.aspx

The outcome of this project will be improved emergency preparedness within and across APEC economies. Towards this goal, the project provides information on the practical workforce strategies that have been found to work well following natural disasters in the Asia-Pacific region. A set of principles for sound workforce strategies in the context of natural disasters will serve to guide policies and practice around a common standardised approach to managing labour markets in the APEC region.

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Introduction

There are many things APEC member economies – industrialised and developing - can do to better prepare labour markets for a disaster or crisis. Traditionally, governments have focused efforts on post-disaster rehabilitation of economic facilities, restoring traditional markets, providing capital assistance for businesses and individuals, and creating job opportunities for those who are made unemployed by disasters. Measures used tend to be *ad hoc* in response to disruptions that have stopped labour markets from functioning. More recently, there is a growing interest in the broader concept of disaster resilience⁴ which includes planning for, and responding to crises but also considers elements that enhance the ability or capacity of physical and human systems to get through adverse circumstances.

This report investigates how selected APEC economies responded to labour market effects caused by natural disasters. It focuses on the practices adopted by individual economies and the key elements for their successful implementation. By using a comparative analysis, this report primarily assesses the post-disaster labour market response of three economies – Australia, New Zealand and Japan – to determine best practice principles to inform the development of sound workforce strategies in APEC economies.

This is the final report prepared as part of the APEC Natural Disasters Workforce Project. It is a synthesis of a policy review and comparative analysis of case studies of APEC economies, accompanied by comments with reference to recent knowledge and literature. The body of the report is organised into four sections as follows.

Section I comprising Chapters 1, 2, 3 and 4 presents a **review of policy and practice** relevant to human resource management in disaster settings and emergency management, and a review of workforce strategies in past post-disaster reconstruction efforts in the APEC region. The literature review in this section draws on the information on recent events, including the Indian Ocean tsunami in Indonesia (2004), Hurricanes Katrina (2005) and Sandy (2012) in the United States, China's Wenchuan Earthquake (2008), Australia's Victorian bushfires (2009) and Queensland floods (2010/11), Chilean Earthquake and Tsunami (2010), Canterbury earthquakes in New Zealand (2010/11) and the Great East Japan Earthquake and Tsunami (2011).

Section II comprising Chapters 5 and 6 presents **the case study methodology** used in this project and a brief **overview of each of the cases** examined in this study. Comparative analysis draws on the case studies provided by Australia, New Zealand, and Japan on their recent events (2010 and 2011 Queensland floods, 2010 and 2011 Canterbury earthquakes, and 2011 Great East Japan Earthquake and Tsunami). Where appropriate, information in relation to the June 2013 Southern Alberta flooding in Canada and China's 2008 Wenchuan earthquake is utilised to provide additional insights into the cross-economy comparison.

Section III comprising Chapters 7 and 8 presents a **cross-economy comparative analysis**. It compares the patterns of disaster impacts on workforce and trends of labour market issues post-disaster, followed by comparison of employment and social policy measures implemented by different countries. Three types of labour market policy intervention are

⁴ The concept was discussed at APEC Workshop on Public Private Partnership and Disaster Resilience, Bangkok 24-29 August, 2010

discussed and compared across economies, with each followed by a summary of key ‘good practice’ features and success factors:

- measures of social protection;
- measures of employment retention and creation; and
- active labour market programmes.

Section IV comprising Chapter 9 and 10 concludes with policy recommendations and good practice principles. It provides a **summary of good practice**. Common building blocks of ‘best practice’ of a sound workforce strategy in disaster settings are suggested in the form of a framework of **principles and guidelines** for APEC economies managing post-disaster labour markets.

Chapter 1 Effects of natural disasters on Asia-Pacific labour markets

Natural disasters can have significant impacts on labour markets in affected regions. Impacts usually involve temporary or longer-term disruptions to the local economy through direct and indirect effects on infrastructure, business and the workforce (Venn, 2012). Current understanding of the impact of disasters on labour markets largely relies on post-disaster economic assessment in which indicators of labour market outcomes, such as job losses, labour force participation and unemployment, are measured.

The functioning of labour markets is reliant on a network where many determinants of a worker's social and economic wellbeing come to play, particularly in a crisis situation. These determinants relate to workplaces, communities and livelihoods (Skoufias, 2003). This chapter will examine how natural disasters impact on the labour market at three levels: the labour force, their workplaces and the wider sector where they participate. Effects as a result of disaster-induced shifts in labour demand will also be reviewed.

1.1 Impacts on the labour force

The way natural disasters disrupt labour supply is by displacing people from their normal lives and jobs. Damage to properties and infrastructure often force people to evacuate to areas outside the disaster zone. According to Venn (2012), mass evacuations can lead to severe labour market disruptions, making it difficult for evacuees to retain their pre-disaster jobs and putting a strain on local labour markets in the areas to which people have been evacuated. In general, there are two types of effects of natural disasters on the labour force: direct job displacement and life disruptions that impede workers' ability to participate in the labour market.

1.1.1 Direct job displacement

Over the past five years, approximately 80 per cent of disaster-induced displacement has occurred in Asia (IDMC, 2013). In 2012 alone, APEC member economies such as China, Japan, Peru, the Philippines the US, experienced large-scale displacement with over 100,000 people in each event. Disasters displaced people not only from homes but also jobs. Research on the impact of floods on employment in the US found that floods decrease employment in an affected region on average by 3 per cent (Camilo, 2007).

In the case of Hurricane Katrina, an estimated 1.1 million people were evacuated from their homes. There were sharp variations in labour market outcomes for evacuees who returned to their pre-hurricane addresses compared with those that did not (BLS, 2006a; Groen & Polivka, 2008; Zissimpoulos & Karoly, 2010). Ten months after the hurricane, the unemployment rate for evacuees who had not returned to their homes was 26 per cent, much higher than for those who had returned (BLS, 2006a). Even those who returned had higher rates of unemployment than those who were in the Katrina-affected states but did not evacuate (Zissimpoulos & Karoly, 2010).

When displacement happens in a densely populated region, more detrimental labour market outcomes are likely. Hurricane Sandy in late October 2012 struck the most densely populated region of the US, displacing more than 775,000 people (BLS, 2012a). In the following month,

the US Bureau of Labor Statistics (2012b) found that employers took 1,759 mass layoff actions involving 173,558 workers, measured by new filings for unemployment insurance benefits.

In New Zealand, following the February 2011 earthquake, many people left Christchurch for other parts of the country or overseas. In the two-year period between June 2010 and June 2012, the population for the Greater Christchurch area declined by 9,200 people or 2 per cent (Statistics New Zealand, 2012a). The 2012 Household Labour Force Survey (HLFS) shows that total employment declined by 9 per cent (Statistics New Zealand, 2012b). However, more information is needed to understand how this emigration correlated with declined employment in the same period.

In Japan following the devastating earthquake and tsunami, there was a net emigration of 31,109 people in 2011 from Fukushima (equivalent to 1.5 per cent of the total Fukushima population). This number also accounted for around 80 per cent of the total net emigration from three Tohoku prefectures affected by the event (Higuchi et al., 2012). The steep rise in net emigration from the Fukushima Prefecture, however, related to the impact of the accident at the Fukushima Daiichi Nuclear Power Station as well as the earthquake impact. Those emigrants, however, were facing significant challenges to find work elsewhere (Nogawa, 2012).

Some studies have found that people who relocate to a new area need additional assistance and protection to find a job due to losses of their social capital (Giglio & Wiseman, 2010; IFRC, 2012). Even for those who are not evacuated or who return to their homes relatively quickly after a disaster, disruptions to social and physical infrastructure as well as disruptions to their livelihood can create a barrier to ongoing labour force participation (Venn, 2012).

1.1.2 Impact on workers' wellbeing

Family and health issues can have a negative impact on a worker's performance. In New Zealand, increases in stress and trauma caused by the impacts of earthquakes and many aftershocks appear to have had an impact on labour supply. In a survey of over 300 businesses in the Canterbury region following the September 2010 earthquake, more than a quarter of respondent organisations reported that managing staff wellbeing in the weeks following the earthquake as the biggest challenge affecting their organisations (Kachali et al., 2010).

Impacts can be felt unevenly across a society. The Great East Japan Earthquake and Tsunami seems to have caused more damage to the health of women than that of men. Official figures show that the number of people receiving unemployment benefits in February 2012 was 34,256 for women and 24,060 for men. Comparing these figures to that of February 2011, there was a 1.7 times increase in the number of men receiving the benefit, and an increase of around 2.3 times the number of women (Japan Cabinet Office, 2012). The higher rate of increase for women indicates that women in these affected prefectures were experiencing a more severe employment situation. A survey from the Ministry of Health, Labour and Welfare (2012) revealed that the impact of the disaster on health was greater for women than men in terms of insomnia and mental health.

In the first week following the 22 February earthquake in New Zealand, there was a more than 50 per cent increase in domestic violence incidents reported to the police, attributed in large part to heightened stress levels among the population (Lynch, 2011). Heightened emotional strains were related to other factors such as disruption to child care arrangements, disruption to public transportation, the slow process of receiving insurance pay outs and repair information, and a lack of suitable accommodation while houses were being repaired or rebuilt (CERA, 2012). While businesses were trying to reopen, relocate and return to normal, staff were struggling with recovery demands at a personal level.

1.2 Disruption to business activities

Businesses are the core medium through which a workforce participates in the labour market. The way in which natural disasters affect the economic activities of businesses carries implications for policies that facilitate labour supply. Businesses may be subjected to temporary or permanent closure as they deal with physical damage and loss of customers. Loss of revenue is an inevitable consequence even for those that have business disruption insurance. Some businesses will be able to reopen quickly while others may take much longer or may never reopen in the same place. There are a number of factors that combine at different times affecting businesses' ability to respond to external disruptions and recover from adverse circumstances. In this section we review the impacts of disasters on businesses in the APEC economies and identify challenges faced by business communities in the aftermath of disasters.

1.2.1 Direct impacts on businesses

Damage to a workplace often displaces workers from their jobs. If the damage is significant and repair or rebuild of a business premises requires a long time, businesses may start laying off employees. The 2008 Wenchuan earthquake in China's Sichuan Province caused damage to more than 16,000 enterprises. As a result, in urban areas 372,000 people lost their jobs. The quake had a significant impact on the farming industry, with more than 1.1 million rural workers losing their land or other income sources. In total, the earthquake created more than 5,100 jobless families (Lu, 2011).

The damage and disruption caused by the Canterbury earthquakes to the local business communities were significant. A survey of Canterbury employers run by the Department of Labour (2011) shows that around 60 per cent of workplaces in the professional, scientific and technical sector in Christchurch had to relocate part or all of their operations. 40 per cent of businesses reported lower revenues. The most common reason given for a fall in revenue was loss of customers, and this was noted by more than 60 per cent of businesses.

In Australia, 25 per cent of businesses in Queensland experienced a major disruption or temporary closure due to the floods (National Australia Bank, 2011). A longitudinal study by the Chamber of Commerce and Industry Queensland (2011) found that direct impacts for businesses affected by the floods included water inundation (damage to premises or equipment) (30 per cent), loss of power (39 per cent), and short-term business closure (53 per cent). The most reported indirect impacts included reduced profitability (69 per cent), affected customers (68 per cent) and employee inability to attend work (50 per cent).

In Japan, businesses located in Sendai City had suffered great losses from the Great East Japan Earthquake and Tsunami. A Sendai City's Immediate Survey in July 2011 found that the disaster had caused over 50 per cent of city's businesses to close or to experience suspension to varied degrees. Even for those that sustained their operations, most found it particularly difficult securing their client or customer base and maintaining cash flow (Okuyama, 2011).

In the US, the Bureau of Labor Statistics (2006b) reported that approximately 39 per cent of business establishments in Louisiana and Mississippi were within a 100-mile corridor of the path of Hurricane Katrina's centre. Around 73 per cent of businesses in Louisiana and 63 per cent in Mississippi were in most affected areas, accounting for 76 per cent and 66 per cent of state-wide employment, respectively.

1.2.2 Challenges faced by the business community in the aftermath

A number of surveys of employers in disaster-affected areas highlighted some of the barriers commonly faced by businesses in the studied APEC economies. Understanding these barriers and the time they are likely to occur can help both policy makers and business communities themselves better prepare against the varied scenarios and get business operations back to normal. In addition, an organisational resilience approach can be applied, which includes not only planning for crises but also considers traits that lead to business adaptability and ability to thrive despite crises (Hatton et al., 2012).

For the first six months after the Queensland floods, businesses experienced barriers such as inability to gain site access when recovery started to take place, lack of capital to continue trading, and a reduced customer base due to a perception that Queensland was closed and not open for business (CCIQ, 2011). Similarly, six months on from the February 2011 earthquake in New Zealand, businesses reported difficulties in reopening including damage to premises, financial problems, insurance renewals and staff retention and recruitment (DoL, 2011). The most prominent issues still facing businesses by the end of 2012 were around cash flow, building relocation issues, retaining customers and dealing with insurance (Hatton et al., 2012). Table 1 summarises the challenges reported by sector groups following the earthquakes in Christchurch⁵.

⁵ The information is synthesised from the Resilient Organisations' monthly reports for APEC project on SME resilience, www.resorgs.org.nz/publications/research-reports

Table 1: Challenges reported by sector groups following the earthquakes in New Zealand

Sectors	Central Business District (CBD) Businesses	Farming	Tourism	Construction
Most reported challenges	Difficulty finding suitable places for relocation	Stress	Reduced visitor numbers	Pre-event sectoral vulnerabilities
	Prolonged urban planning process for the CBD	Wet ground conditions	Reputational damage	Skills shortages
	Ongoing disruptions to business operations due to demolition and reconstruction	Physical damage sustained on-farm	Physical damage to most tourism operators' premises in the CBD	Immigration issues related to the need to recruit skills from overseas

Source: Resilient Organisations' monthly reports for the APEC project on SME resilience.

In Australia, more than half of businesses affected by the floods were able to reopen within five days, while 17 per cent remained closed for three weeks or longer. More than 20 per cent of businesses surveyed by the National Australia Bank (2011) reported that it would take up to one month to recover and 22 per cent stated it would take one month or longer. The survey conducted by the Chamber of Commerce and Industry Queensland (2011) shows that among the types of assistance needed by businesses for restoring their capacity, financial assistance with cash flow was ranked as the highest priority.

In the case of post-Hurricane Katrina, Lam et al. (2009) reported that 25 per cent of businesses in New Orleans had reopened within four months, 38 per cent within ten months and 66 per cent within two years of the storm. The barriers to business reopening varied over their recovery timeframe (Table 2). The reported barriers and their timeline in Table 2, however, are consistent with issues voiced by the business communities in Canterbury following the earthquakes. Damage to business premises, coupled with financial constraints can affect the process of business recovery. As shown in Table 2, those two issues were reported as being prominent for businesses that were unable to reopen two years after the Hurricane Katrina.

Table 2: Barriers considered by New Orleans businesses to business reopening

Barriers to business reopening	6 weeks	4 months	10 months	2 years
Damage to premises	*			*
Damage to social and physical infrastructure	*		*	
Affected supplies and customers	*	*		
Cash flow/financial constraints	*			*
Uncertainty about the ability of flood levees to protect the city		*		
Difficulty recruiting new staff			*	

Source: (Lam et al., 2009)

It has to be mentioned that there is little information on the role insurance plays in business recovery from adverse circumstances such as natural disasters. The work undertaken by Resilient Organisations looking at the role of insurance in organisational recovery following the 2010 and 2011 earthquakes shows that New Zealand has a relatively high insurance penetration but underinsurance was reported as an issue following the earthquakes. Businesses were frustrated by the slowness of claims settlements.

A number of significant factors complicated the claims process and contributed to the delays in New Zealand, including: the number of damaging earthquakes, the number of claims, the extent of damage, open-ended policy wording, resource constraints, regulatory changes and technical challenges (Brown et al., 2013). Australia had similar experiences with insurance issues following the Queensland floods (Venn, 2012). Delays in insurance pay outs mean businesses, particularly small businesses, take longer to get re-established and thus may not bring staff back to work.

As evidenced in Australia, New Zealand and the US, beyond the ability to temporarily relocate businesses, the capacity to garner the financial and psychological resources to revive business operations is a big challenge for all types of businesses, particularly for small and medium enterprises (SMEs). Additionally, in many cases, businesses carry a social responsibility to look after their employees. Therefore, understanding employees' needs – what caused their low productivity or inability to attend work – following a natural disaster is critical for businesses to provide targeted support that can reduce the effects of business disruptions.

A better understanding of disaster impact on businesses could lead to improved recovery policy and planning. Equally important is an understanding of what creates barriers or challenges to their operations following a disaster and what drive business resilience in coping with disruptions. This can help decision-makers to come up with better strategies and practical tools for getting businesses through times of crisis. A concept of organisational resilience can be applied to guide the way our organisations plan for and respond to a disaster.

1.3 Sector vulnerabilities

Past events demonstrate that some sectors are more vulnerable than others and their specific needs should be considered, particularly when designing business continuity plans and policies. The type of industries that are most affected by a natural disaster, however, depends on the industrial structure of the affected region (Venn, 2012).

Some similarities emerge among the disasters studied in this report (Table 3). Service industries such as tourism, education, hospitality and the retail trade often experienced the most significant downturn as populations shrank and the number of visitors decreased. In economies like Japan, the US and Indonesia, agriculture and aquaculture tended to be among the worst-hit as well as manufacturing industry. In general, small businesses were highly vulnerable to disasters. As business activities within APEC economies are increasingly connected, cross-economy trades like imports and exports can be particularly affected by changes in the manufacturing productivity.

Table 3: Sectors that suffered large employment losses after natural disasters

Sectors	US	Indonesia	New Zealand	Chile	Japan	Australia
Tourism			*	*	*	*
Education			*			
Hospitality	*		*	*	*	*
Retailing	*		*	*	*	*
Agriculture		*	*	*	*	*
Aquaculture		*		*	*	
Manufacturing	*		*		*	*

Source: (BLS, 2006a), (Nazara & Resosudarmo, 2007), (Parker & Steenkamp, 2012), (United Nations, 2010), (EERI, 2011) and (Venn, 2012)

Understanding how a type of disaster would impact on different industry sectors can provide insights that can improve the design of business planning processes and the structure of industry institutions following disasters. In this report, we report on industry groups that were affected most by recent events in APEC economies. The following list is not exhaustive and there are likely to be a number of other sectors within and across APEC economies that faced unique challenges following a natural disaster.

1.3.1 Agriculture and aquaculture

Natural disasters were likely to affect the agriculture and aquaculture industries by causing damage to facilities, equipment, stock and land. In the case of a large tsunami, extensive loss of life occurred. As most businesses tended to be micro- or family businesses, subsequent disruptions to economic activity in these sectors also incurred income loss and created many jobless households.

In Indonesia, of USD 4.45 billion tsunami damage⁶, 60 per cent was associated with physical damage and 40 per cent was from lost income (Nazara & Resosudarmo, 2007). Around 78 per cent of the total damage was borne by the private sector (World Bank, 2005). While the oil and gas industry in Aceh escaped the tsunami virtually unharmed, the most seriously affected sector in terms of both the number of casualties and loss of capital was agriculture, particularly fisheries (World Bank, 2005).

According to the Ministry of Marine Affairs and Fisheries, by mid-January 2005 approximately 55,000 fishermen and aquaculture workers were confirmed dead (half of the total number of fishermen in Aceh) and another 14,000 still missing. The Food and Agriculture Organization (FAO) of the United Nations (2005a, 2005b) reported that around 40 to 60 per cent of coastal aquaculture ponds and between 36,000 and 48,000 hectares of brackish-water aquaculture ponds were seriously damaged. Ten per cent of rice fields were also badly affected with soil salinity problems.

In Japan, estimated costs from the Great East Japan Earthquake and Tsunami for agriculture, forestry and fisheries-related industries reached approximately USD 24 billion (EERI, 2011). The regional aquaculture industry in the coastal area of Tohoku suffered significant damage from the tsunami. The fishery food production industry, which employed 0.8 per cent of the

⁶ The World Bank's estimate was based on a standard assessment technique developed by the United Nations Economic Commission for Latin America and the Caribbean (ECLAC (United Nations Economic Commission for Latin America and the Caribbean), 2003).

overall workforce, accounted for around 30 per cent of the employees in the food production industry. As a consequence of the tsunami, job losses in this sector were significant.

In New Zealand, while the earthquakes created significant stress for agriculture, they had very little impact on revenues (Whitman, 2013). The effects of the earthquakes varied among different farming sectors. Dairy farms were found to be most affected by electricity disruption and structural damage. Mixed and arable farms were most significantly affected by the interruption of water services. Stress caused by these disruptions compounded the challenges of managing day-to-day activities. The importance of the farmers' psychosocial health, however, is likely to be the most critical vulnerability for farming organisations in Canterbury (Whitman et al., 2012).

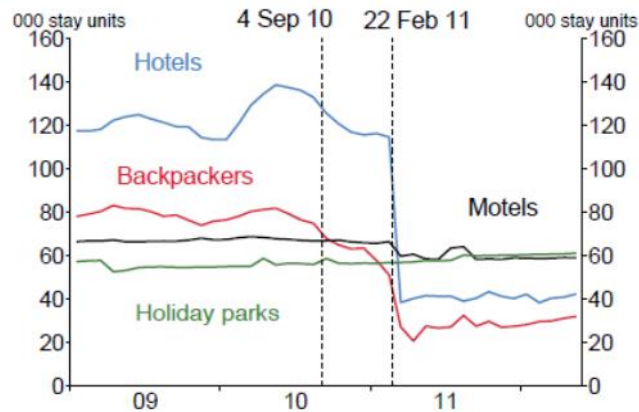
1.3.2 Tourism and hospitality

The tourism sector often serves as a critical economic driver in many APEC economies. However, its viability heavily relies on a region's attractions and activities as well as associated infrastructures such as transport. Natural disasters can result in significant physical and reputational damage to a region's tourism industry. Recovery of tourism markets, however, tends to take much longer than other sectors as it is closely tied to the timeline of the region's recovery.

In the 2010 Chilean earthquake and tsunami, the tourism industry along the coastline was reported to be amongst the hardest hit, with the port city of Constitución one of the worst affected. Three giant waves that swept through the town wiped out 80 per cent of its tourism infrastructure such as hotels and restaurants. Most of the people killed in Constitución were Chilean tourists on Orrego Island at the mouth of the Maule River (United Nations, 2010).

In New Zealand, the earthquakes caused different outcomes on tourism business as a function of their location, business type and direct physical impacts (Orchiston et al., 2012). For example, the Christchurch CBD had been the hub of tourist activity and it bore the brunt of damage caused by the February 2011 earthquake. Many of the attractions and hotels in the central city have been demolished, and others remain either closed or still behind the central city cordon⁷. As at the end 2012, the number of available hotel rooms and beds in backpackers' accommodation in Christchurch had fallen by over two-thirds since the February 2011 earthquake (Figure 1). International visitor numbers to Canterbury have also fallen since February 2011. International guest nights dropped by 6 per cent immediately following the September 2010 earthquake, and then by a further 33 per cent following the February 2011 earthquake and had yet to recover as of the end of 2012 (Parker & Steenkamp, 2012).

⁷ Update on the central city cordon: <http://cera.govt.nz/cbd-rebuild-zone/cordon-map>

Figure 1: Accommodation capacity in Christchurch

Source: Statistics New Zealand

1.3.3 Retail trades and food services

Natural disasters can have multiple effects on retailing trade and food services sectors as they are highly reliant on their input and output sources. Disruptions to a retailing supply chain can be prominent especially when the supply of goods and services are natural resources-reliant. Following a disaster, people often decreased spending on “non-essentials” which affected retailing and food services businesses more than others (Stevenson et al., 2012). Reduced numbers of customers in the wake of a disaster can cause more detrimental employment outcomes in these sectors.

The industry groups significantly affected by Hurricane Katrina were retail trade (USD 8 billion, or 20.2 per cent), wholesale trade (USD 5.9 billion, or 14.7 per cent) and construction (USD 5.7 billion, or 14.2 per cent) (Experian, 2005). Hurricane Katrina also altered the composition of employment, as experienced in Mississippi. From 2005 to 2007 in the hard-hit Gulfport-Biloxi area, reconstruction increased annual employment in the construction sector over 20 per cent, while annual employment in the accommodation and food services sector decreased over 10 per cent due to diminished tourism (Liborio, 2011).

Likewise, the decline in employment in Canterbury following the 2010 and 2011 earthquakes has been most marked in the retail trade, accommodation and food services sectors. According to the New Zealand Reserve Bank, employment in these sectors in Canterbury is estimated to have declined from 54,100 in June 2010 to 41,600 in June 2012 (Parker & Steenkamp, 2012). The vast majority of these job losses was for female workers, explaining the sharp pick-up in female unemployment in the region.

1.3.4 Manufacturing

In many APEC member economies, manufacturing industries make an important contribution to their national economies. However, as the manufacturing industry produces goods from raw materials or assembles products from components, it is heavily reliant on other natural resources industries such as agriculture and mining. The Asia-Pacific region in the last decade has become a global production base supplying the domestic and international markets, and some specialist niche markets. The food manufacturing industry in Japan and

New Zealand, for instance, produces high-quality products for both their domestic and export markets.

Due to its reliance on other supplies industries, the impact of natural disasters can have ripple effects on the manufacturing sector across regions. Disasters often strike the confidence of demand sectors, leading to weaker demand and uncertainty over future regional economic conditions. These effects flow through to the manufacturing sector in disaster areas, with output shrinking significantly.

In Japan, the hardest tsunami-hit sector was manufacturing, where the impact of the decline in exports was strongest. In the first few months following the tsunami, some countries in Asia, such as China, Hong Kong, China, Korea, Malaysia, the Philippines, Singapore, and Chinese Taipei, either banned imports or increased monitoring of goods coming from Japan (Herod, 2011). A particularly dramatic way in which the Great East Japan Earthquake and Tsunami revealed the connectivity of the global economy, however, was through what happened in its automobile industry. For instance, Japanese automobile producers had to slow down their US plants output due to concerns over the availability of parts shipped from Japan. Evidence shows that following the disaster, Japan's overall exports to the US fell by 23 per cent, those to the European Union fell by 11 per cent and Asia-bound shipments declined by 7 per cent (Yuasa, 2011).

In New Zealand, around one-third of manufacturing in the Canterbury region is primary sector manufacturing (e.g. food processing) and nearly all New Zealand's primary sector exporting is done via the manufacturing sector. The performance of agriculture has a significant bearing on the region's manufacturing prosperity. Both sectors were affected by the earthquakes. For instance, Canterbury Spinners yarn manufacturing operation in the hard-hit area of Bromley were forced to make approximately 195 staff redundant due to severe facility damage (Wood, 2011).

The New Zealand Manufacturers and Exporters Association (NZMEA) *Survey of Business Conditions* in March 2011 reported total sales in the manufacturing and exporting sectors in February 2011 dropped by 13 per cent following the February 2011 earthquake. As the market confidence remained strong in these sectors, most businesses expected their recovery would compensate for quake-induced production delays by April 2011 (NZMEA, 2011).

While the effects of natural disasters varied between different commercial sectors, all studied sectors exhibited similar levels of disruption. They have varied vulnerability that exposes them to different effects of disasters. As shown in this review, the degree of exposure is determined by a number of factors. The post-disaster weakness in economic activities within one sector such as agriculture or tourism can spread to all down-stream industries or sub-industries, indicating that difficult employment conditions exist economy-wide.

The initial impact of disasters was commonly experienced in all studied sectors. They all faced problems such as revenue losses, physical damages, business disruptions, reduced customer-base and decreased demand. As a result, reduced employment sector-wide can be a catastrophe to the local economy, especially in income-generator sectors on which the prosperity of a nation or region relies. The recovery and growth of these sectors in subsequent years, however, depend on how industries overcome their implicit vulnerabilities. Identifying these vulnerability factors within and across sectors and the interdependence between sectors can help businesses and sector groups better plan against different disaster scenarios.

1.4 Changes in the pattern of labour demand

Natural disasters tend to create large-scale shifts in the demand for skills. In some cases, there is a marked decline in employment in certain industries while demand for other services, particularly construction, increases. Apart from the sectoral vulnerabilities, women and young people in the studied APEC economies are likely victims in the labour market. As a result of disaster-induced changes in the skills demand, they are often among those who are less able to participate in the emerging employment opportunities during recovery. This section focuses on this change pattern and highlights its effects on certain groups of workers.

1.4.1 Winners and losers

In any disaster there are winners and losers. While disasters directly affected some sectors in the studied economies, post-disaster recovery often created emerging employment opportunities in construction. In a post-disaster environment, there is strong pressure to act quickly to get back to normal. The key characteristic that distinguishes the post-disaster condition from normal times is time compression which requires an unusual pace of capital expenditures and reconstruction (Olshansky et al., 2012). The need to replace lost homes, infrastructure and commercial properties generates a significant demand surge for construction workers.

As a result of this change of employment patterns, female workers tended to be badly affected as they were less likely to be able to take advantage of new job opportunities during the reconstruction phase. Time needed for construction training means young people, particularly school leavers, have less chance to take up immediate employment in construction. Surge demand signaled in the construction market was unable to provide a panacea for workforce issues in the aftermath of a disaster. There were often skill shortages coexisting with relatively high numbers of unemployment and low rates of labour force participation.

Impacts can be felt across the geography and the demography of a region. In Chile, the most affected industries varied by region. In terms of economic sectors, three regions, namely Bio Bio, Maule and O'Higgins, played a vital role before the disaster. The three regions represented a majority of job losses following the 2010 earthquake and tsunami. Across the three regions, service industries were most affected (United Nations, 2010). An OECD study shows that around 46 per cent of jobs lost were borne by women, but 85 per cent of jobs created went to men. Overall, women were most affected, accounting for 60 per cent of net job losses (Venn, 2012).

In New Zealand, research by the Canterbury Employment and Skills Board (2011) found that as of September 2011, employment fell sharpest for young people (22 per cent), in part due to the large numbers employed in the accommodation and retail industries and their vulnerability in times of labour market downturn. Female employment in Canterbury fell by 12.2 per cent, compared with a 4.3 per cent fall for male employment. This was largely because the traditionally female-dominated retail and hospitality sectors saw big falls in employment rates, reflecting the extensive damage to the Christchurch central business district (CBD). Over the year, the female unemployment rate in Canterbury increased from 5.5 to 6.7 per cent, while male unemployment increased from 4.2 to 4.5 per cent. The female

labour force participation rate fell from 64.5 to 59.2 per cent in Canterbury, compared with a modest increase for women nationally (to 62.4 per cent).

1.4.2 Job losses vs. skills shortages

In some cases, the rise in job advertisements in the region often outpaced that of other regions of the economy following the event, but the unemployment rate can also remain high. This is particularly the case in Canterbury and New Orleans. The dramatic rise in vacancies appeared to take place in recovery-related booming industries in which businesses had to attract the specific skills they needed, and on the other hand the high unemployment rate reflected the displacement of workers from the industries that shrank – many of whom cannot readily transfer into other sorts of work available.

Demand for construction-related skills such as demolition, repairs and construction, and associated professional services, has risen considerably in Canterbury following the February 2011 earthquake (Chang-Richards et al., 2013). Despite a fall in aggregate employment, there have been signs of difficulties in recruiting workers with desired skills. According to an investigation by the New Zealand Reserve Bank, online advertisements for skilled workers in Canterbury doubled since early 2011, and there appears to have been growing difficulty experienced by employers in matching workers with vacancies (Craigie et al., 2012). In the construction sector, for instance, employers found it difficult matching the seismic engineering skills and experience they were looking for with local job applicants (Chang-Richards et al., 2012).

In Australia, the construction sector sustained heavy losses as a result of the Queensland floods and wet weather. The revenue loss (12 per cent) borne by that sector was among the highest compared to other industries, followed by retail sector (approximately 10 per cent) (CCIQ, 2011). In 2011, there was some concern about skills shortages due to competition from the mining sector creating problems for rebuild-related construction companies recruiting skilled workers, including engineers and construction managers (Queensland Reconstruction Authority, 2011).

The competition for construction skills in a disaster context was not new. In 2009, following the Victorian bushfires, lack of construction workers for the house repair and rebuild was a prominent problem in fire areas as the active home building boom in the Melbourne Metropolitan area at the time was soaking up much of the labour capacity (Chang-Richards et al., 2012). In such a situation, the local labour market became less efficient in matching the skills required by employers and those of job seekers.

1.4.3 Training challenges

It has to be noted that a rebuild creates not only employment opportunities but also training challenges. Remedial education and job training have generally been more effective for some disadvantaged groups such as low-income adult women than for others (especially youth) (Holzer & Lerman, 2006). The type of training matters too. In the case of Hurricane Katrina, various kinds of private-sector training, including apprenticeships and sectoral programs, proved to work well in terms of creating a new generation of workforce for longer-term rebuild and recovery in the region (Zedlewski, 2006).

1.4.4 Change of wage levels

Finally, the changes in labour supply and demand also determine how average income adjusts in an affected area. A study on the impact of hurricanes in Florida on local labour markets, for instance, found that income per worker in affected counties rose up to four per cent relative to that in nearby unaffected counties, as workers moved and labour demand increased (Belasen & Polachek, 2009). There is a similar experience in New Zealand. The average hourly earnings increased at a slightly higher rate in Canterbury than elsewhere in New Zealand, which could be a reflection of a change in the composition of employment, with the loss of lower-paid jobs in retail and hospitality (Parker & Steenkamp, 2012).

1.5 Commentary summary

The employment environment is comprised of three distinct elements, namely individuals, businesses, and industries. The individual need at a microeconomic level represents the demand and supply side of labour markets during disaster recovery. It relates to livelihoods such as housing, families, access to social, financial and psychological resources. Business recovery (Zhang et al., 2009), infrastructural restoration (Brunsdon et al., 2004) and central government's role in economic recovery (Kim et al., 2010; Waugh Jr., 2009) at a macroeconomic level (community level), however, play a large part in increasing the overall economic resilience.

To what extent the labour market could adjust post-disaster depends on recovery of the employment environment at these three levels. A number of empirical studies (such as (Paton, 1999; Powell, 2010; Tierney, 1997; Webb et al., 2002)) have brought economic recovery into focus as one of the most challenging needs after a disaster. The economic impacts of a disaster may transfer to recovery burdens and have a compounding effect (Resilient Organisations, 2006). Therefore, as an integral element, the implications of business recovery need to be considered and incorporated into pre-event planning.

This chapter reviewed evidence from past events about what is likely to happen to a workforce, its workplaces, and the industry group in which it participates if a disaster of great intensity strikes. We look beyond the numbers of job losses and loss values to local circumstances at the time of the disaster - to the geography and the demography of those who were vulnerable to such shocks. The measure of labour market outcomes should not be based solely on numbers of unemployed or businesses closed but also on the answers to two questions: 1) How and where will those who are displaced from their jobs be replaced in the short term? And 2) How and where will those most vulnerable (women and youth) find employment opportunities for longer-term benefit? The answers to these questions can help to determine the appropriate and necessary support required from the government and charitable agencies.

Over the longer-term reconstruction, as shown in the review, labour market adjustment depends not only on employment opportunities arising in emerging sectors, but also workers' skills and the nature and quality of jobs available in the disaster region. All of these pose challenges to labour market policies. As some sectors, some workplaces and some workforces may recover quickly from disaster impacts, others need help managing their transitions back to the labour market. Therefore, post-disaster rebuilding in any economy needs to be supported by sound workforce strategies to help workers to upgrade their skills, obtain better jobs and raise standards of living.

Chapter 2 Trends and models in emergency management

Over the past 30 years there has been a substantial increase in the number and severity of natural and human-induced disasters occurring around the world: more than half of the reported disasters since the 19th Century have occurred since 1998⁸. Around the world, there have been changes in approaches to emergency management that increasingly seek to identify vulnerabilities, mitigate risks and empower communities to take responsibility for decisions that affect their lifestyles and livelihoods. This chapter will first outline the UN and APEC overall policy frameworks for emergency management and then go on to describe the economy-specific emergency management frameworks.

2.1 Hyogo Framework for Action (HFA) 2005-2015 & Post-2015 HFA2

The Hyogo Framework for Action was conceived to give impetus to the global work on disaster risk reduction. It was initiated by the United Nations under the *International Framework for Action for the International Decade for Natural Disaster Reduction of 1989*, and further articulated by both the *Yokohama Strategy and Plan of Action of 1994* and the *International Strategy for Disaster Reduction of 1999*. These documents represent the broader United Nations reference framework for disaster risk reduction and resilience to natural and man-made hazards.

At the World Conference on Disaster Reduction in January 2005, 168 countries adopted the *Hyogo Framework for Action 2005-2015 (HFA) – Building the Resilience of Nations and Communities to Disasters*. The UN General Assembly endorsed the HFA later that year under UN resolution 60/195. The HFA responds to the need for a comprehensive, integrated, multi-disciplinary approach to identifying and implementing disaster risk reduction measures.

Since its development, HFA has been an inspiration for knowledge, practice, implementation, experience and the science for disaster risk reduction (UN/ISDR, 2012). It is suggested that impacts and losses can be substantially reduced if authorities, individuals and communities in hazard-prone areas are well-prepared and ready to act and are equipped with the knowledge and capacities for effective disaster management. Guided by this tenet, one of the priorities under the HFA is to strengthen disaster preparedness for effective response at all levels (UN/ISDR, 2005).

The HFA has been a basis for countries to increase understanding and knowledge and to develop approaches and priorities for reducing risks and building resilience to disasters. In the past decade, global, regional and national efforts for disaster risk reduction and reinforcing resilience have increased. According to UN/ISDR (2013b), international momentum for disaster risk reduction in recent years has been around issues such as sustainable development, climate change adaptation, the Millennium Development Goals (MDG) or more broadly public and private investment strategies.

The HFA has been instrumental in embarking on a path towards building resilience at all levels. As we are heading toward the end of the current HFA, the development of a post-2015

⁸ The International Emergency Disasters Database: <http://www.emdat.be/natural-disasters-trends>

framework for disaster risk reduction⁹ is a priority for UN agencies and other stakeholders. In December 2012, the UN General Assembly (Resolution 67/2009) decided to convene the Third World Conference to Disaster Risk Reduction in Japan in early 2015 to review the implementation of the HFA over its ten-year term and develop a post-2015 framework for disaster risk reduction (referred to as *Hyogo Framework for Action 2* or HFA2). In the meantime, all disaster risk reduction stakeholders are expected to contribute and participate in the discussions and preparatory work leading to a final draft of a post-2015 framework for disaster risk reduction.

The UN Office for Disaster Risk Reduction (UN/ISDR) was tasked as the secretariat of the Third World Conference to facilitate the development of an HFA2 and to coordinate the preparatory activities in consultation with all relevant stakeholders. A background paper, *Towards the Post-2015 Framework for Disaster Risk Reduction*,¹⁰ was released in March 2012 outlining two phases of consultation. The post-2015 framework for disaster risk reduction will build on the HFA and is expected to be adopted by the World Conference for Disaster Risk Reduction and endorsed by the UN General Assembly in 2015.

2.2 APEC strategy for disaster risk reduction and emergency preparedness

With the intensity and frequency of disasters in the Asia-Pacific region expected to increase, disaster resilience is gaining importance as a core conceptual approach to build capacity of APEC economies to respond to and recover from such disasters. In recent years, the notion of a shared responsibility has been adopted – termed as Public-Private Partnership (PPP)¹¹ - which requires individuals, communities, the private sector, emergency management and support agencies, and all levels of government, to contribute to the management of risk and promoting community safety.

Since the adoption of the HFA, improving emergency preparedness, and building more resilient communities and businesses, has been a priority for APEC Leaders. The 14th and 15th APEC Economic Leaders' Meetings¹² in 2006 and 2007 reaffirmed APEC's value-adding role in building regional capacity in response to natural disasters. It is increasingly recognised that emergency preparedness is the key to building such a capacity and reducing the impacts of unexpected crises on civil society and business community¹³ (APEC TFEP 2008).

A Strategy for Disaster Risk Reduction and Emergency Preparedness and Response in the Asia-Pacific Region: 2009 to 2015, which was endorsed by the APEC Emergency Management CEO's Forum in 2008, identifies joint initiatives within the APEC process to complement multilateral, bilateral and national efforts to strengthen disaster risk reduction, preparedness and response in the Asia-Pacific region. The Strategy identifies three core objectives for APEC to pursue in the period to 2015, which is consistent with the HFA decade. The first objective is that decision makers in APEC economies understand the economic and social costs of disasters and equally, the cost of inaction. Second is that gaps in regional disaster risk reduction approaches are identified and shared to support the delivery of targeted

⁹ <http://www.preventionweb.net/posthfa/?pid:507&pih:2>

¹⁰ http://www.preventionweb.net/files/25129_towardsapost2015frameworkfordisaste.pdf

¹¹ APEC workshop on Public Private Partnerships and Disaster Resilience, Bangkok, 24-29 August 2010

¹² The 14th APEC Economic Leaders' Meeting was held in Hanoi, Vietnam, in November 2006, the 15th APEC Economic Leaders' Meeting was held in Sydney, Australia in September 2007.

¹³ 2011 APEC Leaders' Declaration

capacity-building initiatives, and thirdly, that a suite of practical mechanisms are developed that will aid APEC economies to build business and community resilience.

The Strategy also called for a shared approach that goes beyond vesting responsibility in government or emergency service organisations to protect communities. A broader disaster resilience concept implies that individuals should recognise they are also responsible for making certain decisions that affect their own resilience and wellbeing. The *APEC Framework for Capacity Building Initiatives on Emergency Preparedness* emphasises the goal of “human security” through developing effective preparedness capabilities to reduce the human and property recovery costs of emergencies and facilitate post-disaster rehabilitation and reconstruction.

2.3 Economy-specific emergency management framework in APEC region

In the APEC member economies, approaches to emergency management have evolved to reflect changing threats, community needs and expectations. There is no common emergency management standard - each country adopts the most appropriate operating structure and model to suit its individual needs. Australia, Canada, New Zealand and the US share commonality of using a comprehensive “all hazards” system with an integrated risk management framework. In particular, Australia emphasises the “comprehensive, all hazards, all agencies, and prepared community” approach to emergency management. A synthesis of disaster management framework used in some economies is presented in Table 4.

Table 4: A synthesis of disaster management frameworks used in some economies

Country	Driver events	Agency	Main mandates	Disaster Management Model
The US	<ul style="list-style-type: none"> • 2001 Sept. 11 terrorist attacks • 2005 Hurricane Katrina 	DHS FEMA	<ul style="list-style-type: none"> • Disaster Mitigation Act • Post-Katrina Emergency Management Reform Act • FEMA Strategic Plan 2008-2013 	Capability-based MPPRR model (Mitigation, Preparedness, Protection, Response, Recovery)
Australia	<ul style="list-style-type: none"> • 1974 Cyclone Tracy • 1989 Newcastle earthquake • A series of bushfires 	EMA	<ul style="list-style-type: none"> • Emergency Management Act 2006 • Local Government Act 1993 	Risk management-based PPRR model (Prevention, Preparedness, Response, Recovery)
New Zealand	<ul style="list-style-type: none"> • 1931 Napier earthquake • Learning from the 1994 Northridge earthquake in US 	MCDEM	<ul style="list-style-type: none"> • CDEM Act 2002 • National CDEM Strategy • National CDEM Plan 	Risk management-based '4R' model (Reduction, Readiness, Response, Recovery)
China	<ul style="list-style-type: none"> • 1976 Tangshan earthquake • 1998 Yangtze river floods • 2003 SARS epidemic • 2008 Wenchuan earthquake 	MCA EMO	<ul style="list-style-type: none"> • Emergency Response Law of the People's Republic of China • National Disaster Reduction Plan of the People's Republic of China 	A top-down approach with a focus on disaster mitigation
Indonesia	<ul style="list-style-type: none"> • 2004 Indian Ocean tsunami 	BNPB	<ul style="list-style-type: none"> • The Disaster Management Law 24/2007 • National Action Plan for Disaster Risk Reduction (2010-2013) 	Disaster Management Cycle (Pre-disaster planning and preparedness, emergency response, post-disaster longer-term recovery)

Note: DHS (The Department of Homeland Security), FEMA (Federal Emergency Management Agency), EMA (Emergency Management Australia), MCDEM (The Ministry of Civil Defence and Emergency Management), MCA (The Ministry of Civil Affairs), EMO (Emergency Management Office), BNPB (The National Disaster Management Agency)

The focus in both Australia and New Zealand, particularly since the 1990s, has moved to risk management and sharing responsibility for community safety. The need to identify, analyse, evaluate, treat and monitor risks is a key feature of the Australian/New Zealand Risk Management Standard (AS/NZS 4360). This approach recognises that some hazards cannot be completely eliminated, so they need to be managed to mitigate their potential impact. The risk management approach is integrated into their emergency management framework to increase the capability of communities and individuals to prepare for, respond to and recover from disasters.

Since 1989, in response to the UN's appeal of the *International Disaster Reduction Decade*, the Chinese Government has launched a series of disaster reduction and mitigation initiatives. Meanwhile, in response to the direction of UN/ISDR, the Chinese Government established the Chinese National Committee for International Disaster Reduction (CNCIDR) in October 2000, consisting of 30 official agencies and social groups. In December 2005, China established an Emergency Management Office (EMO) and started to build an integrated emergency management system.

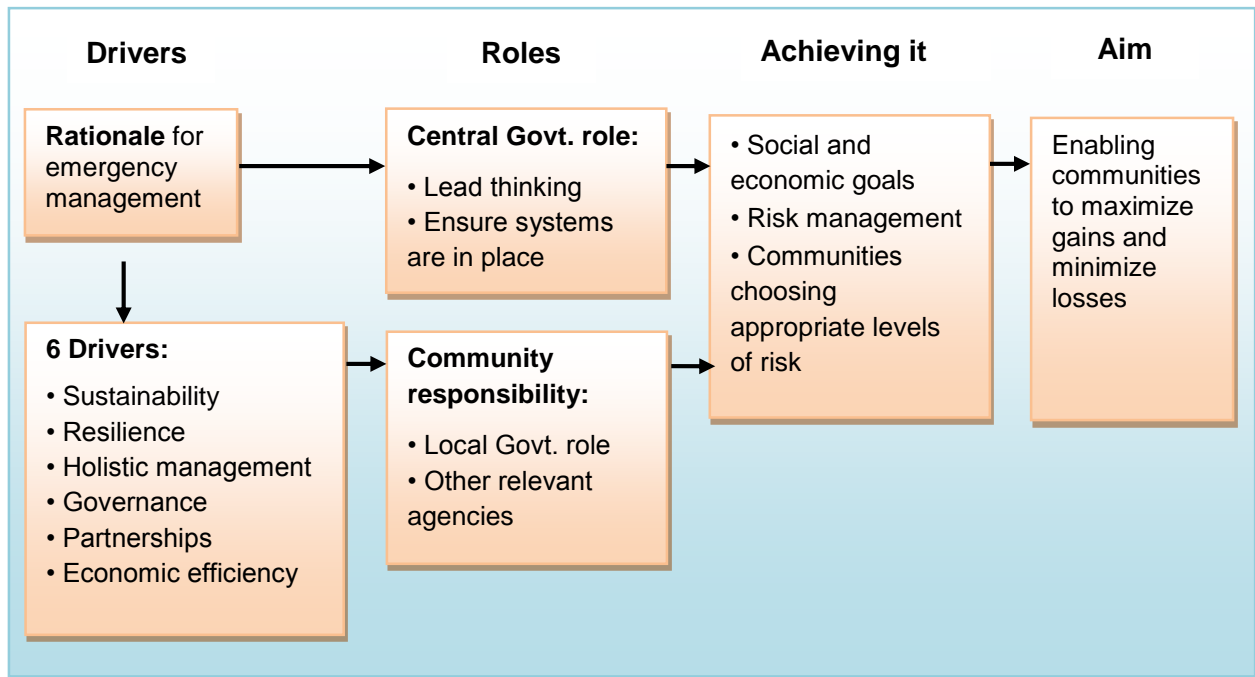
The disaster management landscape in Indonesia has changed greatly since the 2004 Indian Ocean tsunami and was further influenced by the HFA in 2005. In 2007, Indonesia enacted *Disaster Management Law (24/2007)*. This has been further elaborated upon in subsequent Government Regulations, Presidential Regulation and numerous implementing guidelines (GFDRR, 2009). It provides a comprehensive basis for disaster management during the three phases of a cycle: pre-disaster planning and preparedness, during emergency response and post-disaster longer-term recovery (UNDP, 2009).

After Hurricane Katrina, in October 2006, the US Congress passed the *Post-Katrina Emergency Management Reform Act*, which redefined a stronger Federal Emergency Management Agency (FEMA) which was granted a more robust preparedness mission. The Act also adds a fifth component – protection – to the four components of emergency management framework: preparedness, response, recovery and mitigation. “Capacity building” has been proposed as a key watchword to address the increased challenges posed by disasters, emergencies and terrorist events in the country.

A review of the evolution of and analysis of key elements in the disaster management system in Australia, China, Indonesia, New Zealand the US shows that emergency management is commonly influenced by broader social changes in these countries. The reform of institutions in any particular country is rooted in its past events. The country's legislative and governmental systems provide the basis for plans and organising disaster risk reduction. The governance structures exhibit formal and informal institutions which shape the policy formulation and implementation specific to the nation.

Regardless of the differences, there are common conceptions of ‘disaster risk’, ‘vulnerability’, ‘resilience’ and ‘capability’ inherent in these countries’ disaster management practices. This common vision has brought organisations and individuals together to work towards a comprehensive disaster management. Britton (2002) suggested six key drivers that alter the ways in which individuals as well as institutions frame perspectives and actions to disaster management (Figure 2).

Figure 2: Emergency management drivers



Source: (Britton, 2002, p.47)

It seems that the five countries, to varying degrees, have engaged these drivers to enable an improved emergency management/disaster management. There were symbolic disaster events that played a significant role in driving legal and institutional reforms for addressing the issues arising after a disaster, with an increasing focus on capacity building to deal with the next disaster.

Increased political and economic pressures to reduce disaster losses can be seen in all five countries. However, disaster management systems in Australia, New Zealand and the US differ from those in China and Indonesia, with the latter focusing more on centralised disaster management leadership while the former emphasise disaster preparedness and mitigation measures at a local level. Whilst individual countries will face their own challenges in addressing emergency management, learning lessons from past events and sharing experience with other nations can often provide innovative ideas, offer differing perspectives, and ultimately inform the way in which the government protects people, property and the environment from disasters.

Chapter 3 Human resource development in international processes

There are a few policies specifically aimed at workforce protection and development in a crisis context. This chapter outlines the strategy and actions of the various organisations directly responsible for considering human resource development policy.

3.1 World Bank social protection and labour strategy

The World Bank's approach to labour strategy in crises is within its general framework of "social risk management". The social risk management framework is consistent with other current approaches to social policy and poverty reduction, and serves as an important conceptual framework for the World Bank's work in social protection sector (World Bank, 2001). The concept of social risk management asserts that individuals, households and communities are exposed to multiple risks from different sources - both natural and man-made. Poor people tend to be more exposed to risk and have less access to effective risk management instruments (Holzmann & Jorgensen, 2000). This vulnerability, however, gives rise to the need for public intervention.

A risk management approach, along with other factors specific to a given population, are considered in the World Bank's targeted risk management strategies. The World Bank (2001) also proposed several principles to guide the application of this new risk management framework, including:

- Viewing social protection issues in the context of social risk management
- Looking at all aspects of social protection
- Achieving a balance among strategies
- Achieving a balance among arrangements
- Matching instruments to risks
- Being prepared for risk
- Matching supply and demand of risk management instruments
- Involving stakeholders in designing and implementing programs

Box 1: The World Bank's involvement in social protection

The World Bank's involvement in social protection – which traditionally consists of labour markets, pension, social funds and “safety nets” – began with work on labour markets in the 1970s and the incorporation of safety net components into structural adjustment programmes in the 1980s. The debt and economic crises of the 1980s in various parts of the world set the stage for the World Development Report 1990 on poverty, which recognised the importance of safety nets.

Events of the 1990s brought social protection programmes to the forefront of the World Bank's work. In 1995, the World Bank espoused a broader view of social protection in its World Development Report 1995, which focused on labour issues, as well as in its groundbreaking 1994 study of aging and pension reform, *Averting the Old Age Crisis*.

The World Bank's portfolio in social protection reflects its growing involvement in the sector in response to world conditions. The first Social Protection Sector Strategy set out directions for the World Bank's work along four dimensions: regional and country priorities; traditional Bank products; partnerships with other organisations, and resources (financial and human). Since the World Bank's first strategy, there has been a progressive evolution of its policy around social protection, as evidenced in its Social Protection and Labour Strategy: 2012-2022.

Source: (Marzo & Mori, 2012; World Bank, 2001)

Similar to the emergency management cycle adopted in many APEC economies, the World Bank used three phases of crisis - before, during and after - to define the functions of its social protection and labour strategy. A '3Ps' framework was formalised in its first *Social Protection Sector Strategy: from safety net to springboard* (World Bank, 2001). The 3Ps refers to **prevention** of negative impacts by building resilience and preparing responses (before), **protection** of affected households, especially the poor, helping them to cope (during) and **promotion** of recovery (after). In line with the Social Risk Management and the 3Ps framework, each of the World Bank's social protection and labour instrument is designed to contribute to one or more 3P functions (Table 5).

Table 5: Social protection and labour instruments

Instruments/Functions		Prevention	Protection	Promotion
Social insurance	Unemployment/pensions/health insurance	*	*	
	In-kind transfers	*	*	
	Cash transfers	*	*	
Social safety nets	Conditional cash transfers	*	*	*
	Subsidies		*	
	Public works	*	*	*
Labour market policies	Trainings & skills development	*	*	*
Analytical & advisory activities	Risk and vulnerability assessments, crisis preparedness analysis	*		

Source: (Marzo & Mori, 2012)

Drawing on the lessons from practice over the last decade, a new World Bank *Social Protection and Labour Strategy 2012-2022* was developed to help countries cope with the rapidly changing socio-economic landscape. The new strategy builds on the basic analytical

foundations of the first World Bank social protection and labour strategy, aiming to achieve three intertwined goals: resilience, equity, and opportunity.

In the new strategy, the World Bank's social and protection and labour programmes include three systems: 1) social assistance (social safety nets) such as cash transfers, school feeding and targeted food assistance; 2) social insurance such as old-age and disability pensions, and unemployment insurance; and 3) labour market programmes such as skills-building programs, job-search and matching programmes and improved labour regulations (Marzo & Mori, 2012).

Figure 3 below shows how the three goals are in line with the 3Ps framework. For instance, resilience for the vulnerable is through insuring against the impact of drops in wellbeing from a range of shocks. Equity for the poor is through protecting against destitution and promoting equality of opportunity. Opportunity for all is through promoting human capital in children and adults and “connecting” men and women to more productive employment (World Bank, 2012b). Within the new strategy, the World Bank’s social protection and labour systems, policies and programmes are designed to help individuals and societies manage risk and volatility and protect them from poverty and destitution – through instruments that improve resilience, equity and opportunity.

Figure 3: Three goals of social protection and labour systems, source:



Source: (World Bank, 2012b)

It has to be noted that the World Bank's experience with interventions in each of the main areas of social protection has its primary focus on developing countries. However, the World Bank’s involvement in social protection has provided some lessons to guide workforce strategies. These include (Vakis, 2006; World Bank, 2001, 2012a):

- Successful pension reform involves country ownership, flexibility, institution building, adoption of innovations, and sharing of experience.
- Social funds do well in terms of targeting, impact, sustainability, comparative advantage, and cost, and have shown the importance of community-driven development in achieving impact.

- In labour markets, vocational education and training perform best when demand-driven.
- Job placement activities are generally effective and efficient, and labour policies need to facilitate job creation and enhance the development of payoffs from jobs.
- Social safety nets are most effective when established before a crisis hits, and their delivery mechanisms should involve communities.
- The inclusion of social protection measures in the policy mix supported in adjustment operations has contributed to positive social and economic outcomes.

3.2 Employment policies within the United Nations systems

The *World Summit for Social Development*¹⁴ put the goal of full and productive employment at the forefront of the UN development agenda and recognised that the generation of productive employment is the most effective means of reducing poverty and promoting social integration. At the special session in 2000, the General Assembly emphasised the need to elaborate a coherent and coordinated international strategy on employment.

At the 2005 World Summit, countries committed to making the goals of full and productive employment and decent work for all a central objective of national and international policies. Achieving these goals is an integral part of the efforts to meet the internationally agreed development goals, including the Millennium Development Goals (MDGs), and the broader UN development agenda, with a focus on improving the lives of poor people.

Social protection and youth employment have been priority themes for the UN's social development goal. Employment was also recognised as an emerging development challenge for the post-2015 UN development agenda (ILO, 2012a). Whilst a full review of UN's employment policies is beyond the scope of this report, this section reviews UN's involvement in achieving employment and decent work in a crisis situation, including post-conflict and disaster response.

3.2.1 UN Policy for Post-conflict Employment Creation and Income Generation

To reinforce its current work in post-conflict settings, in 2006 the UN set out its policy for making employment a key element of peace-building. On 28 November 2006 the United Nations Secretary-General requested the International Labour Organization (ILO) and the Bureau for Crisis Prevention and Recovery (BCPR)¹⁵ to co-lead an inter-agency task force. The aim of the task force was to draft a United Nations system-wide policy paper on post-conflict employment creation, income generation and reintegration.

Approved in May 2008, the *United Nations Policy for Post-Conflict Employment Creation, Income Generation and Reintegration* (United Nations, 2009) is the product of two years of research, analysis and engagement among agencies throughout the UN system. The policy provides a United Nations system-wide approach to employment and reintegration built around a set of guiding principles and programming guidelines designed to support programming at national levels. A guidance note *Employment Creation, Income Generation*

¹⁴ <http://social.un.org/index/employment.aspx>

¹⁵ Within the United Nations Development Programme (UNDP)

and Reintegration in Post-Conflict Settings sets out the implementation and institutional arrangements including distribution of roles and responsibilities among the different United Nations bodies in this field.

The policy document set the tone for the United Nations acting as a facilitator and a catalyst for the process of transforming post-conflict development opportunities into reality. Despite a post-conflict context for which the policy is aimed, five guiding principles for programming are worth considering in a post-disaster context. They are listed as follows (United Nations, 2009).

Guiding Principle 1: Be coherent and comprehensive

Programmes must be derived from assessments, including pre-programme and labour market assessments. They require structured coordination amongst all stakeholders, building on comparative advantages. Interventions should be incorporated into national and sectoral post-conflict frameworks and policies.

Guiding Principle 2: Do no harm

Programmes must avoid harmful spill-over effects on individuals, communities, the environment and the economy. A surge in aid flows can, for example, lead to a sharp appreciation of the real exchange rate which can discourage investment in employment-intensive exports. Competition for staff can slow recovery of government institutions and distort private sector wage levels.

Guiding Principle 3: Be conflict-sensitive

UN Programmes must at all times avoid creating and reinforcing causes of conflict. Analysis and continuous monitoring of the root causes of conflict, as well as of programme impacts, need to be an integral part of post-conflict efforts.

Guiding Principle 4: Aim for sustainability

Sustainability requires national and local ownership and investment in capacity development of governments, communities and other stakeholders. Short-term employment programmes have to anticipate and complement programmes supporting the creation of longer-term sustainable employment.

Guiding Principle 5: Promote gender equality

Although certain changes in gender roles during conflict can have an empowering effect on women, the social foundations of gender relations tend to remain largely unchanged post-conflict. Programmes must systematically assess opportunities in a gender disaggregated way and support both women's and men's efforts to build new social and economic relationships.

3.2.2 ILO's Response to conflicts and disasters

As part of the United Nations system, the primary goal of the ILO is to contribute to the achievement of full and productive employment and decent work for all, including women and young people, a goal embedded in the *2008 ILO Declaration on Social Justice for a Fair Globalization*¹⁶. In order to support its member states and the social partners to reach their goals the ILO pursues a *Decent Work Agenda*¹⁷ which comprises four interrelated areas: respect for fundamental workers' rights and international labour standards, employment promotion, social protection and social dialogue.

The work of the ILO on employment is broad and encompasses a diverse range of topics and at least six means of action (policy advice, policy research, development of tools, manuals and policy guidelines, technical cooperation, capacity building of ILO constituents, and expanded and strengthened partnerships). Responses to conflicts and disasters are among the main employment programmes of the ILO. Acting as a facilitator for preparedness, initial response, capacity building and strategic partnerships, the ILO is responsible for supporting its field offices in identifying entry points for livelihood recovery and providing the analysis needed for a meaningful contribution to the "one-UN" response (ILO, 2010b).

By 2008, the *International Programmes on Crisis Response and Reconstruction* had been established to direct the ILO's response to natural disasters and post-conflict environments. The ILO has been working in some disaster-affected countries such as China, Indonesia, Pakistan, the Philippines, and Haiti following its earthquake in 2010. In these countries, the role of the ILO focused on "framing" or "influencing" the design and implementation of internationally- supported programmes on disaster response and reconstruction so that they explicitly take account of decent work concerns (ILO, 2010a).

"Decent work" has been defined by the ILO and endorsed by the international community as being "*productive work for women and men in conditions of freedom, equity, security and human dignity*" (ILO, 2007). Putting the Decent Work Agenda into practice is achieved through the implementation of the ILO's four strategic objectives (four pillars), with gender equality as a cross-cutting objective¹⁸.

- **Creating jobs** – an economy that generates opportunities for investment, entrepreneurship, skills development, job creation and sustainable livelihoods.
- **Guaranteeing rights at work** – to obtain recognition and respect for the rights of workers. All workers, and in particular disadvantaged or poor workers, need representation, participation, and laws that work for their interests.
- **Extending social protection** – to promote both inclusion and productivity by ensuring that women and men enjoy working conditions that are safe, allow adequate free time and rest, take into account family and social values, provide for adequate compensation in case of lost or reduced income and permit access to adequate healthcare.
- **Promoting social dialogue** – Involving strong and independent workers' and employers' organisations is central to increasing productivity, avoiding disputes at work, and building cohesive societies.

¹⁶ http://www.ilo.org/global/resources/WCMS_099766/lang--en/index.htm

¹⁷ <http://www.ilo.org/global/about-the-ilo/decent-work-agenda/lang--en/index.htm>

¹⁸ ILO Decent Work Agenda: <http://www.ilo.org/global/about-the-ilo/decent-work-agenda/lang--en/index.htm>

Apart from the Decent Work Agenda, the International Labour Organization and the World Health Organization are currently co-leading the *One-UN Social Protection Floor Initiative*¹⁹. This initiative was endorsed by the United Nations, the G20, and numerous governments and non-governmental organisations in 2009. The Social Protection Floor is a global social policy approach promoting integrated strategies for ensuring access to essential social services and income security for all. It promotes the importance of effective social protection and labour programs and policies. In addition, multilateral banks, United Nations agencies, the European Commission and bilateral partners are increasingly helping countries to improve their social protection and labour efforts.

3.3 OECD skills strategy

The OECD has one of the world's largest and most reliable sources of comparable statistical, economic and social data. It monitors trends and evolving patterns of employment²⁰. For instance, the annual OECD Employment Outlook has been playing a key role in monitoring the unfolding jobs crisis and the response of OECD countries. Using employment data, the OECD works with governments to recommend labour policies in tackling labour market, social policy and international migration challenges.

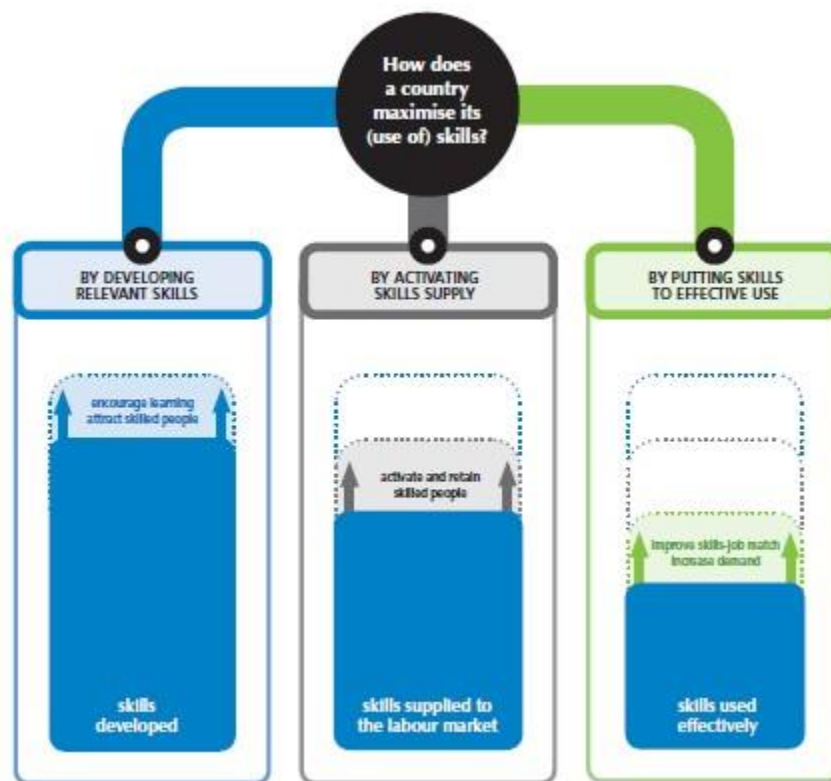
The OECD Directorate for Employment, Labour and Social Affairs (ELS) leads the Organization's work on employment, social policies, international migration and health. In recent years, the work of the OECD in the policy areas of ELS affairs has been focusing on the most vulnerable groups – youth, the low-skilled and immigrants (OECD, 2013). Its activities are around four main themes: 1) raising employment rates and labour productivity growth; 2) upgrading workers' skills; 3) modernising social protection systems to extend opportunities for all and responding to demographic challenges; and 4) managing labour migration.

The *OECD Skills Strategy* (OECD, 2012) provides an integrated, cross-government strategic framework to help countries understand more about how to invest in skills in a way that will transform lives and drive economies. The Strategy helps countries to identify the strengths and weaknesses of their national skills systems, benchmark them internationally and develop skills policies. It addresses three inter-related policy levers (Figure 4).

¹⁹ <http://www.socialprotectionfloor-gateway.org/>

²⁰ <http://www.oecd.org/employment/emp/onlineoecdemploymentdatabase.htm>

Figure 4: Inter-related policy levels within the OECD Skills Strategy



Source: (OECD, 2012)

- **Developing relevant skills:** Ensuring that the supply of skills is sufficient in both quantity and quality to meet current and emerging needs is a central goal of skills policies. Supply can be ensured by developing the right mix of skills through education and training, and influencing the flow of skills by attracting and retaining talent.
- **Activating skills supply:** Identifying inactive individuals, possibly re-training them, ensuring that the benefit system offers them financial incentives to enter or return to the labour market, and removing demand-side barriers to hiring.
- **Putting skills to effective use:** Ensuring that available skills are used effectively through matching the skills demanded in a job with the skills of the person doing the job.

In 2012, the OECD initiated a survey of six member countries – Australia, Chile, Japan, New Zealand, Turkey and the US – examining the labour market impact of recent natural disasters in those countries. It also identified the main labour market programmes providing help to displaced workers and discussed the challenges of implementing such policies in the aftermath of a natural disaster (Venn, 2012).

Helping displaced workers back into work quickly and minimising their income losses is an important challenge for employment policy. To continue its work with displaced workers, a new OECD project²¹ aims to examine how “displaced” workers fare after job loss and what are the most appropriate policies for helping them back into work. New evidence on the incidence and consequences of job displacement in OECD countries was presented in the

²¹ <http://www.oecd.org/els/emp/backtoworktheoecdreviewondisplacedworker.htm#ctry>

2013 OECD Employment Outlook (released in July 2013), to be followed by a series of nine country policy reviews and a cross-country synthesis report.

3.4 APEC human capital policies

Human resource development activities within APEC are carried out through the Human Resources Development Working Group (HRDWG) which conducts work programmes on education, labour and capacity building to develop human resources through three networks: Capacity Building Network (CBN), Education Network (EDNET) and Labour and Social Protection Network (LSPN). The 1994 APEC Ministerial Meeting in Jakarta, Indonesia, set out a *Human Resources Development Framework for APEC*, which stipulates the following objective of human resource development in APEC and guiding principles (APEC, 1994).

- The people of the Asia Pacific are the most important resource in economic growth and development, one of whose goals is to enhance the quality of life and well-being of our peoples.
- The development and protection of human resources contribute to the attainment of such fundamental values as the alleviation of poverty, full employment, universal access to primary, secondary and vocational education, and the full participation of all groups in the process of economic growth and development.
- Human resources development requires cooperative action by public, and business/private sectors, educational and training institutions.
- In designing regional approaches to human resources development attention must be given to the diversity of experiences and situations in the region.

In November 2009, APEC leaders expressed their support for a new growth paradigm for a “connected Asia-Pacific in the 21st Century” that focuses on inclusive growth, broadening access to economic opportunities by facilitating worker re-training, skills upgrading and domestic labour mobility. This inclusive growth will also look to design social safety nets that provide short-term support but avoid long-term dependence.

Building on this, the 5th APEC Human Resources Development Ministerial Meeting in 2010 developed *APEC Human Resource Development Ministers’ Action Plan (2011-2014)* to direct HRDWG to advance the *APEC Growth Strategy*²². Guided by *APEC Principles on Disaster Response and Cooperation* (APEC TFEP, 2008a), three priority areas are highlighted in the Action Plan: 1) accelerating job creation by employment-oriented growth, 2) strengthening social safety nets, and 3) building a skilled and adaptable APEC workforce into and beyond recovery.

Emergency preparedness has become a significant and growing priority for APEC economies. Human resource development following a natural disaster also has a prominent role in the APEC policy agenda. The current APEC ‘Building natural disaster response capacity – sound workforce strategies for recovery and reconstruction’ Project (the APEC Natural Disasters Workforce Project) represents a step towards employment of macroeconomic frameworks in disaster settings.

²² http://www.mofa.go.jp/policy/economy/apec/2010/docs/aelmdeclaration2010_e04.pdf

3.5 Commentary summary

Set within a broad evolutionary framework, this chapter outlines the pathways through which institutional changes and renewed disaster experiences influence managing workforce issues following a crisis. It is found that the features and processes of different social development systems (UN, ILO, World Bank, OECD and APEC) shape their workforce strategies (Table 6).

Table 6: Comparison of labour policy priorities in international developments

Agency	Priorities of workforce strategies	Context
World Bank	<ul style="list-style-type: none"> • Social safety nets • Social insurance • Labour market programmes 	Crisis
UN	<ul style="list-style-type: none"> • Job creation • Re-integration of workforce into livelihood 	Post-conflict
ILO	<ul style="list-style-type: none"> • Quality of jobs (decent work) • Promotion of skills (training and education, capital assistance to SMEs and self-employed) • Social protection 	General labour employment support & post-disaster
OECD	<ul style="list-style-type: none"> • Social protection – especially for the most vulnerable (youth, low-skilled and immigrants) • Up-skilling and labour productivity 	General labour employment policy & new projects looking at effects of disasters on displaced workers
APEC	<ul style="list-style-type: none"> • Skills promotion • Job creation • Social safety nets 	General labour employment policy & new projects looking at sound workforce strategies in disaster settings

A review of different policy frameworks in relation to workforce strategies in a crisis setting shows three key focus areas: 1) social protection; 2) skills promotion through jobs training and skills development; and 3) job creation. Policy assistance in different systems also targeted different populations. For instance, while extensive work has been done by the World Bank and the UN with respect to the role of social safety nets in responses to crises, much of their work is focused on developing countries and/or within the context of poverty alleviation. Nevertheless, the World Bank and the UN's policies provide a strong foundation for agencies like OECD and APEC which have a narrower focus to look at good practice in workforce strategies for post-disaster recovery and reconstruction.

In APEC economies, the ILO has advocated natural disaster responses be more closely linked to social protection policies, with more dialogue between stakeholders to ensure the value of partnerships with businesses and the private sector are rallied. The new *Japan Earthquake Project*²³ launched by ILO's Japan office aims to collect and compile lessons and good practices from the recovery efforts in Japan and to share them with a wide circle of the international community. It is hoped that the final outputs of the Project will better inform future natural disaster recovery efforts and policies including the post-Hyogo Framework of Action (HFA2) in the Asia and Pacific region and beyond.

There is recognition that when employment-related human impacts are ill-handled, pre-existing conditions in the labour market are most likely to combine to produce more

²³ http://www.ilo.org/asia/whatwedo/projects/WCMS_209150/lang--en/index.htm

vulnerabilities for those who are displaced from their jobs (Zedlewski, 2006). A “one size fits all” approach may not address some structural problems rooted in a labour market. There is a need to shift from post-disaster labour market response to developing improved processes pre-event to better cope with disaster shocks.

Chapter 4 Workforce strategies in past reconstruction

In APEC economies, most of the policy responses to the natural disasters have been created in response to events, as well as using pre-existing mechanisms. The development of labour market strategies post-event is often guided by existing international or national labour force policies and principles under a broader emergency management framework, as discussed above. This chapter reviews a range of policies and practice taken by the studied APEC economies in response to the labour market crisis after natural disasters.

4.1 Assistance to individuals in the workforce

Income support in the form of subsidies or benefits were a common social safety instrument in the studied APEC economies. In most countries, unemployment benefits existed before a disaster event and were provided to people displaced from jobs due to the disasters. Additional support was provided in some cases to subsidise income losses of a certain population.

Several countries extended the normal length of unemployment benefits for those affected by disaster. In Japan, the unemployment benefit for the 2011 tsunami victims was extended up to 360 days in disaster-affected areas. Some governments relaxed the application procedure or extended the benefit coverage. For instance, in New Zealand, the Work and Income Department waived the pre-benefit requirement for attending an information seminar. In the United States, the Federal Disaster Unemployment Assistance²⁴ (DUA) was provided by FEMA following Hurricane Sandy (FEMA, 2006). This fund was available for self-employed individuals who were living or working in the affected counties at the time of the disaster.

In Japan, the Public Employment Security Offices and Labour Standard Inspection Offices took initiatives to support individual workers, such as special treatment of labour insurance (unemployment insurance and worker's compensation insurance), expanding the Employment Adjustment Subsidy Programme (EASP) and enhancing job placement for unemployed including new graduates, and securing occupational safety and health (ILO, 2012b).

In addition to usual unemployment benefits with standard eligibility criteria, the Australian Government also provided a Disaster Income Recovery Subsidy for small businesses and farmers who lost income as a result of Queensland floods and were not receiving other forms of income support or pension (Venn, 2012). The Australian Government Disaster Recovery Payment was paid to assist people adversely affected by local natural disasters. For instance, payments of AUD 1,000 per eligible adult and AUD 400 per eligible child were offered to victims affected by the January 2013 Queensland floods and previous similar events (Department of Human Services, 2013).

In Chile, according to Venn (2012), the Ministry of Labour and Social Security created a number of emergency jobs, primarily to work with the Military Corp of Labour, an agency of the Chilean army. Unemployed people were hired from affected areas to work in 74 municipalities and two islands on tasks of reconstruction, demolition, removal and clearing of

²⁴ <http://lwd.dol.state.nj.us/labor/ui/aftrfile/dua.html>

debris, as well as public welfare. Participants were paid the minimum wage but also received social protection.

In Indonesia after the 2004 tsunami, Mercy Corps initiated a Cash for Work (CFW) programme to help people who lost jobs as a result of the tsunami. Many jobless households participated in this programme in clearing debris during the initial stage. CFW payments ranged from USD 1.02 (Rp. 10,000) to USD 7.65 (Rp. 75,000) per day, depending on the type and skill level of work, the length of the workday and the period of the project. In general, the daily rate for unskilled labour was set at USD 3.06 (Rp. 30,000) with an additional allowance of USD 0.51 (Rp. 5,000) for lunch; any wages higher than that were for special skills or added responsibilities and were paid on an occasional basis (Doocy et al., 2006).

4.2 Assistance for business continuity and restoration

In the studied economies, there were a number of initiatives undertaken by public and private sectors to facilitate the rapid restoration of the economy and support business continuity. Some were short-term solutions to get businesses back to normal while others aimed to create conditions for business success and to address future economic challenges. Examples of public interventions include the following.

- ***Disaster Recovery Toolkit for Business in Australia:*** Following the Queensland floods, the Australian Government developed resources that proactively assisted small to medium enterprises (SMEs) to develop and build resilient, sustainable businesses. These resources have been utilised by the Department of Employment, Economic Development and Innovation (DEEDI) Regional Centres and other organisations, including CPA Australia, which has incorporated some of the materials into its Disaster Recovery Toolkit for Business (CPA Australia, 2009). The goal was to enhance the capacity of businesses through building their continuity planning skills and capabilities.
- ***Earthquake Support Subsidy (ESS) in New Zealand:*** Short term grants were made available to employers in Canterbury to allow them to continue wage payments in the immediate six weeks post-disaster. The ESS provided a grant of up to NZD 500 per week for each full-time employee for up to six weeks or NZD 400 a week for six weeks for employees whose employers were not contactable or who indicated their business was closed permanently (Ministry of Social Development, 2011). A key feature of the ESS is that it maintained the relationship between employers and employees as opposed to the Government providing direct welfare payments. The ESS was very well received by business with comments that it “saved their business from failure and staff from the dole queue” (Steeman, 2011).
- ***Japan as One Project:*** Immediately after the Great East Japan Earthquake and Tsunami, the Japanese Government established the “Headquarters for Emergency Disaster Measures” headed by the Prime Minister. Under the Headquarters, the “Subsidiary Headquarters for Special Measures to Assist the Lives of Disaster Victims” was established on 20 March 2011. The Conference on the Promotion of Employment Support and Job Creation for the disaster victims was held on 28 March to identify the instruments that could support the disaster victims’ work and livelihood (Ministry of Health Labour and Welfare, 2011). The government subsequently

launched its five-year “Japan as One” Work Project in April. A big proportion of a budget of 6.1 trillion yen was allocated for Phase 3 of the “Japan as One” work project to support companies, particularly the reconstruction of small and medium enterprises (SMEs). A “Comprehensive Program for Employment Recovery in Disaster-hit Areas” was also launched during this stage, integrating financial support for hardest hit industries²⁵.

- ***Social security measures in China:*** The Chinese Government enacted a series of policy measures to promote employment and assist the restoration and rebuilding efforts after the Wenchuan earthquake. One of the first measures was to reduce or suspend insurance premiums. According to the International Social Security Association (ISSA) (2008), within one to three years, employers’ contributions to the unemployment insurance fund were reduced from two to one per cent of payroll while that of individual workers were reduced from one to 0.5 per cent. For two years after the earthquake, the personal contributions to be paid for the non-salaried urban resident medical insurance by the vulnerable groups in the stricken area were covered by the urban and rural medical assistance funds. Local businesses received a tax reduction of 4,800 yuan (around USD 800) for each person it hired for one year. By providing monetary incentives, the government encouraged enterprises to absorb the unemployed workforce.

Past events have also seen an increasingly manifest interest by the public and private sector in working together to help businesses recover. Examples of Public-Private Partnerships (PPP) in these economies include the following.

- ***Recover Canterbury in New Zealand:*** A temporary organisation formed by Canterbury Development Corporation (CDC) and the Canterbury Employers’ Chamber of Commerce (CECC), supported by several government agencies to help small and medium businesses survive, revive and thrive following the earthquakes. Initially, Recover Canterbury’s role was to identify what emergency help businesses needed and ensure they received it. For instance, in the first month following the February 2011 earthquake, it assisted more than 3000 businesses to gain access to their premises. Over time, it evolved into a free “one stop shop” for business to obtain supports of all kinds, including facilitating and assisting in the creation of local business associations and facilitating the co-location and coordination of SMEs in the arts sector. In 2012, CDC assessed its economic impact: “By the most conservative assumptions, Recover Canterbury saved 617 jobs, and kept NZD 39 million in the economy. Almost 400 businesses received funding of NZD 6.1 million” (Scott, 2013).
- ***Acehnese Entrepreneurs Group in Indonesia:*** In order to improve the investment environment in Aceh after the tsunami, the Chamber of Commerce and Industry (KADIN) of Aceh and the Agency for the Development of Construction Services (LPJK) together with the Acehnese government, BRR²⁶, and several other organisations held the Kongres Saudagar Aceh Serantau (KSAS) in Banda Aceh in July 2007. KSAS was a forum for information sharing and discussion among businessmen in Aceh, in the rest of Indonesia and abroad, to network and create a better business climate in Aceh. Around 300 entrepreneurs from within and outside

²⁵ Japan as One work project: http://www.mhlw.go.jp/english/topics/2011eq/japan_as_one.html

²⁶ The Badan Rehabilitasi dan Rekonstruksi (BRR) (Agency for Rehabilitation and. Reconstruction) of Aceh-Nias

Aceh attended the event. During the conference, six MOUs were signed to enhance economic development in Aceh. The event also held an exhibition that included food, crafts and products from small businesses (BRR, 2007).

- ***Livelihood Recovery in Sichuan Province, China:*** In cooperation with the Ministry of Human Resources and Social Security (MoHRSS), the ILO implemented a project following the Wenchuan earthquake, “Livelihood Recovery in Sichuan Province: (Re) starting Business” through Emergency Start and Improve Your Business (E-SIYB). The project was launched in July 2008 to help economic recovery in the six counties of Mianyang, Deyang, and Chengdu in Sichuan Province. The project was to support the employment programme of the Chinese Government for the re-establishment of small businesses in the affected areas. The project’s ultimate beneficiaries included small entrepreneurs, workers who used to be employed in enterprises but were unemployed due to the closure of the enterprises, and farmers who had lost their livelihoods and productive assets and wished to start a small business (International Recovery Platform, 2010).
- ***Jobs and Skills Package in Australia:*** Skills Queensland is an industry-led statutory body established to strengthen Queensland's economic base by providing a skilled workforce that meets the current and future needs of industry and the community. Skills Queensland, in partnership with Australian Government agencies, developed the 2011 Queensland Natural Disasters – Jobs and Skills Package to assist 10,000 people. One of the key strategies of the package was to support apprenticeships – AUD14.2 million was allocated to support employers to retain apprentices and trainees, provide employment and training opportunities to stood-down or cancelled apprentices and trainees and additional apprentice incentives (QRA, 2012).

4.3 Targeted labour market programmes

Workers and businesses in the studied economies were able to access standard re-employment assistance provided by public and private employment services. In addition, most countries had special labour market programmes to help with the necessary adjustments. Active labour market programmes such as training and education were created to address the job and skills mismatch and skills shortages problems. In many cases, some economies implemented programs that were targeted to a particular industry or population, to provide adequate protection to the vulnerable (e.g. youth, women and SMEs). This section outlines some of the practices used in previous disaster experiences.

- In the US, job search assistance was provided through ***One Stop Career Centres***, including mobile units deployed in hurricane-affected areas. Similarly in New Zealand, the Ministry of Business, Innovation and Employment (MBIE) in collaboration with the Canterbury Earthquake Recovery Authority (CERA) and the Ministry of Social Development (MSD) and the Tertiary Education Commission (Centre for Social Protection), initiated the Canterbury ***Skills and Employment Hub***²⁷ to provide job-matching, information-sharing and immigration facilitation services for job seekers and employers.

²⁷ <http://www.opportunitycanterbury.org.nz/>

- ***The Rural Resilience Package in Australia:*** This is an AUD 20 million fund provided by the Queensland and Australian Governments to support the recovery and future resilience of primary producer and tourism businesses, and their communities in the area most severely impacted by Cyclone Yasi. The Package funded 17 Industry Recovery Officers to work with industries to get primary producers and tourism operators back in business and be better prepared for future events. The Package also includes an industry grants programme that funds industry organisations targeting the affected area, designed to promote future climate risk preparedness.
- ***Hello Work in Japan:*** The “Japan as One” project included a range of programmes to help workers displaced by the disaster find new jobs. The public employment service ‘Hello Work’²⁸ was provided by the Japanese Government and extended to provide special assistance for workers displaced from the agriculture, fishery and forestry industries and the self-employed. According to Venn (2012), local construction companies were given priority when awarding reconstruction contracts and private employers were encouraged to submit reconstruction job offers to Hello Work.
- ***Education and Skills Training (EAST) project in Indonesia:*** In 2005, the International Labour Office (ILO) started to work in Aceh as part of the post-tsunami reconstruction efforts. It has since reoriented its activities in the province towards support for youth employment with the Education and Skills Training project (EAST). ILO-EAST assisted formal and informal schools to agree to cooperate and join efforts to prevent dropouts by raising awareness of education-related actions that have the potential to reduce early exits. The overall impact of the ILO-EAST Programme has been very positive with 267 children readmitted to school, 246 returned to non-formal institutions and 19 to formal schools (ILO, 2011).
- ***IFRC’s involvement in Job promotion in China:*** One of the IFRC’s (International Federation of Red Cross and Red Crescent Societies’) on-going work in response to the 2008 Wenchuan earthquake is providing vocational training and micro loans that help the vulnerable to restore lives. In May 2011, the Red Cross Society of China and the IFRC initiated a project providing vocational training for survivors in the earthquake-affected areas, supported by the British Red Cross and Japanese Red Cross Societies. Training was accompanied by a Red Cross micro loan aimed at particularly vulnerable people in the community, particularly adult women and people with disabilities. By May 2013, 7,000 people had received training, including 1,400 disabled people in practical vocational skills. The micro loans have benefited nearly 474 families. A further county in Sichuan has been chosen for the continuation of the project after the magnitude 7 Ya-an earthquake on 20 April 2013 (IFRC, 2013).

4.4 Commentary summary

The above examples provide a rich spectrum of experiences and evidence in the APEC region which show that improved labour market outcomes in a complex recovery environment can be achievable. As promoted by the International Recovery Platform (2007), well-considered recovery is likely to provide this possibility and introduce changes in disaster management practice. Most approaches reviewed in this chapter emphasise the value of opportunities in the aftermath of a disaster through recovery to help workers restore their livelihood. A

²⁸ http://www.tokyo-icc.jp/guide_eng/gov/03.html

comparison between these varied strategies will furnish a picture of their practical implications in the field of disaster management (Table 7).

Table 7: A synthesis of reviewed labour market programmes of APEC economies

Economy	Program	Provider	Targeted people	New or pre-existing
US	One Stop Career Centre	Public sector	Job seekers and employers	New
New Zealand	Skills and Employment Hub	Public sector	Job seekers and employers	New
Australia	Jobs and Skills Package	Public sector	Job seekers, employers, industry and community	New
Japan	Hello Work	Public sector	Job seekers	Existing public employment service
Indonesia	Education and Skills Training (EAST)	ILO	Youth	New
China	Vocational training and micro loans	IFRC	Vulnerable people: women, disabled people	New

There has been a tendency to look at substantial policies to match job seekers with available job openings. A more training-oriented assistance approach to disaster-affected communities was seen in economies like Indonesia or China, particularly in rural areas. This is possibly due to the substantial availability of international assistance from such as ILO and IFRC for disaster-recovery in those countries.

Practices in previous reconstruction efforts showed that, on one hand, workforce strategies involved securing employment for those displaced by disasters; on the other hand, with financial and in-kind support from agencies (public, private and non-government organisations) the labour market could be rebuilt in ways that improve long-term employment opportunities for disadvantaged workers.

Across the studied economies, job placement assistance came from both public and private sectors. In developing economies, international aid organisations played an instrumental role in job creation and promotion. There is not much information available on what economic development activities in these economies address the long-run quality of jobs as well as workers' skill levels. It is also not clear what mechanism was used in these economies for coordination of employment, housing and other livelihood recovery after a disaster. Future investigation could potentially focus on skill enhancement and improved coordination between private and public sectors.

There is a need for the decision-makers involved at higher levels to give due consideration to real needs of labour markets at the three levels specified earlier in this chapter (namely, individual workforce, workplace and industry where they participate). Identifying local capacity of the private sector, as shown in previous practice, is critical to aligning resources more closely to markets and to the requirements of those affected (individual workers and businesses).

Chapter 5 Methodology of case studies and cross-economy comparison

The varied categorisation of disaster events, in terms of their impacts and scales, points to common questions:

- 1) How are the impacts dealt with — both tangible and intangible, in the short- and long-terms, and on a small scale and a large scale?
- 2) How could the economic units (workers, businesses and sectors) have been better prepared?
- 3) How could the labour market structure be improved to reduce these impacts?

This chapter describes the methodology applied to address these questions, including case study method and a comparative analysis.

5.1 Why use case studies?

The case study research methodology was designed with the following project objectives in mind:

- To share experiences and enhance understanding of workforce strategies followed in response to recent natural disasters;
- To improve emergency preparedness by providing a menu of practical workforce strategies that have been found to work well following previous natural disasters in the Asia-Pacific region, building the capacity of economies to manage such events; and
- To develop a set of APEC principles for sound workforce strategies in recovery and reconstruction.

The issue of livelihood and employment is one of the least researched areas in disaster settings. Some institutions such as OECD and ILO have been gathering examples of recovery efforts in relation to employment. As evidenced in the literature review, the ILO worked closely with local governments to facilitate a decent work agenda in some disaster-affected economies (e.g. Indonesia, China). The OECD's work focused primarily on public assistance in helping displaced workers back into jobs after a natural disaster (Venn, 2012).

There are several crucial gaps in the literature. Firstly, there is a lack of information on the private sector, particularly its partnership with public employment services. Efforts by private sector actors deserve attention due to their unconventional and innovative approaches to workforce strategies. Secondly, not much information is available on active labour market programmes such as education and job training. The third gap is related to thematic focuses and methodology. There is no systematic case study analysis of the employment issues after a natural disaster. Only a few studies have been done with a focus on different aspects of employment issues.

To fill these gaps, it is necessary to examine employment and labour-related measures in the context of disaster recovery by using a case study approach. The creation of a ‘learning culture’ in order to build upon past disaster experiences and applying their lessons can help reduce future risks (Lorch, 2005). The APEC Natural Disasters Workforce Project, as referenced in this report, applies a case study method to enhance the knowledge on employment and labour-related measures in the context of disaster recovery.

Case studies and the cross-case comparison will complement the work of other international organisations (e.g. ILO, World Bank, OECD) by providing more concretely the range of measures taken by individual economies to stimulate labour demand, reduce job losses, protect workforce and promote active labour market programmes in response to natural disasters. It seeks opportunities for improvement in the labour markets of APEC economies in response to natural disasters by investigating and cross-comparing workforce strategies used by both public and private sectors in disaster reconstruction.

Through collaboration with some disaster-affected economies, the APEC Natural Disasters Workforce Project aims to provide empirical evidence as an input to evidence-based policy making. Some preliminary insights have already emerged from literature review and the APEC HRDWG annual meeting held in June 2013 in Indonesia. However, lessons learned from case studies will help to deepen knowledge on the workforce dimension of APEC frameworks concerning natural disaster responses.

5.2 Analytical framework of cross-economy comparison

International comparisons are made more complex by differences in political, social, economic and cultural environments between economies. In order to incorporate these differences, a conceptual framework was developed. In line with the components of individual case studies, the comparative analysis focuses on five broad themes:

- a) pre-disaster labour market conditions;
- b) characteristics of the natural disaster event;
- c) impacts of natural event on the labour market;
- d) key stakeholders and a broad categorisation of strategies used by government and non-government sectors; and
- e) effectiveness of different strategies.

Based on the analytical framework, comparison in this report examines:

- **To what extent do labour markets change post-disaster?** Previous Resilient Organisations research²⁹ shows that in some cases, the impacts of labour market changes come from pre-existing economic settings, reflecting domestic issues or other pressures. In other cases, labour market vulnerabilities are largely due to disruptions caused by natural disasters.

²⁹ APEC project on SME Resilience, Resilient Organisations monthly reports, <http://www.resorgs.org.nz/Publications/research-reports.html>

- **What are the similarities and differences between the countries?** The varying severities of natural events influence the range of labour market and workforce strategies employed. The comparative analysis considers, amongst other things, the targeted workforce groups, social protection, jobs and training strategies used by government and non-government sectors following recent natural disasters.
- **Why do different outcomes occur?** Cross-case comparison evaluates the extent to which different economies are able to offset the impacts associated with disasters through improved workforce plans and policies. The key factors that lead to different labour market outcomes are identified.

Cross-economy comparison synthesises the knowledge and experience on workforce strategies and labour markets under the individual work programmes, identifying what worked well, what did not and under what circumstances. Drawing on the results from case studies, principles and guidelines for sound natural disaster workforce strategies suitable to economies in the Asia-Pacific area are provided.

Chapter 6 Overview of natural disasters studied

This chapter provides a brief overview of each of the natural events studied in this report, as well as their social and economic impact.

6.1 Australia: the 2010 and 2011 Queensland floods

From November 2010 to early January 2011, significant flooding occurred in Queensland with three quarters of the state declared a disaster zone. The widespread flooding events, followed by Severe Tropical Cyclone Yasi, resulted in the tragic death of 36 people (Queensland Reconstruction Authority, 2012). Over 2,700 houses and 3,500 businesses were affected by floods, forcing about 15,500 people to evacuate.

The floods inflicted significant damages and losses to a vast amount of public infrastructure. There were damages to more than 9,100 kilometres of state road network and approximately 4,700 kilometres of the rail network. Floods also damaged 54 coal mines, 11 ports, 139 national parks and 411 schools (World Bank & Queensland Reconstruction Authority, 2011). The damage to rail and port infrastructure had significantly disrupted the exports of coal and agricultural products to trading countries.

According to the National Australia Bank (2011), the economic impacts of these events were considerable. Queensland's business revenue was reduced by 9.8 per cent and capacity utilisation by 13.8 per cent. Similar disruption occurred across Australia. In the State of New South Wales revenue and capacity utilisation were reduced by four per cent and five per cent, respectively, and in the State of Victoria by four per cent and three per cent. Australia's real GDP fell by 0.5 per cent in the March quarter of 2011, but increased by 4.3 per cent over the following year.

As of March 2012, 131,000 insurance claims were reported with an estimated value of AUD 3.8 billion (Insurance Council of Australia, 2012). There were estimated losses of AUD 875 million in primary industries, primarily the sugar, fruit and vegetable sub-sectors. The estimated cost of the disaster in terms of damage and economic impacts was around 15.7 billion or around one per cent of the country's GDP (World Bank & Queensland Reconstruction Authority, 2011).

6.2 New Zealand: the 2010 and 2011 Canterbury earthquakes

A series of large earthquakes struck the Canterbury region of New Zealand in late 2010 and 2011. The two major ones were a 7.1 magnitude earthquake that hit west of Christchurch on September 4, 2010 and the deadly 6.3 magnitude earthquake on 22 February 2011. The second quake took the toll of 185 lives and caused substantial destruction of buildings, widespread land damage and rock falls. The damage was largely centred in the city of Christchurch.

More than 60 per cent of Christchurch's Central Business District (CBD) buildings were severely damaged (CERA, 2012). Another 60 per cent of the 5,000 businesses in the CBD and 50,000 employees were displaced. More than one third of central city businesses were unable to operate, with another third relocating to makeshift premises. Over 150,000 homes (around three quarters of Christchurch's housing stock) sustained some damage from the

earthquakes. The total number of individual building, land and contents claims received exceeds 600,000 (Earthquake Commission, 2011).

In terms of infrastructure damage, 1,021 kilometres of roads needed rebuilding, representing around 52 per cent of Christchurch's urban sealed roads. The earthquakes also damaged 51 kilometres of water supply mains and 528 kilometres of the sewer system within the city (CERA, 2012). As more precise information is now becoming available, the latest figures released on 28 April 2013 by the Government suggest that the rebuild with improvements could reach NZD 40 billion with high levels of uncertainty remaining. This damage is about 19 per cent of New Zealand's GDP.

The impacts of the earthquakes were felt not just in Canterbury but across the entire New Zealand economy, with national economic growth estimated to be about 1.5 per cent lower in 2011 than it would have otherwise been. The manufacturing hub in Canterbury escaped significant damage due to its location outside the central city. Tourism in Christchurch has suffered significantly from the earthquakes. As a tourist gateway of the South Island, the city lost a large amount of accommodation capacity and tourist numbers had fallen considerably following the earthquakes.

6.3 Japan: the 2011 Great East Japan Earthquake and Tsunami

The Great East Japan Earthquake with magnitude of 9.0 on the Richter scale occurred on 11 March 2011 about 160 kilometres off the east coast of the island of Honshu, Japan. It was the biggest recorded earthquake ever to hit Japan and the world's fifth largest since 1900 (Japan's Reconstruction Agency, 2012). This earthquake released 8,000 times as much energy as the magnitude 6.3 one which struck Christchurch, New Zealand in the previous month (Herod, 2011). The huge tsunami that was generated by the earthquake as well as aftershocks caused tremendous human losses and damage to buildings and infrastructure, particularly in three prefectures of Tohoku: Iwate, Miyagi and Fukushima.

As of 28 May 2012, Japan's Extreme Disaster Management Headquarters listed 15,883 fatalities with an additional 2,676 people still missing. The tsunami caused heavy destruction of roads and highways, collapse of 126,421 houses, half collapse of 272,028 houses and partial collapse of 740,572 houses. Approximately 4.4 million households in north-eastern Japan lost their electricity and 1.5 million went without water for several days (Herod, 2011). The destruction wrought on the Fukushima Daiichi nuclear power plant had forced more than 110,000 people to evacuate due to the contamination by radioactive materials.

The US Congressional Research Service estimated that the overall cost of the earthquake and tsunami could be between USD 195 billion and 305 billion, making it the most expensive natural disaster on record (Nanto et al., 2011). A further assessment undertaken by the Japanese Cabinet Office (2011), however, shows that the economic impact of this event was 16.9 trillion yen (approximately USD 207 billion) or around four per cent of Japan's GDP.

Apart from the direct impact from the earthquake and tsunami, the secondary economic effects were considerable, particularly in Japan's exports industries. Due to the disruptions to power supply and global supply chains, there were widespread impacts in the automobile and

food manufacturing industries. Two years on, there were 1,164 cases of business bankruptcies³⁰ and 1,106,000 people were displaced from employment³¹.

6.4 Canada: the June 2013 Southern Alberta floods

In June 2013, large areas of Southern Alberta experienced a deluge of heavy rainfall that caused disastrous levels of flooding. The floods devastated areas spanning 55,000 square kilometres and affected more than 100,000 people and approximately 10,000 homes (Flood Recovery Task Force, 2013). The scale and impacts of this event resulted in an unprecedented State of Provincial Emergency to be declared in Alberta. During the first few days after June 20, 2013, there were 29 local states of emergency declared in the province.

Floods caused significant damage to infrastructure, including roadways, water treatment and waste water treatment facilities, hospitals and schools. Damage to businesses required the evacuation or closure of indoor and outdoor recreation locations (Flood Recovery Task Force, 2013). Economic trends reported as of July 2013 revealed that the flood damage caused short-term supply disruptions, likely hurting economic output in the aftermath (Alberta Treasury Board and Finance, 2013).

The Alberta Government estimated that approximately 5.1 million hours of work were lost during the flooding, resulting in CAD 485 million of lost economic output by the private sector. Factoring in the public sector working losses, the total economic impact of the floods reached approximately CAD 500 million. It represents about 0.2 per cent of Alberta's annual GDP, or about 2.2 per cent of June's GDP (Parkatti, 2013).

The impacts were not evenly felt. The largest losses were concentrated in the primary resource sectors (with the vast majority in the oil and gas industry) which are estimated to have lost CAD 290.5 million in GDP³², or about 60 per cent of economic output lost by the Alberta economy as a whole. The professional, scientific, and technical services industry experienced about one in four employees missing work due to the flooding, losing CAD 61 million, followed by Finance, Insurance, and Real Estate (losing CAD 31 million), and Information, Culture, and Recreation (losing CAD 25 million).

6.5 China: the 2008 Wenchuan earthquake

On 12 May 2008, a devastating earthquake measuring 8.0 on the Richter scale hit Wenchuan County in China's Sichuan Province. The earthquake was followed by over 30,000 aftershocks affecting 4,667 towns and large landslides occurred in some places (Ministry of Finance et al., 2012). A population of 46 million in Sichuan, Gansu and Shaanxi provinces was affected by this event (International Recovery Platform, 2010).

The Asian Development Bank (2008) described the Wenchuan earthquake as being a natural disaster that featured the strongest destruction, the widest impact range and the hardest rescue and relief efforts in China since the establishment of the People's Republic of China. Official

³⁰ As of 10 May 2013

³¹ As of 8 May 2013

³² The figure only covers the last two weeks in June 2013.

statistics reported that 69,227 people were killed in this disaster and 17,923 were missing (Ministry of Finance et al., 2012).

Housing was the single greatest component of all losses in terms of economic value and buildings damaged. Around 7,789,000 housing units collapsed and 24,590,000 were damaged during the earthquake (Paterson et al., 2008). Infrastructure also suffered severe damages. As of September 11, 2008, the State Planning Group (2008) reported that approximately 34,125 kilometres of roads, 1,263 reservoirs, 7,444 schools and 11,028 hospitals were damaged in the earthquake.

The total economic loss in the quake-affected areas was estimated at RMB 845 billion (approximately USD 150 billion) which was around between one and three per cent of China's GDP. A number of cities and towns which functioned as major industrial and agricultural bases in the region were among the hardest hit. In urban areas, many factories and businesses were closed due to the damage. More than 1,150,000 farmers lost farmlands and production assets in the earthquake. In total, this disaster had left 372,000 people unemployed and more than 15 million people were forced to evacuate (Ministry of Finance et al., 2012).

Chapter 7 Comparing conditions and labour market outcomes

This chapter will compare within the context of local conditions the impacts in the studied events, and argue that the ‘death and dollars’ measures of loss are insufficient for assessing the magnitude of impacts in natural events. Recent experience will be used to demonstrate the variables where comparisons are meaningful, including the intensity and concentration of losses, as well as the social and economic conditions.

To demonstrate how a better understanding of labour market impacts could lead to improved workforce policy and planning, this chapter will consider what a disaster actually does to the labour market. What are the similarities between the studied events? From these comparisons, four implications are suggested for consideration in evaluating the effects of disasters on workforce and developing recovery programmes.

7.1 Impact of the disaster in case study economies

Loss of lives and destruction of buildings and infrastructure are the inevitable consequences of natural hazards that take place where people have settled. In terms of lives lost or population affected, the recent Southern Alberta floods were moderate compared to other four international counterparts studied in this report.

By comparing event severity, however, the magnitude of these disasters was overwhelming. Each has been rated the strongest and most expensive natural disaster in the country’s/region’s history. Table 8, overleaf, compares the magnitude and impact of the five examined disaster events. With the exception of the Wenchuan earthquake, damage estimates of the other four events are preliminary as the recovery evolves.

In a comparison of the five natural disasters by their overall losses, the Great East Japan earthquake and tsunami and the Wenchuan earthquake caused many more deaths, destroyed substantially more buildings and together represented a financial loss of more than USD 300 billion. In the case of the Canterbury earthquakes, despite the fact that the event had a lower number of deaths, a smaller number of units damaged, and lower dollar value attributed to total loss, it was the earthquake event that caused serious damage to the national economy.

Table 8: Comparison of impacts in five studied disasters

	Australia	New Zealand	Japan	China	Canada
When	November 2010 to January 2011	4 September 2010 and 22 February 2011	11 March 2011	12 May 2008	June 2013
Event	Floods	Earthquake	Earthquake and tsunami	Earthquake	Floods
Population affected	200,000	460,000	400,000 most directly affected	46 million	100,000 in Southern Alberta
% of regional population	4.4%	81.3%	4.3%	52.5%	2.5%
Human losses	36	185	15,883	69,227	4
Damage estimates	AUD 15.7 billion	NZD 40 billion	JPY 16.9 trillion	RMB 845 billion	CAD 500 million
% of national GDP	1%	19%	4%	1% - 3%	0.2%
Industrial structure affected	Coal mining and tourism were most affected. Specific agricultural loss estimates include sugarcane, cotton, grain and banana crops. All of Queensland's 54 coal mines were affected resulting in decreased exports.	Tourism hub, accounting for about 20% of total arrivals in New Zealand. Manufacturing centre although manufacturers outside worst affected areas. Agricultural sector largely unaffected.	Damage to electricity generation capacity, radiation fallout from the meltdown at Fukushima Daiichi Nuclear Plant, several ports severely damaged, damage to automotive and electronic goods factories, agricultural and fishing sectors.	Damage concentrated on manufacturing, agricultural and services sectors. Many factories and businesses in urban areas were either destroyed or closed. Farmland, crops and agricultural facilities were destroyed in large numbers.	The largest contributor to economic loss was the oil and gas industry (extraction & services), which is estimated to have lost CAD 290.5 million in GDP, about 60 per cent of economic output lost by the Alberta economy as a whole.
Initial conditions	Resources sector is core industry. Queensland coal production accounts for 56 per cent of Australia's black coal production and 62 per cent of the country's coal exports. Agriculture is another income generating industry, with sugarcane production alone accounting for 30 per cent of harvest nationwide.	Canterbury was going through modest recovery from recession with positive medium-term outlook, and some spare capacity. There were high agricultural and commodity prices. Agriculture is central to the Canterbury economy, creating seasonal work opportunities in the region.	The Tohoku region was in an upward trend through a slow recovery in individual consumption after the global financial crisis. Agriculture, forestry and fishery were dominant industries in Iwate whereas the tertiary industry and service sectors were primary industries in Miyagi. Manufacturing was strong in Fukushima.	The Province ranks the fifth in land territory. Endowed by natural disasters, Sichuan has a population of 87.5 billion, being one of the most densely populated provinces in China, and one of the most developed provinces in terms of GDP and economic capacity in Southwest China.	Alberta had a rapidly growing manufacturing base. In 2012, investment per capita was CAD 25,348 in Alberta, more than double the Canadian average. The highest economic growth industries include oil sands, agriculture, oil and gas services, construction, machinery, fabricated metals, retail and wholesale trade.

Source: (Parker & Steenkamp, 2012), (Parkatti, 2013) and case study data

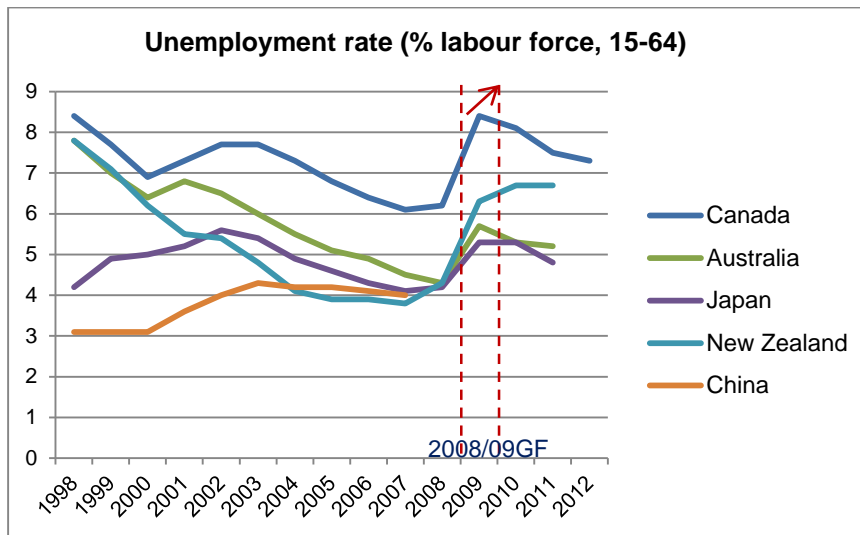
If the concentration of losses (e.g. the percentage of national GDP) in a region and the intensity of population affected (e.g. the ratio of people affected to the total population in the area) is significant, the loss can certainly overwhelm the local capacity. This is most evident in Canterbury where more than 80 per cent of the population were affected by the earthquakes and the estimated repair and rebuild costs reached up to 19 per cent of the entire nation's GDP. Similarly, although with a lower proportion of GDP damage, the Wenchuan earthquake occurred in places of high people density, affected half of the population and caused a significant challenge to disaster relief, response and recovery services.

The disaster events have all disproportionately affected the major industries in the region. After the Queensland floods and the Southern Alberta floods, the majority of businesses in resources sectors ceased operations temporarily. In Canterbury, tourism as the major revenue generating sector had experienced the biggest blow from the earthquakes. While the total damage was relatively modest compared to the size of Japan's economy, disruption to nuclear electricity generation from the 2011 earthquake meant severe short-term disruption to industrial production and economic activity across the country.

The Alberta economy, by comparison, has been relatively resilient and the wider Canada economy appears to have been little affected. The immediate impact on output appears to be much more muted than that following the other four events. However, disasters happen against a background context of other pressures on the economy. Apart from the Wenchuan earthquake which occurred prior to the 2008/09 global financial crisis, all the other studied disasters happened in economies while they were coping with economic disturbances, even though they were faring relatively well in this crisis.

During the financial crisis, with few exceptions the APEC economies experienced much higher unemployment in 2009 compared to 2008 (APEC HRDWG, 2010). This is particularly the case in economies studied in this report. Figure 5 below summarises the trend of unemployment in these economies prior to their respective disaster event. Unemployment was rising in 2009 in Australia, New Zealand, Japan and Canada. From 2009 onwards, with one exception (New Zealand), unemployment fell in the other three economies to the point of the studied event.

Figure 5: Trends of unemployment rate of selected APEC economies up to the disaster



Source: Data for Canada, Australia, Japan and New Zealand are from the OECD Employment Outlook database, data for China is from the World Bank Jobs Data. The disaster event for each of these was at the end point of the line on the graph.

The floods occurred as Queensland's economy appeared to be emerging from a lull in the second half of 2010. Flooding events in Alberta took place when the region was experiencing consistent job growth and strong population growth with high labour force participation. In Canada, even though the recent economic downturn affected Alberta more than most other provinces, Alberta has recovered strongly and leads the nation in employment, exports, and investment. In 2012 Alberta's average unemployment rate was the third lowest in Canada at 4.6 per cent.

By the numbers, comparison shows that the earthquake and tsunami in Tohoku and the Wenchuan earthquake were by far the most destructive disasters with high death tolls and significant monetary loss. But if we look at the concentration and intensity of economic impacts and populations affected, we find a much more complex picture of disaster impacts than the disaster-loss numbers portray. The Canterbury earthquakes, while similar in magnitude to that of the Wenchuan earthquake, caused more damage in terms of population and economic development relative to the size of the economy.

While the impact of one disaster differs from another in the studied countries, so does each economy's ability to recover. Determining the degree to which the ability to recover in particular economic and social sectors (i.e. the geography and demography) will provide an improved understanding of the need for policy intervention. The next section will compare the labour market outcomes in case study countries and discuss the issues inherent in their economic systems. Rather than trying to estimate the overall labour market impacts of disasters, it focuses on the commonalities that emerge from cross-case comparison.

7.2 Post-disaster labour market outcomes

It is difficult to distinguish disaster-related effects on the labour market from those of other events such as a global financial crisis and development programmes which are at play simultaneously. This is in part due to a lack of reliable data and information collected through labour surveys. It is also difficult to gauge the spill-over effects of economic disruptions caused by disasters or caused by financial crises on the regional economy. Therefore, comparative analysis in this section is indicative of the specific labour market impacts of natural disasters, with a focus on looking at what a disaster really does to the workforce.

The literature review has already offered a preliminary insight into the disaster effects on the labour market. This report examines post-disaster employment conditions in Queensland, Canterbury and Tohoku based on the available data provided by these economies. To evaluate the impacts of the disasters, the commonly-used labour market indicators are used, such as unemployment rate, labour force participation rate, job openings and job losses. Comparing these indicators across economies should be exercised with caution as there are varying means of measurement used by individual economies.

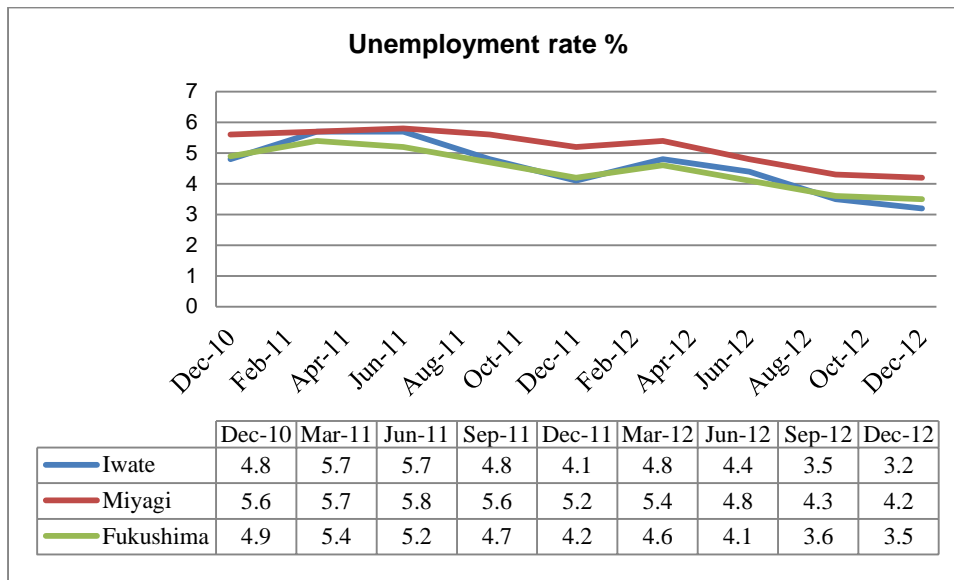
7.2.1 Post-disaster aggregate labour market conditions

While disasters reduce economic activity in the short run, subsequent reconstruction efforts were expected to boost output growth over a sustained period. Comparing aggregate labour force patterns in all studied economies, there were relatively short-lived negative labour market consequences followed by eventual recovery. Post-disaster labour market conditions in these economies vary across the disaster-stricken jurisdictions. Nevertheless, the labour market issues that were faced by different regions were broadly similar.

In the short-term, issues such as declining industries, structural adjustment, increased unemployment and skills shortages for reconstruction invariably altered the landscape of labour demand and supply. In the longer-term, the level of skills and types of skills that are needed for changing economic conditions were critical issues facing the studied economies.

The unemployment rate increased immediately in three regions affected by the disasters. However, the pace of labour force participation and of employment rebounding to pre-disaster rates was different. Employment in Tohoku experienced a 'boom' shortly after the tsunami whereas employment in Queensland and Canterbury gradually recovered to pre-event level.

Figure 6 shows that the unemployment rates in the three most affected prefectures in Tohoku had increased sharply immediately after the disaster, and had all returned to the level of the fourth quarter of 2010 over a short period (in the third and fourth quarters of 2011). By December 2011, almost a year after the flood, Queensland had seen improvements in the labour market. It was not until December 2012, nearly 18 months after the 22 February 2011 earthquake, that labour market conditions in Canterbury partially recovered.

Figure 6: Unemployment rate in three prefectures in Tohoku region

Source: Statistics Bureau, Ministry of Internal Affairs and Communications, Japan
<http://www.stat.go.jp/english/data/roudou/lnindex.htm>

There were different factors explaining the prolonged process of labour market adjustment. The continued drop in employment in Canterbury following the February 2011 earthquake was largely due to on-going aftershocks. Another factor was the decline in working age population as people left the region for other parts of the country or for overseas. The fluctuation of Queensland's unemployment rate, however, was attributed to a number of non-disaster related factors. Existing weak conditions in sectors such as housing, tourism and construction, together with the prolonged recovery time needed for the mining industry, had all contributed to a slow recovery of employment after the floods.

It seems that all three regions experienced slow employment growth following the disaster. Sustaining a rapid pace for longer-term workforce recovery is a challenge to Tohoku. By comparison, employment growth in Queensland appeared to be driven by a recovery in exports and business investment in the resources sector over the short to medium-term, whereas employment in Canterbury was largely driven by an increase in the construction sector as the rebuild activity began to strengthen in 2012.

7.2.2 Post-disaster labour market conditions by sector

Sector-wise, available data provided by case economies allows a comparison of employment by sectors in Australia and New Zealand. The fall in employment in Canterbury was largely due to the damage to the region's retail trade, accommodation and food services industries, as well as the associated loss of businesses in these sectors. In Queensland, however, employment impacts of floods on the primary industries (coal mining, tourism and agriculture) were short-lived. Impacts on small businesses had been significant, causing a large number of workers being temporarily laid off.

Table 9 below shows that, following the first September 2010 earthquake Canterbury had seen a fall in employment in accommodation and food services by more than 30 per cent during the two-year period from December 2010 to December 2012. Queensland had

experienced a less dramatic employment loss in similar sectors, from 178,100 in November 2010 to 154,600 in February 2012, a fall of approximately 13 per cent. Other factors such as the high exchange rate and weak economic conditions had worked together, alongside flooding effects, depressing the tourism sector in Queensland.

Table 9: Employment in major industries in Queensland and Canterbury

Timeline	Queensland (Australia)				Canterbury (New Zealand)			
	Nov-2010	Feb-2011	Feb-2012	Change	Dec-2010	Dec-2011	Dec-2012	Change
Agriculture, forestry and fishing	82,100	66,600	74,500	-9.2%	23,200	24,300	22,800	-1.7%
Mining for Queensland/Retail trade for Canterbury	53,000	55,800	64,300	+21.3%	33,400	30,300	28,300	-15.2%
Construction	243,200	235,900	230,100	- 5.4%	30,200	26,200	32,900	+8.9%
Accommodation & food services	178,100	164,700	154,600	-13.2%	23,500	14,800	16,300	-30.6%

Source: Australian Bureau of Statistics, *Labour Force, Australia, Detailed, Quarterly, August 2013* (Cat. No. 6291.0.55.003); case study information provided by the New Zealand Ministry of Business, Innovation and Employment

Increased job creation in Queensland's mining sector (21.3 per cent) and Canterbury's construction sector (8.9 per cent) started showing in the year of 2012. In comparison, employment in other primary industries in both regions failed to recover to pre-event level. There was anticipation in the two economies that on-going reconstruction in the two regions would add prospects for employment recovery in other sectors over the next few years.

7.2.3 Post-disaster labour market conditions by socio-demographic groups

As observed in case studies, gender segregation within industries has a strong bearing to post-disaster labour market outcomes. In Tohoku and Canterbury, disasters had particularly impacted on sectors with higher shares of female employees (the food manufacturing industry and marine products processing industry in Tohoku, and the retail and accommodation sectors in Canterbury). Closure of businesses in these industries caused significant employment issues for female workers.

In contrast, Queensland seemed to have a more rapid decline in the male participation rate than that of females over the period from December 2010 to March 2012. This may be attributed to the flood impacts on Queensland's male-dominant mining and construction sectors. A comparison of labour force participation rates by gender in Queensland and Canterbury is shown in Table 10 below.

Table 10: Labour force participation rates by gender in Queensland and Canterbury

Labour force participation rate %	Queensland (Australia)				Canterbury (New Zealand)		
	Dec-2010	Feb-2011	Mar-2012	Change	Dec-2010	Dec-2011	Change
Timeline							
Female	62.2	61.1	61.1	-1.1	64.7	60.9	-3.0
Male	74.5	73.3	73.0	-1.5	77.1	75.3	-1.8

Source: Australian Bureau of Statistics, (2012b). *Labour Force, Australia, Spreadsheets (Cat. No. 6202.0), March 2012*; case study information provided by the New Zealand Ministry of Business, Innovation and Employment

Case studies commonly highlighted the employment issues with young people in the disaster-impacted regions. The fluctuation of their employment was larger than any other age groups. In Canterbury for instance, employment fell sharply for young people aged 15 to 24 years in the year to December 2011. They were particularly vulnerable to earthquake effects because they tend to have lower skills, work in the accommodation and retail industry and have greater mobility in times of labour market downturn.

Analogous to the case in Canterbury, Tohoku had experienced a similar fall in youth employment following the tsunami. In Fukushima Prefecture in particular, a large number of young people left due to the accident at the Fukushima Daiichi nuclear plant. This had exacerbated a prior workforce aging problem in the region. Changes to youth employment were slightly different in Queensland where the unemployment rate increased modestly for young people by 0.3 percentage point to 11.8 per cent between December 2010 and February 2012. This had also been accompanied by a decline in the youth labour participation rate over the same period by 1.5 percentage points to 72.8 per cent.

7.2.4 Changing patterns of labour demand

Literature review reveals that disasters often bring about a change in the pattern of labour demand, with the loss of jobs in some sectors and job openings in other sectors. This is most evident in case study economies. Following the disaster, Canterbury and Tohoku saw a rise in vacancies as well as a short-term rise in unemployment. For instance, the case study reported that over the year of 2011, online advertisements for skilled jobs in Canterbury had almost doubled. Similarly, the number of active job openings in three heavily affected prefectures in Tohoku reached a peak of 111,368 openings in January 2012 and had remained at a high level since.

In spite of decreased aggregate employment in the three regions, there were signs of increased difficulties recruiting labour in general. In Tohoku and Canterbury, new jobs growth was strongest in occupations that support construction, given the extent of damage to be repaired. Growth in demand for construction and mining-related labour in Queensland had risen following the floods and was expected to accelerate over time, although the outlook for mining has softened in recent times.

Case studies corroborate the findings in literature review that job and skill mismatch is a common issue facing the labour market post-disaster. Three case economies reported that in the short to medium term, it was difficult to match workers with vacancies. In particular, those who had lost jobs in the accommodation and tourism sectors in Queensland and

Canterbury were having difficulties securing jobs in the construction sector as the rebuild gathered pace.

The size of a labour market, according to Craigie et al. (2012), is a critical factor influencing the degree of matching efficiency. In large labour markets there is a higher probability that employers will find an exact match for the skills and experience they are looking for to fill job openings (Moretti, 2012). This is evident in Canterbury where the rise in job advertisements had far outpaced that of other regions of New Zealand since the 22 February 2011 earthquake, but the unemployment rate had remained high. By comparison, in Queensland, there seemed to be a higher level of aggregate matching efficiency post-floods due to a relatively larger labour market.

Both case studies of Queensland and Canterbury have reported the existing and projected labour shortages for reconstruction workers. The Queensland Reconstruction Authority (2011)³³ anticipated that in the immediate term, the capacity to meet the reconstruction task in Queensland was adequate. However, in the medium term (2012-2014) there might be increasing competition for skills from resource sector projects, other infrastructure investment and housing development. That said, continued weakness in the construction sector is helping to offset some of the concerns in relation to competition for labour.

Canterbury is facing a similar situation as in Queensland. There will be an additional 17,000 workers needed to meet demand at the height of the rebuilding activity in late 2014. Flowing on from the rebuild, another 15,000 workers would be needed in supporting roles and sectors, including such as administration, law, accounting, retail, accommodation and services. Skills shortages were reported in key skilled labour areas such as engineering, project management and supervising foremen (Chang-Richards et al., 2013).

7.2.5 Post-disaster labour market issues

To understand the issues facing industry, businesses and communities, Australia and New Zealand had undertaken a number of surveys in the aftermath of the disaster. In Australia, the Chamber of Commerce and Industry Queensland initiated a longitudinal study examining the impact of the Queensland floods on local businesses. The first survey was undertaken in January 2011 immediately after the flooding events and the second survey was launched six months on from the event.

Similarly, following the 4 September 2010 earthquake, the Resilient Organisations Research Programme and the University of Canterbury launched a longitudinal study to examine the resilience and recovery of organisations within the Canterbury region. After the major event on 22 February 2011, the former Department of Labour (DoL, 2011) created the Canterbury Employer's Survey to understand the disaster impacts on Canterbury workplaces. Findings from both surveys in Queensland and Canterbury are consistent, revealing a range of barriers commonly facing employers and employees to returning to business as usual.

The survey results in Table 11 show striking resemblance of impacts experienced by business communities in Queensland and Canterbury. Businesses tended to experience short-term disruptions due to physical damages to their premises or assets. A noticeable trend was that as time progressed, the indirect impact of the event on revenue became a major issue preventing

³³ Current findings are based available data and information as at September 2011.

a return to business as usual. Businesses in the two regions were facing similar recovery problems such as dealing with insurance pay outs and securing cash flows for recovery.

Table 11: Comparison of range of barriers facing businesses in Queensland and Canterbury

	Queensland (Australia)	Canterbury (New Zealand)
Short-term impacts/barriers	<p><i>Direct impacts</i></p> <ul style="list-style-type: none"> • Short-term closure (53.5%) • Loss of power (39.4%) • Water inundation and/or damage to their business and equipment (30.0%) <p><i>Indirect impacts</i></p> <ul style="list-style-type: none"> • Reduced sales/profitability (69%) • Affected customers (68.3%) • Employee inability to attend work (48.6%) 	<p><i>Direct impacts</i></p> <ul style="list-style-type: none"> • Damage to or closure of nearby organisations • Damage to or closure of adjacent organisations or buildings • Unable to access site • Electricity supply disruption • Water supply disruption <p><i>Indirect impacts</i></p> <ul style="list-style-type: none"> • Supply chain disruptions & affected customer base • Impacts on staff wellbeing • Loss of revenue
Long-term impacts/barriers	<ul style="list-style-type: none"> • Impacted customers, poor consumer confidence, low demand and loss of customers/tourists • Building and insurance delays • Major resource projects continuing to be impacted and the associated flow-on effects • Lack of alternative business sites • Lack of available finance 	<ul style="list-style-type: none"> • Difficulties retaining and attracting staff • Renewing insurance policies, particularly for employers with 50 or more staff • Resolving insurance payments • Cash flow

Source: (CCIQ, 2011), (Kachali et al., 2010) and (DoL, 2011)

Compounding the immediate impacts was the longer-term effect on consumer confidence in Queensland’s retailing and services sectors. The lengthy time it took for the resources sector to recover had also negatively affected its supporting businesses. By comparison, it seemed that the state of employee wellbeing, together with the capacity of industry to retain employees were major concerns facing Canterbury businesses.

The Canterbury Employer’s Survey also captured a range of barriers for employees to returning to employment, including an increase in employees’ sick leave, increase in fatigue and increase in stress. Other barriers, as perceived by employees to continuing work were family issues, mental health issues, lack of suitable accommodation and childcare difficulties. Recovery-related issues such as continuing aftershocks, insurance uncertainty, slow recovery, lack of clarity over the recovery process, however, had placed additional stress on workers.

Workplace surveys in Canterbury also highlighted that substantial losses in housing were likely to have an impact on the housing/jobs balance, on the tax base and on services. Given that the habitable housing stock has been greatly reduced in the earthquakes, Christchurch city has found it difficult to ensure the market provides enough affordable housing for displaced residents. Compounding this shortage was the need for housing a large number of additional rebuild workers. It has been an on-going concern which likely constrains labour supply in the region.

7.3 What does a disaster do to the labour market?

As alluded to earlier, it is difficult to separate the impact of disasters on labour market indicators from those of the economic recession. Disasters do not completely change pre-disaster economic conditions; instead they simply magnify trends or conditions in place before disaster strikes (Comerio, 1998). It is useful to look beyond the impacts to local circumstances at the time of the disaster: to implications of the losses in order to determine the effects of a disaster on the labour market.

In a report commissioned by the World Bank, Marzo and Mori (2012) described how different crisis situations, including economic crisis, pandemic, natural disasters and conflict, impact on local communities. As shown in Table 12, in comparison with economic crises and pandemics, occurrence of natural disasters would cause destructions of buildings and other property and in many cases, claim lives. Although less dramatic as the effects of conflicts, the similar disruption problems affect the victims of disasters when there are displacement of people from their homes, livelihoods, jobs and communities.

Table 12: Crisis and associated impacts

Impacts	Economic crisis	Pandemic	Natural disaster	Conflict
Institutional impact	Low	Low	Low	High
Physical impact (infrastructure)	Low	Low	High	High
Physical impact (loss of human lives)	Low	High	High	High
Economic impact	High	High	High	High
Social impact	High	High	High	High

Source: (Marzo & Mori, 2012)

Disasters often displace workers through the destruction of productive assets and infrastructure. Cross-case comparison described above concludes that a labour market can be fundamentally changed due to the restructuring of economic activities as a consequence of the disaster itself or of the reconstruction. By comparing case study information, the following section summarises the implications of a natural disaster for labour market systems, including:

- **Physical damage and disruptions caused by disasters can cause fluctuations in the economic cycle which disproportionately affect less-skilled or vulnerable workers.** As demonstrated in the case studies, natural events would directly impact on labour-intensive sectors, such as manufacturing, services and agriculture industries. Loss of production assets, facilities and closure of workplaces can lead to significant job displacement of employees in these sectors. Similar to an economic cycle, a disaster can bring about fluctuations in the economic cycle and cause structural adjustment in certain industries. This sudden structural adjustment would particularly harm the labour force that is less-skilled, or those who are vulnerable to job loss or other age- or health-related problems.
- **Disasters tend to create additional participation barriers through the disruptions to individual workers' livelihood.** Disasters can have direct personal impact. Some household-related issues, as highlighted in the case studies, including such as displacement from their homes, housing repairs, dealing with insurance pay outs, family issues and childcare arrangements, may hinder continued workforce

participation in the labour market. When other factors such as psychological wellbeing and health are added into the mix, the combination of issues has the potential to continue to influence labour participation over time.

- **Compounding the labour market problem are the difficulties facing individuals with lower skills.** Disasters in case economies had a marked impact on the patterns of labour demand. Many of the displaced workers have skills that are not required for newly available jobs. Young people and female workers of lower skills in the retailing and services sectors, for instance, were less likely to transfer into other sorts of jobs in booming industries like construction. Workers with single skills or lower skills, such as people with disability or with low language, literacy and numeracy skills, can be left behind from this structural adjustment.
- **Displacement of workers, especially those evacuees who moved to elsewhere outside the disaster zone, is associated with more detrimental labour market outcomes.** The case study of the Canterbury earthquakes has highlighted the employment effects of evacuees. Those who moved out of the region and who are employed elsewhere were more likely to have lower rates of labour force participation and employment and higher rates of unemployment than those who did not move. This finding, however, is consistent with prior studies of labour market effects following Hurricane Katrina (e.g. (Giglio & Wiseman, 2010; Holzer & Lerman, 2006)).

7.4 Commentary summary

Building on the previous literature review, this chapter sheds light on how a disaster differs from other shocks and disturbances to a local economy and workforce. In general, aggregate patterns in case study economies show short-lived negative labour market effects. These findings are consistent with previous studies of aggregate labour market effects following hurricanes and other natural disasters such as earthquakes and floods (e.g. (Belasen & Polachek, 2008), (Sawada et al., 2011)).

Across examined economies, weak economic conditions may compound the disaster impacts and widespread damage, worsen employment in certain sectors, and put a brake on further recovery in the labour market. While the occurrence of a given natural disaster is largely exogenous, the impact that it has on the population is not (Baez & Santos, 2008). Post-event labour market indicators show that many of the people who were temporarily displaced from jobs have already or will soon find new jobs on their own, either in the same area or elsewhere. But others need help to manage their transitions back to the labour market.

Compared to other demographic groups, higher job displacement results from Canterbury and Tohoku in relation to female workers and youth, however, have confirmed the patterns identified in the literature review that female workers and youth groups may face more severe and sustained consequences. With major events, the implications of displacement are especially important to consider.

Comparison shows that the occurrence of natural disasters tends to intensify deficiencies in the labour market through physical and economic destruction and subsequent disruption. However, disentangling the causal impacts of disasters on the workforce is a complex empirical task. The lack of consistent data makes it difficult to undertake robust comparative analysis. Although informative, the aggregate findings in this chapter do not illustrate how

different groups fare in the labour market over the longer-term recovery period. There might be some pervasive effects of disasters on the workforce of a particular group in the studied economies.

The multiple aspects of disaster impacts on different socio-demographics make it a complex undertaking for policy makers, firstly to identify these groups and individuals, and secondly, to provide the support that is needed to address the barriers to their labour force participation. As the rebuild progresses in Queensland, Canterbury and Tohoku, coordination of employment initiatives with housing and other welfare policies is critical for ensuring that labour market opportunities are available to everyone, especially those with disadvantage.

Chapter 8 Comparing labour market policy responses

Case studies provide insight into policy areas that interact to shape the labour market outcomes associated with natural disasters. The discussion in the foregoing chapters highlights some of the complexity in the relationship between disaster impacts and employment, as well as some of the diversity in the response challenges faced by case study countries. This chapter compares the labour market policy responses, with an aim to provide insights as to the kinds of policies that have been found to work well following previous natural disasters.

This chapter will first compare the general policy settings available to support employment and provide social protection in post-disaster circumstances. It then goes on to compare the employment and social policy measures adopted by case economies, followed by a summary of the critical elements and features that have enabled the achievements of ‘good practice’. Comparative policy analysis in this chapter helps develop a set of APEC principles for sound workforce strategies in recovery and reconstruction, which will be detailed in the following chapter.

8.1 General policy supporting the labour market

Ensuring a smooth transition from response through relief and recovery is critical to the effectiveness of post-disaster recovery activity (Smart, 2012). Through providing a coordinated and flexible response to the recovery challenges, case study economies have benefited from existing and/or new institutional structures to manage the overall recovery and reconstruction. The recovery governance structure and allocated roles within that structure, are key drivers in determining how workforce policy is designed and implemented post-disaster. Table 13 summarises the general recovery policy settings and their relations to workforce and employment following study events.

Both Queensland and New Zealand created recovery authorities with strong powers that were stipulated in a newly created Recovery Act³⁴ and circumvented existing regulations. In Canterbury, the key organisation assisting in the recovery is the Canterbury Earthquake Recovery Authority (CERA). It is equivalent to the Queensland Reconstruction Authority (QRA) which was established following the flooding events. Indeed, Queensland’s institutional response was specifically cited in a New Zealand Cabinet minute proposing the creation of CERA (New Zealand Cabinet Office, 2011).

Japan and China adopted a similar concept of recovery governance, but implemented in a slightly different way. Disaster Headquarters were set up in both countries with the objective of bringing relevant agencies together to set comprehensive policies and provide mandatory facilitation. The Headquarters in both economies were chaired by their Prime Minister and comprised officials in individual ministries. This top-down approach, however, has always been the basis of disaster policy in these two countries (Comerio, 1998). The advantage is that the Headquarters could evenly allocate recovery responsibilities to government departments of relevance and empower the local government in implementing recovery plans.

³⁴ The Queensland Reconstruction Authority Act 2011 and the Canterbury Earthquake Recovery Act 2011

Table 13: General recovery policy settings in relation to employment

Economy	Recovery leading agency	Overarching recovery programme	Labour element	Responsible organisation
Australia	QRA	Operation Queenslander – The State Community, Economic and Environmental Recovery and Reconstruction Plan 2011-2013	Jobs and Skills Package; The State Community, Economic and Environmental Recovery and Reconstruction Plan (the State Plan)	DEEWR DEEDI
New Zealand	CERA	Canterbury Economic Recovery Programme	Labour Market Recovery Programme	MBIE
Japan	EDMH	Great East Japan Earthquake and Tsunami Recovery Planning	Livelihood support	Work Support/Job Creation Promotion Council
China	Command Headquarters of State Council	The State Overall Planning for Post-Wenchuan earthquake Restoration and Reconstruction	Employment and income generation	MoHRSS
Canada	Government of Alberta	2013 Southern Alberta Disaster Recovery Program; Government of Alberta Recovery Plan	Business and household support	Flood Recovery Task Force

Note: QRA (Queensland Reconstruction Agency), CERA (Canterbury Earthquake Recovery Authority), EDMH (Extreme Disaster Management Headquarters), DEEWR (The Australian Government Department of Education, Employment and Workforce Relations), DEEDI (Queensland Government Department of Employment, Economic Development and Innovation), MBIE (Ministry of Business, Innovation and Employment), MoHRSS (Ministry of Human Resources and Social Security)

By comparison, Canada, while similar in emergency management structure to that of Australia and New Zealand, adopted a special Provincial Recovery Framework which describes how the Government of Alberta will support local communities in their recovery efforts. In the aftermath of the Southern Alberta floods, the Government of Alberta played a central role in helping communities and businesses to recover. A Flood Recovery Task Force (FRTF) was established within the Government of Alberta to coordinate all provincial efforts on recovery and it comprises a Ministerial Flood Recovery Task Force and an Assistant Deputy Ministers Flood Recovery Taskforce (Flood Recovery Task Force, 2013).

One feature in common across case studies is the integration of an employment response into the overall recovery strategy. It can provide the added benefit of enabling the utilisation of existing institutions, programmes and initiatives within a disaster response context. Table 13 shows that employment and skills have a critical role to play in the rebuilding process. There are several key features shared by studied economies, which significantly influence the way in which employment policy response is designed and implemented. These included:

- the establishment of a dedicated response and recovery organisation;
- comprehensive recovery programme with employment being one of its critical components;
- the collaboration of the government agencies; and
- existing labour department or agencies taking a leading role in employment response.

8.2 Broad employment policy response

Across case economies, a wide range of government interventions were introduced at different stages in the wake of disaster. Some have since been scaled back while others are on-going into longer-term recovery. Table 14 tabulates the overarching employment programmes adopted in Queensland, Canterbury and Tohoku following the disaster.

Table 14: Overarching employment programme in Queensland, Canterbury and Tohoku

Overarching Employment Programme	
Australia	<p>Queensland Natural Disasters Jobs and Skills Package, comprising</p> <ul style="list-style-type: none"> • Skills and employment initiatives to mitigate skills and job losses • Support the retention of skilled workers in impacted communities • Address emerging skills shortages stemming from the flood crisis
New Zealand	<p>Canterbury Labour Market Programme³⁵, led by Canterbury Earthquake Recovery Authority (CERA) and Canterbury Employment and Skills Board (CESB), seeking to</p> <ul style="list-style-type: none"> • Predict the labour market needs for the rebuild including construction needs and the flow on impacts on other sectors • Identify sources of labour, competition and skill levels needed, timing and policy implications • Retain, develop and attract appropriately skilled and experienced people for the greater Christchurch rebuild and economic growth
Japan	<p>Japan as One, led by the Ministry of Health, Labour and Welfare, the Government of Japan</p> <ul style="list-style-type: none"> • Phase 1: Tentative emergency overall countermeasures, including initiatives on employment protection, emergency job creation and job matching • Phase 2: Steady creation of employment through reconstruction projects through promotion of reconstruction projects and active labour market programmes (ALMPs) • Phase 3: Further promote creation of long-term, stable jobs.

Governments in Australia, Japan, and New Zealand realised the need for a multi-faceted approach to take into account both immediate and longer-term needs to ensure support for disaster-affected industry, business and labour force. The government assistance in terms of a workforce strategy in these economies share common themes. These included:

- **Immediate and short-term assistance** to stabilise the economic conditions and minimise labour market disruptions;
- **Medium-term assistance** to restore confidence and community spirit, retain employment and promote economic opportunities; and
- **Longer-term expansion and development of a skilled workforce** for the rebuild and regional development.

Embedded in a strategic framework for economic recovery in the region, the broad employment approach commonly adopted by Australia, Japan and New Zealand focused on a strategy for workforce retention within a workplace context, while providing employment and training support to those in need. Great efforts have also been made to coordinate the recovery and rebuilding work with other economic activities so that opportunities for investment, innovation and job creation are maximised.

³⁵ <http://cera.govt.nz/recovery-strategy/economic/labour-market>

8.3 Employment and social policy measures in response to disasters

This section provides a comparative analysis of different approaches to managing the effects of disasters on labour markets in the economies studied. This is an evolving area as Australia, Canada, Japan, and New Zealand are still in the process of recovery and reconstruction. A number of new measures are currently under implementation or under development as recovery progresses.

Within the overarching employment programme, comparative analysis will be undertaken under three categories, namely:

- Measures to support the unemployed and social protection;
- Measures to retain and create employment; and
- Active labour market programmes (ALMPs).

8.3.1 Measures to support the unemployed and social protection

According to Mitra and Ranjan (2011), social protection refers to publicly provided safety nets of two kinds. The first type is poverty alleviation measures which help people who are born poor or who lack the productive assets or skills to get out of poverty. The second type consists of social insurance programmes or other labour market interventions that allow people to deal with labour market risk.

Actions aimed at addressing these two challenges cut across a broad range of policy domains that have the potential to promote job creation, as well as to foster the protection of individuals against the negative consequences of labour market caused by disasters. Providing adequate social protection to the unemployed remained a priority in case study economies. The focus was commonly on the welfare and labour market policies and related aspects of taxation that were considered as most relevant for near-term labour market outcomes.

8.3.1.1 Income support

In all studied economies, labour force participation was in part supported by adequate social protection systems such as unemployment insurance (UI) or benefit programmes, and an expanded coverage of basic social protection programmes. These systems provided assistance to workers who were displaced from their jobs due to the natural disaster. Usually, the application of unemployment benefits or short-term work benefits was under standard eligibility criteria.

Compared with the other four economies, the coverage of contributory social benefit programmes in China remained relatively low. The unemployment insurance scheme was limited to the displaced workers who were employed in urban formal sectors and lost jobs in the earthquake. The Federal Employment Insurance Program was sufficient in Alberta to provide basic income support for displaced workers. In Japan and New Zealand, however, there was a case for expanding the coverage of unemployment insurance programmes where appropriate.

The size and timing of employment effects depends to a great extent on country circumstances. Labour market indicators as described in previous chapters had shown a growing number of jobseekers who were displaced from their jobs for a protracted period of time and being at risk of withdrawing from the labour force and falling into poverty. Therefore, additional assistance was provided by case study economies to facilitate income support for displaced workers.

For example, Japan extended the normal length of unemployment benefits for unemployed workers in the disaster. New Zealand simplified application procedures and expanded capacity to provide easy access by beneficiaries for receiving benefits while in Australia, arrangements were in place for people in disaster-affected areas who were on income support payments with participation requirements to be exempt from the requirement to look for work or undertake training or related activities for a period of between 2 and 13 weeks, depending on individual circumstances (Box 2).

Box 2: Workers income support: timeliness, clear purpose, coverage and easy access

- **Australia:** the Disaster Income Recovery Subsidy provided assistance to employees, small business persons and farmers who lost income as a result of the flooding events for a period of up to 13 weeks. This payment was not means tested, but basic eligibility applied such as must be living in or deriving income from an eligible area affected by the disaster and not currently receiving other payments. It consisted of ex-gratia payments of AUD 469.70 per fortnight for single people and AUD 424 per fortnight each for a couple (equivalent to the maximum rate of Newstart Allowance).
- **Japan:** Unemployment benefit of 45-80 per cent of the previous wage, depending on age, insured period and the reason for job loss. The Unemployment benefit for the 2011 tsunami victims was extended up to 360 days in disaster-affected areas.
- **New Zealand:** Earthquake Job Loss Cover of NZD 240-400 per week was available depending on previous working hours, for workers who were employed prior to the earthquake and lost their job due to damage to the workplace or their employer stopped paying them. It was not available for those receiving other income support payments, workers compensation or for those whose employers were receiving an Earthquake Support Subsidy. Access to income support was simplified following the earthquakes, by encouraging people to apply for the unemployment benefit online or over the phone. In worst affected areas, campervans were used as mobile welfare application units so that people could more easily apply for assistance.
- **China:** Unemployment benefit was available until the end of 2008 to people who were employed prior to the earthquake under the enterprise unemployment insurance scheme. The payments varied between jurisdictions depending on the corporate standards to unemployment insurance benefits. One-off unemployment benefit was available to people who were self-employed prior to the earthquake under the social unemployment insurance scheme. It also provided up to RMB 3,000 Entrepreneurship Subsidy to help self-employed people to start up business following the disaster.
- **Canada:** Employment Insurance payments were available for all workers affected by the June 2013 flooding events. To streamline the processing of claims, Service Canada had set up an online system for applying for Employment Insurance benefits.

In the case studies, unemployment insurance systems proved to be critical at the early stage of disaster recovery, absorbing the effects of job losses on economy and households. The primary concern in case study economies was the risk that high unemployment caused by natural shocks may turn into persistent structural unemployment. Therefore, those countries had opted for policy packages with unemployment benefits at its core that appeared best suited to address their most pressing labour market challenges. In designing and/or adapting

existing social protection programmes, economies had also taken into account their budgetary and administrative constraints, along with other social objectives.

Case studies reported one challenge, which was specifically in relation to the design and expansion of social protection programmes. While adequate benefits can effectively alleviate poverty and provide access to basic services such as medical, health, education and other social infrastructure, how much adequacy is enough? There was a challenge facing case study economies as to raising incentives for some disaster-displaced workers and those who were long-term unemployed before the event to return to the labour market.

While many workers who lost jobs as a result of the disaster could find replacement employment relatively quickly, others – especially lower-skilled workers – tended to rely on unemployment benefits for longer. The reason, as explained in the previous chapter, was partially due to the structural adjustment of certain industries in response to natural disasters. In today's knowledge economy, workers who have lower educational attainment and are unable to 'respond flexibly to a shock', however, would tend to fall into the trap of longer-term unemployment (Australian Workforce and Productivity Agency, 2012).

For those who need continued income support, sustainable funding may provide a solution, which requires joint commitments of the governments and support from the private sector or non-government agencies (Norton et al., 2001). Cross-case comparison also highlights that it is essential to combine income support with appropriate job seeking incentives and re-employment services to mobilise benefit receivers/beneficiaries back to employment, as well as with a benefit system that provides adequate work incentives.

8.3.1.2 Household livelihood assistance

Despite rapid income support provided by case study economies, participation challenges as a result from the disaster disruptions in livelihoods remained for many people and groups. Increasing workforce participation was therefore a major theme of case study countries' household support following the event. A number of initiatives had been introduced to increase participation, based on an improved understanding of barriers to participation. Good practice examples of such livelihood support for workers are shown in Box 3 overleaf.

Box 3: Good practice examples of livelihood support for workers

- **Australia:** Queensland Government provided financial and in-kind assistance to meet needs of households of various kinds, including Structural Assistance Grant (up to AUD 10,500 for individual or AUD 14,200 for a couple or family) to help with home repairs; Essential household contents grant to help replace lost or damaged household contents; Essential services reconnection grant to help reconnect house to essential services (electricity, gas, water, sewage or septic systems). Mortgage relief loan and bond loans or rental grants were also provided to home owners and renters, respectively, who experience difficulties paying their home loans or paying rents.
- **New Zealand:** Earthquake Support Coordination Service draws on skills of both government and NGO community-based social agencies to help earthquake affected residents. The service is delivered by a team of Earthquake Support Coordinators who help homeowners navigate the earthquake information pathway; work out what needs to be done and create a recovery plan; provide information or access to other services and facilitate meetings and offer other types of support.
- **Japan:** The majority of the elderly people affected by the earthquake and tsunami were cared for in social welfare shelters. One of the provisions of the Japan Disaster Relief Act covers shelters for people with disabilities. Employment Promotion Housing was provided by the Employment and Human Resources Development Organisation of Japan to those made homeless by the disaster. Emergency temporary housing was also constructed under the ‘Japan as One’ Work Project’s One Year of Initiatives. In cases where the demand for temporary housing outstripped the supply, many local governments provided financial assistance for people to live in rental properties.
- **China:** Child Friendly Space (CFS) is a special type of daytime nursery jointly supported by the China National Working Committee on Children and Women and the United Nations Children's Fund (UNICEF). It provided care services free of charge to those children in local communities, whose parents were in full-time employment. Apart from accommodating childcare, it also served as a service centre where children and their families could access psychosocial support.

The forms and role of household livelihood assistance vary from country to country depending on local needs, the levels and coverage of programmes in the disaster-affected communities, the strength and legitimacy of social partners, and the degree to which international organisations are involved. Measures taken by case study economies cut across a number of elementary human needs, such as food, water, shelter, clothing, sanitation, health care, and others. The priority of case study countries was to provide assistance to address four aspects of livelihood issues that may concern workers and disengage them from the labour market. These included:

- Home repair or rebuild (e.g. insurance pay-out, access to loans and financial assistance, access to other public payment programmes);
- Family issues (e.g. loss of family members, health issue and childcare arrangements);
- Personal impact (e.g. physical, mental and psychological health, stress and coping ability); and
- Temporary housing/accommodation

In addition to the good practice in Box 3, case study economies also had cash benefits support with a focus on addressing financial difficulties experienced by households and individuals after a disaster. These income-support types of benefit include payments to people who were injured or who lost family members in the disaster, whose property were destroyed or damaged, and those who were temporarily laid off. Selected examples of disaster assistance payments for households are tabulated in Table 15.

Table 15: Selected examples of disaster assistance payments for households

Economy	Household support measures
Australia	<p>The Australian Government Disaster Recovery Payment (AGDRP) was available to people significantly affected by flooding in Queensland local government areas that were declared natural disaster zones. Payments of AUD 1,000 per adult and AUD 400 per child were available from 1 January until 4 July 2011.</p> <p>The joint Australian and State Governments' Natural Disaster Relief and Recovery Arrangements (NDDRA) provided household payments including personal hardship and distress allowance, essential services safety and reconnection grants of up to AUD 5,000 and funeral and memorial grants of up to AUD 10,000.</p>
New Zealand	<p>Civil Defence Payment for Loss of Livelihood of around NZD 250-340 per week for people who were evacuated and lost wages of self-employment income. Additional payments were available to cover accommodation and living costs of evacuees.</p>
Japan	<p>Basic relief payments include: payment of natural disaster condolence to people who lost family members in the earthquake and tsunami; payment of lifetime disaster consolation to people with disability due to the disaster; and payment of victim relief to households with pronounced damage to livelihoods.</p>
Canada	<p>Flood assistance payments (including pre-loaded debit cards) available to Albertans who can't return to the place they live. Those who qualify receive CAD 1,250 per adult and CAD 500 per child to help pay for the expenses related to being evacuated.</p>

Many of the policy measures to tackle livelihood disruptions and encourage workforce participation also contributed to community recovery. Most relevant in this area were policy measures to support housing repairs and recovery while meeting the housing needs of those displaced. China, Japan and New Zealand had provided temporary accommodation for people who were forced to evacuate from their damaged homes. One of the household support priorities for Australia and Canada was to resolve the immediate personal hardship through household payments to make sure that families get back on their feet within a short timeframe.

Evidence from the case country experiences shows that APEC economies have learned from each other and applied these learnings to their practice in response to the studied event. The Earthquake Support Coordination Service in Canterbury and the 'Build Back Blitz' programme in Queensland are typical examples. They both originated from the protocol of the Building Advisory Service which was first adopted by the Victorian Bushfire Recovery and Reconstruction Authority (VBRRA) to assist homeowners struggling to rebuild or repair homes following the 2009 bushfires in Victoria, Australia. The case study of the Canterbury earthquakes reported that the service enabled workers to continue to participate in the workforce rather than taking extra time out to deal with family and other issues.

Elements of this good practice included:

- a model of one service across multiple providers based on a collaborative approach;
- the appointment/recruitment of Rebuilding Advisors to provide one-on-one assistance;
- combining social recovery with technical and financial advice to home owners; and
- ensuring efficiency and easy access to the public through mobile services.

Case studies also show that non-profit organisations, social groups and international organisations also played a prominent role in filling the gap of livelihood support. The ILO in particular had its presence across APEC economies that were recently affected by natural disasters. Working with local government and other agencies in China, the ILO played an instrumental role in livelihood restoration in Sichuan following the Wenchuan earthquake

(FAO, 2008). The response from other social groups in Australia, Japan and New Zealand, however, had a particular focus on building community capability in disaster-affected areas to support the recovery effort.

8.3.1.3 Public works programmes

As an alternative to unemployment insurance, public works programmes provided an important means of social benefits. According to Marzo and Mori (2012), public works programmes are generally used to provide income support to the poor during times of economic and natural shocks. It is believed that immediate job opportunities can have the direct personal impact of encouraging local residents to stay and participate in the redevelopment of their community (Vakis, 2006).

In considering further action to accelerate the pace of employment recovery, case study economies had focused on specific areas covering both the demand and supply sides of the labour market. On the demand side, measures to boost public investment in public works programmes were aimed at direct job creation and poverty alleviation while raising potential growth in the longer run. Box 4 (overleaf) lists the good practice examples of public works programmes adopted by Australia, China, Japan and New Zealand.

Public works in case studies, as shown in Box 4, cover a variety of programmes with different impacts on jobs. Both Australia and New Zealand has a long history of using subsidised public works in community or environmental projects. They had both expanded existing social welfare programmes during the disaster response. In comparison, China and Japan had taken steps to identify job opportunities in the process of relief and recovery for those unemployed people.

In the Working for the Environment model and Taskforce Green model, the participation of public sector (education, local authorities, government departments, and service groups) and private sector employers was a critical element in the success of the initiative. Work opportunities provided by communities and employers enabled people to gain work experience and develop skills within a workplace environment. In New Zealand in particular, the Government utilised subsidised public works to help lower-skilled people transition and progress towards unsubsidised, sustainable employment.

Box 4: Good practice examples of public works programmes

- **Australia:** Working for the Environment was one of four key initiatives within the Queensland Natural Disasters Jobs and Skills Package. It provided employment and work experience opportunities for eligible people on projects targeted at rebuilding community and public infrastructure, and environmental restoration.
- **New Zealand:** Taskforce Green is a Government subsidy that allows people to participate in project-based work where they can develop work habits and general on-the-job skills. It aims to help people gain experience and progress towards unsubsidised, sustainable employment. Following the Canterbury earthquakes, this project was extended with NZD 96,000 funding to subsidise the wages of unemployed people for clean-up and other community restoration projects in the Canterbury recovery³⁶.
- **Japan:** Job creation through recovery work was one of the comprehensive emergency measures set by the Japanese Government during its second stage of employment assistance through ‘Japan as One’ Work Project. Identification of potential public works projects for the unemployed was undertaken in parallel with post-disaster recovery planning process.
- **China:** In the immediate aftermath of the Wenchuan earthquake, the Municipal Government of Chengdu, capital city of Sichuan Province, provided public service projects creating temporary jobs including health and epidemic prevention in public hospitals, goods delivery, carers for wounded victims, security and logistics, and clean-up. All the local governments were required to identify and provide unemployed people with public work opportunities that arise from the recovery³⁷.

In other APEC economies, public works were effective in providing income support to the vulnerable while contributing to generate basic infrastructure in urban and rural areas. As exemplified in the literature review, the Chilean Ministry of Labour and Social Security created a number of emergency jobs following the 2011 Chilean earthquake and tsunami. Unemployed people were hired from affected areas to work on tasks of reconstruction, demolition, removal and clearing of debris, as well as public welfare. Results were encouraging with a large number of youth benefiting from the programme and most clean-up works done³⁸.

In lower-income economies, public works constitute an important component of the ‘social protection’ as a poverty programme. Mitra and Ranjan (2011) highlighted that in order to properly implement public works programmes, it requires an appropriate level of wage rates, inclusion of the poor and women’s participation. Some APEC economies take the form of ‘Cash for Work’ (CFA) to involve unemployed people in public works. While most job opportunities were created in public sectors, public works programmes in case economies were temporary, aimed at quickly mitigating the impact on livelihoods.

The World Bank emphasised the importance of transitioning from public works programmes to sustainable safety net programmes in a crisis (Vakis, 2006). There is thus significant scope in APEC economies to further expand the opportunities of public works in a disaster context, combined with job training and other labour market policies to help with this transition. Community-based public works, in particular, would have a major impact on poverty, employment, regional economic stability and social cohesion.

³⁶ New Zealand Government: <http://beehive.govt.nz/release/taskforce-green-funding-cleans-quake-damage>

³⁷ ‘Wenchuan earthquake restoration and reconstruction to support employment and social insurance policies: implementing rules in Chengdu’: <http://www.qlrslj.gov.cn/>

³⁸ Interview results (August 2013)

8.3.1.4 Commentary summary

Comparative analysis in this section provides additional insights into the role and potential of social protection in employment response to natural disasters. Evidence suggests that governments in case study economies have committed to the mainstreaming of social protection in disaster prevention and management. Important challenges still remain as to how to effectively help workers transition from temporary jobs created post-disaster to sustainable employment.

The scope and coverage of social protection vary across economies. Unemployment insurance and unemployment benefits played an important role as a ‘shock absorber’ in cushioning the effects of income losses. They worked particularly well when combined with other household assistance, such as livelihood support, personal support and temporary housing assistance. It was recognised that fiscal, institutional and administrative capacity was crucial to the successful delivery of those social supports.

Case studies show that the design of social safety nets required for a disastrous situation might be different from what exists for regular social welfare purposes. Therefore, preparing for disaster impacts by fiscal prudence and by setting programmes and schemes in place is crucial to cushioning disturbance in the labour market, and it can increase the timeliness and reach of response. Without such a capacity, social protection policy is unlikely to reap its full benefits.

In summary, elements of good practice of post-disaster social protection assistance include:

- **Pre-designed social protection systems** which can be quickly activated;
- **Ensuring timeliness and coverage** of basic social protection – through extending the normal length of unemployment benefits, simplification of applications and establishing online or mobile services which people can easily access;
- **Response innovation** by providing the main social support for people affected by disasters, covering the recovery of housing, household wellbeing and livelihoods; and
- **Combine public assistance with private and community inputs** through the provision of job opportunities in public works programmes.

8.3.2 Measures to retain and create employment

As discussed in the previous chapter, businesses faced a number of constraints in the aftermath of a disaster that can reduce their capacity to retain employees, apprentices and trainees. In the longer-term, certain industries might find it difficult to recover without additional support from the government and the community. Therefore, a number of initiatives had been undertaken by case study economies aiming for maintaining business continuity, meanwhile facilitating a rapid recovery of the local economy.

8.3.2.1 Measures to support businesses

Disruption to businesses caused by natural disasters can have both immediate and longer-term employment impacts. Safeguarding companies from business disruption is therefore in the public interest (Wokeck, 2010). The way in which natural disasters affected the economic activities of the business community carries implications for policies that facilitate labour

supply. In response to varied business impacts, as reviewed in the previous chapters, a range of financial and technical assistance was provided by case study economies (Table 16), with the specific policy priorities nevertheless varying across them.

Table 16: Good practice of business assistance in response to disaster impacts

Disaster impacts experienced by businesses	Selected examples of business assistance
Damage to premises/equipment	<p>Australia: Help was made available by the Queensland Government to assist businesses with the clean-up after Cyclone Yasi. The service was for primary producers and tourism operators only (Operation Clean Up).</p> <p>Japan: Payment of grants was available for SMEs in fisheries, manufacturing and tourism sectors to recover their facilities and equipment. A Subsidy for Corporations Creating Employment in Tsunami/Nuclear Disaster Area was established in 2013 to facilitate business relocation by subsidising the costs of building new factories in areas where they had relocated. Financial assistance was also provided to fishermen for replacing equipment lost in the tsunami.</p> <p>Canada: the <i>Disaster Recovery Program</i> provides funds for small businesses (with 20 or less full-time employees) and rental property owners with cost to clean, repair and replace their essential business assets; <i>Small Business Rebuilding Program</i> provides funds for businesses (with 21 to 50 full-time employees, covering reasonable fixed expenses including rental of office space and equipment, production equipment and rolling stock and facilities.</p>
Short-term business closure	<p>Financial and technical assistance:</p> <p>China: The Sichuan Government relaxed the employee insurance³⁹ payment for enterprises that were subject to a short-term closure with six months extension.</p> <p>Canada: The Calgary Chamber of Commerce set up <i>Business Help Kiosks</i> in affected areas where business owners can go to find information about assistance available. The Kiosks are attended by City of Calgary staff, Alberta Health Services, local banks, insurance companies and the Government of Alberta to provide information and services that may help restore damaged businesses.</p>
Affected supply chain and customer base	<p>New Zealand: New Zealand Trade and Enterprise assisted 260 Christchurch businesses in reassuring their international supply chains that they were still viable and operating.</p>
Cash flow/financial constraints (reduced sales/profitability)	<p>Government-funded low interest loans to businesses:</p> <p>Australia: The Queensland Government initiated the <i>Natural Disaster Assistance Loan</i> and <i>Exceptional Disaster Assistance Grant and Loan</i> to assist primary producers and SMEs. The <i>Small Business Support Line</i> was set up to provide advice to small business owners and put them in touch with specialist advisors on matters such as obtaining finance and cash flow management.</p> <p>Japan: Two types of loans for SMEs affected by the earthquake and tsunami were provided by the Japanese Government, including <i>Great East Japan Earthquake Recovery Special Loans</i> and <i>Great East Japan Earthquake Recovery Emergency Guarantees</i>. In cases where SMEs were on a loan prior to the event and had difficulty accessing an earthquake-related loan, the Great East Japan Earthquake Business Regeneration Support Organisation, in collaboration with the Industrial Reconstruction Organisations/Industrial Reconstruction Consultation Centres purchased loans from financial institutions and lent these loans to them.</p>

³⁹ Enterprise-based employee social insurance includes retirement pension, medical insurance, work-related accident insurance, unemployment insurance and maternity insurance.

<p>Inability to pay employees when no trading</p>	<p>Canada: <i>Hand-up Plan</i> provides low-interest loans and interest rebates to small businesses. Other loans for small businesses to get up and running include loans provided by Industry Canada through Canada Small Business Financing Program and low-interest loans provided by the Business Development Bank of Canada.</p> <p>Government-funded wage subsidies to employees:</p> <p>Australia: <i>Wage Assistance</i> available to employers including businesses, primary producers and not-for-profit organisations to help them maintain their workforce. Payments were the equivalent to the single rate of Newstart Allowance (AUD 469.70 per fortnight) for up to 13 weeks. It was further extended to 26 weeks of assistance.</p> <p>New Zealand: <i>Earthquake Support Subsidy</i> (ESS) was short-term grants available to employers in Canterbury to allow them to continue wage payments in the immediate six weeks post-disaster. The ESS provided a grant of up to NZD 500 per week for each full-time employee for up to six weeks or NZD 400 a week for six weeks for employees whose employers were not contactable or who indicated their business was closed permanently.</p>
<p>Inability to gain site access when recovery started to take place & subject to building and insurance delays</p>	<p>Australia: Assistance was available for businesses seeking advice and information on how to make insurance claims following the disaster. The <i>MoneySmart</i> website, which is an initiative of the Australian Securities & Investments Commission, offers information for businesses on disaster insurance and advice on making a claim.</p> <p>New Zealand: At the initial stage of early recovery, <i>Recover Canterbury</i> helped identify what emergency help businesses needed and ensure they received it. For instance, in the first month following the February 2011 earthquake, it assisted more than 3,000 businesses in gaining access to their premises.</p>
<p>A perception that the region was and still is closed and not open for business</p>	<p>Joint campaign to boost consumers' confidence</p> <p>New Zealand: Financial support for activities supported under <i>Recover Canterbury</i> such as the '<i>Love Christchurch</i>' campaign had encouraged people to buy local and helped relocated businesses to advertise.</p> <p>Canada: Tourism Calgary launched its '<i>Calgary's Doors are Open</i>' campaign in an attempt to attract tourists to the city. The campaign runs for three weeks across the country through radio, newspapers, online advertising and social media. A complementary communications and marketing campaign was led by the Calgary Business Recovery Task Force to encourage residents to 'buy local'.</p>

In the cases of Australia, Canada, New Zealand and Japan, the primary concern was the risk that physical damage and business disruptions caused by disaster would impede business' ability to pay or retain their employees. By comparison, in China, concerns had more to do with the viability of local businesses in support of employment. In general, case studies reported that there was significant uncertainty as to how long businesses would require support and what types of support should be considered over the longer-term recovery timeframe.

Good practice summarised in Table 16 shows that some strategies were short-term measures to keep people attached to the labour market while others aimed to provide support for viable businesses to get their operation up and running without additional assistance. Comparison has also seen increased collaboration between public and private sectors through new models and networks established following the disaster. In particular, joint campaigns (e.g. '*Love Christchurch*' and '*Calgary's Doors are Open*') had an impact on economy-wide investment

and recovery and had been instrumental in improving business environments for future job generations.

To increase employee retention, two types of initiatives are noted. First, relief payments to employees attached to an employer whose business stopped trading as a result of disaster effects can be helpful. Both Australia and New Zealand adopted wage assistance to businesses. A key feature of the wage assistance is that **it maintained the relationship between employers and employees** as opposed to the Government providing direct welfare payments. In New Zealand, the Earthquake Support Subsidy (ESS) was very well received by business with comments that it “saved their business from failure and staff from the dole queue” (Steeman, 2011).

Second, assistance that helped employers establish a more family-friendly working environment also increased the likelihood of staff retention. Many public agencies in Queensland and Canterbury provided workers with easy access to financial and specialist support through their employers’ Human Resource (HR) system. Some employers allowed flexible working hours for employees who had to deal with personal issues and were unable to attend work. The details of workplace-based public support are economy-specific. Business surveys in the two countries had played a critical role in informing the design of public policies to address country-specific challenges facing business societies.

Locally-owned strategies played an important role in orienting economic recovery programmes. In Australia, Canada, Japan and New Zealand, regional economic recovery was primarily led by one dedicated regional development organisation⁴⁰, characterised by strong public-private partnerships and organisational innovations. While Australia used an existing initiative - Regional Development Australia, Canada and New Zealand created Calgary Business Recovery and Recover Canterbury, respectively, both of which were based on the local needs and experience of the delivery of past programmes (Box 5).

⁴⁰ The term regional development organisations (RDOs) is used generically to describe the national network of multi-jurisdictional planning and development organisations that provide administrative, professional and technical assistance to local governments, businesses and private residents nationwide. These public entities are often known locally by names such as councils of governments, economic development corporations, regional planning commissions and regional councils.

Box 5: Good practice examples of regional development organisations leading business recovery

- **Australia:** The Queensland Department of Employment, Economic Development and Innovation (DEEDI) was the leading agency to restore a competitive and sustainable regional economy in Queensland. It assisted with the recovery of individuals, businesses and tourism operators through a range of initiatives. Regional Development Australia (RDA) is a nation-wide initiative that brings together all levels of government to enhance the development of Australia's regions. Following the Queensland floods, RDA in Queensland had played a major role in enhancing the growth and development of Queensland's regions through a new network of 12 RDA committees to provide regional development advice for 12 regions across the State.
- **New Zealand:** Recover Canterbury is a temporary organisation formed by Canterbury Development Corporation (CDC) and the Canterbury Employers' Chamber of Commerce (CECC), supported by several government agencies to help small and medium businesses survive, revive and thrive following the earthquakes. Initially, Recover Canterbury's role was to identify what emergency help businesses needed and ensure they received it. Over time, it evolved into a free one-stop-shop for business to obtain support of all kinds. Support included facilitating and assisting in the creation of local business associations and facilitating the co-location and coordination of small and medium enterprises (SMEs) in the arts sector. In 2012, CDC assessed its economic impact: "by the most conservative assumptions, Recover Canterbury saved 617 jobs, and kept NZD 39 million in the economy. Almost 400 businesses received funding of NZD 6.1 million" (Scott, 2013).
- **Canada:** The Calgary Business Recovery Taskforce (CBRT) was created in July 2013 to help get struggling businesses back to pre-flood levels of business activity. The creation of the Task Force has been led by the Calgary Chamber of Commerce and Calgary Economic Development. The Task Force aims to not only help resume business operations but also encourage communities to support the local economy and ensure business and investment comes back through a comprehensive local, national and international marketing and communications campaign.

There were several key components of **the regional development organisation models** that contributed to sustained business recovery in Australia, Canada and New Zealand. These included:

- the collaboration between the government agencies and business peak bodies (e.g. advocacy group);
- place-based economic recovery strategies as a basis for longer-term growth;
- the primary role of the regional development organisations being an advocating voice of disaster-affected businesses and communicating their needs, with a secondary role of developing projects to address priority economic issues; and
- has a dedicated response team with a broad network, whether it was an existing regional organisation or newly created temporary one.

8.3.2.2 Sector-based employment assistance

Two mechanisms were adopted by governments in case study economies to support industry-wide employment. These included direct **financial** assistance, in terms of interest-free and low-interest loans, tax reductions and other types of grants, and **technical** assistance to help business sectors deal with issues in the recovery process. With varying scope and roles, some of these programmes lasted for a short period (e.g. clean-up, relocation) while others provided continued support for targeted sectors (e.g. shop local campaign, business continuity planning assistance) (See Table 17, overleaf).

Table 17: Sector-based assistance in case study economies

Programmes	Immediate aftermath		Short to medium term		Long term	
	Clean up	Premises & assets	Consumer confidence	Business recovery	Business continuity	Community resilience
Australia	Rural Resilience Package	*			*	*
	Disaster Recovery Toolkit for Business			*	*	
	Natural Disaster Assistance Loan		*		*	
	Exceptional Disaster Assistance Grant and Loan		*		*	
	Operation Clean Up	*				
	Tax Assistance & Insurance Assistance				*	
New Zealand	Love Christchurch Campaign		*			
	Canterbury Recovery Trust Grants			*		
	Business Mentors NZ			*	*	
	The Canterbury Tourism Partnership		*	*		
Japan	Subsidy for Corporations Creating Employment in Tsunami/Nuclear Disaster Area		*		*	
	Business grants		*			
	Great East Japan Earthquake Recovery Special Loans				*	
	Great East Japan Earthquake Recovery Emergency Guarantees				*	
China	Cultural tourism		*	*		*
	Emergency Start and Improve Your Business				*	*
	Pioneer Farmers				*	*
Canada	Twin Assistance Grants	*	*		*	
	Disaster Recovery Program	*	*		*	
	Small Business Rebuilding Program	*	*		*	
	Hand-up Plan				*	
	Calgary's Doors are Open Campaign			*		

One similarity among sector-based programmes was a consistent priority of support for Small and Medium Enterprises (SMEs), primary producers⁴¹ and the tourism sector. While

⁴¹ According to the definition by the Australian Taxation Office, a primary producer is an individual, trust or company carrying on a primary production business, including plant and animal cultivation, fishing and pearling, tree farming and felling.

economies attached varying importance to different policy approaches, the common purpose was to build business capacity in these sectors via targeted interventions and support their transition from emergency to recovery.

Across case studies, one particularly successful good practice of industry assistance programmes was publicly-funded business mentoring services. The regionally-based and industry-based business mentors were hired by the public agencies from within the community or from a relevant industry sector. Their mentoring services ranged from psycho-social support to business-specialist support on matters such as obtaining finance, cash flow management, retail leasing, relocation, promotion and marketing. This approach was seen to have the ability to quickly and more effectively provide a greater level of engagement.

Comparison of case studies shows that the employment response in industry sectors tended to target particular groups that were most affected by the disaster. For instance, self-employment was one of the dominant themes in Sichuan's agriculture sector recovery. The ILO initiative in China was specifically designed to help youth and women by identifying opportunities for starting their own business. Likewise, Japan's 'Subsidy Project for Restoration and Construction of Facilities and Equipment by SME Groups' was aimed at supporting the automobile and electronics industries impacted by the tsunami.

Comparative analysis found that promoting self-efficacy was a critical element in the success of the packages with the intent that resilience-building could be seen as coming from the people themselves. Typical examples were Australia's Disaster Recovery Toolkit for Business and the Rural Resilience Package which shared a feature of proactively assisting businesses to develop resilience and better prepare for future events. The challenge facing case study economies was to achieve a balance between resource provision for sector recovery and helping businesses and those self-employed to become independent.

Most of the policy responses had focused on a public-private partnership to improve economic prospects in the climate in which businesses operate. In Australia, these were also coupled with measures to develop and build resilient, sustainable businesses. However, when budget is constrained, priorities will need to be targeted to some sectors with high growth potential so that more positive effects arising from such support can be yielded. This is most evident in Japan where before providing support, governments had to decide the directions of business assistance taking into account their ability for job creation. Public assistance was prioritised for the sectors which were deemed to have most prospects of generating future jobs in the region.

8.3.2.3 Measures to increase the aggregate demand

It is not unusual for recessions to be followed by impacts of natural disasters. One implication is that, compared with protracted recoveries from global financial crisis, such disastrous events have the potential to yield positive economic outcomes (Agrawal, 2011). Requirements from the rebuild may generate a sufficient pace for economic activities to translate into lower unemployment. In this context, macroeconomic stimulus policies played a major role in boosting job creation across the economies studied in this report.

The common approach adopted was to prioritise repairs and rebuild of infrastructure facilities, regional developments projects and other economic-significant programmes in the country's fiscal plans as well as disaster recovery plans. All studied economies included a specific employment component in their fiscal spending on infrastructure, often with more specific targets for local skills. In China and New Zealand, the procurement process for infrastructure rebuild explicitly indicated a preference for using local companies and labour resources. In economies like Japan infrastructure repairs and maintenance work was commissioned in the form of public works that can be targeted for local unemployed people and disadvantaged groups.

An additional spill-over effect of infrastructure spending, according to ILO (2009), is that it lays the foundation for future growth and achievement of long-term development objectives. Case study results confirm this sentiment by showing that publicly funded infrastructure repairs and rebuild had large multiplier effects on the local economy. It was the most direct way of stimulating aggregate demand and increasing employment in related sectors, such as construction. One typical example was that in New Zealand more than 2,000 workers will be directly employed and sourced locally at the peak of infrastructure rebuild.

In Australia, there is a case for integrating recovery from the flooding events into long-run regional economic development that underpin future growth. In view of the constraints on macro policies, stronger and faster employment gains will be hard to achieve without significant structural reforms that foster job creation and take-up (ILO et al., 2012). Australia's Work for Queensland Strategy (a Queensland Government initiative) not only included a Resources Skills and Employment Plan in response to strong growth in the recovery and resources sector, but also contained measures to boost productivity growth and enhance skills. **This practice, perhaps, reflects the need in other economies to rebuild their policy space, allowing for productivity and skills gains in addition to absorbing a growing labour force.**

8.3.2.4 Commentary summary

This section illustrated a comparison of measures undertaken by governments to strengthen or maintain links to the labour market for those who risk being severed from it. The policy responses varied across economies. In most cases, financial assistance was limited to getting businesses back into operation or helping with self-employment. Greater priority in Australia and New Zealand was given to workplace-based employment retention. Business mentoring services grew in prominence to help businesses develop and build their capacity of recovery.

Studied economies commonly gave priority of assistance to targeted population and business groups in the affected sector. Similar to business mentors, good practice in Australia, Canada, Japan and New Zealand highlighted the role of regional development organisations in supporting employment recovery in the region. This is consistent with the positive experience of the US following the 2008 Iowa floods and Hurricane Ike in which case a sector advocacy organisation representing the sectoral interests played a significant part in job creation and economic improvement (NADO, 2010).

There were also region-wide stimulus programmes in terms of prioritising infrastructure spending or investments in other developments, which had wider employment effects at a more aggregated level. Drawing from Australia's experience, there appeared to be

considerable potential for a wider regional skills strategy to entail job creation and skills development across infrastructure investment and other development sectors.

In summary, elements of good practice of post-disaster employment retention and creation include:

- **Industry-based economic recovery** by close collaboration between public agencies and private sectors (the sector and business representatives) and by recruiting business mentors from within the community and industry sector;
- **Maintain the relationship between employers and employees** by providing workplace-based public support (employer wage assistance and human resources support);
- **Promote self-efficacy and capacity-building** through measures that encourage businesses and individuals to identify their own economic opportunities and take ownership of employment solutions;
- **Target support** to most troubled sectors and needed groups, based on the findings from business surveys (e.g. Australia and New Zealand); and
- **Combine job creation stimulus packages with productivity and skills enhancement element** through integrating opportunities in infrastructure rebuild and other development projects.

8.3.3 Active labour market policies and programmes

Improving labour market outcomes involves several challenges relating to both quantity and quality aspects of job creation (ILO et al., 2012). Comparison in the last chapter shows that case study economies were commonly confronted with various underlying problems that have plagued labour markets in the past, such as low levels of skills, productivity, and employment disadvantage of some workers. Following the disaster, other worrying features included skills shortages, job mismatch and youth employment difficulties.

Actions aimed at tackling these problems cut across a broad range of Active Labour Market Policies (ALMPs)⁴² that played an important role in improving the overall labour market prospects. The priority was to increase labour market participation and employment rates, in particular for specific groups such as women and young people. Comparison shows that three policies were widely applied across case study economies: public employment services, skills and training programmes, and hiring subsidies.

8.3.3.1 Public employment services

A higher pace of creation of vacancies and job openings in case study economies, as described in the previous chapter, called for policies to improve matching between job seekers and employers through scaled-up employment placement services. Available data in case studies shows that job matching was the central function of the labour market intermediation of public employment response in Australia, Japan and New Zealand.

⁴² According to OECD Employment policies and data, Active Labour Market Policies are to help unemployed people back to work, including job placement services, benefit administration, and labour market programmes such as training and job creation. <http://www.oecd.org/employment/emp/activelabourmarketpoliciesandactivationstrategies.htm>

Building on existing capacity, policy practice of public employment services adopted by these three economies are summarised in Box 6.

Box 6: Good practice examples of post-disaster public employment initiatives

- **Australia:** The *Queensland Natural Disasters Jobs and Skills Package* was a joint programme between Queensland and Australian Government agencies. The package was developed to support Queensland industry, business and communities affected by floods and Cyclone Yasi. It comprised skills and employment initiatives to mitigate skills and job losses, support the retention of skilled workers in impacted communities and address emerging skills shortages from the recovery. Two initiatives under this Package were the employment of Jobs and Skills Development Officers (JSDOs) to lead the implementation of the package within target regions and industries and the Flexible Funding Pool for Natural Disaster Recovery Projects (FFP) to support practical and innovative work experience projects for job seekers, specifically targeted at disaster recovery and rebuilding.
- **New Zealand:** ‘One stop shop’- the *Canterbury Skills and Employment Hub* (CSEH) is a job matching initiative providing specialised assistance for employers and job seekers. The Hub is a one year pilot with the potential for aspects of it to be rolled out nationally if the evaluation is sufficiently favourable. The Hub website allows employers to list vacancies and be matched with jobseekers from Christchurch and elsewhere in New Zealand. Skills Brokers were employed in the Hub, linking with employers and, if needed, with Immigration New Zealand for processing visa applications. The whole idea behind establishing the Hub is to reduce ‘red tape’ and increase efficiency of job matching for employers involved in the rebuild.
- **Japan:** ‘*Japan As One*’ work project was a critical initiative led by the Japanese Government to support employment recovery. The project has three phases in line with the planned recovery and reconstruction timeframe. The first phase was focused on job creation through recovery work and building systems to increase job matching efficiency. The second phase placed an emphasis on employment retention and ensuring livelihood security for displaced people, such as expanding unemployment insurance benefits and providing subsidies to businesses for job retention and creation. The third phase was designed to enhance employability of affected people by increasing the capacity of its public employment services.

Comparison shows that economies all expanded their public employment services in response to the post-disaster requirements. These services not only included core services such as providing employment information, job matching and other re-employment assistance, but also included targeted services provided by skills-specialist brokers to a range of troubled job seekers. One common concept manifested in public employment services was the One-Stop concept. It consolidated the provision of employment and training programmes into one point of contact so that both individuals and employers could more easily access these services.

Another common experience among case economies was public effort made to reduce ‘red tape’ that would otherwise hinder employers from efficient job matching. For instance, the Canterbury Skills and Employment Hub (CSEH) was established after the earthquakes in order to reduce the inefficiency identified by Immigration New Zealand and Canterbury employers. In comparison, both Job Services Australia in Queensland and Hello Work in Tohoku, however, were existing public employment centres located across the affected areas. They have all focused on providing job seekers with the right skills, training and support, based on their needs and preferences, to enter the labour market in local areas.

The success of all these public employment services, however, relied largely on the capability of technical and specialist supports, especially support for targeted, personalised job seeking. By comparison, Job Services Australia providers are organisations contracted by the Australian Government whereas the New Zealand-based CSEH Skills Brokers were usually seconded internally from the Ministry of Social Development (MSD) or from the Ministry of Business, Innovation and Employment (MBIE). Similar to Queensland, consultants

contracted to the Hello Work or to 'Japan as One' Jobs Council in Tohoku were specialist providers, reflecting a public-private co-service model, which has been adopted by many other APEC economies.

Another salient feature of these public employment services was their close link with employers and training organisations. Such a connection enabled gaining better labour market information to formulate effective labour market policies. In New Zealand's model, four agencies have linking roles in the Hub. The Ministry of Social Development (MSD) has made its job seeker database available to the Hub. The Canterbury Skill Shortage List has been constantly updated to reflect employers' labour demand. Similarly, in Tohoku, Hello Work consultants travelled from place to place to gain a better understanding of business recovery and their job openings.

In summary, elements of good practice of public employment services in Australia, New Zealand and Japan included:

- **Ensure efficiency** through providing 'One Stop' service to reduce 'red tape' and enable quick and easy access by the public, and by appointing specialist skills brokers;
- **Flexibility** to be better able to tailor service offerings to the individual needs of job seekers and to adjust quickly to the changing disaster context;
- **Capability of technical and specialist supports** through collaboration between public and private sectors; and
- **Sound labour market information and more demand-led training** by creating closer links between employers and training organisations.

8.3.3.2 Skills and training programmes

Comparative analysis suggests that fairly robust employment gains can be generated by boosting measures to help the unemployed keep their skills transferrable or updated. Policies to improve the supply and quality of labour through education and training were critical for the overall recovery of disaster-impacted regions. Commonly cited concerns during policy design were problems of aligning the training programmes with the needs of both employers and potential trainees, and with the broader skills requirements for reconstruction.

A wide range of post-disaster skills development programmes were implemented by case study economies, but varied by coverage and target. Training models implemented in New Zealand and Japan contributed to increased quality of education as well as reduced cost for employers. Similarly, China's 'Pioneer Farmers' in Qiangchuan county, as part of the Zhejiang Province's Twin Assistance Program, was a comprehensive training campaign that helped farmers who lost farmland and jobs in the earthquake, to identify opportunities through developing agro-techniques or training for jobs in other places. The coverage was across 40 townships in the county over three years, thus highlighting the importance of continuity and diversity of training for skills development in the long-run.

Education and training in Australia and New Zealand were also targeted to support apprenticeships. The Australian Government provided funding for four initiatives that were designed to specifically assist new apprentices, and those who were out of trade apprentices, to start or recommence their apprenticeship as part of the Queensland Natural Disasters Jobs

and Skills Package. In New Zealand, changes to the government's industry training model were announced in January 2013 to encourage more vocational training in response to emerging opportunities from the rebuild or future development.

All the training programmes undertaken in case study economies have seen an increased focus on employability of trainees and alignment of the curriculum with skills in demand in the labour market. In Japan, more tailored solutions for different job seekers were used. Under the 'Japan as One' project, many efforts were taken to expand the vocational training sector and set up special courses to suit the needs of different job seekers.

Another key aspect of targeted skills training is the importance of easily accessible and reliable data. New Zealand initiated a labour market demand modelling system. By providing real-time information on the labour market, the system helped inform targeted training strategies considered by the industry training organisations.

The effectiveness of all education and skills training programmes adopted by case study economies depended on capacity of management and adaptability of these programmes to the changing needs. Funding support from the government and technical capacity of training organisations were also important factors determining the success of these programmes. In Queensland, up to AUD 3 million in funds were invested in training and employment projects for Indigenous Australians in disaster-affected locations. Canterbury-specific training projects also included an essential element of trades training for Indigenous young Māori. Increased partnership between social groups and industry training providers was another contributor to the success of these programmes.

In the case of Wenchuan earthquake, assistance from international organisations, such as the ILO and the International Federation of Red Cross and Red Crescent Societies (IFRC), was instrumental in meeting the needs of targeted job seekers. In partnership with governments of varied levels in China, ILO had drawn on its training expertise and capacity to help with rapid restoration of livelihoods of those most vulnerable. The ILO pilot projects implemented in Sichuan are also being applied to other parts of China affected by recent disasters.

Another common experience among case study economies was an emphasis on delivering place-based training initiatives. This was particularly the case in Queensland where the Australian Government responded to its 'patchwork economy'⁴³ by supporting communities to develop plans to address their own workforce challenges. Regional Education, Skills and Jobs Plans are built from local knowledge and aim to improve participation and outcomes in education, training and employment at a regional level.

⁴³ A 'patchwork economy' is characterised by diversity between and within regions, different experiences at local and regional scale, spatial clustering of particular types of activity, and a series of transitions which may persist for the short or long term.

In summary, elements of good practice of skills development and training in the studied economies included:

- **Targeted, place-based training programmes** based on labour market data;
- **Funding support from the Government and technical capacity of training organisations;**
- **Increased partnership between social groups and industry training providers;** and
- **Ensuring a diversity of training providers** (e.g. public, industry and non-government organisations) and **continuity of training programmes** for some groups.

8.3.3.3 Hiring subsidies to employers

An important stimulus to employment in case study economies came from subsidising the recruitment of newly hired and disadvantaged job seekers. The ILO (2009) suggested that subsidies of this nature are an important counter-cyclical tool in the face of the crisis affecting labour demand. Hiring subsidies are used by Australia and Japan to subsidise displaced and young workers who faced unusual barriers to their entry to the labour market. Particularly in Japan, hiring subsidy assistance was designed to support job creation and job preservation for people deemed vulnerable.

One commonality among hiring subsidies, however, was a priority to limit the risk of discouraging a particular group of people from entering the labour market. In comparison, China had a slightly different subsidy programme which by means of tax reduction or monetary incentives encouraged local businesses to take on people with disadvantage. Skoufias (2003) suggested that hiring subsidies to employers will be more effective when designed for specific categories of workers. This is evident across studied economies (e.g. apprentices, trainees, young people, and the disabled).

Comparative analysis found that wage assistance and subsidies are more likely to achieve their full potential when used as part of an integrated package of assistance to employers. For instance, Japan's Ministry of Health, Labour and Welfare (MHLW) created Employment Creation Programmes for targeted sectors and extended the duration of Public Employment Security Offices (PESOs). By using PESO's network, priority was given to unemployed people with disadvantages, and a special subsidy was given to employers who hire these unemployed.

In summary, the features of hiring subsidies adopted by case study economies included:

- Disadvantaged people (e.g. youth, people with disability, women) and those who have potential job prospects (e.g. apprentices, trainees, newly-hired) were front of mind when targeting subsidies to prospective employers; and
- Being part of an integrated package of assistance to employers.

8.3.3.4 Commentary summary

This section provides an understanding of the active labour market policies, especially jobs and training strategies, in response to recent natural disasters. These policies have been applied in a variety of ways, such as improving job matching services, scaling-up of training programmes and a subsidy for hiring workers unemployed. There was a trend towards an increase in spending on active labour market policies and integrating skills and training strategies into employment services.

Because of rapid moves in expanding public services and well-placed skills brokers/consultants, case study economies were able to prioritise the needs of job seekers. Although different organisational models were used in the economies studied, these services worked as a single point of contact between employers and job seekers. There was also close interaction between the public and private sectors in terms of labour market information sharing and data collection. The capability of private providers in the case of Australia and Japan was critical to the success of public employment services.

Publicly-funded employment services, according to Ellwood and Welty (2000), can raise short-term employment for groups with the weakest job prospects and can have long-term impacts on earnings when combined with significant work supports. In recent years, there has been an increased interest among APEC economies in systematically monitoring and evaluating performance of employment service agencies⁴⁴. More effective quantitative and qualitative assessments are perhaps also needed in case study economies in order to further improve quality and capacity of employment services in response to future disasters.

The type of training that is available for displaced workers matters. After Hurricane Katrina, for instance, various kinds of private-sector training including apprenticeships, sectoral programmes (Lerman, 2005), community college-based credentials and links to the local market (Holzer & Martinson, 2005) appear to be effective. In studied economies, although considerable government activity was/is taking place in the training space in partnership with industry and training organisations, there is scope in using vocational education and training (VET) to improve employability of workers and adaptability of their skills to future shocks.

Comparative analysis concludes that the critical elements that have enabled the effectiveness of the above labour market policies included:

- **collaborative partnership** either between public sectors or through a diversity of public and private partnerships;
- **flexibility** to tailor services and develop additional initiatives;
- a greater level of **local inputs and engagement**;
- **labour market intelligence**; and
- **institutional capacity** to administer new programmes and/or increase the scope of existing programmes, using prevailing networks.

⁴⁴ In South Korea, for instance, Korea Employment Service Evaluation Centre runs a certification programme that measures the quality of services provided by private employment service agencies, and grants certification to excellent private agencies, <http://eng.keis.or.kr/eng/project/evaluation.jsp>

8.4 Role of non-government organisations

The forms and role of participation of social groups in post-disaster labour issues vary from country to country. Across the studied economies, there was increased engagement of non-profit organisations and social groups in different joint programmes with public sectors. In order to promote social inclusion post-disaster, most their programmes were focused on improving the employment prospects for those long-term unemployed, along with people of multiple disadvantages.

Table 18 (overleaf) summarises some measures taken by aid organisations in case study economies. These programmes had successfully filled the gap of public institutional capacity. Advance Cairns in Australia was a good example of balancing the public strategy with local inputs to localise economic and employment solutions. The work of Advance Cairns, however, is focused more broadly on regional development, rather than disaster recovery per se. Both St Vincent de Paul and UNICEF's Child Friendly Space adopted a more **family-oriented approach to livelihood support** to local residents.

In China, non-government organisations played an instrumental role in providing livelihood recovery assistance for business start-up training to help economic recovery after the Wenchuan earthquake. Under the guidance of China Ministry of Human Resource and Social Security (MoHRSS), ILO and IFRC provided technical support to help many jobless young people and women to gain skills and start their own businesses. **Collaboration with local government agencies** was a critical element in the success of their initiatives (ILO, 2009). The successful implementation of some piloting projects in Sichuan (e.g. ILO's E-SIYB project) subsequently enabled their application in other parts of China that were recently afflicted by natural disasters.

Similar to the labour unions in Japan, the Student Volunteer Army (SVA) in New Zealand represented a strong community response to the earthquakes, offered volunteering jobs to all spheres of the community through disaster relief and community projects. Although formed in response to the earthquakes, the Student Army has a continuing existence and strong influence among young people beyond the region. One contributory factor to its success, however, is **for young people to take ownership of their work so as to co-produce outcomes that benefit both communities and themselves.**

Table 18: Employment support provided by non-government organisations

	Organisation	Programme	Focus/Target
Australia	Advance Cairns	<ul style="list-style-type: none"> • The Tropical North Queensland Regional Economic Plan • The Skills Formation Strategy Framework 	Regional growth and development & industry-led and regionally-owned processes to address labour and workforce issues into the future
	St Vincent de Paul	Administered payments from the Queensland Premier's Disaster Relief Appeal	Help those who were heavily affected recover through material, financial support and care.
New Zealand	Rekindle	Using wood waste sourced from the region to make furniture	Create employment opportunities and promote craftsmanship, equip young people with transferrable skills
	Student Volunteer Army (SVA)	Mobilising student volunteers across the region to help communities respond to earthquakes	Debris clean-up Wellbeing of local communities Help increase the efficiency in emergency services
Japan	Labour unions (Rengo and the National Confederation of Trade Unions)	Labour management initiatives	Providing financial and in-kind support to disaster-stricken communities
China	International Labour Organization (ILO)	Emergency Start and Improve Your Business (E-SIYB)	E-SIYB project was implemented by Sichuan Provincial Department of Labour and Social Security (SCDOLSS), under the guidance of China Ministry of Human Resource and Social Security (MoHRSS), with technical support from the ILO. It supported livelihood recovery through skills training, micro grants and short-term vocational skills training, especially focused on farmers who lost jobs, disabled people and unemployed workers.
	China NWCCW ¹ & UNICEF ²	Child Friendly Space	Childcare support to workers and psychosocial support to children and their families

Note: 1. National Working Committee on Children and Women, 2. the United Nations Children's Fund

Chapter 9 Summary of good practice and recommendations

Clearly there is no one-size-fits-all approach to regional challenges held by APEC case study economies. Disparities in the distribution of resources, infrastructure and services are important considerations in addressing post-disaster employment issues in the local context. A menu of practical workforce strategies taken by case study economies is provided in Table 19.

Table 19: Menu of practical workforce strategies adopted by case study economies

Category	Measures	Description
Social protection	Income support	Unemployment benefits or short-time work benefits
	Livelihood support housing support	Assistance provided to households or individual workers to improve their wellbeing and enable them to continue to participate in the workforce
	Public works	Workfare programs to provide employment relief on emergency projects such as clean up, restoration and maintenance, and infrastructure projects
Employment retention and creation	Business assistance	Support to disaster-affected businesses including short-term assistance in the form of wage subsidies, grants and loans to help them retain workers and minimise the impacts of business disruptions, as well as longer-term assistance for improving business environment
	Sector-based assistance	Targeted support to most affected industries and other economic opportunities emerge from disaster recovery to adjust the structural change in local economy and maximise the job opportunities
	Macro stimulus policies	Prioritising infrastructure repairs and rebuild as well as other development projects in disaster-affected areas to stimulate the aggregate labour demand
Active labour market programmes (ALMP)	Training and education	Support to both training organisations and trainees for upskilling and reskilling of existing workers, as well as people transitioning to new industries
	Public employment services	To assist people in accessing job opportunities and dealing with employment churn and unemployment in terms of job matching, re-employment and job placement services
	Hiring subsidies	Subsidising the recruitment of newly hired and disadvantaged jobseekers

9.1 Summary of good practice

Comparative case studies also provide insight into policy areas that interact to shape the labour market outcomes associated with disasters. The discussion in the previous chapters highlights some of the complexity in the relationship between trade and employment, as well as some of the diversity in the policy responses to varied disaster events. In particular, four policy areas emerge as important across economies and regions in facilitating smooth labour market adjustment through poverty reduction, employment retention and livelihood protection, and in allowing workers to gain job opportunities.

- **Social protection systems and active labour market policies (ALMPs):** Disasters often damage social and physical infrastructure and change the patterns of economic activities. Adjustment to such change can mean disruptions for some businesses and dislocations for some workers, and the challenges in returning to business-as-usual operation or transitioning workers to new employment opportunities. While an appropriate safety net, tailored to contexts of an economy, can make a significant contribution in this regard, ALMPs are instrumental in promoting reintegration of displaced workers. Therefore, these two instruments are complementary and facilitate post-disaster labour market adjustment. As highlighted in case studies, social protection measures acted as a ‘shock absorber’ cushioning the blow of employment impact. Dedicated ALMPs can further boost the resilience of workforce to changes to their employment status and even to future disasters.
- **Business resilience and infrastructure:** As businesses form the backbone of a nation’s economy and play a crucial role as employers and taxpayers, business resilience is important to economic resilience (CSR, 2010). Ensuring a conducive business environment is an important part of policy response in boosting job creation and retaining trade activities. Beyond immediate-to-short-term assistance for business recovery, cross-case comparison points to such elements for improvement as interdependency between a business and its social and physical infrastructure, business continuity planning, and resilience development. In the context of natural shocks, when budget is constrained, priority should be given to income-generating sectors and those businesses with high growth potential. Additionally, businesses, as shown in case studies can be a medium through which public measures such as wage subsidies and hiring subsidies realise full benefits of employment retention and creation.
- **Readiness of labour market:** Comparative analysis highlights the role of pre-existing mechanisms, such as institutional arrangements, established network and relationships among public and private sectors, and standardised public employment services, in enabling labour market to adapt to industry structural changes and changing economic conditions post-disaster. Some workers with precarious employment status may suffer more from the disaster effects of labour market as they are less likely to transfer to other opportunities available during the recovery. Case studies suggest that rigid workforce composition in some primary industries may lead to relatively high labour lay-off and longer-term unemployment, especially for those with disadvantages. This highlights the importance of a coherent policy approach that builds ‘flexibility and adaptability’ and a lifelong learning culture, thus permitting markets to respond positively to changing patterns of labour demand.
- **Skills and workforce development:** The poverty reduction paradigm behind the Millennium Development Goals (MDGs) has been moving closer to a labour-market-centred approach (Kawar, 2011). Appropriate education and training are important inputs to skills development needed for such a goal. In several case studies, youth and women were commonly identified groups whose employment will be more affected by disasters than other socio-demographic groups. Poor-quality education, an inadequate skills set or pockets of high unemployment, however, may affect their ability to overcome barriers to employment. This will further limit economic growth of the region. It is therefore important to address post-disaster skills shortages, impacts of structural adjustment and barriers to participation by using

regional approaches. Localised, place-based solutions could provide a way forward improving workforce participation for those who are having employment difficulties.

Within these four policy areas, key differences between economies have been the different institutional arrangements both pre- and post-disaster in dealing with employment issues. Comparative analysis points out that institutions work best when they account for the context within which they operate. The scale and composition of policy packages implemented, along with the relative importance of pre-existing mechanisms and discretionary measures, vary across countries. Australia, Canada and New Zealand share the most similarities perhaps due to the existence of similar emergency management institutions. However, variations still occur even though the types of policy measures undertaken were similar among the three countries.

In contrast, both China and Japan have their specific response mechanism in dealing with employment crisis during a large disaster. One effect of the Wenchuan earthquake had been closer collaboration in support of livelihoods restoration between the Chinese governments with UN organisations, particularly the ILO, United Nations Development Programme (UNDP) and the Food and Agriculture Organisation (FAO). The recovery from the Tohoku earthquake and tsunami has seen increased partnership between public and private providers of employment services, as has been the case in Australia and New Zealand, through joint employment programmes.

Case studies, however, highlighted the critical issue of skills development and its role in promoting economic growth and poverty reduction following a natural disaster event. The economic prospects of countries depend ultimately on employment and productivity of workers. Nevertheless skills development within the context of post-disaster recovery need to be connected to broader growth, employment and development strategies. This requires governments, working with the private sector to build policy coherence in linking education and skills development to labour market recovery with technology, investment, trade and macroeconomic policies that generate future employment growth.

9.2 Recommendations

Comparative analysis identified countries where policy response and actions were concrete as well as countries where there may be scope for policy improvement in certain policy domains. Case study APEC economies had taken a broad range of employment, labour market and social protection measures, or are committed to do so, in order to address the main employment challenges. Our analysis shows that some factors are common across all the case studies. These factors can be taken as relatively firm foundations for policy responses and help to build the capacity of economies to manage the effects of future events:

- **Organisational innovation**, such as recovery authorities, regional development organisations, business mentoring services, skills consultant services and rebuilding advisory services, has implications for public-private partnership in post-disaster economic recovery;
- **Place-based approaches** shown in case studies emphasise the importance of identification and mobilisation of endogenous potential, namely, the ability of local people to draw on their own resources and innovative capacities to develop own job opportunities;

- **The business sector** itself plays an important role in employment retention and generation. Taking care of existing workforce by understanding and addressing their workforce participation barriers will be important to avoid disengagement in the face of adversities;
- **Public support within a workplace context** for employment retention, livelihood support and skills training can help overcome workers' participation barriers;
- **Combining social protection with skills development strategies** can have implications for sustainable employment. Governments may consider early identification of those who need longer-term income support and assisting them in accessing subsidised training and employment services and in dealing with other livelihood concerns;
- Policies arising out of national or regional workforce development strategy might need to focus on **predicting future workforce skills development needs against scenarios of future risks** including the impacts of natural events; and
- Above all, **information and communication** was critical to the effective delivery of labour market policies. Post-disaster business surveys and labour demand analytical modelling techniques, as demonstrated in the case studies, can be instrumental in providing labour market intelligence to inform the design of employment policy response.

In thinking about additional measures it is useful to be reminded of two important elements. First, fiscal capacity is a critical factor in policy response and delivery of labour market programmes. In countries facing fiscal constraints, expenditure should be prioritised and targeted to those measures with a high impact on job opportunities and take-up. Second, industries and socio-demographical populations fare differently following the disaster. Well-designed skills and training strategies, including a lifelong learning culture, can make a contribution to addressing structural and workforce composition issues.

Economies need to enhance progress in developing toolkits, strategies and 'good practice' appropriate to targeted sectors of priority and their vulnerabilities. It is useful to develop guidance for organisations in managing their Human Resources (HR) issues pre-disaster and during recovery. Economies, perhaps also need to consider the range of within-country legislative/regulatory and employment relations issues and social issues that may occur with the influx of new workers coming into the region post-disaster.

Finding an appropriate balance between supply-side measures to enhance labour market readiness and workforce participation, and demand-side measures to support strong employment generation, is contingent on country-specific situations. Pursuing such a balance requires an integrated effort, innovative partnership, and shared responsibility that act on a better understanding of labour market impacts and workforce participation barriers. However, making a commitment of doing so can have large positive effects for the workforce.

Chapter 10 Sound workforce strategies: principles and guidelines

The success measures provided in this report are a snapshot of the range of good practice available in case study economies. They provide a ground for a stronger approach to coordinated and possibly additional employment and social policy measures as part of the APEC region’s response to natural disasters. Alongside other guiding principles suggested by international organisations, this report proposes principles which build on the experience of a range of good practice policies applied by case study economies.

10.1 Overview of principles on employment aspect of crisis response

There are several policy documents that provide a general framework of guiding principles on employment response to crisis situations (Table 20).

Table 20: Overview of guiding principle documents on employment aspect of crisis response

Organisation	Context/focus	Guiding principle document
UN	Post-conflict employment	The United Nations Policy for Post-Conflict Employment Creation, Income Generation and Reintegration
World Bank	Social protection in response to crises	The World Bank 2012-2022 Social Protection and Labour Strategy: Resilience, Equity, and Opportunity
ILO	Global development in employment	Decent Work Agenda & Emergency Employment Programme
APEC	Human resources policy response to economic shocks	Summary of HRD Experts Meeting on Human Resource Impacts of the Global Economic Crisis (Jakarta, Indonesia, July 2010)
APEC	Emergency Preparedness Working Group (EPWG)	<ul style="list-style-type: none"> • Strategy for Disaster Risk Reduction and Emergency Preparedness and Response in the Asia Pacific Region: 2009 to 2015 • Principles on Public-Private Partnerships and Disaster Resilience
Japanese Government	Employment policy lessons learned from the Great East Japan Earthquake and Tsunami response	Lessons Learned on Employment Policy Towards Natural Disaster Response from the Special Session by the Government of Japan on 5 th December 2011, Kyoto, Japan

- Five guiding principles in the **United Nations** Policy for Post-Conflict Employment Creation, Income Generation and Reintegration, as discussed in literature review, are worth considering in a post-disaster context. This document set the tone for the United Nations acting as a facilitator and a catalyst for the process of transforming post-conflict development opportunities to employment generation.
- ‘**3Ps**’ framework has been instrumental for the **World Bank** in developing its policy response to employment effects after a crisis. In countering the impact, crisis response measures need to be timely, targeted and temporary and cover within a short period of time all those who need protection (World Bank, 2010). Marzo and Mori (2012) further examined the World Bank’s instruments performance based on four criteria: adequacy, operational feasibility, political acceptability and automation.

- Skills development policies constitute a core element of the **ILO's Global Employment Agenda**. The ILO's policy framework for the employment promotion objective of the **Decent Work Agenda** also provides guidance for effective skills and employment policies. ILO in particular had its presence across APEC member economies that were recently affected by natural disasters. The ILO disaster response programme focuses on livelihood support and employment opportunities to help people who have lost their livelihoods in the wake of a disaster.
- In July 2010, the **APEC Human Resources Development Working Group (HRDWG)** held the APEC HRD Experts Meeting on Human Resource Impacts of the Global Economic Crisis in Jakarta, Indonesia. A summary report compiles some of the experiences shared at the meeting, including 10 case studies detailing the impacts and interventions in individual APEC economies and a research paper examining the labour market policy responses in APEC economies to the worldwide recession.
- Building on the '**APEC Strategy for Disaster Risk Reduction and Emergency Preparedness and Response in the Asia Pacific Region: 2009 to 2015**' and the APEC Emergency Preparedness Working Group (EPWG)'s library of best practice principles, participants of the EPWG Workshop on Public-Private Partnerships and Disaster Resilience⁴⁵ agreed on a set of 14 **APEC principles on public-private partnerships and disaster resilience**.
- Following the Great East Japan earthquake and Tsunami, **Japan** issued a policy document on the lessons learned and reaffirmed that policy for securing employment toward disaster response is one of the measures for 'Decent Work' which has been advanced by the ILO (Japan Government, 2011).

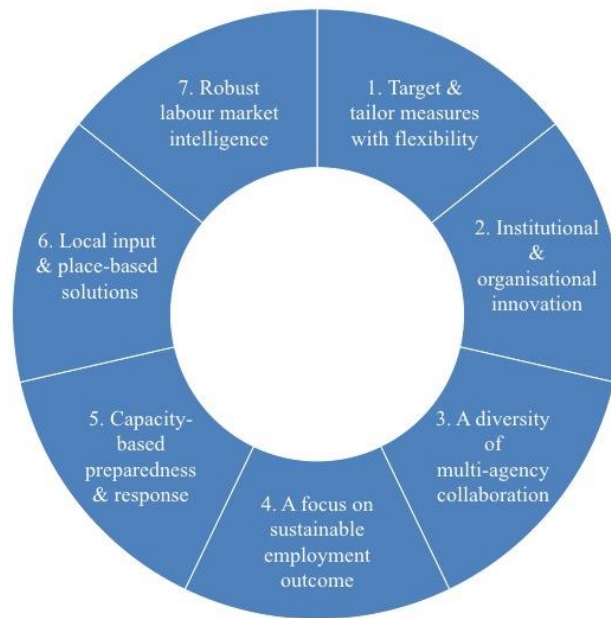
These global/regional tools and mechanisms play an important role in setting agendas at global and national levels and provide guidance in principles and approaches. In working towards achievement of the outcomes of good practice identified in this report, the labour market response of APEC economies to reduce the disaster effects on employment should be guided by the following core and operational principles.

10.2 APEC Principles for sound natural disaster workforce strategies

The guiding principles are to ensure the workforce strategy in APEC economies has a clear set of objectives that any employment plans and measures should manifest. They should align closely with the principles suggested by other international bodies. The common building blocks of 'best practice' of a sound workforce strategy in disaster settings are presented in the form of a framework of seven principles for APEC economies managing post-disaster labour markets (Figure 7 below). The guidelines that we believe should underpin a natural disaster sound workforce strategy are outlined in Table 21.

⁴⁵ The APEC workshop on Public-Private Partnership and Disaster Resilience was held in Bangkok, Thailand from 24-27 August 2010.

Figure 7: A framework of principles for sound workforce strategies following natural disasters



- **Principle 1:** Target and tailor measures with flexibility
- **Principle 2:** Institutional and organisational innovation
- **Principle 3:** A diversity of multi-agency collaboration
- **Principle 4:** A focus on sustainable employment outcome
- **Principle 5:** Capacity-based preparedness and response
- **Principle 6:** Local input and place-based solutions
- **Principle 7:** Robust labour market intelligence

Table 21: Principles and guidelines for APEC sound natural disaster workforce strategies

Principles	Guidelines
1. Target and tailor measures with flexibility	<ul style="list-style-type: none"> • Employment strategies (e.g. public works, employer subsidies) should be targeted for the most troubled sectors and/or needed groups and individuals; if fiscal capacity is constrained, resources should be directed to sector groups that have most potential to generate employment. • Social protection measures should be as flexible as possible to meet the needs of beneficiaries, reducing application ‘red tape’, providing easy access, expending the coverage and length of support.
2. Institutional and organisational innovation	<ul style="list-style-type: none"> • An overarching recovery strategy with employment being one of key components provides a framework for an efficient, responsive labour market response. • A truly dedicated response team in respective policy domains (regional development organisations, rebuilding advisory services, skills specialist officers) will drive efficiency and higher levels of engagement from the industry and community. • One-stop design is critical to the success and accessibility of employment services.
3. A diversity of multi-agency collaboration	<ul style="list-style-type: none"> • A diversity of collaboration among multiple agencies is essential to ensure coverage of assistance and combination of capacity (financial, technical and ‘know-how’) for effective service delivery. • Expertise and ‘know-how’ knowledge of non-government organisations, particularly the International Labour Organization (ILO)⁴⁶ should be drawn on, promoting a collaborative approach to supporting employment and livelihood assistance.
4. A focus on sustainable employment outcome	<ul style="list-style-type: none"> • A commitment to sustainable employment outcomes requires social protection measures to be coupled with training and skills development programmes, job creation activities to be combined with productivity and skills enhancement, and disaster labour market response to be integrated in regional workforce development strategies. • Workplace-based employment retention and livelihood support play an important role in overcoming workers’ participation barriers. • Self-efficacy and employability concepts should be built into the design of self-employment assistance and training programmes, respectively, with a focus on linking support measures with direct employment outcomes.
5. Capacity-based preparedness and response	<ul style="list-style-type: none"> • Pre-designed labour market response policies which can be quickly activated ensure timeliness and efficiency of employment assistance. • Existing networks and relationships, together with a strong leadership, allow resources and capabilities to be quickly assembled and/or redirected in response to the changing needs over the recovery time. • Fiscal, technical, staffing and technological capacity is essential to ensure efficiency within service delivery.
6. Local input and place-based solutions	<ul style="list-style-type: none"> • Economic and business recovery should increase the engagement of local organisations and people with local and industry knowledge. • Employment assistance provided to displaced workers and job seekers, particularly those disadvantaged (youth, women, people with disability, long-term unemployed) can be based on their individual needs and opportunities identified by themselves.
7. Robust labour market intelligence	<ul style="list-style-type: none"> • An evidence-based approach, building on what has proved to be good practice in international experience is instrumental in designing a similar measure. Business surveys will allow for more responsive and targeted assistance. • Labour market programmes should be based on robust labour force information which will contribute to a sustainable and resilient employment services system.

⁴⁶ By the time of finalising this report (12 November 2013), the ILO is helping put in place emergency employment programmes in the areas heavily affected by the Typhoon Haiyan in the Philippines as part of USD 301 million relief appeal launched by the United Nations.

10.3 Links with emergency preparedness

Comparative analysis across case studies highlights key dimensions of labour market preparedness against natural disasters. Countries with existing automatic shock stabilisers, such as social insurance and unemployment benefits, tended to have greater capacity to respond in times of disasters. Similarly, enhanced coping mechanisms of households and businesses implied less impact and made it possible for individuals and businesses to recover from adverse circumstances.

In line with the World Bank's 3Ps framework, good practice in the studied economies highlights how pre-event preparedness could contribute to the other 3P functions of social protection and labour policies (Figure 8). Preparedness consists of measures that enable these different groups to respond effectively and recover more quickly when disasters strike. Preparedness efforts also aim at ensuring that the resources necessary for responding effectively in the event of a disaster are in place, and that those faced with having to respond know how to use those resources (Sutton & Tierney, 2006).

Figure 8: Links of preparedness with labour market response



Comparative analysis highlights key dimensions of labour market preparedness against natural disasters. Table 22 lists these dimensions and associated activities that can contribute to enhanced labour market readiness. Some of them are cutting across different units of analysis.

Table 22: Labour market preparedness dimensions and associated activities against disasters

Dimension of labour market preparedness	Associated activities
Know-how and information	<ul style="list-style-type: none"> • Building robust labour market information systems • Modelling, monitoring and tracking changes in labour demand and supply • Undertaking robust assessment of disaster impacts • Identifying effects on different socio-demographic groups • Understanding interdependency between economic activities and employment
Public sector/government agency preparedness	<ul style="list-style-type: none"> • Establishing institutional arrangements for disaster response and recovery • Including labour in pre-disaster emergency preparedness and recovery planning • Enhancing administrative and technical capacity of program delivery • Forming collaborative relationships with other agencies and private sector • Forming standardised response procedures among agencies
Multi-agency partnership	<ul style="list-style-type: none"> • Identifying key stakeholders and networks in the workforce element of disaster response; • Developing joint plans, memoranda of understanding, mutual aid agreements and partnership protocols; • Seeking local inputs by engaging communities, social groups and NGOs • Exploring collaborative models for public-private partnership in workforce measures at different levels (individual workers, businesses and industry)
Supportive resources	<ul style="list-style-type: none"> • Ensuring an adequate number of people with expertise providing technical and specialist support to individual workers and businesses • Ensuring fiscal capacity (consider disaster risk financing models) • Utilising previously unrecognised resources (volunteers, unions, international organisations, regional development organisations) • Acquiring materials and equipment needed for response and having logistics plans in place
Social protection	<ul style="list-style-type: none"> • Understanding potential barriers for individual workers to labour market participation and barriers to enhancing their productivity • Improving the efficacy of safety nets by linking with other ALMPs • Preparing actions plans for the scenarios in which public services are also affected by disasters • Developing capacity to improvise and innovate social protection measures
Business resilience and preparedness	<ul style="list-style-type: none"> • Having resources and tools in place for enhancing capacity of businesses • Business continuity planning, including staff wellbeing consideration • Identifying trans-boundary risks between critical economic sectors and forming industry-wide preparedness initiatives • Innovating business practice in a crisis situation (e.g. adapting business development model, alliancing, resource sharing)
Workforce and skills development	<ul style="list-style-type: none"> • Identifying the trends of labour demand and the potential drivers • Continuously improving performance-based employment services and enhancing its quality and capacity in response to disaster events • Building concepts of employability, life-long learning and sustainable employment into the vocational training and education systems • Developing regional workforce development strategy with consideration of uncertainties and risks of future, including such as disaster impacts against different scenarios

Earlier projects have developed an **APEC Framework for Capacity Building Initiatives on Emergency Preparedness** and **APEC Principles on Disaster Response and Cooperation**. The APEC Natural Disasters Workforce project, referenced in this report, however, has taken the workforce aspect of the Framework and Principles further, by providing a menu of practical strategies suitable to economies in the Asia-Pacific area. Some of innovative strategies for supporting business resilience and building collaborative public-private partnerships help to connect the workforce dimension with the APEC Emergency Preparedness Working Group (EPWG) frameworks concerning disaster preparedness.

The case studies show that effective preparedness contributes to reducing the human and financial costs of recovering from disasters. Emergency preparedness in this aspect constitutes two ways. Firstly by ensuring that the skills needed for the recovery and reconstruction are available, and secondly by encouraging and enabling better use of new and existing economic opportunities to boost job creation and skills development. This two-pronged approach to workforce strategy should be an integral part of emergency preparedness.

Business continuity plans and public resources for rebuilding business resilience are critical for businesses to prepare for and recover from disasters. Case studies show that it is also in the interests of organisations to have prior readiness and staff-support measures that provide benefits to organisations once a disaster happens. In APEC economies, a standardised business continuity planning tool (e.g. Queensland's Disaster Recovery Toolkit for Business), for instance, can be a starting point for businesses to build their own resilience. Other resources, such as those developed by Resilient Organisations⁴⁷, are also available to support organisations to both evaluate and improve their resilience (e.g. (Lee et al., 2013; McManus et al., 2008; Whitman et al., 2013)).

Another critical dimension of the labour market emergency preparedness is to protect the most vulnerable economic activities and labour-intensive sectors, such as manufacturing, services and agriculture industries. Case study economies reported specific measures to assure the continuity of economic activities during disaster but also mentioned difficulties in coordinating the work of different sectors. Risks that are inherent in the architecture of economic connectivity of APEC economies are evident in the case studies. It is therefore important to increase the understanding of key linkages and interdependencies between those sectors and design effective risk reduction policy responses in accordance to that understanding.

Comparative analysis has also shown that there is scope for labour policy improvement in public and private sector partnership. The models of employment services, wage assistance, livelihood support and skills training in a workplace context, regional development organisations, rebuilding advisory services, as well as public works and hiring subsidies for the purpose of job creation and skills development, are good practice examples of public-private partnership. This report also highlighted the instrumental role of non-government agencies in disaster employment response.

⁴⁷ See <http://www.resorgs.org.nz>

A key accomplishment in implementing the Hyogo Framework for Action (HFA) is the increase in the number of countries establishing a multi-sectoral National Platform⁴⁸ to engage more stakeholders in disaster risk reduction (UN/ISDR, 2013a). Perhaps in APEC economies, building an employment element into a National Platform can be a practical means in order to further engage diverse organisations and facilitate coordinated approaches to a multi-agency collaboration.

Good practice and associated principles in this report provides insights as to the areas of preparedness that may be helpful in promoting improved labour market outcomes. However, further analytical work on the impact and costs of different measures in different contexts could help consideration of how the APEC member economies might strengthen the contribution of emergency preparedness tools to labour market response to natural disasters.

⁴⁸ A multi-sectoral National Platform for disaster risk reduction is a nationally owned and led mechanism facilitating the interaction of key development players around the national disaster risk reduction agenda. The National Platform serves as an advocate for adopting disaster risk reduction measures at all levels.

Conclusion

Recent natural events affecting APEC economies presented a significant test of the overall resilience policy in the region. It also brings into focus the role of workforce policy and emergency preparedness in building the resilience of individuals, organisations, and communities in the face of crises. Good practice in this report shows that the employment component of natural disasters cuts across the work programmes of APEC working groups.

This report provides insights into the kinds of policy responses that may be instrumental in promoting improved labour market outcomes if a disaster strikes. From this work, it is clear that enhanced policy design is needed, taking into account disaster impacts to the labour market and participation challenges facing different groups of people, to help deal with the uncertainties and risks of the future.

While the relationship between disaster impacts and jobs is complex, available empirical data point to the opportunity for positive labour market outcomes. This can be achieved if a multi-faceted approach is used, taking into account both immediate and longer-term needs to ensure support for disaster-affected industry, business and labour force (Figure 9).

Figure 9: A multi-faceted approach to post-disaster labour market response



There are some clear patterns in the composition of the labour market policy measures taken by selected APEC economies. In particular, four policy areas emerge as important across economies and regions in facilitating smooth labour market adjustment post disaster. These include:

- 1) social protection systems and active labour market policies (ALMPs),
- 2) business resilience and infrastructure,
- 3) readiness of labour market, and
- 4) skills and workforce development.

A framework of seven principles is suggested for APEC economies managing post-disaster labour markets (diagram below). Comparative analysis indicates that good practice highlighted in this report can enable those APEC economies who are currently recovering from disasters to consider other innovative measures. In the meantime, the report aims to help

other economies in policy framing to create services and workforce programmes that reduce and alleviate vulnerabilities in their labour market to future events.

A framework of principles for sound workforce strategies following natural disasters



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